SONY

MVS-8000X System

(With CCP-9000 Series Center Control Panel)

User's Guide

Multi Format Switcher System

Volume 1 English
1st Edition (Revised 1)
Software Version 10.00 and Later

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Functions Newly Supported in Version 10.00

The functions newly supported in the MVS-8000X system version 10.00 are as follows.

Functions relating to operability

Classification	Functions supported	Menu No.	See page		
			Vol.1	Vol.2	Vol.3
Control panel	Assignment of keys 1 to 8 to region selection buttons in the device control block (trackbal)	7321.17	71	–	961

Functions relating to the switcher

Classification	Functions supported	Menu No.	See page		
			Vol.1	Vol.2	Vol.3
Signal inputs and outputs	Format converter	–	110	–	910
	Premium inputs	–		–	–
	Increased number of primary inputs	–		–	–
Wipe	Random / diamond dust wipes (pattern numbers 273 and 274), and dust mix	1151	233, 417	–	–
Frame Memory	Support for 1080P format	–	298	–	–
	Extended clips	–	299	–	–
	Reposition function	2531	304	–	–
	Support for external hard disk drives	2561, 2562	338	–	–
	FM Data Port support	7312.2	–	–	907
M/E capacity expansion	Use of the M/E-4 bank	–	458	–	–
Key availability expansion	Use of keys 5 to 8	–	459	–	–

Functions relating to setup

Classification	Functions supported	Menu No.	See page		
			Vol.1	Vol.2	Vol.3
System	Support for SD format	7313	–	472	908
	Support for 1080PsF/24, 1080PsF/25, and 1080PsF/29.97 formats	7313	–	–	908
	Support for switcher Resume mode	7314	–	–	914
	DME input/output signal format setting	7316.8	–	–	931
Control panel	Assigning functions to transition control block buttons (standard type)	7321.9 7321.33 7311.34	51	–	953
	Assigning functions to key control block buttons	7321.29	67	–	957
Switcher	Setting the re-entry button operation mode	7336.4	–	–	1055
Tally	Additional matrix size	7361	–	–	1100
	Selecting the serial tally data size	7367	–	–	1115

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Chapter 1 MVS-8000X Functions

Introduction

This manual is the User's Guide for the MVS-8000X Multi Format Switcher system.
This manual describes principally the operation of the system using the CCP-9000A of center control panels.
The User's Guide for this system comprises three volumes.
For the contents of each volume, see the section “Organization of This User’s Guide” at the front of this volume.

Devices and system nomenclature

In this manual, when discussing the principal components of the MVS-8000X system, in place of the formal product names, abbreviated names characterizing the functions and features are sometimes used. When distinctions between system configurations must be drawn, the terms in the following table are used.

Principal components and naming

The formal product names of the principal components of the MVS-8000X system, and the terms used in this manual are as follows.

Formal product name	Term used in this manual
MVS-8000X Multi Format Switcher Processor	Switcher or switcher processor
MVE-8000A Multi Format DME Processor	DME or DME processor or MVE-8000A
MVE-9000 Multi Format DME Processor	DME or DME processor or MVE-9000
CCP-9000A Center Control Panel	Control panel or center control panel
DCU-8000 (MKS-8700) Device Control Unit	DCU or MKS-8700
DCU-2000 (MKS-2700) Device Control Unit	DCU or MKS-2700

System nomenclature

The following terms are used for systems, depending on the combination of installed options, and the signal format.

System configuration and features	Term for system
System with installed option boards and settings to support HDTV format	HD system
System with installed option boards and settings to support SDTV format	SD system

System configuration and features	Term for system
A system in which the center control panel has two M/E banks	2M/E system
A system in which the center control panel has one M/E bank	1M/E system

Related manuals

MVS-8000X-C Switcher Processor Pack
- MVS-8000X-C Operation Manual
- MVS-8000X-C Installation Manual

MVE-8000A DME Processor Pack
- MVE-8000A Operation Manual
- MVE-8000A Installation Manual

MVE-9000-C DME Processor Pack
- MVE-9000-C Operation Manual
- MVE-9000-C Installation Manual

CCP-9000A-C Center Control Panel Pack
- CCP-9000A-C Operation Manual
- CCP-9000A-C Installation Manual

DCU-8000 Device Control Unit Pack
- DCU-8000 Operation Manual
- DCU-8000 Installation Manual

DCU-2000 Device Control Unit Pack
- DCU-2000-C Operation Manual
- DCU-2000-C Installation Manual

Features of the MVS-8000X Multi Format Switcher System

The MVS-8000X Multi Format Switcher system boasts extensible high performance and multifunctionality. The following are some of the principal features of this system.

System configuration flexibility

Multiformat support

This system supports both HDTV and SDTV signal formats. The format selection can be switched by a simple control panel operation.

Extensible system configuration

By suitable combination of options, the switcher can be configured with various inputs and outputs, and different numbers of M/E banks. The system offers the flexibility to change and expand as required.
You can connect up to two MVE-8000A or MVE-9000 extensible DME processor, which provides any number from one to eight channels, for a maximum of four channels of DME functionality.
When the signal format is 1080P, you can also connect up to four MVE-8000A units, which provides a maximum of eight channels of DME functionality.

Powerful external device interfaces

By connecting to a Sony routing switcher or similar, a large system can be built. From the control panel, it is also possible to operate other equipment, including VTRs and disk recorders.

Powerful tally system

The complete system including routing switcher provides an all-inclusive tally system. The system can be adapted to different applications and settings, using multiple tally outputs, including both on-air and recording tallies.

Comprehensive video manipulation

M/E banks

Each mix/effects bank (M/E bank) is equipped with four keyers, and each keyer is capable not only of chroma keying, but also independent key transitions separate from the background transitions. The four keys can be freely combined, to carry out four different program outputs.

Powerful frame memory functions

The frame memory can hold approximately 1000 frames in an HDTV system (approximately 2000 frames in 720P/59.94 format), or approximately 5000 frames in an SDTV system in 480i/59.94 format, or approximately 4000 frames in 576i/50 format, and allows eight frames (four frames in 1080P format) to be recalled simultaneously.

Link operation with DME

By means of the dedicated DME interface, a range of DME functions including DME wipes and processed keys can be handled as switcher functions.
By connecting two MVE-8000A or MVE-9000 unit, you can interface to a maximum of eight DME channels.
When the signal format is 1080P, you can also connect up to four MVE-8000A units, which enables a maximum of eight channels to be interfaced.

Designed for use in a live broadcasting environment

High-performance user interface

The menu control block provides a large color LCD panel, with rapid touch-panel menu selection.
The source name displays have color backlit LCD displays. The signal names, and graphical representations of the patterns associated with buttons provide intuitive feedback, and allow the immediate decisions that are required in a live operating environment.

Basic Video Processing

This section introduces basic functions used for video processing on the switcher.

Transitions

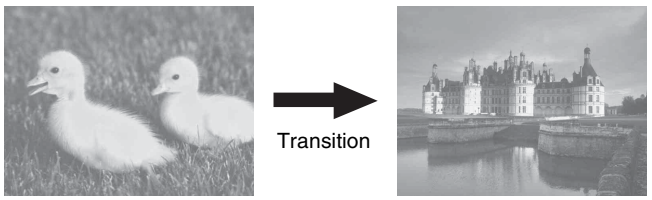
In the M/E banks and PGM/PST bank, the switch from the current video stream (appearing on the corresponding program monitor) to a new video stream is referred to as a transition.
In the M/E banks and PGM/PST bank, you can change one of the images, the background, and keys 1 to 8 (downstream keys 1 to 8 in the PGM/PST bank), and also vary combinations of these simultaneously.
The following are examples of transition.

Notes

When the signal format is 1080P, four keyers can be used (keys 1 to 4).

Changing the background

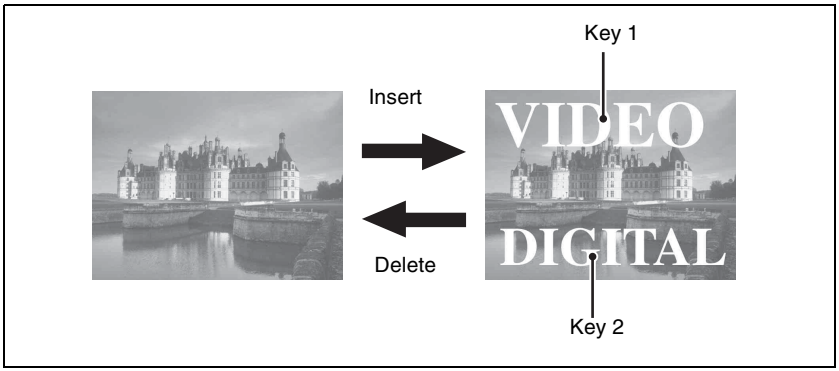
A background transition switches from the video currently selected on the background A bus (the current video) to the video selected on the background B bus (the new video).



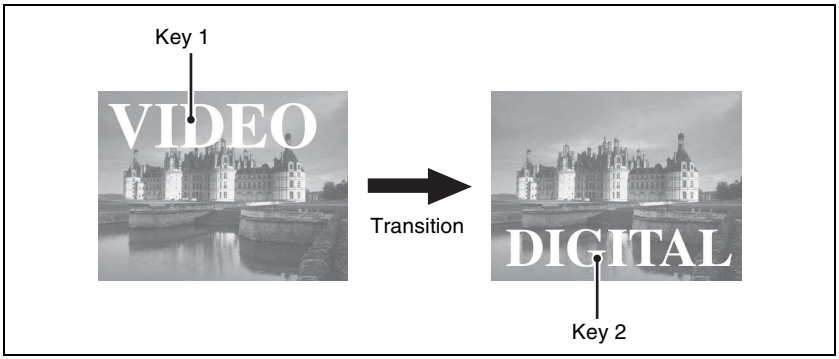
In the default selection of flip-flop mode (*see page 143*), the background always switches in the direction from the A bus to the B bus. When the transition completes, the cross-point selections on the A and B buses are interchanged.

Inserting and deleting a key

You can insert one or more of the eight keys (downstream keys on the PGM/PST bank).
If you select a key which is already inserted, the transition will delete the key.
A simultaneous combination of deleting and inserting keys is also possible.



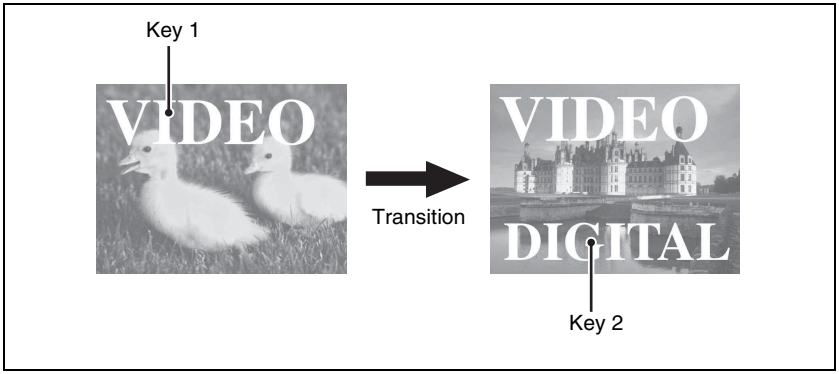
Inserting or deleting key 1 and key 2



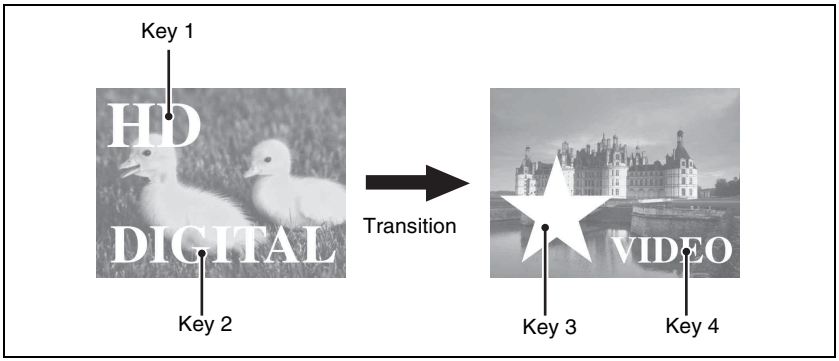
Deleting key 1 and inserting key 2

Simultaneously changing the background and keys

You can change any of the eight keys (downstream keys on the PGM/PST bank) and the background at the same time.



Changing the background and key 2 simultaneously



Changing the background and keys 1 to 4 simultaneously

Selecting the transition type determines the way in which the transition occurs. The following are the transition type.

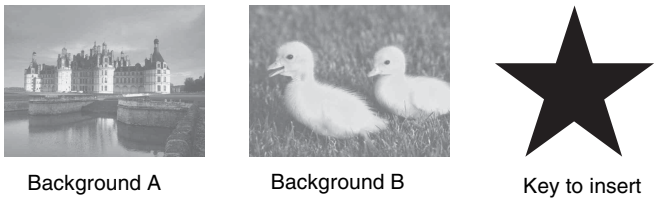
- Mix
- NAM (non-additive mix)
- Super mix
- Preset color mix (color matte)
- Wipe
- DME wipe
- Clip transition
- Cut

There are two modes for carrying out a transition: auto transitions are carried out by a button operation, and manual transitions are carried out using the fader lever. It is also possible to combine these two modes.

Independent Key Transitions

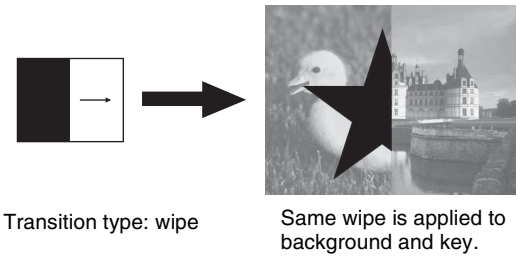
In addition to common transitions, it is possible to carry out independent transitions on the keyers of the M/E banks and PGM/PST bank. These are called “independent key transitions.”
By carrying out an independent key transition in combination with a common transition, different transition types can be used for the background and keys. The following description compares the independent key transition with a common transition, taking a simultaneous change of the background and key as an example.

Video used in the transition



Effect of a common transition

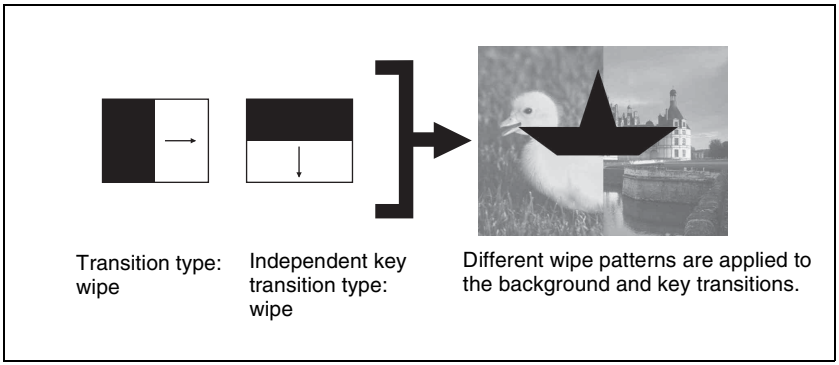
In the case shown in the previous illustration, carrying out a common transition produces the following change in the image.



Effect of a common transition

Effect of use with an independent key transition

The key is inserted with an independent key transition as the background changes with a common transition, providing the following result.



Effect of a background transition and independent key transition

For details of transitions, see Chapter 3 “Signal Selection and Transitions” (page 105).

Keys

A key is an effect in which a part of the background image is replaced by an image or superimposed text. The signal determining how the background is cut out is termed “key source,” and the signal that replaces the cut-out part is termed “key fill.” The system component responsible for processing a key is referred to as a keyer.
Each switcher bank has eight keyers, each providing the same functionality.

On each switcher bank, you can use the following key types (methods of processing the key source).

- Luminance key
- Linear key
- Color vector key
- Chroma key
- Wipe pattern key
- Key wipe pattern key

Key modifiers

You can apply borders and other modifiers to the edge of the key image.

Masks

A mask allows a part of the image to be replaced by the background or a key. To prevent unwanted holes in the background, or if a key is not the desired shape, you can correct this with a mask.

Resizer

This function allows you to apply effects, similar to a DME, such as zoom, movement, or aspect ratio change to a part of a created key. You can use the following operations.

- Two-dimensional transform of a key
- Resizer interpolation settings
- Resizer crop/border settings
- Resizer effect settings (wide key border, drop shadow, edge enhancement, mosaic, defocus, mask)

For details, see Chapter 4 "Keys" (page 155).

Wipes

A wipe is a transition from the current video stream to a new video stream, using a wipe pattern.
Changing the background by means of a wipe is referred to as a "background wipe," and inserting or deleting a key with a wipe is termed a "key wipe."
There are two types of wipe: those that can be selected in a common transition, and those that can be selected in an independent key transition.

The patterns that can be used for a wipe are as follows.

- Standard wipe patterns
- Enhanced wipes
- Rotary wipes
- Mosaic wipe pattern
- Random and diamond dust wipe patterns

You can combine two selected patterns (referred to as "main" and "sub") to create a new pattern (pattern mix).

You can also specify the wipe direction, or set the pattern position, applying various changes and modifiers to the selected wipe pattern.

For details, see Chapter 5 "Wipes" (page 227).

DME Wipes

A DME wipe is a wipe transition that uses a DME effect to change from one video image to the next.
There are two types of DME wipe: those which can be selected for a normal transition, and those which can be selected for an independent key transition.

The patterns that can be used for a DME wipe are as follows.

Slide, Squeeze, Split, Door, Flip tumble, Mirror, Sphere, Character trail, Wave, Ripple, Page turn, Page roll, Frame in-out, Picture-in-picture, 2D trans, 3D trans, Sparkle, Split slide, Mosaic, Defocus, Brick, and User programmable DME

You can also specify the wipe direction, or set the pattern position, applying various changes and modifiers to the selected DME wipe pattern.

Resizer DME wipes

Using the resizer, you can carry out key DME wipes.

For details, see Chapter 6 "DME Wipes" (page 261).

Frame Memory

Frame memory is a function for using a still image or video (frame memory clip) as material for editing.
You can create a still image by capturing a frame of input video or a clip by specifying a range of input video. The created images and clips can be written to memory for playback, editing, and output.

For details, see Chapter 7 "Frame Memory" (page 297).

Color Backgrounds

This function can be used to obtain color background video.
Two color signals generated from the dedicated generators can be switched or mixed, and then output.

For details, see "Color Background" (page 348).

Copy and Swap

This function can be used to copy and swap the settings among the M/E-1 to M/E-3, and PGM/PST banks or between keyers.
The following settings can be copied or swapped.

- Overall settings for the M/E and PGM/PST banks
- Keyer settings
- Wipe settings in a transition control block
- Wipe settings in an independent key transition control block
- DME wipe settings in a transition control block
- DME wipe settings in an independent key transition control block
- Matte color settings (color 1, color 2, and how to compose them)
- Color settings
- DME channel settings
- Format converter input settings (copy only)
- Format converter output settings (copy only)

For details, see "Copy and Swap" (page 352).

Video Process

The term "video process" is applied to adjustments to the gain, hue, black level of the input video signal. There are two types of adjustment; adjustment of an individual input signal and adjustment as image effects on a particular bus.

For details, see "Video Process" (page 368).

Color Corrector

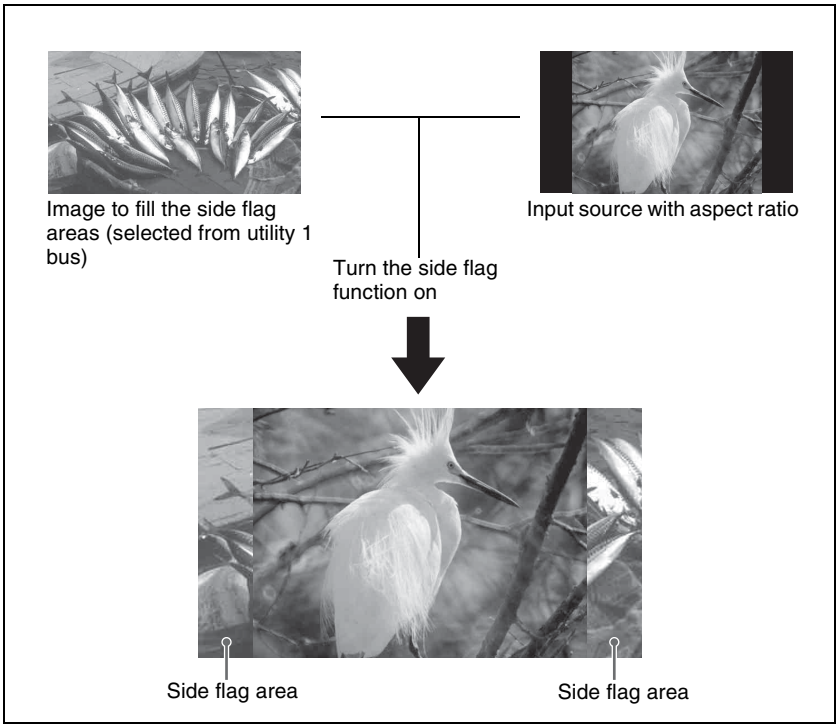
The color corrector enables video signal color correction (black balance/white balance adjustment, gamma correction, knee correction, etc.).
The color corrector includes the following adjustments.

- Input video processing
- Primary color correction
- Secondary color correction
- Luminance processing
- Spot color adjustment
- Output video processing
- YUV/RGB clip

For details, see Chapter 9 "Color Corrector" (page 371).

Side Flags

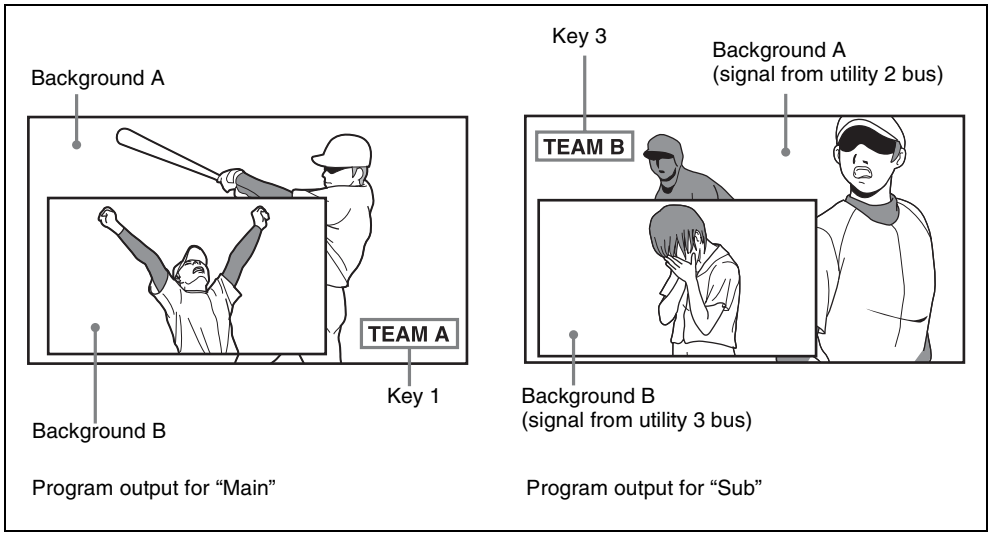
The term “side flags” refers to the areas to left and right of an image with aspect ratio 4:3 embedded within a 16:9 frame, when these areas are filled with a separate image selected from the utility 1 bus.



For details, see “Side Flags” (page 392).

Multi Program 2

By operating the switcher in Multi Program 2 mode, a single switcher mix/effects bank can be used to create two separate video outputs, referred to as “main” and “sub.” You can set backgrounds, keys, and transitions for each of main and sub. For example, immediately after a score in baseball two versions of the scene can be provided as shown below, and switched simultaneously.



For details, see “Multi Program 2” (page 397).

Creation of Special Effects and Management of Data and Operations

This section introduces functions used for creation of special effects, control of external devices or switcher operations, and data management.

Digital Multi Effects (DME)

When used with the switcher, DME allows you to add three-dimensional effects such as image movement, rotation, magnification and shrinking, as well as a wide variety of special effects.
Each channel can be used on its own or in combination with other channels, which allows you to create advanced effects with more complexity.

The following types of DME special effects are available.

- **Edge effects:** Border, Crop, Beveled Edge, Key Border, Art Edge, Flex Shadow
- **Effects for entire image:** Defocus, Blur, Multi Move
- **Effects for video image:** Sepia, Mono, Posterization, Solarization, Nega, Contrast, Mosaic, Mask, Sketch, Metal, Dim and Fade, Glow
- **Freeze effects**
- **Nonlinear effects:** Wave, Mosaic Glass, Flag, Twist, Ripple, Rings, Broken Glass, Flying Bar, Blind, Split, Split Slide, Mirror, Multi Mirror, Kaleidoscope, Lens, Circle, Panorama, Page Turn, Roll, Cylinder, Sphere, Explosion, Swirl, Melt, Character Trail
- **Lighting effects:** Lighting, Spotlighting
- **Recursive effects:** Trail, Motion Decay, Keyframe Strobe
- **Background color**
- **Separate Sides** (effects for front and back sides)
- **Signal inversion** (Invert effect)
- **Key density adjustment**
- **Key source selection**

Global effects

Global effects are special effects created by combining the images of successive channels. The following types of global effects are available.

- Combiner
- Brick
- Shadow

For details, see Chapter 11 “DME” (Volume 2).

External Devices

In this system, you can operate while controlling the following types of external device:

- Devices supporting P-Bus (Peripheral II protocol)
- Devices supporting GPI
- VTRs
- Disk recorder (Sony disk 9-pin protocol and video disk communications protocol)
- Extended VTR (Abekas A53 protocol)

For details on the devices that can be connected, consult your Sony representative.

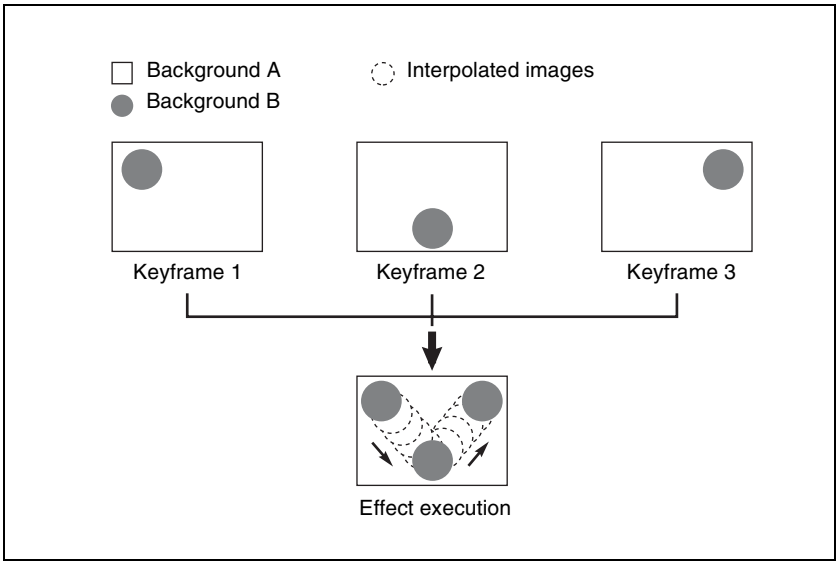
You can control an external device by previously registering timeline keyframes.

For details, see Chapter 12 "External Devices" (Volume 2).

Keyframes

A keyframe represents an instantaneous state of an image; it can be saved in a register *(see "Registers" in Chapter 13 (Volume 2))* and recalled for reuse. By arranging a number of keyframes on the time axis, and interpolating between successive keyframes, you can create a "key frame effect" in which there is a continuous change from each keyframe to the next.

The following figure shows three keyframes created with a wipe pattern (the circle) in different positions. This is interpolated to create the effect shown.



Example of keyframes and effect execution

You can save the sequence of keyframes representing a single effect in a register. Then by recalling this register, you can replay the same effect.

For details, see Chapter 13 "Keyframe Effects" (Volume 2).

Snapshots

The term "snapshot" refers to a function whereby the various settings required to apply a particular effect to an image are saved in a register as a set of data, for recall as required, to recover the original state.

Snapshots are divided as follows.

- Snapshots applying to a particular region (functional block of the switcher or DME)
- Master snapshot
- Key snapshot
- Wipe snapshot
- DME wipe snapshot

An individual snapshot may also have attached special conditions relating to switcher or DME operation when the snapshot is recalled.

These conditions are called “attributes” of the snapshot, and can be added when the snapshot is saved or recalled.

For details, see Chapter 14 “Snapshots” (Volume 2).

Utility

The utility function refers to a function whereby you can assign an arbitrary action or a shortcut for frequently used menu to a particular button, then instantly recall the action or menu by pressing the button.

For details, see “Utility Execution” in Chapter 15 (Volume 2).

Shotbox

The term “shotbox” refers to a function whereby for each specified region *(see “Regions” in Chapter 13 (Volume 2))* any snapshot or keyframe effect can be recalled simultaneously.

For details, see “Shotbox” in Chapter 15 (Volume 2).

Macros

The term “macro” refers to the function whereby a sequence of signal selections and other operations on the control panel is saved as data in memory, so that it can be recalled as required to automatically execute the same sequence of operations.
The individual control panel operations constituting a macro are termed “events.”
Macros also provide the following functions.

Menu macros

The term “menu macro” refers to the function whereby a sequence of menu operations is saved as data in memory, so that it can be recalled as required to automatically execute the same sequence of operations.

Macro timeline

By recording macro recall and execute action on a timeline, in the same way as for keyframes in an effect, you can automatically execute them in a sequence.

Macro attachment

Macro attachment is a function whereby a macro register is assigned to a control panel button or a particular position of a fader lever, linking the execution of the button function or a fader lever operation with a macro execution.

For details, see Chapter 16 “Macros” (Volume 2).

Files

You can save register data, including setup information and snapshot information, as a file on a hard disk or memory card, and recall it as required. You can operate on individual files or registers, or together in a batch. Regarding frame memory, it is possible to capture image data stored in an external device into frame memory.

The following files can be saved and recalled.

- Operation mode setup data for system as a whole and individual devices
- Device status data for system startup
- Key memory setting data
- Video process memory setting data
- Keyframe effect setting data
- Snapshot setting data
- Wipe snapshot setting data
- DME wipe snapshot setting data
- Key snapshot setting data
- Shotbox setting data
- Macro setting data
- Macro attachment data
- Menu macro setting data
- Frame memory image data

For details, see Chapter 17 “Files” (Volume 2).

Setup

Various settings are required, in order to operate the switcher, control panel, DME, external devices, and so on, connected together in a single system. This is referred to as “setup,” and you can carry out the setup operations from the Engineering Setup menu.

The settings in the Engineering Setup menu are grouped under the following headings.

System setup (System)

For details, see Chapter 18 “System Setup” (Volume 3).

Panel setup (Panel)

For details, see Chapter 19 “Control Panel Setup (Panel)” (Volume 3).

Switcher setup (Switcher)

For details, see Chapter 20 “Switcher Setup (Switcher)” (Volume 3).

DME setup (DME)

For details, see Chapter 21 “DME Setup (DME)” (Volume 3).

DCU setup (DCU)

For details, see Chapter 22 “DCU Setup (DCU)” (Volume 3).

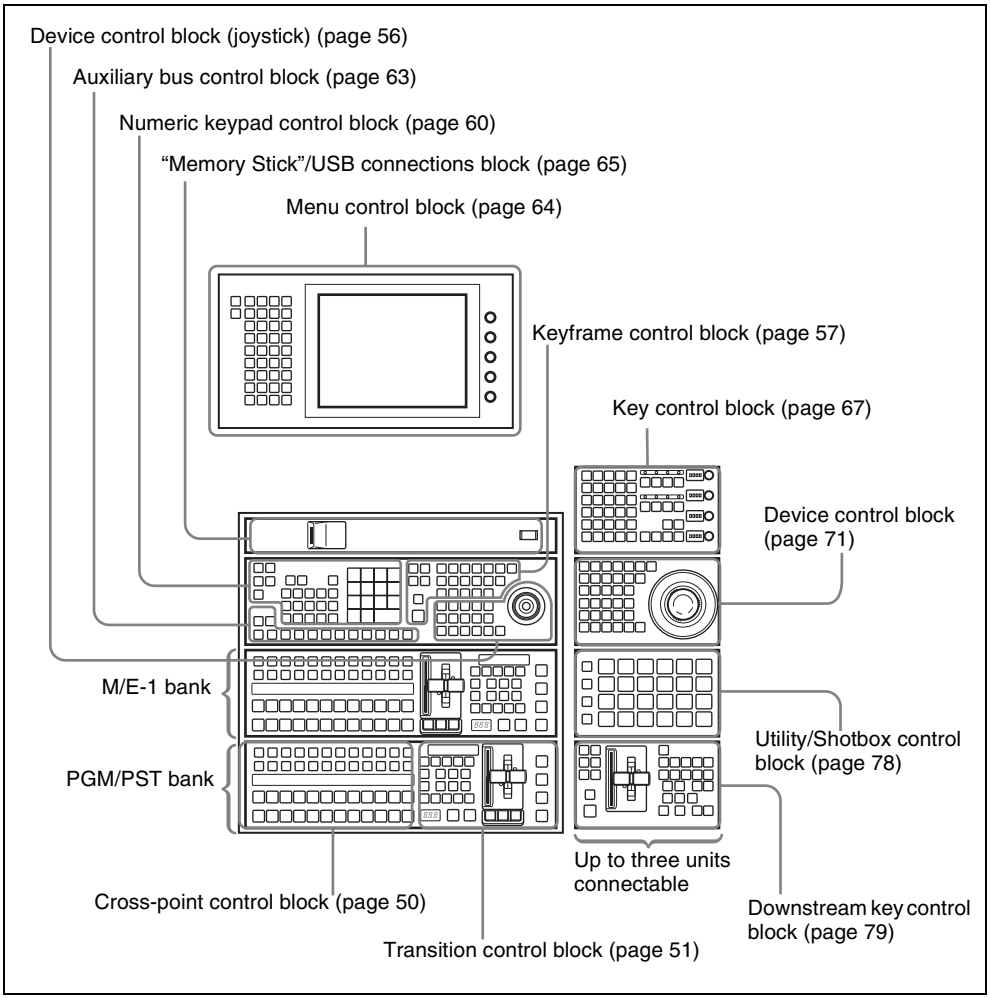
Router/tally setup (Router/Tally)

For details, see Chapter 23 “Setup Relating to Router Interface and Tally (Router/Tally)” (Volume 3).

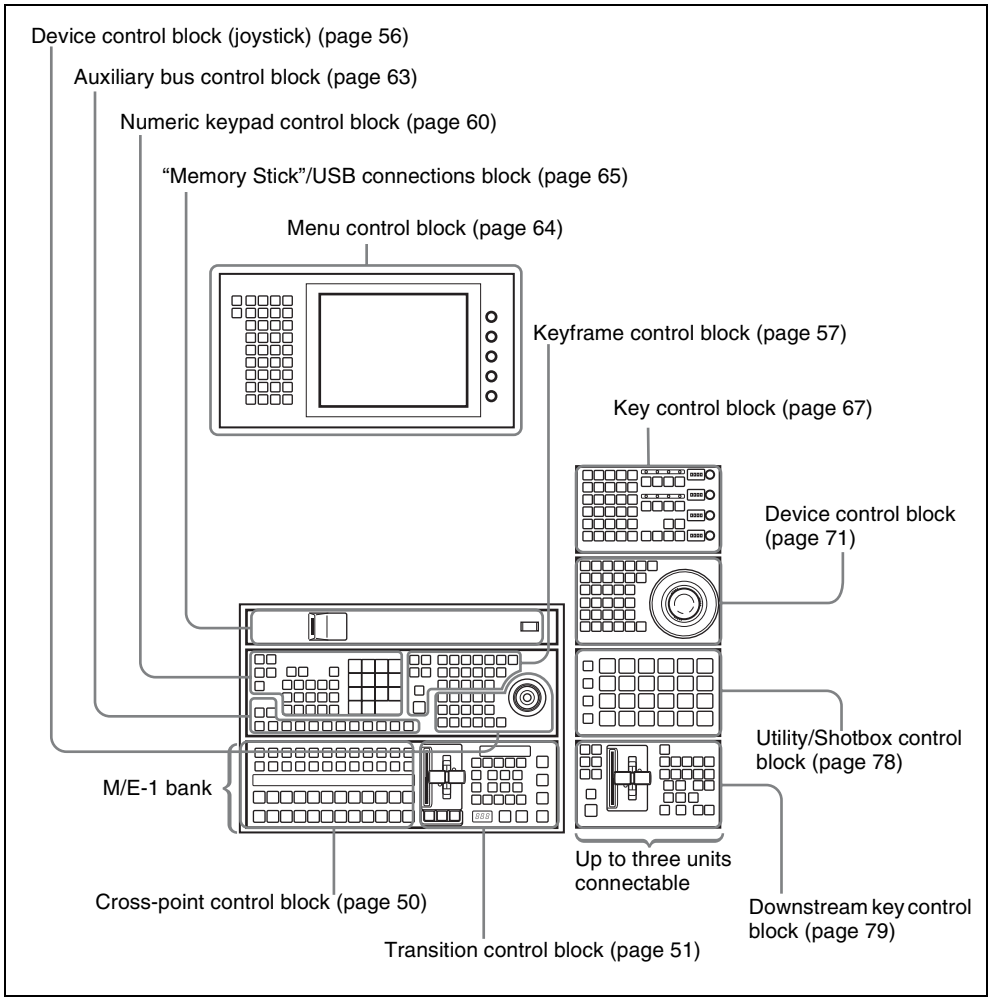
Chapter 2 Menus and Control Panel

Names and Functions of Parts of the Control Panel

Example Control Panel Configuration



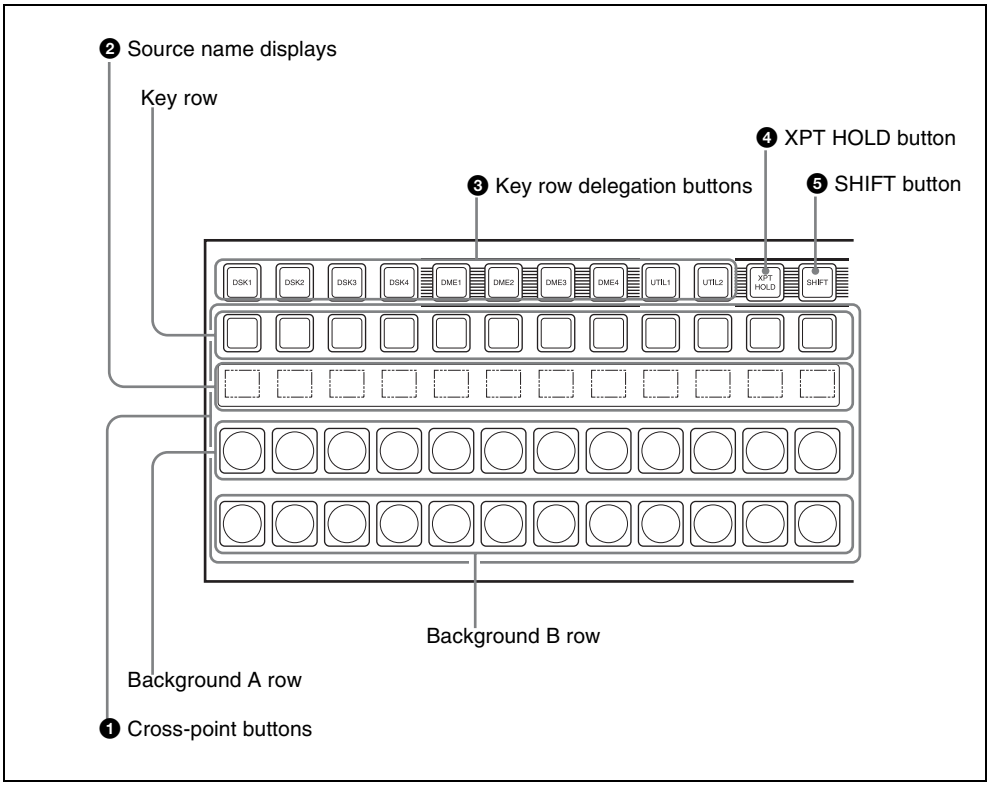
Example control panel configuration (with CCP-9000A 2M/E panel)



Example control panel configuration (with CCP-9000A 1M/E panel)

Cross-Point Control Block

In the cross-point control block, you can select the signals to be used in this M/E bank or PGM/PST bank.



❶ Cross-point buttons

These buttons select the signals used for video creation on this M/E bank or PGM/PST bank. Each row of buttons corresponds to one or more signal buses within the switcher.

Key row: The buttons in this row select the bus signals specified with the key row delegation buttons ([DSK1] to [DSK8], [DME1] to [DME4], [UTIL1], or [UTIL2]) or delegation buttons in the auxiliary bus control block.

The later pressed delegation button takes precedence and the selection is reflected in the key row.

For details of DSK5 to DSK8 assignment, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459) in Appendix (Volume 1).

Background A row: Press the desired button to select the signal as the current

background video on this M/E bank or PGM/PST bank.

Background B row: Press the desired button to select the signal as the background after the next transition on this M/E bank or PGM/PST bank.

Cross-point button numbers

Cross-point button and reentry buttons are respectively numbered.

For details, see "Cross-point button control block button numbers" (page 111).

Assigning signals to button

You can assign a signal to each button using the Setup menu.

For details on the operation, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 3).

Visual indications on cross-point buttons

For details on the operation, see "Colors of lit cross-point buttons" (page 114).

❷ Source name displays

These show the names of the signals which can be selected on the cross-point buttons, in two or four characters, or in auto mode. While the [SHIFT] button or the [SHIFT] button assigned to the column of cross-point buttons is enabled, the source name of the signal assigned to the column of cross-point buttons in shift mode appears. You can select green, orange, or yellow for the background color of the source name display, for each source separately. You can set the source name display mode and background color in a Setup menu.

❸ Key row delegation buttons

Use these buttons to assign buses to the key row, copy keys, or assign DME to keys.

❹ XPT (cross-point) HOLD button

Turning this button on enables you to recall a keyframe or snapshot while keeping the current cross-point selection unchanged. This function is valid for the background A and B rows.

By means of setup settings, you can also enable this for the following function blocks.

- Background A and B rows
- Key buses
- Utility 1 and 2 buses
- External DME bus
- DME utility 1 and 2 buses

❺ SHIFT button

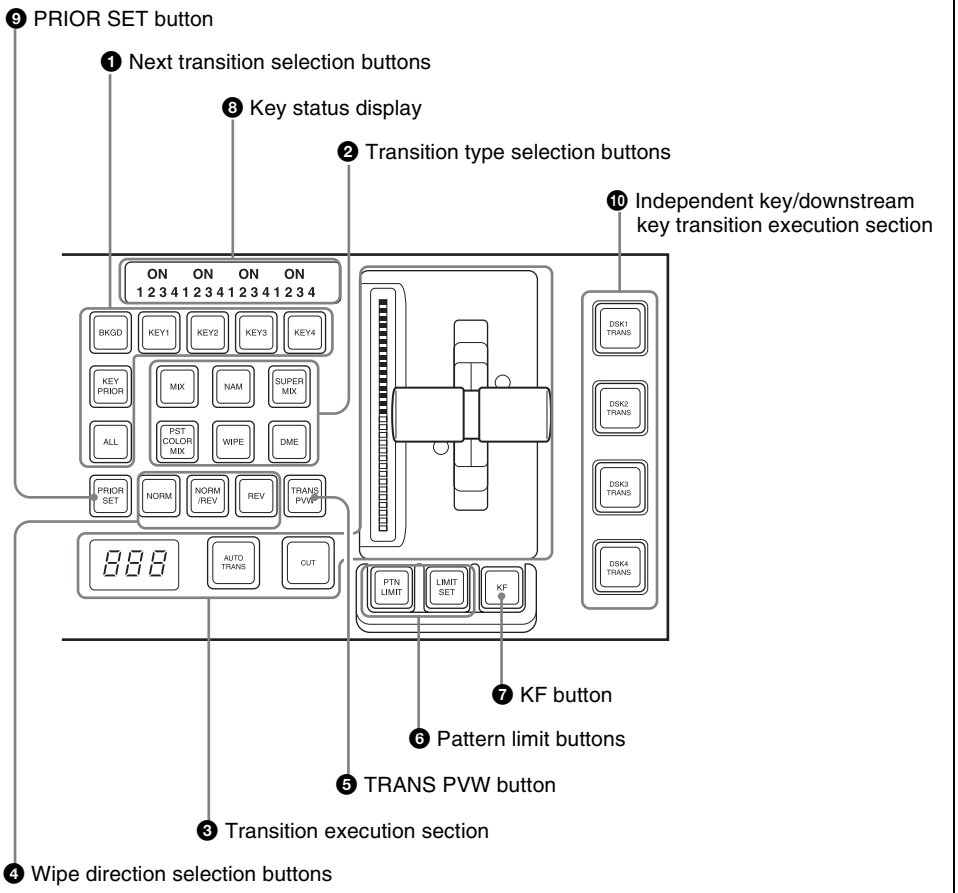
When this button is enabled, either the source name displays show the shifted signal names, or the shifted signals for all buses in this M/E (P/P) bank are enabled. You can select either mode in a Setup menu.

Each press of the button toggles between the enabled and disabled states.

Using a Setup menu operation, you can also make this button function as the [SHIFT] button for the whole cross-point control block inclusive of the key row and background A and B rows.

Transition Control Block

In the transition control block, you can modify the output of the M/E bank or PGM/PST bank, and perform transitions. Both common transition and independent key transition operations are possible.



❶ Next transition selection buttons
Press these buttons, turning them on, to determine what the next transition will apply to.

BKGD: Next transition changes the background.

KEY1 to KEY8 (DSK1 to DSK8 in the PGM/PST bank): Press this button, turning it on, to make the next transition insert or remove the corresponding key (keys 1 to 8). If a key is currently inserted it will be removed, and vice versa.

In the PGM/PST bank, this inserts or removes downstream keys 1 to 8.

For details of assignment and selection of keys 5 to 8, see the following sections in Appendix (Volume 1): "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459) and "Selecting Keys 5 to 8 for Next Transition" (page 460).

KEY PRIOR (priority): When this button is lit, the setting of the key priority after the next transition is enabled. The key

priority after the next transition appears in the key status display.

ALL: Pressing this button turns on a preselected set of the [BKGD], [KEY1] to [KEY8], and [KEY PRIOR] buttons. Make this setting in a Setup menu.

❷ Transition type selection buttons

You can assign these buttons in setup to any transition type *(see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3))*.

Press one of these buttons, turning it on, to determine the type of the next transition.

When multi-program mode is selected in the Setup menu *(see "Settings for Switcher Configuration (Config Menu)" in Chapter 20 (Volume 3)),* two or more of the following buttons may light.

You can also assign a function to these buttons to select whether or not the fader levers are used as keyframe faders.

MIX: In a background transition, the new video fades in as the current video fades out. During the transition, the overall signal level is maintained at 100%.

In a key transition, the key fades in (for insertion) or out (for removal).

NAM (non-additive mix): The current and new video signals are compared, and the signal with the higher luminance level is given priority in the output. The current video is maintained at 100% output for the first half of the transition as the new video increases progressively to 100%, then the current video is progressively reduced from 100% to zero in the second half while the new video is maintained at 100%.

SUPER MIX: The current video is maintained at 100% output for the first half of the transition as the new video is mixed while increasing progressively to 100%. The current video is then progressively reduced from 100% to zero in the second half while the new video is maintained at 100%.

PST (preset) COLOR MIX: In the first transition, the current video is replaced by the color matte in a mix (dissolve), then in the second transition the color matte is replaced by the new video also in a mix (dissolve).

In place of a color matte, you can select any signal on the utility 2 bus.

WIPE: The current video is replaced by the new video, using the wipe pattern selected in the Wipe menu.

DME: A wipe type of transition is carried out, using the DME effect selected in the DME Wipe menu.

FM1&2CLIP, FM3&4CLIP, FM5&6CLIP, FM7&8CLIP: A recorded clip is played back together with the transition. At this point, you can also carry out a transition (wipe or mix (dissolve)) simultaneously together with the clip.

KF (keyframe): Press this button, turning it on, to enable using the fader lever as a keyframe fader.

❸ Transition execution section

Transition indicator: This comprises multiple LEDs, which show the progress of the transition.

Fader lever: Move up or down to carry out the transition. When the [KF] button or a transition type selection button to which the KF button function has been assigned is lit, you can use this as a keyframe fader.

Transition rate display: This shows the "transition rate" (the time from the beginning of a transition to its completion) set for an auto transition, in frames.

You can set the transition rate using the numeric keypad control block or menu.

AUTO TRANS (transition) button: Pressing this button carries out an auto

transition of the set transition rate (duration). The transition starts immediately, and the button lights amber. When the transition completes, the button goes off.

CUT button: Pressing this button carries out the transition as a cut (i.e. instantaneously).

❹ Wipe direction selection buttons

When you have selected a wipe or DME wipe as the transition type, press one of these buttons, turning it on, to select the wipe direction.

NORM (normal): The wipe proceeds in the direction from black to white as shown on the pattern in the lists of patterns *see "Wipe Pattern List" (page 412) and "DME Wipe Pattern List" (page 418),* or in the direction of the arrow.

REV (reverse): The wipe proceeds in the opposite direction to that when the [NORM] button is pressed.

NORM/REV (normal/reverse): The wipe direction alternates between normal and reverse every time a transition is executed.

❺ TRANS PVW (transition preview) button

When this button is lit, you can check in advance the video changes during the transition, on the preview output from the M/E or PGM/PST bank.

During the preview, you can use the fader lever, [AUTO TRANS] button, and [CUT] button. One of the following functions of this button can be selected in a Setup mode.

- When the transition completes, the system returns to the normal mode.
- The transition preview mode is maintained while this button is pressed.
- Switching is made between the transition preview mode and normal mode every time this button is pressed.

❻ Pattern limit buttons

PTN (pattern) LIMIT: Pressing this button, turning it on, enables the pattern limit function.

LIMIT SET: Use this button to set a pattern limit when the [PTN LIMIT] button is off.

Move the fader lever to the position of a particular pattern size, and stop it there, then press this button to set the pattern limit range.

❼ KF (keyframe) button

Pressing this button to turn it on allows you to use the fader lever as a keyframe fader.

❽ Key status display

For each of the next transition selection buttons, [KEY1] to [KEY4], the corresponding ON indicator lights when the key is inserted. It also shows the priority (1 to 4) of each key.

❾ PRIOR (priority) SET button

While this button is held down, you can set the key priority.

The setting mode when this button is pressed depends on whether or not the [KEY PRIOR] button is lit, as follows.

- When the [KEY PRIOR] button is off, the current key priority is set.
- When the [KEY PRIOR] button is lit, the key priority after the next transition is set.

Press the [KEY PRIOR] button as required, to switch between these two modes.

In either mode, hold down the [PRIOR SET] button, and press the button ([KEY1] to [KEY8]) corresponding to the key you want to bring to the front.

Notes

The key priority establishes a separate priority order within each of the groups of keys 1 to 4 and keys 5 to 8. You can make any setting within the groups of keys 1 to 4

or keys 5 to 8, but not for combinations of keys from different groups. For example, it is not possible to set a priority sequence of keys 1, 5, and 2.

For details, see "Setting the Key Priority in the Transition Control Block" (page 122).

The following controls are used as the independent key transition control block.

⓾ Independent key/downstream key transition execution section

KEY1 TRANS to KEY8 TRANS (DSK1 TRANS to DSK8 TRANS in the PGM/PST bank) buttons: These correspond to keys 1 to 8 from top to bottom; press one to carry out an auto transition. The transition rate for an independent key transition can be set in the numeric keypad control block or in a menu.

For details of assignment of keys 5 to 8, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459) in Appendix (Volume 1).

The color with which buttons are lit shows the status, as follows.

Lit green: During a transition

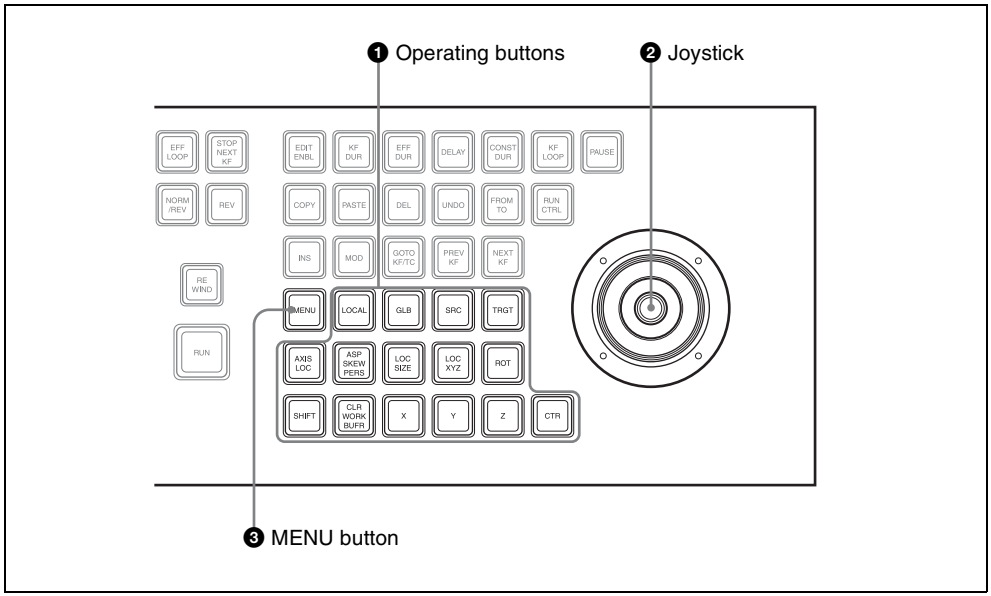
Lit amber: Key on. Not inserted into program video (final output video from the switcher).

Lit red: Key on. Inserted into program video (final output video from the switcher).

Not lit: Key off.

Device Control Block (Joystick)

The joystick type device control block is used for three-dimensional transform operations using a DME.



❶ Operating buttons

The functions of these buttons are equivalent to the functions in three-dimensional transform operation mode of the operating buttons of the trackball type device control block.

Notes

To select a required DME channel, use the region selection buttons in the numeric keypad control block.

Use of the [SHIFT] button

Pressing a button in the device control block while holding down the [SHIFT] button enables the shifted function of the button. Also, pressing a button in the keyframe control block while holding down the [SHIFT] button enables the shifted function of the button.

About the [CLR WORK BUFR] (clear work buffer) button

When [M/E-1] or [P/P] is selected along in the numeric region selection buttons of the keypad control block, press this button twice in rapid succession to reset all parameters of the selected M/E or P/P to their initial values. When a DME channel is selected in the region selection buttons, the operation is the same as when using a trackball type device control block in the three-dimensional transform operation mode *(see page 73)*.

❷ Joystick

When the three-dimensional transform operation mode is enabled

By moving this, you can carry out operations in the x-, y-, and z-axes.

When the following buttons are held down, operation of the joystick is switched to a finer control. (fine mode)

- The button on the end of the joystick
- [SRC] button
- [TRGT] button

Depending on the settings made in the Setup menu, the operation speed multiple can be changed.

When the effect run control mode is enabled

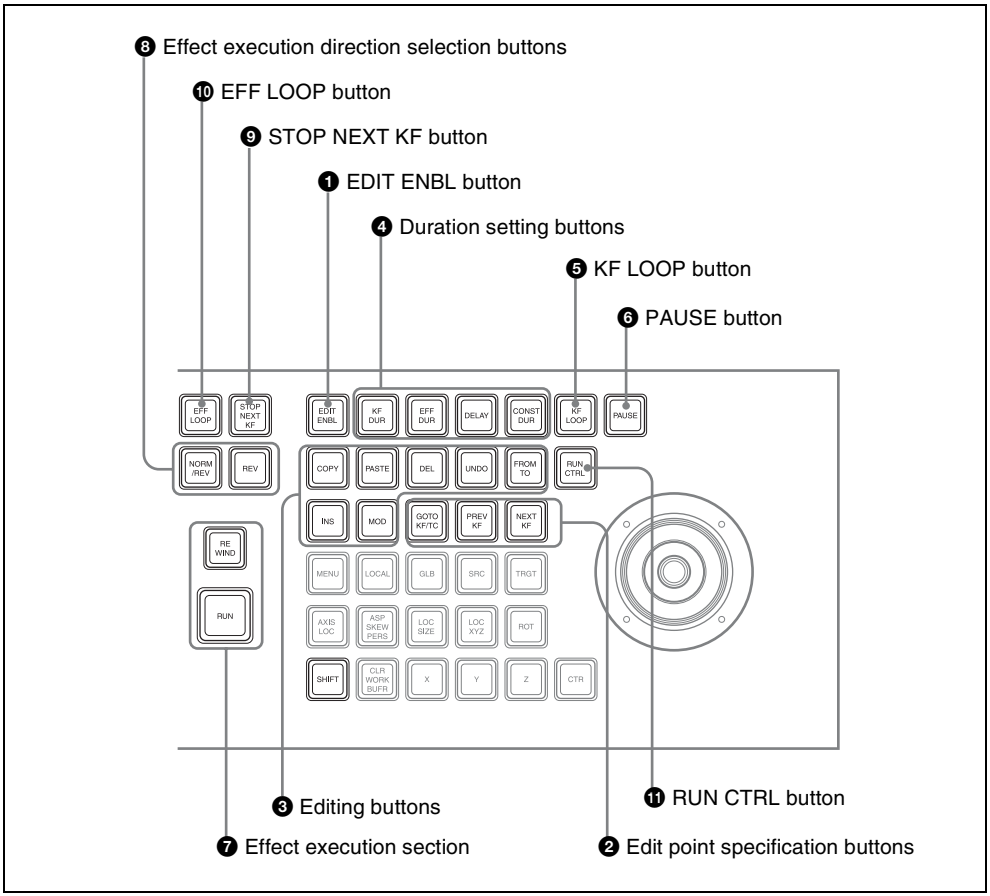
By moving the joystick sideways, you can run the keyframe effect, independent of the STOP NEXT KF, EFF LOOP, and similar settings in the keyframe control block. Move to the right to run the effect in the normal direction, and to the left for the reverse direction.

❸ MENU button

The function of this button is equivalent to the function of the [MENU] button in the trackball type device control block.

Keyframe Control Block

In the keyframe control block, you can carry out effect editing and execution.



❶ EDIT ENBL (edit enable) button
Press this button, turning it on, to enable effect editing operations with the keyframe control block.
When macro editing is carried out, this button lights red.

❷ Edit point specification buttons

GO TO KF/TC (Go to keyframe/ timecode): Press this button, turning it on, to enter a numeric value from the numeric keypad control block, and move the edit point to the specified keyframe.
To move the edit point to the specified timecode position, hold down the [SHIFT] button in the device control block, then press this button, turning it on, and enter the desired numeric value from the numeric keypad control block.
During macro editing, pressing this button moves the edit point to the event number specified by numeric entry with the numeric keypad control block.

PREV KF (previous keyframe): When this button is pressed, the edit point moves to the keyframe immediately before the current time (the position where the effect is currently stopped).

During macro editing, pressing this button moves the edit point to the event immediately before the current event.

NEXT KF (next keyframe): When this button is pressed, the edit point moves to the keyframe immediately after the current time.

During macro editing, pressing this button moves the edit point to the event immediately after the current event.

❸ Editing buttons

FROM TO: Press this button, turning it on, to enter numeric values from the numeric keypad control block, and select a specified range of keyframes (during macro editing, the specified range of events).

INS (insert): When this button is pressed, a new keyframe is inserted after the current keyframe. Pressing this button while holding down the [SHIFT] button in the device control block inserts a new keyframe before the current keyframe.

During macro editing, pressing this button moves the edit point to the event immediately after the current event.

MOD (modify): When this button is pressed, the selected keyframe is modified with the values of the current keyframe. When the edit point is between two keyframes, the immediately preceding keyframe is modified. You can also select multiple keyframes, and modify them in a single operation. At this time, pressing this button while holding down the [SHIFT] button in the device control block modifies all selected keyframes with the changed values taken as relative values.

During macro editing, pressing this button amends the selected event.

DEL (delete): When this button is pressed, the selected keyframe is deleted. When the edit point is between two keyframes, the immediately preceding keyframe is deleted. During macro editing, pressing this button deletes the selected event. You can also select multiple keyframes or macro events, and delete them in a single operation.

COPY: When this button is pressed, the selected keyframe (during macro editing, macro event) is copied. You can also select multiple keyframes or macro events, and copy them in a single operation.

PASTE: When this button is pressed, the deleted or copied keyframe (during macro editing, macro event) is inserted after the current keyframe (during macro editing, macro event). Pressing this button while holding down the [SHIFT] button in the device control block inserts the deleted or copied keyframe (during macro editing, macro event) before the current keyframe (during macro editing, macro event).

UNDO: When this button is pressed, the last executed keyframe (during macro editing, macro event) insertion, modification, or deletion, or paste operation is canceled.

❹ Duration setting buttons

KF DUR (keyframe duration): Press this button, turning it on, to set the keyframe duration of the selected keyframe, by numeric value entry from the numeric keypad control block.

EFF DUR (effect duration): Press this button, turning it on, to set the effect duration from the numeric keypad control block.

DELAY: Press this button, turning it on, to enter a delay value from the numeric keypad control block.

CONST DUR (constant duration): Select the duration mode. When this is lit, the

mode is constant duration mode, and when off, variable duration mode.

❺ KF LOOP (keyframe loop) button
Press this button, turning it on, to execute the effect the specified number of times through the keyframes in the specified range.

❻ PAUSE button
When this button is pressed, a pause is applied to the selected keyframe.
When editing a macro, press this button, turning it on, to include a pause event in the macro. The pause length can be set in the numeric keypad control block.

❼ Effect execution section
RUN: When this button is pressed, the effect is run from the first keyframe to the last keyframe. However, if a pause is set on a keyframe, the effect stops at that point. Press this button again to resume execution, and continue to the next pause point or the end of the effect.
REWIND: When this button is pressed, the currently recalled effect is rewound to the first keyframe.

❽ Effect execution direction selection buttons
REV (reverse): When this button is off, effect execution runs from the first keyframe to the last keyframe. When this button is lit, effect execution runs from the last keyframe to the first keyframe.
NORM/REV (normal/reverse): Press this button, turning it on, to reverse the direction of the effect when it reaches the last keyframe or first keyframe.

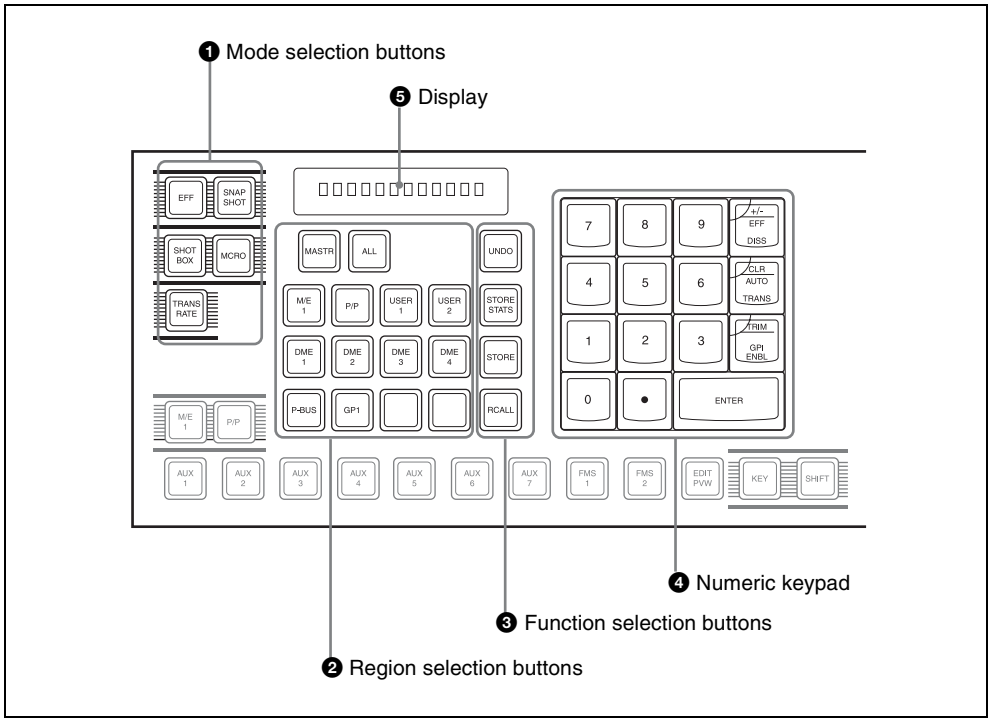
❾ STOP NEXT KF (stop next keyframe) button
When this button is pressed, turning it on, the effect execution range is from the current time to the next keyframe.

❿ EFF LOOP (effect loop) button
When the effect reaches the last keyframe with this button on, it returns to the first keyframe and repeats.

⓫ RUN CTRL (run control) button
When this button is on, you can execute keyframe effects without being affected by the STOP NEXT KF or EFF LOOP settings in the keyframe control block.

Numeric Keypad Control Block

The numeric keypad control block is used for region selection, for saving and recalling snapshots, effects and shotboxes, for entering numeric values for trackball operation and keyframe operation, and for transition rate entry.



❶ Mode selection buttons

EFF (effect): Press to save or recall an effect.

SNAPSHOT: Press to save or recall a snapshot.

SHOTBOX: Press to save or recall a shotbox.

MCRO (macro): Press to save, recall or edit a macro.

TRANS RATE (transition rate): Press to set the transition rate.

Hold down this button, and press one of the key row delegation buttons [KEY1] to [KEY8] in the cross-point control block to set an independent key transition rate.

❷ Region selection buttons

These select the functional block ("region") of the control panel to which operations apply.

You can select more than one region at the same time.

The first button you press is taken as the reference region, and lights green, while the next pressed button lights amber.

With the exception of the [MASTER] and [ALL] buttons, you can change the region assignment to the buttons as desired in the Setup menu.

MASTR: Press this, turning it on, to save region information in a master snapshot register or master timeline register, or to recall such region information.

ALL: Select all regions. When any region is already selected, pressing this button makes all regions unselected.

M/E 1 and P/P: Select the corresponding regions, M/E-1 and PGM/PST.

USER 1 to USER 8: Select the corresponding User regions.

DME1 to DME8: Select a DME channel.
P-Bus: Select the P-Bus region.
GPI: Select the GPI region.
RTR: Select the router region.
DEV1 to DEV12: Select the Device 1 to Device 12 regions respectively.
MCRO: Select the macro region.

❸ Function selection buttons

UNDO: After recalling a register, press this button to return to the state before recalling the register.
STORE STATS (store status): This lights amber when data is stored in a register. After saving data to a register, hold down this button and press the [UNDO] button to return the register to the state before the data was saved.
STORE: Press this button to switch to the mode for saving a snapshot, effect, shotbox or macro in a register.
RCALL (recall): Press this button to switch to the mode for recalling a snapshot, effect, shotbox or macro from a register.
[STORE] button or [RCALL] button flashes amber when one or more of the regions assigned to the Region selection buttons are not selected by the Region Select menu.

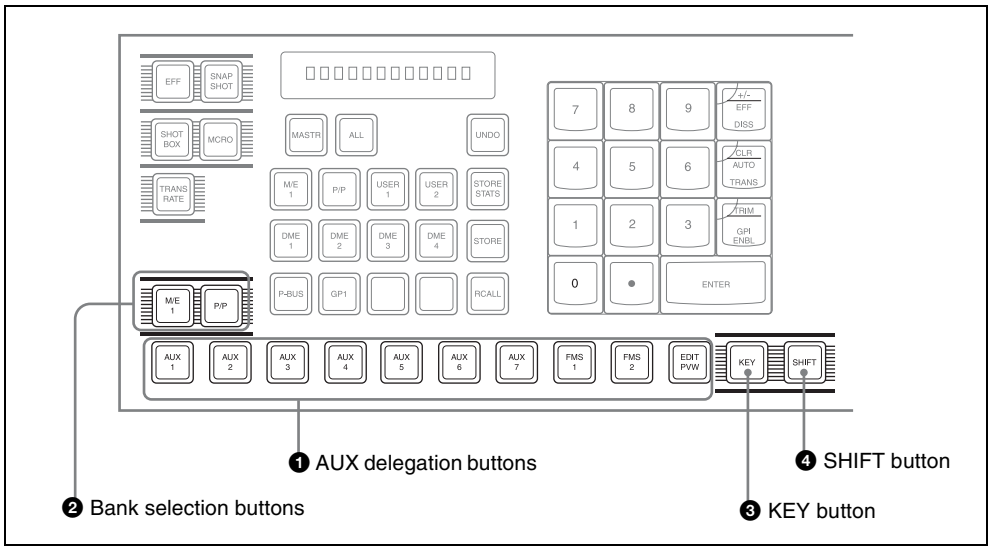
❹ Numeric keypad

In addition to the buttons for numeric input, this includes buttons for adding attributes to snapshots.
0 to 9: Used to input numeric digits.
. (period): Enters the decimal point. When the [TRANS RATE] button is lit, enters "00." When the [EFF] button, [SNAPSHOT] button or [SHOTBOX] button is lit, this is used to find an empty register.
+/–/ EFF DISS (effect dissolve): Invert the sign, negative or positive. When the [SNAPSHOT] button is lit, applies the effect dissolve attribute to a snapshot.
CLR/AUTO TRANS (clear/auto transition): Clear an input value, returning to the previous state. When the [SNAPSHOT] button is lit, applies the auto transition attribute to a snapshot.
TRIM/GPI ENBL (enable): After entering a difference value to be added to an existing setting, press this button to confirm the change.
ENTER: Confirm an entered value.

❺ Display

This shows the selected region name and entered numeric values.

Auxiliary Bus Control Block



❶ AUX delegation buttons

Press one of these buttons, turning it on, to select the bus to assign to the key row of the bank selected with the bank selection buttons. These 10 buttons from left to right have ID numbers 1 to 10. When the [SHIFT] button is enabled, their ID numbers switch to 11 to 20. Pressing one of the buttons selects the bus assigned to the ID number. That is, you can select up to 20 buses using these AUX delegation buttons in combination with the [SHIFT] button. The assignment of buses to the ID numbers can be done in a Setup menu.

For buses that can be selected, see "Bus Selection" (page 109).

For each bank, the key row is shared between the auxiliary bus control block and cross-point control block. Priority is given to the control block in which the delegation button is last pressed. When priority is given to the cross-point control block, all these buttons go off.

❷ Bank selection buttons

These select the bank for which the AUX delegation buttons are enabled.

❸ KEY button

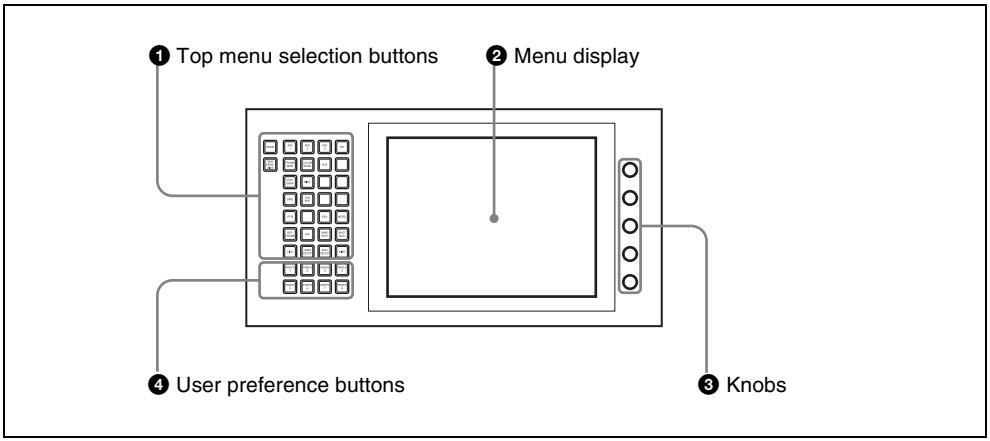
While this button is held down, you can use the cross-point row of buttons to select key signals.

❹ SHIFT button

While this button is enabled, the AUX delegation buttons have the shifted ID numbers. In a Setup menu, you can select one of the following three modes for this button.

- The button takes effect while being held down.
- Every time the button is pressed, it toggles between the shifted and unshifted states for the AUX delegation buttons.
- The button does not take effect even when pressed.

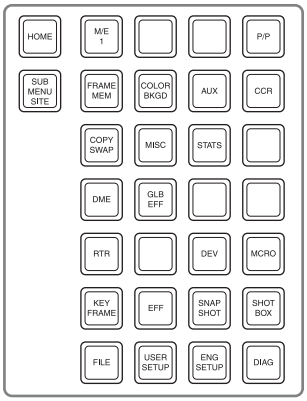
Menu Control Block



❶ Top menu selection buttons

These select the menu appearing in the menu display.
It is also possible to change the assignment of these buttons in setup.

For details, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3).



❷ Menu display

This shows the menu currently in use.

❸ Knobs

These adjust the parameter values appearing in the menu.

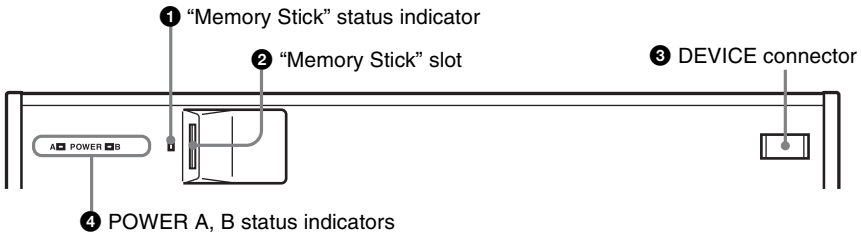
❹ User preference buttons

These recall the functions or menus assigned to them in the Setup menu.
In the default setup, nothing is assigned to the [PREFS 1] to [PREFS 7] buttons.
It is also possible to change the assignment of these buttons in setup.

For details, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3).

PREFS 8 button: When this button is on, control of an editor from the Remote1 port on the rear panel of the switcher is possible. However, even when it is off, control of the Edit PVW bus is always possible.

“Memory Stick”/USB Connections Block



❶ “Memory Stick” status indicator
Lights in red during access to a “Memory Stick.”

Notes

Do not power the unit off or remove a “Memory Stick” when the “Memory Stick” status indicator is lit.

❷ “Memory Stick” slot
Insert “Memory Sticks.” You can use it in software installation, and for saving and reading data, such as snapshot, keyframe, effect, and setup data.

See the next item, “Memory Sticks” for more information about the usable “Memory Sticks” and their handling.

❸ DEVICE connectors
There is a USB connector.
You can connect a device such as a mouse, keyboard, USB storage, and so on, that is equipped with a USB interface to any of these connectors.

For details on the devices that can be connected, consult your Sony representative.

❹ POWER A, B status indicators
The status indicators light in green when the unit is powered on.
The POWER B status indicator does not light when the optional HK-PSU11 Power Supply Unit is not supplied in the factory configuration.

About “Memory Sticks”

Usable “Memory Sticks”

This unit has been confirmed to operate with those of the following “Memory Sticks” that have a capacity of 8 GB (gigabytes) or less. However, operation with all “Memory Sticks” is not guaranteed.

- “Memory Stick”
- “Memory Stick PRO”
- “Memory Stick Duo”
- “Memory Stick PRO Duo”

Notes

- When using a “Memory Stick PRO,” high-rate data transfer using parallel interface is not supported.
- A “MagicGate Memory Stick” can also be used, but this system does not support the MagicGate function.
- When using a “Memory Stick Duo,” be sure to use it with a “Memory Stick Duo

Adaptor" (MSAC-M2 or equivalent). If you insert a "Memory Stick Duo" without using the adaptor, there is the possibility that the stick cannot be removed, resulting in a serious accident.

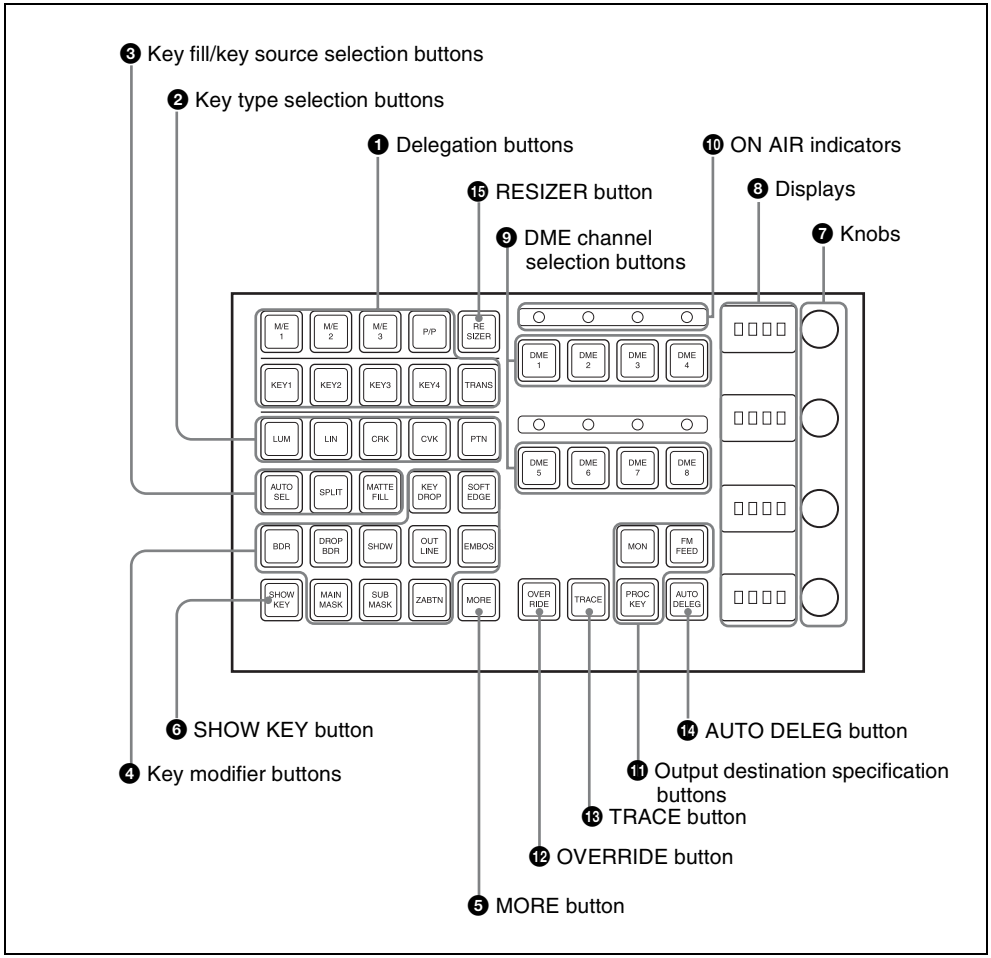
Handling "Memory Sticks"

When using "Memory Sticks," pay attention to the following points.

- Do not touch the connector of the "Memory Stick" with anything, including your finger or metallic objects.
- Do not attach anything other than the supplied label to the "Memory Stick" labeling position.
- Attach the label so that it does not stick out beyond the labeling position.
- Carry and store the "Memory Stick" in its case.
- Do not strike, bend, or drop the "Memory Stick."
- Do not disassemble or modify the "Memory Stick."
- Do not allow the "Memory Stick" to get wet.
- Do not use or store the "Memory Stick" in a location that is:
  - Extremely hot, such as in a car parked in the sun
  - Under direct sunlight
  - Very humid or subject to corrosive substances

Key Control Block (MKS-8035 Key Control Module, Option)

Each of the M/E and PGM/PST banks includes eight keyers (for keys 1 to 8), and you can delegate this control block to any desired keyer. In this control block, you can adjust and modify keys.



❶ Delegation buttons

Key delegation: Press one of the [KEY1] to [KEY8] buttons to delegate the key control block to the corresponding keyer.

For details of assignment of keys 5 to 8, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459) in Appendix (Volume 1).

M/E delegation: Press one of the [M/E 1] to [M/E 4], and [P/P] buttons to select the bank (the M/E bank or PGM/PST bank) to which the key control block is delegated.

For details of [M/E 4] button assignment, see "Assigning a Button for M/E-4 Selection in the Setup Menu" (page 458) in Appendix (Volume 1).

Notes

- When the MKS-9011 1M/E Control Panel is used, only the [P/P] is enabled. When the MKS-9012 2M/E Control Panel is used, only the [M/E-1] and [P/P] are enabled.
- With the MKS-9011/9012, you cannot directly control DME5 to DME8.

TRANS: By pressing this button, you can check the DME channel used for DME wipes on the M/E or PGM/PST bank. Also, by pressing this button, then pressing one of the DME channel selection buttons, you can preset the DME channel to be used when a DME wipe is selected as the transition type for the next transition.
When presetting the DME channel for an independent key transition, hold down this button, then press one of the [KEY1] to [KEY8] buttons, turning the two buttons on, beforehand.

❷ Key type selection buttons

Press one of these buttons, turning it on, to select the desired key type.
Depending on the selected key type, various parameters are displayed, and you can set the values with the knobs.
The following key types can be selected.
LUM: luminance key
LIN: linear key
CRK: chroma key
CVK: color vector key
PTN: key wipe pattern key

For details, see "Key Types" (page 156).

❸ Key fill/key source selection buttons

AUTO SEL (selection): Use the signal selected on the key fill bus, and the paired key source signal. The setting of key fill and key source pairs is carried out in a Setup menu.
SPLIT: To use the signal selected on the key fill bus as key fill, and a signal separate from the signal assigned in a pair with key fill for key source, press this button, turning it on.
To use the signal selected on the key fill bus as key source (self keying), press the [AUTO SEL] button and [SPLIT] button at the same time, so that both are off.
MATTE FILL: To use a color matte from the internal generator as key fill, press this button, turning it on. You can adjust the color matte using the knobs. When this button is off, the signal selected on the key fill bus is used as key fill.

❹ Key modifier buttons

To add an edge modifier to the key, press one of these buttons, turning it on.
Depending on the edge type selected, parameters appear in the displays, and you can set the values with the knobs.
KEY DROP: When the selected edge type is "normal" and soft edge is not selected or when drop border or shadow is selected, turning this button on lowers the key fill and key source position by four or eight scan lines as set in the key menu.
To select 4H or 8H, use the Key menu.
When the selected edge type is "normal" and soft edge is selected or when border, outline, or emboss is selected, this button lights automatically.

BDR (border): Apply a border of a uniform thickness to the whole key.

DROP BDR (drop border): Apply a border to two sides of the key (for example, below and to the right, or below and to the left).

SHDW (shadow): Apply a shadow to two sides of the key (for example, below and to the right, or below and to the left).

OUTLINE: Use the outline of the key.

EMBOS (emboss): Apply an embossing effect to the periphery of the key.

- To select a "normal" as the edge type (that is, a plain edge), set all five of the above buttons off.
- When border, drop border, or shadow is selected, you can use a special color matte or a signal selected on the utility 1 bus for the edge.
- When emboss is selected, you can use the dedicated color matte signal for the emboss function.
- When outline is selected, the signal selected on the key fill bus is used to fill the edge.

MAIN MASK: Press this button, turning it on, to enable the key mask using the main pattern. It also enables you to set the parameters with the knobs.

SUB MASK: Press this button, turning it on, to enable the key mask using the sub pattern. It also enables you to set the parameters with the knobs.

ZABTN (zabton): When this is pressed, turning it on, a translucent pattern is inserted behind the key. With the knobs, you can adjust the color, size, density, and softness parameters.

SOFT EDGE: Soften the edge of the key.

❺ MORE button

When there are more than four parameters, this button lights amber. When it is pressed, it changes from amber to green and the fifth and subsequent parameters are assigned to the knobs, allowing them to be adjusted.

❻ SHOW KEY button

While this button is held down, a key processed key source signal is output from the specified output port. You can make the output specification independently for each of edit preview and the preview of the M/E or PGM/PST bank in a Setup menu.

❼ Knobs

Turn the knobs to adjust the parameter values.

❽ Displays

Each display shows the initial letters of the parameter name and the parameter value (maximum three digits including a minus sign for a negative value).

❾ DME channel selection buttons

Press one of these buttons, turning it on, to assign a DME channel to the keyer.

The number of valid DME channel selection buttons depends on the number of channels installed in the DME processor.

A maximum of four consecutively numbered DME channels from DME 1 to 8 can be assigned to one keyer.

When the signal format is 1080P only, the consecutive channel combinations that can be selected are any of DME1 and DME2, DME3 and DME4, DME5 and DME6, or DME7 and DME8.

A DME channel assigned to a keyer cannot be selected on another keyer. However, using the override function it is possible to allocate a channel already allocated to another keyer to the currently selected keyer. If DME channel allocations have been made in a Setup menu, these buttons cannot be used to make DME channel allocations. Using the trace function, it is possible to check which keyer a DME channel is allocated to.

⑩ ON AIR indicators

These light red when the corresponding DME channels are included in the final program output.

⑪ Output destination specification buttons

MON (DME monitor): Hold down this button and press the selection button for the DME channel you want to assign to the monitor output; you can then monitor the output signal on the DME monitor output.

While this button is held down, the DME channel selection buttons light as follows, allowing you to check the monitor assignment.

Lit amber: DME channel that can currently be monitored

Lit green: DME channel currently assigned to the monitor output

FM FEED (frame memory feed): When you press this button, it lights momentarily amber, then for the currently selected keyer, the key processed signals are selected for frame memory sources 1 and 2. If a DME is selected on the currently selected keyer, the key fill and key source signals to which a DME effect is applied are assigned to frame memory sources 1 and 2; otherwise the key fill and key source signals are assigned.

Carrying out a frame memory feed causes the [PROC KEY] button to light amber.

PROC KEY (processed key): When this button is on, the key fill/source signal subjected to key processing or signal subjected to a DME effect on the currently selected keyer can be selected as a reentry signal (PROC V or PROC K) for the M/E or PGM/PST bank, on the auxiliary bus or the like.

If a DME is selected on the currently selected keyer, the key fill and key source signals to which a DME effect is applied are assigned; otherwise the key fill and key source are assigned.

⑫ OVERRIDE button

To select a DME channel already allocated to another keyer or transition to the currently selected keyer (or transition), hold down this button, and press the DME channel selection button.

⑬ TRACE button

When a DME channel is already allocated to another keyer or transition, hold down this button, and press the corresponding DME channel selection button, to switch to the state in which the keyer (or transition) to which the DME channel is allocated is currently selected.

⑭ AUTO DELEG (auto delegation) button

When this button is on, the key delegation selection state of the key control block is linked to the next transition selection state of the transition control block.

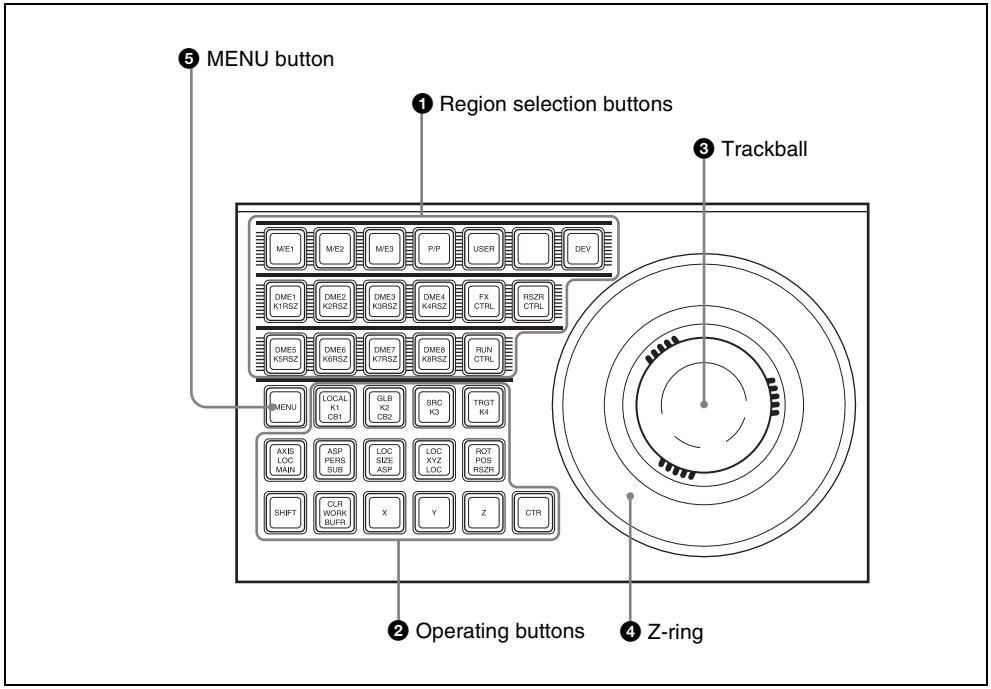
⑮ RESIZER button

Enables or disables resizer.

For details on resizer, see page 210.

Device Control Block (MKS-8031TB Trackball Module, Option)

The device control block is used for three-dimensional transform operations using a DME, for wipe pattern position setting, and for VTR/disk recorder or frame memory clip operations.



❶ Region selection buttons

The operation mode allocated to the device control block depends on the selection state of the region selection buttons.

When the [M/E 1], [M/E 2], [M/E 3], [M/E 4], and [P/P] buttons are selected: This enables the wipe pattern position setting (positioner) operation mode in the device control block. You can select multiple buttons simultaneously. When the MKS-9011 1M/E Control Panel is used, only the [P/P] is enabled. When the MKS-9012 2M/E Control Panel is used, only the [M/E-1] and [P/P] are enabled.

For details of [M/E 4] button assignment, see "Assigning a Button for M/E-4 Selection in the Setup Menu" (page 458) in Appendix (Volume 1).

When the [USER] button is selected: This enables pattern position setting used for color backgrounds.

When the [DME 1] to [DME 8] buttons are selected: This enables the three-dimensional transform operation mode in the device control block.

Press a button, turning it on, to select a DME channel. You can select multiple buttons simultaneously.
The number of valid buttons depends on the number of DME processor channels installed.
With the MKS-9011/9012 control panel, you cannot directly control DME5 to DME8.

When the [DEV] button is selected: This enables the VTR/disk recorder/frame memory operation mode in the device control block. Each button functions as follows.
(From upper left to right in the above figure)
[M/E1] to [M/E3]: DEV1 (device 1) to DEV3 (device 3)
[P/P]: DEV4 (device 4)
[USER]: FM1CLIP (frame memory clip 1)
[Unused]: FM2CLIP (frame memory clip 2)
[DME1] to [DME4]: DEV5 (device 5) to DEV8 (device 8)
[Unused]: FM LOOP (frame memory loop)
[DME5] to [DME8]: DEV9 (device 9) to DEV12 (device 12)
To exit from this mode, press the [DEV] button again, turning it off.

When the [RUN CTRL] button is selected: This enables the effect run control mode in the device control block.

When the [RSZR CTRL] button is selected: This enables the resizer control mode in the device control block.

In resizer control mode, select the key with the region selection button [K1RSZ] to [K8RSZ].

For details on resizer, see page 210.

The functions of the operation buttons, trackball, and Z-ring vary with the operation mode as follows.

[FX CTRL] button: Leave this button off for operation.
Alternatively, for details of operation of this button, refer to the help information for the MPES-FX01 Programmable Effector software.

❷ Operation buttons

When the positioner operation mode is enabled

K1 CB1: Press this button to enable wipe pattern position setting for key 1 (DSK1).
When the [USER] button is selected, pattern position setting for color background 1 is enabled.

K2 CB2: Press this button to enable wipe pattern position setting for key 2 (DSK2).
When the [USER] button is selected, pattern position setting is enabled for color background 2.

K3: Press this button to enable wipe pattern position setting for key 3 (DSK3).

K4: Press this button to enable wipe pattern position setting for key 4 (DSK4).

MAIN: Press this button to enable main wipe pattern position setting for normal transitions.

SUB: Press this button to enable sub wipe pattern position setting for normal transitions.

Among the [K1 CB1] button, [K2 CB2] button, [K3] button, [K4] button, [MAIN] button, and [SUB] button, you can select multiple buttons.

POS: Press this button to enable pattern movement in the x-axis and y-axis directions with the trackball.
When the [USER] button is selected,

this enables the trackball to move the pattern in the x-axis and y-axis directions, and the Z-ring to adjust the size of the pattern.

X, Y: These restrict the axes affected by the trackball and Z-ring to the x- or y-axis.

Z: This restricts the axes affected by the trackball and Z-ring to the z-axis.

CTR (center): When this button is pressed, the pattern position returns to the center. When the [USER] button is selected, the pattern size also returns to 50.00.

SHIFT/CLR WORK BUFR: These are not used in positioner operation mode.

When the three-dimensional transform operation mode is enabled

The buttons are used for three-dimensional DME transformations.

For details, see "Basic Operations" in Chapter 11 (Volume 2).

When the VTR/disk recorder/frame memory operation mode is enabled

The buttons are used for VTR control or playback of frame memory clips.

For details, see "Controlling the Tape/Disk Transport" in Chapter 12 (Volume 2).

When the resizer control mode is enabled

LOC SIZE (ASP: aspect): Pressing this button and operating the trackball or Z-ring changes the aspect ratio of a key to which the resizer function is applied to. When this button is held down, the trackball or Z-ring operation is switched to a finer control. (fine mode)

LOC XYZ (LOC: location): Pressing this button and operating the trackball or Z-ring moves, shrinks, or magnifies a key to which the resizer function is applied to. When this button is held down, the trackball or Z-ring operation is switched to a finer control. (fine mode)

ROT (RSZE: resizer): Press this button, turning it on, to enable the resizer.

CLR WORK BUFR (clear work buffer): Pressing this button once returns the two-dimensional transformation settings to the defaults. Pressing twice in rapid succession returns all resizer parameter values to the defaults.

X, Y: These restrict the axes affected by the trackball and Z-ring to the x- or y-axis.

Z: This restricts the axes affected by the trackball and Z-ring to the z-axis.

CTR (center): Pressing this button once changes the two-dimensional transformation settings to the closest detent values. Pressing twice in rapid succession returns the two-dimensional transformation settings to the defaults.

❸ Trackball

When the positioner operation mode is enabled

By moving this, you can move the pattern in the x-axis and y-axis directions.

When the three-dimensional transform operation mode is enabled

Move the trackball to control the x- and y-axes in a three-dimensional transform.
When the [SRC] or [TRGT] button is held down, the trackball operation is switched to a finer control. (fine mode)

When the resizer control mode is enabled

Turning the trackball allows the key to which the resizer applies to be moved in the x-axis and y-axis directions, and change the aspect ratio.
When the [LOC SIZE] or [LOC XYZ] button is held down, the trackball operation is switched to a finer control. (fine mode)

❹ Z-ring

When the positioner operation mode is enabled

When the [USER] button is selected, by turning the ring you can adjust the size of the pattern.

When the three-dimensional transform operation mode is enabled

Turn this ring to control the z-axis in a three-dimensional transform.
When the [SRC] or [TRGT] button is held down, the Z-ring operation is switched to a finer control. (fine mode)

When the effect run control mode is enabled

By turning the Z-ring, you can run the keyframe effect, independent of the STOP NEXT KF, EFF LOOP, and similar settings in the keyframe control block. Turn clockwise to run the effect in the normal direction, and counterclockwise for the reverse direction.

When the resizer control mode is enabled

By turning the ring, you can zoom the key to which the resizer is applied, and change the aspect ratio.
When the [LOC SIZE] or [LOC XYZ] button is held down, the Z-ring operation is switched to a finer control. (fine mode)

When the VTR/disk recorder/frame memory operation mode is enabled

Turning the Z-ring controls the tape transport/disk drive/frame memory clip operations, at a speed determined by the operating buttons. Turn clockwise for the normal direction, and counterclockwise for the reverse direction.

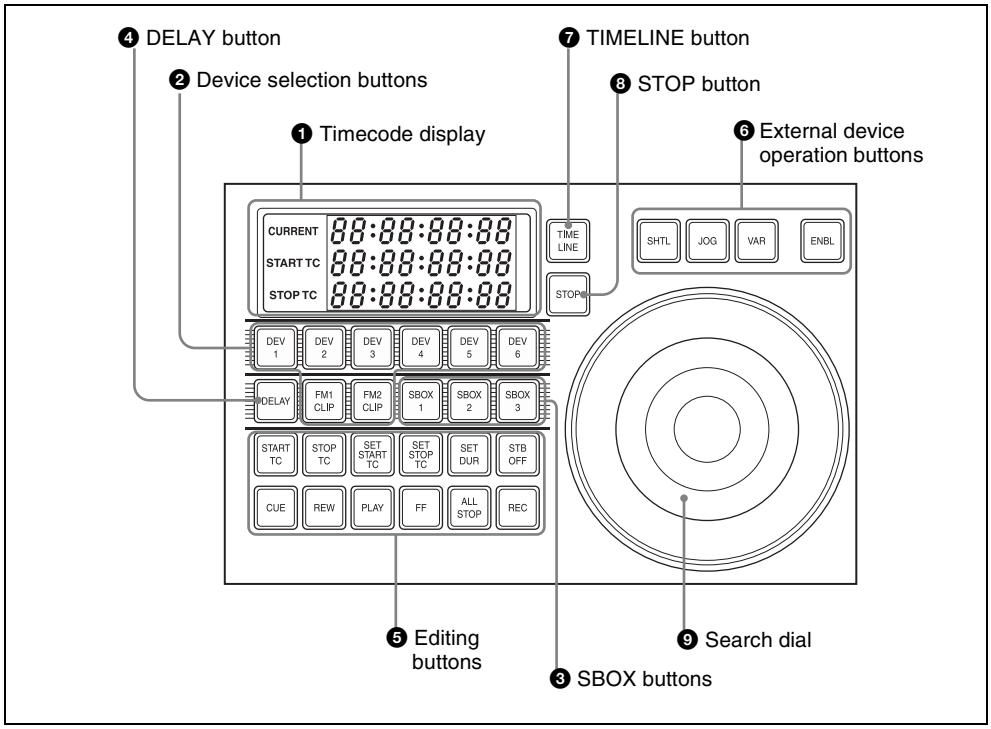
❺ MENU button

Press this button, turning it on, to enable adjusting the parameters allocated to the knobs in the menu using the trackball and Z-ring.
In the case of the DME menu, the operation applies to the selected DME channel.
In VTR/disk recorder/frame memory operation mode, press this button, setting it to On, to make it possible to carry out timeline start/stop point setting operation for the device selected with the device selection buttons (timeline setting mode).

Device Control Block (MKS-8036A Search Dial Module, Option)

Using the device control block (MKS-8036A search dial module [1], option), you can directly operate an XDCAM, disk recorder, VTR or other external device, frame memory clip, or shotbox. The device control block (MKS-8031TB track ball module, option) can be used together.

1) The product name of the MKS-8036A is “device control module,” but in this manual it is referred to as “search dial module” to distinguish it from the MKS-8031TB trackball module.



❶ Timecode display

This shows the current time (CURRENT) and the start and stop point timecode values for the current reference device (START TC, STOP TC). When you press a device selection button, the button lights, selecting the assigned device as the reference device, and displaying its setting value.
In the case of the [SBOX] buttons, the display does not change. The displayed setting value depends on whether the [TIMELINE] button is on or off, as follows.

When the [TIMELINE] button is on:

Displays the start and stop points of the last set keyframe on the timeline. When the keyframe number is changed and the last register and keyframe change, the display also changes. (timeline setting mode)

When the [TIMELINE] button is off:

Displays the Cueup & Play (rewind action) start and stop points.

❷ Device selection buttons

These buttons are used for selecting assigned external devices or frame memory clips.
Each button can only be assigned to a single device. Carry out the assignment in the Setup menu *(see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3))*. To select an assigned device, press the corresponding button, which lights green. To select more than one device simultaneously, hold down the button for the first selection, while pressing the buttons for the other selections in turn. The second and subsequent selected buttons light amber. If you press another button without holding down the first selected

button, the second button will be the reference device and light green.

DEV: Assign external devices DEV1 to DEV12.

FM CLIP: Assign frame memory clips FM1 to FM8.

Device selection buttons can be set as SBOX buttons or DELAY button in the Setup menu.

❸ SBOX (shotbox) buttons

Assign a shotbox saved in registers 1 to 99. When you press a button, the assigned shotbox is selected, and executed. Carry out the assignment in the Setup menu *(see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3))*.

SBOX buttons can be set as device selection buttons or DELAY button in the Setup menu.

❹ DELAY button

When pressed, this button lights green, the numeric keypad control block display changes to DELAY__ : , and you can set the start delay time for the selected device. The setting range is from 00:00 to 59:29 (depends on the video format). This button goes off when another timecode setting button ([START TC], [STOP TC], [SET START TC], [SET STOP TC], or [SET DUR]) is pressed.

The DELAY button can be set as a device selection button or an SBOX button in the Setup menu. Carry out the assignment in the Setup menu *(see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3))*.

❺ Editing buttons

These carry out Cueup & Play (rewind action) operations on material, and timeline settings. These operations are only valid while a device is selected with the device selection buttons.

START TC: When pressed, this button flashes amber, and sounds a beep, setting the timecode at that time as the device start point (on the timeline when the [TIMELINE] button is On, and Cueup & Play start point when Off). If you press once more, the timecode at that time is overwritten as a new start point.

STOP TC: When pressed, this button flashes amber, and sounds a beep, setting the timecode at that time as the device stop point (on the timeline when the [TIMELINE] button is On, and Cueup & Play stop point when Off). If you press once more, the timecode at that time is overwritten as a new stop point.

SET START TC, SET STOP TC, SET DUR: When pressed, these buttons light green, "START TC", "STOP TC" or "DUR" appears in the numeric keypad control block display, and you can enter a timecode from the numeric keypad. If you enter a numeric value and press the [ENTER] button, the button goes off, whereas if you press the [ENTER] button without entering a numeric value the numeric keypad control block display shows "--:--:--:--". To exit the numeric value entry mode, either repeat pressing the same button, or press a different numeric keypad control block linked button, or a mode selection button such as the [EFF] and [SNAPSHOT] buttons in the numeric keypad control block. If the timecode has been set correctly, the entered numeric value appears in the timecode display.

STB (standby) OFF: When pressed, this button flashes amber, and the device selected with the device selection buttons exits from the standby mode.

This button cannot be used for frame memory clip operations.

CUE: When pressed, this button flashes amber together with the [ALL STOP] button, and the device selected with the device selection button is cued up to the start point of the material. When more than one device is selected, the amber flashing continues until the reference device is cued up, and when the cueing up is finished, this button lights green.

REW: When pressed, this button lights amber, and material of the device selected with the device selection buttons is rewound. To stop during the rewind, press the [STOP] button or [ALL STOP] button.

PLAY: When pressed, this button lights amber, and the device selected with the device selection buttons plays. The playback stops not only if the [STOP] button is pressed, but also if any of the [STB OFF], [SHTL], [JOG], [CUE], [REW], [PLAY], [FF], and [ALL STOP] buttons is pressed. When the [VAR] button is pressed while the device is playing back, the device plays at one times normal speed in variable mode.

FF: When pressed, this button lights amber, and the material of the device selected with the device selection buttons is fast forwarded. To stop during the fast forward, press the [STOP] button or [ALL STOP] button.

ALL STOP: When pressed, all device material playback and other operations stop. During cueing up of any of the devices, this button flashes amber, and when all cueing up operations are completed, it lights green.

REC: When pressed simultaneously with the [PLAY] button, this button lights red (the [PLAY] button lights amber), and the image from the selected device is recorded.
This button cannot be used for frame memory clip operations.

❻ External device operation buttons

ENBL (enable): When this is pressed, turning it on, the search dial [VAR], [JOG], and [SHTL] button operations are enabled.

VAR (variable): Sets the search dial to variable mode.

JOG: Sets the search dial to jog mode.

SHTL (shuttle): Sets the search dial to shuttle mode.

❼ TIMELINE button

Press to switch the device selected with the device selection buttons to timeline setting mode.

❽ STOP button

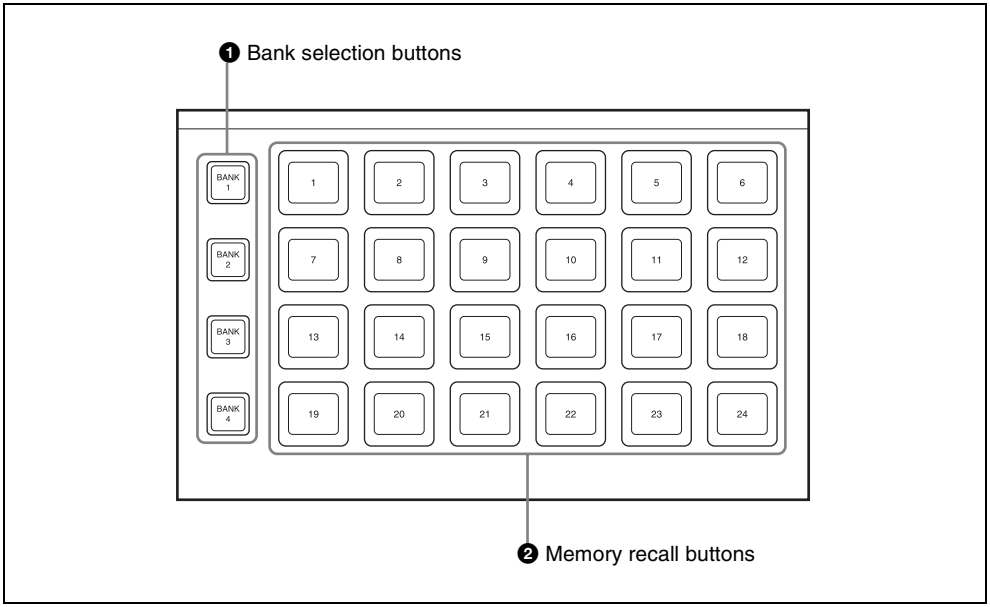
When pressed, this lights amber, and operation of the device selected with the device selection buttons stops.

❾ Search dial

Use this for search and other operations on the material of an external device.

For details of the method of use, see "Controlling Tape/Disk Transport" in Chapter 12 (Volume 2).

Utility/Shotbox Control Block (MKS-8033 Utility/ Shotbox Module, Option)

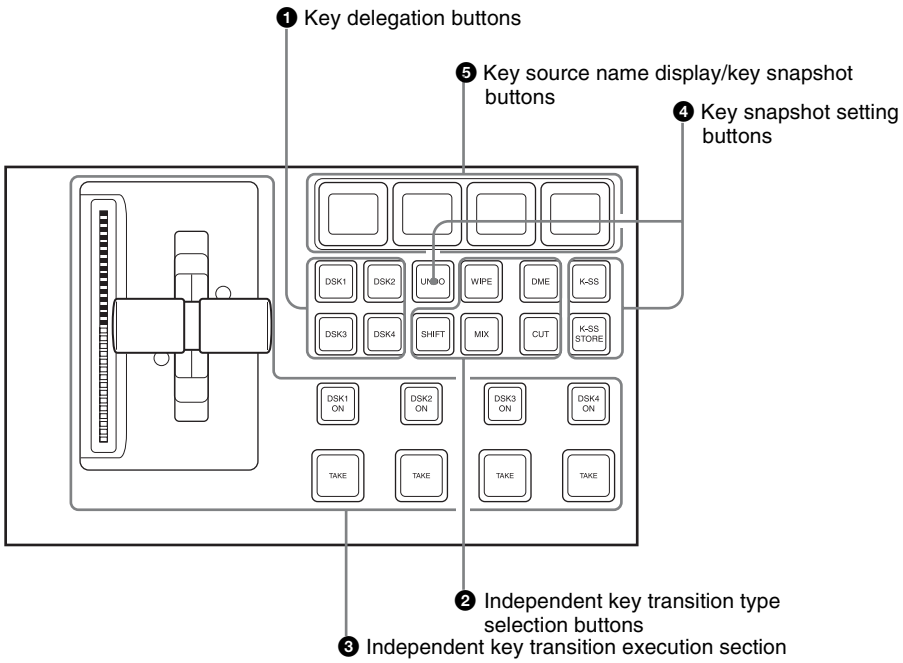


❶ Bank selection buttons
Press any of the [BANK1] to [BANK4] buttons to select a bank of 24 memory recall buttons. The selected button lights amber.

❷ Memory recall buttons
You can use these buttons to recall frequently used menus, utility functions, shotbox registers, or macro registers that you have assigned.
When a utility function is allocated to a button, the button lights orange (or green depending on the status), and the allocated function name appears. Pressing the button executes the allocated function. When the function constitutes a switching on/off operation, the button lights green; otherwise, it only momentarily lights green. When a shotbox register or macro register recall is assigned to a button, the button lights orange, and the assigned register name appears. (If the register is empty, the button goes off.) In the case of a shotbox function, pressing the button executes the assigned shotbox function, and the button lights yellow. In the case of a macro register, pressing the button executes the assigned macro, and the button flashes yellow.
You can also assign enabling and disabling of macro attachment to use as the MCRO ATTCH ENBL button. You can make a setup setting such that when MCRO ATTCH ENBL is On, the buttons for which a macro attachment is set light.

For details, see "Assigning a Function to a Memory Recall Button in the Utility/ Shotbox Control Block" in Chapter 19 (Volume 3).

Downstream Key Control Block (MKS-8032 DSK Fader Module, Option)



❶ Key delegation buttons

Press one of the [DSK1] to [DSK4] buttons to delegate this control block to the corresponding keyer.

When the MKS-9012 2M/E Control Panel is used, using the Setup menu, it is possible to assign these to DSK5 to DSK8 or M/E keys 1 to 8.

❷ Independent key transition type selection buttons

Press one of these buttons, turning it on, to select the downstream key transition type.

MIX: Carry out a dissolve with the key selected with the key delegation buttons.

WIPE: Carry out a wipe with the key selected with the key delegation buttons.

DME: This switches the key selected with the key delegation buttons, using a DME wipe.

CUT: Instantaneously insert or delete the key selected with the key delegation buttons.

SHIFT: When setting is made in the Setup menu to allow a different transition type for inserting or deleting a key, it is possible to display and set the transition after the next transition while this button is held down.

❸ Independent key transition execution section

DSK1 (downstream key 1) ON to DSK4 ON buttons: Press these to instantaneously cut the downstream keys 1, 2, 3, and 4 in or, when the downstream keys are already inserted, cut them out. When the key corresponding to the button appears in the final program output, the button lights red, and otherwise lights amber.

TAKE buttons: These correspond to downstream keys 1, 2, 3, and 4 from left to right; press to execute an auto transition. The transition starts immediately, and the button lights amber. When the transition completes, the button goes off.

Fader lever: Move this to carry out a manual downstream key transition.

Transition indicator: This comprises multiple LEDs, which show the progress of the downstream key transition.

❹ Key snapshot setting buttons

K-SS (key snapshot): This enables key snapshot mode.

K-SS STORE (key snapshot store): To save a key snapshot, hold down this button, and press the key source name display/key snapshot button for the register you want to save.

UNDO (key snapshot recall undo): This undoes the last key snapshot recall.

❺ Key source name display/key snapshot buttons

These display the selected source name for each corresponding keyer. In snapshot mode, they correspond to registers 1 to 4 of the selected keyer, and pressing the button saves or recalls a key snapshot.

Basic Menu Operations

Menu Organization

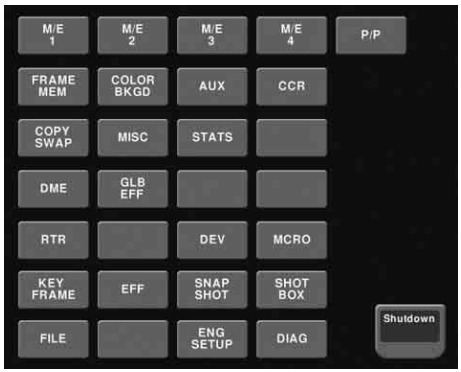
Operations on the MVS switcher system make frequent use of menu operations. This section describes the menus and their interrelationships.

Overview

All detailed settings for basic operations such as transitions, keys, DME, or wipes, are made in menus. There are also menus for carrying out general system control, managing setting data, and initial setup.

About the Top Menu List

When the control panel is powered on, the top menu list appears as shown below. You can also display this by selecting VF1 'Top Menu List' after pressing the [HOME] button at the upper left in the top menu selection button area of the menu control block.



To display the top menu

In the same way as for the top menu selection buttons in the menu control block, press each button to display the particular top menu in the menu display.

Notes

- The arrangement of buttons in the top menu list and the default arrangement of the top menu selection buttons may be different.
- Changing the top menu selection button assignment in setup has no effect on the top menu list.

To shut down the menus

Press the [Shutdown] button at the lower right.
This operation is the same as the shut down operation in the top menu window.

For details, see "Shutting down the menus" (page 100).

Accessing Menus

You can use any of the following methods to access a menu, and the initially displayed menu page depends on the method used.

- Pressing a top menu selection button in the menu control block.
  This displays the page you last accessed in the particular menu. After initially powering on the system, however, the page of VF1 - HF1 of the particular menu is always selected.
- Pressing a button other than a top menu button twice in rapid succession *(see page 83).*

Depending on the button, this may display a fixed page or the page selected last time you accessed the menu.

- Press the menu page selection button at the top left of the menu display.
  The top menu window appears; press the top menu selection button for the particular menu, or enter the menu number with the numeric keypad, and press the Enter button.

For details of the VF buttons and HF buttons, see "Interpreting the Menu Screen" (page 88).

Menus accessed from a top menu selection button

Buttons	Menus	Function	See
HOME	Home	Recalling menus using the top menu list or shortcut menu	Top menu list: page 81 Shortcut menu: page 102
M/E 1	M/E-1	Transition, keys, and wipe settings for the M/E-1 bank	page 129 (transitions), page 157 (keys), page 229 (wipes)
P/P	PGM/PST	Transition, downstream key, and wipe settings for the PGM/PST bank	
FRAME MEM	Frame Memory	Frame memory settings	page 301
COLOR BKGD	Color Bkgd	Color background settings	page 348
AUX	Aux	AUX bus settings	page 364
CCR	CCR	Color corrector settings	page 371
COPY SWAP	Copy/Swap	Copy and swap settings	page 352
MISC	Misc	Safe title settings	page 360
STATS	Status	Status display	page 365
DME	DME	DME special effect settings	Chapter 11 (Volume 2)
GLB EFF	Global Effect	Global effect settings	Chapter 11 (Volume 2)
RTR	Router	Destination, source and level selections	page 366
DEV	Device	Settings for external device operation	Chapter 12 (Volume 2)
MCRO	Macro	Macro register settings	Chapter 16 (Volume 2)
KEY FRAME	Key Frame	Keyframe settings	Chapter 13 (Volume 2)
EFF	Effect	Keyframe effect register settings	Chapter 13 (Volume 2)
SNAP SHOT	Snapshot	Snapshot register settings	Chapter 14 (Volume 2)
SHOTBOX	Shotbox	Shotbox register settings	Chapter 15 (Volume 2)
FILE	File	File settings	Chapter 17 (Volume 2)

Buttons	Menus	Function	See
ENG SETUP	Engineering Setup	Setup functions	Chapter 18 to Chapter 24 (Volume 3)
DIAG	Diagnosis	Status information display	Appendix (Volume 3)

Menus accessed by pressing a button twice

For relevant buttons other than the top menu selection buttons, pressing twice in rapid succession directly recalls a related menu page. The following table lists these buttons of each control block, together with the menus they recall.
(XX represents the HF menu recalled last in the VF menu.)

Cross-point control block

Buttons	Menus	See
FM1 to 8 signals assigned buttons	Frame Memory >Still >Recall	page 311
Color Bkgd1 signal assigned button	Color Bkgd >Color Bkgd1	page 348
Color Bkgd2 signal assigned button	Color Bkgd >Color Bkgd2	
CCR1 signal assigned button	CCR >CCR1 >XX	page 373
CCR2 signal assigned button	CCR >CCR2 >XX	
DME1 to DME4	DME >XX	Chapter 11 (Volume 2)
KEY1 to KEY8 (DSK1 to DSK8)	• M/E-1 >Key1, 2, 3, 4, 5, 6, 7, 8 >XX • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >XX	page 163

Transition control block

Buttons	Menus	See
KEY1 (DSK1)	• M/E-1 >Key1 >XX • PGM/PST >DSK1 >XX	page 163
KEY2 (DSK2)	• M/E-1 >Key2 >XX • PGM/PST >DSK2 >XX	
KEY3 (DSK3)	• M/E-1 >Key3 >XX • PGM/PST >DSK3 >XX	
KEY4 (DSK4)	• M/E-1 >Key4 >XX • PGM/PST >DSK4 >XX	
KEY5 (DSK5)	• M/E-1 >Key5 >XX • PGM/PST >DSK5 >XX	
KEY6 (DSK6)	• M/E-1 >Key6 >XX • PGM/PST >DSK6 >XX	
KEY7 (DSK7)	• M/E-1 >Key7 >XX • PGM/PST >DSK7 >XX	
KEY8 (DSK8)	• M/E-1 >Key8 >XX • PGM/PST >DSK8 >XX	
WIPE	M/E-1, PGM/PST >Wipe >Main Pattern	page 229
DME	M/E-1, PGM/PST >DME Wipe >XX	page 273
SUPER MIX	M/E-1, PGM/PST >Misc >Transition	page 130
PST COLOR MIX	M/E-1, PGM/PST >Misc >Transition	page 131
FM1&2 CLIP, FM3&4 CLIP, FM5&6 CLIP, FM7&8 CLIP	M/E-1, PGM/PST >Misc >ClipTransition	page 331
PRIOR SET	M/E-1, PGM/PST >Misc >Key Priority	page 125
KEY PRIOR	M/E-1, PGM/PST >Misc >Next Key Priority	page 126

Key control block [a]

Buttons	Menus	See
KEY1	• M/E-1 >Key1 >XX • PGM/PST >DSK1 >XX	page 163
KEY2	• M/E-1 > Key2 > XX • PGM/PST >DSK2 >XX	
KEY3	• M/E-1 >Key3 >XX • PGM/PST >DSK3 >XX	
KEY4	• M/E-1 >Key4 >XX • PGM/PST >DSK4 >XX	
KEY5	• M/E-1 >Key5 >XX • PGM/PST >DSK5 >XX	
KEY6	• M/E-1 >Key6 >XX • PGM/PST >DSK6 >XX	
KEY7	• M/E-1 >Key7 >XX • PGM/PST >DSK7 >XX	
KEY8	• M/E-1 >Key8 >XX • PGM/PST >DSK8 >XX	
LUM	• M/E-1 >Key1, 2, 3, 4, 5, 6, 7, 8 >Type • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Type	page 164
LIN		
CVK		
PTN		
CRK	• M/E-1 >Key 1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Type >Chroma Adjust	page 170

a) The menu recalled depends on which of the M/E delegation buttons and key delegation buttons are selected in the key control block.

Numeric keypad control block

Buttons	Menus	See
EFF	• Effect >Effect 1-99 >XX [b] • Effect >Master Timeline >Store [c]	Chapter 13 (Volume 2)
SNAPSHOT	• Snapshot >Snapshot >XX [b] • Snapshot >Master Snapshot >Store [c]	Chapter 14 (Volume 2)
SHOTBOX	Shotbox >Register >Store/Recall	Chapter 15 (Volume 2)
MCRO	Macro >Register >XX	Chapter 16 (Volume 2)
TRANS RATE [a]	Misc >Transition	page 137
STORE RCALL	Key Frame >Region Select [d]	Chapter 13 (Volume 2)

a) The menu recalled depends on which of the M/E-1 bank and PGM/PST bank the numeric control block is delegated to.
b) When other than [MASTR] is selected with the region selection buttons.
c) When [MASTR] is selected with the region selection buttons.
d) When the [SNAPSHOT] button or [EFF] button is set to On, or lit green.

Downstream key control block [a]

Buttons	Menus	See
DSK1	• M/E-1 >Key1 >XX • PGM/PST >DSK1 >XX	page 163
DSK2	• M/E-1 >Key2 >XX • PGM/PST >DSK2 >XX	
DSK3	• M/E-1 >Key3 >XX • PGM/PST >DSK3 >XX	
DSK4	• M/E-1 >Key4 >XX • PGM/PST >DSK4 >XX	
WIPE	• M/E-1 >Key1, 2, 3, 4, 5, 6, 7, 8 >Transition >Wipe Adjust >Pattern Select • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Transition >Wipe Adjust >Pattern Select	page 254
DME	• M/E-1 >Key1, 2, 3, 4, 5, 6, 7, 8 >Transition >Wipe Adjust >Pattern Select • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Transition >DME Wipe Adjust >Pattern Select	page 284
K-SS STORE [b]	Snapshot >Key Snapshot >XX	Chapter 14 (Volume 2)

a) The menu recalled depends on which of keyers 1 to 8 the downstream key control block is delegated to.
b) Recalling is possible only when the [K-SS] button is On.

Auxiliary bus control block

Buttons	Menus	See
FMS1, FMS2	Frame Memory >Still >Freeze/Store	page 308
FM1 to 8 signals assigned buttons	Frame Memory >Still >Recall	page 311
Color Bkgd1 signal assigned button	Color Bkgd >Color Bkgd1	page 348
Color Bkgd2 signal assigned button	Color Bkgd >Color Bkgd2	
CCR1 signal assigned button	CCR >CCR1 >XX	page 371
CCR2 signal assigned button	CCR >CCR2 >XX	

Device control block (trackball)

Buttons	Menus	See
DME1 to DME8 [a]	DME >XX	Chapter 11 (Volume 2)
DEV1 to DEV12 assigned buttons	• Device >DDR/VTR >Cueup & Play [b] • Device >DDR/VTR >Timeline [c]	Chapter 12 (Volume 2)
FM1CLIP to FM8CLIP assigned buttons	Frame Memory >Clip >Recall	–
K1RSZ to K8RSZ [d]	• M/E-1, 2, 3, 4 >Key1, 2, 3, 4, 5, 6, 7, 8 >Processed Key • PGM/PST >DSK1, 2, 3, 4, 5, 6, 7, 8 >Processed Key	page 210

a) When the three-dimensional transformation operation mode is enabled.
b) When the [MENU] button is Off.
c) When the [MENU] button is On.
d) When the resizer control mode is enabled.

Device control block (search dial)

Buttons	Menus	See
DEV1 to DEV12	• Device >DDR/VTR >Cueup & Play [a] • Device >DDR/VTR >Timeline [b]	Chapter 12 (Volume 2)
FM1CLIP to FM8CLIP assigned buttons	Frame Memory >Clip >Recall	–

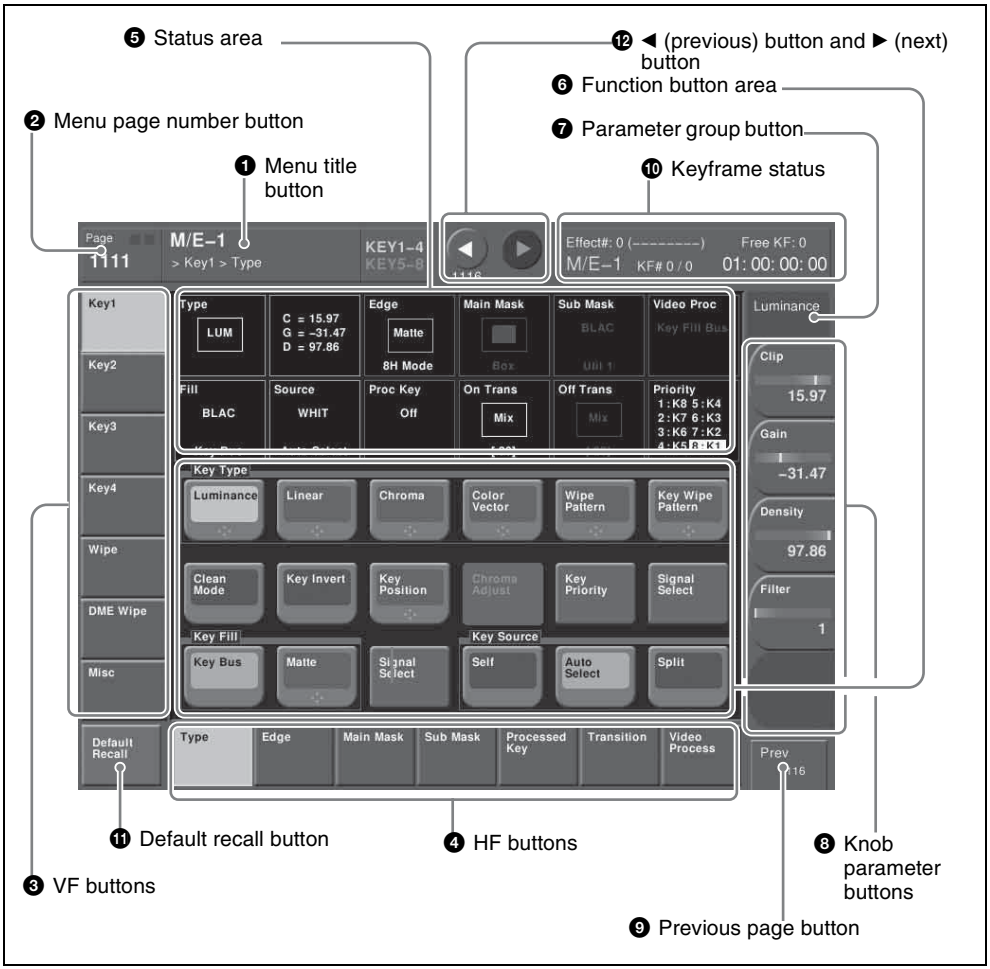
a) When the [TIMELINE] button is Off.
b) When the [TIMELINE] button is On.

Displaying a Menu

To display, for example, the M/E-1 >Key1 >Type menu, use either of the following operations.

- Press the top menu selection button [M/E 1], then press the VF1 ‘Key1’ button and the HF1 ‘Type’ button in that order.
- Press the menu page number button in the upper left corner of the menu screen to display the top menu window, then enter the page number of the M/E-1 >Key1 >Type menu, which is 1111, and press the [Enter] button. *(For details of the menu page numbers, see “Menu Tree” (page 434).)*

The M/E-1 >Key1 >Type menu appears in the menu display as follows.



M/E-1 >Key1 >Type menu

Interpreting the Menu Screen

The menu screen consists of the following principal parts.
When buttons on the screen are lit or represented in a depressed state, this indicates that the corresponding item or function is selected (set on).

❶ Menu title button
This shows the title of the menu screen. You can set different colors for the main menu site and subsidiary menu site *(see page 102)*.

Switching the VF buttons between the Key1 to Key4 and Key5 to Key8 button displays

Switch the displays with the [KEY1-4] and [KEY5-8] menu title buttons.

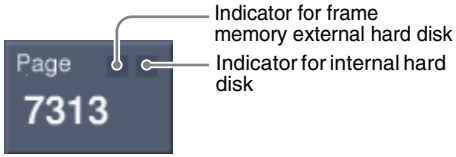


When [KEY1-4] is lit, Key1 to Key4 buttons appear in VF1 to VF4.
When [KEY5-8] is lit, Key5 to Key8 buttons appear in VF1 to VF4.

❷ Menu page number button

This shows the menu screen page number. When you press this button, the top menu window (*see page 99*) appears. You can enter the page number for the desired menu, or press one of the top menu selection buttons in the window, to display that menu.

While the system is accessing the hard disk, the indicator lights red.



Notes

When the indicator is lit, do not power off the switcher, or disconnect the USB cable [1)].

1) When an external hard disk drive is connected

❸ VF buttons

These indicate the larger subdivisions of this menu.

Depending on the selected item, the menu screen contents including the HF button indications change.

❹ HF buttons

These indicate the items within the menu. Depending on the selected item, the menu indications change.

Depending on the function, if any one is on, the status is shown by an orange bar, as in the following figure.



❺ Status area

This shows the status of the settings items controlled by the selected menu.

An orange frame appears around the parameter area relating to the displayed menu. For each of the twelve areas, pressing the display jumps to the related menu.

❻ Function button area

This shows the functions which can be operated in the currently selected menu by means of buttons.

Each function button corresponds to a function which can be set in the currently selected menu. Press it to enable the function, to display a parameter group and adjust the parameters with the knobs, or to execute the function.

These buttons are in groups by function. In the screen example shown on the previous page, the [Key Bus] and [Matte] function buttons constitute the <Key Fill> group.

❼ Parameter group button

This displays parameter group names for which the knobs can make adjustments, the current parameter setting page number, and the total number of the parameter setting pages. (Example: Color Vector 1/2)

When there are more than five parameters within the same parameter group, press this button to display the sixth and subsequent

parameters, which can then be controlled by the knobs.

❽ Knob parameter buttons
These show the parameters currently controlled by the knobs and their values. Pressing one of these buttons displays the numeric keypad window *(see page 97),* and you can then enter a new value for the corresponding parameter with the numeric keypad.

❾ Previous page button
This shows the page number of the previously displayed menu screen. Press it to go back to that page. When the indication [Parent] appears, this displays the parent directory.

❿ Keyframe status
This shows the keyframe status of the reference region. Pressing this button switches the menu screen as follows.

When a menu other than the Key Frame menu is currently shown: The menu screen switches to the Key Frame menu.

When the Key Frame menu is currently shown: The menu screen switches to the menu that was on the screen immediately before the Key Frame menu.

In some parts of menus such as the File menu, this functions as a "Region selection area," for selecting the region to which operations apply.

⓫ Default recall button
This only appears in those menus for which the default recall function is available. *(See "Menus allowing a return to default settings" (page 92).)*
Press this button, turning it on, then press a VF button or knob parameter button to return the settings to their default values, in the following groupings.

- Function grouping: the functions within an HF menu under the VF button
- Knob parameters (parameters currently controlled by the knobs)

⓬ ◀ (previous) button and ▶ (next) button
The ◀ button returns to the previous menu. Press the ▶ button to continue to the next menu.

Menu Operations

Selecting an item

1 Press the VF button (1 to 7) for the desired group of items.

The HF button (1 to 7) indications change to show the items within the selected group.

2 Press the HF button for the desired item.

The indications in the status area and function button area change, and you can now make various changes to the selected item.

Selecting a function
Press the appropriate function button within the function button area.

Shape and color of the button
Pressing the button turns it on, and it lights, showing the state.



Lit pale blue: The function is enabled, and the parameters can currently be adjusted with the knobs.
Lit orange: The function is enabled.
Lit purple: Execution button. Pressing the button immediately executes the function. (Example: [Auto Start] button in the Chroma Adjust menu)



Pressing a button of this type displays a further menu, allowing more detailed settings. (Example: [Chroma Adjust] button in the Type menu)

Setting parameters



This marking on a function button indicates that there are parameters which can be adjusted with the knobs.
Pressing this function button assigns parameters to the knobs.
You can set the parameter values by either of the following methods.

- Turn the knob (1 to 5) corresponding to the parameter, to adjust the value.
- Press the knob parameter buttons (1 to 5) corresponding to the parameter. This displays the numeric keypad window allowing you to enter the desired value.

In the description of specific setting procedures, the knob adjustment is described, as follows.

Example: When wipe pattern key is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00
3	Density	Key density	0.00 to 100.00

When the [MENU] button in the device control block is lit, you can use the trackball and Z-ring to control the parameters.

- Move the trackball on the x-axis to control the parameter for knob 1 or on the y-axis to control the parameter for knob 2. Moving up or to the right increases the parameter value, and moving down or to the left decreases the parameter value.
- Use the Z-ring to adjust the parameter for knob 3. Turning clockwise increases the parameter value, and turning counterclockwise decreases the parameter value.

Going back to the previous menu

To return to the last displayed menu, press the previous page button.

Returning to default state in function groupings

1 Press the [Default Recall] button, turning it on.

This enters the menu default recall mode.

2 Press the VF button you want to return to the default state.

This returns the settings within the function grouping to the default state, and the [Default Recall] button goes off.

Notes

The default state of the settings depends on the setting of the initial status mode, set in the Setup menu of system setup, as follows.

User: The state when [Initial Status Define] is executed.

Factory: Factory default settings

Returning knob parameters to default state

1 Press the [Default Recall] button, turning it on.

This enters the menu default recall mode.

2 Press the knob parameter button you want to return to the default state.

This returns the knob parameter value to the default state, and the [Default Recall] button goes off.

Notes

- In the following table, "Menus allowing a return to default settings," the default recall function does not apply to some knob parameters.

  For details, see the table, "Knob parameters to which default recall does not apply" on page 94.

- The default recall function does not return the horizontal (H) and vertical (V) position settings to their default state individually. Returning the horizontal (H) position to its default state also returns the vertical (V) position to its default state automatically, and vice versa.

  For details, see the table, "Knob parameters subject to restriction on default recall" on page 96.

Menus allowing a return to default settings

Top menu selection button name	VF number (HF number)	Menu number	Menu name
M/E1	VF1 a)	1110-series/1510-series	Key1/Key5 b)
	VF2 a)	1120-series/1520-series	Key2/Key6 b)
	VF3 a)	1130-series/1530-series	Key3/Key7 b)
	VF4 a)	1140-series/1540-series	Key4/Key8 b)
	VF5	1150-series	Wipe b)
	VF6	1160-series	DME Wipe b)
	VF7	1170-series	Misc b)

Top menu selection button name	VF number (HF number)	Menu number	Menu name
M/E2	VF1 [a]	1210-series/1610-series	Key1/Key5 [b]
	VF2 [a]	1220-series/1620-series	Key2/Key6 [b]
	VF3 [a]	1230-series/1630-series	Key3/Key7 [b]
	VF4 [a]	1240-series/1640-series	Key4/Key8 [b]
	VF5	1250-series	Wipe [b]
	VF6	1260-series	DME Wipe [b]
	VF7	1270-series	Misc [b]
M/E3	VF1 [a]	1310-series/1710-series	Key1/Key5 [b]
	VF2 [a]	1320-series/1720-series	Key2/Key6 [b]
	VF3 [a]	1330-series/1730-series	Key3/Key7 [b]
	VF4 [a]	1340-series/1740-series	Key4/Key8 [b]
	VF5	1350-series	Wipe [b]
	VF6	1360-series	DME Wipe [b]
	VF7	1370-series	Misc [b]
M/E4	VF1 [a]	8110-series/8510-series	Key1/Key5 [b]
	VF2 [a]	8120-series/8520-series	Key2/Key6 [b]
	VF3 [a]	8130-series/8530-series	Key3/Key7 [b]
	VF4 [a]	8140-series/8540-series	Key4/Key8 [b]
	VF5	8150-series	Wipe [b]
	VF6	8160-series	DME Wipe [b]
	VF7	8170-series	Misc [b]
P/P	VF1 [a]	1410-series/1810-series	DSK1/DSK5 [b]
	VF2 [a]	1420-series/1820-series	DSK2/DSK6 [b]
	VF3 [a]	1430-series/1830-series	DSK3/DSK7 [b]
	VF4 [a]	1440-series/1840-series	DSK4/DSK8 [b]
	VF5	1450-series	Wipe [b]
	VF6	1460-series	DME Wipe [b]
	VF7	1470-series	Misc [b]
COLOR BKGD	VF1	2210	Color Bkgd 1 [b]
	VF2	2220	Color Bkgd 2 [b]
CCR	VF1	2410-series	CCR1 [b]
	VF2	2420-series	CCR2 [b]

Top menu selection button name	VF number (HF number)	Menu number	Menu name
FRAME MEM	VF1	2510-series	Still [c]
	VF2	2520-series	Clip [c]
	VF3	2530-series	Reposition/Lock [c]
	VF4	2540-series	File [c]
	VF5	2550-series	Folder [c]
AUX	VF1	2311	Aux Bus [c]
DME	VF1	4110-series	Edge [c]
	VF2	4120-series	Video Modify [c]
	VF3	4131	Freeze [c]
	VF4	4141	Non-Linear [c]
	VF5	4150-series	Light/Trail [c]
	VF6	4160-series	Input/Output [c]
	VF7	4170-series	Enhanced Video Modify [b]
GLB EFF	VF1	4210-series	Ch1–Ch4 [c]
	VF2	4220-series	Ch5–Ch8 [c]
KEY FRAME	(HF3)	6113	Path [c]

a) VF1 to VF4 are shared between Key1 (DSK1) to Key4 (DSK4) and Key5 (DSK5) to Key8 (DSK8).
b) Menu to return to the default settings for particular functions or for particular knob parameters *(for the relevant knob parameters, see page 94)*
c) Menu to return to the default settings for particular knob parameters *(for the relevant knob parameters, see page 94)*

Knob parameters to which default recall does not apply

Menu number [a]	Menu name	Button name	Knob	Parameter
1111	Type	[Luminance] and [Linear] in <Key Type> group	4	Filter
		[Color Vector] in <Key Type> group	1 2 (Parameter group [2/2])	Y Filter, C Filter
1111.1	Type >CRK Adjust	[Key Active]	5	Filter
		[Color Cancel] in <Color Cancel> group	5	Filter
1112.1	Edge >Matte	[Mix Color] in <Edge Matte> group	5	Pattern
		[Multi]	3	Invert Type

Knob parameters to which default recall does not apply

Menu number [a]	Menu name	Button name	Knob	Parameter
1113	Main Mask	[Pattern]	5	Pattern
		[Multi]	3	Invert Type
1116	Transition	[Wipe] in <ON Transition Type> group	1 5	Transition Rate Pattern
		[Wipe] in <OFF Transition Type> group	1 5	Transition Rate Pattern
		[Key Blink] and [Edge Blink] in <Blink> group	1	Blink Rate
		[Mix] in <Transition Type> group	1	Transition Type
		[Wipe] in <Transition Type> group	1 5	Transition Rate Pattern
1116.1	Transition > Wipe Adjust	[Multi]	3	Invert Type
		[H] and [V] in <Pairing> group	1	Width
		[H], [V], and [Fringe] in <Modulation> group	4	Shape
1154	Edge/Direction	[Split] in <Edge> group	1	Split No
1154.1	Edge/Direction > Matte Adjust	[Mix Color] in <Edge Matte> group	3	Pattern
		[Multi]	3	Invert Type
1155	Main Modify	[H] and [V] in <Pairing> group	1	Width
		[H], [V], and [Fringe] in <Modulation> group	4	Shape
1164	Edge/Direction	[Independent Trans Rate] in <Pattern Limit Release> group	1	Transition Rate
1171	Transition	[Mix], [Nam], [Super Mix], [Preset Color Mix], [Wipe], [DME Wipe], and [FTB] in <Transition Type> group	1	Transition Rate

a) The menu numbers shown by way of example are those for M/E-1: the same applies for M/E-2, M/E-3, M/E-4, and P/P. Also, content applying to Key1 applies equally to Key2 to Key8.

Knob parameters subject to restriction on default recall

Menu number	Menu name	Button name	Knob	Parameter
1111.1 a)	Type >CRK Adjust	[Sample Mark] in the <Auto> group	1 2	Position H Position V
1112.1 a)	Edge >Matte Adjust	[Position]		
1113 a)	Main Mask	[Position]		
1116.1 a)	Transition >Wipe Adjust	[Position]		
1116.3 a)	Transition >DME Wipe Adjust	[Position]	1 2	H V
1154.1 a)	Edge Direction >Matte Adjust	[Position]	1 2	Position H Position V
1155 a)	Main Modify	[Position] in the <Position> group		
1155.1 a)	Main Modify >Multi Adjust	[Position]		
1156 a)	Sub Modify	[Position] in the <Position> group		
1156.1 a)	Sub Modify >Multi Adjust	[Position]		
2122.2	Composite >Pattern Adjust	[Position]	1 2	Position H Position V
2131	Reposition	[Normal]		
		[Black&White]		
2210	Color Bkgd1 b)	[Position]		
2412.1 c)	Primary CCR >Mask1 Adjust d)	[Position]		
4116	DME >Edge >Wipe Crop	[Position/Size]	5	Pattern
4127	DME >Video Modify >Mask	[Position/Size]		

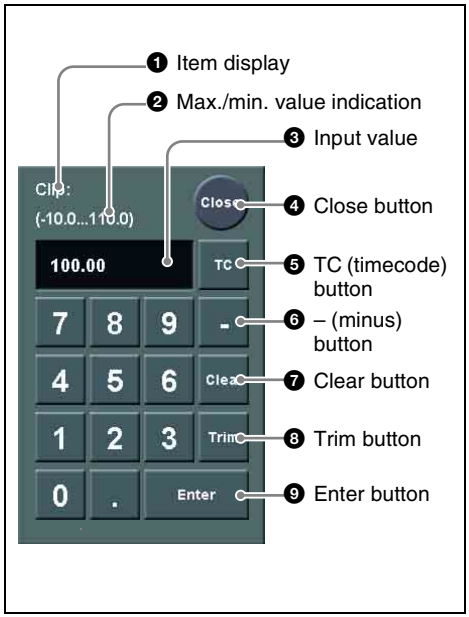
a) The menu numbers shown by way of example are those for M/E-1: the same applies to M/E-2, M/E-3, M/E-4, and P/P. Equally, content applying to Key1 applies equally to Key2, Key3, and Key4.

b) The same applies to Color Bkgd2.

c) The menu numbers shown by way of example are those for CCR1: the same applies to CCR2.

d) The sample applies to Mask2 Adjust.

Numeric keypad window



❶ Item display
This is the name of the parameter being set in the numeric keypad window.

❷ Max./min. (maximum/minimum) value indication
This shows the maximum and minimum settings of the parameter.

❸ Input value
This is the value being input into the numeric keypad window.

❹ Close button
This closes the numeric keypad window.

❺ TC (timecode) button
When the numeric keypad window is opened for a setting requiring a timecode value to be entered, this button appears in a depressed state.
You can enter a timecode value in the range that depends on the signal format *(see "Setting the Signal Format (Format Menu)" in Chapter 18 (Volume 3))* as follows:

00:00:00:00 to 23:59:59:nn,
where nn = (number of frames per second) – 1.

❻ – (minus) button
This toggles the sign of the entered value. When it is pressed, the value is negative.

❼ Clear button
This clears the input. It does not change the parameter setting.

❽ Trim button
After entering the difference from the current value, press this button to confirm the numeric input.

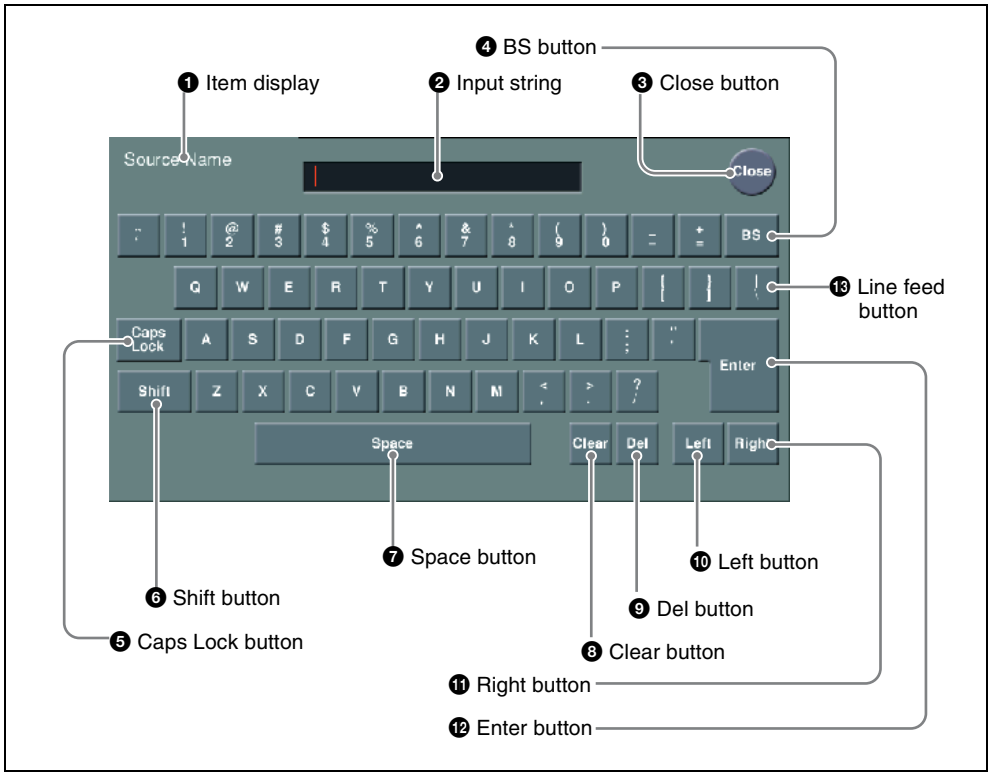
❾ Enter button
This confirms the entered value.
If correctly set, the numeric keypad window closes.
If not correctly set, the input display changes color.

Keyboard window

Notes

Except when changing source names, the following characters cannot be used.

space, \, /, :, ;, , (comma), . (dot), <, >, *, ?, ", |



❶ Item display

This is the name of the parameter being set in the keyboard window.

❷ Input string

This is the character string being input in the keyboard window.

❸ Close button

This closes the keyboard window.

❹ BS button

This clears the character immediately before the cursor in the input string.

❺ Caps Lock button

This enables input of capital letters only.

Notes

You can enter items to be displayed on the control panel LCD using lowercase letters, but these will be converted to capitals for display.

MS-DOS does not distinguish case in filenames, and therefore you are recommended to enter filenames in capital letters.

❻ Shift button
This selects the characters on the shift side of the keys. The shift is released when you enter a character.

❼ Space button
This enters a space character.

❽ Clear button
This clears all of the characters in the input string.

❾ Del button
This clears the character immediately after the cursor in the input string.

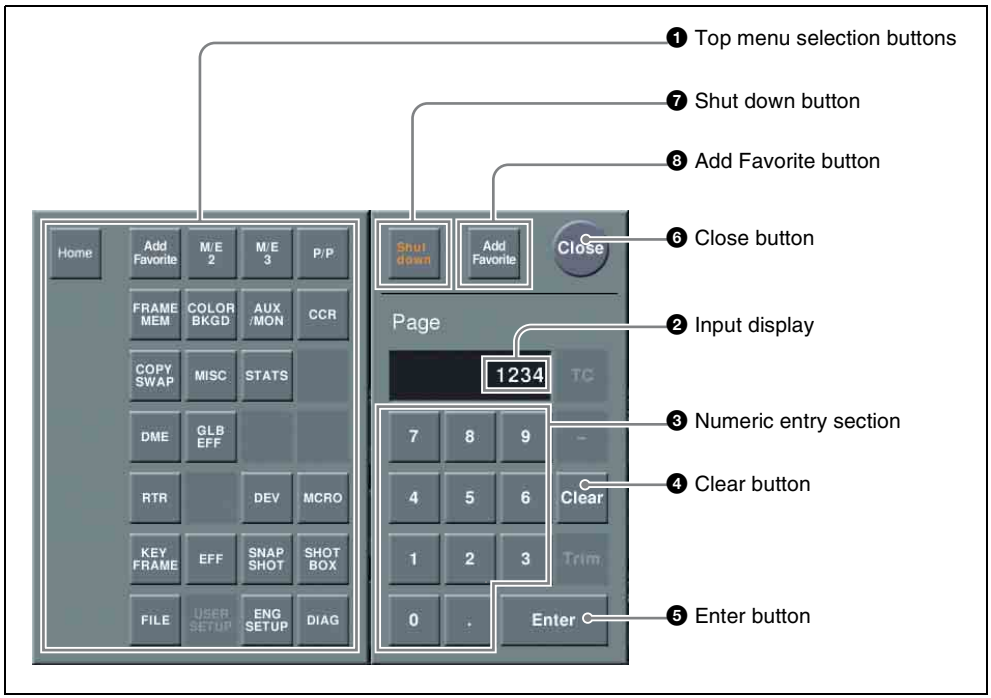
❿ Left button
This moves the cursor one character to the left in the input string.

⓫ Right button
This moves the cursor one character to the right in the input string.

⓬ Enter button
This sets the input string as a parameter value, and closes the keyboard window if the value has been entered correctly. If the value has not been entered correctly, the display color changes.

⓭ Line feed button
After pressing the Shift button, press this button to feed a line. The input string shows "|".

Function of the top menu window



❶ Top menu selection buttons
These are the same as the top menu selection buttons in the menu control block. Pressing one of these buttons closes the top menu window and displays the selected menu in the menu display.

❷ Input display
This shows the page number entered with the numeric entry section.

❸ Numeric entry section
Enter a page number.

❹ Clear button
Press this to clear the input display.

❺ Enter button
Pressing this button without entering a page number closes the top menu window with the current menu remaining in the menu display.
If you enter a page number then press this button, this confirms the value in the input display. If it is a correct page number, the top menu window closes, and the menu display shows the new menu. If it is not correctly set, the input display changes color.

❻ Close button
Press this to close the top menu window.

❼ Shut down button
Shuts down the menus.

Notes

Be sure to shut down the menus before powering off the control panel.

Use of the color palette window

When a parameter is assigned to the knobs as a combination of luminance, saturation, and hue, pressing a knob parameter button displays a color palette window.

Shutting down the menus

1 In the menu screen, press the menu page number button to open the top menu window.

For details of the top menu window, see "Function of the top menu window" (page 99).

2 Press [Shut down].

A confirmation message appears.

3 Press [Yes].

This shuts down the menu system after a while, and the menu display changes to black. Now power off the system.

To restart menu operations
Power on the control panel once more.

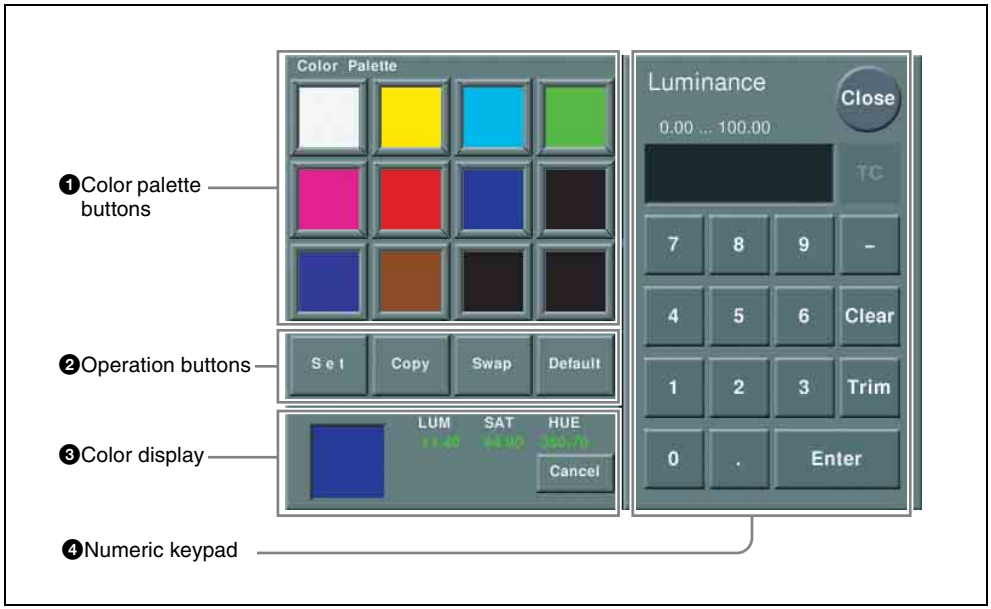
❽ Add Favorite button
Pressing this button allows the currently displayed menu to be registered to the Shortcut menu.

Registering a menu to the Shortcut menu

1 In the Home >Favorites >Shortcut menu, select the desired group.

2 Display the menu you want to register, and then press the [Add Favorite] button.

The currently displayed menu is automatically registered to a blank button.



❶ Color palette buttons

Press one of these to enter the corresponding color in the display.
By default the following settings are available.
First row: white, yellow, cyan, green
Second row: magenta, red, blue, black
Third row: all black

❷ Operation buttons

Set: If you press any color palette button with this button held down, the color shown in the color display is assigned to the color palette button.
Copy: If you press a color palette button with this button held down, the color is used as the source for copying. Next press a different color palette button to copy to that button.
Swap: If you press two color palette buttons in sequence with this button held down, the two colors are swapped.
Default: If you press any color palette button with this button held down, the color palette button is set to the default color.

❸ Color display

This shows the setting color, and the parameters (LUM, SAT, and HUE).
By adjusting the parameters with the knobs, you can create any color.
If a parameter value is outside the permitted range for RGB (0 to 255), the indication "Illegal Color" appears, and this is adjusted to a value in range.
Cancel: Pressing this button returns to the state when the color palette window was opened.

❹ Numeric keypad

Use this to enter numeric values for parameters.

For details of use, see page 97.

Switching Between the Main Menu Site and Subsidiary Menu Site

For menu transitions, you can store two separate versions in the main and subsidiary menu sites.
By switching sites, and pressing the ◄ button and the ► button you can trace the history in each menu.

To switch the subsidiary menu site on and off

Assign [SUB MENU SITE] to a menu control block top menu selection button or user preference button. To switch to the subsidiary menu site, press this button, turning it on.

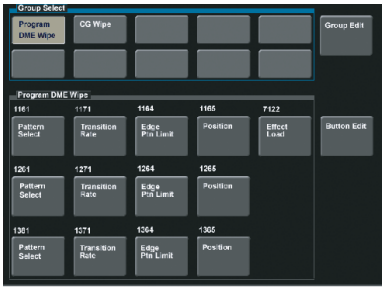
For details of the assignment operation, see "Assigning Functions to the Menu Control Block Top Menu and User Preference buttons" in Chapter 19 (Volume 3).

Shortcut Menu

Recalling a menu using the shortcut menu

1 In the Home menu, select VF2 'Favorites' and HF1 'Shortcut.'

The following menu appears.



2 In the [Group Select] box, select the group.

The group buttons appear.

3 Press the button for the desired menu.

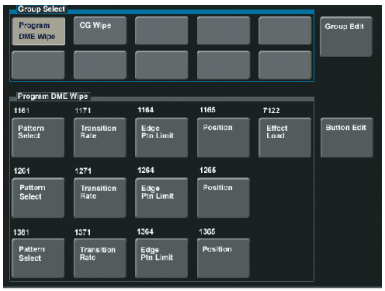
Creating a shortcut menu

Assign frequently used menus to buttons, to create a "Favorites" menu.

To create a menu group

1 In the Home menu, select VF2 'Favorites' and HF1 'Shortcut.'

The following menu appears.



2 Press [Group Edit].

The following menu appears.



3 With the cursor, select the group name (in this case a blank button) for the operation.

4 Press [Rename].

A keyboard window appears.

5 Enter a group name (maximum 24 characters), and press Enter.

This confirms the group name.

To copy a menu group

1 In the Home >Favorites >Group Edit menu, press the button for the copy source group.

2 Press [Copy].

3 Press the button for the copy destination group.

4 Press [Paste].

This copies the menu group settings.

To delete menu group settings

1 In the Home >Favorites >Group Edit menu, select the group to be deleted.

2 Press [Clear].

A confirmation message appears.

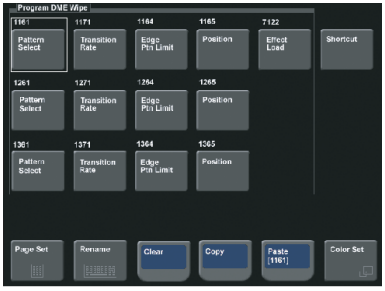
3 Press [Yes].

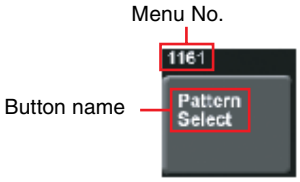
This deletes the settings.

To register a menu on a button

You can register 15 buttons in one group.

1 In the Home >Favorites >Shortcut menu, press [Button Edit].





2 Move the cursor to the position where you want to display the button. To change the content of an already displayed button, press the button to select it.

3 Press [Page Set].

A page number input window appears.

4 Enter the page number for the menu you want to register.

5 Press [Rename].

A keyboard window appears.

6 Enter the button name (maximum 24 characters).

7 To change the button color, press [Color Set].

Button color samples appear.

8 Press the desired color.

This completes the assignment of the menu to the button.

9 Repeat steps **2** to **8** to complete the "Favorites" menu.

To copy button settings

1 In the Home >Favorites >Button Edit menu, press the copy source button to select it.

2 Press [Copy].

3 Press the copy destination button to select it.

4 Press [Paste].

This copies the button settings.

To delete button settings

In the Home >Favorites >Button Edit menu, press [Clear].
This deletes the button settings.

Notes

The shortcut menu settings are handled as part of the control panel setup. You can recall and save them in the same way as setup data.

To register a menu macro on a button

See "Recalling a Menu Macro Register and Executing a Menu Macro" in Chapter 16 (Volume 2).

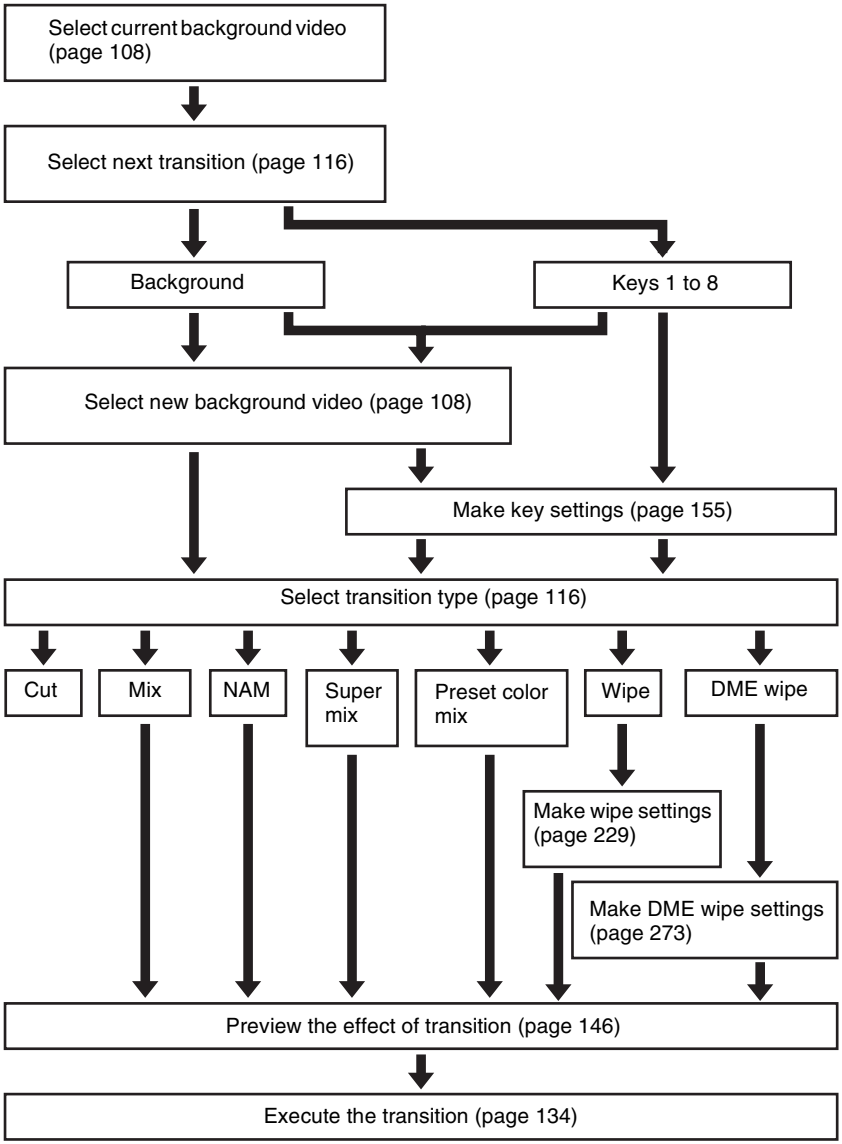
To execute a menu macro with a button

See "Recalling a Menu Macro Register and Executing a Menu Macro" in Chapter 16 (Volume 2).

Chapter 3 Signal Selection and Transitions

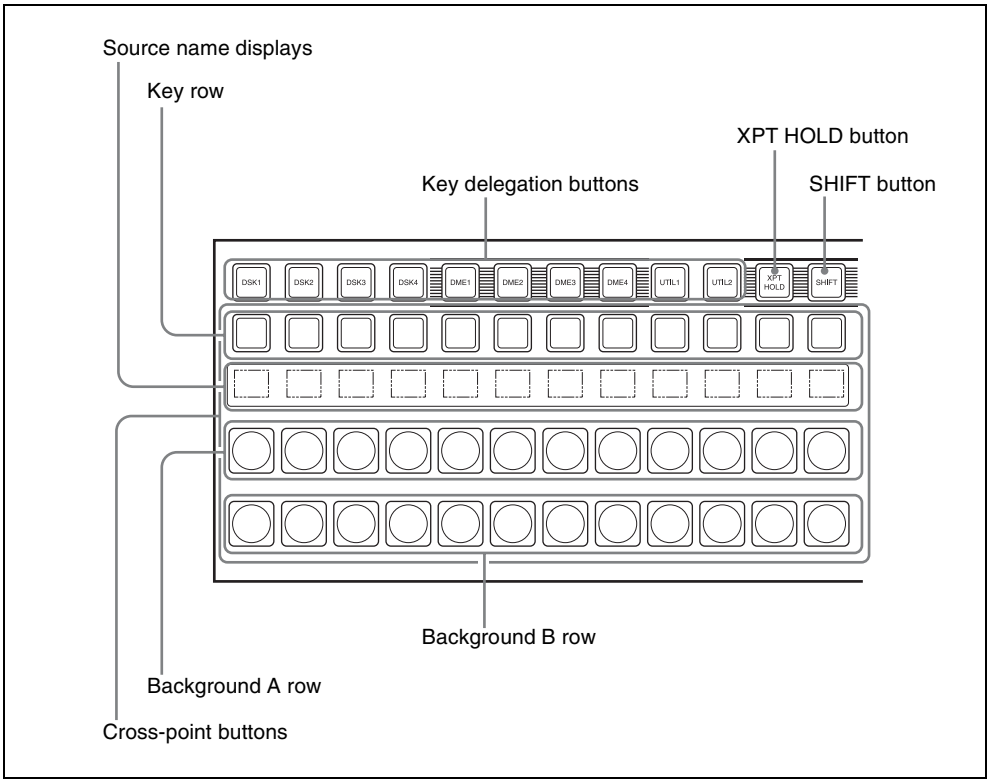
Video Processing Flow

The switch from the current video stream (appearing on the corresponding program monitor) to a new video stream is referred to as a transition.
The following illustration shows the flow of operations for carrying out a transition on an M/E bank or the PGM/PST bank.


Select current background video (page 108)
Select next transition (page 116)
Background
Keys 1 to 8
Select new background video (page 108)
Make key settings (page 155)
Select transition type (page 116)
Cut
Mix
NAM
Super mix
Preset color mix
Wipe
DME wipe
Make wipe settings (page 229)
Make DME wipe settings (page 273)
Preview the effect of transition (page 146)
Execute the transition (page 134)

Signal Selection

You carry out signal selection with the cross-point buttons in the cross-point control block of the M/E bank or PGM/PST bank, and the buttons in the auxiliary bus control block.



Cross-point control block

Basics of Signal Selection

Each of the M/E bank and auxiliary bus control block has cross-point buttons. These buttons are identified by numbers common to all of the banks and block, and a signal is assigned to each number.
The basis of signal selection is to select, in a cross-point button row, the cross-point button to which is assigned the desired signal.

Bus Selection

The key row is shared by multiple buses.
To assign a bus to the cross-point buttons in the auxiliary bus control block, press one of the AUX delegation buttons to select the bus.

The following table illustrates the correspondence between buses and cross-point button rows, and the delegation operations.

Bank	Bus name	Cross-point button row	Delegation operation
M/E-1	Background A bus	Background A row	–
	Background B bus	Background B row	–
	Key 1 bus	Key row	Turn on the button to which the corresponding key is assigned.
	Key 2 bus		
	Key 3 bus		
	Key 4 bus		
	Key 5 bus [b]		
	Key 6 bus [b]		
	Key 7 bus [b]		
	Key 8 bus [b]		
PGM/PST	Program bus	Program row	–
	Preset bus	Preset row	–
	DSK 1 bus	DSK row	Turn on the button to which the corresponding key is assigned.
	DSK 2 bus		
	DSK 3 bus		
	DSK 4 bus		
	DSK 5 bus [b]		
	DSK 6 bus [b]		
	DSK 7 bus [b]		
	DSK 8 bus [b]		
M/E-1, PGM/PST	Utility 1 bus	Key row	Turn on the [UTIL1] button
	Utility 2 bus		Turn on the [UTIL2] button
	DME 1 video bus		Turn on the [DME1] button [a]
	DME 2 video bus		Turn on the [DME2] button [a]
	DME 3 video bus		Turn on the [DME3] button [a]
	DME 4 video bus		Turn on the [DME4] button [a]

Bank	Bus name	Cross-point button row	Delegation operation
Auxiliary bus control block [c]	AUX1 to AUX48 buses	The key row of the bank selected with the bank selection buttons in the auxiliary bus control block	Turn on the appropriate buttons in accordance with the signal assignment made in the Setup menu.
	Frame memory source 1 and frame memory source 2 buses		
	DME 1 to DME 4 video buses		
	DME 1 to DME 4 key buses		
	Edit preview bus		
	M/E-1 UTILITY 1 and M/E-1 UTILITY 2 buses		
	P/P UTILITY 1 and P/P UTILITY 2 buses		
	M/E-1 Key 1 fill to M/E-1 Key 8 fill buses		
	M/E-1 Key 1 source to M/E-1 Key 8 source buses		
	DSK 1 fill to DSK 8 fill buses		
	DSK 1 source to DSK 8 source buses		
	M/E-1 external DME bus		
	P/P external DME bus		
	DME UTILITY 1 and DME UTILITY 2 buses		

a) To turn on the [DME1] to [DME4] buttons requires one of the [KEY1] to [KEY8] and [DSK1] to [DSK8] buttons to be on.
b) An assignment is required for keys 5 to 8.
c) An assignment to the delegation buttons is required in setup, to assign the bus for operations.

Signal Assignment and Selection

Assigning signals to buttons

Each cross-point button has a button number, to which you assign a signal. In addition to the signals input to the PRIMARY INPUTS 1 to 144 connectors, the PREMIUM INPUTS 1 to 20 connectors, or the FC INPUTS 1 to 16 connectors on the rear panel of the switcher, you can also select signals generated within the switcher.

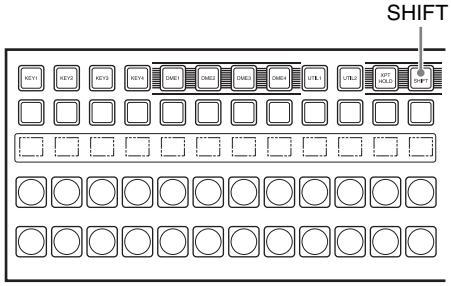
Each button has assigned to it a video signal and a key signal, forming a pair. You can set these video and key combinations in a Setup menu.

For details of Setup menu operations, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 3).

Cross-point button control block button numbers

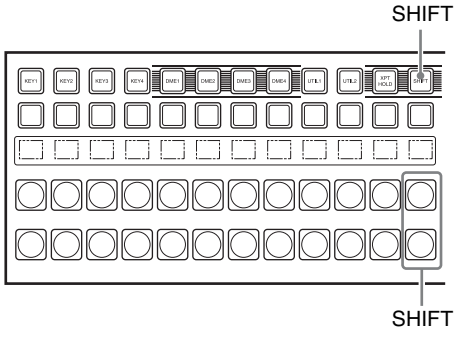
On the M/E and PGM/PST banks, each cross-point button has two button numbers, and you use the [SHIFT] button to switch between these numbers. The button numbers are as follows.

Button numbers when all 12 buttons are used as cross-point buttons.



When the SHIFT button is off:	1	2	3	4	5	6	7	8	9	10	11	12
When the SHIFT button is on:	13	14	15	16	17	18	19	20	21	22	23	24

Button numbers when the rightmost buttons (12th buttons) are used as SHIFT buttons.



When the SHIFT button is off:	1	2	3	4	5	6	7	8	9	10	11
When the SHIFT button is on:	12	13	14	15	16	17	18	19	20	21	22

Notes

You can use the rightmost button (number 12) as a [SIDE FLAG] button. In this case, the shift button moves one to the left, to number 11, and the button numbers are offset by one.

For details of the [SIDE FLAG] button, see "Cross-Point Settings (Xpt Assign menu)" in Chapter 19 (Volume 3).

Inhibiting cross-point button operations

For each cross-point button, you can temporarily inhibit operations.

Notes

This setting is cleared when you reset the control panel.

Assigning a button to the function of disabling cross-point button operation

You can assign the button to be used for the operation to a user preference button, in setup. The [Inhibit All Clear] function is also assigned to this button. *(See "Setting Button Assignments (Prefs/Utility menu)" in Chapter 19 (Volume 3).)*

Buses for which operations can be inhibited

This setting applies to the auxiliary bus control block and the cross-point buttons in each switcher bank.

For example, if you make the setting for one cross-point button in a switcher bank, this inhibits operation of all cross-point buttons with the same number in the following buses.
The corresponding name also disappears from the source name display.

- Background A, background B
- Keys 1 to 8
- Utility 1, Utility 2
- DME utility 1, DME utility 2
- External DME

To inhibit operation of a cross-point button

Hold down the button which "Inhibit Set" is assigned, and press the cross-point button whose operation you want to inhibit.
The button you pressed flashes amber, and this makes the operation inhibited.

Notes

Even when you inhibit operation of a cross-point button, macro attachment settings are still possible *(see "Setting and Canceling a Macro Attachment" in Chapter 16 (Volume 2))*.

To clear a cross-point button operation inhibit setting

Hold down the button to which "Inhibit Set" is assigned, and press the button whose operation is inhibited (flashing amber).
This clears the operation inhibit setting for the button you pressed.

To clear all operation inhibit settings

Press the button to which "Inhibit Set" is assigned and the button to which "Inhibit All Clear" is assigned simultaneously.

Selection of signals linked with the audio mixer

When you select a signal in a switcher bank background A row or AUX bus control block which is set to be linked with the audio mixer, the program output of the audio mixer follows the signal selection.

For details of the setting, see "Cross-Point Settings (Xpt Assign menu)" in Chapter 19 (Volume 3).

Notes

- For details of audio mixers that can be connected, contact your Sony service or sales representative.
- When the signal is switched with a snapshot, keyframe, and so on, the audio mixer is not linked.
- When bus fixed mode is selected in setup *(see page 143)*, the audio mixer program output is linked to the bus output as the background.

Signal Name Display

You can attach a name (source name) to each signal assigned to a cross-point button, with a maximum of 16 characters.

- The source name displays in the cross-point control block and auxiliary bus control block show the source names of the video signals assigned to numbers 1 to 12 (or 11).
- To display the source names for shifted numbers (13 to 24 or 12 to 22), press the [SHIFT] button to the right of the key row delegation buttons.
- To display the source names of the key signals assigned to button numbers, hold down one of the key delegation buttons [KEY1] to [KEY8] or [DSK1] to [DSK8] buttons or, for the auxiliary bus control block, hold down the [KEY] button.

Colors of lit cross-point buttons

In a particular row of cross-point buttons, only the last pressed button is effective, and lights amber or red. The amber indicates the "low tally" state, and the red indicates the "high tally" state, to indicate whether or not the selected signal appears in the final output video.

Significance of colors of lit cross-point buttons

Color	State	Significance
Amber	Low tally	Does not appear in final output video
Red	High tally	Appears in final output video

Transitions

Selecting the Next Transition

To execute a transition, it is first necessary to decide how the image will be changed as a result of the transition. This selection is carried out using the next transition selection buttons *(see page 52)* in the transition control block of each M/E or PGM/PST bank.

For details of operations, see "Procedure for Basic Transition Operation" (page 119).

Transition Types

Selecting the transition type determines the way in which the transition occurs. Carry out the type selection with the transition type selection buttons in the transition control block of each M/E or PGM/PST bank.

For details of this operation, see "Procedure for Basic Transition Operation" (page 119).

The following are the transition types.

Mix

This is a dissolve, in which the new video progressively fades in over the current video, with the sum of the two video outputs maintained constant. At the mid-point of the transition (when the fader lever is in the center position), the output of each is 50%.
This transition type can also be selected for an independent key transition. In this case, the key either dissolves in or dissolves out similarly, with the progress of the transition.

NAM (non-additive mix)

In this dissolve, the current video and new video signals are compared, and the signal with the higher luminance level is given priority in the output. The current video is maintained at 100% output for the first half of the transition as the new video increases progressively to 100%, then the current video is progressively reduced from 100% to zero in the second half with the new video maintained at 100% output.

Notes

This transition type is not available for an independent key transition.

Super mix

In this dissolve, the current video is maintained at 100% output for the first half of the transition as the new video is mixed while increasing progressively to 100%, then the current video is progressively reduced from 100% to zero in the second half with the new video maintained at 100% output.

For details on super mix settings, see page 130.

Notes

This transition type is not available for an independent key transition.

Preset color mix

This is a two-stage dissolve, comprising two transitions, the first a dissolve to a color matte, and the second from the color matte to the new video.
In the first transition, the current video is replaced by the color matte in a mix (dissolve), then in the second transition the color matte is replaced by the new video also in a mix (dissolve).

For details on color matte settings, see page 131.

Notes

This transition type is not available for an independent key transition.

Wipe

A wipe replaces the current video by the new video according to a predetermined pattern. This transition type can also be selected for an independent key transition.

For details, see Chapter 5 “Wipes” (page 227).

DME wipe

Using a DME effect, it is possible to obtain a transition to a new image from the current image, as in a wipe. You can also use this transition type as an independent key transition.

For details, see Chapter 6 “DME Wipes” (page 261).

Clip transitions

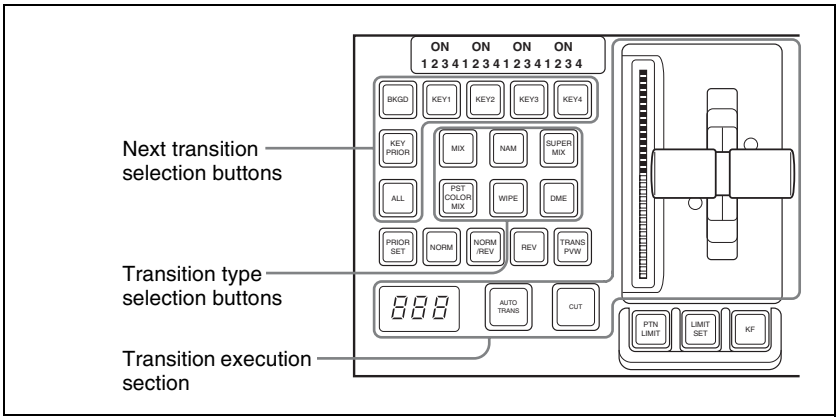
Linked to a mix (dissolve) or wipe transition, a frame memory clip (movie) is played back.

Cut

A cut switches instantaneously from the current video to the new video. When the next transition is a key transition, the key cuts in or out instantaneously.

Procedure for Basic Transition Operation

The positions of the principal buttons used for basic transition operation are as follows.



Transition control block

1 In the cross-point control block, select the background video with the background A row of cross-point buttons.

2 Select the way in which the transition will affect the image, using the next transition selection buttons in the transition control block.

For an overview, see "Selecting the Next Transition" (page 116).

To change the background: Press the [BKGD] button, turning it on.

To insert or delete a key: Press one of the [KEY1] to [KEY4] buttons (or [DSK1] to [DSK4] buttons in the PGM/PST bank), turning it on. *(For details of the operation to select [Key5] to [Key8], see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459) in Appendix (Volume 1).*

To enable the key priority setting, which determines the key overlay order after the transition: Press the [KEY PRIOR] button, turning it on.

You can press more than one button at the same time.

To change the keys and background presets in Setup menus simultaneously: Press the [ALL] button.

To allocate a particular next transition button to the [ALL] button function, see "Operation Settings (Operation Menu)" in Chapter 19 (Volume 3).

3 For the transition to change the key priority, set the priority for after the transition.

When using keys 1 to 8, see "Priority Setting for Keys 1 to 8" (page 127). For details of the key priority setting operation, see "Key Priority Setting" (page 122).

4 Select the new video used for the transition.

- In the background B row of cross-point buttons, select the new background video.
- When inserting a key, select the key signal, and make any required settings.

For details of key settings, see Chapter 4 "Keys" (page 155).

To carry out a cut transition, skip to step **7**; otherwise continue to step **5**.

5 Select one of the transition type selection buttons in the transition control block.

To carry out a dissolve to the new video: Press one of the [MIX], [NAM], [SUPER MIX], and [PST COLOR MIX] buttons, turning it on.

To carry out a wipe: Press the [WIPE] or [DME] button, turning it on.

To carry out a transition while playing back a frame memory clip: Press one of the buttons corresponding to the clip to be used (FM1&2CLIP, FM3&4CLIP, FM5&6CLIP, and FM7&8CLIP).

You can also use the Misc >Transition menu to select a desired transition type for the M/E or PGM/PST bank. *(See "Selecting the Transition Type by a Menu Operation" (page 129).)*

For an overview of the transition types, see "Transition Types" (page 116).

Notes

The transition type selection buttons in the transition control block can be interchanged in the setup menu.

For details, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3).

6 Make the required settings, according to the selected transition type.

For details of the settings, see the relevant section.

Super mix: *"Super Mix Settings" (page 130)*
Preset color mix: *"Color Matte Settings" (page 131)*
Wipe: *"Basic Procedure for Wipe Settings" (page 229)*
DME Wipe: *"Basic Procedure for DME Wipe Settings" (page 273)*
Clip transition: *"Clip Transition Operations" (page 331)*
Using the transition preview function *(page 146),* you can check the transition on the preview monitor.

7 Carry out the transition in the transition execution section.

For a gradual transition such as a mix (dissolve) or wipe: Press the [AUTO TRANS] button, or operate the fader lever.
To execute a transition by pressing the [AUTO TRANS] button, first set the transition rate (specified as the duration of the transition). (*See "Setting the Transition Rate" (page 135).)*
When you have selected a wipe or DME wipe as the transition type, you can also set the transition range. *(See "Pattern Limit" (page 137).)*
For an instantaneous transition: Press the [CUT] button.

For details, see "Executing a Transition" (page 134).

Transition linked to the audio mixer

If the video signal selected in the background B row is linked to the audio mixer in setup, then the audio mixer sound changes with the transition. That is, pressing the [AUTO TRANS] button gives a cross fade, and pressing the [CUT] button gives an instantaneous sound switch.

For details of setup, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 3).

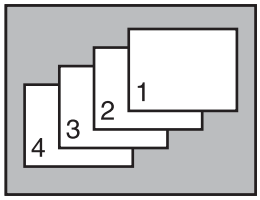
Notes

- The audio mixer is not linked to a snapshot or key frame transition.
- The audio mixer is not linked to a transition using the fader lever.
- If the bus-fixed mode *(see page 143)* is selected in the setup menu, and the fader lever is in the lowest position, there is a cross fade from the audio selected on the B row to the audio selected on the A row.
- The audio mixer is not linked to a key transition.
- In the following cases, the audio and video may be out of sync.
  - When carrying out a cross fade in some DME wipes (for example, "picture in picture")
  - When executing a preset color mix in two-stroke mode
- For details of audio mixers that can be used, contact your Sony service or sales representative.

Key Priority Setting

If a number of keys are already inserted in the current video, you can check or change the key priority, that is to say, the order in which the keys are overlaid. When a key priority ([KEY PRIOR]) is selected as the next transition, you can also change the key priority in the new video.

The key priority values go from 1 to 4, with a higher priority key being “in front” as seen on the screen.



Priority sequence on the screen

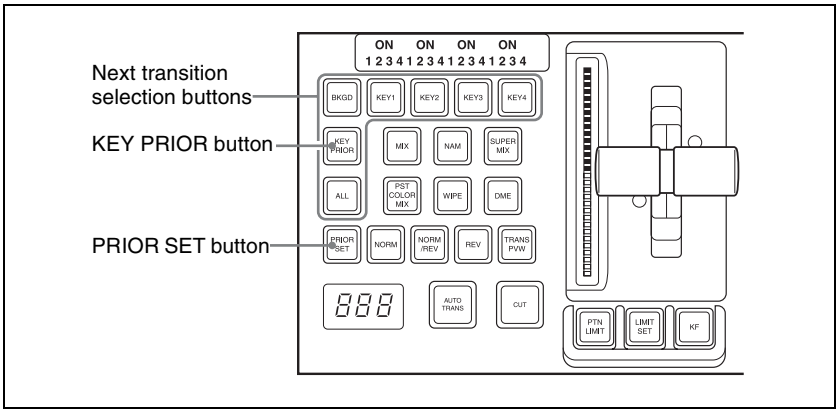
There are two ways of setting the priority: either using the [PRIOR SET] button in the transition control block, or using the Misc menu to access the Key Priority menu for the M/E or PGM/PST bank.

Notes

When the operating mode is set to multi program, the key priority setting cannot be made.

Setting the Key Priority in the Transition Control Block

The positions of the buttons used for the operation are as follows.



Transition control block

Changing the currently inserted key priority

1 If the next transition selection button [KEY PRIOR] is on, press another next transition selection button to turn the [KEY PRIOR] button off.

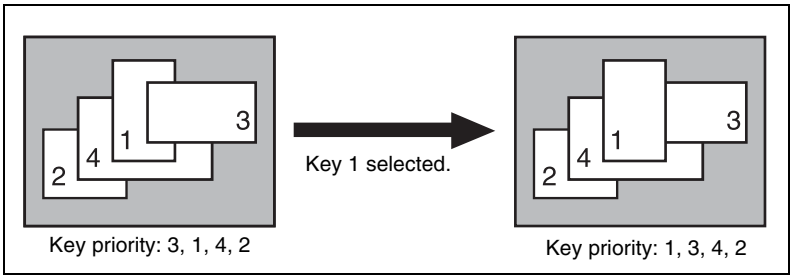
(When the [KEY PRIOR] button is on, the transition control block switches to the mode for changing the key priority for after the transition.)

2 Holding down the [PRIOR SET] button, press the one of the next transition selection buttons [KEY1] to [KEY4] ([DSK1] to [DSK4] buttons in the PGM/PST bank) for the key to appear on top.

Notes

- To select [Key5] to [Key8], or [DSK5] to [DSK8] requires an assignment. *For details, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459).*
- The key priority establishes a separate priority order within each of the groups of keys 1 to 4 and keys 5 to 8. You can make any setting within the groups of keys 1 to 4 or keys 5 to 8, but not for combinations of keys from different groups. For example, it is not possible to set a priority sequence of keys 1, 5, and 2. *For details, see "Setting the Key Priority in the Transition Control Block" (page 122).*

The selected key now appears on top, on the program monitor.
The priority of keys other than the selected one does not change.



To change the priority of more than one key, repeat this operation as required.

Changing the key priority for after the transition

When executing a transition, turning on the next transition selection button [KEY PRIOR] causes the keys to be rearranged based on the set priority. To set the key priority for after the transition, use the following procedure.

1 In the transition control block, hold down the [PRIOR SET] button and press the [KEY PRIOR] button to turn it on. Do not release the [PRIOR SET] button before advancing to step **2**.

The [KEY PRIOR] button lights green, and it becomes possible to change the key priority setting for after the transition.

2 Hold down the [PRIOR SET] button, and press the one of the next transition selection buttons [KEY1] to [KEY4] ([DSK1] to [DSK4] buttons in the PGM/PST bank) for the key you want to bring to the front after the transition.

To set the priority to be the same as before the transition, press the [BKGD] button.

Notes

- The [BKGD] button is only effective when in the mode for changing the key priority for after the transition.
- To select [Key5] to [Key8], or [DSK5] to [DSK8] requires an assignment. *For details, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459).*
- The key priority establishes a separate priority order within each of the groups of keys 1 to 4 and keys 5 to 8. You can make any setting within the groups of keys 1 to 4 or keys 5 to 8, but not for combinations of keys from different groups. For example, it is not possible to set a priority sequence of keys 1, 5, and 2. For details, *see "Setting the Key Priority in the Transition Control Block" (page 122).*

When the next transition selection button [KEY PRIOR] is on, the selected key appears on top on the preview monitor. The priority of keys other than the selected one does not change.

3 To change the priority of more than one key, repeat the previous operation as required.

4 Execute the transition.

The keys are rearranged based on the set priority.

Setting the Key Priority by a Menu Operation

When using keys 1 to 8, set the priority separately for the two groups. For details, see "Priority Setting for Keys 1 to 8" (page 127).

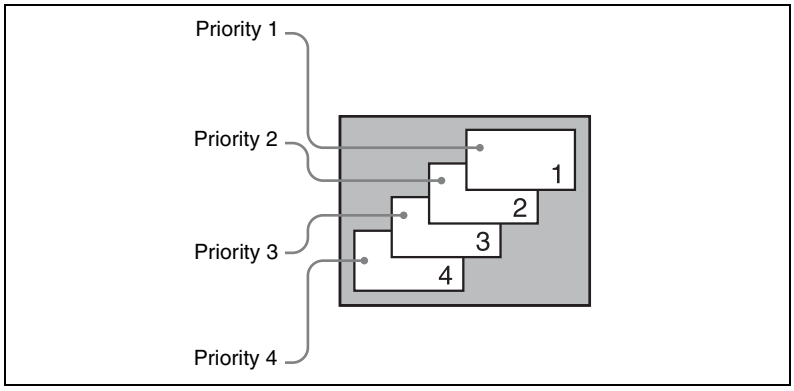
Changing the priority of the currently inserted keys

1 In the M/E or PGM/PST menu, select first VF7 'Misc,' then HF3 'Key Priority.'

The Key Priority menu appears.

2 For each of <Priority1>, <Priority2>, <Priority3>, and <Priority4>, select a key, to determine the key priority sequence.

The keys are inserted in the key priority sequence with priority 1 at the front.



Notes

It is not possible to select the same key for two or more priority numbers.

The keys appear in the set order on the program monitor.

Changing the key priority for after the transition

1 In the M/E or PGM/PST menu, select first VF7 ‘Misc,’ then HF4 ‘Next Key Priority.’

The Next Key Priority menu appears.

2 For each of <Priority1>, <Priority2>, <Priority3>, and <Priority4>, select a key, to determine the key priority sequence.

*For details of the key priority sequence, see the figure shown for step **2** in the previous item (see page 125).*

The keys appear in the set order on the preview monitor.

3 Execute the transition.

The keys are rearranged in the set order on the program monitor.

Display of the Key Output Status and Key Priority

You can check whether keys are currently output, and the key priority setting, using the key status display in the transition control block of the M/E or PGM/PST bank.
The display is above the next transition selection buttons [KEY1] to [KEY4] ([DSK1] to [DSK4] buttons in the PGM/PST bank).

Notes

You can change the assignment of the next transition selection buttons [KEY1] to [KEY4]. If this is changed, the output status and priority is shown for the assigned key.

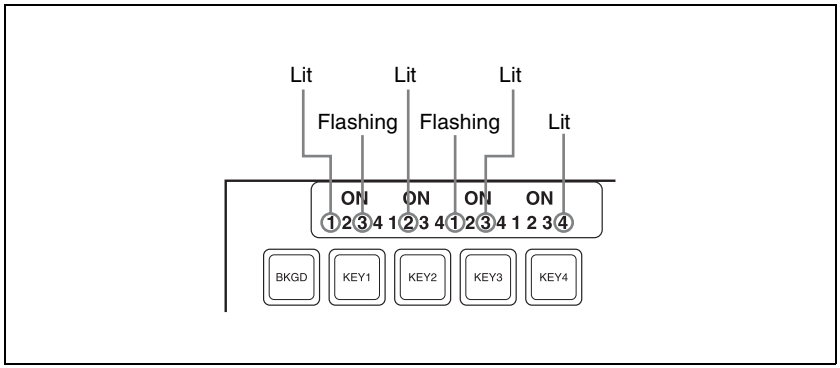
Display of the key output status

When a key is included in the output from the M/E or PGM/PST bank, the corresponding ON indicator lights.

Key priority display

The key priority is indicated by numerals 1 to 4 lighting.
The topmost key as seen on the program monitor is priority 1, and the keys underneath are numbered 2, 3, 4 away from the viewer *(see page 125).*

To display the key priority for after the transition, press the [KEY PRIOR] button in the transition control block, turning it on. For keys for which the priority after the transition is different from the current priority, the corresponding numerals 1 to 4 flash. For a key with the same priority, the indication remains on.
Example key status display given when the [KEY PRIOR] button is pressed:
Current key priority: 1, 2, 3, 4
Key priority after the transition: 3, 2, 1, 4
Indicators: 1, 3 (flashing), 2, 1 (flashing), 3, 4



Example key status display (showing the key priority after the transition)

Priority Setting for Keys 1 to 8



Set the priority for each of the groups consisting of keys 1 to 4 and keys 5 to 8.

1 In the VF7 ‘Misc’ menu, select HF3 ‘Key Priority,’ to display the Key Priority menu.

2 In <Higher Group>, press the button for the group you want to be higher.

The button you pressed lights green, and this becomes the reference group.

3 Set the reference group priority.

4 In <Higher Group>, select the other group.

5 Set the priority for the other group.

Selecting the Transition Type by a Menu Operation

You can also select the required transition type by a menu operation.

1 In the M/E or PGM/PST menu, select first VF7 ‘Misc,’ then HF1 ‘Transition.’

The Transition menu appears.

2 Select the required transition type in the <Transition Type> group.

The parameter settings can now be adjusted with the knobs according to the selected transition type.

For details, see the following.
- *“Super Mix Settings” (page 130)*
- *“Color Matte Settings” (page 131)*
- *“Setting the Transition Rate” (page 135)*

Notes

When multi-program mode is selected in the Setup menu *(see “Settings for Switcher Configuration (Config Menu)” in Chapter 20 (Volume 3)),* there may be cases in which two or more transition types have been selected.

Super Mix Settings

You can set the output levels of the current and new video signals at the mid-point of the transition, in the range 0 to 100%.

Notes

This transition type is not available for an independent key transition.

1 In the M/E or PGM/PST menu, select first VF7 ‘Misc,’ then HF1 ‘Transition.’

The Transition menu appears.

2 Select [Super Mix] in the <Transition Type> group.

3 Turn the knobs to adjust the output levels.

Knob	Parameter	Adjustment	Setting values
2	A Gain	Background A output level	0.00 to 100.00%
3	B Gain	Background B output level	0.00 to 100.00%

Color Matte Settings

You can specify the color matte by luminance, saturation, and hue values. Also, in place of a color matte you can use an image selected on the utility 2 bus.

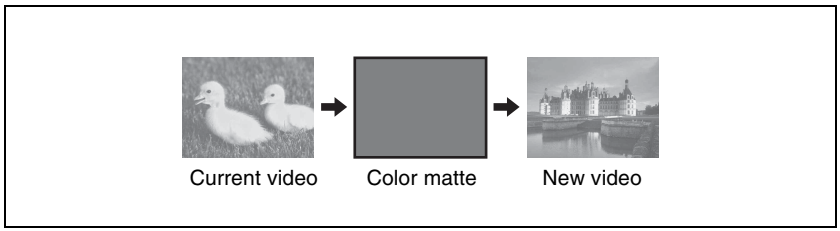
Notes

- This transition type is not available for an independent key transition.
- In the multi-program mode, you can use a preset color mix only when selecting the background for the next transition.

One-stroke mode and one-time mode

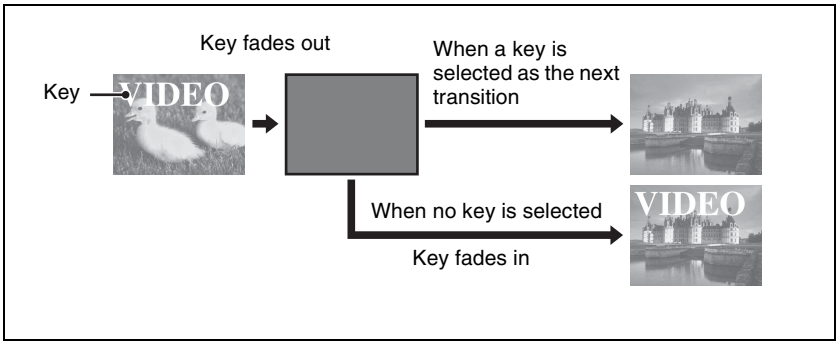
- You can make a setting such that a preset color mix is carried out in a single transition. This is called “one-stroke mode.”
  When the bus fixed mode is selected with a Setup menu setting, a preset color mix is always carried out in the one-stroke mode.
- You can also make a setting such that when a preset color mix is completed, the next transition switches to the previous transition type automatically. This is called “one-time mode.”

When only the background is changed



Preset color mix (changing background only)

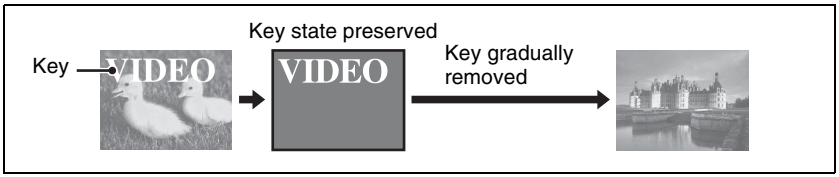
When a key is inserted



Preset color mix (transition including key)

By means of a Setup menu setting, it is possible to preserve the key state while carrying out the color matte mix.

When, with a key inserted, a key is selected in the next transition



Preset color mix (when set to preserve key state)

Setting the color matte

1 In the M/E or PGM/PST menu, select first VF7 ‘Misc,’ then HF1 ‘Transition.’

The Transition menu appears.

2 Select [Preset Color Mix] in the <Transition Type> group.

3 In the <Preset Color Mix Fill> group, select one of the following.

Flat Color: monochrome color matte
Utility 2 Bus: signal selected on the utility 2 bus

4 When “Flat Color” is selected, turn the knobs to adjust the color matte.

Knob	Parameter	Adjustment	Setting values
2	Luminance	Luminance	0.00 to 100.00

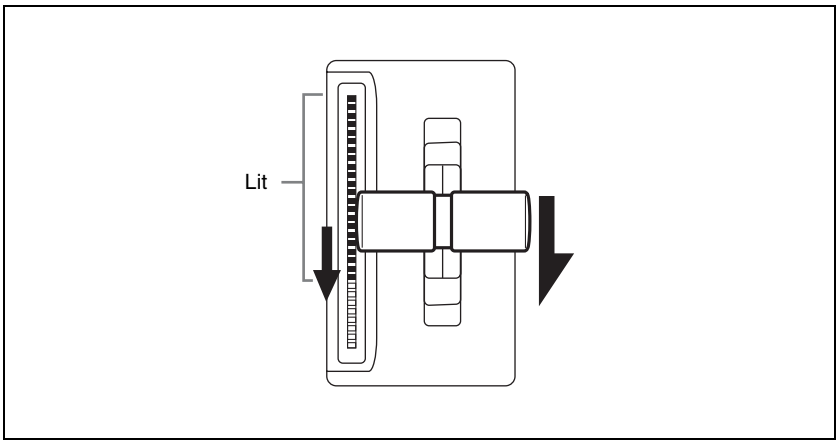
Knob	Parameter	Adjustment	Setting values
3	Saturation	Saturation	0.00 to 100.00
4	Hue	Hue	359.99 to 0.00

Executing a Transition

There are two modes of executing a transition: an auto transition by button operation or a manual transition using the fader lever.
It is also possible to combine both methods, taking control with the fader lever of an auto transition which has partly completed, or complete a transition started with the fader lever as an auto transition.
By combining common transitions with independent key transitions, different transition types can be applied to the background and keys, for example allowing a key wipe combined with a background dissolve.
When the audio mixer is linked in setup, you can carry out an auto transition, and also switch the sound with the audio mixer. *(See "Transition linked to the audio mixer" (page 121).)*

Transition Indicator Function

In each of the M/E banks and PGM/PST bank, to the left of the fader lever is a transition indicator composed of multiple LEDs. This indicator shows the state of the transition, whether auto or manual, by which LEDs are lit.



Transition indicator

For example, in the previous illustration, it can be seen that the transition is more than half completed.
When the transition is completed, all of the LEDs go off.

Setting the Transition Rate

There are two ways of setting the transition rate: using the numeric keypad control block to enter a numeric value, or using the Misc menu to access the Transition menu for the M/E or PGM/PST bank.
You can also display the transition rate and independent key transition rate for each of the M/E and PGM/PST banks, and change the settings. *(See "Displaying a List of Transition Rates and Changing the Settings" (page 361).)*

Notes

When a clip transition is selected as the transition type, it is not possible to set the transition rate.

Frame input mode and timecode input mode

For numeric input of the transition rate value, there are two modes: frame input mode and timecode input mode. The frame input mode is selected automatically when the frame display mode is selected. The timecode input mode is selected automatically when the timecode display mode is selected.
Frame input mode: The entered value is a number of frames.
Example: Entering 123 constitutes an entry of 123 frames
Timecode input mode: The entered value is a timecode value.
Example: Entering 123 constitutes an entry of 1 second 23 frames.

Notes

Whereas you can enter a value of up to 999 in frame input mode, a value not smaller than 10 seconds cannot be entered in timecode input mode.

Frame display mode and timecode display mode

For the transition rate display in the transition control block, there are two modes: frame display mode and timecode display mode. You can select one of these modes in setup. *(See "Operation Settings (Operation Menu)" in Chapter 19 (Volume 3).)*

Notes

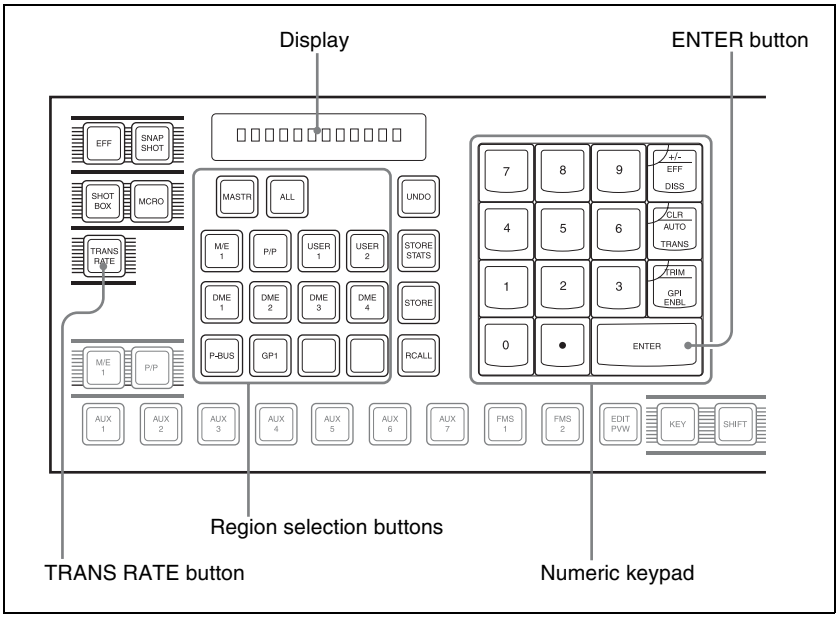
The setting is common to all banks of the switcher.

Frame display mode: Values are shown as from 0 to 999 frames. In this display mode, a value entered in timecode input mode is converted for display as a number of frames.

Timecode display mode: Values are shown as timecode values, consisting of seconds and frames. In this display mode, a value entered in frame input mode is converted for display as a timecode value. If the value consists of four or more digits, the last digit is not shown.

Example: A value of 9 seconds 23 frames appears as “9.23” and a value of 10 seconds 1 frame appears as “10.0.”

Setting the transition rate in the numeric keypad control block



Numeric keypad control block

1 In the numeric keypad control block, press the [TRANS RATE] button.

2 Press the region selection button for the M/E or PGM/PST bank for which you want to set the transition rate, turning it on.

The numeric keypad control block display now shows the selected region name and the current transition rate setting for the region.

3 With the numeric keypad, enter the transition rate.

- Enter a value of up to three digits.
- To clear the entry, press the [CLR] button.

4 Press the [ENTER] button.

This confirms the entry, and the selected region name and the set transition rate appear in the numeric keypad control block display.
The transition control block display of the same bank (M/E or PGM/PST) also shows the setting.

To enter a difference from the current value

After pressing the [+/–] button, enter the difference and press the [TRIM] button.
To change the sign (+ or –), press the [+/–] button.

Setting the transition rate by a menu operation

1 In the switcher bank, select first VF7 'Misc,' then HF1 'Transition.'

The Transition menu appears.

2 Select any transition type in the <Transition Type> group.

3 Turn the knob to set the transition rate.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Transition Rate	0 to 999 (frame count)

Displaying the transition rates in a menu and changing the settings

For each of the M/E and PGM/PST banks, you can display the transition rate and independent key transition rate, and change the settings.

For more details, see "Displaying a List of Transition Rates and Changing the Settings" (page 361).

Pattern Limit

When a wipe or DME wipe pattern is selected for the transition, you can specify the range of movement of the wipe pattern through the course of the transition, for each bank independently.
When the pattern limit function is enabled, carrying out a transition results in the following effect for example settings.

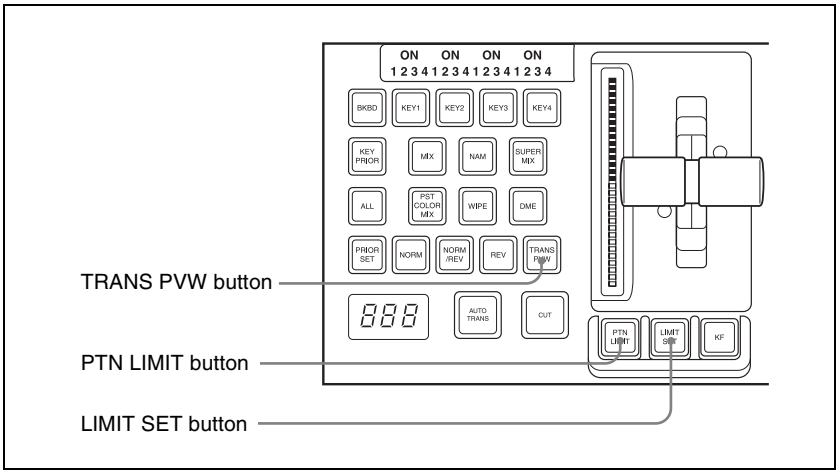
- When the limit value is set to 50%, the effect at the end of the transition is the same as when the fader lever is at the center position in the normal case (with the pattern limit function disabled); the wipe pattern does not complete.
- When the limit value is set to 0%, the wipe effect is completely disabled, and carrying out the transition produces no change in the image.

- When the limit value is set to the maximum 100%, the image changes in exactly the same way as when the pattern limit function is off, but when the transition is completed, the cross-point selections on the background A and B buses do not interchange.

There are two ways of setting a pattern limit: either by operating the fader lever to save the fader position, or by using the Wipe menu or DME Wipe menu to access the Edge/Direction menu for the M/E or PGM/PST bank.

Notes

- A pattern limit only applies when a wipe or DME wipe is selected as the transition type.
- A pattern limit cannot be applied to an independent key transition *(see page 148)*.



Transition control block

Setting the pattern limit with the fader lever

1 Move the fader lever to the position corresponding to a particular pattern size.

- First make sure that the [PTN LIMIT] button is off.
- To check the pattern size on the preview monitor, first press the [TRANS PVW] button, to select the transition preview mode *(see page 146)*.

2 Press the [LIMIT SET] button.

This sets the current fader lever position as the pattern limit.

Setting the pattern limit by a menu operation

1 When a wipe is selected as the transition type, in the M/E or PGM/PST menu, select first VF5 ‘Wipe,’ then HF4 ‘Edge/Direction.’

When a DME wipe is selected as the transition type, in the M/E or PGM/PST menu, select first VF6 ‘DME Wipe,’ then HF4 ‘Edge/Direction.’

The Edge/Direction menu appears.

2 Press the [Pattern Limit] button, turning it on.

3 Turn the knobs to adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Pattern Limit	Pattern limit	0.00 a) to 100.00% b)

a) 0.00%: Executing the transition does not change the video output at all.
b) 100.00%: The transition is the same as when no pattern limit is set, but the cross-point button selections of the background A and B buses do not interchange when the transition completes.

Executing a pattern limit transition

1 Press the [PTN LIMIT] button, turning it on.

The button you pressed lights amber.

2 Carry out the transition.

The transition progresses as far as the set pattern limit. Even if the transition completes, the cross-point button assignments of the background A and B buses do not interchange.

3 Carry out the transition once again.

The status before the previous transition is restored.

To cancel the pattern limit

To cancel the pattern limit after completion of step **3** in the previous procedure, press the [PTN LIMIT] button, turning it off.
If after carrying out step **2** in the previous procedure, the pattern limit has been reached, carry out the following procedure.

1 Press the [PTN LIMIT] button.

The button you pressed lights green.

2 Carry out the transition.

The [PTN LIMIT] button goes off, and the pattern limit state is released. Depending on the way in which the transition was executed, the action will be as follows.

- When you press the [CUT] button, the pattern limit is immediately released, and the image switches instantaneously.
- When you press the [AUTO TRANS] button, until the state of the next transition, the transition is carried out over the duration given by the transition rate.
- When you move the fader lever, the transition is carried out from the pattern limit state to the state before the pattern limit transition was carried out.
  Moving the fader lever even a little synchronizes the fader lever position with the transition state, and you can move the fader lever either in the forward direction or in the reverse direction.

Depending on the Setup settings, the transition may be executed at the instant you press the [PTN LIMIT] button, and the button goes off. In this case, execution continues for the time specified by the dedicated transition rate in the menu setting, as far as the state of the next transition.

For details of the setting, see "Settings Relating to Keys, Wipes, Frame Memory and Color Correction (Key/Wipe/FM/CCR Menu)" in Chapter 20 (Volume 3).

To set the transition rate when the pattern limit is released

1 In the <Pattern Limit Release> group of the Edge/Direction menu, select one of the following.

Auto Trans Rate: Use the transition rate set in the transition rate control block

Independ Trans Rate: Independent transition rate

2 If you selected "Independ Trans Rate" in step **1**, adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Independent transition rate	0 to 999 (frames)

Executing an Auto Transition

The following two modes can be used for auto transition.

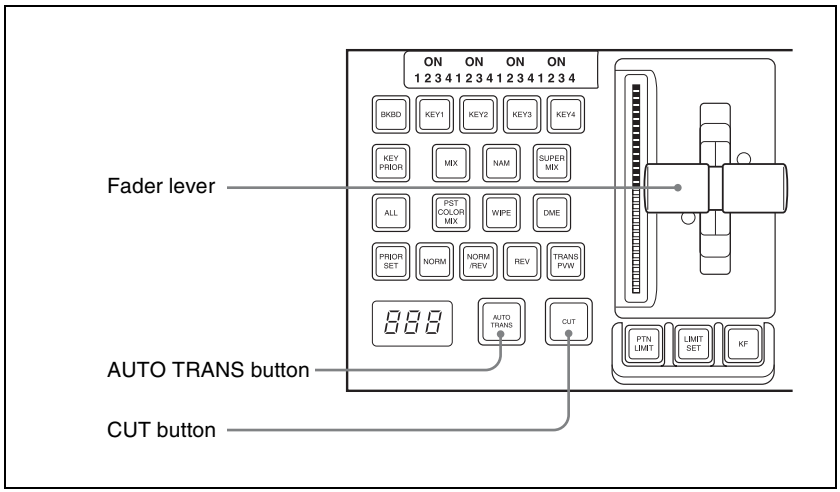
Cut

A cut switches instantaneously from the current video to the new video. When the next transition is a key transition, the key cuts in or out instantaneously.

Auto transition

The transition from the current video to the new video is carried out automatically at a constant rate, using the transition effect selected as the transition type.

You can set the transition rate in advance. *(See "Setting the Transition Rate" (page 135).)*



Transition control block

To execute a transition on the M/E or PGM/PST bank by a button operation, use the following procedure in the transition control block.

To carry out an instantaneous cut transition: Press the [CUT] button.

To carry out a gradual transition: Press the [AUTO TRANS] button.
This executes the transition at the preset transition rate (*see page 135).* While the transition is executing, the [AUTO TRANS] button lights amber. When it completes the button goes off.

To complete a partially executed transition instantaneously: Press the [CUT] button.
The [AUTO TRANS] button goes off.

Executing a Transition With the Fader Lever (Manual Transition)

Using the fader lever, you can manually control the progress of the transition. Moving the fader lever from one end of its travel to the other completes the transition.

To execute a manual transition with the transition control block fader lever, use the following procedure.

To carry out the transition completely: Move the lever over the full range of its travel.
To pause a partly executed transition: Stop moving the fader lever.
To resume a paused transition: Resume moving the fader lever.

Combinations of Auto and Manual Transitions

Using the [AUTO TRANS] button, the [CUT] button, and the fader lever, use the following procedures.

Moving the fader lever during an auto transition

During an auto transition started by pressing the [AUTO TRANS] button, operating the fader lever immediately enables the fader lever, and the [AUTO TRANS] button goes off. Thereafter, the fader lever controls the progress of the transition.

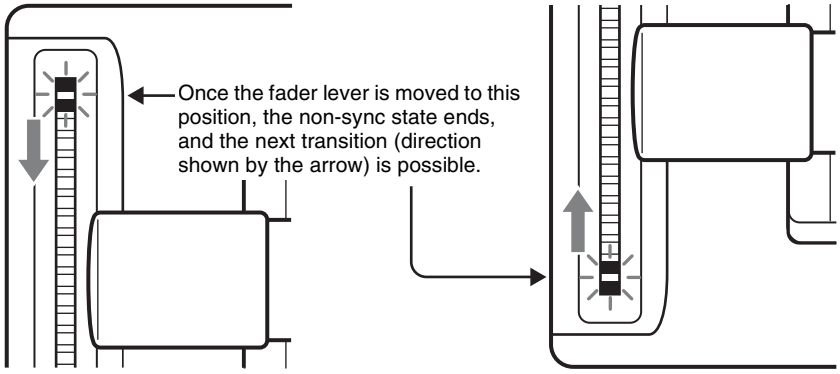
Executing an auto transition after partly moving the fader lever

- Press the [CUT] button to instantaneously complete the transition.
- Press the [AUTO TRANS] button to complete the rest of the transition at the preset transition rate.
  If the transition rate is set to 100 frames, and the fader lever has moved through $^{1}/_{4}$ of the transition, then the remaining $^{3}/_{4}$ of the transition is carried out in 100 frames.

Non-Sync State

If the fader lever is in an intermediate position when a transition is completed as an auto transition, then the lever position no longer agrees with the transition state. This is termed a non-sync state.

In a non-sync state, two lit LEDs indicate the position from which a normal transition can be carried out. This is either at one end position or both end positions of the fader lever travel.
Moving the fader lever toward the position of the lit LEDs does not carry out a transition, but when the fader lever reaches the end position the non-sync state is released, and it is now possible to carry out the next transition.



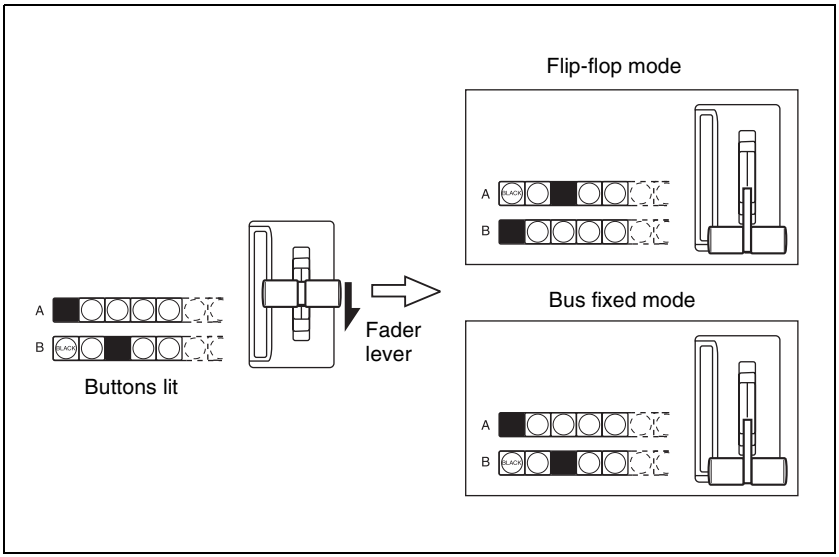
- If the fader lever is moved in the direction away from the lit LEDs, this carries out the next transition, over the remaining part of the fader lever travel.
- Even in a non-sync state, you can carry out an auto transition by pressing the [AUTO TRANS] button. During the auto transition, the indicators show the transition progress in the usual way, but when the transition completes, they once again indicate the non-sync state.

Fader Lever Operation in Bus Fixed Mode

Flip-flop mode and bus fixed mode

The following describes the difference between flip-flop mode and bus fixed mode, taking an M/E bank as an example; the functionality is the same, however, on the PGM/PST bank.
Normally, when a background transition is carried out on an M/E bank, the signals selected on the A and B rows of cross-point buttons are interchanged at the end of the transition. That is to say, except during a transition, the

background output is always from the background A bus. This is called “flip-flop mode.”
The alternative is known as “bus fixed mode,” in which there is no bus interchange. In this mode, when the fader lever is at the top of its travel the output from the A bus is always 100%, and when the fader lever is at the bottom of its travel the output from the B bus is 100%.



Flip-flop mode and bus fixed mode

In the bus fixed mode there is a fixed relationship between the position of the fader lever and the signal output on each bus. Depending on the direction of the transition, the fader lever must therefore always be moved in a particular direction, as shown in the following table. This does not affect an auto transition, which is executed regardless of the fader lever direction.

Fader lever operating direction in bus fixed mode

Next transition	Transition direction	Fader lever movement
Background	A → B	Downward
	B → A	Upward
Keys 1, 2, 3, 4, 5, 6, 7, and 8	On → Off (deletion)	Downward
	Off → On (insertion)	Upward

- When a transition applies to a combination of more than one of the background and keys 1, 2, 3, 4, 5, 6, 7, and 8, then the transition for all of these must be in the same direction complying with the above table.
- If as a result of an auto transition, for example, the fader lever position does not agree with the signal output, this is a non-sync state *(see page 142)* and

LEDs light at both end positions of the fader lever travel. Moving the fader lever does not carry out a transition, but when the fader lever reaches the end position the non-sync state is released, and it is now possible to carry out the next transition. If the fader lever is moved in the direction away from the lit LEDs, this carries out the next transition, over the remaining part of the fader lever travel.

Transition Preview

With the preview output of the M/E banks and PGM/PST bank, you can check the effect of a transition in advance. To carry out a transition preview, press the [TRANS PVW] button in the transition control block.

Notes

In multi-program mode, DSK mode or bus fixed mode *(page 143)*, it is not possible to carry out a transition preview.

Carrying out a transition preview

1 In the M/E or PGM/PST bank transition control block, press the [TRANS PVW] button.

The [TRANS PVW] button lights green, and the switcher is now in the transition preview mode. At this point, the preview output is the same as the program output before the [TRANS PVW] button was pressed.

2 Operate the fader lever, or press the [AUTO TRANS] button or [CUT] button.

On the preview monitor, you can check the effect of the transition.

To terminate a transition preview

There are three modes for a transition preview. To terminate a transition preview, carry out the operation which depends on the mode, and press the [TRANS PVW] button, turning it off.

Lock: Toggling the [TRANS PVW] button on and off switches between the transition preview mode and the normal mode.

Hold: The preview mode obtains only while the [TRANS PVW] button is held down.

One Time: Each time a transition ends, it reverts to the normal mode.

Set the transition preview mode in the following combinations.

For details, see Chapter 19 "Control Panel Setup (Panel)" (Volume 3).

Transition Preview mode	Switcher setup (Transition menu) <Transition Preview> group	Panel setup (Operation >Custom Button menu) <Trans Pvw> group
Lock	Normal	Lock

Transition Preview mode	Switcher setup (Transition menu) <Transition Preview> group	Panel setup (Operation >Custom Button menu) <Trans Pvw> group
Hold	Normal	Hold
One Time	One Time	–

Notes

- During a transition, whether executed with the [AUTO TRANS] button or the fader lever, it is not possible to press the [TRANS PVW] button.
- In bus fixed mode *(see page 143),* transition previews are not available.

Independent Key Transitions

What is an independent key transition?

In addition to common transitions, it is possible to carry out independent transitions on the keyers of the M/E banks and PGM/PST bank. These are called “independent key transitions.”
By carrying out an independent key transition in combination with a common transition, different transition types can be used for the background and keys. It is also possible to use different transition types for key insertion and key deletion by means of a Setup menu setting.

For details of this operation, see “Basic Independent Key Transition Operations” (page 151).

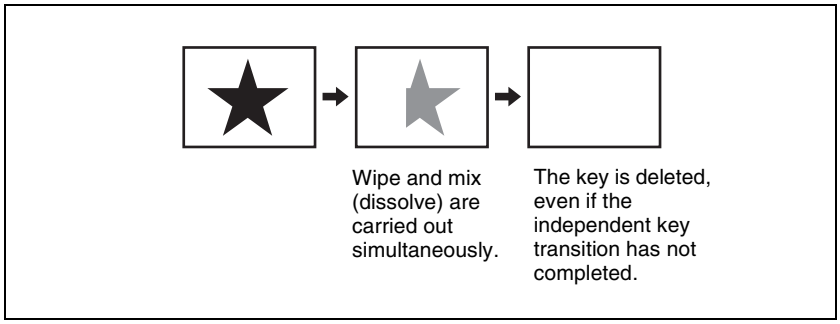
Combining other transitions with independent key transitions

When you set a common transition and a key independent transition for the same key, you can apply two different effects such as a wipe and mix (dissolve) *(see page 116)* to the key simultaneously.
When carrying out such a combination of transitions simultaneously on a key as auto transitions *(see page 140)*, the result depends on the timing of pressing the respective [AUTO TRANS] buttons.

Simultaneous execution

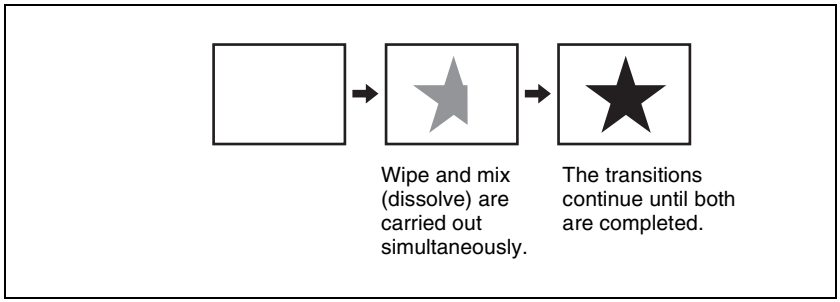
If the [AUTO TRANS] buttons for the two transitions are pressed simultaneously, the following is the result.
Note that in both cases the common transition is a wipe and the independent key transition is a mix (dissolve).

Deleting a key with simultaneous transitions: With the key inserted, it is deleted simultaneously with the two transitions.
When the common transition completes, even if the independent key transition is still not completed, the two end simultaneously.



Deleting a key with simultaneous transitions

Inserting a key with simultaneous transitions: With the key not inserted, it is inserted simultaneously with the two transitions. If the common transition or independent key transition ends first, the other continues to completion.



Inserting a key with simultaneous transitions

Time offset execution

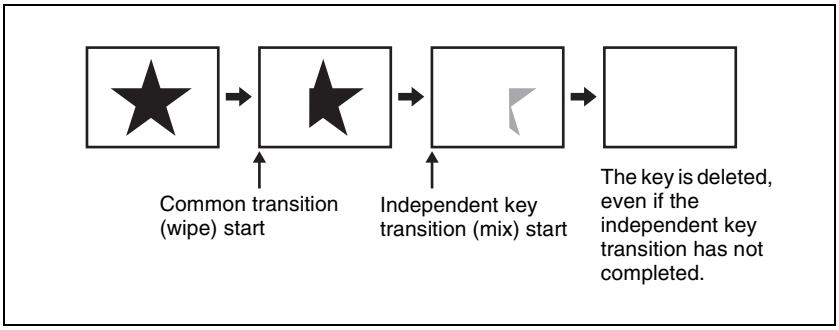
If the [AUTO TRANS] buttons for the two transitions are pressed with a time offset, the following is the result.

Note that in both cases the common transition is a wipe and the independent key transition is a mix (dissolve).

Time offset execution with the key inserted: With the key inserted, it is deleted with the two transitions acting with a time offset.

Whichever button is pressed first, when the common transition completes, even if the independent key transition is still not completed, the two end simultaneously.

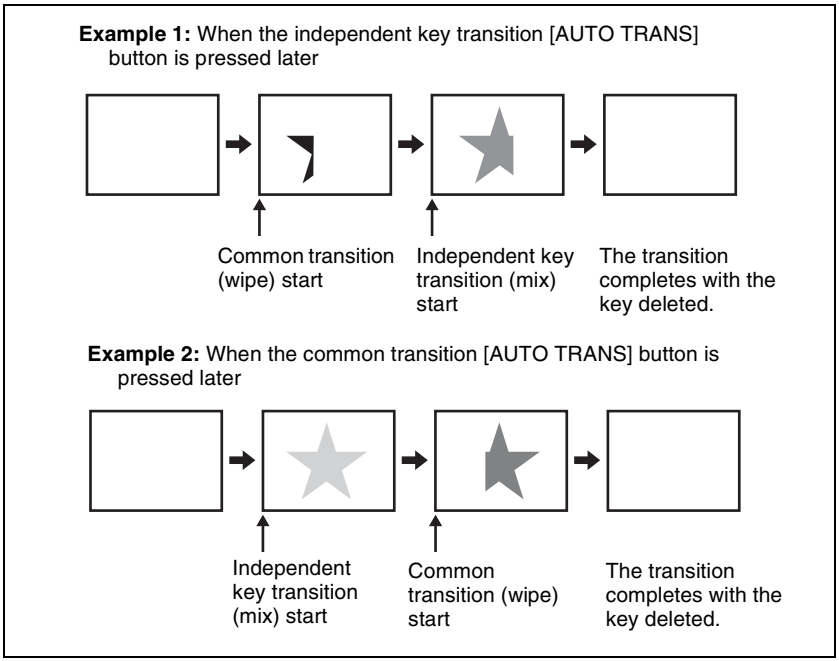
Example: When the independent key transition [AUTO TRANS] button is pressed later



Time offset execution with the key inserted

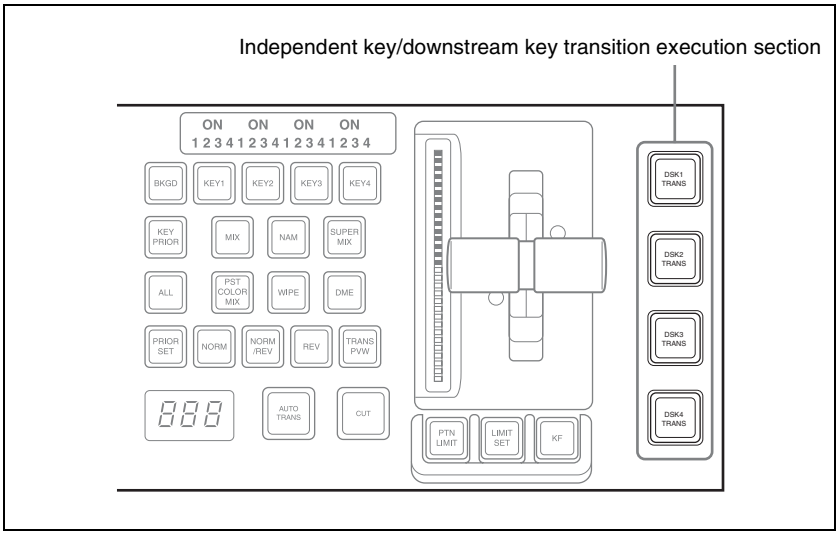
Time offset execution with the key not inserted: With the key not inserted, it is inserted with the transition whose [AUTO TRANS] button is pressed first.

Since the key is then in the inserted state, with the transition whose [AUTO TRANS] button is pressed later, the key is deleted. When the key is completely deleted, both transitions complete.



Time offset execution with the key not inserted

Basic Independent Key Transition Operations



Transition control block

You can set independent transitions for the keyers on the M/E or PGM/PST bank.
To execute an independent key transition, press the appropriate button in the independent key/downstream key transition execution section of the transition control block.
The color with which buttons are lit shows the status, as follows.
Lit green: During a transition
Lit amber: Key inserted
Lit red: Key inserted into final output video
Not lit: Key not inserted
To select the transition type and set the transition rate, use a menu operation.

Notes

- In an independent key transition, the pattern limit function is not available.
- The buttons for [Key5] to [Key8] and [DSK5] to [DSK8] require previous assignment in the Setup menu. *For details, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459).*

Setting the Independent Key Transition Type by a Menu Operation

You can also select the required independent key transition type by a menu operation.

1 In the M/E or PGM/PST menu, select first the desired one from VF1 'Key1' to VF4 'Key4,' then HF6 'Transition.'

The Transition menu for the selected appears.

2 Select the required transition type in the <Transition Type> group.

If, in the Setup menus, you set insertion/deletion as independent modes, make the settings for insertion in the <On Transition Type> group, and the settings for deletion in the <Off Transition Type> group.

Setting the Independent Key Transition Rate

There are two ways of setting the transition rate: using the numeric keypad control block to enter a numeric value, or using the Key menu to access the Transition menu for the M/E or PGM/PST bank.
You can also display the transition rate and independent key transition rate for each of the M/E and PGM/PST banks, and change the settings. *"Displaying a List of Transition Rates and Changing the Settings" (page 361).*
When the setup selection is for separate transition rates for inserting or deleting a key, you can set both rates independently. For example, with the system in the state with the key not inserted, the transition rate setting applies to key insertion.

Setting the independent key transition rate in the numeric keypad control block

1 In the numeric keypad control block, hold down the [TRANS RATE] button, and in the independent key transition control block, press the delegation button [KEY1] to [KEY8] ([DSK1] to [DSK8] in the PGM/PST bank) for the key for which you want to set the transition rate.

The numeric keypad control block changes to the mode for inputting the independent key transition rate, and its display now shows the corresponding region name and the current transition rate set for the region.

2 With the numeric keypad, enter the transition rate.

- Enter a value of up to three digits.
- To clear the entry value, press the [CLR] button.

For details of frame input mode and timecode input mode, see page 135.

3 Press the [ENTER] button.

This confirms the entry, and the selected region name and the set transition rate appear in the numeric keypad control block display.

To enter a difference from the current value

After pressing the [+/–] button, enter the difference and press the [TRIM] button.
To change the sign (+ or –), press the [+/–] button.

Setting the independent key transition rate by a menu operation

1 In the M/E or PGM/PST menu, select first the desired one from VF1 'Key1' to VF4 'Key4,' then HF6 'Transition.'

The Transition menu for the selected key appears.

2 Select any transition type in the <Transition Type> group.

If, in the Setup menus, you set insertion/deletion as independent modes, make the settings for insertion in the <On Transition Type> group, and the settings for deletion in the <Off Transition Type> group.

3 Turn the knob to set the transition rate.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Transition rate	0 to 999 (frame count)

Displaying the independent key transition rates in a menu and changing the settings

For each of the M/E and PGM/PST banks, you can also display the transition rate and independent key transition rate, and change the settings.

For more details, see "Displaying a List of Transition Rates and Changing the Settings" (page 361).

Chapter 4 Keys

Overview

A key is an effect in which a part of the background image is replaced by an image or superimposed text. The signal determining how the background is cut out is termed “key source,” and the signal that replaces the cut-out part is termed “key fill.”
The system component responsible for processing a key is referred to as a keyer.
Each M/E bank and the PGM/PST bank has eight keyers, and all of these keyers provide the same functions.

Notes

When the signal format is 1080P, four keyers can be used (keys 1 to 4).

Key Types

The key type indicates the manner in which the key source signal is used to cut out the background. In each bank, you can use the following key types. You can select the key type using the key type selection buttons in the key control block, or by a setting in the Type menu for the keyer. *(See “Key Type Setting” (page 164).)*

Luminance key

The background is cut out according to the luminance (Y) of the key source signal, and at the same time the key fill signal is cut out and then added to the background signal.

Linear key

This is a type of luminance key, but there is a reduced variability in gain, allowing more precise adjustment.

Color vector key

The key signal is created from a combination of the luminance and chrominance components of the key source signal. When perfect keying is not possible with a luminance key, this allows a key signal to be created even if the luminance level is low, provided that the colors have high saturation.

Clean mode

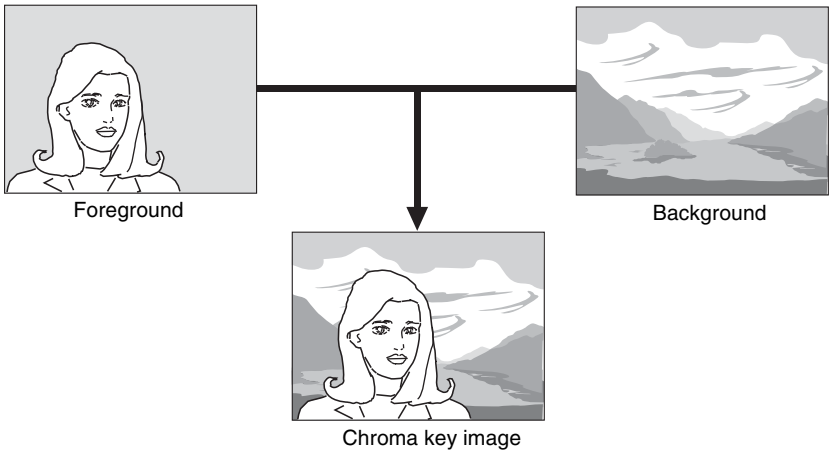
In a luminance key, linear key or color vector key, you can enable the clean mode. When the clean mode is on, the key source does not affect the key fill, which is added unchanged to the background. This improves the keyed image quality, but means that the part of the key fill signal which is not to be inserted must be completely black, or it will color the background. You set the clean mode with the Type menu of the respective keyer. *(See "Setting the key type in a menu" (page 164).)*

Note that in the following situations, the clean mode goes off, and cannot be turned on.

- When the key type is a pattern key
- When key inversion is on
- When the key fill is a matte
- When the key edge is an outline
- When the key edge is normal with soft edge being on
- When fine key is on
- When the key positioner is on

Chroma key

A key signal based on a particular color is used to cut out the background, and the key fill is then inserted. The inserted signal is also referred to as the foreground, and the composite image is called a chroma key image.



For details of chroma key composition, see "Chroma Key Composition" (page 166). For details of video adjustment operations and the adjustment items, see "Chroma Key Adjustments" (page 168).

Wipe pattern key

This uses the wipe pattern selected for a transition as the key source.

Key wipe pattern key

This uses the wipe pattern selected for an independent key transition as the key source.

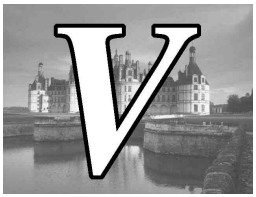
Note on wipe pattern modifiers

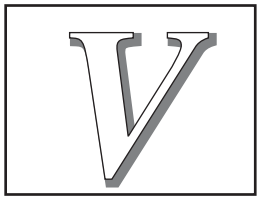
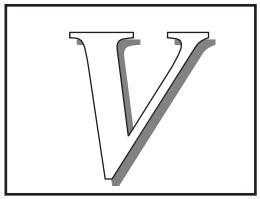
In a wipe pattern key or key wipe pattern key, you can apply various modifications, depending on the pattern used, and the modifiers in common with a wipe.
However, modifiers which relate to the wipe direction and edge are not reflected.

Key Modifiers

Edge modifiers

You can apply borders and other effects to the edge of the key. *(See "Key Edge Modifications" (pages 178 and 201).)*

Name	Effect	Image
Normal	This is the state with no key edge modifiers applied.	
Border	This applies a uniform width border to the edge of the key. You can adjust the border width and density. You can also enable the separate edge function, and adjust the top, bottom, left, and right border widths separately.	

Name	Effect	Image
Drop border	This applies a border below and to the right for example, of the key. You can adjust the border width, position, and density.	
Shadow	This applies a shadow below and to the right for example, of the key. You can adjust the shadow width, position, and density.	
Outline	This uses the outline of the original key as the key. You can adjust the width and density of the outline. You can also enable the separate edge function, and adjust the top, bottom, left, and right outline widths separately.	
Emboss	This applies an embossing effect to the outline of the key. You can adjust the width and position of the embossing, and the density. You can adjust the density separately for key fill and key edge. When embossing is on, the Fine Key and zabton functions go off.	–
Soft edge	This softens the edge of the key.	–
Zabton	This inserts a translucent pattern behind a key. You can adjust the pattern size, softness, density and color.	–

Edge type and key fill/key source position

The key edge modification function has two modes: a mode (“key drop ON mode”) in which the key fill/key source position moves downward, and a mode (“key drop OFF mode”) in which it does not move downward.

Key drop ON mode: The key fill/key source position moves downward by eight scan lines or four scan lines. When a drop border or shadow is selected, it is possible to apply a border to the top edge of the key.

Key drop OFF mode: The key fill/key source position does not move. When a drop border or shadow is selected, it is not possible to apply a border to the top edge of the key.

In the key drop ON mode, a menu setting selects between the mode ("4H mode") in which the key fill/key source position is lowered by four scan lines, and the mode ("8H mode") in which the key fill/key source position is lowered by eight scan lines.

When Fine Key is on, the edge width is forced to the range 0.00 to 4.00.

Note that in the following situations, the key drop mode is forcibly turned on.

- When the edge type is border, outline, or emboss
- When the edge type is normal with soft edge being on
- When Fine Key is on

To fix key fill / key source in key drop off mode

In the Edge menu, switch frame delay mode on *(see page 182)*.

Regardless of the fine key and edge type settings, key fill and key source are fixed in key drop off mode. In this mode key image has a one-frame delay.

Notes

This function uses the resizer, and therefore the normal effect of the setting is not obtained while using DME wipe or other effect that uses the resizer.

Edge fill

When a border, drop border, or shadow modifier is selected, you can select a signal to fill these edge effects.

The edge fill may be either the signal from the dedicated color matte generator, or the signal currently selected on the utility 1 bus.

In the case of an outline, there is no edge fill signal selection, because the key fill signal fills the outline, and the rest of the image remains as the background.

For the emboss effect, in place of the edge fill signal, the emboss fill matte 1 and emboss fill matte 2 signals are used.

Masks

A mask is used to inhibit the effect of a key over a part of the image. This allows parts of the background which would otherwise be keyed to be protected, or to correct the key if it is not of the desired shape.

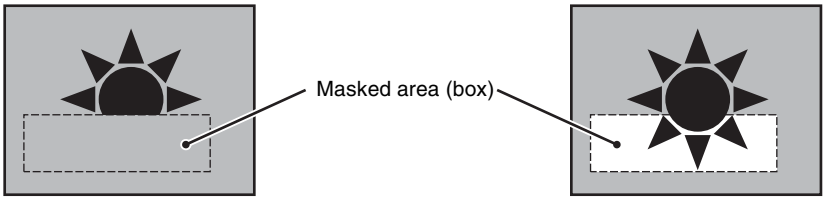
For details of masking operations, see "Masks" (pages 185 and 205).

Key mask and background mask

There are two types of mask: a key mask and a background mask.

Key mask: This masks out a part of the key, which will result in the background appearing.

Background mask: This masks out a part of the background, which will result in the key fill appearing.



Main mask and subsidiary ("sub") mask

Each keyer allows two masks to be used simultaneously, and these are referred to as the main mask and the sub mask. The signal that determines the mask shape and size is termed the mask source, and different sources are used for the main mask and sub mask.

Main mask: This uses the signal from the dedicated box generator provided on each keyer, or the signal from the dedicated pattern generator as the mask source.

When the box generator is selected, a rectangular mask is formed. You can adjust the positions of the four sides of the box separately.

When the pattern generator is selected, you can select the pattern and apply modifiers.

Sub mask: This uses the wipe generator signal or the signal selected on the utility 1 bus, as the mask source.

When the wipe generator is selected, the patterns and the pattern modifiers are the same as in a wipe transition.

Key Memory

The key memory function allows the keyer settings on each cross-point button to be automatically stored, so that the next time the same cross-point button is selected these settings are recalled automatically.

There are two modes for key memory: simple mode and full mode.

The parameters stored in each mode are as follows.

Simple mode: key type, clean mode (including the plane setting for chroma keying), key position, key inversion, and adjustment values for the particular key type (Clip, Gain, Density, Filter, etc. This includes color vector key, wipe pattern key, key wipe pattern key, and chroma key.

However, in the case of a chroma key, it excludes color cancel, Y balance, foreground CCR, window, and shadow.)

Full mode: All settings except transition (the same parameters as simple mode, Fine Key, key modifiers, main and sub mask settings, chroma key detailed settings, and so on)

For the settings for these modes, see "Settings Relating to Keys, Wipes, Frame Memory and Color Correction (Key/Wipe/FM/CCR Menu)" in Chapter 20 (Volume 3).

Key Default

With a simple operation you can return the key adjustment values to their defaults.

The adjustment values which can be returned to their default values are as follows.

- Adjustment values for the particular key type (Clip, Gain, Density, Filter, etc.)
  In the case of chroma keying, all adjustment values return to their default values.
- Key position
- Key inversion
- Clean mode

For details, see "Returning the key adjustment values to their defaults" (page 208).

For the menu operation to return the key adjustment values to their defaults, see "Returning to default state in function groupings" (page 91).

Key Setting Operations Using Menus

There are two ways of making key settings: either using menus, or using the key control block.
This section describes basic procedures for making key settings using the menus, taking the M/E-1 >Key1 menu as an example.
Operations in the Key menus are the same for all banks (M/E-1 to M/E-3 and PGM/PST).

For details of the method of using the key control block, see "Key Setting Operations With the Key Control Block" (page 197).

Key Setting Menus

The key setting menus for each bank (M/E-1 to M/E-3 and PGM/PST) are as follows.

Bank	Keys set	Menus
M/E-1	Keys 1 to 8	M/E-1 >Key1 to 8
PGM/PST	Downstream keys 1 to 8	PGM/PST >DSK1 to 8

Notes

When the signal format is 1080P, only keys 1 to 4 can be used.

Accessing a key setting menu

For example, to access the M/E-1 >Key1 menu, carry out any of the following procedures.

- In the menu control block, select the top menu selection button [M/E 1], then press VF1 'Key1.'
  If VF1 'Key5' is shown, press the [KEY1-4] switching button at the top of the menu, turning it on, then press VF1 'Key1.'



- In the M/E-1 bank transition control block, press the KEY1 next transition selection button twice in rapid succession.

- Press the [KEY1] button in the key delegation row of the M/E-1 bank twice in rapid succession.
- In the key control block, press the M/E delegation button [M/E1], then press the key delegation button [KEY1] twice in rapid succession.

Any of the above operations displays the M/E1 >Key1 menu.

Note that you can access the DSK menus by pressing the button for the corresponding key in the downstream key control block twice in rapid succession.

Notes

- To select [M/E 4] with the top menu selection buttons, it is first necessary to assign a button in the Setup menu. *For details, see "Assigning a Button for M/E-4 Selection in the Setup Menu" (page 458).*
- To select [Key5] to [Key8], and [DSK5] to [DSK8] in the key control block, a previous assignment in the Setup menu is required. *For details, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459).*

Key Type Setting

Setting the key type in a menu

1 In the M/E-1 >Key1 menu, select HF1 'Type.'

The Type menu appears.

2 In the <Key Type> group, select the key type.

Luminance: luminance key
Linear: linear key
Chroma: chroma key
Color Vector: color vector key
Wipe Pattern: wipe pattern key
Key Wipe Pattern: key wipe pattern key

For the selected key type, you can now set the parameters.

For an overview of the key types, see "Key Types" (page 156).

3 Carry out the following settings as required, depending on the key type selected in step **2**.

To enable clean mode *(see page 157)* for a luminance key, linear key or color vector key: Select [Clean Mode] so that it is set on.

When clean mode is enabled, key fill is added to the background without cutting out with key source.

When chroma key is selected: Select [Chroma Adjust] to access the Chroma Adjust menu *(see page 170)*, and make the required settings.

When a wipe pattern key is selected: In the M/E-1 >Wipe menu *(see page 229),* select the pattern and set any modifiers, then return to the M/E-1 >Key1 menu.

When a key wipe pattern key is selected: In the M/E-1 >Key1 > Transition >Wipe Adjust menu *(see page 254)*, carry out pattern selection and modifier setting, then return to the M/E-1 >Key1 >Type menu.

Notes

For a wipe pattern selected for a wipe pattern key or key wipe pattern key, the [Edge] and [Direction] modifier settings are not available.

4 Set the parameters.

- **When a luminance key or linear key is selected**

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for generating the key signal	+109.59 to –7.31
2	Gain	Key sensitivity	–100.00 to +100.00
3	Density	Key density	0.00 to 100.00
4	Filter	Filter coefficient	1 to 9 a)

a) Setting this value to 1, produces the "through" state in which no filter is applied. The larger the value, the more strongly the filter applies.

- **When a chroma key is selected**

Knob	Parameter	Adjustment	Setting values
3	Density	Key density	0.00 to 100.00

- **When a color vector key is selected**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Y Clip	Reference level for creating luminance signal	+109.59 to –7.31
2	Y Gain	Luminance signal sensitivity	–100.00 to +100.00
3	C Clip	Reference level for creating chrominance signal	100.00 to 0.00
4	C Gain	Chrominance signal sensitivity	–100.00 to +100.00

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
5	Density	Key density	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Y Filter	Luminance signal filter coefficient	1 to 9
2	C Filter	Chrominance signal filter coefficient	1 to 9

- **When a wipe pattern key or key wipe pattern key is selected**

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Degree of edge softness	0.00 to 100.00
3	Density	Key density	0.00 to 100.00

5 Make the following settings as required.

To invert the black and white sense of the key source: Press [Key Invert], turning it on.

To adjust the horizontal position or key source width for a luminance key, linear key, or chroma key: Press [Key Position], turning it on, and set the parameters.

Knob	Parameter	Adjustment	Setting values
1	H Phase	Key horizontal position	–4.00 to +4.00
2	Left	Key left edge position	–4.00 to +4.00
3	Right	Key right edge position	–4.00 to +4.00

To set the key priority: Press [Key Priority] or select VF7 ‘Misc’ and HF3 ‘Key Priority’ to access the Key Priority menu.
For details, see “Setting the Key Priority by a Menu Operation” (page 125).

Chroma Key Composition

In creating a chroma key image, either a normal mix or an additive mix can be used. To select which, use the Type >Chroma Adjust menu for the keyer.

Normal mix: The foreground is cut out with the key signal, and then combined with the background, which has also been cut out with the key signal.

Additive mix: The background, which has been cut out with the key signal, is combined with the unshaped foreground. This is effective for a natural-looking composite when the scene includes glass or other translucent objects.

Plane function

In an additive mix, the foreground is not shaped by the key signal, and variations in the (blue) background appear in the composite image. To prevent this, it is possible to set a particular luminance level for the background, and any parts below this level are cut forcibly.

Composing an image by chroma keying

There are two types of composition for chroma keying: normal mix, and additive mix.

1. In the M/E-1 >Key1 menu, select HF1 'Type.'
2. Select [Chroma] in the <Key Type> group.

   It becomes possible to adjust the key density *(see page 165)*.
3. Select [Chroma Adjust].

   The Chroma Adjust menu appears.
4. Carry out auto chroma key adjustments.
   Also carry out manual adjustments if necessary to obtain an optimum chroma key image.
5. In the <Mix Mode> group, select [Normal Mix] or [Additive Mix] depending on the desired type of chroma key composition.

When using an additive mix for chroma keying, the (typically blue) background parts of the foreground video must be converted to black. For this, use the color cancel function *(see page 171)*.

Using the plane function

In an additive mix, since no key is applied to the foreground, any variations in the (typically blue) background may appear in the composite image. To avoid this, a particular luminance level can be set for the (blue) background, and regions of lower luminance forcibly cut.

1. In the Chroma Adjust menu, set [Plane] on.
2. Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance level	0.00 to 100.00

Chroma Key Adjustments

Methods of adjusting the composite obtained from chroma keying include automatic adjustment with the auto chroma key function, and manual adjustment carrying out the necessary processing separately. The optimum results will be obtained by first carrying out adjustments with the auto chroma key function, then making any fine adjustments as required.
The following manual adjustments are possible.

Key active

When this function is off, only the foreground is output and you can make adjustments of color cancel *(see the next paragraph).*

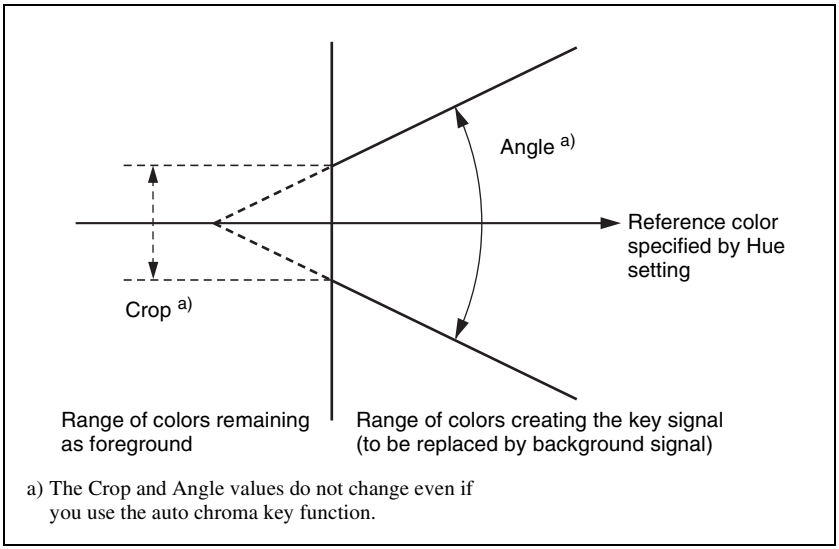
Color cancel

If the foreground image includes shades of the background color, turn this function on to remove the color from the foreground image.

Chroma key window

You can adjust the range over which the key signal is determined as matching the specified hue. When this adjustment is off the default ranges are used.

Chroma keying generates a key signal based on a particular color (reference color) in the foreground (typically a plain blue background), and the "window" refers to the range of colors which are regarded as matching this specified reference color to create the key signal.
As seen on a vectorscope (that is, in the hue-saturation color space), the range for this matching corresponds to a truncated sector. This range is specified by two parameters: the "Angle" parameter, which determines the range of the hue parameter, and the "Crop" parameter, which determines the degree of truncation *(see the following figure).*



a) The Crop and Angle values do not change even if you use the auto chroma key function.

Window adjustment

Y balance

In normal chroma keying, the key signal is based on the chrominance component only, and all elements of the foreground with the same hue are replaced by the background. Using the Y balance function, you can specify a luminance level range within which the key is active, and replace the specified part by the background.

You can use the Y balance function independently on the key signal for the composition and the key signal for the color cancel function. When applied to the key signal for the composition, this produces the foreground with the color cancel effect applied. This can therefore be used to provide an impression of smoke, for example.

When the Y balance function is applied to the color cancel key, the relevant part is output in its original color without canceling, and therefore it is possible to combine colors which are the same color as the background (i.e. typically blue) in the foreground.

Chroma key shadow

This function provides a more realistic treatment when the shadow of an object in the field of view falls on the blue background. Since parts of the blue background darker than a specified intensity are treated as shadows, there is no effect on cutting out of the foreground.

Video signal adjustment

You can vary the foreground signal gain, or change the hue. There are separate adjustments for the gain of the overall video signal, and Y and C components.

Making auto chroma key adjustments

Auto chroma key is an automatic adjustment function which allows you to specify a part of the foreground video (for example, the blue background color) and use it as a reference for creating the chroma key image.

1 In the M/E-1 >Key1 menu, select HF1 'Type,' then select [Chroma] in the <Key Type> group.

2 Select [Chroma Adjust].

The Chroma Adjust menu appears.

3 Select [Sample Mark] in the <Auto> group.

The foreground video only appears on the monitor, with a white box-shaped sample selector.

4 Adjust the position and size of the sample selector, to specify the color to be used as the basis of chroma keying (typically a blue background).

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–100.00 to +100.00 a)
2	Position V	Vertical position	–100.00 to +100.00 a)
3	Size	Size	1.00 to 100.00

a) The setting ranges depend on the signal format, screen aspect ratio, and size settings.

5 Select [Auto Start] in the <Auto> group.

This executes an auto chroma key based on the color specified by the sample selector, and displays the composite image on the monitor.

Making key active adjustments

When the key active function is on, the composite image is output to the monitor, and you can watch the monitor while manually adjusting the keying. When the key active function is off, only the foreground image appears. Set this off when manually adjusting color cancel *(see the next section)*.

1 In the Chroma Adjust menu, set [Key Active] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Clip	Chroma key reference level	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	Gain	Key gain	–100.00 to +100.00
3	Hue	Hue	359.99 to 0.00
4	Density	Density	0.00 to 100.00
5	Filter	Filter coefficient	1 to 9

Making color cancel adjustments

If the background color is leaking into the foreground video, turning the color cancel function on allows you to eliminate this leakage.

1 In the Chroma Adjust menu, turn [Key Active] off.

Only the foreground image appears on the monitor.

2 In the <Color Cancel> group, set [Color Cancel] on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00
5	Filter	Filter coefficient	1 to 9

4 Set [Key Active] on.

The chroma key composite image now appears in the monitor.

Making key signal adjustments for color cancel

When the color cancel function is set on, you can adjust the key signal for color cancel.

1 In the <Color Cancel> group of the Chroma Adjust menu, set [Color Cancel] on.

2 In the <Color Cancel> group, set [Cancel Key] on.

The cancel key is now on, and you can now adjust the key signal for color cancel.

Knob	Parameter	Adjustment	Setting values
1	Clip	Color cancel key reference level	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	Gain	Color cancel key gain	–100.00 to +100.00

3 Make the following settings, as required, in the <Color Cancel> group.

- **When setting [Key Position] on and adjusting the color cancel key edge position**

Knob	Parameter	Adjustment	Setting values
1	H Phase	Move left and right edges of the color cancel key simultaneously	Left edge position value shown
2	Left	Move left edge of the color cancel key	–3.00 to +3.00
3	Right	Move right edge of the color cancel key	–3.00 to +3.00

- **When setting [Window] on and adjusting the detection range of the color cancel key**

Knob	Parameter	Adjustment	Setting values
1	Crop	Crop value	100.00 to 0.00
2	Angle	Angle value	180.00 to 0.00

For details of the crop and angle parameters, see "Chroma key window" (page 168).

- **When setting [Y Balance] on and adjusting the ratio in which Y balance is added to the color cancel key**

Knob	Parameter	Adjustment	Setting values
1	Mixture	Ratio of Y balance key	0.00 to 100.00

Adjusting the window

Setting the window function on allows you to adjust the detection range used to determine the key signal. When this function is off, the default range is used for the key.

For an overview of the window, see "Chroma key window" (page 168).

After making sure that the values of Clip, Gain, and Hue are adjusted appropriately, use the following procedure to make the window adjustment.

1 In the Chroma Adjust menu, set [Window] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Crop	Crop value	100.00 to 0.00
2	Angle	Angle value	180.00 to 0.00

Adjusting the Y balance

Setting the Y balance on allows you to specify that, even if the hue is the same, only portions of a particular luminance will be replaced by the background.

For an overview of the Y balance, see "Y balance" (page 169).

1 In the Chroma Adjust menu, set [Y Balance] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Clip	Luminance range	0.00 to 100.00
2	Gain	Key gain	–100.00 to +100.00
3	Luminance	Luminance	0.00 to 100.00

Adjusting the chroma key shadow

This function allows a shadow falling on the (typically blue) background color to be rendered more realistically. Since portions of the (blue) background of less than a certain luminance are treated as shadows, there is no effect on cutting out of the foreground.

1 In the Chroma Adjust menu, set [Shadow] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Reference luminance for shadows	0.00 to 100.00
2	Gain	Shadow key gain	–100.00 to +100.00
3	Density	Shadow opacity	0.00 to 100.00
4	Soft	Shadow softness	0.00 to 100.00

Notes

When chroma key shadow is on, key edge is changed to normal, and soft edge is switched off.

Adjusting the video signal

You can change the gain of the foreground signal, or vary the Hue. There are separate adjustments for the gain of the whole video signal, or Y and C individually.

1 In the Chroma Adjust menu, set [FRGD CCR] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Overall gain of video signal	–100.00 to +100.00
2	Y Gain	Y signal gain	–100.00 to +100.00
3	C Gain	C signal gain	–100.00 to +100.00
4	Hue	Hue offset amount	–180.00 to +180.00

Selecting Key Fill and Key Source

Notes

The only signals that can be selected as key signals in the M/E-4 bank are premium inputs (inputs to the PREMIUM INPUTS connectors 1 to 20 of the switcher).

Selecting key fill and key source

To select key fill and key source for key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF1 'Type.'

The Type menu appears.

2 In the <Key Fill> group, select either of the following for use as key fill.

Key Bus: signal selected on the key 1 fill bus
Matte: signal from the dedicated color matte generator

3 If you selected [Key Bus] in step **2**, press the key delegation button [KEY1] in the cross-point control block and select the key fill signal in the key row.

4 If you selected [Matte] in step **2**, in the same Type menu, press the [Matte Adjust] button to display the Matte Adjust menu, then adjust the single-

color or two-color combination color matte. Select whether to use a single-color matte or a two-color combination in the <Fill Matte> group.

Flat Color: Adjust color 1 with the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Mix Color: Carry out a color mix. Adjust color 1 and color 2, and select a mix pattern *(see the next section).*

5 In the <Key Source> group, specify the key source selection mode.

Self: The key fill bus signal is automatically selected as the key source. When the key type is selected as chroma key, select [Self].

Auto Select: The signal allocated, being paired with the key fill bus signal, to a cross-point button is automatically selected as the key source. The setting of key fill and key source pairs is carried out in the Setup menu. *(See "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 3).)*

Split: You can select a key source signal independently of the key source automatically selected in Auto Select mode.

6 When [Split] was selected in step **5**, hold down the [KEY1] button and press the appropriate button in the key row to select the key source signal.

To select the video signal assigned to the button, turn off the [KEY] button in the AUX bus control block, and to select the key signal, turn on the [KEY] button before pressing the button in the key row.

Notes

- Carrying out a [KEY] button operation in the AUX bus control block requires the [KEY] button operating mode (Key Source Bus Select Mode) to be set. With the factory default setting (Key), the [KEY] button is always off, and it is only possible to select a key signal assigned to a button as the key source signal.

  For details, see "Operation Settings (Operation Menu)" in Chapter 19 (Volume 3).

- When [Split] is selected, the key memory function *(see page 161)* is disabled.

To select a video signal assigned to a cross-point button

By selecting the key source bus with an auxiliary bus control block AUX delegation button, and pressing the cross-point button, it is possible to select the video signal assigned to the cross-point button.
(If you press the cross-point button with holding down [KEY], the key signal assigned to the cross-point button.)

Notes

In the above operation, the following settings must have been made.

- Assigning the key source bus to an AUX delegation button

  For details, see "Auxiliary Bus Control Block Settings (Aux Assign Menu)" in Chapter 19 (Volume 3).

- Setting the [KEY] button operating mode

  For details, see "Operation Settings (Operation Menu)" in Chapter 19 (Volume 3).

Selecting key source and key fill in the menu

Selecting key source

For example, to select the key source for M/E-1 key 1, use the following procedure.

1 In the M/E-1 >Key1 >Type menu, press [Signal Select].

The Signal Select menu appears.



2 In the <Target> group, press [Source].

3 In the <Key Source> group, select the key source selection mode (Self, Auto Select, or Split).

*See step **5** in "Selecting Key Fill and Key Source" (page 175).*

4 If you selected [Split], using any of the following methods, select the key source signal.

- Press directly on the list on the right.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Setting	Values
1	No	Button number	1 to 128

5 In the <Assign> group, select the video signal or key signal from the V/K pair to assign to the key source.

6 Press [Set Xpt].

This selects the key source signal.

Selecting key fill

For example, to select the key fill for M/E-1 key 1, use the following procedure.

1 In the M/E-1 >Key1 >Type menu status area, press "Fill."

The Signal Select menu appears.

2 In the <Target> group, press [Fill].

3 Select the fill signal from the list on the right.

4 Press [Set Xpt].

This selects the key fill signal.

Carrying out a color mix for key fill

When [Matte] is selected for key fill, you can combine color 1 and color 2. For the combination, you can use not only a key wipe generator pattern, but also the dedicated pattern for key edge color mix.

1 In the <Key Fill> group of the Type menu, select [Matte] and press [Matte Adjust].

The Matte Adjust menu appears.

2 Select [Mix Color] in the <Fill Matte> group.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Softness of the edge of the pattern	0.00 to 100.00

4 Select the combining pattern in the <Mix Pattern> group.

Key Wipe: The wipe pattern selected for an independent key transition is used for combination. You can change this pattern by pressing [Pattern Select] to open the menu for key wipe pattern selection (Pattern Select menu), and make adjustments by pressing [Pattern Adjust] to open the menu for pattern adjustment (Wipe Adjust menu).

Key Edge Pattern: Combine using the dedicated pattern selected for the color mix in the key edge fill. You can change this pattern by pressing [Pattern Select] to open the menu for edge color mix dedicated wipe pattern selection (Mix Pattern Select menu), and make adjustments by pressing [Pattern Adjust] to open the menu for pattern adjustment (Matte Adjust menu).

For details, see "Carrying out a color mix for the key edge fill matte" (page 182).

5 In the Type menu, adjust color 1 and color 2.

To adjust color 1, select [Color1], and to adjust color 2, select [Color2], then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

6 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Key Edge Modifications

To modify the key edge of key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF2 'Edge.'

The Edge menu appears.

2 Select the edge type in the <Edge> group.

For an overview of the key edge modifications, see "Edge modifiers" (page 158).

Normal: unadorned edge
Border: edge with border applied
Drop Border: edge with drop border applied
Shadow: edge with shadow applied
Outline: edge used as outline
Emboss: embossing effect applied to edge

If you select [Normal], skip to step **7**.

3 Set the border width and other parameters.

When border or outline is selected: The setting parameters depend on the key type and whether the separate edge function is enabled or not. To enable the separate edge function, press [Separate Edge], setting it on.

- **Separate edge off**

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0.00 to 8.00 a) (0.00 to 100.00) b)
3	Density	Density	0.00 to 100.00

a) In the "4H mode" and when [Fine Key] (page 181) is on, the setting value range is 0.00 to 4.00.
b) When a wipe pattern key or key wipe pattern key is selected as the key type

- **Separate edge on**
  The left, right, top, and bottom border or outline widths can be adjusted independently. The separate edge function is only valid when a luminance key, linear key, or chroma key is selected as the key type.

Knob	Parameter	Adjustment	Setting values
1	Top	Top edge width	0.00 to 8.00 a)
2	Left	Left edge width	0.00 to 8.00 a)
3	Right	Right edge width	0.00 to 8.00 a)
4	Bottom	Bottom edge width	0.00 to 8.00 a)
5	Density	Density	0.00 to 100.00

a) In the "4H mode" and when [Fine Key] (page 181) is on, the setting value range is 0.00 to 4.00.

When drop border or shadow is selected: The setting parameter values depend on the on/off setting of key drop and the selection of 4H mode/8H mode *(see page 159)*.

- **"Key drop OFF" mode**

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0.00 to 8.00 a)
2	Position	Position	359.99 to 180.00
3	Density	Density	0.00 to 100.00

- **"Key drop ON" mode**

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0.00 to 8.00 a)
2	Position	Position	359.99 to 0.00
3	Density	Density	0.00 to 100.00

a) In the "4H mode" and when [Fine Key] (page 181) is on, the setting value range is 0.00 to 4.00.

When emboss is selected:

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0.00 to 4.00
2	Position	Position	359.99 to 0.00
3	Density a)	Density	0.00 to 100.00

a) The Density adjustment only affects the key edge. This can be adjusted separately from Key Density, and if Key Density is set to 0.00, the embossed edge effect only can be applied.

To make edge fill adjustments, carry out the settings in step **6**.

4 Select the edge fill signal in the <Edge Fill> group.

Utility 1 Bus: signal selected on the utility 1 bus
Matte: signal from dedicated color matte generator.
It becomes possible to adjust color 1.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

When the edge type is outline, in place of the edge fill signal, the selected key fill signal fills the outline, and elsewhere remains as the background.

5 Carry out the following operation, depending on the selection in step **4**.

When [Utility 1 Bus] is selected: Press the key delegation button [UTIL1], turning it on, and select the signal in the key row.

When [Matte] is selected: Press [Matte Adjust] in the same EDGE menu, to display the Matte Adjust menu, and adjust a single color or two-color combination color matte.

You can select whether to use a single color matte or a two-color combination color matte in the <Edge Matte> group.

For the color mix operation, see "Carrying out a color mix for the key edge fill matte" (page 182).

6 When emboss is selected for the edge type, adjust the color in the <Emboss Fill> group.

To adjust matte 1 press [Matte1], and to adjust matte 2 press [Matte2], then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

7 To make the edge soft, press [Soft Edge] to set it on, and adjust the softness.

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0.00 to 100.00

For a normal edge, when [Soft Edge] is enabled, [Key Drop] is kept on.

8 To make separate fine adjustments to the positions of the left, right, top, and bottom of the source edge, press [Fine Key], to set it on, and adjust the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Key top edge position	–2.00 to +2.00
2	Left	Key left edge position	–2.00 to +2.00
3	Right	Key right edge position	–2.00 to +2.00

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
4	Bottom	Key bottom edge position	–2.00 to +2.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	H Phase	Key horizontal position	Left edge position value shown
2	V Phase	Key vertical position	Top edge position value shown

Notes

In the emboss function it is not possible to set [Fine Key] on.

- When the edge type is normal, drop border or shadow, enabling the [Fine Key] function keeps [Key Drop] on.
- When applying a border to the key edge, enabling the [Fine Key] function halves the border width setting range.

To fix key fill and key source in key drop off mode

1 In the Edge menu, press [Key Delay Mode].

The Key Delay Mode menu appears.

2 Press [Frame Delay], setting it to On.

Notes

This function uses the resizer, and therefore the expected result of the setting may not be obtained if conditions do not allow the resizer to be used.

Carrying out a color mix for the key edge fill matte

When you select ‘Matte’ for the edge fill of a border, drop border, or shadow, you can create a combination of color 1 and color 2 using a wipe pattern generated by the dedicated pattern generator.

1 In the <Edge Fill> group of the Edge menu, select [Matte], then press [Matte Adjust].

The edge fill Matte Adjust menu appears.

2 In the <Edge Matte> group, select [Mix Color], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Softness of pattern edge	0.00 to 100.00
3	Pattern	Pattern number	1 to 24 a)

a) The patterns are the same as standard wipes. *(For details, see "Wipe Pattern List" in (page 412).)*

To select the pattern, display the Mix Pattern Select menu by pressing [Mix Pattern] in the edge fill Matte Adjust menu. After selecting one of the patterns (standard wipe patterns 1 to 24) displayed in the Mix Pattern Select menu, you can adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Softness of pattern edge	0.00 to 100.00

4 Adjust color 1 and color 2.

To adjust color 1 press [Color 1], and to adjust color 2 press [Color 2], turning it on respectively, and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

5 If required, set the pattern modifiers.

- **When turning [Position] on and setting the pattern position**

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See page 242.

- **When turning [Multi] on and replicating the pattern**

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63

Knob	Parameter	Adjustment	Setting values
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See page 247.

- **When turning [Aspect] on and setting the aspect ratio of the pattern**

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) See page 246.

- **When turning [Angle] on in the <Rotation> group and inclining the pattern**

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See page 244.

- **When turning [Speed] on in the <Rotation> group and rotating the pattern at a constant speed**

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See page 244.

6 To interchange color 1 and color 2, press [Color Invert], turning it on.

Applying the zabton effects

1 In the Edge menu, press [Zabton], turning it on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Pattern edge softness	0.00 to 100.00
3	Density	Density	0.00 to 100.00

Notes

If in the pattern selection described below you select “Mask Pattern,” and “Box” for the main mask, the “Size” parameter here cannot be adjusted. Set “Size” in the Main Mask menu.

3 To adjust the pattern and color, press [Zabton Adjust].

The Zabton Adjust menu appears.

4 In the <Zabton Pattern> group, select the pattern.

Key Wipe: Use a key wipe.
You can change this pattern by pressing [Pattern Select] to open the menu for key wipe pattern selection (Pattern Select menu), and make adjustments by pressing [Pattern Adjust] to open the menu for pattern adjustment (Wipe Adjust menu).
Key Edge Pattern: Use a color mixing pattern for key edge.
You can change this pattern by pressing [Pattern Select] to open the menu for edge color mix dedicated wipe pattern selection (Mix Pattern Select menu), and make adjustments by pressing [Pattern Adjust] to open the menu for pattern adjustment (Matte Adjust menu).
Mask Pattern: Use the main mask Box or Pattern.
You can also press [Pattern Select], and in the corresponding pattern adjustment menu, change the pattern.

5 To adjust the color, press [Zabton Color] and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00
4	Density	Density	0.00 to 100.00

Masks

There are two masks, which can be used to mask off unneeded parts of a key or background, or to remove defects, and these are known as the main mask and subsidiary mask.
You can either use the main mask and subsidiary mask independently, or at the same time.

Using the main mask

For example, to use the main mask for key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF3 ‘Main Mask.’

The Main Mask menu appears.

2 In the <Mask Type> group, select the mask type.

Key Mask: Masks a part of a key.
Bkgd Mask: Masks a part of a background.

3 In the <Mask Source> group, select the mask source.

Box: signal from the dedicated box generator
Pattern: signal from the dedicated pattern generator

4 Set the mask source parameters.

- **When a box is selected**

Knob	Parameter	Adjustment	Setting values
1	Top	Top position	–100.00 to +100.00
2	Left	Left position	–100.00 to +100.00
3	Right	Right position	–100.00 to +100.00
4	Bottom	Bottom position	–100.00 to +100.00
5	Soft	Box softness	0.00 to 100.00

- **When a pattern is selected**

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00
5	Pattern	Pattern number	1 to 24 a)

a) The pattern is the same as a standard wipe. *(See “Wipe Pattern List” in Appendix (Volume 1) (page 412).)*

To select the pattern, display the Mask Ptn Select menu by pressing the [Mask Ptn Select] button in the Main Mask menu.
After selecting one of the patterns (standard wipe patterns 1 to 24) displayed in the Mask Ptn Select menu, you can adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

5 To invert the black and white sense of the mask source, press the [Mask Invert] button, turning it on.

6 When a pattern is selected as the mask source, set the pattern modifiers as required.

- **When turning [Position] on and setting the pattern position**

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See page 242.

- **When turning [Multi] on and replicating the pattern**

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See page 247.

- **When turning [Aspect] on and setting the aspect ratio of the pattern**

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) See page 246.

- **When turning [Angle] on in the <Rotation> group and setting the angle of the pattern rotation**

Knob	Parameter	Adjustment	Setting values
1	Angle	Pattern angle	–100.00 to +100.00 a)

a) See page 244.

- **When turning [Speed] on in the <Rotation> group and setting the rate of pattern rotation**

Knob	Parameter	Adjustment	Setting values
1	Speed	Rate of pattern rotation	–100.00 to +100.00 a)

a) See page 244.

Using the subsidiary mask

For example, to use the subsidiary mask for key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF4 'Sub Mask.'

The Sub Mask menu appears.

2 In the <Mask Type> group, select the mask type.

Key Mask: Masks a part of a key.
Bkgd Mask: Masks a part of a background.

3 In the <Mask Source> group, select the mask source.

Wipe: wipe pattern selected for a transition
If you select [Wipe], select the pattern and make modifier settings in the M/E-1 >Wipe menu *(see page 229),* then return to this M/E-1 >Key1 menu.
In the case of a wipe pattern selected for a mask, the modifier [Edge] and [Direction] settings are not available.

Utility 1 Bus: signal selected on the utility 1 bus
When you selected [Utility 1 Bus], press the key delegation button [UTIL1], turning it on, in the M/E-1 bank and select the signal in the key row.

4 Set the mask source parameters.

- **When wipe is selected**

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

• **When utility 1 bus is selected**

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for creating mask signal	+109.59 to –7.31
2	Gain	Gain	–100.00 to +100.00

5 To invert the black and white sense of the mask source, press the [Mask Invert] button, turning it on.

Applying a DME Effect to a Key

Notes

- On keys 1 to 4 of one M/E, a maximum of two DME effects (including DME wipes) can be used simultaneously. However, when using a DME wipe pattern for the background, the restriction depends on the execution mode as follows.
  One-channel mode: DME can only be used in one place on keys 1 to 4.
  Two-channel mode or three-channel mode: DME cannot be used for keys 1 to 4.
- When the system signal format is 1080P, and the DME input/output signal format is set to dual link mode, the following restrictions apply.
  – On keys 1 to 4 of one M/E, a maximum of one DME effect (including DME wipes) can be used simultaneously.
  – When a DME wipe pattern is selected for the background, DME cannot be used for keys 1 to 4.
- On keys 5 to 8 of one M/E, a maximum of two DME effects (including DME wipes) can be used simultaneously. However, for keys 5 to 8 of the M/E4 block, DME effects cannot be used.

For details, see "Interfacing With External Devices (Device Interface Menu)" in Chapter 19 (Volume 3).

For keys 5 to 8 on the M/E4 bank, DME effects cannot be applied.

Assigning a DME to a key

1 In the M/E-1 >Key1 menu, select HF5 'Processed Key.'

The Processed Key menu appears.

2 In the <DME Select> group, select the DME channel (DME1 to DME8) to be used.

The lit colors of [DME1] to [DME8] indicate the DME assignment.
Lit green: Shows the DME assigned to the currently selected key.
Lit amber: Shows the DME assigned to a key other than the currently selected key.
Off: DME is not assigned.

To select a DME being used by another keyer
Press [Override], turning it on, then select the DME channel.
The later selection is valid, and the button lights green.

You can check the DME operating status in the Status menu *(see page 365)*.

Selecting the video signal for the DME assigned to a key

For the operating procedure, see"Selecting the video signal for a DME assigned to a key" (page 195).

Assigning a DME output signal as a monitor signal

1 In the Processed Key menu, press [Monitor].

The Monitor menu appears.

2 Press [Monitor Set], turning it on.

3 In the <DME Select> group, select the DME channel (DME1 to DME8) to be used.

This assigns the selected DME output to DME MON V and DME MON K.
The colors with which [DME1] to [DME8] are lit show the key assignment status.
Lit green: DME currently being monitored
Lit amber: DME that can be monitored
Off: Unassigned DME

Specifying the Key Output Destination

Using the key processed keyer signals (external processed key)

To select the key processed keyer key fill and key source signals on the AUX bus or edit preview bus, press [Ext Proc Key] turning it on, in the Processed Key menu.
This assigns the key fill and key source signals for M/E-1 key 1 to reentry signals PROC V and PROC K.

When a DME is selected on the keyer, the key fill and key source signals to which a DME effect is applied are assigned.

Notes

You cannot select the PROC V and PROC K signals using the cross-point selection buttons of the M/E or PGM/PST bank.

Using the key processed keyer signals or signals to which a DME effect is applied in frame memory (frame memory feed)

To use the key processed keyer key fill and key source signals on the frame memory source buses, in the Processed Key menu, press [FM Feed]. [Ext Proc Key] turns on, and the key fill and key source signals processed on the currently selected keyer are automatically assigned to frame memory source buses 1 and 2. When a DME is selected on the keyer, the key fill and key source signals to which a DME effect is applied are assigned.

Key Modify Clear

A simple button operation or a menu operation returns the key settings to the initial status settings.
Press [Default Recall] at the lower left of the menu display, turning it on, then press the corresponding VF button (VF1 to VF4) to return the key settings to their initial status.

For details of the initial status, see "Selecting the State After Powering On (Start Up Menu)" in Chapter 18 (Volume 3).
For the menu operation to return the key state to that set in initial status, see "Returning to default state in function groupings" (page 91).

Blink Function

With the blink function, you can obtain the following effects.

Key blink: The key is alternately inserted and deleted at regular intervals. You can set the period of blinking, and the proportion of each cycle for which the key is inserted.

Edge blink: The key fill and key edge fill signals are interchanged at regular intervals. You can set the period of blinking, and the proportion of each cycle for which the original state holds.

The blink settings are in the Transition menu for each key.

Using the blink function

For example, to make the required settings for key 1 on the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF6 ‘Transition.’

The Transition menu appears.

2 In the <Blink> group, select [Key Blink] or [Edge Blink] to set it on.

3 Set the blink parameters.

- **When key blink is selected**

Knob	Parameter	Adjustment	Setting values
1	Blink Rate	Length of blink cycle	1 to 100
2	Duty	Proportion of cycle for which key inserted	0.00 to 100.00

- **When edge blink is selected**

Knob	Parameter	Adjustment	Setting values
1	Blink Rate	Length of blink cycle	1 to 100
2	Duty	Proportion of cycle for which original state holds	0.00 to 100.00

Video Processing

You can adjust the luminance and hue of the selected key fill signal.
For example, to apply video processing to the signal selected on the M/E-1 bank key 1 fill bus, use the following procedure.

1 In the M/E-1 >Key1 menu, select HF7 ‘Video Process.’

The Video Process menu appears.

2 Press [Video Process], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video gain	–200.00 to +200.00
2	Y Gain	Luminance gain	–200.00 to +200.00

Knob	Parameter	Adjustment	Setting values
3	C Gain	Chrominance gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Luminance black level	–7.31 to +109.59

To return adjustment values to their defaults

Press [Unity].

Key Setting Operations With the Cross-Point Control Block

You can make a key signal selection using the cross-point control block of the M/E-1 or PGM/PST bank including the relevant key.

Applying a DME Effect to a Key

Checking the DME status

As an example, to check the DME status for M/E1 key 1, hold down the key row delegation button [KEY1] in the M/E1 bank.
While the button is held down, the [DME1] to [DME4] buttons light, and the colors with which they light indicate the status, as follows.

Lit green: A DME is assigned to M/E1 key 1. In the M/E1 independent key transition and transition control blocks, the transition type for KEY1 is set to a DME wipe.

Lit amber: A DME is assigned to an M/E1 key other than key 1.
In the independent key transition and transition control blocks, the transition type for other than key 1 of M/E-1 is set to a DME wipe.

Not lit: No DME is assigned, or a DME wipe is not selected.

You can check the DME operating status in the Status menu *(see page 365)*.

Assigning DMEs to a key

As an example, to assign DME1 and DME2 to key 1, in the cross-point control block, hold down the key row delegation button [KEY1] and press the buttons ([DME1] to [DME4]) for the DME channels to be used.
In this case, press [DME1], followed by [DME2].
The buttons pressed ([DME1] and [DME2]) light green and the DMEs are assigned to key 1.

Notes

- If the DME is selected on another keyer, the later selection takes precedence and the button lights green.
  By a setting in the Setup menu *(see "Operation Settings (Operation menu)" in Chapter 19 (Volume 3))*, you can make the first selection take precedence.
- When assigning two or more DMEs to a key, use consecutive channels.

Notes

When the signal format is 1080P, the combination of two consecutively numbered DME channels that can be selected is DME1 and DME2, DME3 and DME4, DME5 and DME6, or DME7 and DME8. It is not possible to combine three or more DME channels.

- On keys 1 to 4 of one M/E, a maximum of two DME effects (including DME wipes) can be used simultaneously. However, when using a DME wipe pattern for the background, the restriction depends on the execution mode as follows.
  One-channel mode: DME can only be used in one place on keys 1 to 4.
  Two-channel mode or three-channel mode: DME cannot be used for keys 1 to 4.
- When the system signal format is 1080P, and the DME input/output signal format is set to dual link mode, the following restrictions apply.
  – On keys 1 to 4 of one M/E, a maximum of one DME effect (including DME wipes) can be used simultaneously.
  – When a DME wipe pattern is selected for the background, DME cannot be used for keys 1 to 4.
- On keys 5 to 8 of one M/E, a maximum of two DME effects (including DME wipes) can be used simultaneously. However, for keys 5 to 8 of the M/E4 block, DME effects cannot be used.
- For keys 5 to 8 on the M/E4 bank, DME effects cannot be applied.

Ending a DME assignment

As an example, to end the assignment of a DME to key 1, in the cross-point control block, hold down the key row delegation button [KEY1] and press the DME button ([DME1] to [DME4]) that is lit green.
The button goes off, and this ends the assignment.

Selecting the video signal for a DME assigned to a key

1 In the cross-point control block, press the key row delegation button [KEY1].

The assigned DME button lights amber.

2 Press the DME button (one of [DME1] to [DME4]) lit amber, which then lights green.

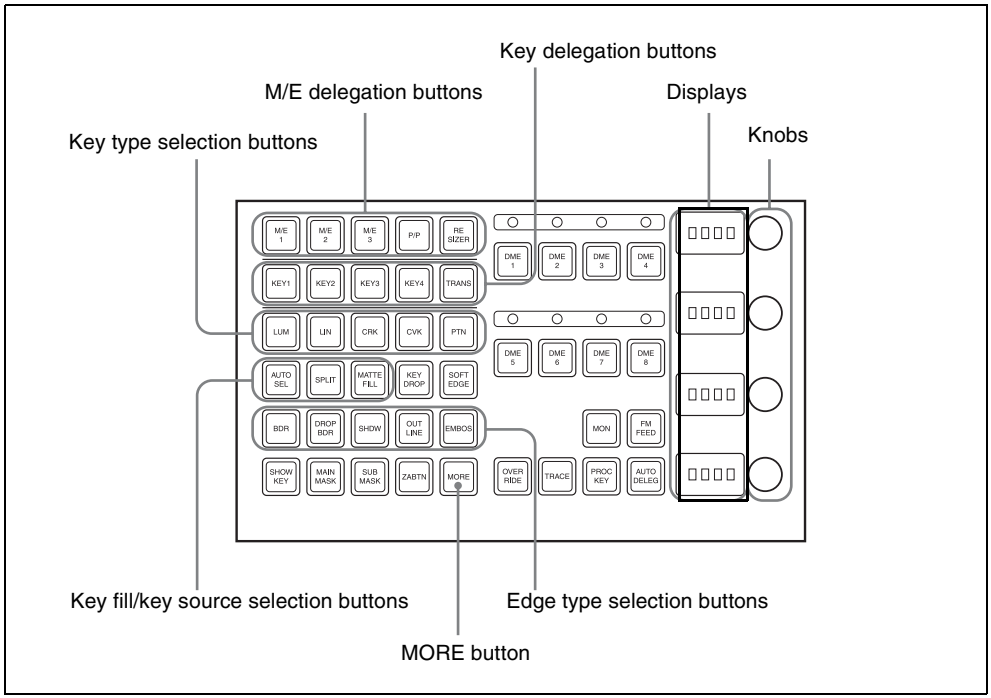
3 To select the video signal for the side of the DME image that is currently visible, make the signal selection in the key row.

4 To select the video signal for the side of the DME image that is currently not visible (the back side), hold down the DME button (one of [DME1] to [DME4]) and make the signal selection in the key row.

When two or more DME channels are assigned, select the video signal for each DME in the same way.

Key Setting Operations With the Key Control Block

This section describes the basic procedures for key settings using the key control block.



Notes

To select [M/E 4], [Key5] to [Key8], and [DSK5] to [DSK8] in the key control block, a previous assignment in the Setup menu is required. *For details, see ""Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459).*

Operations in the Key Control Block

Parameter adjustment with the knobs

When the button for a function requiring parameter settings is pressed (that is, on), you can set the parameters with the four knobs. If there are more than four values to be assigned to the knobs, the [MORE] button lights amber. At this point, press the [MORE] button, which turns green, to assign the fifth and subsequent parameters to the knobs, so that the parameter settings can be made.

Selecting the bank and keyer

To make key settings, first select the bank (from M/E-1 to M/E-3 and PGM/PST) and keyer, then assign them to the key control block.
For example, to set key 1 on M/E-1 with the key control block, use the following procedure.

1. Using the M/E delegation buttons in the key control block, press the [M/E1] button, setting it on.
2. Using the key delegation buttons in the key control block, press the [KEY1] button, setting it on.

   This assigns the key control block to M/E-1 key 1.

Selecting the key type

To select the key type, press one of the key type selection buttons in the key control block.
[LUM] button: luminance key
[LIN] button: linear key
[CRK] button: chroma key
[CVK] button: color vector key
[PTN] button: key wipe pattern key
When using a wipe pattern key as the key type, in the <Key Type> group of the Type menu for the keyer, select [Wipe Pattern] and make the settings.

For an overview of the key types, see "Key Types" (page 156).

The button you pressed lights green, and you can now adjust the parameters with the knobs. The display beside each knob shows the first letter of the parameter name and the three-digit setting value.

• When the [LUM] or [LIN] button is lit green

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for generating the key signal	+109 to –7
2	Gain	Key sensitivity	–100 (shown as –00) to +100
3	Density	Key density	0 to 100
4	Filter	Filter coefficient	1 to 9

• When the [CRK] button is lit green

Knob	Parameter	Adjustment	Setting values
1	Clip	Chroma key reference level	0 to 100
2	Gain	Key sensitivity	–100 (shown as –00) to +100
3	Hue	Hue	0 to 359
4	Density	Key density	0 to 100

– When [Key Active] is off, only the parameters Hue and Density are displayed.
– When both [Key Active] and [Color Cancel] are off, only the parameter Density is displayed.

• When the [CVK] button is lit green

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Y Clip	Reference level for Y signal	+109 to –7
2	Y Gain	Y signal sensitivity	–100 (shown as –00) to +100
3	C Clip	Reference level for chrominance signal	100 to 0
4	C Gain	Chrominance signal sensitivity	–100 (shown as –00) to +100

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Y Filter	Y signal filter coefficient	1 to 9
2	C Filter	Chrominance signal filter coefficient	1 to 9
4	Density	Key density	0 to 100

• **When the [PTN] button is lit green**

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0 to 100
2	Soft	Edge softness	0 to 100
3	Density	Key density	0 to 100

Selecting key fill

Select whether to use a color matte as key fill, or the signal on the key fill bus.

When using a color matte: Press the [MATTE FILL] button, setting it on. The button lights green, and you can now set the parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Color 1 luminance	0 to 100
2	Saturation	Color 1 saturation	0 to 100
3	Hue	Color 1 hue	359 to 0

When [Mix Color] is selected in the key fill Matte Adjust menu, you can further adjust color 2.

When [Mix Color] is on, and the [MORE] button is lit amber

Knob	Parameter	Adjustment	Setting values
1	Luminance	Color 1 luminance	0 to 100
2	Saturation	Color 1 saturation	0 to 100
3	Hue	Color 1 hue	359 to 0
4	Size	Pattern size	0 to 100

When [Mix Color] is on, and the [MORE] button is lit green

Knob	Parameter	Adjustment	Setting values
1	Luminance	Color 2 luminance	0 to 100
2	Saturation	Color 2 saturation	0 to 100
3	Hue	Color 2 hue	359 to 0
4	Soft	Edge softness	0 to 100

When using the key fill bus signal: Press the [MATTE FILL] button, turning it off.

To select the key fill signal, use the key bus buttons in the cross-point control block.

Selecting key source

- To use the key source paired with the key fill signal selected on the key fill bus, press the [AUTO SEL] button, turning it on. The pairing of the cross-point buttons for key fill and key source is carried out in the Setup menu. *(See "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 3).)*
- To select key source independently of the key fill signal selected on the key fill bus and paired with key source, hold down the key delegation button [KEY1], then press the desired key row button in the cross-point control block.
- To use as key source the same signal as the key fill signal selected on the key fill bus, select the SELF mode by pressing the [AUTO SEL] button and [SPLIT] button simultaneously so that both are off. When chroma key is selected as the key type, select the SELF mode.

Key Edge Modifications

To apply a modification to the key edge, press one of the edge type selection buttons in the key control block.

[BDR] button: border
[DROP BDR] button: drop border
[SHDW] button: shadow
[OUTLINE] button: outline
[EMBOS] button: emboss

For an overview of the edge modifications, see "Edge modifiers" (page 158).

The pressed button lights green, and you can now adjust the parameters with the knobs. The display beside each knob shows the first letter of the parameter name and the three-digit setting value.

Setting the border parameters

When the [BDR] button is lit green, the parameter settings depend on the key type and whether the separate edge function is active. To activate the separate edge function, press [Separate Edge], setting it on, in the Edge menu for the key.

- **Separate edge off**

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0 to 8 [a] (0 to 100) [b]
4	Density	Border density	0 to 100

a) In the “4H mode” and when [Fine Key] (page 181) is on, the setting value range is 0 to 4.
b) When a wipe pattern key or key wipe pattern key is selected as the key type

- **Separate edge on**
  The border width settings can be made independently for left, right, top, and bottom sides. The separate edge function is only available when luminance key, linear key, or chroma key is selected as the key type.

Knob	Parameter	Adjustment	Setting values
1	Top	Top edge width	0 to 8 a)
2	Left	Left edge width	0 to 8 a)
3	Right	Right edge width	0 to 8 a)
4	Bottom	Bottom edge width	0 to 8 a)

a) In the “4H mode” and when [Fine Key] (page 181) is on, the setting value range is 0 to 4.

To adjust the edge fill color

When [BDR] is selected, the [MORE] button lights amber. Pressing the [MORE] button to turn it green then allows you to adjust the edge fill color parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0 to 100
2	Saturation	Saturation	0 to 100
3	Hue	Hue	359 to 0
4	Density	Density	0 to 100

Setting the drop border or shadow parameters

When the [DROP BDR] or [SHDW] button is lit green, the parameter settings differ between the “key drop OFF” and “key drop ON” modes *(see page 159)* as shown below. Switching between these two modes is made by turning the [KEY DROP] button on or off.

- **“Key drop OFF” mode**

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0 to 8 a)
2	Position	Position	359 to 180
4	Density	Density	0 to 100

a) In the “4H mode” and when [Fine Key] (page 181) is on, the setting value range is 0 to 4.

• **"Key drop ON" mode**

Knob	Parameter	Adjustment	Setting values
1	Width	Width	0 to 8 a)
2	Position	Position	359 to 0
4	Density	Density	0 to 100

a) In the "4H mode" and when [Fine Key] (page 181) is on, the setting value range is 0 to 4.

To adjust the edge fill color

When [DROP BDR] or [SHDW] is selected, the [MORE] button lights amber. Pressing the [MORE] button to turn it green then allows you to adjust the edge fill color parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0 to 100
2	Saturation	Saturation	0 to 100
3	Hue	Hue	359 to 0
4	Density	Density	0 to 100

Setting the outline parameters

When the [OUTLINE] button is lit green, the parameter settings depend on the key type and whether the separate edge function is active. To activate the separate edge function, press [Separate Edge], setting it on, in the Edge menu for the key.

• **Separate edge off**

Knob	Parameter	Adjustment	Setting values
1	Width	Outline width	0 to 8 a) (0 to 100) b)
4	Density	Outline density	0 to 100

a) In the "4H mode" and when [Fine Key] (page 181) is on, the setting value range is 0 to 4.
b) When a wipe pattern key or key wipe pattern key is selected as the key type

• **Separate edge on**
The outline width settings can be made independently for left, right, top, and bottom sides. The separate edge function is only available when luminance key, linear key, or chroma key is selected as the key type.

Knob	Parameter	Adjustment	Setting values
1	Top	Top edge width	0 to 8 a)
2	Left	Left edge width	0 to 8 a)

Knob	Parameter	Adjustment	Setting values
3	Right	Right edge width	0 to 8 a)
4	Bottom	Bottom edge width	0 to 8 a)

a) In the "4H mode" and when [Fine Key] (page 181) is on, the setting value range is 0 to 4.

When [Outline] is selected with separate edge on, the [MORE] button lights amber. Pressing the [MORE] button to turn it green then allows you to adjust the key fill density parameter with a knob.

Knob	Parameter	Adjustment	Setting values
4	Density	Outline density	0 to 100

Setting the embossing parameters

When the [EMBOS] button is lit green, adjust the following parameters.

Knob	Parameter	Setting values
1	Width	0 to 4
2	Position	359 to 0
4	Density	0 to 100

Selecting a normal edge

When all five edge type selection buttons are off, a normal edge is selected. If one of the buttons is lit, press it, turning it off.

Softening the edge

Press the [SOFT EDGE] button, turning it on. The button lights green, and you can now adjust the softness with the knob.

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0 to 100

- For a normal edge, when [SOFT EDGE] is enabled, "Key Drop" mode turns on.
- When a luminance key or linear key is selected as the key type, and clean mode is enabled, enabling [SOFT EDGE] ends the clean mode.

Applying the zabton effects

When the [ZABTN] button is lit green, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0 to 100
2	Soft	Pattern edge softness	0 to 100

Press the [MORE] button lit amber, changing it to green, then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0 to 100
2	Saturation	Saturation	0 to 100
3	Hue	Hue	359 to 0
4	Density	Density	0 to 100

Masks

Using the main mask

In the key control block, press the [MAIN MASK] button, turning it on. The parameter settings depend on the mask source selected as [Box] or [Pattern] in the <Mask Source> group of the Main Mask menu for the key.

• When box is selected

Knob	Parameter	Adjustment	Setting values
1	Top	Top position	–100 (shown as –00) to +100
2	Left	Left position	–100 (shown as –00) to +100
3	Right	Right position	–100 (shown as –00) to +100
4	Bottom	Bottom position	–100 (shown as –00) to +100

When box is selected and the [MORE] button is lit amber, there are more settings. Press the [MORE] button, so that it changes from amber to green to make the extra setting.

Knob	Parameter	Adjustment	Setting values
1	Soft	Box softness	0 to 100

• When pattern is selected

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0 to 100
2	Soft	Edge softness	0 to 100

Knob	Parameter	Adjustment	Setting values
3	Pattern	Pattern number	1 to 24 a)

a) The pattern is the same as a standard wipe. *(See "Wipe Pattern List" (page 412).)*

Using the subsidiary mask

In the key control block, press the [SUB MASK] button, turning it on. The parameter settings depend on the mask source selected as [Wipe] or [Utility 1 Bus] in the <Mask Source> group of the Sub Mask menu for the key.

- **When wipe is selected**

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0 to 100
2	Soft	Edge softness	0 to 100

- **When utility 1 bus is selected**

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for creating mask signal	+109 to –7
2	Gain	Gain	–100 (shown as –00) to +100

Applying a DME Effect to a Key

Notes

For one M/E bank, DME effects (including DME wipes) can be used in up to two places simultaneously.
For example, if one DME channel wipe pattern is selected for the background, a DME can only be used in one place on keys 1 to 4. If two or more channels are selected, then no DME can be used on keys 1 to 4.

Assigning a DME to a key

1 In the key control block, press the delegation buttons [M/E1] and [KEY1].

2 Using the DME channel selection buttons, select the DME channel (DME1 to DME8) for applying the effect.

The lit colors of the [DME1] to [DME8] buttons indicate the DME assignment.
Lit green: Shows the DME assigned to the currently selected key.

Lit amber: Shows the DME assigned to a key other than the currently selected key.
Off: DME is not assigned.

To select a DME being used by another keyer
Press [Override], turning it on, then select the DME channel.
The later selection is valid, and the button lights green.

You can check the DME operating status in the Status menu *(see page 365)*.

Selecting the video signal for the DME assigned to a key

For the operating procedure, see"Selecting the video signal for a DME assigned to a key" (page 195).

Assigning the DME output signal to a monitor signal

1 Holding down the output destination specification button [MON] in the key control block, use the DME channel selection buttons to select the DME channel (DME1 to DME8) you want to use.

The selected DME output is assigned to DME MON V and DME MON K.

2 To check the DME assignment status, hold down just the [MON] button.

While it is held down, the lit color of the [DME1] to [DME8] buttons shows the key assignment status.
Lit green: Shows the DME currently being monitored.
Lit amber: Shows a DME which can be monitored.
Off: DME is not assigned.

Other Key Setting Operations

Using an external processed key

You can select and use the key processed keyer key fill and key source signals on the AUX buses.

1 Select the keyer to be allocated.

2 In the key control block, press [PROC KEY], turning it on.

The button lights amber, and on the currently selected keyer, the key fill and key source are assigned to reentry signals PROC V and PROC K.

When a DME is selected on the currently selected keyer, the key fill and key source signals to which the DME effect is applied are assigned to PROC V and PROC K.

Notes

You cannot select the PROC V and PROC K signals using the cross-point selection buttons of the M/E or PGM/PST bank.

Using a frame memory feed

When you press the [FM FEED] button in the key control block, it lights momentarily amber, then the key fill and key source signals processed in the currently selected keyer are assigned to frame memory sources 1 and 2.
If a DME is selected on the currently selected keyer, then the key fill and key source signals to which a DME effect is applied are assigned to frame memory sources 1 and 2.
Carrying out a frame memory feed causes the [PROC KEY] button to light amber.

Using the show key function

While the [SHOW KEY] button is held down, the key-processed key source signal appears on the specified output. (Show key mode)
Even when the [SHOW KEY] button is released, for a preset time the show key mode is maintained. You can specify the output to which the show key function is applied and set the time for which the show key mode is maintained after releasing the button in a Setup menu.

For details see "Settings Relating to Keys, Wipes, Frame Memory and Color Correction (Key/Wipe/FM/CCR Menu)" in Chapter 20 (Volume 3).

Using the auto delegation function

To couple the selection in the key delegation buttons of the independent key transition control block so that the key control block delegation selection is automatically switched, in the key control block press the [AUTO DELEG] button, turning it on.

Returning the key adjustment values to their defaults

Holding down a key type button ([LUM], [LIN], [CRK], [CVK], or [PTN]) recalls the key default values *(page 162).*

Key modify clear

When an M/E delegation button is held down, holding down a key delegation button together returns the key settings to the initial status settings.

For details of the initial status, see "Selecting the State After Powering On (Start Up Menu)" in Chapter 18 (Volume 3).

Resizer

Resizer allows you to apply DME-like effects such as image shrinking, magnification and movement, as well as change of the aspect ratio, to the processed key.
The following functions are available.

- Two-dimensional transformations of keys
- Resizer interpolation settings
- Resizer crop/border settings
- Resizer effect settings
  (wide key border, drop shadow, edge enhance, mosaic, defocus, mask)

Notes

- The image of the key manipulated by resizer has a one-frame delay.
- Some effects of resizer are different from what you would expect of DME effects.

Restrictions on the use of effects

There are restrictions on combined use of resizer effects themselves and that with DME wipes.

For details, see "Impossibility of simultaneous use within the same keyer" (page 223).

Relation between resizer and other effects

You cannot apply DME effects to a key for which the resizer function is enabled. When one of the three functions – resizer, DME wipe and DME effects – is enabled, the other two are disabled.

Two-Dimensional Transformations of Keys

Notes

When the screen aspect ratio is 4:3 in HD format, when the resizer is used to shrink a video image, this is applied to the 16:9 screen including the added video on the left and right sides. Use the crop function as required to extract the 4:3 image.

Menu operations for key shrinking, magnification and movement

For example, to shrink, magnify or move key1 of the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 >Processed Key menu, press [Resizer], turning it on.

2 Adjust the following parameters with the knobs.

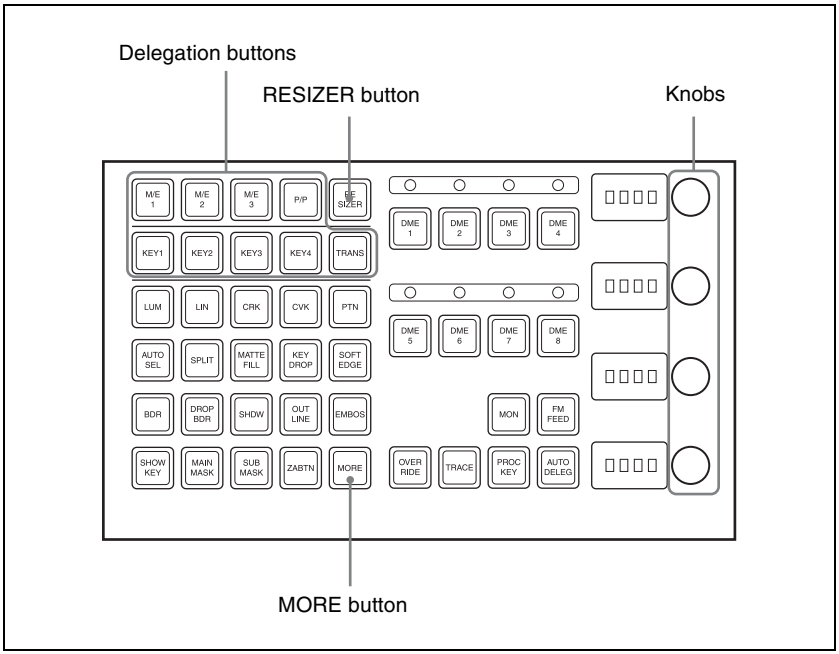
Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values	
1	Location X	Move key horizontally	HD	–99.9999 to +99.9999
			SD 4:3	–33.3333 to +33.3333
			SD 16:9	–24.9999 to +24.9999
2	Location Y	Move key vertically	HD	–99.9999 to +99.9999
			SD 4:3	–33.3333 to +33.3333
			SD 16:9	–24.9999 to +24.9999
3	Size	Magnify or shrink key	0.0000 to 99.9999	

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Aspect X	Change aspect ratio horizontally	0.0000 to 99.9999
2	Aspect Y	Change aspect ratio vertically	0.0000 to 99.9999
3	Aspect Ratio	Change aspect ratio horizontally and vertically at a time	0.0000 to 2.0000

Key control block (MKS-8035 Key Control Module, option) operations for key shrinking, magnification and movement



1 Use the delegation buttons to select the key to which you want to apply a resizer function.

2 Press the [RESIZER] button, turning it on.

3 Adjust the following parameters with the knobs.
(To switch between displaying parameter group 1/2 and 2/2, press the [MORE] button.)

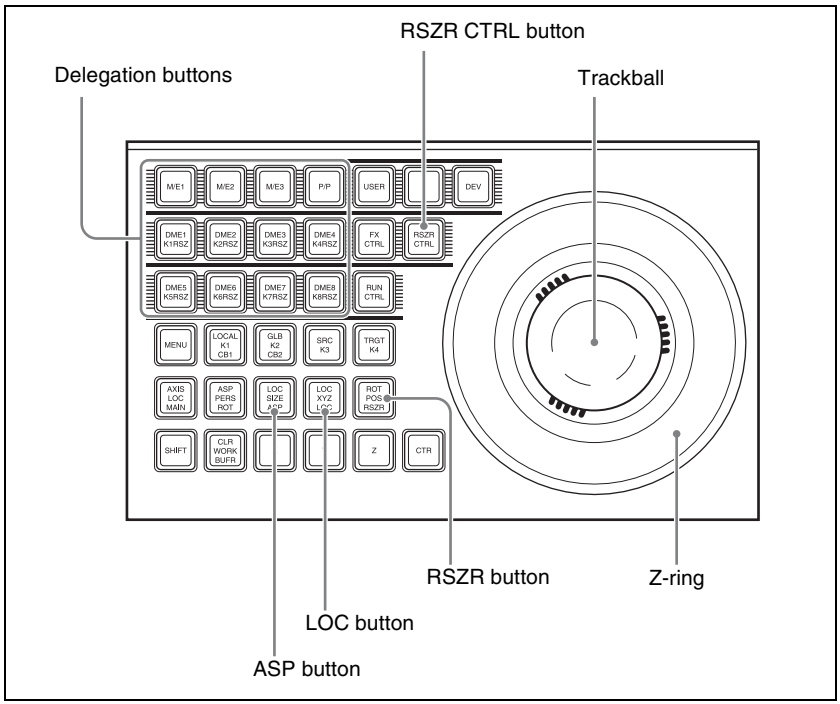
Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values	
1	X	Move key horizontally	HD	–99 to +99
			SD 4:3	–33 to +33
			SD 16:9	–24 to +24
2	Y	Move key vertically	HD	–99 to +99
			SD 4:3	–33 to +33
			SD 16:9	–24 to +24
3	S	Magnify or shrink key	0.0 to 99	

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	X	Change aspect ratio horizontally	0.0 to 99
2	Y	Change aspect ratio vertically	0.0 to 99
3	R	Change aspect ratio horizontally and vertically at a time	0.0 to 2.0

Device control block (MKS-8031TB Trackball Module, option) operations for key shrinking, magnification and movement



1 Press the [RSZR CTRL] button, turning it on.

2 Press the delegation button to select the key.

3 Press the [RSZR] button, turning it on.

4 • To change the aspect ratio, turn on the [LOC SIZE(ASP)].

• To shrink, magnify, or move the key, turn on the [LOC XYZ(LOC)].

Hold these buttons down while carrying out the operation of step **5** to enable fine adjustment (fine mode).

5 Use the trackball for the operation.

*For details of parameters, see step **3** of "Key control block (MKS-8035 Key Control Module, option) operations for key shrinking, magnification and movement" (page 212).*

Entering parameters

This operation is the same as DME three-dimensional parameter input.

For details, see "Entering Three-Dimensional Parameter Values" in Chapter 11 (Volume 2).

Resetting parameters

This operation is the same as DME three-dimensional parameter resetting.

For details, see "Entering Three-Dimensional Parameter Values" in Chapter 11 (Volume 2).

Clearing resizer effects

To clear two-dimensional transform parameters only and set the initial state

In the device control block, press the [CLR WORK BUFR] button in the operation buttons.

To clear all resizer parameters, and set the initial state

In the device control block, press the [CLR WORK BUFR] button in the operation buttons, twice in rapid succession.
For the initial state, you can select either the factory default settings or user settings.

For details of how to make this selection, see "Selecting the State After Powering On (Start Up Menu)" in Chapter 18 (Volume 3).

Resizer Interpolation Settings

For example, to make the interpolation settings for key 1 of the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 >Processed Key menu, press [Resizer], turning it on.

This enables the resizer function.

2 Press [Resizer Process].

The Resizer Process menu appears.

3 In the <Video Field/Frame Mode> and other groups, make the interpolation settings.

Resizer Crop/Border Settings

Making a crop setting for a key for which resizer is on

For example, to make the crop settings for key 1 of the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 >Processed Key menu, press [Resizer], turning it on.

This enables the resizer function.

2 Press [Border/Crop].

The Border/Crop menu appears.

3 Press [Crop], turning it on.

This enables the adjustment of crop.

4 Set the parameters.

These settings are the same as those for crop of DME. For details, see "Crop Settings" in Chapter 11 (Volume 2).

Notes

If mosaic or defocus is enabled, and in the <Mosaic/Defocus Mode> group you select Video/Key, then the crop is disabled.

Applying a border to a key for which resizer is on

For example, to add the border for key 1 of the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 >Processed Key menu, press [Resizer], turning it on.

This enables the resizer function.

2 Press [Border/Crop].

The Border/Crop menu appears.

3 Press [Border], turning it on.

This enables the adjustment of crop.

4 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

- **SD format**

Knob	Parameter	Adjustment Setting	Values
1	H	Simultaneously adjust width of left and right borders	0.00 to 4.00
2	V	Simultaneously adjust width of top and bottom borders	0.00 to 3.00 (4:3) 0.00 to 2.25 (16:9)
3	All	Simultaneously adjust width of all four borders	Value of H shown
5	Density	Density of the borders	0.00 to 100.00

- **HD format**

Knob	Parameter	Adjustment Setting	Values
1	H	Simultaneously adjust width of left and right borders	0.00 to 12.00 (4:3) 0.00 to 16.00 (16:9)
2	V	Simultaneously adjust width of top and bottom borders	0.00 to 9.00
3	All	Simultaneously adjust width of all four borders	Value of H shown
5	Density	Density of the borders	0.00 to 100.00

To apply color to a border

1 In the <Border Mode> group of the Border/Crop menu, press [Flat Color].

2 Adjust the following parameters.

Knob	Parameter	Adjustment Setting	Values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00

Knob	Parameter	Adjustment Setting	Values
3	Hue	Hue	359.99 to 0.00

To soften the inner edge of a border

1 In the Border/Crop menu, press [Border Soft].

2 Adjust the following parameters.

Knob	Parameter	Adjustment Setting	Values
1	Inner Soft	Border inner softness	0.00 to 100.00

To apply a beveled light edge

1 In the <Border Mode> group of the Border/Crop menu, press [Beveled Light Edge].

2 Adjust the following parameters.

Knob	Parameter	Adjustment Setting	Values
1	Top	Top edge	–100.00 to +100.00
2	Left	Left edge	–100.00 to +100.00
3	Right	Right edge	–100.00 to +100.00
4	Bottom	Bottom edge	–100.00 to +100.00
5	All	Four edges	Value of Left shown

3 Press [Border Soft].

4 Adjust the following parameters.

Knob	Parameter	Adjustment Setting	Values
1	Inner Soft	Border inner softness	0.00 to 100.00
2	Bound Soft	Border boundary softness	0.00 to 100.00

To apply a beveled color edge

1 In the <Border Mode> group of the Border/Crop menu, press [Beveled Color Edge].

2 In the <Color Adjust> group, select the edges for adjustment among the [Top], [Left], [Right], and [Bottom] edges. To select all the four edges, press [All].

3 Set the color parameters.

For details, see "To apply color to a border" (page 216)

4 Press [Border Soft].

5 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Inner Soft	Border inner softness	0.00 to 100.00
2	Bound Soft	Border boundary softness	0.00 to 100.00

Applying Resizer Effects

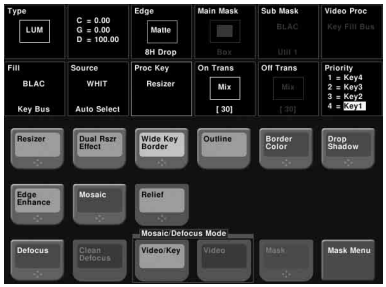
For example, to apply effects to key 1 of the M/E-1 bank, use the following procedure.

1 In the M/E-1 >Key1 >Processed Key menu, press [Resizer], turning it on.

This enables the resizer function.

2 Press [Enhanced Effect].

The Enhanced Effect menu appears.



Applying a wide key border

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Dual Rszr Effect], turning it on.

2 Press [Wide Key Border], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust border width of left and right edges	0.00 to +100.00
2	V	Simultaneously adjust border width of upper and lower edges	0.00 to +100.00
3	All	Simultaneously adjust border width of all four edges	Value of H shown
4	Soft [a)]	Softness of border	0.00 to +100.00
5	Density	Density of border	0.00 to +100.00

a) Shared with the drop shadow "Soft" value.

4 To add an outline, press [Out Line], turning it on.

5 To adjust the border color, press [Border Color].

6 Set the color parameters.

For details, see "To apply color to a border" (page 216).

Applying a drop shadow

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Dual Rszr Effect], turning it on.

2 Press [Drop Shadow], turning it on.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

- **SD format**

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position of shadow	–8.00 to +8.00
2	V	Vertical position of shadow	–6.00 to +6.00 (4:3) –4.50 to +4.50 (16:9)
3	Size	Shadow size	0.00 to 2.00
4	Soft [a)]	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

a) Shared with the wide key border "Soft" value.

• **HD format**

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position of shadow	–24.00 to +24.00 (4:3)-32.00 to +32.00 (16:9)
2	V	Vertical position of shadow	–18.00 to +18.00
3	Size	Shadow size	0.00 to 2.00
4	Soft [a)]	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

a) Shared with the wide key border "Soft" value.

Edge enhancement

Adjusting the gain sharpens the image.

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Edge Enhance], turning it on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal gain adjustment	0.00 to 100.00
2	V	Vertical gain adjustment	0.00 to 100.00
3	All	Both horizontal and vertical adjustment	H value is displayed

Applying a mosaic

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Mosaic], turning it on.

2 Set the parameters.

This operation is the same as the DME mosaic setting. For more details, see "Mosaic Settings" in Chapter 11 (Volume 2).

3 In the < Mosaic/Defocus Mode > group, select the signal to which to apply the mosaic effect.

Video/Key: Video signal and key signal
Video: Video signal only

Notes

If mosaic is enabled, and in the <Mosaic/Defocus Mode> group you select Video/Key, then the crop and mask are disabled.

4 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal defocusing	0.00 to 100.00
2	V	Vertical defocusing	0.00 to 100.00
3	All	Horizontal and vertical defocusing	H value shown

To make the mosaic like a relief pattern

1 With [Mosaic] on, press [Relief], turning it on.

2 In addition to the mosaic parameters, set the following parameters.

Knob	Parameter	Adjustment	Setting values
3	Gain	Relief depth of mosaic cells	0.00 to 100.00
4	Angle	Light source direction	–8.00 to +8.00

Defocusing

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Defocus], turning it on.

2 Set the parameters.

This operation is the same as the defocusing setting when using the DME. However, <Mosaic/Defocus Mode> appears in place of <Defocus Mode>.

For more details, see "Defocus Settings" in Chapter 11 (Volume 2).

Notes

If defocus is enabled, and in the <Mosaic/Defocus Mode> group you select Video/Key, then the crop and mask are disabled.

Applying a mask to mosaic or defocus

1 In the M/E-1 >Key1 >Processed Key >Enhanced Effect menu, press [Dual Rszr Effect], turning it on.

2 Press [Mask], turning it on.

This enables the mask function.
To make the mask settings, continue with steps **3** and following.

3 Press [Mask Menu].

The Mask menu appears.

4 In the <Mask Source> group, select either of [Box] and [Circle].

Box: Use a box pattern as the mask signal.
Circle: Use a circle pattern as the mask signal.

5 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

The parameters are the same as for drop shadow. For more details, see "Applying a drop shadow" (page 219), except that knobs 3 and 5 are as follows.

Knob	Parameter	Adjustment	Setting values
3	Size	Size	0.00 to 100.00
5	Aspect	Aspect ratio	–100.00 to +100.00

The rotation and inversion operations are the same as for a DME mask setting.

For more details, see Chapter 11 "Mask Settings" (Volume 2).

Notes

- When a mask effect is applied to a border, the boundary becomes discontinuous, giving an unnatural effect. Avoid applying a mask to a border.
- If mosaic or defocus is enabled, and in the <Mosaic/Defocus Mode> group you select Video/Key, then the mask is disabled.

Restrictions on resizer effects

Restrictions on the use of effects

Of the resizer effects, using mask, drop shadow, or wide key border requires two units of hardware for the resizer function.
These are called "dual resizer effects".

In a dual resizer effect, predetermined combinations, key 1 and key 2, key 3 and key 4, key 5 and key 6, key 7 and key 8 are used.
For example, if either of key 1 and key 2 has resizer set to On, the other key cannot be used for a dual resizer effect.
The same restriction applies when using a resizer DME wipe in place of resizer.

Impossibility of simultaneous use within the same keyer

The following combinations of resizer effects cannot be simultaneously on.

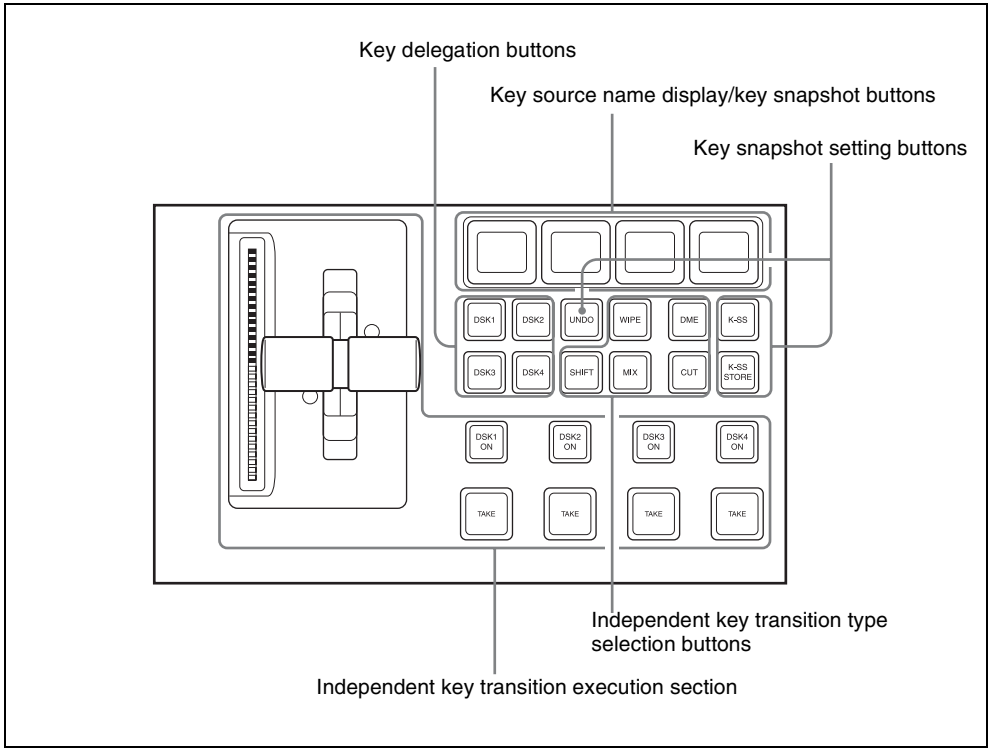
- Mosaic and edge enhance
- Defocus and wide key border
- Mask and drop shadow
- Mask and wide key border

Key Snapshots

Key settings other than the key on/off status and the key priority can all be instantaneously saved in a dedicated register, for recall when required. A key snapshot comprises three values: a cross-point button number, key memory full mode, and independent key transition, and can be called in any combination. There are four key snapshot registers for each keyer.

Key Snapshot Operations

Key snapshot operations are carried out in the downstream key control block (MKS-8032 DSK Fader Module). Each keyer is provided with four dedicated key snapshot registers.



Independent key transition control block (MKS-8032)

Notes

To select [Key5] to [Key8] or [DSK5] to [DSK8] in the downstream key control block, a previous assignment in the Setup menu is required.

For details, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" (page 459).

Saving a key snapshot

For example, the following procedure saves the state of the DSK1 settings.

1. Press the key delegation button [DSK1], turning it on.
2. Press the [K-SS] button, turning it on.

   The system switches to key snapshot mode, and the key source name display/key snapshot buttons show the status of registers 1 to 4 for DSK1.
   Off: Nothing is saved in the register.
   Lit orange: Settings are saved in the register.
   For a register holding a snapshot, the register name is shown as up to eight characters.
3. Hold down the [K-SS STORE] button, and press the key source name display/key snapshot button corresponding to the register in which you want to save the snapshot.

   The key source name display/key snapshot button which you pressed lights yellow.

Notes

If you save a key snapshot in a register for which the button is lit orange or yellow, the existing contents of the register are overwritten.

Recalling a key snapshot

For example, the following procedure recalls the state of the DSK1 settings.

1. Press the key delegation button [DSK1], turning it on.
2. Press the [K-SS] button, turning it on.
3. Press the key source name display/key snapshot button corresponding to the register you want to recall.

   The button you pressed lights yellow, and this recalls the key snapshot. To cancel the recall, press the [UNDO] button.

Chapter 5 Wipes

Overview

A wipe is a transition from the current video stream to a new video stream, using a wipe pattern.
Changing the background by means of a wipe is referred to as a "background wipe," and inserting or deleting a key with a wipe is termed a "key wipe."
There are two types of wipe: those that can be selected in a common transition, and those that can be selected in an independent key transition.

For details of independent key transitions, see page 148.

Types of Wipe Pattern

The patterns that can be used for a wipe are divided into a number of groups, as follows. Note that only the standard wipe patterns can be used for an independent key transition.

For wipe patterns, see "Wipe Pattern List" in Appendix (Volume 1) (page 412).

Standard wipe patterns
Patterns consisting of straight lines vertically, horizontally, or diagonally, and circular patterns.

Enhanced wipes
More complex shapes such as hearts, stars, and round corners.

Rotary wipes
These patterns involve rotation of the image about a point.

Mosaic wipe pattern
This divides the image into small tiles.

Random and diamond dust wipe patterns
These patterns consist of small random tiles, or fine particles.

Basic Procedure for Wipe Settings

You carry out wipe setting operations principally using the Wipe menu for each of the M/E-1 to M/E-3 and PGM/PST banks.
This section describes the basic procedures for wipe settings, taking the M/E-1 >Wipe menu as an example.

For details of independent key transition wipe settings, see "Wipe Settings for Independent Key Transitions" (page 254).

Wipe Settings Menu

Accessing the wipe settings menu

To access the M/E-1 >Wipe menu, use either of the following operations.

- In the menu control block, select the top menu selection button [M/E 1], and press VF5 'Wipe.'

  Notes

  To select [M/E-4], a previous assignment in the Setup menu is required.

- In the transition control block of the M/E-1 bank, press the transition type selection button [WIPE] twice in rapid succession.

Any of the above operations displays the M/E-1 >Wipe menu.

Wipe Pattern Selection

Selecting a wipe pattern by a menu operation

1 In the M/E-1 >Wipe menu, select HF1 'Main Pattern.'

The Main Pattern menu appears.

2 Select the wipe pattern group with the pattern group selection button.

Standard: standard wipes
Enhanced: enhanced wipes
Rotary: rotary wipes
Mosaic1 to Mosaic3: mosaic wipes

Random/Dust: random/diamond dust wipes

The patterns from the selected pattern group appear on the screen.

For details of wipe patterns, see "Types of Wipe Pattern" (page 228) and "Wipe Pattern List" (page 412).

3 Press the button to select the desired pattern.

The selected pattern is displayed on the screen.

4 The parameters change according to the selected pattern, and you can adjust the pattern.

- **When a polygon wipe is selected** (pattern number 49)

Knob	Parameter	Adjustment	Setting values
1	No	Number of points	3 to 64
2	Star Rate	Angularity of star	–100.00 to +100.00 a)

a) A value of –100.00 completely removes the star "rays," leaving a circle; at +100.00 the "rays" are at their sharpest.

- **When a mosaic wipe is selected** (pattern numbers 200 to 203, 206 to 213, 224 to 247, 250 to 257, 260 to 269)

Knob	Parameter	Adjustment	Setting values
1	H Tile No	Number of tiles horizontally	2 to 36
2	V Tile No	Number of tiles vertically	2 to 18

- **When a karaoke wipe is selected** (pattern numbers 220 to 223)

Knob	Parameter	Adjustment	Setting values
1	Start	Position of start tile	–100.00 to +100.00 a)
2	Row No	Number of rows of tiles	1 to 36
3	Phase	Delay for next row	–100.00 to +100.00 b)

a) At –100.00 tiles appear from the top (or left edge) of the screen; at +100.00 from the bottom (or right edge) of the screen.
b) At –100.00 all rows appear simultaneously; at +100.00 until one row of tiles is completely displayed, the next row does not start to appear.

- **When a random wipe is selected** (pattern number 273)

Knob	Parameter	Adjustment	Setting values
1	H Size	Tile width	0.00 to 100.00
2	V Size	Tile height	0.00 to 100.00
3	Volatility	Rate of tile generation	0.00 to 100.00

• **When a diamond dust wipe is selected** (pattern number 274)

Knob	Parameter	Adjustment	Setting values
1	H Size	Particle width	0.00 to 100.00
2	V Size	Particle height	0.00 to 100.00
3	Flash Rate	Rate of generation of particles	0.00 to 100.00

Notes

When Flash Rate is set to 0.00, you cannot change the pattern. In this state, adjusting H Size or V Size has no effect on the pattern.

For details of a pattern mix, see the next section.
For details of applying pattern modifiers, see "Setting Wipe Modifiers" (page 236).

Pattern Mix

You can create a new pattern by combining two selected patterns (main and "sub").

Notes

It is not possible to apply a pattern mix to an independent key transition.

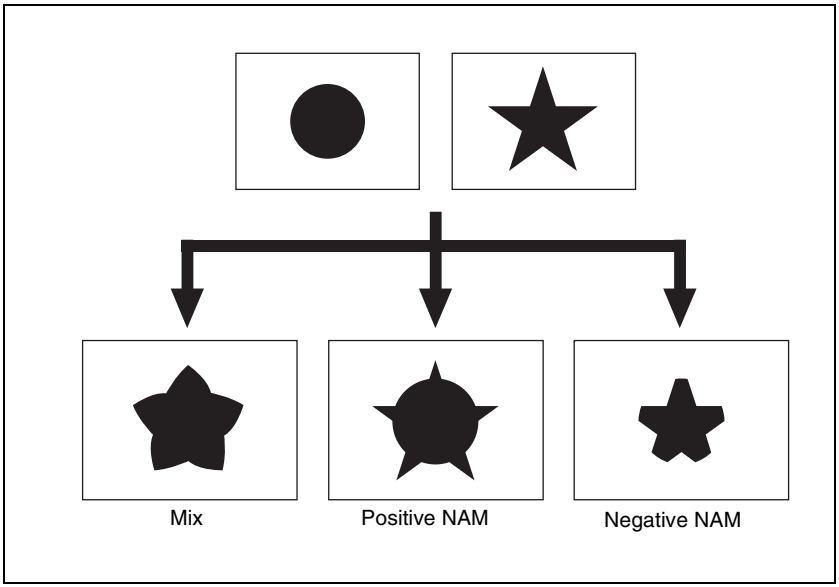
Types of pattern mix

There are four ways in which patterns can be combined in a pattern mix, as follows.

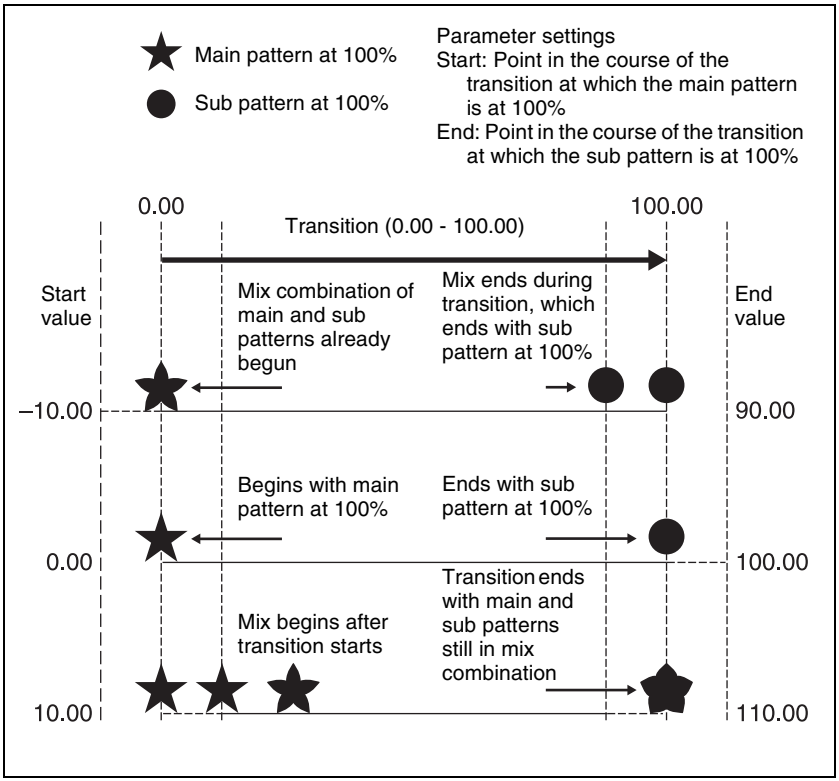
Mix: The effect of the sub pattern is applied to the main pattern, modifying the outline or nature of the main pattern.

Positive NAM (+Nam): Creates a pattern with an outline which contains all points within the outlines of either of the main pattern and the sub pattern.

Negative NAM (–Nam): Creates a pattern with an outline which contains all points within the outlines of both of the main pattern and the sub pattern.



Morphing: As the transition progresses, the pattern morphs from the main pattern, through the “mix” combination, to the sub pattern.



- A value of 0.00 corresponds to the beginning of the transition, and a value of 100.00 to the end of the transition.
- A negative Start value signifies that the main and sub patterns are already combined when the transition starts.
- An End value of 100.00 or more signifies that the main and sub patterns are still combined when the transition complete.
- If the Start and End values are the same, the main and sub patterns are interchanged instantaneously at the corresponding point in the transition.
- If End is less than Start, as the transition proceeds, it changes from the sub pattern to the main pattern.

Dust mix

You can apply the effect of a diamond dust wipe to a selected pattern. You can also apply the diamond dust wipe effect to the pattern resulting from a pattern mix. *(See "Applying the effect of a diamond dust wipe to the selected pattern (Dust mix)" (page 236).)*

When the pattern mix function is off, turning dust mix on results in the main pattern and the diamond dust pattern being mixed. This state is the same as a pattern mix when the diamond dust pattern is selected for the sub pattern.

Main and sub modifier link function

When carrying out a pattern mix, it is possible to link the modifier settings for the main pattern and sub pattern. There are two modes for this function.

FULL LINK (fully linked) mode

In this mode, all modifier settings are the same for the main pattern and sub pattern.
Changing the modifier settings for one pattern automatically changes the settings for the other.

SEMI LINK (semi-linked) mode

Only the parameter settings of the modifiers are linked. The modifier on/off settings are not linked. When the parameter values for the modifiers of the main pattern and sub pattern are different, then after this link mode is selected, changing the value of a parameter for one pattern changes the value of the parameter for the other pattern to maintain the same difference between the two.

Notes

When carrying out a wipe transition using a pattern mix, it is recommended that you set the modifier link function to FULL LINK mode.
If the link function is off, or SEMI LINK mode is selected, the desired effect may not be obtained at the start or end of the transition.

Combining two patterns

Select a main pattern in the Main Pattern menu, then use the following procedure.

1 In the M/E-1 >Wipe menu, select HF3 ‘Sub Pattern.’

The Sub Pattern menu appears.

2 In the same way as for the main pattern, select the sub pattern.

The patterns that can be selected for the sub pattern depend on the pattern selected for the main pattern *(see the following table).*

Possible combinations of main pattern and sub pattern

Yes: Combination possible **No:** Combination not possible

Main pattern	Sub pattern				
	Standard	**Enhanced**	**Rotary**	**Mosaic**	**Random/ diamond dust**
Standard	Yes	Yes	No	Yes	Yes

Main pattern	Sub pattern				
	Standard	Enhanced	Rotary	Mosaic	Random/ diamond dust
Enhanced	Yes	Yes	No	Yes	Yes
Rotary	No	No	No	No	No
Mosaic	Yes	Yes	No	No	Yes
Random/ diamond dust	Yes	Yes	No	Yes	No

3 Select HF2 'Pattern Mix.'

The Pattern Mix menu appears.

4 In the <Pattern Mix> group, select the type of pattern mix.

Mix: mix
+Nam: positive Nam
–Nam: negative Nam
Morphing: morphing

For an overview of types of pattern mix, see "Types of pattern mix" (page 231).

5 Depending on the selection in step **4**, set the following parameters.

- **When mix, positive Nam, or negative Nam is selected**

Knob	Parameter	Adjustment	Setting values
1	Mix Ratio	Proportion of sub pattern to the main pattern	0.00 to 100.00

- **When morphing** *(see page 232)* **is selected**

Knob	Parameter	Adjustment	Setting values
2	Start	Point in transition at which main pattern is at 100%	–50.00 to +150.00
3	End	Point in transition at which sub pattern is at 100%	–50.00 to +150.00

6 In the <Main/Sub Link> group, make the main/sub modifier link function settings. (*See "Main and sub modifier link function" (page 234).)*

Full: fully linked mode
Semi: semi-linked mode

Applying the effect of a diamond dust wipe to the selected pattern (Dust mix)

1 In the Pattern Mix menu, press [Dust Mix], turning it on.

2 Set the following parameters as required.

Knob	Parameter	Adjustment	Setting values
1	Mix Ratio	Proportion of diamond dust pattern in mix	0.00 to 100.00
2	H Size	Particle width	0.00 to 100.00
3	V Size	Particle height	0.00 to 100.00
4	Flash Rate	Rate of generation of particles	0.00 to 100.00

You can also apply the dust mix function to the pattern generated by a pattern mix.

Notes

When a random/diamond dust wipe (pattern numbers 270-274) is selected, the dust mix function is not available.

Setting Wipe Modifiers

You can apply various modifiers to the wipe pattern: setting the wipe direction, pattern position, and so on.

Note that the available modifiers may depend on the pattern you are using. For details, see "Possible combinations of wipe patterns and modifiers" (page 253).

Main pattern and sub pattern modifiers

You can make independent settings of the modifiers for the main pattern and sub pattern.

- To set the modifiers for the main pattern, in the M/E-1 >Wipe menu, select HF5 'Main Modify,' and make the settings in the Main Modify menu.
- To set the modifiers for the sub pattern, select HF6 'Sub Modify,' and make the settings in the Sub Modify menu.

Operations in the Main Modify menu and Sub Modify menu are the same.

Independently set modifiers for the main pattern and sub pattern

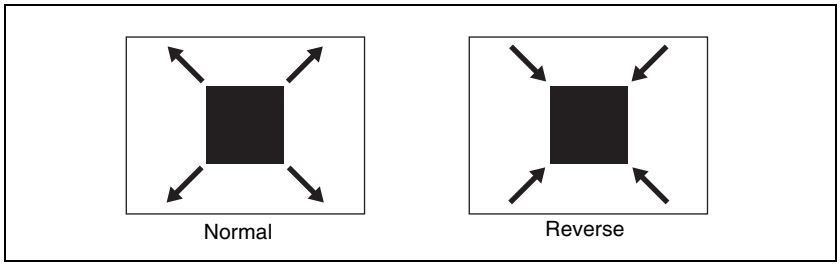
- Positioner
- Rotation

- Aspect ratio
- Pattern replication (MULTI)
- Pairing
- Modulation
- Spring
- Spiral

The following sections show examples of modifying the main pattern.

Specifying the wipe direction (Direction)

You can specify the direction of the wipe: the regular direction is referred to as "normal," and the other direction as "reverse." You can also select alternating directions each time the transition is completed (normal/reverse mode).



To specify the wipe direction in a menu

1 In the M/E-1 >Wipe menu, select HF4 'Edge/Direction.'

The Edge/Direction menu appears.

2 In the <Direction> group, specify the wipe direction.

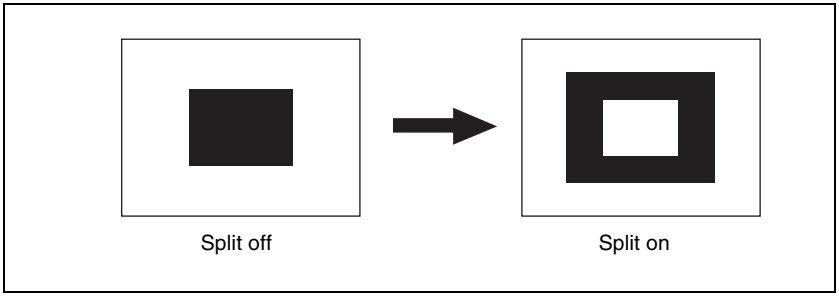
Normal: regular direction
Normal/Reverse: alternate between regular and reverse for each transition
Reverse: reverse direction to normal

To specify the wipe direction with a button in the transition control block

In the transition control block of each of the M/E-1 to M/E-3 and PGM/PST banks, press the following direction selection buttons.
NORM: Normal
NORM/REV: Normal/reverse
REV: Reverse

Splitting the wipe pattern (Split)

This splits the pattern, making the parts of the wipe move in opposite directions.



The parameter Split No specifies the number of splits.
The parameter Spacing specifies the spacing between adjacent patterns.

1 In the M/E-1 >Wipe menu, select HF4 ‘Edge/Direction.’

The Edge/Direction menu appears.

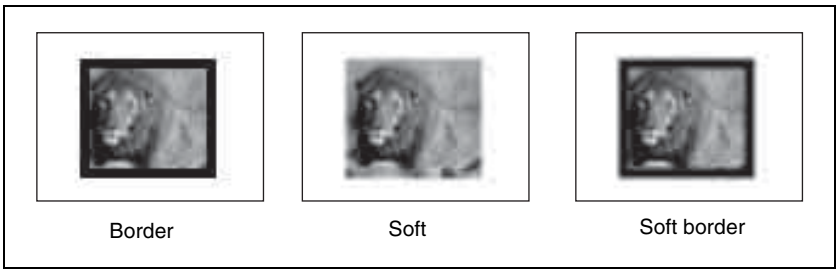
2 Press [Split], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Split No	Number of splits	1 to 4 (integer)
2	Spacing	Spacing between adjacent patterns	0.00 to 100.00

Modifying the wipe pattern edge (Edge)

You can apply a border to the pattern, soften the edges, or soften the applied border.



Border: You can adjust the border width.
Soft: You can adjust the edge softness.

Soft border: You can adjust the border width, and the softness of the inner and outer edges of the border.

When a border or soft border is selected, the signal filling the border is called edge fill. For the edge fill, you can use a matte generated by the dedicated color matte generator, or the signal selected on the utility 2 bus. A matte can include color 1 and color 2, and a combination of the two colors (a “color mix”).

1 In the M/E-1 >Wipe menu, select HF4 ‘Edge/Direction.’

The Edge/Direction menu appears.

2 In the <Edge> group, select the edge type.

Border: border
Soft: soft edge
Soft Border: soft border

3 Set the parameters according to the selection in step **2**.

- **When border is selected**

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00

- **When soft edge is selected**

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0.00 to 100.00

- **When soft border is selected**

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00
2	Inner Soft	Border inner softness	0.00 to 100.00
3	Outer Soft	Border outer softness	0.00 to 100.00

4 When you selected border or soft border, select the edge fill signal in the <Edge Fill> group.

Utility 2 Bus: signal selected on the utility 2 bus
Matte: signal from the dedicated color matte generator

5 Depending on the operation in step **4**, carry out the following operation.

When ‘Utility 2 Bus’ is selected: Press the key delegation button [UTIL2], turning it on, and select the signal in the key row.

When 'Matte' is selected: In the same Edge/Direction menu, press [Matte Adjust] to display the Matte Adjust menu, then adjust the single-color or two-color combination color matte. Select whether to use a single-color matte or a two-color combination in the <Edge Matte> group.
Flat Color: Adjust color 1 with the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

When you select [Mix Color] for a two-color combination, see the next paragraph.

Carrying out a color mix for the edge fill matte

When you selected [Matte] for the border or soft border edge fill, you can combine color 1 and color 2.
For the combination, you can use not only a normal wipe generator pattern, but also the dedicated color mix pattern.

1 In the <Edge Fill> group of the Edge/Direction menu, select [Matte], and press [Matte Adjust].

The Matte Adjust menu appears.

2 In the <Edge Matte> group, select [Mix Color], turning it on.

3 In the <Mix Pattern> group, make one of the following selections.

Wipe: Use the wipe pattern selected for the transition.
Pattern: Use the dedicated pattern.

4 Depending on the selection in step **3**, set the following parameters.

- **When Wipe is selected**

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

- **When Pattern is selected**

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
3	Pattern	Pattern number	1 to 24 a)

a) The patterns are the same as for a standard wipe. *See "Wipe Pattern List" (page 412).*

If you selected Pattern, you can also carry out the pattern selection by pressing the [Mix Ptn Select] button in the Matte Adjust menu, to display the Mix Ptn Select menu. Select any pattern appearing in the Mix Ptn Select menu (wipe patterns 1 to 24) by pressing the appropriate button, and you can then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

5 If you selected Pattern in step **4**, if required, the following modifiers can be added. After selecting a wipe mix, skip to step **6**.

• When turning [Position] on and setting the pattern position

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See page 242.

• When turning [Multi] on and using replications of the same pattern

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See page 247.

• When turning [Aspect] on and setting the aspect ratio of the pattern

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) See page 246.

- **When turning [Angle] on in the <Rotation> group and slanting the pattern**

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See page 244.

- **When turning [Speed] on in the <Rotation> group and rotating the pattern at a constant rate**

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See page 244.

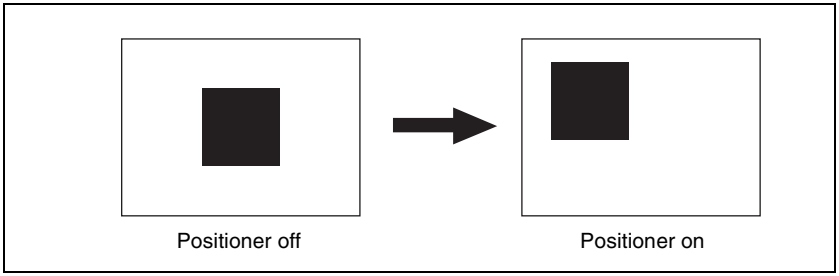
6 To adjust color 1, set [Color 1] on, and to adjust color 2 set [Color 2] on, then adjust the parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

7 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Setting the wipe position (Positioner)

When you turn on this function, you can move the wipe pattern to any position.



- The parameter H Position controls the horizontal position of the pattern. A negative value moves the pattern to the left, and a positive value moves the pattern to the right.
- The parameter V Position controls the vertical position of the pattern. A negative value moves the pattern down, and a positive value moves the pattern up.

You can set the position independently for the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 'Main Modify.'

The Main Modify menu appears.

2 In the <Position> group, press [Position], turning it on, and set the pattern position.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00
2	Position V	Vertical position	–200.00 to +200.00

To return the pattern position to the center of the screen

In the <Position> group, press [Center].

To move the pattern from its current position to the center through the course of a transition

In the <Position> group, press [Auto Center], turning it on.

To set the wipe position using the trackball

You can also set the wipe position using the trackball in the device control block.

1 In the device control block, press the [M/E1] or [P/P] button, turning it on.

The buttons in the device control block are assigned to the wipe position setting as follows.

Table 1: Buttons and assigned settings

Button name	Setting
MAIN	Wipe position for common transition (main pattern)
SUB	Wipe position for common transition (sub pattern)

Table 2: Buttons assigned to functions

Button name	Function
POS	Toggle Position on or off.
X, Y	Fix the operating direction.
CTR	Return the pattern position to the center of the screen.

2 Press the [MAIN] button or [SUB] button, turning it on.

3 Press the [POS] button, turning Position on.

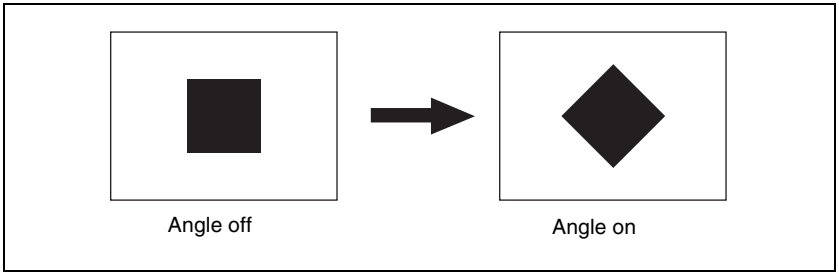
4 Move the trackball or joystick, to set the wipe position. By pressing the [X] button, turning it on, you can restrict movement to the horizontal direction, and by pressing the [Y] button, turning it on, you can restrict movement to the vertical direction.

Rotating the wipe pattern (Rotation)

You can rotate the pattern. There are three rotation modes, as follows.

Angle

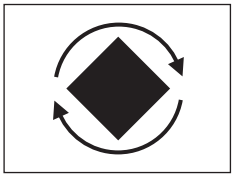
This carries out a wipe with the pattern in a fixed angle.



The parameter Angle determines the angle of pattern rotation.
A value of –100.00 of the parameter Angle corresponds to one whole turn counterclockwise; a value of +100.00 corresponds to one whole turn clockwise.
With a value of 0.00 there is no rotation.

Speed

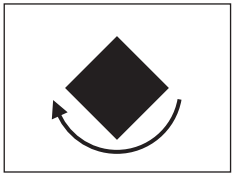
Through the course of the transition the wipe pattern rotates at a fixed specified speed.



The parameter Speed determines the speed of pattern rotation.
A value of –100.00 of the parameter Speed corresponds to one turn per second counterclockwise; a value of +100.00 corresponds to one turn per second clockwise. With a value of 0.00 the pattern is stationary.

Magnitude

Through the course of the transition the wipe pattern rotates through the specified angle.



The parameter Angle determines an angle of pattern inclination at the beginning of the transition.

- A value of –100.00 corresponds to the angle rotated one whole turn counterclockwise.
- A value of +100.00 corresponds to the angle rotated one whole turn clockwise.
- With a value of 0.00 the pattern is stationary.

The parameter Magnitude determines an angle of pattern rotation through the course of the transition.

- A value of –200.00 corresponds to a rotation of two turns counterclockwise.
- A value of +200.00 corresponds to a rotation of two turns clockwise.
- With a value of 0.00 the pattern is stationary.

You can apply rotation independently to the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

2 In the <Rotation> group, select the rotation type.

Angle: Incline the pattern through a fixed angle.
Speed: Rotate at a fixed rate.
Magnitude: Rotate through a particular angle during the course of the transition.

3 According to the selection in step **2**, set the following parameters.

- **When Angle is selected**

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00

• **When Speed is selected**

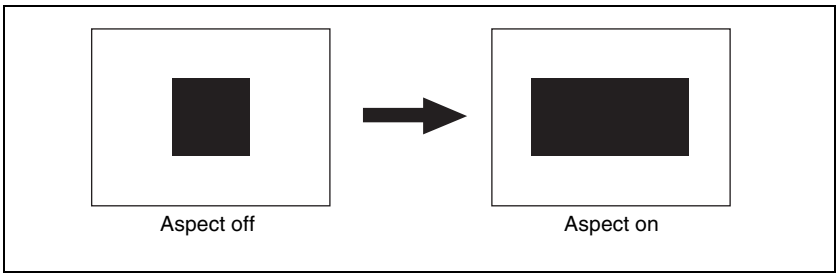
Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00

• **When Magnitude is selected**

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation at start of transition	–100.00 to +100.00
2	Magnitude	Angle of rotation through course of transition	–200.00 to +200.00

Setting the wipe pattern aspect ratio (Aspect ratio)

You can freely change the aspect ratio of the pattern.



A negative value of the parameter Aspect stretches the pattern vertically; a positive value stretches the pattern horizontally.

You can set the aspect ratio independently for the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

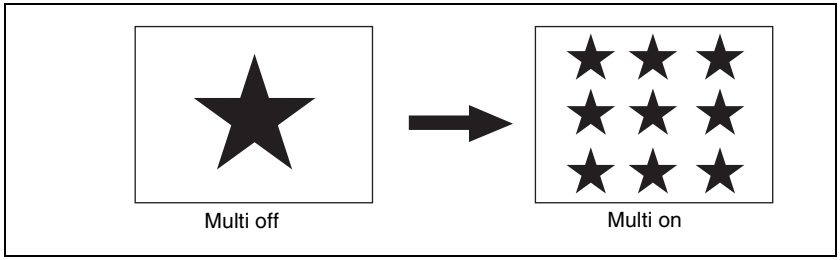
2 Press [Aspect], turning it on.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00

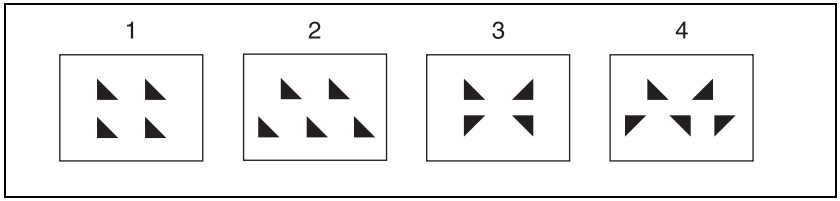
Setting the wipe pattern replication (Multi)

The same pattern can be repeated horizontally and vertically or both, up to 63 times. You can also change the orientation of alternate copies, or change the position.



- The parameter H Multi determines the number of pattern replications horizontally, and the parameter V Multi determines the number of pattern replications vertically.
- The parameter Shift determines the manner of replication.
  At a value of –100.00, the pattern of the adjacent odd-numbered column on the left lines up with the central coordinate horizontally.
  At a value of +100.00, the pattern of the adjacent odd-numbered column on the right lines up with the central coordinate horizontally.

For an independent key transition wipe, you can use the “Invert Type” parameter to select from the following four types of replication pattern.



1: All replications in the same orientation
2: Even-numbered rows staggered
3: Even-numbered columns and rows inverted
4: Even-numbered columns and rows inverted, and even-numbered rows staggered

You can set pattern replication independently for the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

2 Press the [Multi] button, turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Shift	Replication layout	–100.00 to +100.00

4 To make more adjustments, press the [Multi Adjust] button.

The Multi Adjust menu appears.

5 Make the following settings, as required.

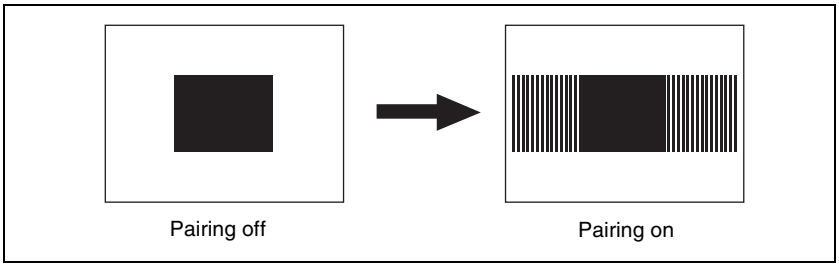
H Invert: When this is on, alternate tiles are inverted left-to-right.
V Invert: When this is on, alternate tiles are inverted top-to-bottom.
Non-Mask: When this is on, even if the positioner function is used to move the pattern position, the pattern is always present on the screen.
Position: By adjusting the following parameters, move the pattern position within the divisions determined in step **3**.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position of pattern	–200.00 to +200.00 a)
2	Position V	Vertical position of pattern	–200.00 to +200.00 a)

a) See page 242.

Making a wipe pattern like a Venetian blind (Pairing)

This slits the pattern into multiple strips, making it like a venetian blind.



H: Create slits in the horizontal direction.
V: Create slits in the vertical direction.
- The parameter Width determines the width of the slits.
- The parameter H Offset determines the spacing in the horizontal direction. If a negative value is set, the even-numbered pairs of strip and slit move to

the left, and the odd-numbered pairs move to the right. (The value –100.00 represents the maximum movement.)
If a positive value is set, the even-numbered pairs of strip and slit move to the right, and the odd-numbered pairs move to the left. (The value +100.00 represents the maximum movement.)

- The parameter V Offset determines the spacing in the vertical direction.
If a negative value is set, the even-numbered pairs of strip and slit move upward, and the odd-numbered pairs move downward. (The value –100.00 represents the maximum movement.)
If a positive value is set, the even-numbered pairs of strip and slit move downward, and the odd-numbered pairs move upward. (The value +100.00 represents the maximum movement.)

1 In the M/E-1 >Wipe menu, select HF5 'Main Modify.'

The Main Modify menu appears.

2 In the <Pairing> group, select the slit direction.

H: Create slits in the horizontal direction.
V: Create slits in the vertical direction.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Width	Width of the slits	1 to 128 (integer)
2	H Offset	Spacing in the horizontal direction	–100.00 to +100.00
3	V Offset	Spacing in the vertical direction	–100.00 to +100.00

Applying modulation to the wipe pattern (Modulation)

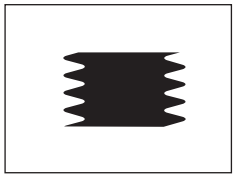
The pattern signal can be modulated, giving waves on the horizontal or vertical edges, or radially.
The parameter Shape determines the form of the modulation.
1: sine wave, 2: triangular wave, 3: rectangular wave

Notes

When using 1080PsF mode in an HD system, the modulation function is not available.

Horizontal modulation

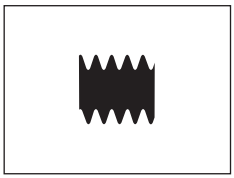
This modulates the pattern, applying waviness in the horizontal direction to edges.



The parameter Speed determines the speed of waves.
A value of –100.00 generates the maximum downward speed of waves, and a value of +100.00 the maximum upward speed.

Vertical modulation

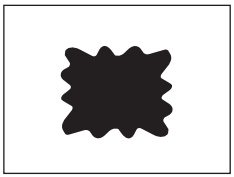
This modulates the pattern, applying waviness in the vertical direction to edges.



The parameter Speed determines the speed of waves.
A value of –100.00 generates the maximum leftward speed of waves, and a value of +100.00 the maximum rightward speed.

Fringe

This modulates the pattern, applying waviness in the radial direction to edges.



The parameter Speed determines the speed of waves.
A value of –100.00 generates the maximum counterclockwise speed of waves, and a value of +100.00 the maximum clockwise speed.

You can apply modulation independently to the main pattern and sub pattern.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

2 Depending on the desired effect, in the <Modulation> group select one of the following.

H (Horizontal modulation): Modulate the pattern, applying waviness in the horizontal direction to edges.

V (Vertical modulation): Modulate the pattern, applying waviness in the vertical direction to edges.

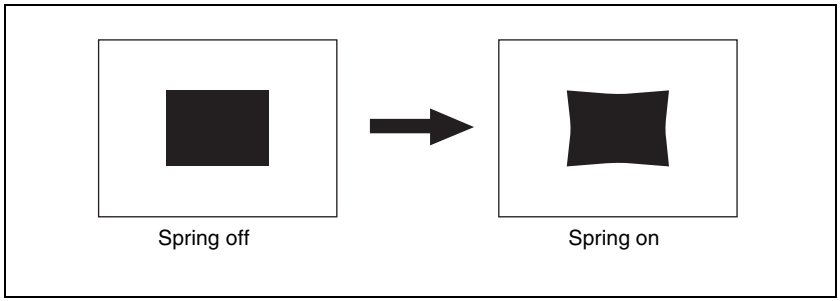
Fringe (Radial modulation): Modulate the pattern, applying waviness in the radial direction to edges.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Amplitude	Amplitude of modulation	0.00 to 100.00
2	Frequency	Frequency of modulation	0.00 to 100.00
3	Speed	Speed of waves	–100.00 to +100.00
4	Shape	Form of the modulation	1 to 3

Applying barrel or pincushion distortion to the edge of the wipe pattern (Spring)

As the transition progresses, the edge of the pattern is subjected to barrel or pincushion distortion.



A negative parameter value produces pincushion distortion, and a positive value produces barrel distortion.

You can set the spring function independently for the main and sub patterns.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

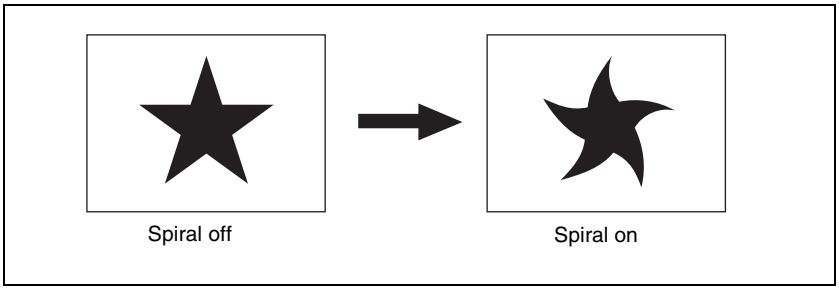
2 Press [Spring], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Gain	Degree of barrel distortion	–100.00 to +100.00

Applying a spiral effect to the wipe pattern (Spiral)

This deforms the pattern spirally.



- The parameter Magnitude determines the size and direction of the spiral. A value of –100.00 represents the maximum movement in the counterclockwise direction, and a value of +100.00 represents the maximum movement in the clockwise direction.
- The parameter Wave Speed determines the speed of the lateral waves. A value of –100.00 represents the maximum speed to the left, and a value of +100.00 represents the maximum speed to the right.

You can set the spiral function independently for the main and sub patterns.

1 In the M/E-1 >Wipe menu, select HF5 ‘Main Modify.’

The Main Modify menu appears.

2 Press [Spiral], turning it on.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Magnitude	Size and direction of the spiral	–100.00 to +100.00
2	Wave Speed	Speed of the lateral waves	–100.00 to +100.00

Possible combinations of wipe patterns and modifiers

Yes: Can be used **No:** Cannot be used

Modifiers	Type of wipe				
	Standard	**Enhanced**	**Rotary**	**Mosaic**	**Random/ diamond dust**
Direction	Yes	Yes	Yes	Yes	Yes
Split	Yes	Yes	No	Yes	No
Edge	Yes	Yes	Yes	Yes	Yes
Positioner	Yes a)	Yes b)	Yes c)	No	No
Rotation	Yes	Yes	Yes c)	No	No
Aspect ratio	Yes d)	Yes	No	No	No
Pattern replication	Yes	Yes	Yes	Yes e)	No
Pairing	Yes f)	Yes	No	No	No
Modulation (H/V)	Yes	Yes	Yes	No	No
Modulation (Fringe)	No g)	Yes	No	No	No
Spring	No g)	Yes	No	No	No
Spiral	No h)	Yes	No	No	No

a) Not patterns 1 to 16, 19, and 20
b) Not patterns 300 to 303
c) Not patterns 100 to 103, 150, 151, 516, 518, 604, and 606
d) Not patterns 1 to 8, 17, and 18
e) Not patterns 220 to 223
f) Not patterns 19 and 20
g) But patterns 21, 23 and 24 are possible
h) But patterns 21 and 23 are possible

Wipe Modify Clear

Press [Default Recall] at the lower left of the menu display, turning it on, then press VF5 ‘Wipe’ to return the wipe settings to their initial status.

For details of the menu operation to return the wipe state to that set in initial status, see “Returning to default state in function groupings” (page 91).

Wipe Settings for Independent Key Transitions

You carry out independent key/downstream key transition wipe setting operations using the Wipe Adjust menu for each keyer.

For an overview of independent key transitions, see "What is an independent key transition?" (page 148).

This section describes the independent key transition wipe settings, taking the M/E-1 >Key1 >Transition >Wipe Adjust menu as an example.

Basic Procedure for Independent Key Transition Wipe Settings

Accessing the independent key transition wipe settings menu

As an example, to access the M/E-1 >Key1 >Transition >Wipe Adjust menu, carry out the following operations.

- In the menu control block, select the top menu selection button [M/E 1] and select VF1 'Key1' and HF6 'Transition' to display the Transition menu for key 1, then press [Wipe Adjust].
  If VF1 [Key5] is shown, press the switching button at the top of the menu, so that [Key1-4] appears, and press VF1 [Key1].

Notes

To select [M/E-4], a previous assignment in the Setup menu is required.

Carrying out the above operation displays the M/E-1 >Key1 >Transition >Wipe Adjust menu (which will be referred to below as simply the Key1 Wipe Adjust menu).

Selecting the independent key transition wipe pattern

You select the independent key wipe pattern from the list of patterns displayed in the menu.

Notes

In an independent key transition, you can only use the standard wipe patterns (pattern numbers 1 to 24).

To select a wipe pattern for independent key1 on the M/E-1 bank, use the following procedure.

1 In the Key1 Wipe Adjust menu, select [Pattern Select].

The Pattern Select menu appears.

2 Press the button for the desired pattern.

Setting Independent Key Transition Wipe Modifiers

Available modifiers

You can use the following modifiers with an independent key transition wipe. Note that the available modifiers may depend on the pattern you are using.

- Direction
- Edge
- Positioner
- Rotation
- Aspect ratio
- Pattern replication

Setting the wipe direction (Direction)

In the <Direction> group of the Key1 Wipe Adjust menu, make any of the following selections.

Normal: regular direction

Normal/Reverse: alternate between regular and reverse for each transition

Reverse: reverse direction to normal

Softening the wipe pattern edge (Soft edge)

1 Press [Soft] in the Key1 Wipe Adjust menu, turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0.00 to 100.00

Setting the wipe position (Positioner)

There are two methods of setting the wipe position: using the device control block, or in a menu.

To set the wipe position using the trackball

You can also set the wipe position using the trackball in the device control block.

1 In the device control block, press the [M/E1] or [P/P] button, turning it on.

The buttons in the device control block are assigned to the wipe position setting as follows.

Table 1: Buttons and assigned settings

Button name	Setting
K1 CB1	Wipe position for independent key 1 transition
K2 CB2	Wipe position for independent key 2 transition
K3	Wipe position for independent key 3 transition
K4	Wipe position for independent key 4 transition

Table 2: Buttons assigned to functions

Button name	Function
POS	Toggle Position on or off.
X, Y	Fix the operating direction.
CTR	Return the pattern position to the center of the screen.

2 Press one of the buttons in Table 1 above, to select the wipe position to which the operation applies. Multiple selection is possible.

Notes

By setting the operation mode in setup, you can also use [K1 CB1], [K2 CB2], [K3], and [K4] to select keys 5 to 8. In this case, press [SHIFT], turning it on, then press [K1 CB1], [K2 CB2], [K3], or [K4] to select one of keys 5 to 8. However, it is not possible to select more than one key.

For details of assignment for keys 5 to 8, see "Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu" in the Appendix (page 459).

3 Press the [POS] button, turning Position on.

4 Move the trackball or joystick, to set the wipe position. By pressing the [X] button, turning it on, you can restrict movement to the horizontal direction,

and by pressing the [Y] button, turning it on, you can restrict movement to the vertical direction.

To set the wipe position by a menu operation

1 Press [Position] in the Key1 Wipe Adjust menu, turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See page 242.

To move the pattern from its current position to the center through the course of a transition

Press [Auto Center] in the <Position> group, turning it on.

Rotating the wipe pattern (Rotation)

1 In the <Rotation> group of the Key1 Wipe Adjust menu, select the rotation type.

Angle: Incline the pattern through a fixed angle.
Speed: Rotate at a speed rate.
Magnitude: Rotate the pattern through a fixed angle during the course of the transition.

2 According to the selection in step **1**, set the following parameters.

- **When Angle is selected**

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See page 244.

- **When Speed is selected**

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See page 244.

• **When Magnitude is selected**

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation at start of transition	–100.00 to +100.00 a)
2	Magnitude	Angle of rotation through course of transition	–200.00 to +200.00 a)

a) See page 245.

Setting the wipe pattern aspect ratio (Aspect ratio)

1 Press [Aspect] in the Key1 Wipe Adjust menu, turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) See page 246.

Replicating the wipe pattern (Multi)

1 Press [Multi] in the Key1 Wipe Adjust menu, turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See page 247.

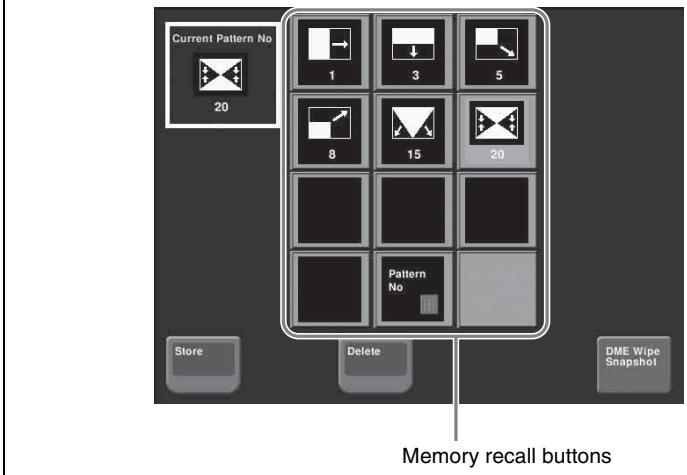
Wipe Snapshots

You can snapshot and save a wipe pattern together with the current settings of its modifiers and pattern limit in a dedicated register for recall when required. There are 10 wipe snapshot registers on each M/E bank and the PGM/PST bank.
Use the menu to save and recall wipe snapshots.

Wipe Snapshot Operations With the Menus

Menus used

As an example, when operating on M/E-1, select M/E-1 >Wipe >Wipe Snapshot.
The Wipe Snapshot menu appears.



Button displays

In setup you can select whether the memory recall buttons show the pattern number or register name.

See "Operation Settings (Operation Menu)" in Chapter 19 (Volume 3).

Saving a wipe snapshot from the menu

1 Set up the wipe you want to save.

2 In the Wipe Snapshot menu, press [Store], lighting it amber.

3 Press the memory recall button for the register in which you want to save.

Notes

- If you press a button which is already lit, this overwrites the contents of the register.
- When both the main pattern and sub pattern are selected for a pattern mix, the button in the memory recall section shows only the main pattern.

Recalling a wipe snapshot from the menu

In the Wipe Snapshot menu, press the memory recall button for the wipe snapshot you want to recall.
This recalls the wipe snapshot, and the button you pressed lights amber.
In the upper left is shown the currently recalled register name or number.

Notes

The Flexi Pad and menu settings are linked.
A setting in setup determines whether register names or pattern numbers appear.

Deleting a wipe snapshot from the menu

1 In the Wipe Snapshot menu, press [Delete].

2 Press the memory recall button for the wipe snapshot you want to delete.

This deletes the wipe snapshot.

Chapter 6 DME Wipes

Overview

A DME wipe is a wipe transition that uses a DME effect to change from one video image to the next.
There are two types of DME wipe: those which can be selected for a normal transition, and those which can be selected for an independent key transition.

For details of independent key transitions, see page 148.

Notes

It is also possible to carry out a DME wipe on a key using the resizer *(see page 288)*.

Types of DME Wipe Pattern

The patterns used for a DME wipe fall into two broad classes.
Preset patterns: predetermined fixed patterns
User programmable DME patterns: patterns which you can create using keyframe effects

DME wipe execution mode and pattern numbers that can be used

There are three DME wipe execution modes, depending on the number of DME channels available: one-channel mode, two-channel mode and three-channel mode. The pattern numbers that can be used in these modes are as follows.

Execution mode	Preset pattern numbers that can be used	User programmable DME pattern numbers that can be used
One-channel mode	1000 series	1901 to 1999
Two-channel mode	2000 series	2901 to 2999
Three-channel mode	3000 series	3901 to 3999

Notes

When the signal format is 1080P, three-channel mode cannot be used.

DME wipe pattern groups

The patterns used in DME wipes fall into the following groups.

For each group (excluding user programmable DMEs), for schematic patterns and numbers, see "DME Wipe Pattern List" (page 418). The black part of the pattern represents the old video, and the white part the new video, with the wipe taking place in the direction of the arrow.

Slide: The new video slides in over the old video.
(Pattern numbers: 1001 to 1008 (one-channel mode), 2601 to 2608 (two-channel mode))

Squeeze: The new video appears squeezed over the old video, and progressively expands to cover it.
(Pattern numbers: 1021 to 1031 (one-channel mode), 2621 to 2628 (two-channel mode))

Split: The old video splits, and the new video appears in the gap.
(Pattern numbers: 1011 to 1013 (one-channel mode))

Door: The new video moves like a door closing, and progressively covers the old video.
(Pattern numbers: 1041 to 1048 (one-channel mode))

Flip tumble: The old video rotates about an axis and is replaced by the new video. During the transition, the signal from the utility 2 bus of the M/E bank appears as the background.
(Pattern numbers: 1101 to 1104, 1109, 1110, 1121, 1122, 1124, 1131 to 1133, 1135 (one-channel mode))

Mirror: The new video appears over the old video as a mirror effect slides in all four directions.
(Pattern numbers: 1355 to 1358 (one-channel mode))

Sphere: The new video appears wrapped around a sphere over the old video, then returns to the original video while unwrapping.
(Pattern number: 1365 (one-channel mode))

Character trail: The new video appears with a trail over the old video. Next this gradually returns to the original from the periphery.
(Pattern numbers: 1371, 1372 (one-channel mode))

Wave: The new video appears with a wave-like effect over the old video. Next this returns to the original video as the effect reduces.
(Pattern numbers: 1378, 1379 (one-channel mode))

Ripple: The new video appears over the old video like outwardly moving ripples.
(Pattern number: 1381 (one-channel mode))

Page turn: The old video moves like a page turning, and the new video appears behind it.
(Pattern numbers: 1301 to 1313, 1315 to 1318, 1341 to 1345 (one-channel mode), 2701 to 2713, 2715 to 2718, 2741 to 2745 (two-channel mode))

Page roll: The new video unrolls like a scroll over the old video. This is a type of page turn.
(Pattern numbers: 1321 to 1333, 1335 to 1338, 1346 to 1350 (one-channel mode), 2721 to 2733, 2735 to 2738, 2746 to 2750 (two-channel mode))

Frame in-out: Completed in two transitions. In the first transition, the new video appears, then on the second transition the new video goes out and the old video returns.

(Pattern numbers: 1201 to 1208, 1221 to 1224 (one-channel mode), 2851 to 2854, 2861 to 2864 (two-channel mode))

Picture-in-picture: The one-channel mode and two-channel mode differ as follows.

In one-channel mode, this completes in two transitions. In the first transition, the old video shrinks, and the new video appears behind it. In the second transition, the old video expands again until it is its original size.

(Pattern number: 1251 (one-channel mode))

In two-channel mode, in the first half of the transition, the old video shrinks, and the new video appears. In the second half of the transition, the new video expands, and the old video disappears. You can move the pattern from the current position by a relative amount. During the transition, the signal from the utility 2 bus of the M/E bank appears as the background.

(Pattern numbers: 2651 and 2652 (two-channel mode))

2D trans: The new video appears over the old video, while undergoing expansion, two-dimensional rotation and translation.

(Pattern numbers: 1051 to 1058, 1061 to 1064, 1068 (one-channel mode))

3D trans: In one-channel mode, the new video appears over the old video, while undergoing expansion, three-dimensional rotation and translation.

(Pattern numbers: 1071, 1072, 1074, 1076, 1077, 1088, 1091 to 1094 (one-channel mode))

In two-channel mode, the old video changes to the new video while both undergo expansion, three-dimensional rotation and translation.

(Pattern numbers: 2631 to 2634, 2642, 2644 (two-channel mode))

Sparkle: The new video appears over the old video with a nonlinear effect applied, such as broken glass, explosion, or melt. Next this returns to the original video as the effect gradually reduces.

(Pattern numbers: 1391, 1393, 1394, 1396, 1398, 1399 (one-channel mode))

Split slide: The new video appears in strip form while sliding interleaved in the opposite direction over the old video.

(Pattern numbers: 1384 to 1389 (one-channel mode))

Mosaic: In the first half of the transition, a mosaic is gradually applied to the old video, then at the 50% point the inner image changes to the new video. In the second half, the mosaic effect on the new video is gradually reduced, returning to the original image at 100%.

(Pattern number: 1701 (one-channel mode))

Defocus: In the first half of the transition, the old video is gradually defocused, then at the 50% point the inner image changes to the new video. In the second half, the defocusing effect on the new video is gradually reduced,

returning to the original image at 100%.
(Pattern number: 1702 (one-channel mode))

Brick: In two-channel mode, a brick such that the side surface is visible slides in over the old video, then rotates so that the new video can be seen.
(Pattern numbers: 2801 to 2804, 2811 to 2814 (two-channel mode))
In three-channel mode, a brick appears over the old video as the image is expanding and rotating, and switches to the new video.
(Pattern number: 3601 (three-channel mode))

User programmable DME: Using a DME keyframe effect created with a keyframe operation, this executes a DME wipe.
(Pattern numbers: 1901 to 1999 (one-channel mode), 2901 to 2999 (two-channel mode), 3901 to 3999 (three-channel mode))

For details of creating keyframe effects, see "Creating User Programmable DME Patterns" (page 291).

Notes

In an independent key transition, the following patterns can be used.

Execution mode	DME wipe patterns that can be used
One-channel mode	Slide, split, squeeze, door, 2D trans, 3D trans, frame in-out, page turn, page roll, mirror, sphere, character trail, wave, ripple, split slide, sparkle, user programmable DME
Two-channel mode	Page turn, page roll

User programmable DME in transition mode

For the transition mode set when creating a keyframe effect for a user programmable DME pattern, the following can be used.

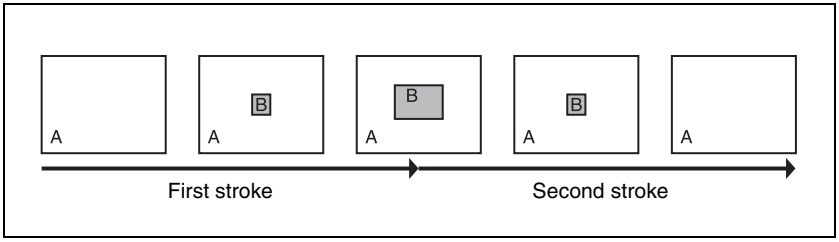
- **Single:** single transition mode
- **Flip tumble (Flip Tumble):** flip tumble transition mode
- **Dual:** dual transition mode
- **Picture-in-picture (PinP):** one-channel and two-channel picture-in-picture transition mode
- **Compress:** a type of picture-in-picture, in which the new image is the background, and the currently visible image shrinks, and then expands to its original size. (See example in the next item.)
- **Frame in-out (Frame I/O):** frame in-out transition mode. When the first transition completes, if you move the position of the image, you can move it both horizontally and vertically.
- **Frame in-out H (Frame I/O H):** a type of frame in-out mode, which is specified when creating a transition effect in the horizontal direction.
  The image movement is reflected at both the transition start point and end point. *(See page 267.)*
  The operation is carried out according to DME wipe patterns 1202, 1203, or 1204.

- **Frame in-out V (Frame I/O V):** a type of frame in-out mode, which is specified when creating a transition effect in the vertical direction.
  The image movement is reflected at both the transition start point and end point. *(See page 268.)*

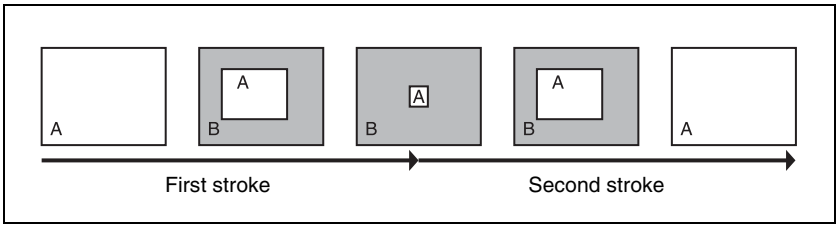
Transition mode “Compress”

The change in the image when the transition mode is set to “Compress” is as follows, in comparison to the case of “Picture-in-picture.”

- **Example of the image change in the transition mode “Picture-in-picture” (one-channel mode)**

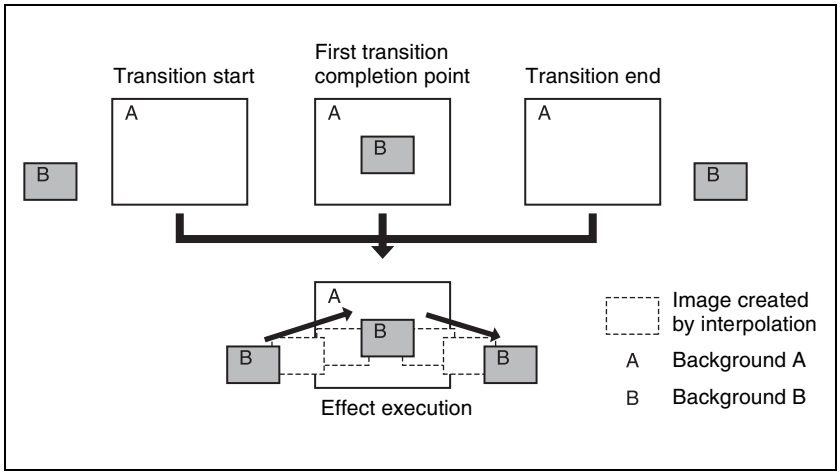


- **Example of the image change in the transition mode “Compress”**

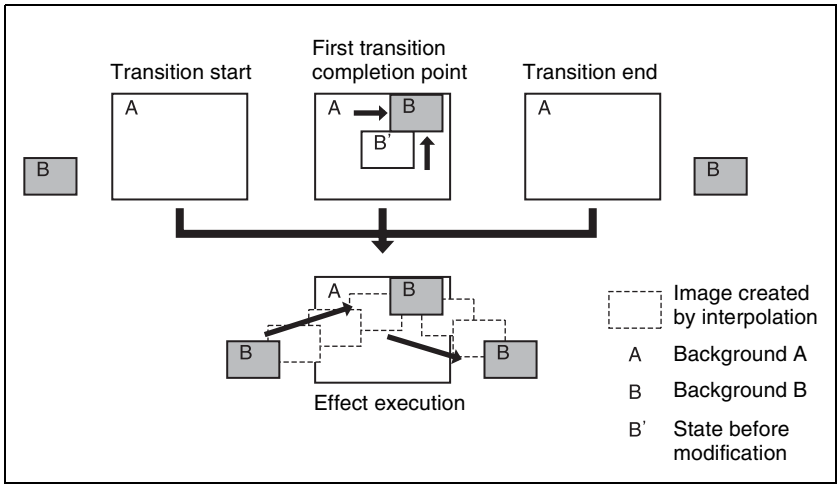


Transition mode “frame in-out”

In this mode, when the first transition has completed, you can move the image with the positioner in both horizontal and vertical directions, but the image position at the transition start point and end point does not change.
The description is of an example of creating an effect such as the following.



At the first transition completion point, if you move the image with the positioner, the transition appears as in the following figure.

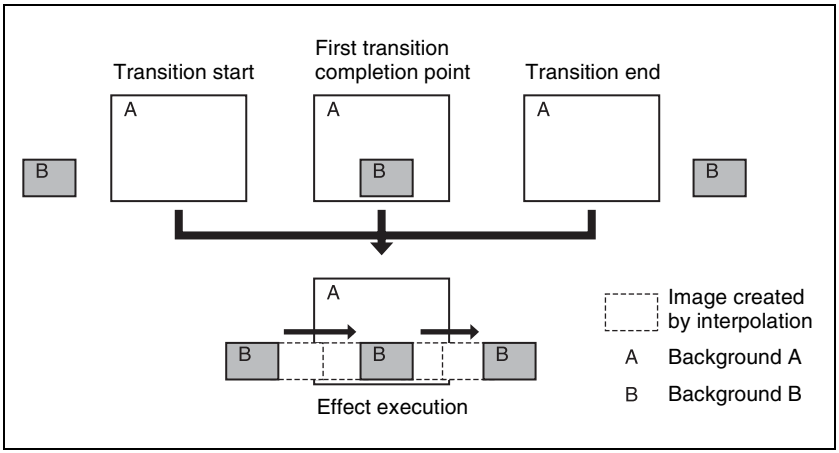


Transition mode “frame in-out H”

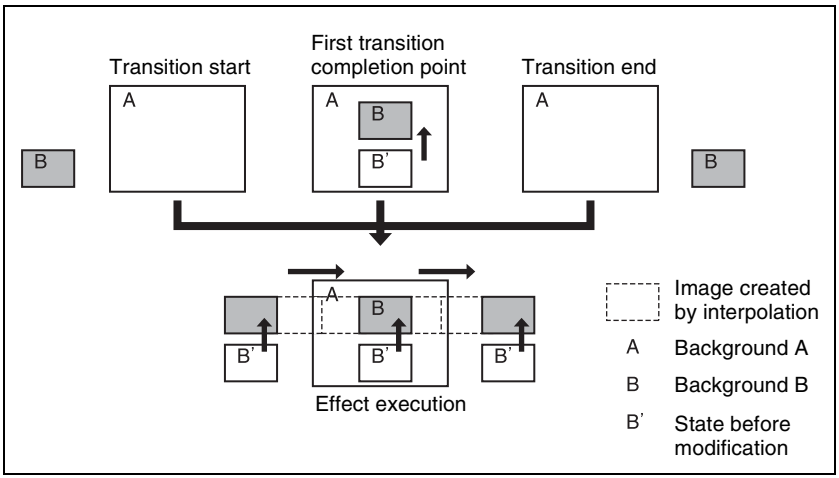
This mode is specified when creating a transition effect in the horizontal direction.

In this mode, when the first transition has completed, you can move the image with the positioner in both horizontal and vertical directions. The image at the transition start point and end point also moves.

The description is of an example of creating an effect such as the following.



At the first transition completion point, if you move the image with the positioner, the transition appears as in the following figure.

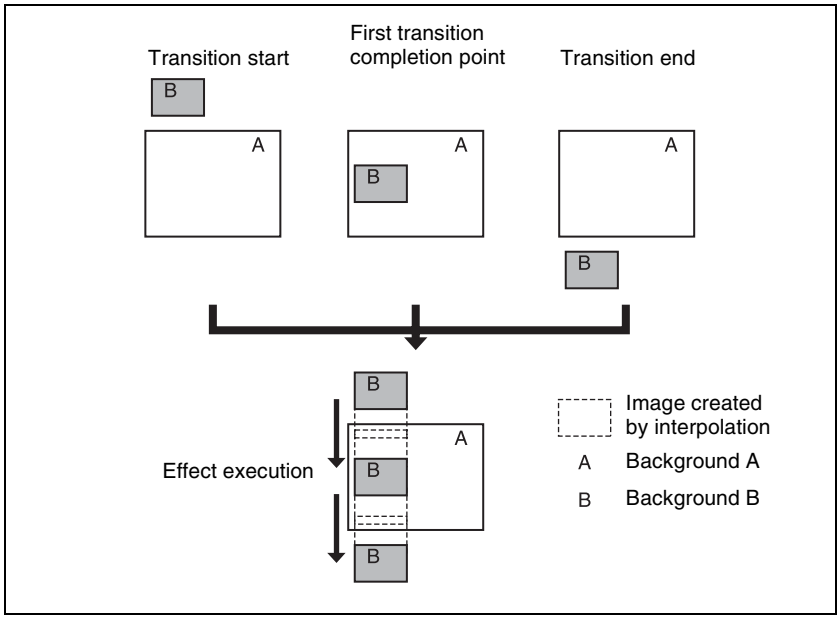


Transition mode “frame in-out V”

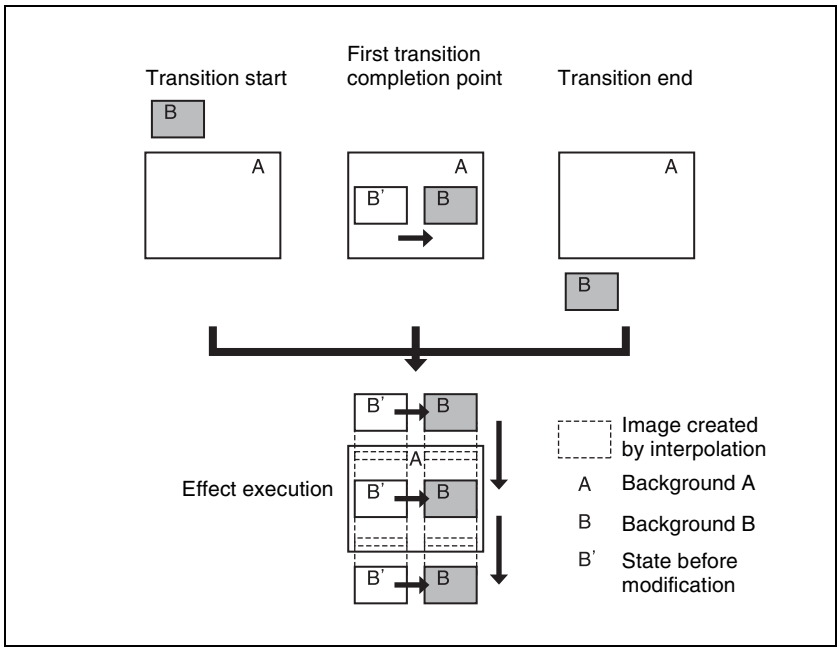
This mode is specified when creating a transition effect in the vertical direction.

In this mode, in the state at completion of the first transition, you can move the image with the positioner in both horizontal and vertical directions. The image at the transition start point and end point also moves.

The description is of an example of creating an effect such as the following.



At the first transition completion point, if you move the image with the positioner, the transition appears as in the following figure.



Signals forming part of the background for a DME wipe

For a two-channel mode page turn, page roll, brick, frame in-out, and so on, the part of the pattern shown in gray *(see page 412)* is filled with the signal selected on the DME external video bus.
For three-channel mode brick, the part of the pattern shown in dark gray is filled with the DME external video signal, and the light gray portion with the signal selected as follows.
When the DME channel used is 3 or 4, the signal selected on the DME utility 1 bus. For channel 7 or 8, the signal selected on the DME utility 2 bus.

DME Wipe Pattern Variation and Modifiers

You can modify the selected DME wipe pattern in the same way as an ordinary wipe pattern, as follows.

For the setting operations, see "Setting DME Wipe Modifiers" (page 276).

Direction: You can set the DME wipe direction to normal, reverse, or alternating normal/reverse *(see page 276),* except for a key transition, which is always in normal/reverse mode. However, a key transition can only be specified when the following patterns are selected, and when other patterns are selected, this is fixed, as normal/reverse.
Patterns: 1204, 1207, 1221 to 1224

Edge: You can apply a border or soft border *(see page 277).*
In the case of those user programmable DME patterns for keys in which an edge has already been applied to the effect, the behavior is as follows.
- When the DME wipe edge setting is on, only part of the edge applied in the effect is enabled, and that portion can be adjusted *(page 277)*.
- When the DME wipe edge setting is off, the edge applied in the effect is enabled as is.

Positioner: You can move the DME wipe pattern or center of the effect to an arbitrary position. Using the position select function, you can also instantaneously move the pattern.
- 1031
  When this pattern number is selected, with the progress of the transition the pattern center automatically moves initially from the set position toward the center of the screen *(see page 278)*. In other words, the effect obtained is the same as in a normal wipe with the positioner set to "AUTO CENTER".
- 1201 to 1208, 1221 to 1224, 1251
  When these pattern numbers are selected, you can set the pattern position when the first transition completes.

- 1381, 1391, 1393, 1394, 1396
  When these pattern numbers are selected, you can set the center of the transition effect.
- 2651, 2652
  When these pattern numbers are selected, you can move the pattern for each channel, or with values relative to the current position the two channels simultaneously.
- 2801 to 2804, 2811 to 2814
  When the these pattern numbers are selected, you can set the vertical position as the brick slides in.
- 2851 to 2854, 2861 to 2864
  When these pattern numbers are selected, you can set the pattern position for each channel setting when the first transition completes.

Pattern limit: You can restrict the range of the transition as desired. However, this is not available for a DME wipe in the independent key transition control block.

For more details, see "Pattern Limit" (page 137).

Size: This can only be used when one of the following pattern numbers is selected.
- 1201 to 1208, 1221 to 1224, 1251
- 2651, 2652, 2851 to 2854, 2861 to 2864
  You can set the size of the image.

Crop: You can crop the image. It is also possible in 16:9 mode to crop both sides, to convert the image to a 4:3 aspect ratio. For the execution of a DME wipe crop transition, you can select from the following three possibilities.
- Cut
- Last 5%
- Linear

When [Last 5%] is selected, you can set the [Release Transition] as follows.
- Last 30%
- Last 5%
- Off

Notes

When pattern numbers 1701 and 1702 are selected, crop cannot be used.

Relation Between DME Wipes and Other Effects

The relations between DME wipes and other effects are as follows.

Relation to ordinary wipes

- DME wipes do not use the wipe generator built into the switcher. Therefore, during the execution of a DME wipe, you can still use a pattern produced by the wipe generator as the source for a pattern key or mask.
- A DME wipe pattern cannot be used as the source for a pattern key or mask.

Relation to processed keys

When using the DME for a processed key, if you select a DME wipe, an available DME is automatically allocated to the DME wipe. If all of the DME channels are in use, then it is not possible to select a DME wipe.
If in a Setup menu a setting has been made for DME allocation, that Setup menu setting takes precedence *(see "Setting the assignments of DME channels to use on the individual M/E banks" in Chapter 20 (Volume 3)*.

Relation to resizer

When resizer is enabled, it is not possible to select a DME wipe.
For the key 1 and key 2, key 3 and key 4, key 5 and key 6, or key 7 and key 8 combinations, if one is used for a dual resizer effect, the other key cannot be used for a DME wipe.

Number of DME wipes that can be used simultaneously on a single M/E bank

DME wipes can be used in nine places, including the eight independent key transitions.

Notes

- When the signal format is 1080P, DME wipes can be used in five places, including the four independent key transitions.
- In the M/E-4 block, it is not possible to use a DME wipe for keys 5 to 8.

Simultaneous use is possible in a maximum of two places.
However, when one DME channel wipe pattern is selected for the background, DME can only be used in one place for keys 1 to 4. When two or more channels are selected, DME cannot be used.

Basic Procedure for DME Wipe Settings

You carry out DME wipe setting operations principally using the DME Wipe menu for each bank.
This section describes the basic procedures for DME wipe settings, taking the M/E-1 >DME Wipe menu as an example.

For details of independent key transition DME wipe settings, see "DME Wipe Settings for Independent Key Transitions" (page 284).

For details of resizer DME wipe, see page 288.

DME Wipe Settings Menu

Accessing the DME Wipe menu

To access the M/E-1 >DME Wipe menu, use either of the following operations.

- In the menu control block, select the top menu selection button [M/E 1], and press VF6 'DME Wipe.'

  Notes

  To select [M/E-4], a previous assignment in the Setup menu is required.

- In the transition control block of the M/E-1 bank, press the transition type selection button [DME] twice in rapid succession.

Either of the above operations displays the M/E-1 >DME Wipe menu.

DME Wipe Pattern Selection

Selecting a DME wipe pattern by a menu operation

1. In the M/E-1 >DME Wipe menu, select HF1 '1ch' for one-channel mode, HF2 '2ch' for two-channel mode or HF3 '3ch' for three-channel mode.
2. Select the desired DME wipe pattern group with one of the following buttons.
   - **Slide/Squeeze:** slide and squeeze
   - **Split/Door:** split and door

- **Flip Tumble:** flip tumble
- **Mirror/Sphere:** mirror and sphere
- **Character Trail:** character trail
- **Wave/Ripple:** wave and ripple
- **Page Turn/Roll:** page turn and page roll
- **Frame I/O/P in P:** frame in/out and picture-in-picture
- **2D Trans/3D Trans:** 2D trans and 3D trans
- **Sparkle/Split Slide:** sparkle and split slide
- **Mosaic/Defocus:** mosaic and defocus
- **Brick:** brick
- **User Program:** user programmable DME

Selectable DME wipe pattern groups in one-channel mode: All of the above groups except for Brick.

Selectable DME wipe pattern groups in two-channel mode: Slide/Squeeze, Page Turn/Roll, Frame I/O, PinP, 3D Trans, Brick and User Program.

Selectable DME wipe pattern groups in three-channel mode: User Program and Brick.

For details of DME wipe patterns, see "Types of DME Wipe Pattern" (page 262) and "DME Wipe Pattern List" (page 418).

The patterns from the selected pattern group appear on the screen.

3 Press the button to select the desired pattern.

Notes

For a key transition, the page turn, page roll and picture-in-picture cannot be used.

Adjusting DME wipe pattern parameters

Of the DME wipe patterns, the following have parameters that can be adjusted.

When Brick (for two channels) is selected (pattern numbers 2801 to 2804, 2811 to 2814)

Knob	Parameter	Adjustment	Setting values
1	Side V Size X	Horizontal magnification	0.01 to 8.00
2	Side V Size Y	Vertical magnification	0.01 to 8.00
3	Height	Height of brick	0.01 to 100.00
4	Center X	Horizontal center position	–100.00 to +100.00 a)
5	Center Y	Vertical center position	–100.00 to +100.00 b)

a) The horizontal center position of the video pasted on Side V. At –100.00 the center is at the left edge of the screen, and at +100.00 the center is at the right edge of the screen.
b) The vertical center position of the video pasted on Side V. At –100.00 the center is at the bottom edge of the screen, and at +100.00 the center is at the top edge of the screen.

When Frame in-out (for two channels) is selected

- **Pattern numbers 2851 to 2854**

Knob	Parameter	Adjustment	Setting values
5	Delay	Timing for video selected on a utility bus to appear on the screen	–100.00 to +100.00

- **Pattern numbers 2861 to 2864**

Knob	Parameter	Adjustment	Setting values
1	Rot X	Rotation about the Y axis (horizontal direction)	–100.00 to +100.00
2	Rot Y	Rotation about the X axis (vertical direction)	–100.00 to +100.00
3	Rot Z	Rotation about the Z axis	–100.00 to +100.00
5	Delay	Timing for video selected on a utility bus to appear on the screen	–100.00 to +100.00

When Brick (for three channels) is selected (pattern number 3601)

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Side V Size X	Side V horizontal magnification	0.01 to 8.00
2	Side V Size Y	Side V vertical magnification	0.01 to 8.00
3	Height	Height of brick	0.01 to 100.00 a)
4	Side V Center X	Side V horizontal center position	–100.00 to +100.00 b)
5	Side V Center Y	Side V vertical center position	–100.00 to +100.00 c)

a) Shared with knob 3 for parameter group 2
b) The horizontal center position of the video pasted on Side V. At –100.00 the center is at the left edge of the screen, and at +100.00 the center is at the right edge of the screen.
c) The vertical center position of the video pasted on Side V. At –100.00 the center is at the bottom edge of the screen, and at +100.00 the center is at the top edge of the screen.

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Side H Size X	Side H horizontal magnification	0.01 to 8.00
2	Side H Size Y	Side H vertical magnification	0.01 to 8.00
3	Height	Height of brick	0.01 to 100.00 a)
4	Side H Center X	Side H horizontal center position	–100.00 to +100.00 b)
5	Side H Center Y	Side H vertical center position	–100.00 to +100.00 c)

a) Shared with knob 3 for parameter group 1
b) The horizontal center position of the video pasted on Side H. At –100.00 the center is at the left edge of the screen, and at +100.00 the center is at the right edge of the screen.
c) The vertical center position of the video pasted on Side H. At –100.00 the center is at the bottom edge of the screen, and at +100.00 the center is at the top edge of the screen.

Setting DME Wipe Modifiers

You can apply various modifiers to the DME wipe pattern: setting the DME wipe direction, pattern position, and so on.

For an overview of the DME wipe modifiers, see "DME Wipe Pattern Variation and Modifiers" (page 270).

Specifying the DME wipe direction (Direction)

You can specify the DME wipe direction (normal/reverse).

To specify the DME wipe direction in a menu

1 In the M/E-1 >DME Wipe menu, select HF4 'Edge/Direction.'

The Edge/Direction menu appears.

2 In the <Direction> group, specify the DME wipe direction.

Normal: regular direction
Normal/Reverse: alternate between regular and reverse for each transition
Reverse: reverse direction to normal

To specify the DME wipe direction with a button in the transition control block

In the transition control block of each of the M/E-1 to M/E-3 and PGM/PST banks, press the following direction selection buttons.
NORM: Normal
NORM/REV: Normal/Reverse
REV: Reverse

Modifying the DME wipe pattern edge

1 In the M/E-1 >DME Wipe menu, select HF4 'Edge/Direction.'

The Edge/Direction menu appears.

2 Depending on whether the selected pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: press [1st Ch], turning it on.
For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channel. You can select more than one channel at the same time.

3 In the <Edge> group, select the edge type.

Border: border
Soft Border: soft border

4 Set the parameters according to the selection in step **3**.

- **When border is selected**

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00
3	Luminance	Luminance	0.00 to 100.00
4	Saturation	Saturation	0.00 to 100.00
5	Hue	Hue	359.99 to 0.00

- **When soft border is selected**

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00
2	Inner Soft	Border inner softness	0.00 to 100.00
3	Luminance	Luminance	0.00 to 100.00
4	Saturation	Saturation	0.00 to 100.00
5	Hue	Hue	359.99 to 0.00

Display indications when multiple channels are selected at the same time

The indications on the knobs show the settings of the lowest-numbered channel. When you turn the knobs to adjust the settings, this changes the settings on the other channels by the same amount.

Setting the DME wipe position (Positioner)

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 Depending on whether the DME wipe pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: press [1st Ch], turning it on.
For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channel. You can select more than one channel at the same time.

3 In the <Position> group, press [Position], turning it on.

4 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–200.00 to +200.00
2	V	Vertical position	–200.00 to +200.00

Display indications when multiple channels are selected at the same time

The indications on the knobs show the settings of the lowest-numbered channel. When you turn the knobs to adjust the settings, this changes the settings on the other channels by the same amount.

To return the DME wipe pattern position to the center of the screen

In the <Position> group, press [Center].

Displaying and moving the position of the DME wipe pattern (position select)

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

In the <Position Select> group, the one of the [Top Left], [Top Right], [Bottom Left], and [Bottom Right] buttons that is on indicates the current display position of the DME wipe pattern.

2 In the <Position> group, press [Position], turning it on.

3 Depending on whether the DME wipe pattern is in one-channel mode or two-channel mode, proceed as follows.

In one-channel mode: press [1st Ch], turning it on.
In two-channel mode: from the <Ch Select> group, select the corresponding channel. You can select more than one channel at the same time.

4 To move the position of the DME wipe pattern, press the button where you want to move to, turning it on.

The DME wipe pattern displayed on the screen moves to the position of the specified button.

Setting relative positions to move the DME wipe pattern

In two-channel mode, use the following procedure.

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 In the <Ch Select> group, select the target channels.

3 Press [Position] in the <Position> group, turning it on.

4 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
4	Relative H	Relative movement in the horizontal direction	–400.00 to +400.00
5	Relative V	Relative movement in the vertical direction	–400.00 to +400.00

For details of the method of DME wipe pattern selection, see "DME Wipe Pattern Selection" (page 273).

Setting the DME wipe pattern size (Size)

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 Depending on whether the selected pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: press [1st Ch], turning it on.
For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channel. You can select more than one channel at the same time.

3 Press [Size], turning it on.

4 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Set size of effect	0.00 to 200.00 a)

a) The effect size when [Size] is off is taken as 100.00%.

Display indications when multiple channels are selected at the same time
The indications on the knobs show the settings of the lowest-numbered channel. When you turn the knobs to adjust the settings, this changes the settings on the other channels by the same amount.

Adjusting the DME wipe pattern cropping

Notes
When pattern numbers 1701 and 1702 are selected, crop cannot be used.

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 Depending on whether the selected pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: press [1st Ch], turning it on.
For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channel. You can select more than one channel at the same time. Some patterns need no selection which is fixed in the <Ch Select> group.

3 In the <Crop Mode> group, press [Crop], turning it on.

4 Set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Crop the left and right of the image	Left value shown
2	V	Crop the top and bottom of the image	Top value shown
3	All	Crop the top, bottom, left, and right of the image	Left value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Crop the top of the image	–100.00 to +100.00
2	Left	Crop the left of the image	–100.00 to +100.00
3	Right	Crop the right of the image	–100.00 to +100.00
4	Bottom	Crop the bottom of the image	–100.00 to +100.00

Display indications when multiple channels are selected at the same time

The indications on the knobs show the settings of the lowest-numbered channel. When you turn the knobs to adjust the settings, this changes the settings on the other channels by the same amount.

In 16:9 mode, to crop to 4:3 aspect ratio

In the <Crop Mode> group, press [4:3 Crop], turning it on.

To set the action when a DME wipe crop transition is executed

1 In the M/E-1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 Depending on whether the selected pattern is in one-channel mode or two-channel mode, proceed as follows.

For a pattern in one-channel mode: in the <Ch Select> group, press [1st Ch], turning it on.

For a pattern in two-channel mode: from the <Ch Select> group, select the corresponding channels. You can select more than one channel at the same time.

3 In the <Crop Mode> group, press [Crop] or [4:3 Crop] (to crop from 16:9 to 4:3 aspect ratio), turning it on.

4 In the <Crop Mode> group, press [Remove From Begin].

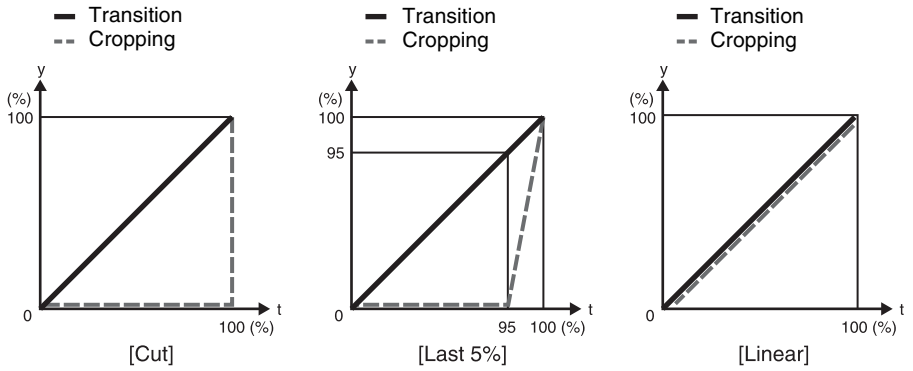
The Remove From Begin menu appears.

5 In the <Crop Transition> group, select the execution mode for the DME wipe crop transition.

Cut: Cut mode. The cropping does not change during the transition, but at the end point of the transition the cropping is removed (enlarges).

Last 5%: The cropping is maintained for the first 95% of the transition, and is progressively removed during the last 5% of the transition (enlarges).

Linear: The cropping is removed linearly through the whole course of the transition (enlarges).



t: transition execution time
y: change in transition and cropping amount

Setting the timing of transition completion

When the execution mode for a DME wipe crop transition is set to [Last 5%], you can select the timing of transition completion from 70% ([Last 30%]), 95% ([Last 5%]), and 100% ([Off]).

1 In the M/E 1 >DME Wipe menu, select HF5 'Modify.'

The Modify menu appears.

2 In the <Crop Mode> group select [Remove From Begin].

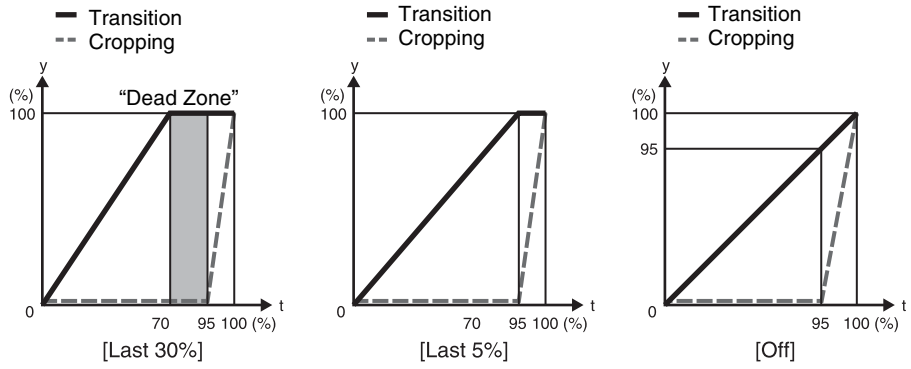
The Remove From Begin menu appears.

3 In the <Release Transition> group, select the timing of transition completion.

Last 30%: The transition completes at the end of 70% of the transition execution time. The transition has a dead zone from 70% to 95% of the transition time.

Last 5%: The transition completes at the end of 95% of the transition execution time. When the transition completes, the cropping is removed during the last 5% (enlarges).

Off: The transition completes at the end of the transition execution time. During the last 5% of the transition, the transition and cropping removal proceed together.



t: transition execution time
y: change in transition and cropping amount

DME Wipe Modify Clear

Press [Default Recall] at the lower left of the menu display, turning it on, then press VF6 'DME Wipe' to return the DME wipe settings to their initial status.

For details of the menu operation to return the DME wipe state to that set in initial status, see "Returning to default state in function groupings" (page 91).

DME Wipe Settings for Independent Key Transitions

You carry out independent key/downstream key transition DME wipe setting operations using the DME Wipe Adjust menu for each keyer.

For an overview of independent key transitions, see page 148.

This section describes the independent key transition DME wipe settings, taking the M/E-1 >Key1 >Transition >DME Wipe Adjust menu as an example.

Basic Procedure for Independent Key Transition DME Wipe Settings

Accessing the independent key transition DME wipe settings menu

As an example, to access the M/E-1 >Key1 >Transition >DME Wipe Adjust menu, carry out the following operation.

- In the menu control block, select the top menu selection button [M/E 1], and select VF1 'Key1' and HF6 'Transition' to display the Transition menu for key 1. Next, press [DME Wipe Adjust].
  If VF1 [Key5] is shown, press the switching button at the top of the menu, so that [Key1-4] appears, and press VF1 [Key1].

Notes

To select [M/E-4], a previous assignment in the Setup menu is required.

Carrying out the above operation displays the M/E-1 >Key1 >Transition >DME Wipe Adjust menu (which will be referred to below as simply the Key1 DME Wipe Adjust menu).

Selecting the independent key transition DME wipe pattern

You select the independent key DME wipe pattern from the list of patterns displayed in the menu.

To select a DME wipe pattern for independent key1 on the M/E-1 bank, use the following procedure.

1 In the <Pattern Select> group of the Key1 DME Wipe Adjust menu, press [1ch] for one-channel mode or [2ch] for two-channel mode.

The Pattern Select menu appears.

2 Select the desired DME wipe pattern group with one of the following buttons.

(In two-channel mode, only Page Turn and Page Roll are selectable.)
- **Slide/Squeeze:** slide and squeeze
- **Split/Door:** split and door
- **Mirror/Sphere:** mirror and sphere
- **Character Trail:** character trail
- **Wave/Ripple:** wave and ripple
- **Page Turn/Roll:** page turn and page roll
- **Frame I/O:** frame in/out
- **2D Trans/3D Trans:** 2D Trans and 3D Trans
- **Sparkle/Split Slide:** sparkle and split slide
- **User Program:** user programmable DME

For details of DME wipe patterns, see "Types of DME Wipe Pattern" (page 262) and "DME Wipe Pattern List" (page 418).

The patterns from the selected pattern group appear on the screen.

3 Press the button to select the desired pattern.

Setting Independent Key Transition DME Wipe Modifiers

You can add modifiers such as pattern position and size for an independent key transition DME wipe.

For introductory information, see "Setting the DME wipe position (Positioner)" (page 278) and "Setting the DME wipe pattern size (Size)" (page 279).

Setting the DME wipe position (Positioner)

For applicable pattern numbers, see page 270.

1 In the <Position> group of the Key1 DME Wipe Adjust menu, press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–200.00 to +200.00
2	V	Vertical position	–200.00 to +200.00

To return the DME wipe pattern position to the center of the screen

In the <Position> group, press [Center].

Setting the DME wipe pattern size (Size)

For applicable pattern numbers, see page 271.

1 In the Key 1 DME Wipe Adjust menu, press [Size], turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Size	Set size of effect	0.00 to 200.00 a)

a) The effect size when [Size] is off is taken as 100.00%.

Cropping a key DME wipe

1 In the <Crop Mode> group of the Key1 DME Wipe Adjust menu, press [Crop], turning it on.

2 Set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Crop the left and right of the image	Left value shown
2	V	Crop the top and bottom of the image	Top value shown
3	All	Crop the top, bottom, left, and right of the image	Left value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Cropping of the top of the image	–100.00 to +100.00
2	Left	Cropping of the left of the image	–100.00 to +100.00
3	Right	Cropping of the right of the image	–100.00 to +100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
4	Bottom	Cropping of the bottom of the image	–100.00 to +100.00

To crop to 4:3 in 16:9 mode

In the <Crop Mode> group, press [4:3 Crop], turning it on.

To set the operation for DME wipe crop transition execution

1 In the <Crop Mode> group of the Key1 DME Wipe Adjust menu, press [Crop], turning it on.

2 In the <Crop Mode> group, press [Crop] or [4:3 Crop] (to crop to 4:3 in 16:9 mode), turning it on.

3 In the <Crop Mode> group, press [Remove From Begin].

The Remove From Begin menu appears.

*For subsequent operations, see step **5** of "To set the action when a DME wipe crop transition is executed" (page 281).*

To set the timing of transition completion

1 In the <Crop Mode> group of the Key1 DME Wipe Adjust menu, press [Crop], turning it on.

2 In the <Crop Mode> group, press [Remove From Begin].

For subsequent operations, see "Setting the timing of transition completion" (page 282).

Applying a border to a key DME wipe

In the <Edge> group of the Key1 DME Wipe Adjust menu, press [Border], turning it on.

*For subsequent operations, use the same process as in step **4** of "Modifying the DME wipe pattern edge" (page 277).*

Resizer DME Wipe Setting

You can carry out a DME wipe on a key using the resizer.

Notes

When the screen aspect ratio is 4:3 in HD format, when the resizer DME wipe is used to shrink a video image, this is applied to the 16:9 screen including the added video on the left and right sides. Use the crop function as required to extract the 4:3 image.

DME wipe patterns available for resizer DME wipe

You can use the following patterns of the DME wipe pattern one-channel mode that can be used in a resizer DME wipe. (7000-series numbers)

- Slide (pattern numbers: 7001 to 7008)
- Squeeze (pattern numbers: 7021 to 7031)
- frame in-out (pattern numbers: 7201 to 7208, 7221 to 7224)

Relation between DME wipes and other effects

The following relations hold between a resizer DME wipe and other effects.

Relation to processed keys

It is not possible to select a resizer DME wipe for a key with processed key enabled.

Relation to resizer

It is not possible to use a resizer DME wipe for a key with resizer enabled.
It is not possible to use a resizer DME wipe for a key forming a pair with a key with the dual resizer effect enabled. The key combinations forming pairs are keys 1 and 2, keys 3 and 4, key 5 and key 6, and key 7 and key 8. For example, when a dual resizer effect is enabled for key 1, it is not possible to use a resizer DME wipe on key 2.

Making resizer DME wipe settings

1 In the <Pattern Select> group of the Key1 DME Wipe Adjust menu, press [1ch].

The 1ch Pattern Select menu appears.

2 Select [Resizer Slide/Squeeze] or [Resizer Frame I/O].

The patterns of the selected group appear.

The wipe patterns that can be used for a resizer DME wipe are as follows.
- **Slide** (pattern numbers: 7001 to 7008)
- **Squeeze** (pattern numbers: 7021 to 7031)
- **Frame in-out** (pattern numbers: 7201 to 7208, 7221 to 7224)

3 Press the desired pattern to select it.

For more about resizer DME wipe modifiers, see "Setting Independent Key Transition DME Wipe Modifiers" (page 285).

DME Wipe Snapshots

You can snapshot and save a DME wipe pattern together with the current settings of its modifiers and pattern limit in a dedicated register for recall when required.
There are 10 DME wipe snapshot registers for each of the M/E and P/P banks. Use the menu to save and recall these registers

DME Snapshot Operations With the Menus

In the same way as for wipe snapshots, you can save, recall, and delete DME snapshots.

For details of the operating procedures, see "Wipe Snapshot Operations With the Menus" (page 259).

Creating User Programmable DME Patterns

With a user programmable DME, you can use DME effects created through the use of keyframes for a transition on the switcher system.
Note the following points when creating a keyframe effect for use as a user programmable DME pattern.

Register numbers and pattern numbers

When saving a keyframe effect as a user programmable DME pattern, specify the register number that corresponds to the pattern number as shown in the following table.

Execution mode	Register number	Pattern number
One-channel mode	101 to 199	1901 to 1999
Two-channel mode	201 to 299	2901 to 2999
Three-channel mode	301 to 399	3901 to 3999

For details of registers and keyframe effects, see Chapter 13 "Keyframe Effects" (Volume 2), respectively.

Notes

When the signal format is 1080P, three-channel mode cannot be used.

Keyframe effects in the global channel

When the effect with the same number as the reference channel is present on the DME global (GLBL) channel, executing the user programmable DME will also execute the effect on the global channel simultaneously.
When executing a user programmable DME, take note of whether the effect is present on the global channel.

User Programmable DME Transition Mode

To create a user programmable DME, it is necessary to set the transition mode (the way in which the effect moves). To set the transition mode, use the Key Frame >DME User PGM menu.

For details of the operating procedures, see "Transition Mode Settings for User Programmable DME" in Chapter 13 (Volume 2).

The following transition modes are available.

Channels	Transition mode	Effect group
One-channel mode	Single transition mode	Slide, Split, Door, Page turn, Page roll, Squeeze, Mirror, Sphere, Character Trail, Wave, Ripple, 2D Trans, 3D Trans, Sparkle, Split Slide
	Flip Tumble	Flip Tumble, Mosaic, Defocus
	Frame in-out	Frame in-out
	Frame in-out H [a)]	Frame in-out
	Frame in-out V	Frame in-out
	Picture-in-picture [b)]	Picture-in-picture
	Compress [c)]	Picture-in-picture
Two-channel mode	Dual transition mode	Slide, Squeeze, 3D Trans
	Two-channel picture-in-picture	Picture-in-picture

a) Transition according to DME wipe patterns 1202, 1203, or 1204
b) Transition according to DME wipe pattern 1201
c) Transition according to DME wipe pattern 1251

For details, see "Overview" (page 262).

Notes

For the following group of effects available in two-channel mode, no user programmable DME wipe patterns can be created.

Page turn, Page roll, Frame in-out, Brick

Notes on creating keyframe effects

When creating a keyframe effect to be used as a user programmable DME pattern, note the following, depending on the transition mode used.

Notes on single transition mode (one-channel mode)

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- Create the last keyframe to be a full-size image.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [Single].

Notes on flip tumble (one-channel mode)

- Create the first keyframe image at full size. In the <Back> group of the DME >Input/Output >Video/Key menu, depending on the direction of the rotation you want during the transition, press [H Invert] or [V Invert], turning it on.

- Create the last keyframe with the image inverted so the back side is visible, and with the size at full size.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [Flip Tumble].

Notes on frame in-out (one-channel mode)

Create a minimum of three keyframes.

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- Create the first transition to end such that the image can be seen within the screen. At this point, press the [PAUSE] button in the keyframe control block, turning it on, to set a pause for the keyframe.
- Either create the last keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [FRAME I/O].

Notes on Frame in-out H (one-channel mode)

Create a minimum of three keyframe points.

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- As the state after completion of the first transition, move the image horizontally to make it visible within the screen. At this time, press the [PAUSE] button in the keyframe control block, turning it on, to set a pause for the keyframe.
- For the last keyframe move the image horizontally to place it outside the screen area or set the image size to zero, so that the image is not visible within the screen.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [FRAME I/O H].

Notes on frame in-out V (one-channel mode)

Create a minimum of three keyframe points.

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- As the state after completion of the first transition, move the image vertically to make it visible within the screen. At this time, press the [PAUSE] button in the keyframe control block, turning it on, to set a pause for the keyframe.
- For the last keyframe move the image vertically to place it outside the screen area or set the image size to zero, so that the image is not visible within the screen.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [FRAME I/O V].

Notes on picture-in-picture (one-channel mode)

Create a minimum of three keyframes.

- Either create the first keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- Create the first transition to end such that the image can be seen within the screen. At this point, press the [PAUSE] button in the keyframe control block, turning it on, to set a pause for the keyframe.
- Either create the last keyframe image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [P In P].

Notes on compress (one-channel mode)

Create a minimum of three keyframe points.

- Create the first keyframe with the image at full size.
- In the state at completion of the first transition, create the image to be visible within the screen. At this time, press the [PAUSE] button in the keyframe control block, turning it on, to set a pause for the keyframe.
- For the last keyframe, once again set the image size to full size.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [Compress].

Notes on dual transition mode (two-channel mode)

- Create the first keyframe for each channel as follows.
  Channel 1: create the image full-size.
  Channel 2: either create the image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
- Create the last keyframe for each channel as follows.
  Channel 1: either create the image outside the screen area, or set the image size to zero so that it cannot be seen within the screen.
  Channel 2: create the image full-size.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [Dual].

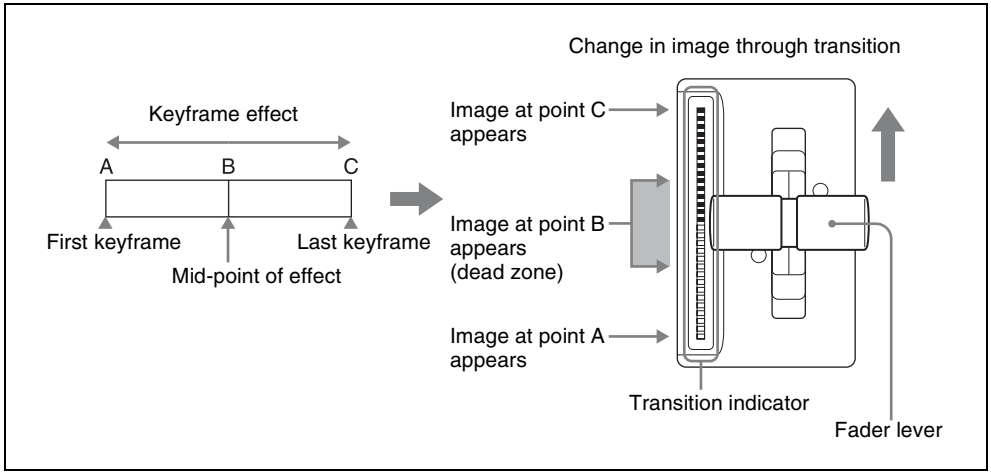
Notes on picture-in-picture (two-channel mode)

Create a minimum of three keyframes.

- Create the first keyframe for each channel as follows.
  Channel 1: create the image full-size.
  Channel 2: since the priority is low, it will not be visible on the screen, so no particular restrictions apply.
  In the Global Effect >Ch1 to Ch4 >Combiner menu, when setting the priority of channel 1 and channel 2, set the channel 1 priority higher.
- In the intermediate part of the transition, create the two images so that both are visible within the screen. In the Global Effect >Ch1 to Ch4 >Combiner menu, when setting the priority of channel 1 and channel 2, set the channel 2 priority higher.

It is recommended to make the priority settings at a keyframe point at which the two images are not overlapping.

- During the course of a transition, there is a “dead zone” corresponding to the intermediate point of the whole effect *(see following figure),* during which the image does not change. Therefore, it is necessary to create the effect so that the image in the intermediate part of the transition is the keyframe for the mid-point of the whole effect. The range of this “dead zone” corresponds to the central one-third of the range of the transition indicator. This also applies to an auto transition.



- Create the last keyframe for each channel as follows.
  Channel 1: since the priority is low, it will not be visible on the screen, so no particular restrictions apply.
  Channel 2: create the image full-size.
- In the <Transition Mode> group of the Key Frame >DME User PGM menu, select [P In P].

Chapter 7 Frame Memory

Overview

Frame memory is a function whereby a frame of input video can be frozen and written to memory, for further use as material for editing.
You can also play recorded frame memory clips (movies).

Frame capacity

The frame memory board has two blocks of memory, and the following table shows the maximum number of images that can be written to each block. (Of the two, one is reserved for storing frame memory clips.)

HD system:

Video format	Memory capacity
1080i/50	Approx. 1000 frames
1080i/59.94	
1080PsF/23.976	
1080PsF/24	
1080PsF/25	
1080PsF/29.97	
1080P/50	Approx. 2000 frames
1080P/59.94	
720P/50	Approx. 2300 frames
720P/59.94	

SD system:

Video format	Memory capacity
480i/59.94	Approx. 5600 frames
576i/50	Approx. 4800 frames

For details of operating procedures, see "Still Image Operations" (page 301).

Types of image and terminology used

The following types of image are handled in frame memory.
Freeze image: An input image that has been frozen, but not saved to memory.
Still image: A freeze frame that has been saved to memory as a file. Each file (still file) holds just one still image.

Frame memory clip: A clip consists of a sequence of still images, which appears as a movie on playback. In this manual this is also referred to simply as a "clip." The files (still files) constituting clips are referred to as a "clip file."

When the above distinctions are not being made, an image is simply referred to as an "image."

About extended clips

Of the two memory blocks for saving a clip, the clip saved in the one which is not combined with a still image is called an "extended clip."

However, when the signal format is 1080P, since both a still image and a clip are saved in both memory blocks, there is no extended clip.

Use of frame memory

There are eight frame memory channels, FM1 to FM8, and each channel independently allows a freeze image to be saved or recalled.

By allocating FM1 to FM8 to cross-point buttons you can use the still image output or clip output from each channel as input material.

Notes

However, when the signal format is 1080P, only the four options of FM1 to FM4 can be used.

Correspondence between input and output

There are two buses for capturing frame memory material: the frame memory source 1 bus and the frame memory source 2 bus.

These input buses are used by allocation to one of the pairs of output, FM1&2, FM3&4, FM5&6, and FM7&8. You can freeze a frame in each channel separately, or freeze in the two channels simultaneously.

The source buses allocated to FM1 to FM8 are as follows.

Input	Frame memory source bus 1	Frame memory source bus 2
Output	FM1	FM2
	FM3	FM4
	FM5	FM6
	FM7	FM8

Pair mode

By enabling the pair mode, you can link FM1 and FM2, FM3 and FM4, FM5 and FM6, and FM7 and FM8. For example, when a freeze or image processing is carried out on FM1, the same operation is carried out on FM2. The same

applies to the other pairs. When a pair of images are captured in pair mode, the image frozen in FM1 (3, 5, or 7) is referred to as the main file and the other frozen in FM2 (4, 6, or 8) is referred to as the sub file.

Pair files and single files

A file that can be recalled in pair mode is termed a "pair file." A pair file can be created by setting pair mode and capturing an image, or by using the coupling function *(see page 334)* to combine two single files.
A file other than a pair file is termed a "single file." A single file can be created by switching off pair mode and capturing an image, or by using the separation function *(see page 335)* to split a pair file.

Operation modes

The frame memory has the following operation mode.

V/K mode: When the pair mode is active, the key signal is automatically selected on frame memory source bus 2. This is convenient for handling the video and key signals together in frame memory. For example, when you select a video signal on frame memory source bus 1, the key signal assigned to it is automatically selected on frame memory source bus 2. You can also use the signal automatically selected on frame memory source bus 2 as a key signal when processing keyframe memory 1.

To change the pair mode or operation mode, use the Frame Memory menu.

Frame memory folders

Still images and clips can be managed in a maximum of twelve groups. Such a group is called a "frame memory folder." Folders can be added or deleted, and can be given a name of up to 8 characters.

Notes

- When the system is powered off, the folder names are deleted. The folder names need to be saved on media.
- The following names cannot be used for folders.
  Flash1, Flash2
  CON, PRN, AUX, CLOCK$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
  LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9
  A folder named "Default" is provided, and this folder cannot be renamed or deleted.
- Still images and clips in different frame memory folders cannot have the same name.

Still Image Operations

The frame memory functions provides the following still image file functions.
- Freezing an input image
- Saving a still image
- Recalling a still image
- Processing an image
- Continuously capturing images (record)
- Recalling a continuous sequence of images (animation)

For an overview of frame memory concepts, see "Overview" (page 298).

Notes

During playback of a frame memory clip of the pair assigned to either of the target FM selection buttons *(see page 323)*, frame memory operations may not be performed properly. Carry out frame memory operations after stopping clip playback.

Preparations

Allocating the frame memory outputs (FM1 to FM8) to cross-point buttons

To output a frame memory image to a monitor, for example, the output signal from the frame memory (FM1 to FM8) must be allocated to a cross-point button. Carry out this allocation in the Setup menu.

Notes

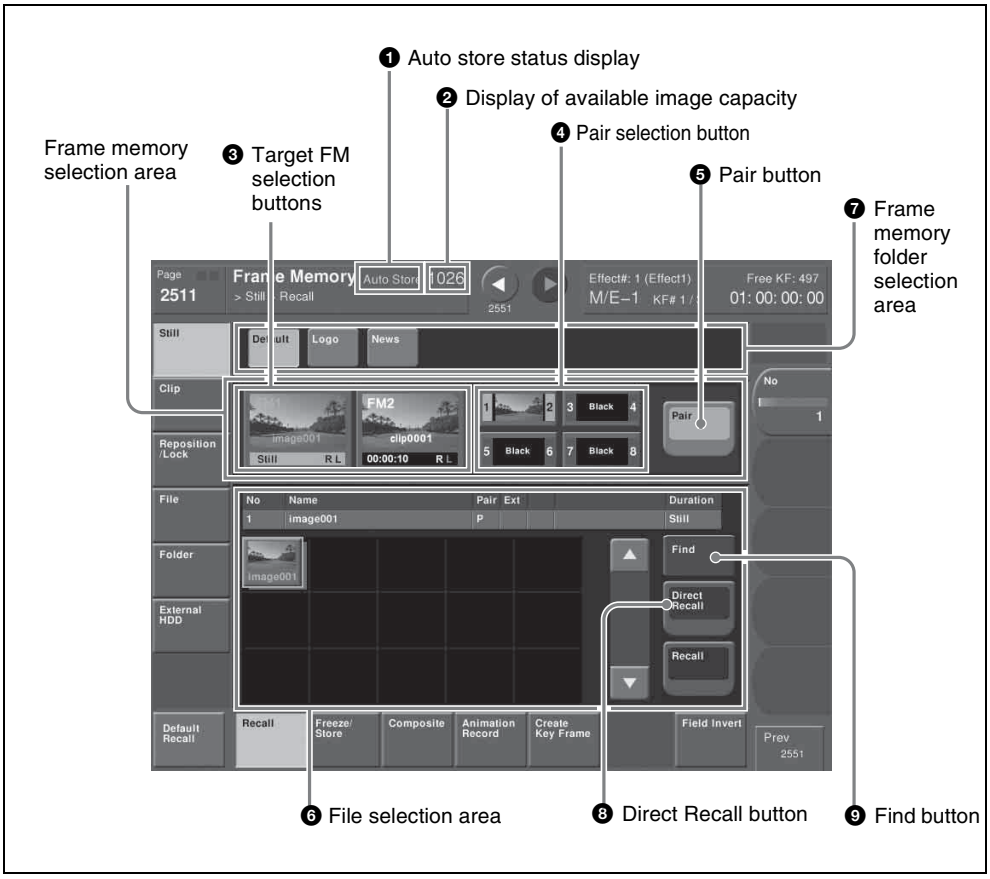
When the signal format is 1080P, only the four options of FM1 to FM4 can be used.

Accessing the Frame Memory menu

Most frame memory operations are carried out using the Frame Memory menu. To access the Frame Memory menu, use either of the following procedures.
- In the menu control block, select the top menu selection button [FRAME MEM].
- Press the cross-point button to which the frame memory output is allocated twice in rapid succession.

Interpreting the Frame Memory Menu

The menu screen consists of the following principal parts.
The frame memory selection area display is the same for all except the Pattern Adjust/Pattern Select/Field Invert/File (excluding Pair Recombination menu)/ Folder/External Device menus.



Frame Memory menu

❶ Auto store status display

Depending on the setup settings, this appears when the auto store function is enabled.

❷ Display of available image capacity

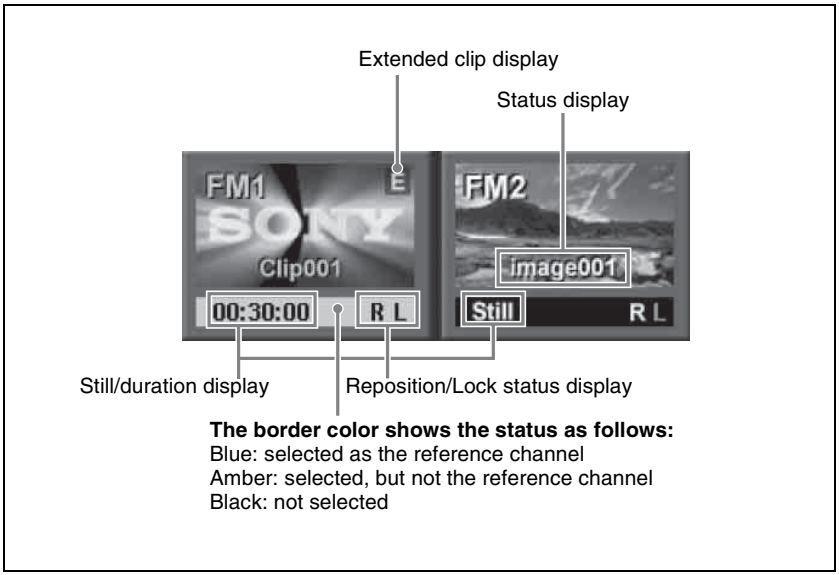
This shows the remaining number of frames. When no more frames can be stored, in pair mode “1” or “0” appears in red, and in single mode “0” appears in red.

The lower figure shows the remaining number of frames that can be used as extended clips.

Notes

When the signal format is 1080P, each time a still image is saved the remaining space is reduced by two frames.

❸ Target FM selection buttons



Press one of these to select which of the selected outputs (FM1 and FM2 in the example shown) the operation applies to.

The following information appears on the button.

Status display

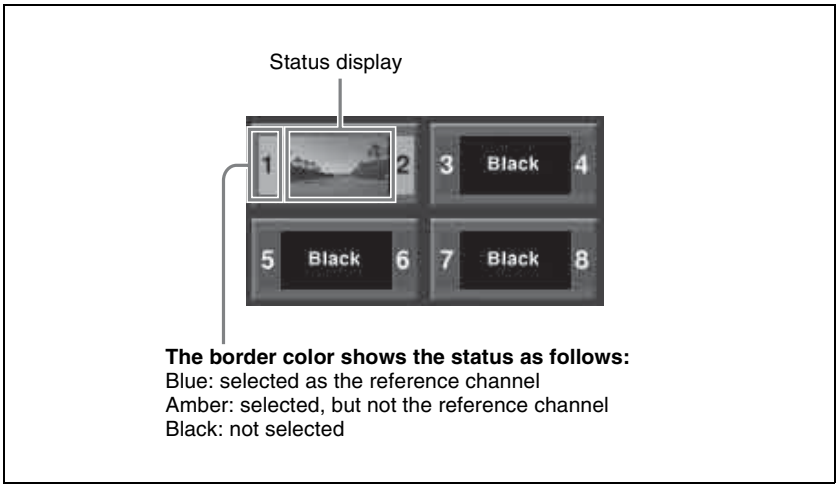
File name (e.g. image001) and thumbnail: when a file is output
Black: when a black signal is output
Through: when the input image is output
Freeze: when a freeze is output
Record: when continuously capturing images (record)

Still/duration display
When a still image is selected, “Still” is shown. When a clip is selected, a duration indication such as “00:00:10” is shown.

Reposition/Lock status display
This shows “R” when the reposition function *(see page 313)* is on, and shows “L” when the lock function *(see page 314)* is on.

Extended clip display
For an extended clip, an “E” appears.

❹ Pair selection button
Select the pair to be displayed in the target FM selection buttons.
(in the following figure, the pair of FM1 and FM2 is selected.)

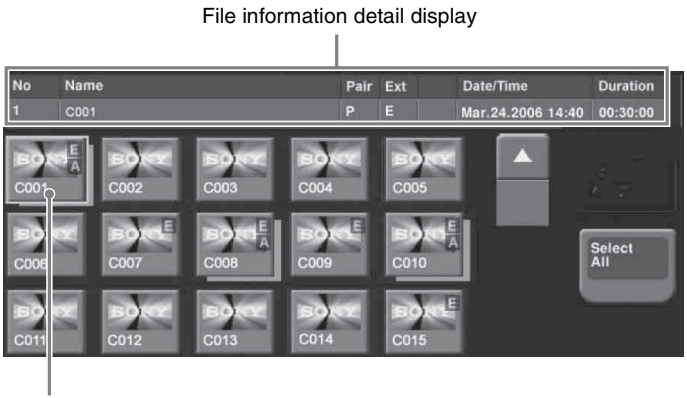


The following information appears on the button.

Status display
For a pair, shows the status for the reference.
Thumbnail: when a file is output
Black: when a black signal is output
Through: when the input image is output
Freeze: when a freeze is output
Record: when continuously capturing images (record)

❺ Pair button
Press this button, turning it on, to enable pair mode.

❻ File selection area
You can select from the displayed still image files or clip files.



Thumbnail indications

Still image files and clip files: Still image files are displayed as gray buttons and clip files are displayed as yellow buttons.

Single files and pair files: Single files are displayed with shadow and pair files are displayed with no shadow.

Selected file: Pale blue border. When more than one file is selected, only the first is pale blue, and the remainders are amber. If the pair file was selected, each press switches the front and the back.

File information detail display

For the selected file, this shows the file name, “P” if a pair file, “E” if an extended clip, and the duration.

❼ Frame memory folder selection area

Select the frame memory folder to be displayed.

❽ Direct Recall button

Toggle on and off the direct recall mode in which pressing a thumbnail immediately recalls the file.

❾ Find button

Pressing this button displays a popup window, in which you can enter a file name to carry out a search.

Selecting an Input Image

For the input image to frame memory, you can use either the signal selected on one of the two frame memory source buses or a dedicated color matte signal. When using the signal on frame memory source bus 1 or 2 for the input image, select the signal as described below.

Selecting the signal on a frame memory source bus

As an example, to select a signal on frame memory source bus 1, use the following procedure.

1 Using the bank selection buttons in the auxiliary bus control block, select the desired bank.

2 In the auxiliary bus control block, press the AUX delegation button to which frame memory source bus 1 is allocated, turning it on.

For allocation of buses to the AUX delegation buttons, see "Assigning a Bus to an AUX Delegation Button" in Chapter 19 (Volume 3).

3 In the key row of the bank selected in step **1**, select the signal to be used for the input image.

To select a signal with a key or DME effect applied on the frame memory source bus

In the key control block or in the M/E-1 >Key1 >Processed Key menu, press the [FM FEED] button.
This automatically assigns the key fill and key source signals being keyed by the currently selected keyer to frame memory source buses 1 and 2.
When DME is selected on the keyer, the key fill and key source signals to which a DME effect is applied are assigned.

Selecting Outputs and Target Frame Memory

Selecting outputs (FM) and target frame memory

The following description applies to the case of settings for FM1&2, but the procedures are similar for the other cases.

1 In the Frame Memory menu, press one of VF1 to VF4, and select the required HF menu.

The current status of frame memory appears. *(See page 302.)*

2 From the pair selection buttons, press the buttons corresponding to FM1 and FM2.

This assigns the signals to FM1 and FM2.
To the right of the target FM selection buttons, the FM1 and FM2 output status appears *(see page 303)*.

3 If required, press [Pair], to select the FM operation mode (pair mode).

On: Operate on FM1(3, 5, 7) and FM2(4, 6, 8) as a pair.
Off: Operate on FM1(3, 5, 7) and FM2(4, 6, 8) individually.

For more details, see "Pair mode" (page 299).

Notes

In the Pair Recombination menu, the [Pair] operation is not possible.

4 Press the target FM selection button [FM1] or [FM2] *(see page 303)* to select the FM operations apply to.

When [Pair] is On: Whichever of FM1 and FM2 you press, the pair is selected.
When [Pair] is Off: One of the targets must be selected. However, in the Clip >Play menu you can also select both FM1 and FM2.

Selecting a frame memory folder

Press a button in the frame memory folder selection area *(see page 305)*.
By pressing [More] to switch the display, you can select from a maximum of 12 folders.
Thumbnails of the files within the selected folder appear.

Capturing and Saving an Input Image

As the input material for the frame memory, you can use the signal selected on the frame memory source bus. For this signal you can use video processing (video levels or hue value adjustment) or masking.
Allocating a frame memory source bus signal to one of FM1 to FM8, then carrying out a freeze captures a still image in the corresponding frame memory output image, and saves it in temporary memory.
For a freeze, an image can be captured either as video frame (a "frame freeze") or a video field ("field freeze").

Notes

When the system is powered off, any freeze images written to temporary memory are lost.

Freezing an image and writing it to memory

To freeze the signal selected as input material, and write it to memory, use the following procedure.

1 In the Frame Memory menu, select VF1 'Still' and HF2 'Freeze/Store.'

The Freeze/Store menu appears.

2 Select the target frame memory.

For the procedure, see "Selecting outputs (FM) and target frame memory" (page 306).

3 To enable V/K mode, press [V/K Mode] turning it on.

4 Press a button in the frame memory folder selection area, to select the folder to hold the freeze image.

For details of the selection method, see page 307.

Notes

The folder selected here is the destination folder for writing the freeze image.
It is not possible to change the selection of this folder after the following step **5**.

An orange bar appears on the selection button for the destination folder.

5 Press [Freeze Enable], turning it on.

The signals of frame memory source buses 1 and 2 are assigned to the pair of FMs selected in step **2**, a freeze is now possible.

6 If necessary, make the video process settings *(see page 310)* or mask settings *(see page 311)* for application to the selected signal.

7 In the state in which you want to freeze, press one of the following in the <Freeze> group, to write the freeze image to temporary memory.

Frame: Freeze one frame.
Field: Freeze one field.
Off: Release the freeze, and delete the recorded freeze image.

After carrying out the freeze, to return to the state immediately before the freeze, press [Undo] in the <Freeze> group.

Notes

- All freeze images written to temporary memory are lost when the system is powered off.
- If you change the frame memory to use as in step **2** before saving the freeze images written to temporary memory, all the freeze images in temporary memory are lost, unless the auto store function has been enabled in setup. With the auto store function enabled, the freeze images written to temporary memory are saved automatically when the frame memory selection is changed.
- For the following signal formats, a field freeze is not possible.
  1080P/50, 1080P/59.94, 1080PsF/23.976, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Saving a freeze image (Store)

You can save an image in temporary memory which has been placed with the freeze function as a file in memory. You can save a single image in a single file and apply a name of up to eight characters to the file.

Notes

- When the system is powered off, all the files saved in memory are lost.
- When the signal format is 1080P, the file name is limited to seven characters. Each time a still image is saved, the remaining space is reduced by two frames.

To save a captured still image in a file, use the following procedure in the Still >Freeze/Store menu.

1 Press [Store].

The keyboard window *(see page 98)* appears.

2 In the keyboard window, enter the file name.

Notes

The following names cannot be used:
CON, PRN, AUX, CLOCK$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

3 In the keyboard window, press the [Enter] button.

This saves the still image file in memory.

The destination folder is the folder selected in step **4** of "Freezing an image and writing it to memory."
If the entered folder name already exists, a message to confirm overwriting appears.

When the system is powered off, the file saved in memory is erased.

To carry out a freeze and store simultaneously (Freeze and Store)

Press [Freeze & Store], turning it on.
In this state, if you press [Frame] or [Field], this carries out a freeze, and simultaneously stores in a still image file.

Setting video processing

To set video processing for the signal selected on a frame memory source bus, use the following procedure in the Still >Freeze/Store menu.

1 In the <Video Process> group, press [Video Process], turning it on.

2 Use the knobs to adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Overall gain of the video signal	–200.00 to +200.00
2	Y Gain	Y signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Y signal black level	–7.31 to +109.59

To return the settings to the default values, press [Unity] in the <Video Process> group.

Notes

When a pair setting is active, it is coupled to the video process on/off setting, but the above parameter settings are only valid for frame memory source bus 1. The pair setting cannot be used to set the frame memory source bus 2. If you want to set video process for frame memory source bus 1 only with the pair setting when old settings for frame memory source bus 2 remain, return the frame memory source bus 2 settings to their default values. When setting video process for the frame memory source bus 2, disable the pair setting.

Setting a mask

Masks can be set separately for frame memory source buses 1 and 2. To apply a mask to the signal selected on frame memory source bus 1, for example, use the following procedure in the Still >Freeze/Store menu.

1 Press [Box Mask] turning it on.

2 Use the knobs to adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Top	Top position	–100.00 to +100.00
2	Left	Left position	–100.00 to +100.00
3	Right	Right position	–100.00 to +100.00
4	Bottom	Bottom position	–100.00 to +100.00

3 To link the masks on frame memory source buses 1 and 2, press [Mask Link], turning it on.

Recalling Still Images

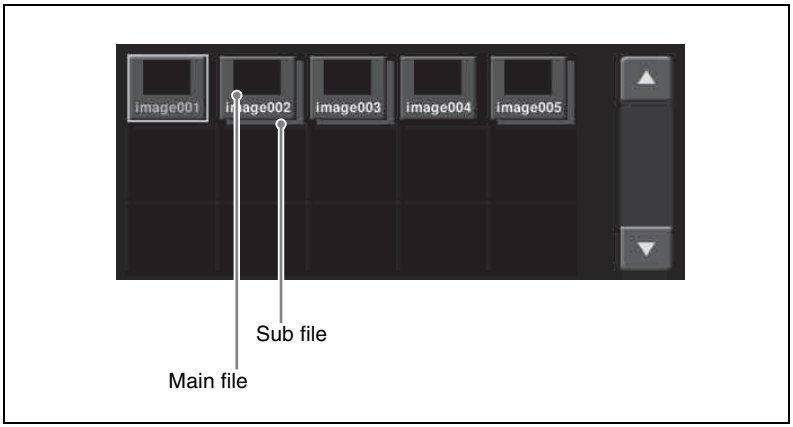
You can recall an image file saved in memory, and allocate to any of the FM1 to FM8 outputs.

Recalling a still image

To recall a still image file saved in memory using the thumbnails, and assign it to an FM output, use the following procedure.

1 In the Frame Memory menu, select VF1 ‘Still’ and HF1 ‘Recall.’

The Recall menu appears.
- When [Pair] is on, only pair files (pairs of main file and sub file) are displayed.
- When [Pair] is off, both single files and pair files appear (see following figure).



2 In the frame memory selection area, select the FM to be assigned. *(See page 307.)*

3 If [Direct Recall] is on, press and turn it off.

4 Select the desired folder in the folder selection area.
By pressing [More] to switch the display, you can select from a maximum of 12 folders.

Thumbnails of the files within the selected folder appear.

5 Using the arrow keys or turning the knob, scroll the file thumbnail display.

Knob	Parameter	Adjustment	Setting values
1	Scroll	Thumbnail display scrolling	1 and upwards

6 Press the thumbnail of the clip you want to recall.

7 Press [Recall].

This recalls the still image file, which is assigned to the FM you selected in step **2**.

To recall in direct recall mode

Direct recall means that pressing a thumbnail immediately recalls the file.
In this mode, only the front thumbnail file is recalled.

1 In step **7** above, instead of pressing [Recall], press [Direct Recall].

2 Press the thumbnail for the file you want to recall.

This immediately recalls the file.

To display the subsidiary file in front

With the direct recall mode on, press [Sub Display], turning it on.

To search by file name

1 Press the [Find] button.

The Find window appears.



2 Press [Find].

A keyboard window appears.

3 Enter the string you want to search for, and press [Enter].

This starts the search, and the indicator lights.
When the search ends, the files found are selected.

4 To move through the selected files, press the [< Prev] or [Next >] button.

5 Press outside the Find window on the menu screen.

This closes the Find window.

Image Output

There are two functions related to image output: the reposition function for moving the output image, and the lock function for fixing the output image.

Moving the output image (reposition function)

For up to two channels of FM1 to FM8 (one from FM1, FM3, FM5 and FM7 and the other from FM2, FM4, FM6 and FM8), you can move the output image with respect to the screen. The area of the screen around the image that has been moved is filled with black. There are two ways of carrying out this repositioning.

Normal mode: Movement in the horizontal direction is in two-pixel increments.

Black and white mode: Movement in the horizontal direction is in one-pixel increments, and for each pixel moved the color is inverted.

Notes

It is not possible to save an image moved with the reposition function directly to frame memory.

1 In the Frame Memory menu, select VF3 'Reposition/Lock' and HF1 'Reposition.'

The Reposition menu appears. In this menu, you can also enable the V/K mode *(see page 308)*.

2 In the frame memory selection area, select the FM output *(see page 307)*.

3 In the <Reposition> group, select the movement mode.

Normal: Move in normal mode.
Black&White: Move in black & white mode.

4 With the knobs, adjust the parameters to move the image.

Knob	Parameter	Adjustment	Setting values
1	Position H	Move in horizontal direction	–200.00 to +200.00 a)
2	Position V	Move in vertical direction	–200.00 to +200.00 a)

a) See page 242.

The surroundings of the moved image on the screen are filled with black.

5 To return the image moved by the reposition function to the center position, in the <Reposition> group press [Center].

Fixing the output image selection (lock function)

For the output of each of FM1 to FM8, this fixes the image at the current output. When this lock is enabled, even if the output is recalled in a snapshot or keyframe, the images output to FM1 to FM8 are preserved.

Notes

When the signal format is 1080P, this function cannot be used.

1 In the Frame Memory menu, select VF3 ‘Reposition/Lock’ and HF2 ‘Lock.’

The Lock menu appears.

2 In the frame memory selection area, select the FM output. *(See page 307.)*

3 Press [Lock], turning it on.

This fixes the currently selected frame memory output image.
To release the lock, set [Lock] to off.

Continuously Capturing Still Images (Record)

You can continuously capture (freeze) a sequence of input video frames and store the sequence of the still images over a specified time interval.
The name of each image recorded in this way consists of a first character string followed by a second string.

First character string: A common part of name assigned to all the still images captured in one record operation. This string includes a maximum of four characters, which can be specified using a menu before carrying out the capture. The first string is automatically used as the clip name when the images are treated as a frame memory clip.

Second character string: A four-digit number (0000 or greater), which is incremented each time a still image is captured.

Notes

When using the record function to continuously capture frames, it is not possible to use the mask function.

Continuously freezing input images and writing to memory

1 In the Frame Memory menu, select VF1 ‘Still’ and HF4 ‘Animation Record.’

The Animation Record menu appears.

2 Select the desired frame memory.

For details of the operating procedures, see “Selecting outputs (FM) and target frame memory” (page 306).

3 To use V/K mode, press [V/K Mode], turning it on.

4 Press a button in the frame memory folder selection area, to select the folder to hold the freeze image.

For details of the selection method, see page 307.

Notes

The folder selected here is the destination folder for writing the freeze image.
It is not possible to change the selection of this folder after the following step **5**.

An orange bar appears on the selection button for the destination folder.

5 Press [Record Enable], turning it on.

The signals of frame memory source buses 1 and 2 are assigned to the pair of FMs selected in step **2**, the recording function is now possible.

6 Input the file name if required.

Pressing [File Name] displays the keyboard window and you can enter the first character string (up to four characters) of the file name.

7 Set the recording time if required.

Pressing [Duration] displays the numeric keypad window, in which you can enter the recording time in the form of timecode.
If you set the recording time to zero, this uses all frame memory in which storing is possible for recording.

8 If required, set video processing for the selected signal.

For details of the operating procedures, see "Setting video processing" (page 310).

9 Press [Record], to start recording.

When the recording time is set, recording stops once the time has elapsed.

10 Press [Stop] to stop recording.

Even if the recording time is set, you can still stop recording before the set time has elapsed.

Recalling a Continuous Sequence of Still Images (Animation)

You can use a continuous sequence of images captured with the record function as keyframes to create an effect. By executing this effect you can recall the continuous sequence (animation).

Notes

- For example, to create an effect using FM1, FM1 must be assigned to a user region.
- To execute the effect, you must assign the user region to which FM1 is assigned to a region selection button in the numeric keypad control block. *(For details of assigning to region selection buttons, see Chapter 19 "Control Panel Setup (Panel)" (Volume 3).)*

In the Frame Memory menu, effect creation follows the image file names. Of the eight characters in the file names, if files have the same characters except for the last three characters they are treated as an image file group, and the effect is created with the last three (numeric) characters in sequence.

Notes

When creating the effect in pair mode *(see page 299)*, the files used must be main files and sub files with the same last three (numeric) characters in the file name.

To recall a continuous sequence of still images, create an effect in the user region with the still image files as a keyframe, and run the created effect.

Notes

With the 720P format or 1080P format, you can continuously recall images using the frame memory in units of two frames only.

Creating an effect with still image files as a keyframe

1 In the Frame Memory menu, select VF1 'Still' and HF5 'Create Key Frame.'

The Create Key Frame menu appears.

- A thumbnail appears for each group of files having the same characters, except for the last three characters, in the file name.
- When [Pair] is on, only pair files (each pair comprising a main file and a sub file) appear.
- When [Pair] is off, both single files and pair files all appear.

2 In the frame memory selection area, select the frame memory to be assigned.

This creates the effect in the user region to which the selected frame memory is assigned.

For details of the operating procedures, see "Selecting outputs (FM) and target frame memory" (page 306).

3 Select the desired folder in the folder selection area.
By pressing [More] to switch the display, you can select from a maximum of 12 folders.

Thumbnails of the files within the selected folder appear.

4 Turn the knob to select the register number in the user region.

Knob	Parameter	Adjustment	Setting values
5	Register	Effect register number	1 to 99

Notes

To search for an empty register in the user region, use the numeric keypad control block *(see step **3** of "Recalling a Register" in Chapter 13 (Volume 2)).*

5 Use the arrow keys or turn the knobs to scroll the thumbnail display of the files.

Knob	Parameter	Adjustment	Setting values
1	Scroll	Thumbnail display scrolling	1 and upwards

6 Select the thumbnail of the files to be used for the keyframe.

7 If necessary, turn the knob to check the animation effect in the thumbnail display.

Knob	Parameter	Adjustment	Setting values
3	Viewer	Animate thumbnail display of files	00:00:00 and upwards

8 Using the region selection buttons in the numeric keypad control block, select one of the regions (User1 to User8) to which the frame memory output signals have been assigned.

9 Carry out either of the following.

- To clear the effect register selected in step **4**, and create a new effect: press [Create Key Frame].
- To add to the end of the effect register selected in step **4**, press [Append Key Frame].

A confirmation message for creating the effect appears.
If there is an inappropriate condition for creating the effect, an error message appears.

For details of error messages, see "Error Messages" in the Appendix (Volume 3).

10 Press [OK].

This creates the effect in the selected user region register.

To cancel creating the effect
Press [Cancel].

Notes

- The effect is built with the selected files, in increasing order of the last three characters of the file name. If you do not want to include some of these files in the effect, first delete or rename them.
- A maximum of 99 keyframes can be included in a single effect.

Recalling a sequence of still images

Run the effect created by the foregoing procedure.
The procedure for doing this is the same as for any other effect.

For details, see "Executing Effects" in Chapter 13 (Volume 2).

Frame Memory Clip Function

What is a “frame memory clip”?

Movies can be read into frame memory, and recalled and played back. A movie held in frame memory is called a “frame memory clip.”
A frame memory clip can be named using up to four characters. *(For details of frame memory clip names, see “Continuously Capturing Still Images (Record)” (page 315).)*

Frame memory clip settings

For frame memory clips, you can make the following settings using a menu or device control block (trackball/search dial/joystick).

- Start point
- Stop point
- Loop On/Off

The above settings can be saved in a snapshot register as snapshot attributes, and recalled.

Frame Memory Clip Operations

For an overview of frame memory clip concepts, see "Frame Memory Clip Function" (page 320).

Notes

During playback of a frame memory clip of the pair assigned to either of the target FM selection buttons *(see page 323)*, frame memory operations may not be performed properly. Carry out frame memory operations after stopping clip playback.

Preparations for Operation

The preparations for using a frame memory clip (hereafter, a "clip") are the same as for a still image operation. *See "Preparations" (page 301)* and *"Selecting Outputs and Target Frame Memory" (page 306)*.

Recalling Clips

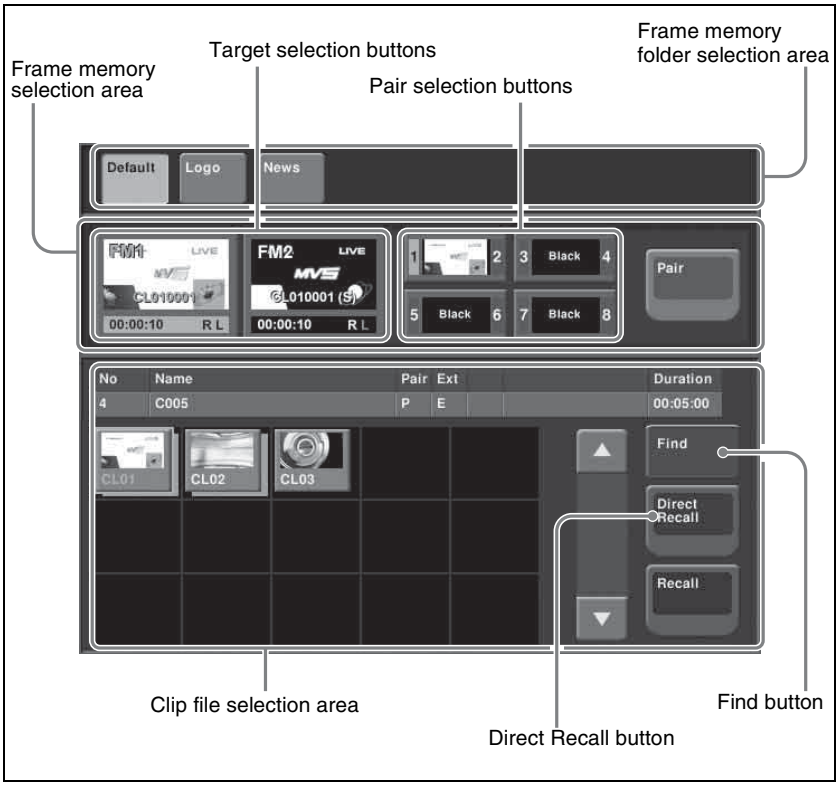
Recalling a clip

You can recall a clip from each of frame memories 1 to 8.

1 In the Frame Memory menu, select VF2 'Clip' and HF1 'Recall.'

The Recall menu appears. *(See following figure)*

- When [Pair] is set to On, only pair files (sets of main file and sub file) are shown.
- When [Pair] is set to Off, both of single files and pair files are shown.



2 In the frame memory selection area, select an assigned target FM. *(See page 306)*

3 If [Direct Recall] is on, press the button, turning it off.

4 In the folder selection area, select the desired folder.
By pressing [More] to switch the displays, you can select from a maximum of 12 folders.

Thumbnails of the files within the selected folder appear.

5 Using the arrow keys or turning the knob, scroll the file thumbnail display.

Knob	Parameter	Adjustment	Setting values
1	Scroll	Thumbnail display scrolling	1 and upwards

6 Press the thumbnail of the clip you want to recall.

7 Press [Recall].

This recalls the clip file, which is assigned to the FM you selected in step **2**. In pair mode, if a clip is selected, the main file is output to FM1, and the sub file to FM2. In single mode, when only one of FM1 and FM2 is selected, the front file on the thumbnail is output.

To recall in direct recall mode

Direct recall means that pressing a thumbnail immediately recalls the file. In this mode, only the front thumbnail file is recalled.

1 In step **7** above, instead of pressing [Recall], press [Direct Recall].

2 Press the thumbnail for the file you want to recall.

This immediately recalls the file.

To display the subsidiary file in front

With the direct recall mode on, press [Sub Display], turning it on.

To search the clip file by file name

Press the [Find] button.

For details, see "To search by file name" (page 313) in Chapter 7.

Clip Playback

You can play a recalled clip by a menu operation or by using the device control block.

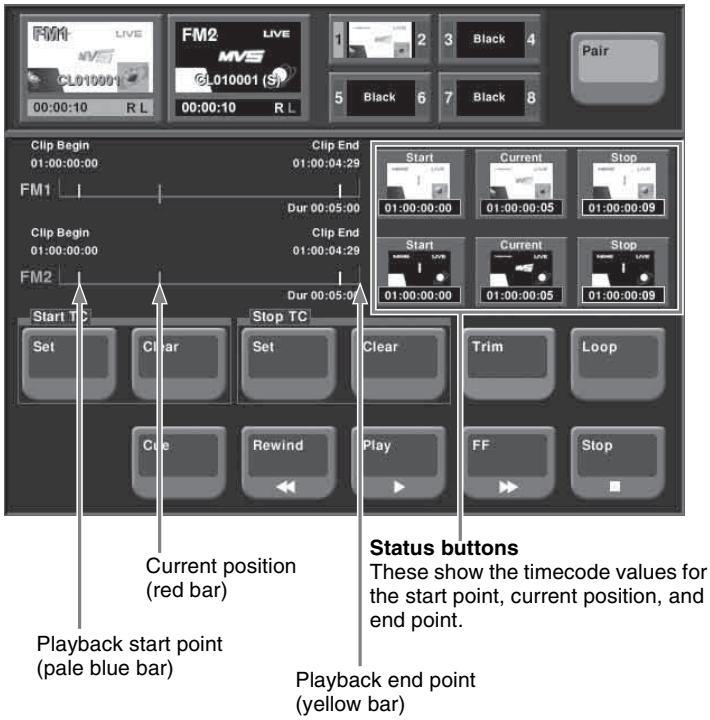
Notes

With a pair file recalled, it is possible to set [Pair] to Off and carry out a single file operation, but if you then set [Pair] to On again, the output of frame memory may be black. In such cases it is necessary to recall the pair file once more.

Playing a clip using the menu

1 In the Frame Memory menu, select VF2 'Clip' and HF2 'Play.'

The Play menu appears. The status of the clip shown in the current target FM selection buttons appears here.



2 When [Pair] is Off, press a target FM selection button to select the target.

3 To set loop playback, press [Loop], turning it on.

4 To start playback, press [Play]. During playback, to stop, press [Stop].

To cue up
Press [Cue].

To play the image at the beginning of the clip (Clip Begin)
Press [Rewind].

To play the image at the end of the clip (Clip End)
Press [FF].

To specify the playback start point

To set the current position as the playback start point, in the <Start TC> group, press [Set]. To set a different position, press the [Start] status button, and enter a timecode value from the numeric keypad window.

To specify the playback stop point

Start playback, and at the desired position press the [STOP] button to stop playback, then in the <Stop TC> group, press [Set]. To set to any position, press the [Stop] status button, and enter a timecode value from the numeric keypad window.

To change the current position

To change the current position, press the [Current] status button, and enter a timecode value from the numeric keypad window.

To delete the parts of a clip file other than the playback part (trimming)

1 Set the playback start point and stop point.

2 Press [Trim].

A confirmation message appears.

3 Press [Yes].

Using the device control block (MKS-8036A Search Dial Module, option) to play back clips

Notes

A frame memory clip must first be recalled with a menu operation.

1 With the device selection buttons, select the frame memory clip to be played (FM1 CLIP to FM8 CLIP).

If the pair mode is on, both main and subsidiary FMs light.

2 Press the [PLAY] button, turning it on.

To stop playback, press [STOP] or any of the [SHTL], [JOG], [CUE], [REW], [FF], and [ALL STOP] buttons.

For details of the buttons in the device control block (MKS-8036A search dial module, option), see "Device Control Block (MKS-8036A Search Dial Module, Option)" (page 74) in Chapter 2.

To specify the playback start point

To make the current position the playback start point, press the [START TC] button. To set a different position, press the [SET START TC] button, then enter the timecode from the numeric keypad control block.

To specify the duration

Press the [SET DUR] button, and enter a timecode from the numeric keypad control block. If the playback start point is already set, this automatically sets the playback stop point. If the playback stop point is already set, this automatically sets the playback start point. (The duration setting is not displayed in the device control block.)

To specify the playback stop point

Start playback, and at the desired position press the [STOP] button to stop playback, then press the [STOP TC] button. To set to any position, press the [SET STOP TC] button, and enter a timecode from the numeric keypad control block.

To carry out the variable speed playback

Use the search dial.

For details on using the search dial, see "Controlling the Tape/Disk Transport" in Chapter 12 (Volume 2).

To apply a loop to a frame memory clip

Press the [LOOP] button.

Using the device control block (MKS-8031TB trackball module, option) to play back clips

Notes

A frame memory clip must first be recalled with a menu operation.

1 Press the [DEV] button in the region selection buttons, and select the frame memory clip for playback (FM1 CLIP to FM8 CLIP).

If the pair mode is on, both main and subsidiary FMs light.

2 Press the [PLAY] button, turning it on.

To stop playback, press [STOP] or any of the [SHTL], [JOG], [CUE], [REW], [FF], and [ALL STOP] buttons.

For details of the buttons in the device control block (MKS-8031TB trackball module, option), see "Device Control Block (MKS-8031TB Trackball Module, Option)" (page 71) in Chapter 2.

For details of the playback start point, stop point, and duration settings, see the previous item, "Using the device control block (MKS-8036A Search Dial Module, option) to play back clips" (page 325).

To carry out the variable speed playback

Press any of the [SHTL], [JOG], and [VAR] buttons, then turn the Z-ring or move the joystick. The image changes in the forward direction when you turn the Z-ring clockwise, and in the reverse direction when you turn it counterclockwise. Move the joystick to the right for the forward direction and to the left for the reverse direction.

When you pressed the [JOG] button: Playback is at a speed corresponding to the turning speed of the Z-ring or the movement speed of the joystick.

When you pressed the [SHTL] button: Playback is at a speed corresponding to the rotation angle of the Z-ring or amount of movement of the joystick.

When you pressed the [VAR] button: Playback is at a speed corresponding to the rotation angle of the Z-ring or amount of movement of the joystick, in the range –1 to +3 times normal speed.

Clip Creation

You save a movie as a clip.

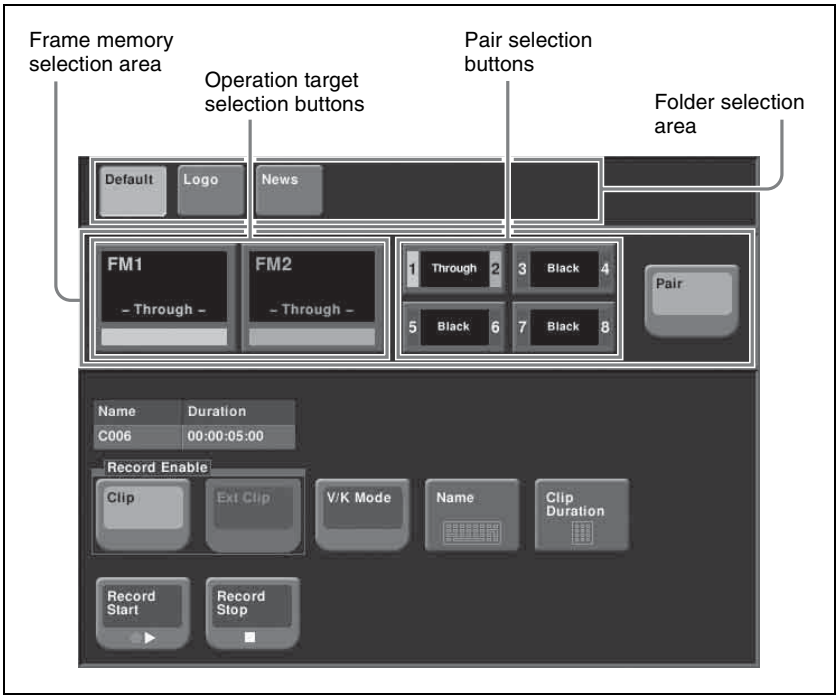
Notes

If the number of frame memory clips exceed 100 single files (50 pair files), an error appears.

Using the menu to record clips

1 In the Frame Memory menu, select VF2 'Clip' and HF3 'Record.'

The Record menu appears.



2 With [Pair] off, press the operation target selection button, to select the operation target.

3 In the folder selection area, select the folder containing the clip to be recorded.

4 In the <Record Enable> group, select the clip type.

- To record a normal clip, press [Clip].
- To record an extended clip, press [Ext Clip].

5 To set the clip name, press [Name].

A keyboard window appears.

6 Enter the clip name, and press Enter.

7 To start recording, press [Record Start].

8 To end recording, press [Record Stop].

To set the clip duration

1 Press [Clip Duration].

A numeric keypad window appears.

2 Enter a timecode value or number of frames, and press Enter.

This confirms the clip duration.

Creating and Handling Frame Memory Folders

You can create, rename, and delete frame memory folders.

Creating a new folder

1 In the Frame Memory menu, select VF5 'Folder.'

The Folder menu appears. The status area shows a list of the current folder settings.

2 Select [New].

A keyboard window appears.

3 Enter the folder name, and press Enter.

This confirms the folder name.

Changing the folder name

1 In the Frame Memory >Folder menu, select the folder with the arrow keys or by turning the knobs.

Knob	Parameter	Adjustment	Setting values
1	No.	Folder selection	1 to 12
2	Num	Number of files to select consecutively from selected file	1 to 12

2 Press [Rename].

A keyboard window appears.

3 Enter the new folder name, and press Enter.

Notes

The following names cannot be used for folders:

Default, Flash1, Flash2
CON, PRN, AUX, CLOCK$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

This changes the folder name.

Deleting a folder

1 In the Frame Memory >Folder menu, select the folder with the arrow keys or by turning the knobs.

Knob	Parameter	Adjustment	Setting values
1	No.	Folder selection	1 to 12
2	Num	Number of files to select consecutively from selected file	1 to 12

To select all folders, select [All].

2 Press [Delete].

A confirmation message appears.

3 To carry out the deletion select [Yes], and to cancel the deletion select [No].

Notes

It is not possible to delete the default folder (named “Default”).

Clip Output

As for still image operation, you can use the reposition and lock functions.

For details of the operation, see “Image Output” (page 313).

Clip Transition Operations

A frame memory clip (movie) is played back, linked to a transition using a mix (dissolve) or wipe.

The following restrictions apply to the use of a clip transition.
- Key frame capture is not possible.
- It is not possible to apply a pattern limit.
- Transitions executed in two strokes, such as a preset color mix with the stroke mode set to Normal, or a DME wipe with a picture-in-picture pattern, will not execute correctly.
- It is not possible to vary the transition rate of a clip transition.
- Transition preview cannot be used.
- No instantaneous state of a clip transition can be saved as a snapshot.
- When recalling a snapshot including a clip transition during executing another clip transition, the follow-on transition does not operate properly. Be sure to complete the transition before recalling a snapshot.

Notes

When a clip transition is selected as the transition type, if one of the wipe direction selection buttons in the transition control block is lit, it indicates the direction of clip playback.

Setting a clip transition

The following example describes the case of a clip transition using FM 1&2 Clip on the M/E-1 bank.

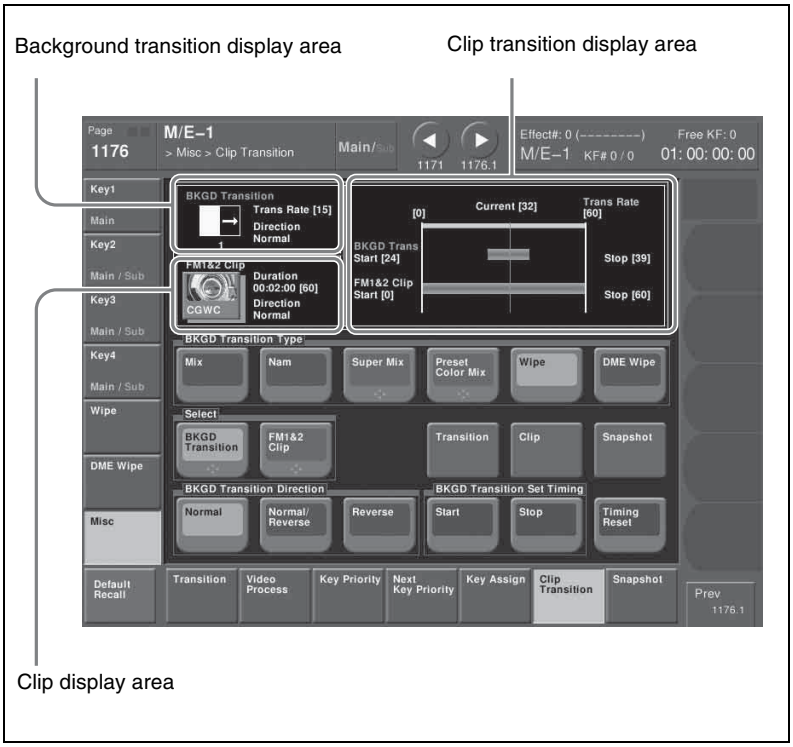
Notes

To use a clip transition effectively, the image from the frame memory clip being played back during the clip transition should be seen in the M/E-1 program output. For example, inserting a key using frame memory output 1 and frame memory output 2.

1 Display the M/E-1 >Misc >Transition menu, and in the <Transition Type> group select “FM1&2 Clip.”

2 Press [Clip Transition].

The Clip Transition menu appears.



3 Press the [Clip] button.

The Clip menu appears, and the status area shows a list of clips.

4 Select the clip to use in the clip transition.

5 Return to the Clip Transition menu, and in the <BKGD Transition Type> group, select the background transition type.

Notes

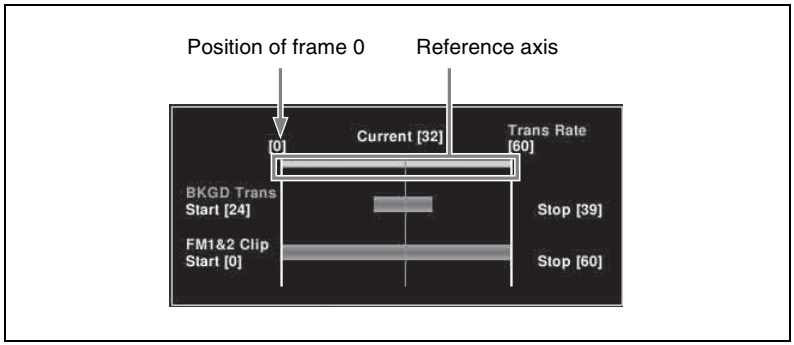
For details of the background transition selected here, see the various adjustments in the M/E-1 >Misc >Transition menu.

6 In the <Select> group, press [BKGD Transition].

7 Use either of the following methods to set the background transition start point independently of the clip playback timing.

- Move the fader lever to the desired position, and in the <BKGD Transition Set Timing> group press [Start].

- Turn knob 1 to set the number of frames. (The left end of the reference axis (see following figure) is the position of frame 0.)



8 Using either of the following methods, set the end point of the background transition.

- Move the fader lever to the desired position, and in the <BKGD Transition Set Timing> group press [Stop].
- Turn knob 2 to set the number of frames.

9 If Wipe or DME Wipe is selected in the <BKGD Transition Type> group, in the <BKGD Transition Direction> group, select the background transition direction.

10 In the <Select> group, press [FM 1&2 Clip].

11 Using either of the following methods, set the start point of the clip.

- Move the fader lever to the desired start point, and in the <Clip Transition Set Timing> group press [Start].
- Turn knob 1 to set the number of frames. (The left end of the reference axis (see previous figure) is the position of frame 0.)

Notes

It is not possible to set the end point.

12 In the <Clip Transition Direction> group, select the playback direction of the clip.

To reset the start point and end point

Press [Timing Reset].

The background transition start point and end point, and the clip start point are all reset.

Image Data Management

You can carry out the following operations on the files in which images are saved.

- Pair file processing
- Move
- Delete
- Rename

Notes

During playback of a frame memory clip of the pair assigned to either of the target FM selection buttons *(see page 323)*, frame memory operations may not be performed properly. Carry out frame memory operations after stopping clip playback.

Pair File Processing

You can create a pair file from two single files. In the reverse direction, you can split a pair file into two single files.

Couple: You can create a pair file from two single still image files or clip files.

Separate: You can also separate a pair file into two single still image files or clip files.

Creating a pair file from two single files

Notes

Carrying out the following operation automatically switches [Pair] to On.

The following description applies to the case of FM1&2, but the procedures are similar for the other cases.

1 In the Frame Memory >Still >Recall menu or Frame Memory >Clip >Recall menu, recall the two single files you want to convert to a pair file, to FM1 and FM2.

2 In the Frame Memory menu, select VF4 ‘File’ and HF1 ‘Pair Recombination.’

The Pair Recombination menu appears.

3 Press [Couple].

This converts the files output to FM1 and FM2 to a pair.

Splitting a pair file into two single files

Notes

Carrying out the following operation automatically switches [Pair] to Off.

The following description applies to the case of FM1and FM2, but the procedures are similar for the other cases.

1 In the Frame Memory >Still >Recall menu or Frame Memory >Clip >Recall menu, recall the pair file.

2 Select the folder in which the file to be moved is stored.

3 In the Frame Memory menu, select VF4 'File' and HF1 'Pair Recombination.'

The Pair Recombination menu appears.

4 Press [Separate].

The FM1 and FM2 pair file is split into separate single files.

Moving Files

1 In the Frame Memory menu, select VF4 'File' and HF5 'Move.'

The Move menu appears. The status area shows files to be moved in the upper area, and destination files in the lower area.

2 Select the folder which contains the file to be moved.

3 Using any of the following methods, select the file to be moved.

- Press the arrow keys to scroll the display.
- Press directly on the thumbnail in the status area.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	No	File selection	1 and upwards
2	Num	Selection of number of files in sequence	1 and upwards

4 Select the destination folder and file.

5 Press [Move].

6 To confirm the move press [Yes], and to cancel press [No].

Deleting Files

1 In the Frame Memory menu, select VF4 ‘File’ and HF5 ‘Delete.’

The Delete menu appears. In the status area, whether pair mode is on or off, all of the saved files appear as thumbnails.

2 Select the folder which contains the file to be deleted.

3 Using either of the following methods, select the file to be deleted. If necessary, press the arrow keys to scroll the display.

- Press directly on the thumbnail in the status area.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	No	File selection	1 and upwards
2	Num	Selection of number of files in sequence	1 and upwards

- To delete all files, press [Select All], turning it on.
- When a clip thumbnail is selected, the still image files making up the clip are also selected for deletion.

4 If necessary, turn the knob to check the contents of the frame memory clip through the thumbnail display.

Knob	Parameter	Adjustment	Setting values
3	Viewer	For a movie, the current frame position. For a still image, no effect.	00:00:00 and upwards

5 Press [Delete].

A message for confirming the deletion appears.

6 To confirm the deletion press [Yes], and to cancel press [No].

Renaming Files

1 In the Frame Memory menu, select VF4 ‘File’ and HF6 ‘Rename’

The Rename menu appears. In the status area, whether pair mode is on or off, all of the saved files appear as thumbnails.

2 Using either of the following methods, select the file to be renamed. If necessary, press the arrow keys to scroll the display.

- Press directly on the thumbnail in the status area.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	No	File selection	1 and upwards

3 If necessary, turn the knob check the contents of the frame memory clip through the thumbnail display.

Knob	Parameter	Adjustment	Setting values
3	Viewer	For a movie, the current frame position. For a still image, no effect.	00:00:00 and upwards

4 Press [Rename].

A keyboard window appears.

5 Enter the new name, then press [Enter] in the keyboard window.

Notes

The following names cannot be used:

CON, PRN, AUX, CLOCK$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

This renames the file.

External Hard Disk Drive Access

You can connect a hard disk drive to the USB port of the switcher processor, to carry out the following operations.

Format: Format the hard disk.
Backup: Batch saving of files from frame memory to the hard disk.
Restore: Restoring frame memory from files saved on the hard disk.

Since image data saved in memory is lost when the system is powered off, using an external hard disk drive allows required data to be preserved.

Notes

- Only one hard disk drive can be connected to a single switcher processor.
- While the hard disk is being accessed, frame memory operations are not possible.
- During playback of a frame memory clip of the pair assigned to either of the target FM selection buttons *(see page 323)*, frame memory operations may not be performed properly. Carry out frame memory operations after stopping clip playback.
- When the signal format is 1080P, this function cannot be used.

Consult your Sony service representative or sales representative about the hard disk drives that can be connected.

Hard Disk Formatting

When you connect a hard disk drive for the first time, it is necessary to format the hard disk. This partitions the disk, creating 15 logical areas (FMHDD1 to FMHDD15).

1 In the Frame Memory menu, select VF6 ‘External Device’ and HF1 ‘Ext HDD Format.’

The Ext HDD Format menu appears.

To get the hard disk drive information
In the button area press [Refresh Status].
The Device item shows the product information for the hard disk drive.

2 Press [Format].

A popup window for confirming formatting appears.

Notes

Carrying out formatting erases any existing data on the hard disk.

3 Press [Yes].

This starts the hard disk formatting. A progress bar and numerical indication appear to show the progress of the operation.
When the operation is completed, a popup window reading “Success!!” appears.

4 Press [OK].

The popup window disappears.

Saving Files

You can save all of the files from frame memory to the external hard disk drive.

Notes

Before carrying out this operation for the first time, it is necessary to format the hard disk *(see previous item, “Hard Disk Formatting”)*.

1 In the Frame Memory menu, select VF6 ‘External Device’ and HF2 ‘Ext HDD Backup/Restore.’

The Ext HDD Backup/Restore menu appears.
For each partition, a list of the directory names and number of files appears.

To get the hard disk drive information
Press [Refresh Status].
The Device item shows the product information for the hard disk drive, and the names of directories.

2 Using any of the following methods, select a logical drive (FMHDD1 to FMHDD15).

- Press directly on the list to select.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Partition	Partition selection	1 to 15

3 In the <Backup> group, do either of the following.

- To replace the existing data, press [Replace].
- To save in addition to the existing data, press [Append].

A popup window for confirming file saving appears.

Notes

When you execute [Replace], all of the saved files in the logical drive is erased immediately before the saving operations.

4 Press [Yes].

This starts the file saving operation. If there is no directory, a directory is automatically created, and the files are saved within it. A progress bar and numerical indication appear to show the progress of the operation.
When the operation is completed, a popup window reading "Completed." appears.

5 Press [OK].

To rename a directory

Select a directory in the list, and in the button area press [Rename].
In the keyboard window that appears, enter the new directory name, and press [Enter]. The name of a directory is limited to eight characters.

Notes

The following names cannot be used:

CON, PRN, AUX, CLOCK$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Recalling Files

You can recall all of the saved files on the hard disk drive into frame memory.

1 Carry out steps **1** and **2** of the procedure *"Saving Files" (page 339).*

Notes

It is not possible to select a partition (FMHDD1 to FMHDD15) of a hard disk in which no file is saved.

2 In the <Restore> group, do either of the following.

- To replace the existing data with the recalled data, press [Replace].
- To add the recalled data to the existing data, press [Append].

A popup window for confirming file recall appears.

Notes

When you execute [Replace], any existing data in frame memory is lost immediately before the recalling operations.

3 Press [Yes].

This starts the file recall operation. A progress bar and numerical indication appear to show the progress of the operation.
When the operation is completed, a popup window reading “Completed.” appears.

4 Press [OK].

Managing Images Using a DDR/VTR

Using a DDR/VTR for High-speed Backup and Restoring

You can save all files currently held in frame memory as a backup data set, by high-speed recording on video tape or other medium.
To restore the folder structure, it is necessary to save the automatically generated file list (of file name, length of clip, and so on) in memory.

Notes

At the beginning of this backup data a red or blue image is automatically inserted when the data is created. Do not delete this image, as it is required for restoring the data.

High-speed recording of backup data to DDR or VTR

Notes

Before starting the backup, it is necessary to select the FM output to record on an AUX bus, for example, and input the AUX output to the DDR/VTR.

1 In the Frame Memory menu, select VF6 'External Device,' and HF4 'Backup to DDR/VTR.'

The Backup to DDR/VTR menu appears.

2 In the <Backup Enable> group, select either of the following.

Clip/Still: Data from the first board (still images and clips)
Ext Clip: Data from the second board (extended clips)

3 Press [Backup Start].

The message "Preparing now..." is displayed in a popup window, and it changes to a confirmation message when the preparation is complete.

4 Start recording at the external device, and immediately after that press [Yes].

This starts the backup, and when completed a message appears.

5 Stop the recording at the external device, and press the [OK] button.

6 To save the file list in memory, press [File >File Name Data].

The File >File Name Data menu appears.
The name of the file that is saved is fixed (FM_Bkup).

For details, see the section "Overview of File Operations" in Chapter 17 (Volume 2).

Restoring backup data from DDR or VTR

Notes

Before starting the restore operation, it is necessary to select the DDR/VTR output on the FM input bus.

1 In the Frame Memory menu, select VF6 'External Device' and HF5 'Restore from DDR/VTR.'

The Restore from DDR/VTR menu appears.

2 Press [File >File Name Data], to read the file list from the File Name Data menu.

For details, see the section "Overview of File Operations" in Chapter 17 (Volume 2).

3 In the <Restore Enable> group, select either of the following.

Clip/Still: Data from the first board (still images and clips)
Ext Clip: Data from the second board (extended clips)

4 In the [Restore Type] group, press either of the following.

Replace: Replace the existing frame memory data with the recalled data
Append: Add to the existing frame memory data.

Notes

If you selected "Ext Clip" in step 4, "Append" is selected automatically.

5 Press [Restore Start].

A confirmation popup window appears.

6 Start playback at the external device, and immediately after that press [Yes].

Notes

Make sure to include that the red or blue image inserted at the beginning when the backup was made. If this image is not found, the clip or still image will not be played back correctly.

This starts the restore operation, and when completed a message appears.

7 Stop the playback at the external device, and press the [OK] button.

Extracting Images from Video Tape

By recording a clip or still image stored on a video tape as a single clip (single file) under certain rules, you can automatically extract an image from the clip, and save as a separate frame memory file.

Notes

When the signal format is 1080P, this function cannot be used.

Relation between recorded state of video tape and files after extraction

The extraction is carried out according to the following rules.

Example 1: When only video signal clips and a still image are recorded (single files)

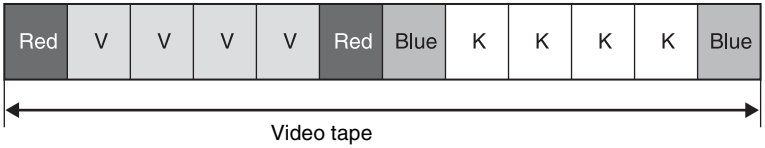
V: video Red: red marker frame [a)]



Result of extraction:
Each section surrounded by red marker frames is extracted as a clip (main file). If the red markers surround a single frame, then it is extracted as a still image. In the case above two clip files (main files) are extracted, and one still image file.

Example 2: When a video signal clip is followed by a key signal clip with the same number of frames (pair file)

V: video K: key Red: red marker frame [a] Blue: blue marker frame [b]



Result of extraction:
The section surrounded by red marker frames is extracted as the main file, and the section surrounded by blue marker frames is extracted as the sub file.
In the case above, one clip file (pair file) is extracted.

a) A red marker frame is a monochrome frame with the RGB signal levels respectively 100%, 0%, 0%.
b) A blue marker frame is a monochrome frame with the RGB signal levels respectively 0%, 0%, 100%.

Notes

- For extraction as a pair file, the main file and sub file must have the same number of frames.
- For image extraction as an extended clip, [Ext Clip] must be selected in the Record menu <Record Enable> group when the video tape content is recorded as a clip.
- For image extraction as still images, [Clip] must be selected in the Record menu <Record Enable> group when the video tape content is recorded as a clip.

1 In the Frame Memory >Clip >Record menu, record the tape image as a clip.

For details, see "Using the menu to record clips" (page 327).

2 In the Frame Memory menu, select VF4 'File' and HF2 'Auto Extraction.'

The Auto Extraction menu appears.

3 Select a clip (single file) recorded from the tape.

4 Press [Extraction Start].

A confirmation popup window appears.

5 Press [Yes].

This starts the extraction, analyzes the currently selected single clip, and automatically extracts a movie (Clip) or still image (Still). When there is key data, a pair file is created.

To check the details of the images (still image/clip)

Use the following knob operations.

Knob	Parameter	Setting	Values
1	No.	File number	1 to maximum
3	Viewer	Timecode for selected image	00:00:00 to maximum

Chapter 8 Color Backgrounds, Copy and Swap, and Other Settings

Color Background

The dedicated generators generate color signals, and these can be used as color backgrounds in video effects.

Color background selection

There are two color backgrounds, color background 1 and color background 2, which you use by assigning to cross-point buttons.

Color combinations (“color mix”)

The color generators can output the result of combining two colors, which are color 1 and color 2.

Using a pattern from a dedicated pattern generator, color 1 and color 2 can be combined in the boundary region, forming a color gradation. This is referred to in the menu system as “color mix.”

You can also apply modifiers to the selected pattern.

When the “color mix” function is not used, the result is a flat color, and color 1 is always output.

You carry out color background settings in the Color Bkgd menu. This section describes the settings menu for color background 1 as an example.

Color Background Settings Menu

Accessing the Color Bkgd1 menu

Use either of the following operations.

- In the menu control block, select the top menu selection button [COLOR BKGD], and press VF1 ‘Color Bkgd1.’
- Press a cross-point button assigned to color background 1 twice in rapid succession.

The above operation displays the Color Bkgd1 menu.

Basic Color Background Setting Operations

Making a single-color matte (Flat Color)

If you are not using the “color mix” function to combine two colors, use the following procedure.

1 In the <Matte> group of the Color Bkgd 1 menu, press [Flat Color], turning it on.

You can now adjust color 1.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Making a color combination (color mix)

To combine color 1 and color 2, use the following procedure.

1 In the <Matte> group of the Color Bkgd1 menu, press [Mix Color], turning it on.

2 Set the following parameters as required.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Degree of softening of edge	0.00 to 100.00
5	Pattern	Pattern number	1 to 24 a)

a) The patterns are the same as for a standard wipe. *See "Wipe Pattern List" (page 412).*

You can also carry out the pattern selection by pressing the [Mix Ptn Select] button, to display the Mix Ptn Select menu. Select any pattern appearing in the Mix Ptn Select menu (standard wipe patterns 1 to 24), and you can then adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Edge softness	0.00 to 100.00

3 To adjust color 1, set [Color 1] on, and to adjust color 2 set [Color 2] on, then adjust the parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
3	Hue	Hue	359.99 to 0.00

4 If required, set the pattern modifiers.

- **When turning [Position] on and setting the pattern position**

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See page 242.

- **When turning [Multi] on and using replications of the same pattern**

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See page 247.

- **When turning [Aspect] on and setting the aspect ratio of the pattern**

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) See page 246.

- **When turning [Pairing] on and making a wipe pattern like a Venetian blind**

Knob	Parameter	Adjustment	Setting values
1	Width	Width of the slits	1 to 128 (integer)

- **When turning [Angle] on in the <Rotation> group and slanting the pattern**

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See page 244.

- **When turning [Speed] on in the <Rotation> group and rotating the pattern at a constant rate**

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See page 244.

- **When selecting H (horizontal) or V (vertical) in the <Modulation> group and applying waviness to the pattern**
  (The modulation is always a sine wave.)

Notes

When using 1080PsF mode in an HD system, the modulation function is not available.

Knob	Parameter	Adjustment	Setting values
1	Amplitude	Amplitude of modulation	0.00 to 100.00
2	Frequency	Frequency of modulation	0.00 to 100.00
3	Speed	Speed of waves	–100.00 to +100.00 a)

a) See *"Applying modulation to the wipe pattern (Modulation)" (page 249)*.

5 To interchange color 1 and color 2, press the [Color Invert] button, turning it on.

Copy and Swap

You can copy or swap the settings among the switcher banks or between keyers.
The following settings can be copied or swapped.

- Overall settings for the M/E-1 to M/E-4, and PGM/PST banks
- Keyer settings
- Wipe settings in a transition control block
- Wipe settings in an independent key transition control block
- DME wipe settings in a transition control block
- DME wipe settings in an independent key transition control block
- Matte data (color 1, color 2, and how to compose them)
- Color settings
- DME channel settings
- Format converter input settings (copy only)
- Format converter output settings (copy only)

You can carry out copy operations with a simple button operation. Swap operations, and copy operations on DME data can only be done with a menu operation.

M/E copy and M/E swap

You can copy and swap the overall bank settings between the M/E-1 and PGM/PST banks.

Target bank	Target data
M/E-1 PGM/PST	Bank settings excluding the following data items: • Setup data • Snapshots • Keyframe effects • Key snapshots • Key memory

Notes

If a DME is being used on the source M/E bank, then if for example there are insufficient DME channels, it may not be possible to select the DME.
There are no such restrictions on a swap.

Keyer copy and keyer swap

You can carry out copy and swap operations among the keyers listed in the following table.

Target bank	Target keyer	Target data
M/E-1	Keys 1 to 8	Key settings excluding the following data items: • Setup data • Key snapshots • Key memory
PGM/PST	Downstream keys 1 to 8	

Notes

If a DME is being used on the source keyer for a copy or either keyer for a swap, then if for example there are insufficient DME channels, or the limit on using DME channels within an M/E bank is exceeded, it may not be possible to select the DME.

Wipe copy and wipe swap

You can copy and swap the wipe settings between the banks.

Target bank	Target data
M/E-1 PGM/PST	Wipe settings. It is not, however, possible to carry out copy or swap involving independent key transition wipe settings.

Wipe copy and wipe swap in the independent key transition control block

You can copy and swap the wipe settings among the keyers listed in the following table.

Target bank	Target keyer	Target data
M/E-1	Keys 1 to 8	Wipe settings in the independent key transition control block.
PGM/PST	Downstream keys 1 to 8	

DME wipe copy and DME wipe swap

You can copy and swap the DME wipe settings between the banks listed in the following table.

Target bank	Target data
M/E-1 PGM/PST	DME wipe settings. It is not, however, possible to carry out copy or swap involving independent key transition DME wipe settings.

DME wipe copy and DME wipe swap in the independent key transition control block

You can copy and swap the DME wipe settings among the keyers listed in the following table.

Target bank	Target keyer	Target data
M/E-1	Keys 1 to 8	DME wipe settings in the independent key transition control block.
PGM/PST	Downstream keys 1 to 8	

Matte data copy and swap

You can copy or swap the matte data among the color generators listed in the following table.

Target bank	Target keyer and data	
M/E-1 PGM/PST	• Keys 1 to 8 • Downstream keys 1 to 8	• Matte data for key fill • Matte data for key edge fill
	Matte data for wipe border edge	
Color background	• Matte data for color background 1 • Matte data for color background 2	

Color data copy and swap

You can copy or swap the color data among the color generators listed in the following table.

Target bank	Target keyer and data	
M/E-1 PGM/PST	• Keys 1 to 8 • Downstream keys 1 to 8	• Colors 1 and 2 for key fill • Colors 1 and 2 for key edge fill • “Zabton” color data
	Colors 1 and 2 for wipe border	
	Color data for preset color mix	
Color background	• Colors 1 and 2 for color background 1 • Colors 1 and 2 for color background 2	
Frame memory	• FM1 color • FM2 color	
DME ch1 to ch4	• Background • Border • Sepia • Light • Shade • Drop shadow (other than DME ch4) • Trail	

DME channel copy and swap

You can copy and swap the channel data among DME channels 1 to 4 or DME channels 5 to 8.
It is not possible to copy or swap the channel data between DME channels 1 to 4 and DME channels 5 to 8.

Notes

When the signal format is 1080P, the combinations for a copy or swap operation are limited to the following.

- Channels 1 and 2
- Channels 3 and 4
- Channels 5 and 6
- Channels 7 and 8

Copying format converter data

You can copy data from one format converter input to another or from one output to another.

Copy and Swap Operations

Copy and Swap Menu Operations

Accessing the Copy/Swap menu

In the menu operation section top menu selection buttons, press the [Copy/Swap] button, then press VF1 'Copy/Swap.' The Copy/Swap menu appears. Here a copy/swap operation on wipe data is described by way of example, using the Copy/Swap >Wipe menu, but the same general procedure applies to all of the following menus.

- M/E: Copying and swapping M/E data
- Key: Copying and swapping key data
- Wipe: Copying and swapping wipe data
- DME Wipe: Copying and swapping DME wipe data
- Matte: Copying and swapping matte data
- Color: Copying and swapping color data
- DME: Copying and swapping data by DME channels
- Format Converter: Copying format converter data

For details, see "Settings Relating to Signal Inputs (Input Menu)" in Chapter 21 (Volume 3).

For an overview of the concepts involved, see "Copy and Swap" (page 352). For details of color corrector copy and swap, see "Copy and Swap Operations" (page 374).

Copying and swapping wipe data

As an example, to copy or swap wipe data, use the following procedure.

1 In the Copy/Swap menu, select HF3 'Wipe.'

The Copy/Swap >Wipe menu appears.
The status area shows lists for the copy/swap source on the left, and the copy/swap destination on the right.

2 In the <Data Select> group, select either of the following.

Wipe: The operation applies to wipes in the transition control block.
Key Wipe: The operation applies to wipes in the independent key transition control block.

3 Using any of the following methods, select the data to be copied or swapped.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs to make the setting.

Knob	Parameter	Adjustment	Setting values
1	Left No	Select data for copy/swap source	1 to 5 a) 1 to 40 b)
2	Right No	Select data for copy/swap destination	1 to 5 a) 1 to 40 b)

a) Transition control block wipe data
b) Independent key transition control block wipe data

For details of the data affected, see "Copy and Swap" (page 352).

4 To copy, press [Copy], and to swap, press [Swap].

This carries out the copy or swap.

To undo a copy or swap

Press [Undo], to return to the state before the copy or swap was carried out.

Copy by Button Operation

You can copy key data by a simple button operation.

Basic button operation

The basic button operation is to hold down the copy source button, then press the destination button.
You can undo the last operation using [Undo] in the menu *(see page 357).*

Keyer copy button operation

Use the key delegation buttons in the respective banks.

To copy from M/E-1 key 1 to P/P downstream key 2

Hold down the M/E-1 key delegation button [KEY1] and press the P/P key delegation button [DSK2].

Misc Menu Operations

In the Misc menu, you can carry out the following operations.

- Enabling and disabling operation from an external device, System Manager, or an editing keyboard.
- Enabling and disabling side flags on the background bus of each of the M/E-1 and PGM/PST banks.

  For the side flag function, see "Side Flags" (page 392).

- Switching the safe title function on or off for each switcher output.
- Displaying the transition rate, independent key transition rate, and fade-to-black transition rate for each of the M/E and PGM/PST banks, and changing the settings.

Port Settings for Control From an External Device

Enabling or disabling control from an external device

1 In the menu control block, press the top menu selection button [MISC], then select VF1 'Enable' and HF1 'Port Enable.'

The Misc >Enable >Port Enable menu appears with the status area showing the settings of the following ports.

- Switcher Remote1 to Remote4 ports (RS-422A, D-sub 9-pin)
- Switcher GPI port (parallel, 25-pin)
- DME1/DME2 Editor ports (RS-422A, D-sub 9-pin)
- DME1/DME2 GPI ports (parallel, 25-pin)

When the signal format is 1080P, you can also make settings for DME3/DME4.

2 In the <Switcher> or <DME> group, press on the name of the port for which you want to disable control from an external device, turning it off. To re-enable control for the port, press on its name once more.

Notes

For the AUX bus operation from the Remote 1 to Remote 4 ports of the switcher, the setting (Enable/Disable/Manual) in the Setup menu takes precedence. Only when the setting is "Manual," the settings made in the Port Enable menu apply.

For details, see "Interfacing With External Devices (Device Interface Menu)" in Chapter 19 (Volume 3).

DME override

1 In the menu control block, press the top menu selection button [MISC], then select VF1 'Enable' and HF1 'Port Enable.'

The Misc >Enable >Port Enable menu appears.

2 In the <DME Override> group, select the DME override mode.

DME Override: When a switcher snapshot or effect using a DME is recalled, forcibly select the DME that was used when saving.

On Air Protect: The operation is the same as the DME override function, except that a DME being used by an M/E bank or P/P bank that is on air will not be forcibly selected.

Notes

If effects using the same DME channel are selected simultaneously in two or more regions, the DME is selected with the order of precedence P/P >M/E1 >M/E2 >M/E3 >M/E4.

Enabling or disabling control from System Manager

By installing the BZPS-8000 System Management Software (System Manager), you can use a computer connected on a network for management of some switcher data and control operations.
To enable or disable this function, use the following procedure.

1 In the menu control block, press the top menu selection button [MISC], then select VF1 'Enable' and HF1 'Port Enable.'

The Misc >Enable >Port Enable menu appears.

2 Press [System Manager].

Each time you press the button toggles between enable and disable.

Editing Keyboard Settings

Notes

The following operations are only possible when a license for the BZS-8050 Editing Control Software is activated. *For details of license registration, see*

"Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 3).

Enabling or disabling control from the editing keyboard

1 In the menu control block, press the top menu selection button [MISC], then select VF1 'Enable' and HF2 'Plug-In Editor.'

The Misc >Enable >Plug-In Editor menu appears.

2 In the <Control From Plug-In Editor> group, press [Editor Enable].

Each time you press the button toggles between enable and disable.

To enable control of the preview bus only

When control from the editing keyboard is disabled (when [Editor Enable] is set to Disable), to enable control of the preview bus only, press [PVW Bus Enable] in the <Control From Plug-In Editor> group.

Safe Title Settings

Switching the safe title function on or off

1 In the menu control block, press the top menu selection button [MISC] and select VF2 'Safe Title.'

The Misc >Safe Title menu appears.

2 Using any of the following methods, select the signal to which the settings apply.

- Directly press the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob to make the setting.

Knob	Parameter	Adjustment	Setting values
1	Output	Signal to which the settings apply	1 to 48

Notes

- It is not possible to change the setting for the output for which the safe title is set off in a Setup menu.
- The safe title function cannot be used for output signals for which through mode is set to Enable in a Setup menu.

For more information about the Setup menu settings referred to above, see "Signal Input Settings (Input Menu)" and "Signal Output Settings (Output Menu)" in Chapter 20 (Volume 3).

3 Press [Safe Title] to set it on or off.

Displaying a List of Transition Rates and Changing the Settings

In the Transition menu, for each bank you can display a list of the M/E (or PGM/PST) transition rates and independent key (or DSK) transition rates, and change the settings.
These settings are linked to the other transition rate setting operations.

Displaying the Transition menu

In the menu control block, press the top menu selection button [MISC], then select VF3 'Transition.'
The Misc >Transition menu appears.

About the Transition menu display

The display of the independent key transition rate in the Misc >Transition menu depends on the selection in the <Key Transition> group of the Engineering Setup >Switcher >Transition menu for each of the M/E and PGM/PST banks.

When [Same] (On direction and Off direction settings the same) is selected in the <Key Transition> group: Only "Key" (or "DSK" in the PGM/PST bank) appears.

When [Independ] (On direction and Off direction settings independent) is selected in the <Key Transition> group: "Key(On)" and "Key(Off)" each appear. In the case of the PGM/PST bank, "DSK(On)" and "DSK(Off)" appear.

For more details, see "Settings Relating to Video Switching (Transition Menu)" in Chapter 20 (Volume 3).

Setting the transition rate in the Transition menu

To set the M/E transition rate

For example, to make the settings for the M/E-1 bank, use the following procedure.

1 In the <M/E-1 Transition Rate> group of the Misc >Transition menu, press [Transition].

2 Turn the knob to set the number of frames.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Transition rate	0 to 999 (frames)

Notes

When a clip transition is selected as the transition type, it is not possible to change the transition rate in this menu.

To set the independent key transition rate

By way of example, the following is the procedure for settings of keys 1 to 4 in the M/E-1 block.

1 Press in the list in the status area of the Misc >Transition menu, to select M/E-1.

2 In the <Transition Rate> group, press [Key K1-K4].

To insert (on) or remove (off) keys individually, press [Key(On) K1-K4] or [Key(Off) K1-K4].

3 Turn the knobs to set the number of frames.

Knob	Parameter	Adjustment	Setting values
1	Key1 Trans Rate	Key 1 transition rate	0 to 999 (frames)
2	Key2 Trans Rate	Key 2 transition rate	0 to 999 (frames)
3	Key3 Trans Rate	Key 3 transition rate	0 to 999 (frames)
4	Key4 Trans Rate	Key 4 transition rate	0 to 999 (frames)

To set the fade-to-black transition rate in the Transition menu

Notes

This function is not available with the CCP-9000A.

1 In the Misc >Transition menu, press [FTB].

2 Turn the knob to set the number of frames.

Knob	Parameter	Adjustment	Setting values
1	Transition Rate	Transition rate	0 to 999 (frames)

AUX Menu Operations

AUX Bus Settings

Making video process settings for an AUX bus

1 In the Aux >Aux Bus menu, using any of the following methods, select the AUX bus to which the settings apply.

- Directly press the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob to make the setting.

Knob	Parameter	Adjustment	Setting values
1	AUX Bus	AUX bus selection	1 to 48

2 Press [Video Process], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Luminance signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–7.31 to +109.59

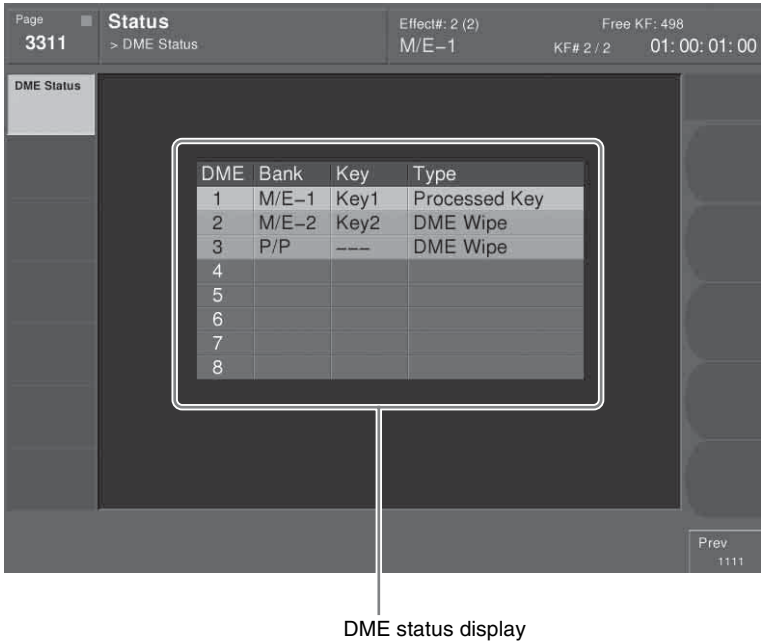
To return adjustment values to their defaults, press [Unity].

Status Menu

The Status menu shows the following information.
- Operating status of the DME

Viewing the DME operating status

To view the DME operating status, press the top menu selection button [STATS] in the menu control block.
This selects VF1 ‘DME Status’ and the Status menu appears.



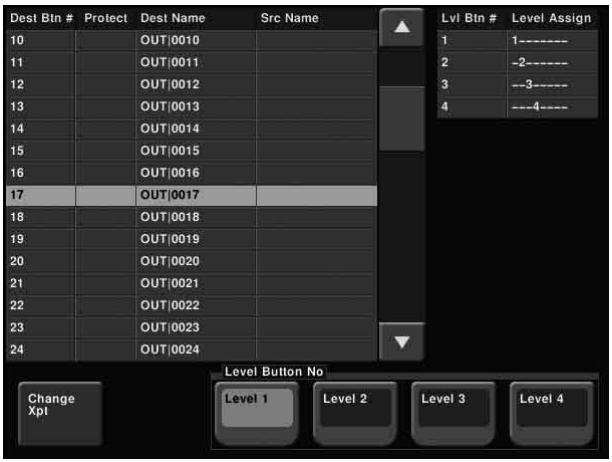
For each DME channel, you can see how the DME is being used in the corresponding operation block.
The display background color also indicates the following differences in the way in which a DME is being used.
Blue: The DME is currently being used in other than the final program output.
Red: The DME is currently being used in the final program output.

Router Control Menu Operations

Using the Router >Router Control >Router Control menu, you can carry out router switching operations.

Checking the List of Inputs for Each Destination

You can check the list of signals currently input for each destination.
In the menu control block, press the top menu selection button [RTR], then select VF1 ‘Router Control’ and HF1 ‘Router Control.’
The following menu appears, and the left side of the status area shows a list for destination assignments.



If in the Assign >RTR Mode Setting menu, [Inhibit] is set to On for a destination, the corresponding line appears in gray. Also, if [PROT] (protect) is set to ON for a source, using a BKSR3xxx or R1xxx series Router remote control, a padlock icon appears.
The right side of the status area shows the level assignment status to the Level 1 to Level 4 buttons.

Selecting the level

In the Level Button No group at the lower right in the above illustration, press the selected level for switching.

Switching the Source for Each Destination

You can switch the source for each destination with a menu operation.

For the assignment of destinations and sources to buttons, use the Setup >Panel >Aux Assign >RTR Mode Setting menu. For details, refer to "Using the Auxiliary Bus Control Block for Router Control" in Chapter 19 (Volume 3).

1 Press [Change Xpt].

The Router >Router Control >Router Control >Change Xpt menu appears.
Destination Select buttons appear in groups of 16.
Source Select buttons appear by group (maximum 24 buttons).

2 Press one of the Destination Select buttons, to select the destination for which you want to switch the source.

To change the group
Press one of the [1-16], [17-32], [33-48], and [49-64] buttons.

3 Press one of the Source Select buttons, to select the source you want to switch.

To change the group
Press one of the [1-24], [25-48], ... [97-120], and [121-128] buttons.

Video Process

The term “video process” is applied to adjustments to the luminance and hue of the input video signal.
There are two types of adjustment, depending on the application:
- Adjustment of an individual input signal
- Image effects on a particular bus

Notes

These types of adjustment may be carried out independently. However, since they are implemented by the same hardware, if the same signal is subjected to processing twice, there may be limitations on the range of effects obtained in the final result.

Video Process Adjustments for Each Input Signal

For each signal input to the switcher, you can set video process on or off and set the parameters (Video Gain, Y Gain, C Gain, Hue Delay, and Black Level) in the Setup menu.

For details of the settings, see “Signal Input Settings” in Chapter 20 (Volume 3).

Video Process Adjustments on a Particular Bus

Buses to which the adjustments apply

For each of the following buses, you can switch video process adjustments on or off, and adjust the parameters.
- Following buses in the M/E-1and PGM/PST banks
  - Key fill buses for keys 1 to 8
  - Background A and background B buses
  - Utility 1 and utility 2 buses
- Frame memory source 1 and frame memory source 2 buses
- Aux 1 to 48 buses

These settings also apply to keyframes and snapshots.

Making the adjustments

Adjust VIDEO GAIN, Y GAIN, BLACK LEVEL, C GAIN, and HUE DELAY in the following menus.

Applicable bus		Menu used for operation	See page
M/E-1 bank	Key fill buses for keys 1 to 8	M/E-1 menu	page 192
	Background A and B buses	Video Process menu	page 370
	Utility 1 and 2 buses		
PGM/PST bank	Key fill buses for DSK1 to DSK8	PGM/PST menu	page 192
	Background A and B buses	Video Process menu	page 370
	Utility 1 and 2 buses		
Frame memory source 1 and 2 buses		Frame Memory menu	page 310
Aux 1 to 48 buses		AUX menu	page 364

Video Process Memory

When using video process adjustments for an image effect on a bus, this function saves the final values for each pair number for the signals. The video process on/off setting is not saved.
When you change the adjustments the values are automatically saved, and these last values are recalled when the pair number is selected.
In other words, by switching video process memory on, regardless of the video process information for each bus, you can carry out video process adjustments for each input signal.
The parameters saved are as follows.

VIDEO GAIN, Y GAIN, BLACK LEVEL, C GAIN, HUE DELAY

Switch the video process memory on or off in the Setup menu.

For details of setting operations, see "Settings Relating to Keys, Wipes, Frame Memory and Color Correction (Key/Wipe/FM/CCR Menu)" in Chapter 20 (Volume 3).

Video Process Settings

This section describes operations on the M/E-1 and PGM/PST background A and B buses, and utility buses 1 and 2.
For these operations, use the Misc >Video Process menu in the respective operating bank.

For video process settings on other buses, see the following.

- *Settings for a particular input signal: "Signal input settings" in Chapter 20 (Volume 3)*
- *Key fill bus settings: "Video Processing" (page 192)*
- *Settings for frame memory source buses 1 and 2: "Setting video processing" (page 310)*
- *Settings for Aux 1 to 48 buses: "Making video process settings for an AUX bus" (page 364)*
- *Overview of video process: "Video Process" (page 368)*

This section describes an example on the background A bus of the M/E-1 bank. For the background B bus or utility bus 1 or 2, make the adjustment with a similar procedure.

Making video process settings for each bus

1 In the menu control block, press the top menu selection button [M/E1] and select VF7 'Misc' and HF2 'Video Process.'

2 In the <Bkgd-A> group, press [Video Process], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Luminance signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–7.31 to +109.59

To return the parameter settings to the defaults, press [Unity] in the <Bkgd-A> group.

Chapter 9 Color Corrector

Preparations

The color corrector enables video signal color correction (black balance/white balance adjustment, gamma correction, knee correction, etc.).

Notes

To use the color corrector, the BZS-8420X Color Corrector Software. To use the software, you are required to input an install key.

For the method of inputting an install key, see "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 3).

Assigning the color corrector input buses to AUX delegation buttons

There are two inputs for capturing material to the color corrector: the CCR1 bus and the CCR2 bus.

For details of the input assignment operation, see "Auxiliary Bus Control Block Settings (Aux Assign Menu)" in Chapter 19 (Volume 3).

Selecting the color correction input signal

After assigning CCR1 and CCR2 to AUX buses, use the following procedure.

1. Press the AUX delegation buttons assigned to CCR1 (or CCR2).
2. In the cross-point button row, select the signal to which you want to apply color correction.

Notes

The signals that can be selected on the CCR1 and CCR2 buses are primary inputs, premium inputs, format converter inputs and frame memory outputs (FM1 to FM8) only.

However you can make all the internal signals of the switcher selectable by a setting in the Setup menu.

For details, see "Selecting the Bank to Make the Settings" in Chapter 20 (Volume 3).

Selecting the color corrector output signal

By assigning the signal output from the color corrector to a cross-point button, you can make that signal available on that button.

For details of the assignment process, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 3).

Accessing the CCR menu

For color correction operations, use the CCR menu.
To access the CCR menu, in the menu control block, press the top menu selection button [CCR].
The following description uses CCR1 as an example. To apply color correction to CCR2, replace VF1 'CCR1' by VF2 'CCR2,' and follow the same procedure.

Overall Color Corrector Operations

Enabling Color Corrector

To enable the functions of color corrector 1, for example, use the following procedure.

1. In the CCR menu, press VF1 ‘CCR1’ and any HF.
2. In the <CCR> group, press [CCR], turning it on.

   This enables the functions of color corrector 1.

Returning all color corrector settings to their defaults

1. In the <CCR> group, press [Unity].

   A confirmation message appears.
2. Press [Yes].

   This returns all color corrector settings to their defaults, whether [CCR] is on or off.

Copy and Swap Operations

Copying color corrector data

1. In the CCR menu, press VF3 ‘Copy/Swap.’

   The Copy/Swap menu appears.
   The status area shows a copy source list on the left and a copy destination list on the right.
2. Using any of the following methods, select the copy source data and copy destination data.

   - Press directly on the list in the status area.
   - Press the arrow keys to scroll the reverse video cursor.
   - Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Left No	Select copy source data	1 or 2
2	Right No	Select copy destination data	1 or 2

3 Press [Copy].

This carries out the copy.

Swapping color corrector data

Refer to the procedure described in the previous item “Copying color corrector data.” In step **3**, press [Swap] instead of [Copy].

To undo copy or swap

In the Copy/Swap menu, press [Undo].
The state before carrying out the copy or swap is restored.

Color Corrector Functions

This section describes the color corrector functions.
For each of the following operations, it is possible to copy or swap data between two color correctors (CCR1 and CCR2).

Input Video Processing Operations

Carry out the following corrections to a YUV signal before conversion to an RGB signal.

- Overall gain adjustment of the video signal
- Gain adjustment of the Y signal
- Gain adjustment of the C signal
- Hue delay
- Black level adjustment

To apply input video processing effects, use the following procedure.

1 In the CCR menu, press VF1 ‘CCR1’ and HF1 ‘Input Process.’

The Input Process menu appears.

2 In the <Input Process> group, press [Input Process], turning it on.

3 Adjust the following parameters.

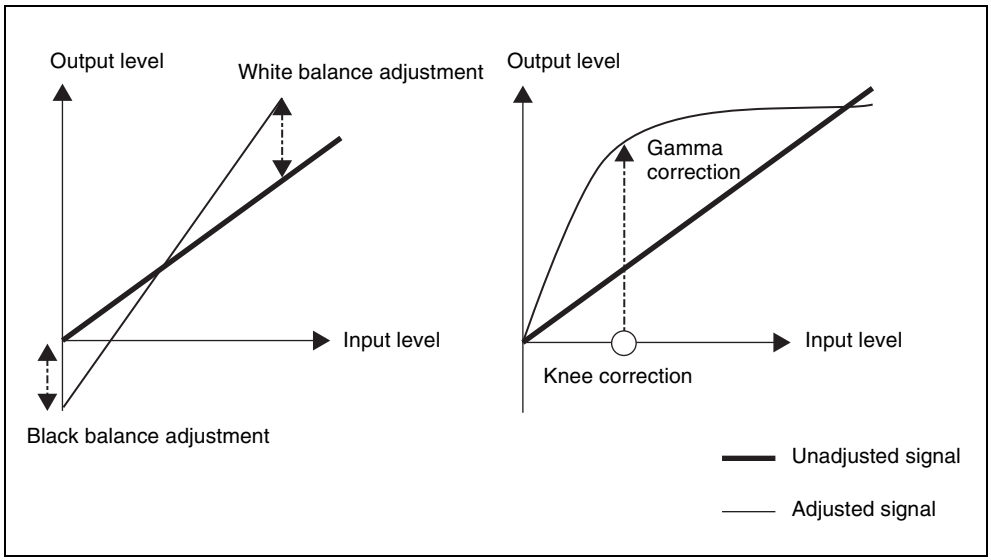
Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Y signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–116.90 to +116.90

To return the parameters to their default settings

Press [Unity] in the <Input Process> group.

Primary Color Correction Operations

Carry out the following corrections to each of the R, G, and B signals.
Black balance adjustment: setting the output level for a 0% level input signal.
White balance adjustment: setting the output level for a 100% level input signal.
Gamma correction: adjusting the curvature of the gamma curve.
Knee correction: adjusting the position of the maximum point of the gamma curve.



It is also possible to mask part of the region to be corrected.

Applying primary color correction

1 In the CCR menu, press VF1 ‘CCR1’ and HF2 ‘Primary CCR.’

The Primary CCR menu appears.

2 In the <Primary CCR> group, press [Primary CCR], turning it on.

3 In the <Primary CCR Adjust> group, select the setting item.

Black: black balance adjustment
White: white balance adjustment
Gamma: gamma correction
Knee: knee correction

4 Depending on the selection in step **3**, adjust the following parameters.

• When Black or Gamma is selected

Knob	Parameter	Adjustment	Setting values
1	Red	Red signal adjustment	–100.00 to +100.00
2	Green	Green signal adjustment	–100.00 to +100.00
3	Blue	Blue signal adjustment	–100.00 to +100.00
4	All	Simultaneous RGB adjustment	Red value is shown

• When White is selected

Knob	Parameter	Adjustment	Setting values
1	Red	Red signal adjustment	0.00 to 200.00
2	Green	Green signal adjustment	0.00 to 200.00
3	Blue	Blue signal adjustment	0.00 to 200.00
4	All	Simultaneous RGB adjustment	Red value is shown

• When Knee is selected

Knob	Parameter	Adjustment	Setting values
1	Red	Red signal adjustment	20.00 to 75.00
2	Green	Green signal gain	20.00 to 75.00
3	Blue	Blue signal gain	20.00 to 75.00
4	All	Simultaneous RGB adjustment	Red value is shown

To return the parameters to their default settings

In the <Primary CCR> group, press [Unity].

Masking a part of the primary color correction

Here the procedure for mask 1 operation is described by way of example. You can carry out mask 2 operation in a similar way.

1 In the Primary CCR menu, press [Mask1].

2 In the < Primary/Secondary Mask > group, press [Mask1], turning it on.

Notes

When [Mask 2] is selected in the Secondary CCR menu, linked to this setting it automatically changes from [Mask 2] to [Mask 1].

3 Press [Mask1 Adjust].

The Mask1 Adjust menu appears.

4 In the <Mask Source> group, select the mask source.

Box: signal from dedicated box generator
Pattern: signal from dedicated pattern generator

5 Depending on the selection in step **3**, adjust the following parameters.

- **When Box is selected**

Knob	Parameter	Adjustment	Setting values
1	Top	Top position	–100.00 to +100.00
2	Left	Left position	–100.00 to +100.00
3	Right	Right position	–100.00 to +100.00
4	Bottom	Bottom position	–100.00 to +100.00
5	Soft	Degree of softness of box	0.00 to 100.00

- **When Pattern is selected**

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Degree of softness of pattern edge	0.00 to 100.00
5	Pattern	Pattern number	1 to 24

For the pattern selection, you can also press [Mask Ptn Select] in the Mask1 Adjust menu, then use the Mask Ptn Select menu.
Press any of the displayed patterns (standard wipe patterns 1 to 24) to select it, then you can adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Pattern size	0.00 to 100.00
2	Soft	Degree of softness of pattern edge	0.00 to 100.00

6 When selecting the pattern as a mask source, set the pattern modifiers as required.

- **When turning [Position] on and setting the pattern position**

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–200.00 to +200.00 a)
2	Position V	Vertical position	–200.00 to +200.00 a)

a) See “Setting the wipe position (Positioner)” (page 242).

- **When turning [Multi] on and replicating the same pattern**

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See “Setting the wipe pattern replication (Multi)” (page 247).

- **When turning [Aspect] on and setting the aspect ratio of the pattern**

Knob	Parameter	Adjustment	Setting values
1	Aspect	aspect ratio	–100.00 to +100.00 a)

a) See “Setting the wipe pattern aspect ratio (Aspect ratio)” (page 246).

- **When turning the [Angle] on in the <Rotation> group and slanting the pattern**

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–100.00 to +100.00 a)

a) See “Angle” (page 244).

- **When turning [Speed] on in the <Rotation> group and rotating the pattern at a fixed rate**

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) See “Speed” (page 244).

7 To invert the mask source, return to the Primary CCR menu and press [Pri/Sec Mask Invrt], turning it on.

Notes

The mask function is common to the primary color correction, secondary color correction, and spot color adjustment functions.

Secondary Color Correction Operations

For the six colors R (red), G (green), B (blue), Y (yellow), C (cyan), and M (magenta), adjust the luminance and saturation, and also the hue within a range of ±30 degrees of the center value for each color.
You can mask a part of the region to be corrected.

Applying secondary color correction

1 In the CCR menu, press VF1 ‘CCR1’ and HF3 ‘Secondary CCR.’

The Secondary CCR menu appears.

2 In the <Secondary CCR> group, press [Secondary CCR], turning it on.

3 In the <Secondary CCR Adjust> group, select the color for which you want to make the setting.

4 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	–100.00 to +100.00
2	Saturation	Saturation	0.00 to 200.00
3	Hue Delay	Hue delay	–180.00 to +180.00

To return the parameter settings to their default values

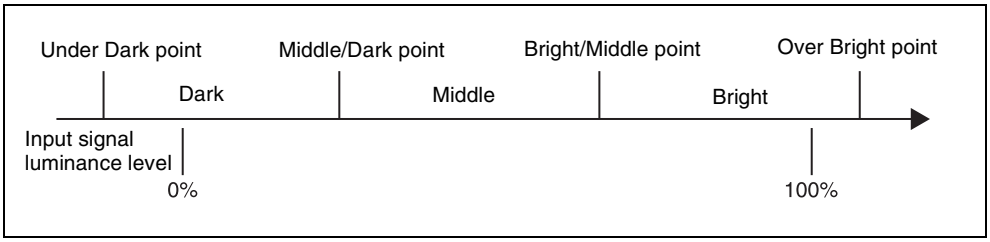
In the <Secondary CCR> group press [Unity].

Masking a part of the secondary color correction

Set [Mask] to On in the Secondary CCR menu, then carry out the same operation as described under *“Masking a part of the primary color correction” (page 378)*.

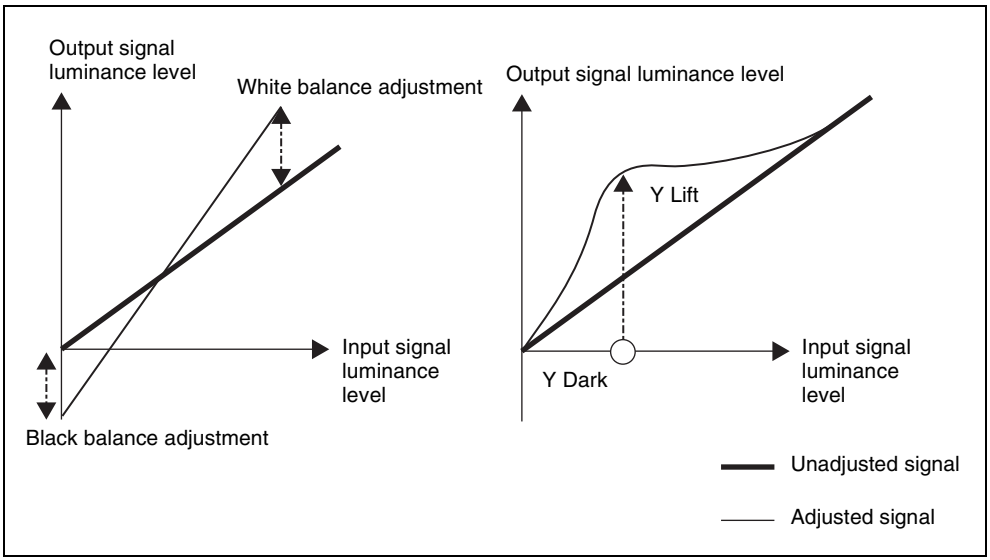
Luminance Processing Operations

After converting a signal to which RGB color correction has been applied to a YUV signal, divide the luminance levels into three regions, referred to as Dark, Middle, and Bright, and apply video signal adjustments to these regions.



There are three modes for luminance processing, as follows.
Tint mode: adding a specified color to the original video signal.
Color Modify mode: adjusting the original video signal.
Y Modify mode: adjusting the output levels of the input luminance signal.

- White balance adjustment: setting the output level for an input luminance signal at the 100% level.
- Black balance adjustment: setting the output level for an input luminance signal at the 0% level.
- Y lift correction: adjusting the curvature of the curve.
- Y dark correction: adjusting the position of the maximum point of the curve.



It is also possible to mask part of the region to be corrected.

Applying luminance processing

1 In the CCR menu, press VF1 ‘CCR1’ and HF5 ‘Luminance Process.’

The Luminance Process menu appears.

2 In the <Luminance Process> group, press [Luminance Process], turning it on.

3 In the <Mode> group, specify the adjustment mode.

Tint: add a specified color to the original video signal.
Color Modify: adjust the original video signal.
Y Modify: adjust the output levels of the input luminance signal.

When tint mode or color modify mode is selected, skip to step **4**.
When Y modify mode is selected, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	White	White balance adjustment	0.00 to 200.00
2	Black	Black balance adjustment	–100.00 to +100.00
3	Y Lift	Curvature of curve	–100.00 to +100.00
4	Y Dark	Position of maximum point of curve	–7.31 to +109.59

4 In the <Bound> group, make the settings for the three regions (Dark, Middle, and Bright).

- **[Level] parameters:** set the boundaries of the three regions.

Knob	Parameter	Adjustment	Setting values
1	Over B Level	Luminance level of the Over Bright point	50.00 to 150.00
2	Mid B Level	Luminance level of the Bright/ Middle point	10.00 to 120.00
3	Dark Mid Level	Luminance level of the Middle/ Dark point	–20.00 to +90.00
4	Under D Level	Luminance level of the Under Dark point	–50.00 to +50.00

- **[Soft] parameters:** set the degree of boundary softness of the three regions.

Knob	Parameter	Adjustment	Setting values
1	Over B Soft	Degree of softness at Over Bright point	15.00 to 70.00
2	Mid B Soft	Degree of softness at Bright/ Middle point	15.00 to 42.50
3	Dark Mid Soft	Degree of softness at Middle/Dark point	15.00 to 42.50

Knob	Parameter	Adjustment	Setting values
4	Under D Soft	Degree of softness at Under Dark point	15.00 to 70.00

5 In the <Luminance Process Adjust> group, press [Dark], [Mid], or [Bright], and adjust the following parameters for the three regions.

• In tint mode

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	–100.00 to +100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

• In color modify mode

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	–100.00 to +100.00
2	C Gain	Chrominance signal gain	0.00 to 200.00
3	Hue Delay	Hue delay	–180.00 to +180.00

To return the parameters to their default settings

In the <Luminance Process> group, press [Unity].

Spot Color Adjustment

You can change the color of a specified color region to a different color, without affecting other regions. You can also mask part of such a region. Then for the region other than the region whose color you have changed, you can make the following corrections.

- Video signal overall gain adjustment
- Y signal gain adjustment
- Y signal offset adjustment
- C signal gain adjustment
- C signal hue adjustment

Adjusting the color of the specified region (key)

1 In the CCR menu, press VF1 ‘CCR1’ and HF6 ‘Spot CCR/Output.’

The Spot CCR/Output menu appears.

2 In the <Spot CCR> group, press [Spot CCR], turning it on.

3 In the <Auto> group, press [Sample Mark], turning it on.

Notes

When [Sample Mark] is on, the effects of color adjustment outside the region of spot color adjustment *(see page 386)* and output video processing *(see page 387)* are temporarily disabled.
Turning [Sample Mark] off restores the former state.

4 Adjust the parameters so that the color you want to change is included within the sample mark.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal position	–100.00 to +100.00
2	Position V	Vertical position	–100.00 to +100.00
3	Size	Size	1.00 to 100.00

5 In the <Auto> group, press [Auto Start], to adjust the key automatically.

Notes

This automatic adjustment does not carry out key gain adjustment. If required, adjust the key gain as shown in step **6**.

6 Press [Key Adjust], and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	–7.31 to +109.59
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00
4	Gain	Key gain	–100.00 to +100.00

7 Press [Window], turning it on, to adjust the key detection range for spot color adjustment.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	0.00 to 100.00

8 In the <Spot CCR> group, press [Spot CCR] to display the parameters, and adjust the replacement color.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

To return the parameters to their default settings

In the <Spot CCR> group, press [Unity].

Masking a part of the spot color adjustment

Set [Mask] to On in the Spot CCR/Output menu, then carry out the same procedure as in *"Masking a part of the primary color correction" (page 378)*.

Adjusting the color outside the spot color adjustment region

1 In the Spot CCR/Output menu, press [Outer Out Proc] in the <Outer Out Proc> group, turning it on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Y signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–116.90 to +116.90

To return the parameters to their default settings

In the <Outer Out Proc> group, press [Unity].

Output Video Processing Operations

Carry out the following corrections are available on the YUV signal.

- Video signal overall gain adjustment
- Y signal gain adjustment
- Y signal offset adjustment
- C signal gain adjustment
- C signal hue adjustment

Applying output video processing effects

1 In the CCR menu, press VF1 ‘CCR1’ and HF6 ‘Spot CCR/Output.’

The Spot CCR/Output menu appears.

2 In the <Output Process> group, press [Output Process], turning it on.

3 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Y signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–116.90 to +116.90

To return the parameters to their default settings

In the <Output Process> group, press [Unity].

YUV Clip Operations

For each of the luminance and color difference signals, the following processing is available.

White clip: setting the maximum level of the luminance signal.

Dark clip: setting the minimum level of the luminance signal.

Positive clip: setting the maximum amplitude in the positive direction of the color difference signal.

Negative clip: setting the maximum amplitude in the negative direction of the color difference signal.

Applying YUV clip processing

1 In the CCR menu, press VF1 ‘CCR1’ and HF7 ‘YUV Clip/RGB Clip.’

The YUV Clip/RGB Clip menu appears.

2 In the <YUV Clip> group, press [YUV Clip], turning it on.

3 In the <YUV Clip Adjust> group, select the target for adjustment.

Luminance: settings for the luminance signal.
Chroma: settings for the color difference signal.

4 Depending on the selection in step **3**, adjust the following parameters.

- **When Luminance is selected**

Knob	Parameter	Adjustment	Setting values
1	White Clip	White clip adjustment	–6.85 to +109.13
2	Dark Clip	Dark clip adjustment	–6.85 to +109.13

- **When Chroma is selected**

Knob	Parameter	Adjustment	Setting values
1	U Posi Clip	Positive clip adjustment for U signal	–113.39 to +113.39
2	U Nega Clip	Negative clip adjustment for U signal	–113.39 to +113.39
3	V Posi Clip	Positive clip adjustment for V signal	–113.39 to +113.39
4	V Nega Clip	Negative clip adjustment for V signal	–113.39 to +113.39

To return the parameters to their default settings

In the <YUV Clip> group, press [Unity].

RGB Clip Operations

For each of the R, G, and B signals, you can make dark clip and white clip adjustments.

Making RGB clip adjustments

1 In the CCR menu, press VF1 ‘CCR1’ and HF7 ‘YUV Clip/RGB Clip.’

The YUV Clip/RGB Clip menu appears.

2 In the <RGB Clip> group, press [RGB Clip], turning it on.

3 In the <RGB Clip Adjust> group, select the item you want to adjust.

Dark: dark clip adjustment
White: white clip adjustment

4 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Red	Red signal adjustment	–50.00 to +149.99 a) –49.99 to +150.00 b)
2	Green	Green signal adjustment	–50.00 to +149.99 a) –49.99 to +150.00 b)
3	Blue	Blue signal adjustment	–50.00 to +149.99 a) –49.99 to +150.00 b)
4	All	Simultaneous RGB adjustment	Red value is shown

a) When Dark is selected
b) When White is selected

To return the parameters to their default settings

In the <RGB Clip> group, press [Unity].

Chapter 10 Special Functions

Side Flags

Overview

The term “side flags” refers to the areas to left and right of an image with aspect ratio 4:3 embedded within a 16:9 frame, when these areas are filled with a separate image selected from the utility 1 bus.
You can adjust the width of the side flag area.

Side Flag Settings

Input source aspect ratio, auto side flags, and auto crop settings

Aspect ratio 4:3 setting

Set the input signal to aspect ratio 4:3. If set to 16:9, the side flags are disabled.

Auto side flag setting

This function automatically applies side flags when a 4:3 signal is selected in the cross-point control block.

Auto crop setting

When carrying out a DME wipe, this function automatically crops the image during transition to 4:3.

Adjusting the width of the side flag area

You can set the left and right sides separately.

For the operation for the above setting, see “Settings for Switcher Configuration (Config Menu)” in Chapter 20 (Volume 3).

Enabling and disabling side flags with a menu operation

You can enable or disable side flags for the backgrounds (A and B) of each of the M/E and PGM/PST banks.
As an example, to enable side flags for background B row on the M/E-1 bank, use the following procedure.

1 In the menu control block, press the top menu selection button [MISC], then select VF1 ‘Enable’ and HF3 ‘Side Flags.’

The Misc >Enable >Side Flags menu appears.
The status area shows the buttons for Bkgd A and Bkgd B for each of the M/E-1 to M/E-4, and PGM/PST (P/P) banks.

2 In the <M/E-1 Side Flags> group, press [Bkgd B].

Each time you press the button toggles between Enable and Disable.

To display a menu for the aspect ratio 4:3, auto side flags, and auto crop settings

In the Misc >Enable >Side Flags menu, press [Setup >SWER >Side Flags].

To display a menu for assigning the side flags on/off function to a cross-point button

In the Misc >Enable >Side Flags menu, press [Side Flags Button Assign].

Enabling and disabling side flags with a button operation

For example, to enable side flags for the background B row of the M/E-1 bank, use the following procedure.

1 First, in the Setup menu assign the rightmost cross-point button to the [SIDE FLAG] button.

For details of the assignment operation, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 3).

2 Press the [SIDE FLAG] button at the right end of the background B row of the M/E-1 bank.

The button you pressed lights amber, and this enables the side flags.

Notes

- The operations of enabling or disabling the side flags by menu operation and by control panel button operation are linked.
- When the auto side flags are on, selecting a 4:3 video material automatically lights the [SIDE FLAG] button, but if you press this button, turning it off, the side flags are temporarily disabled. However, when you select a different 4:3 video material, the [SIDE FLAG] button automatically lights once again, enabling the side flags.

Creating an image with side flags

For example, to create an image with side flags in the background B row of the M/E-1 bank, use the following procedure.

1 In the M/E-1 bank cross-point control block, hold down the [UTIL] button, and in the background A row select the signal (utility bus 1 signal) you want to insert in the side flag areas.

2 In the background B row, press the cross-point button corresponding to the 4:3 video material.

At this point, if auto side flags are on, this automatically adds side flags to the 4:3 video material. *(See "Settings for Switcher Configuration (Config Menu)" in Chapter 20 (Volume 3).)*

3 Use either of the following methods to turn the side flags on.

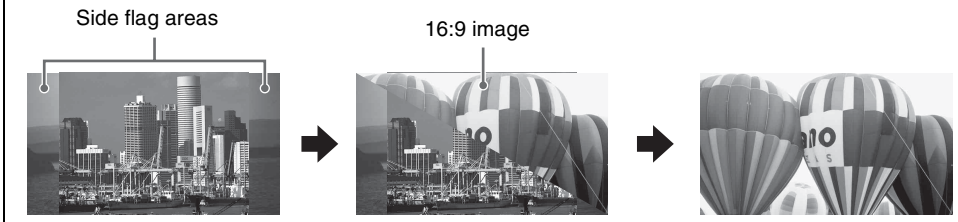
- Use the Misc >Enable >Side Flags menu. *(See page 392)*
- Use a cross-point button operation. *(See previous item.)*

This adds side flags to the 4:3 video material.

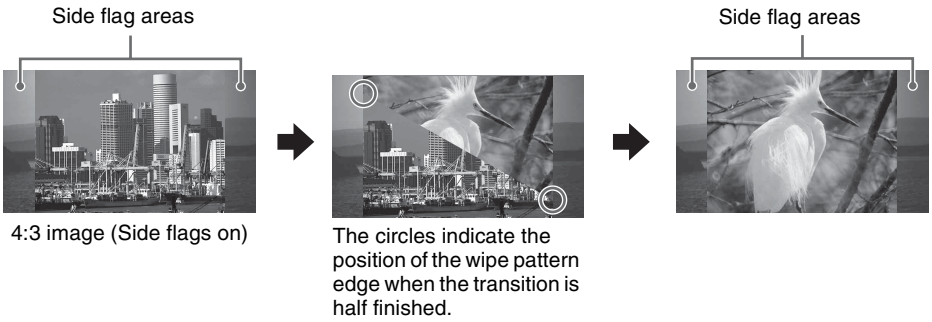
Wipe Action on Images With Side Flags

When a wipe is carried out on an image with side flags, all wipe patterns can be used.
The following illustration shows the action in a wipe.

Wipe from a 4:3 image to a 16:9 image



Wipe from a 4:3 image to another 4:3 image (when side flags are on for both images)



DME Wipe Action for an Image With Side Flags

When a DME wipe is carried out on an image with side flags, all wipe patterns can be used.
Depending on the setting (On/Off) of [Auto Crop] in the Engineering Setup >Switcher >Config menu, the appearance of the 4:3 image changes.

Notes

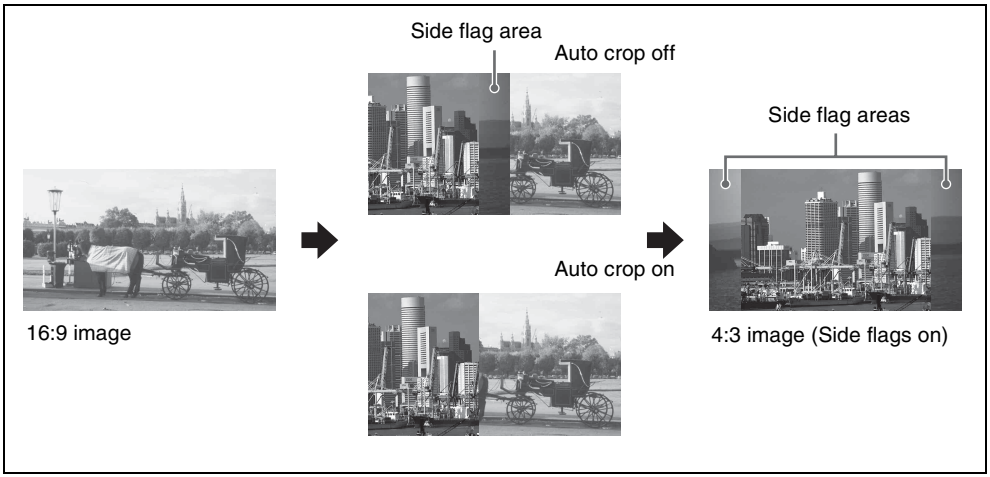
For signals with the following DME wipe pattern selected on the DME external video bus (gray part shown in the pattern illustration), side flags are not applied when auto side flags are set to Off.

- Two-channel page turn
- Two-channel page roll
- Two-channel frame in-out
- Two-channel brick
- Three-channel brick

The following illustration shows the action in a DME wipe.

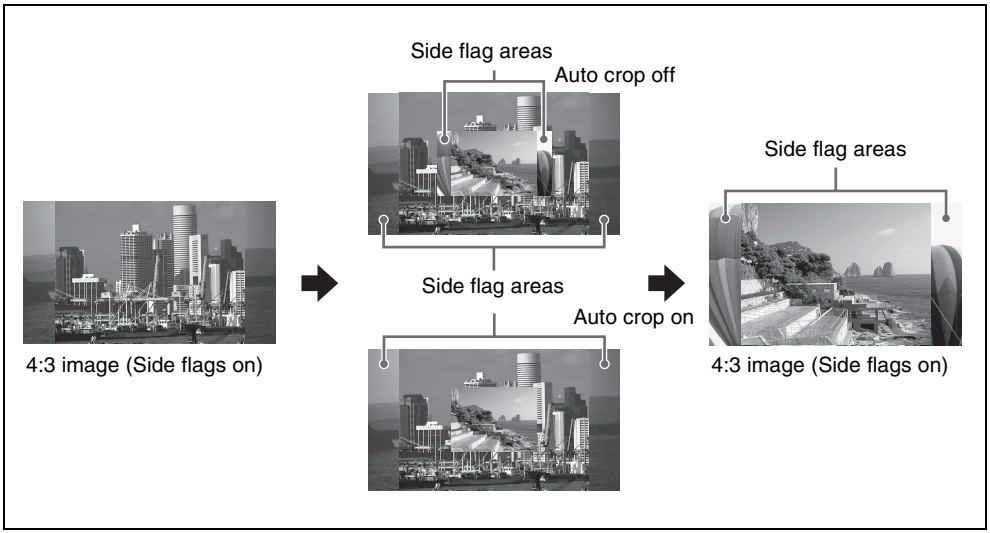
DME wipe from a 4:3 image to a 16:9 image

Wipe action using slide (No. 1001)



DME wipe from a 4:3 image to another 4:3 image (when side flags are on for both images)

Wipe action using squeeze (No. 1031)



Multi Program 2

Overview

What is Multi Program 2?

By operating the switcher in Multi Program 2 mode, a single switcher mix/effects bank can be used to create two separate video outputs, referred to as "main" and "sub." You can set backgrounds, keys, and transitions for each of main and sub. Keys 2 to 8, however, are common to main and sub.

Notes

To enable this function requires the BZS-8200X Multi Program 2 software.

Using the software

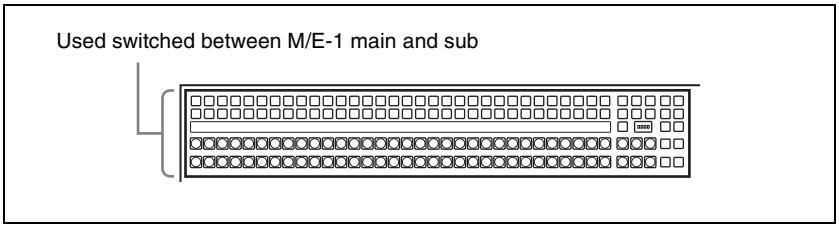
To use the Multi Program 2 software, you are required to enter an install key which validates the software. (If the software has been factory installed, the install key is not required.)
For the method of obtaining an install key, contact your Sony representative. To obtain a key, you may be required to submit the unique device ID of the switcher you are using. You can check the unique device ID in the Install menu of the switcher.

For details of the operation, see "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 3).

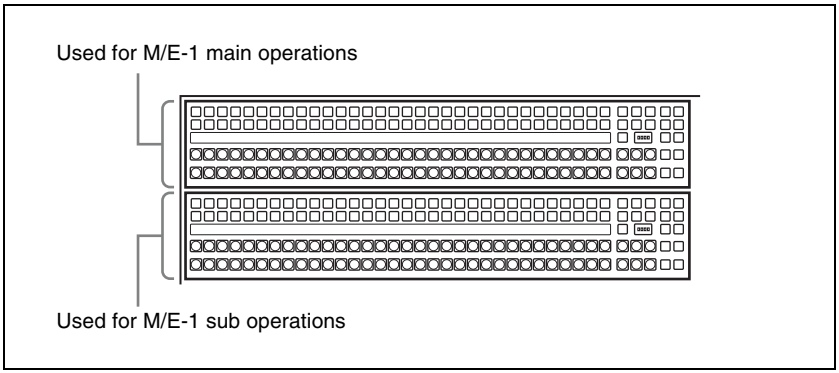
Assigning main and/or sub to switcher banks

For Multi Program 2 operations, a single switcher bank may be shared, and switched between main and sub, or two separate switcher banks may be used, each dedicated to main or sub.

Example 1: Assigning M/E-1 main and sub to a single switcher bank, and switching between them



Example 2: Assigning separate switcher banks as “M/E-1 main dedicated” and “M/E-1 sub dedicated”



Video creation operations in Multi Program 2 mode

For each of main and sub, there are differences from the operations in standard mode.

For details, see “Differences Between Multi Program 2 Mode and Standard Mode” (page 408).

Sequence of Operations in Multi Program 2

Basic operation sequence

Enter the BZS-8200X install key (first time only)
↓
Set Multi Program 2 operating mode for each switcher bank
↓
Assign output signals, and set the background configuration, key configuration, and key preview configuration

↓

For each switcher bank, make a main/sub assignment (one of main dedicated, sub dedicated, and main and sub shared)

↓

For a switcher bank assigned to main and sub shared, assign the [MAIN] and [SUB] delegation buttons

↓

Create the main and sub images

↓

Execute the transition

Optional operations

- Making cross-point settings
- Enabling DME wipe operations for sub
- Inhibiting utility 2 bus signal selection
- Including Multi Program 2 data in keyframes and snapshots
- Changing the key assignment for each output
- Assigning sub preview output to preview selection buttons in the fade-to-black control block
- Changing the matrix size to Standard
- Making settings for keyframe timeline operation

Basic Operations (Required)

Entering the BZS-8200X install key (first time only)

After installing the BZS-8200X Multi Program 2 software in the switcher, carry out the following procedure.

1 In the status area of the Engineering Setup >System >Install/Unit Config menu, select the switcher (SWRx), and press [License].

The License menu appears.

2 In the License menu, enter the BZS-8200X install key.

For details of the operation, see "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 3).

3 Shut down the menus. *(see page 100.)*

4 Power the switcher and SCU off and on again.

Setting the operating mode for each switcher bank

To set a desired switcher bank to Multi Program 2 mode, use the following procedure.

1 Display the Engineering Setup >Switcher >Config menu.

2 Select the switcher bank from M/E-1 to M/E-4, and P/P.

3 In the <M/E Config> group, select [Multi Program2].

4 Repeat steps **2** and **3** as required, to set the operating mode for all desired switcher banks.

Assigning output signals for Multi Program 2 mode

To assign signals to outputs

Use the Engineering Setup >Switcher >Config >M/E Output Assign menu.
The difference from standard mode is that OUT1 is fixed, set to PGM1 (main program), and OUT6 is fixed, set to PGM2 (sub program), and that for the OUT2 to OUT5 signals you can assign any signal selected from the following.

PGM1, PGM2, PGM3, PGM4, PVW1, PVW2, K-PVW1, K-PVW2, CLEAN, SUB CLEAN

Notes

Each of main and sub can use a maximum of four of the six outputs (OUT1 to OUT6). The outputs can be used within the following limits.

- OUT1, OUT2: main only
- OUT3, OUT4: can be used for either main or sub
- OUT5, OUT6: sub only

For details, see "Making Settings Required to Use the Software" in Chapter 18 (Volume 3).

To set the background and key configuration

Use the Engineering Setup >Switcher >Config >PGM Config menu.
The following are the differences from standard mode.

Background configuration: Consists of the following combinations.

- For main: Clean, Bkgd A, Bkgd B
- For sub: Sub Clean, Utility 2, Utility 3

Key configuration: Key1 can be set to “Enable” only when the background is Clean, Bkgd A, or Bkgd B.

For details, see “Setting the Operation Mode” in Chapter 20 (Volume 3).

To set the key preview configuration

Use the Engineering Setup >Switcher >Config >K-PVW Config menu.
The following are the differences from standard mode.
Background configuration: Clean or Sub Clean
Key configuration: Key1 can be set to “On” or “Link” only when the background is Clean.

For details, see “Setting the Operation Mode” in Chapter 20 (Volume 3).

To assign sub outputs to output ports

Use the Engineering Setup >Switcher >Output >Output Assign menu.
You can assign a sub output signal to a switcher output port number.

For details, see “Assigning Output Signals” in Chapter 20 (Volume 3).

Assigning main and/or sub to switcher banks

For each switcher bank for which Multi Program 2 mode is selected, set whether this is main dedicated, sub dedicated, or main and sub shared.

To assign main and sub to a single switcher bank

1. In the Engineering Setup >Panel >Config >MP2 Main/Sub Assign menu, select the switcher bank.
2. In the <Main/Sub Assign> group, select [Main&Sub].

   Main: use for main operations.
   Sub: use for sub operations.
   Main&Sub: use for both main and sub operations.

   When “Main&Sub” is selected, it is necessary to assign [MAIN] and [SUB] delegation buttons to the control panel.

To assign main and sub to two consecutive switcher banks

For example, to assign the first row (first switcher bank) to M/E-1 main, and the second row (second switcher bank) to M/E-1 sub, use the following procedure.

1 In the status area of the Engineering Setup >Panel >Config >MP2 Main/Sub Assign menu, select 1st Row (M/E-1), then press [Main] in the <Main/Sub Assign> group.

2 Press [Dual M/E Assign] to assign M/E to two banks.

In this state, both 1st Row and 2nd Row are set to main.

3 Set 2nd Row to [Sub].

This cancels the shift/non-shift assignment for dual M/E in standard mode.

Notes

It is not possible to assign the combinations of Main with Main&Sub, or Sub with Main&Sub.

Assigning the [MAIN] and [SUB] delegation buttons to buttons on the control panel

1 In the Engineering Setup >Panel >Config menu, press [Program Button].

The Program Button menu appears.

2 Press [Transition Module 1].

The Transition Module 1 menu appears.

3 Select the switcher bank in the <Bank Select> group.

The buttons in the transition control block on the left appear in the currently assigned state.

4 Press the button whose assignment you wish to change.

The button you press appears in reverse video.

5 From the list on the right, select [MAIN], and press [Set].

The indication on the button changes according to the selection.

6 Repeat Step **4** and **5** to assign [SUB].

Examples of Operations in the Multi Program 2 Mode (When Sharing a Switcher Bank)

To create video on the M/E or PGM/PST bank assigned to both main and sub operations, use the following procedure.

1 Press the [MAIN] button, turning it on, and turning off the [SUB] button.

2 With the normal operations, create the main video.

3 Press the [SUB] button, turning it on, and turning off the [MAIN] button.

Now you can create the sub video.

4 Create the sub video.

The basic method of operation is the same as for the main video, except that the utility 2 bus signal is assigned to background A, and the utility 3 bus signal is assigned to background B.
For sub, only keys 2 to 8 can be used, and for wipes, standard wipe patterns only. There are also other differences in operation from standard mode.

For details, see "Differences Between Multi Program 2 Mode and Standard Mode" (page 408) and "Restrictions on Using Multi Program 2 Mode" (page 409).

5 Press the [MAIN] and [SUB] buttons simultaneously, turning them on.

If both buttons are lit, the control panel shows the status of main.

6 Carry out the transition.

Both main and sub video images are switched.

Optional Operations

Making cross-point settings

Cross-point assign tables can be set not only for main output but also for sub output.
You can set cross-point assign tables for the following banks.

M/E-1 SUB to M/E-4 SUB
P/P SUB

The table actually used is that for which the control panel delegation button is lit.

For details, see "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume 3).

Enabling DME wipe operations for sub

By factory default, DME wipe operations are inhibited for sub background. To enable them, in the Engineering Setup >Switcher >Config menu, set [DME Wipe Sub Enable] to On.
This enables DME wipe operations for sub background.
This setting applies to the whole control panel (all M/E banks and PGM/PST bank).

Notes

If a DME wipe for sub is recalled in a snapshot or keyframe, the image will not be handled correctly.

Inhibiting utility 2 bus signal selection

In Multi Program 2 mode, you can inhibit other uses of the utility 2 bus signal in order to use the signal as the background for sub.
This setting applies to the whole control panel (all M/E banks and PGM/PST bank).
In the Engineering Setup >Panel >Config >MP2 Main/Sub Assign menu, set [Util2 Inhibit] to On.
This prevents the key row delegation button [UTIL2] from lighting.

Inhibiting key operations for main or sub keyer

In the Engineering Setup >Panel >Config >Operation Inhibit >M/E Operation Inhibit menu, you can make settings to inhibit key operations on each of the main and sub keyers independently.

For details, see "Inhibiting Utility 2 Bus and Key Operations" in Chapter 19 (Volume 3).

Including Multi Program 2 data in recall operations of keyframes and snapshots

In the Engineering Setup >Switcher >Config menu, set [Recall M/E Config] to On.
When a keyframe or snapshot is stored or recalled, the following data is included.

M/E Config, PGM Config, M/E Output Assign, and Key PVW Config

For details of the above data, see "Setting the operating mode for each switcher bank" (page 400) and "Assigning output signals for Multi Program 2 mode" (page 400).

This setting applies to the whole control panel (all M/E banks and PGM/PST bank).

Notes

M/E Config data is saved, even when this setting is Off.

Changing the key assignment for each output (Misc menu)

In Multi Program 2 mode you can change the key assignments independently. The following describes an example using M/E-1, but the operation is the same for other banks.

Notes

- This setting is linked to the setting in the Engineering Setup >Switcher > Config >PGM Config menu.
- It is not possible to make this setting while the above PGM Config menu is locked, or [Recall M/E Config] *(see previous item)* is set to Off.

1 In the M/E-1 menu, select first VF7 'Misc,' then HF5 'Key Assign.'

The Key Assign menu appears, and the current key assignment is shown in the status area.

2 Change the setting in "Key Enable" as required.

Keys recalled in a snapshot recall

If a snapshot is recalled independently on main or sub, this only retrieves the settings for the key assigned to the recalled side. For example, if key 1 and key 2 are assigned on main, and key 3 and key 4 are assigned on sub, then if you recall a snapshot on main, this only retrieves the settings for key 1 and key 2, and the state of key 3 and key 4 assigned on sub is not affected.

Changing the matrix size to Standard

When using a router, if the matrix size is set to [128×128], it is not possible to control the utility 3 bus on the S-Bus. When using Multi Program 2, in the <Matrix Size> group of the Engineering Setup >Router/Tally >Router menu, select other than [128×128].

For details, see "Assigning Switcher Inputs and Outputs to S-Bus Space" in Chapter 23 (Volume 3).

When [136×138] is selected, as for the bus number of the utility 3 bus, a DME Key bus number is used as follows.

No.	Bus (Standard)	Bus (MP2)
70	M/E-1 DME Key	M/E-1 Utility3
85	M/E-2 DME Key	M/E-2 Utility3
100	M/E-3 DME Key	M/E-3 Utility3
115	P/P DME Key	P/P Utility3

Making settings for timeline-related keyframe operations

To assign sub regions to the region selection buttons in the numeric keypad control block

In the Engineering Setup >Panel >Config >10 Key Region Assign menu, assign regions to the region selection buttons in the numeric keypad control block.

For details, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3).

To make region and reference region selections using a menu

During snapshot or keyframe operations, you can select a region (including sub) in the Key Frame >Region Select menu. This is convenient for selecting some of the regions assigned to the numeric keypad control block or changing the reference region.

For details, see "Specifying the Region and Edit Points" in Chapter 13 (Volume 2).

To assign regions shown in the Timeline menu

You can select how regions assigned to region selection buttons appear in the Key Frame >Timeline menu.

For details, see "Settings in the Timeline Menu" in Chapter 13 (Volume 2).

Enabling re-entry between the main and sub sides of the same M/E bank

In the Engineering Setup >Switcher >Config menu, set [MP2 Free Re-Entry] to On.

Notes

- Re-entry adds a 1H delay to the video. Nested re-entry may lead to problems in the video.

- A maximum of ten re-entry stages are possible, with the final output having a delay of 5H.
- The selection order of re-entry signals affects the number of lines by which the output signal is lowered.
- If a delay occurs in the image, even when the through mode is set, the ancillary data does not pas through.
- For example, it is possible to select the re-entry of M/E-1 main on M/E-1 main.

Restrictions on Mutual Re-entry When Using Multi Program 2

The snapshot function is affected by this re-entry function.
When the [MP2 Free Re-Entry] button is On, and any of the switcher banks are in Multi Program 2 mode, then the following restrictions apply.

If you save and recall snapshots simultaneously with more than one region specified, the recorded state is played back in the order of precedence of regions (M/E-1 >M/E-2 >M/E-3 >M/E-4 >P/P). Therefore, if you save and recall snapshots with more than one region specified, the cross-point settings may not be recalled correctly.

To recall the snapshots correctly, press the cross-point button before recalling the snapshots, to select a signal other than the re-entry signal, then recall the snapshots.

Functions Added in Multi Program 2 Mode

- You can set video processing for the utility 3 bus signal.
- In the control panel and DCU GPI input settings and switcher GPI link settings, the actions that can be selected now also include “Sub Cut” and “Sub Auto Trans.”
- A switcher GPI link can now be set also for the utility 3 bus.
- To the macro event configuration parameters and macro attachment settings, “Main & Sub” and “Sub” have been added.
- For cross-point button link settings, M/E-1 to M/E-4, and P/P “Sub Program,” “Sub Preset,” and “Sub Trans PGM” have been added to the link source bus.
- Snapshot attributes can now be set independently for main and sub.
- There are additional menus for sub which can be recalled by pressing a button twice.
- You can set [MP2 Auto Correct] to On or Off in the Effect menu or Snapshot menu. When this is set to On, for example, copy destination and source data is automatically recognized as main or sub, and the data interchanged.
- When the key adjustment mode is selected on the Multifunction Flexi Pad (or when the KEY ADJ button is lit), if you select the region selection button to

which [M/E-x Sub] is assigned, the [TRNS] button operates as a button for the sub region.

- You can assign [SUB TRANS] to the key control block. This button functions as a [TRNS] button for the sub region.

Differences Between Multi Program 2 Mode and Standard Mode

The differences from operation in standard mode are as follows.

Item		Main	Sub
Keys [a)]		Keys 1 to 8 can be used	Keys 2 to 8 only can be used
Wipes (background)	Patterns	Same as standard mode	• Only standard patterns can be used • Pattern mix is not possible
	Modifiers	Same as standard mode	• Pairing, modulation, spring, spiral, and split cannot be used • Edge fill mattes are single-color only • Replication can be selected from four patterns
Wipes (key)		Same as wipes (background) for sub	
DME wipes	Use	Can be used	Cannot be used (Can be used, with a setting change)
	Patterns for 1 channel	Each of main and sub can be used.	
	Patterns for 2 channels	Only one of main and sub can be used (For each M/E, the number of DMEs that can be used is the same as in standard mode.)	
	Patterns for 3 channels		
	Backgrounds	Wipe edge fill matte (including color mix and other settings in the Matte Adjust menu)	Wipe edge fill matte (single-color only)
	Modifiers	Same as standard mode	Wipe border colors are single-color only

Item		Main	Sub
Transitions	Key priority	Cannot be used	
	Transition preview	Cannot be used	
	Preset color mix	Color matte or video signal selected on the utility 2 bus	Color matte only
Snapshots	Cross-point hold	Utility 2 cannot be set	Utility 3 is added. BKGD A/B and Key1 cannot be set.
Control from an editor		Same as standard mode	Cannot be used
Operation setting for switcher GPI inputs and outputs		Same as standard mode	Cannot be used

a) Keys 2 to 8 are common to main and sub.

Notes

- Allow a transition to complete before carrying out main and sub delegation switching.
- The sub background A bus (utility 2 bus) is shared with wipe edge border fill. Making a change to one affects the other.
- Even if the wipe border width is set to the same numeric value for main and sub, the same image is not obtained.

Restrictions on Using Multi Program 2 Mode

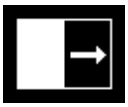
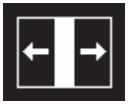
- The following functions are not available for sub:
  – Data copy and swap
  – Default recall (except for parametric recall)
- Re-entry is limited to five levels. Re-entry is not possible for main and sub of the same M/E.
  However, this restriction can be removed. *For details, see "Enabling re-entry between the main and sub sides of the same M/E bank" (page 406).*
- In the following cases, a transition using the fader lever may not be performed correctly:
  – When the main and sub bus toggle modes are set differently
  – For a pattern mix, preset color mix, and so on
- For an Internal bus link, GPI link, or External bus link, the "Utility 2" bus cannot be selected.
- Screen aspect, show key, and [MCRO ATTCH ENBL] button settings are common to main and sub.
- If a snapshot is recalled simultaneously for main and sub, or a keyframe is executed simultaneously for main and sub, then for the following common to main and sub the main settings are reflected.

  - Key
  - M/E Config
  - DME external video bus and utility 1 bus
- When a macro attachment is set on the DME utility 1 bus or DME utility 2 bus, it is not possible to make separate main and sub settings.
- When snapshots with different M/E Config settings are recalled:
  - If M/E Config data is not to be included in the snapshot data, the current system settings are used for snapshot reproduction.
  - If M/E Config data is to be included in the snapshot data first M/E Config data is set, and then other snapshot data is recalled.
- The bus override function is only available on the following buses:
  - M/E-1 to M/E-4 Main BKGD A/B buses
  - M/E-1 to M/E-4 Sub BKGD A/B buses (UTIL-2, UTIL-3 buses)
  - P/P Main PGM/PST bus
  - P/P Sub PGM/PST buses (UTIL-2, UTIL-3 buses)
- When a master snapshot or master timeline is executed with a key being assigned to both main and sub, it is uncertain which data will be reflected.
- When recalling a master snapshot with different register numbers for main and sub, the recall timing may differ by one field or more between main and sub.
- The link state is maintained even when M/E Config is changed. Set the link setting again, as required.
- Since keys 2 to 4 are shared between main and sub, when the main and sub fader lever positions are different, if you move the fader lever, the video changes instantaneously to the value of the most recently moved fader lever.
- When the transition type for main or sub is set to preset color mix, it is not possible to carry out independent key transition operation (common to main and sub).
- When the signal format is 1080P, snapshots, wipe snapshots, and effects created using a wipe for sub, do not function correctly with a signal format other than 1080P. Similarly, those created with other than the 1080 signal format, do not function correctly with a signal format of 1080P.

Appendix (Volume 1)

Wipe Pattern List

Standard Wipes

1		2		3		4	
5		6		7		8	
9		10		11		12	
13		14		15		16	
17		18		19		20	
21		22		23		24	

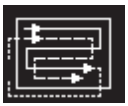
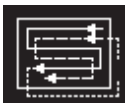
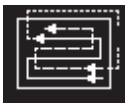
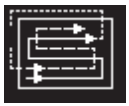
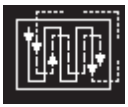
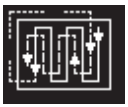
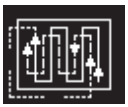
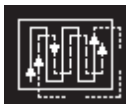
Enhanced Wipes

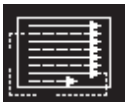
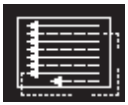
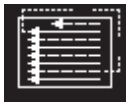
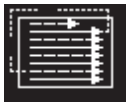
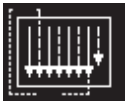
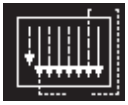
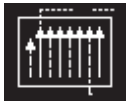
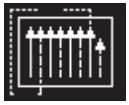
26		27		29		49	
300		301		302		303	
304							

Rotary Wipes

100		101		102		103	
104		105		106		107	
150		151		156		158	
160		162		516		518	
604		606		624		661	

Mosaic Wipes

200		201		202		203	
206		207		208		209	
210		211		212		213	
220		221		222		223	
224		225		226		227	
228		229		230		231	
232		233		234		235	

236		237		238		239	
240		241		242		243	
244		245		246		247	
250		251		252		253	
254		255		256		257	
260		261		262		263	
264		265		266		267	
268		269					

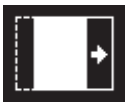
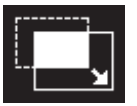
Random/Diamond Dust Wipes

270		271		272		273	
274							

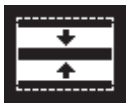
DME Wipe Pattern List

DME Wipe Patterns Available in One-Channel Mode

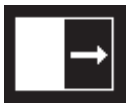
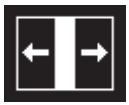
Slide

1001		1002		1003		1004	
1005		1006		1007		1008	

Split

1011		1012		1013	

Squeeze

1021		1022		1023		1024	
1025		1026		1027		1028	
1029		1030		1031			

Door

1041		1042		1043		1044	
1045		1046		1047		1048	

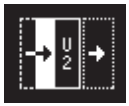
2D trans

1051		1052		1053		1054	
1055		1056		1057		1058	
1061		1062		1063		1064	
1068							

3D trans

1071		1072		1074		1076	
1077		1088		1091		1092	
1093		1094					

Flip tumble

1101		1102		1103		1104	
1109		1110		1121		1122	
1124		1131		1132		1133	
1135							

Frame in-out

1201		1202		1203		1204	
1205		1206		1207		1208	
1221		1222		1223		1224	

Picture-in-picture

1251	

Page turn

1301		1302		1303		1304	
1305		1306		1307		1308	
1309		1310		1311		1312	
1313		1315		1316		1317	
1318		1341		1342		1343	
1344		1345					

Page roll

1321		1322		1323		1324	
1325		1326		1327		1328	
1329		1330		1331		1332	
1333		1335		1336		1337	
1338		1346		1347		1348	
1349		1350					

Mirror

1355		1356		1357		1358	

Sphere

1365	

Character trail

1371		1372	

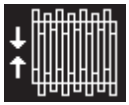
Wave

1378		1379	

Ripple

1381	

Split slide

1384		1385		1386		1387	
1388		1389					

Sparkle

1391		1393		1394		1396	
1398		1399					

Mosaic

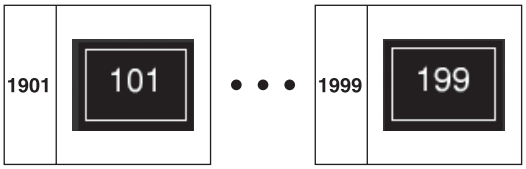
1701	

Defocus

1702	

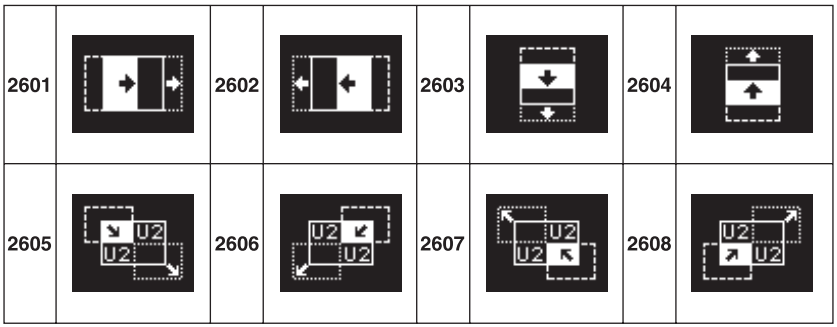
User programmable DME

The illustrations for patterns 1901 to 1999 show an effect register number or register name.

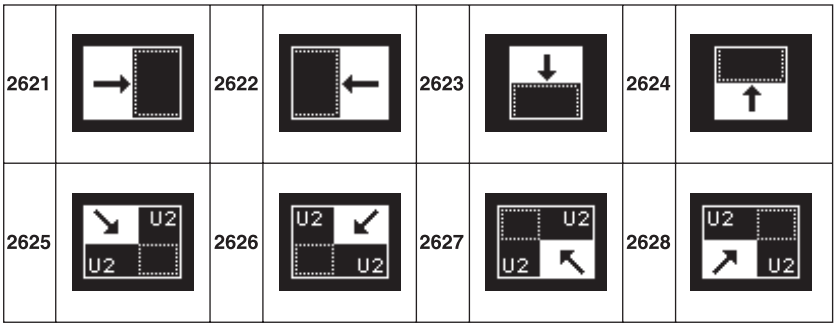


DME Wipe Patterns Available in Two-Channel Mode

Slide



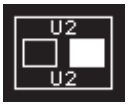
Squeeze



3D trans

2801		2802		2803		2804	
2811		2812		2813		2814	

Picture-in-picture

2651		2652	

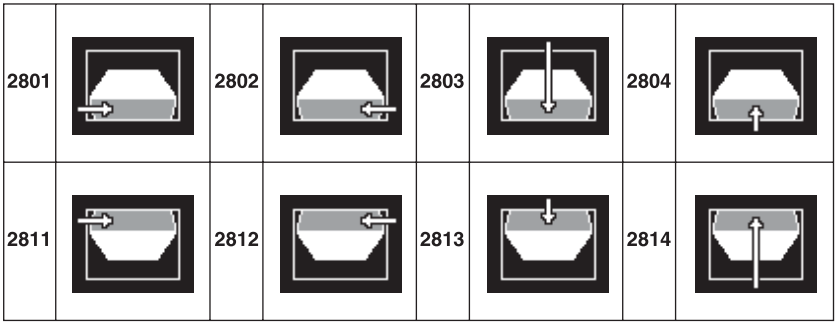
Page turn

2701		2702		2703		2704	
2705		2706		2707		2708	
2709		2710		2711		2712	
2713		2715		2716		2717	
2718		2741		2742		2743	
2744		2745					

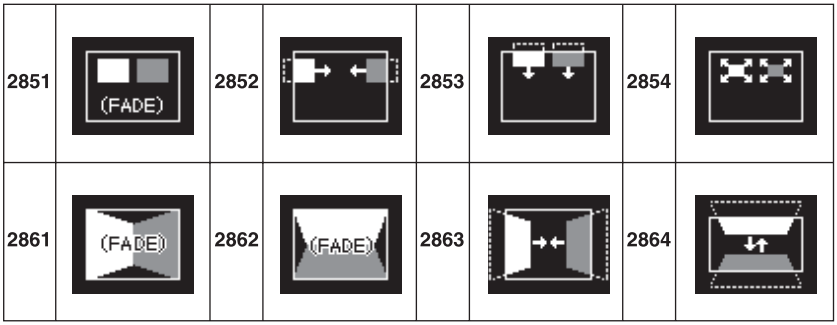
Page roll

2721		2722		2723		2724	
2725		2726		2727		2728	
2729		2730		2731		2732	
2733		2735		2736		2737	
2738		2746		2747		2748	
2749		2750					

Brick

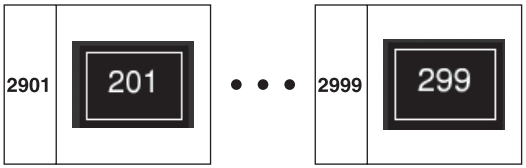


Frame in-out



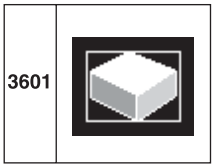
User programmable DME

The illustrations for patterns 2901 to 2999 show an effect register number or register name.



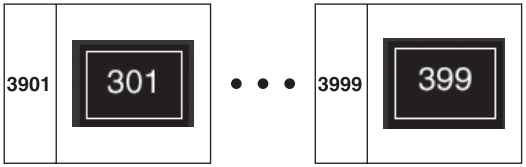
DME Wipe Patterns Available in Three-Channel Mode

Brick



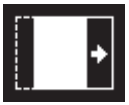
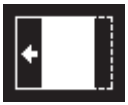
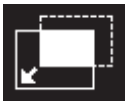
User programmable DME

The illustrations for patterns 3901 to 3999 show an effect register number or register name.

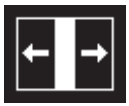
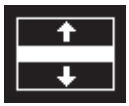


Resizer DME Wipe Pattern List

Slide

7001		7002		7003		7004	
7005		7006		7007		7008	

Squeeze

7021		7022		7023		7024	
7025		7026		7027		7028	
7029		7030		7031			

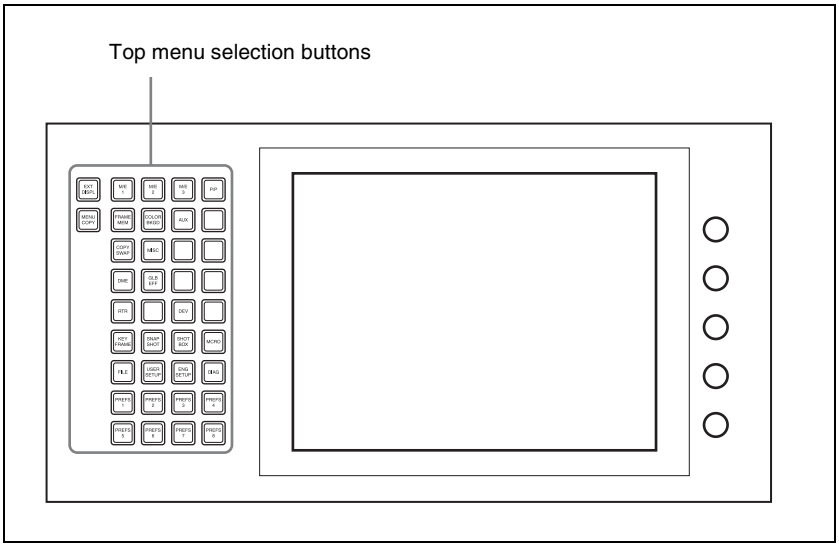
Frame in-out

7201		7202		7203		7204	
7205		7206		7207		7208	
7221		7222		7223		7224	

Menu Tree

Recalling Menus

This section details the menu structure, and shows the top menu selection buttons in the menu control block which are used to access the menus.



Menu control block

Some menus can also be accessed by pressing other buttons twice in rapid succession.

For more details, see "Menu Organization" (page 81).

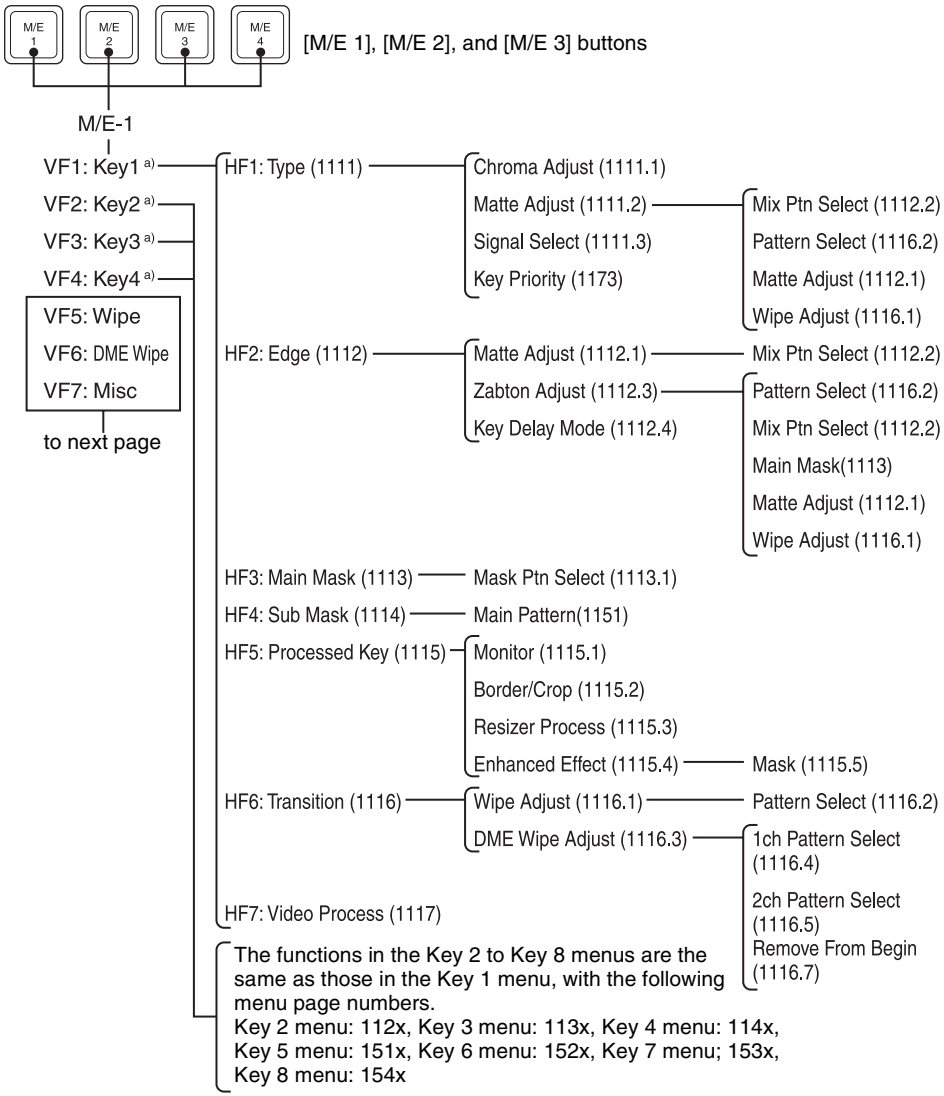
Notes

Some menus may not appear, depending on the model.

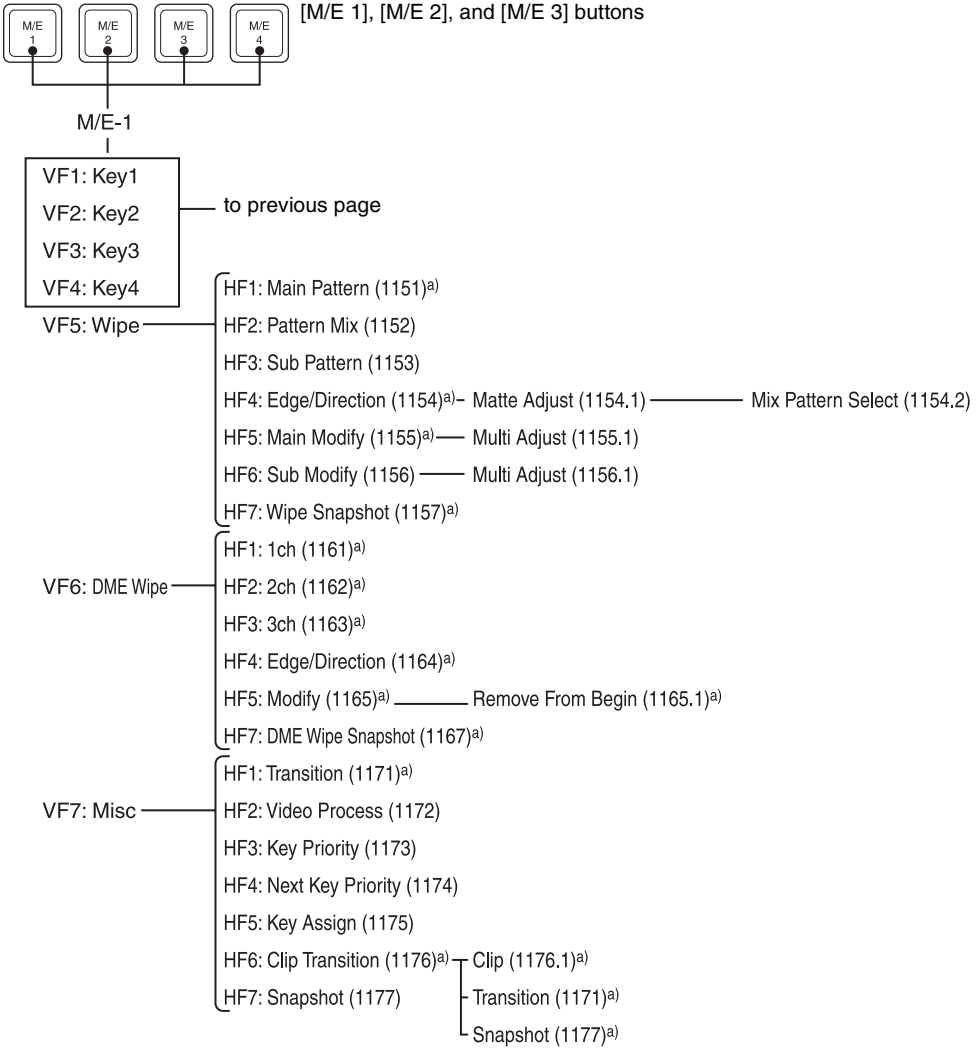
M/E-1 to M/E-4 Menus

The functions in the M/E-1, M/E-2, M/E-3, and M/E-4 menus are the same, but the menu page numbers are distinguished as follows.

M/E-1 menus: 11xx, M/E-2 menus: 12xx,
M/E-3 menus: 13xx, M/E-4 menus: 81xx
In this section, the numbers for the M/E-1 menus are given as examples.

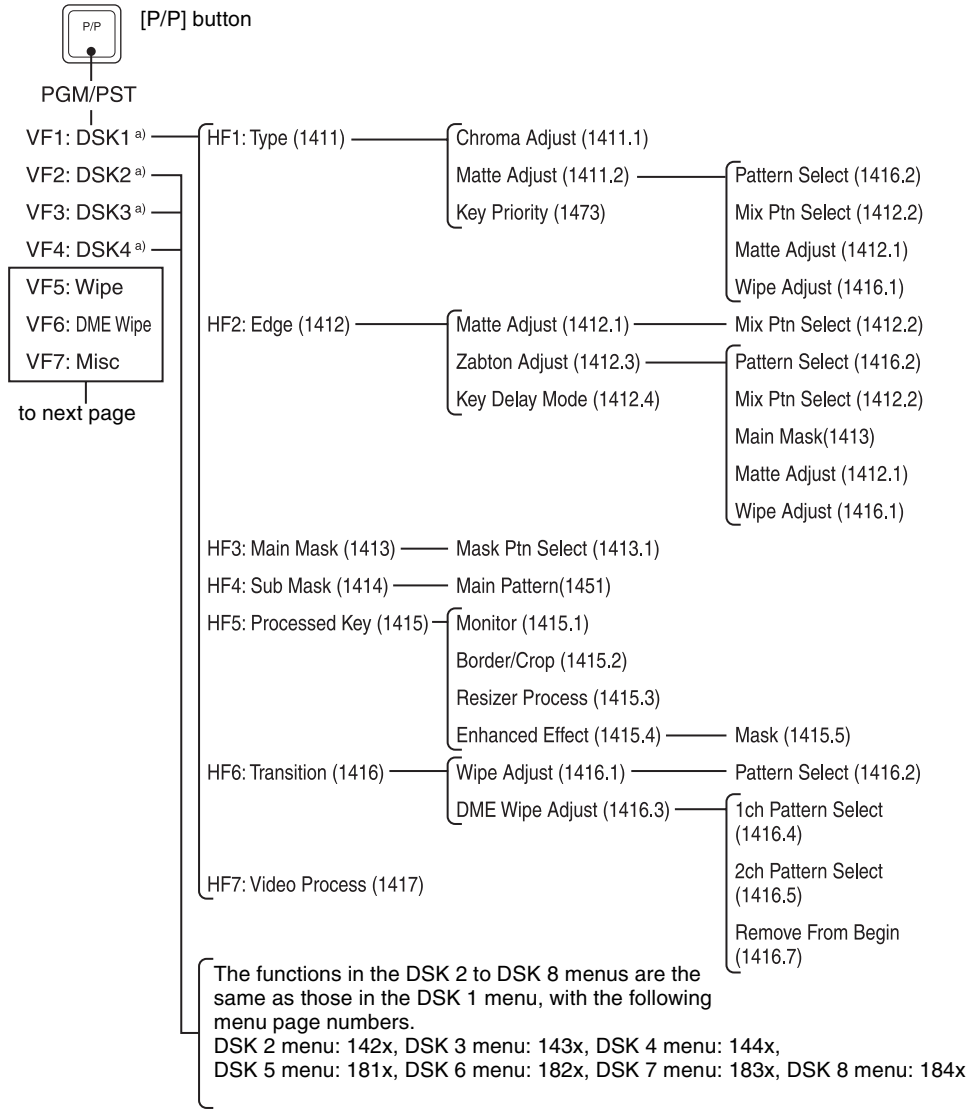


a) For VF1 to VF4, either of the groups Key1 to Key4 and Key5 to Key8 appears.

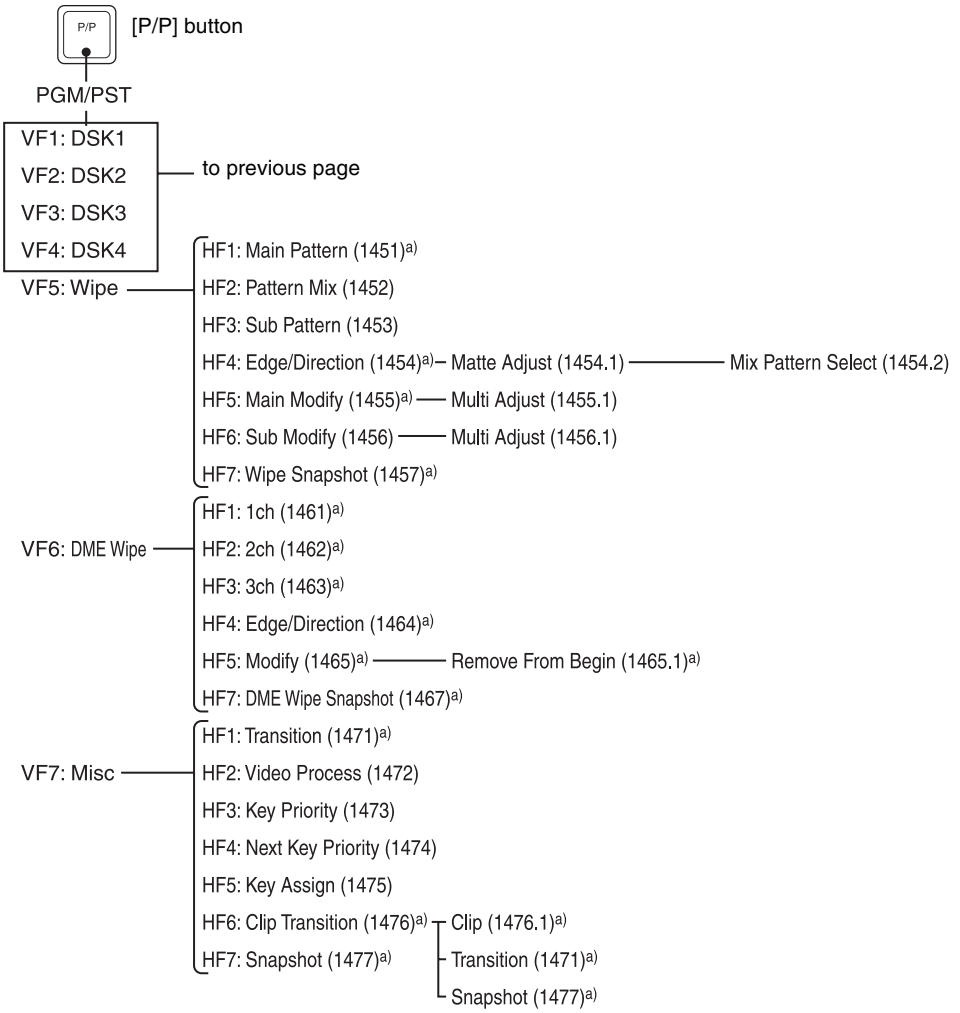


a) In Multi Program 2 mode, the menus for sub are displayed with 400 higher numbers than the aboves for main.

PGM/PST Menu

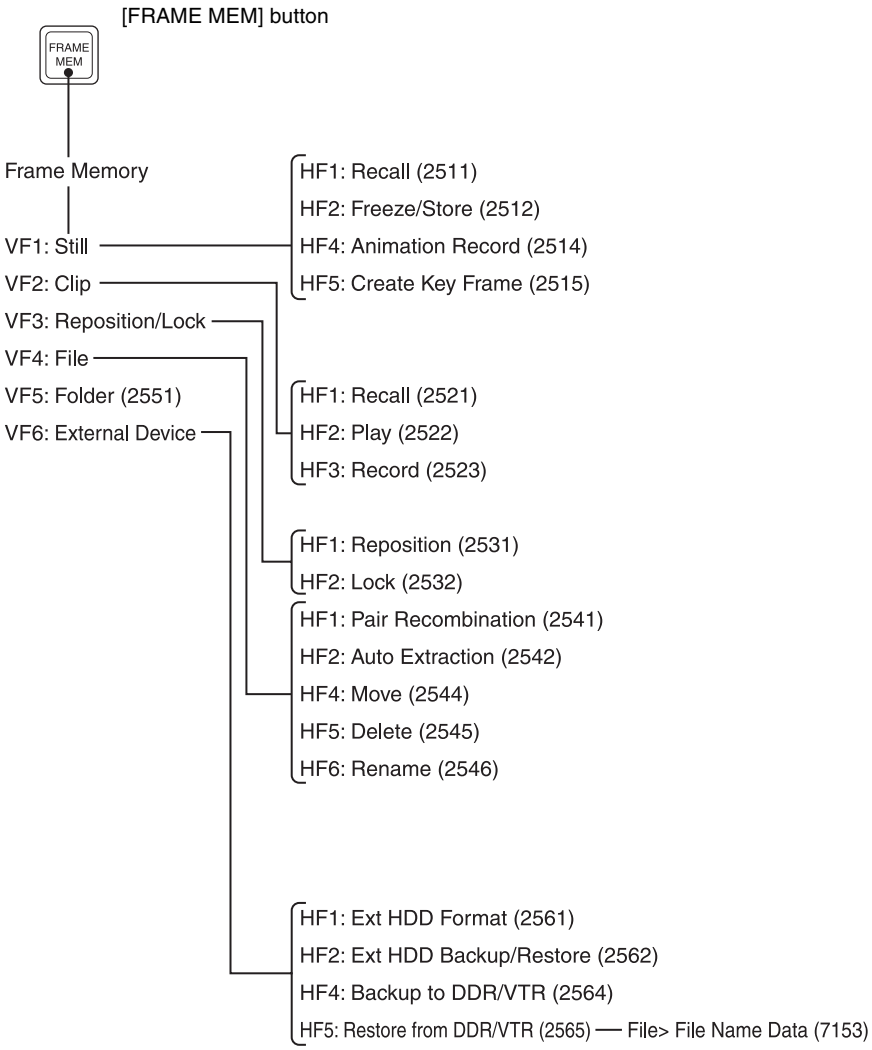


a) For VF1 to VF4, either of the groups Key1 to Key4 and Key5 to Key8 appears.

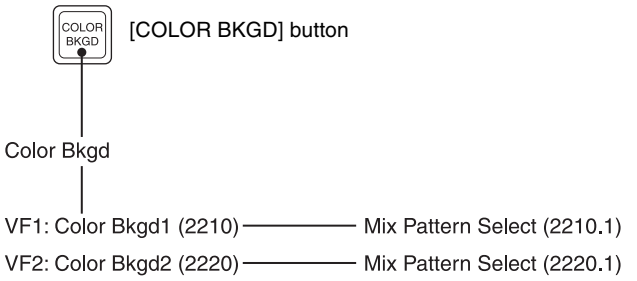


a) In Multi Program 2 mode, the menus for sub are displayed with 400 higher numbers than the aboves for main.

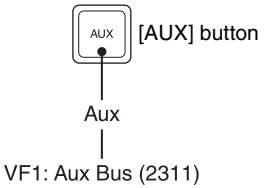
Frame Memory Menu



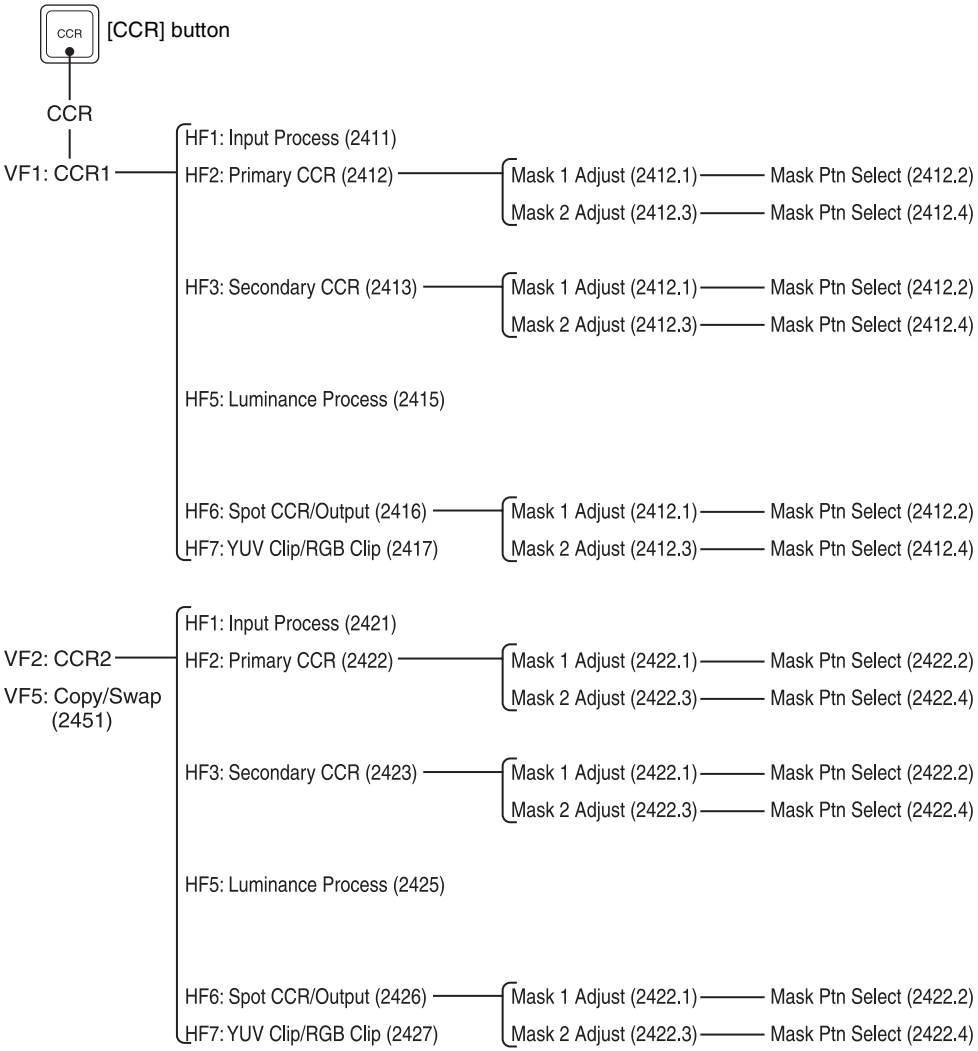
Color Bkgd Menu



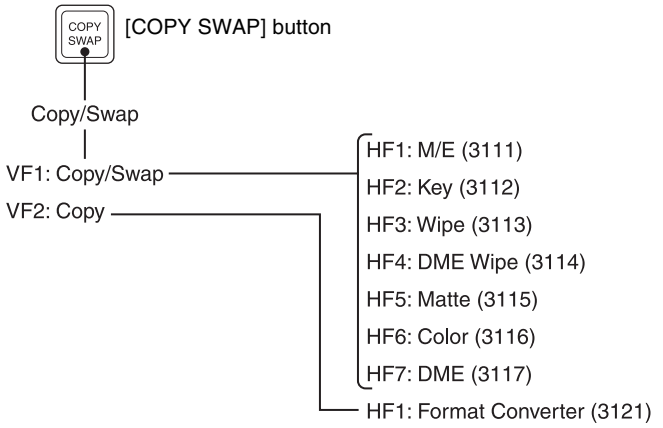
AUX Menu



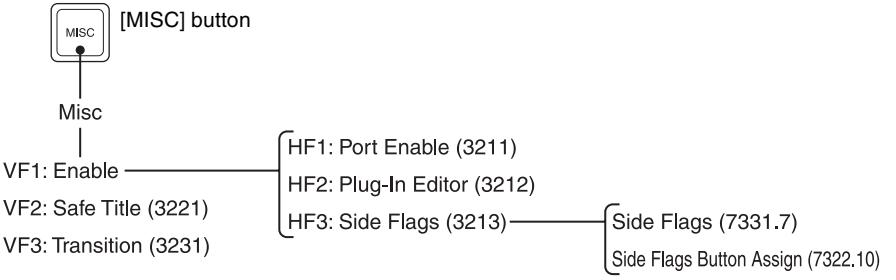
CCR Menu


CCR
[CCR] button
CCR
VF1: CCR1
HF1: Input Process (2411)
HF2: Primary CCR (2412)
Mask 1 Adjust (2412.1)
Mask Ptn Select (2412.2)
Mask 2 Adjust (2412.3)
Mask Ptn Select (2412.4)
HF3: Secondary CCR (2413)
Mask 1 Adjust (2412.1)
Mask Ptn Select (2412.2)
Mask 2 Adjust (2412.3)
Mask Ptn Select (2412.4)
HF5: Luminance Process (2415)
HF6: Spot CCR/Output (2416)
Mask 1 Adjust (2412.1)
Mask Ptn Select (2412.2)
HF7: YUV Clip/RGB Clip (2417)
Mask 2 Adjust (2412.3)
Mask Ptn Select (2412.4)
VF2: CCR2
VF5: Copy/Swap (2451)
HF1: Input Process (2421)
HF2: Primary CCR (2422)
Mask 1 Adjust (2422.1)
Mask Ptn Select (2422.2)
Mask 2 Adjust (2422.3)
Mask Ptn Select (2422.4)
HF3: Secondary CCR (2423)
Mask 1 Adjust (2422.1)
Mask Ptn Select (2422.2)
Mask 2 Adjust (2422.3)
Mask Ptn Select (2422.4)
HF5: Luminance Process (2425)
HF6: Spot CCR/Output (2426)
Mask 1 Adjust (2422.1)
Mask Ptn Select (2422.2)
HF7: YUV Clip/RGB Clip (2427)
Mask 2 Adjust (2422.3)
Mask Ptn Select (2422.4)

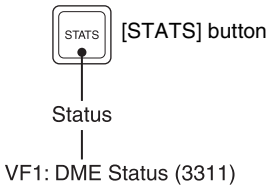
Copy/Swap Menu



Misc Menu



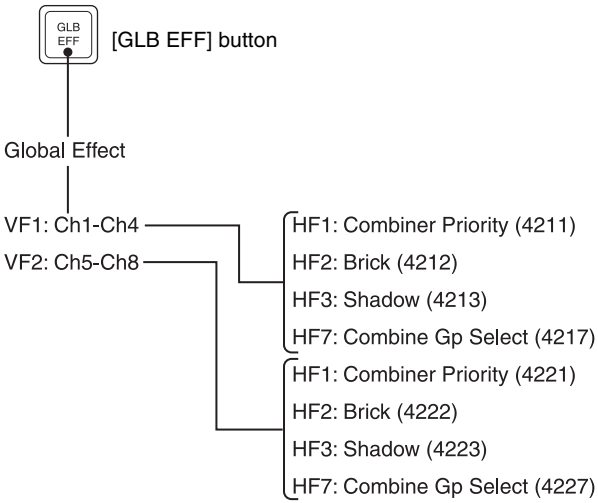
Status Menu



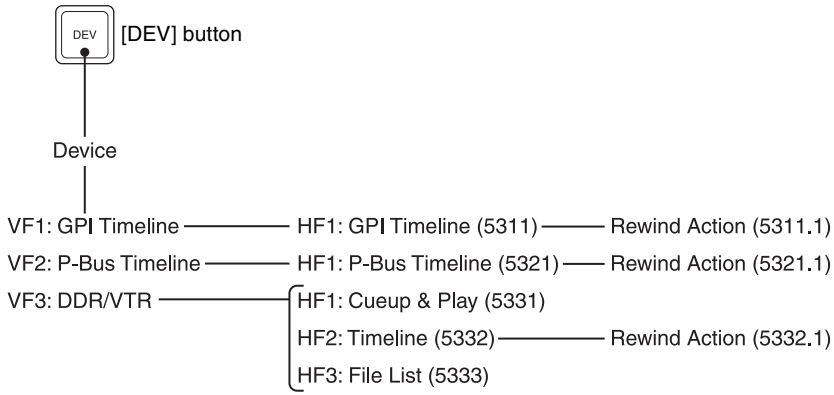
DME Menu


DME
[DME] button
DME
VF1: Edge
HF1: Border/Crop (4111)
HF2: Beveled Edge (4112)
HF3: Key Border (4113)
HF4: Art Edge (4114)
HF5: Flex Shadow (4115)
HF6: Wipe Crop (4116)
Pattern Select (4116.1)
HF7: Color Mix (4117)
Mix Pattern Select (4117.1)
VF2: Video Modify
VF3: Freeze
VF4: Non-Linear/Corner Pin
HF1: Defocus/Blur (4121)
Mask (4127)
HF2: Multi Move (4122)
HF3: Color Modify (4123)
Mask (4127)
HF4: Mosaic (4124)
Mask (4127)
HF7: Mask (4127)
VF5: Light/Trail
VF6: Input/Output
VF7: Enhanced Video Modify
HF1: Freeze (4131)
HF1: Non Linear (4141)
HF2: Conner Pinning (4142)
HF1: Lighting (4151)
HF2: Trail (4152)
HF3: Motion Decay (4153)
HF4: KF Strobe (4154)
HF5: Wind (4155)
HF6: Spot Lighting (4156)
HF1: Bkgd (4161)
HF2: Video/Key (4162)
HF3: Process (4163)
HF4: Graphic (4164)
Wave (4141.1)
Mosaic Glass (4141.2)
Flag (4141.3)
Twist (4141.4)
Ripple (4141.5)
Rings (4141.7)
Broken Glass (4141.8)
Flying Bars (4141.9)
Blind (4141.10)
Split (4141.11)
Split Slide (4141.12)
Mirror (4141.13)
Multi Mirror (4141.14)
Kaleidoscope (4141.15)
Lens (4141.16)
Circle (4141.17)
Panorama (4141.18)
Page Turn (4141.19)
Roll (4141.20)
Cylinder (4141.21)
Sphere (4141.22)
Explosion (4141.25)
Swirl (4141.26)
Melt (4141.27)
Character Trail (4141.28)
Color Mix (4117)
Mix Pattern Select (4117.1)
Texture Ptn Select (4156.1)
Copy/Swap (4156.2)
Light1 (4156.3)
Light Color Adjust (4156.4)
Light2 (4156.5)
Light Color Adjust (4156.6)
Light3 (4156.7)
Light Color Adjust (4156.8)
HF1: Sketch (4171)
Mask(4127)
HF2: Metal (4172)
Mask(4127)
HF3: Dim & Fade (4173)
HF4: Glow (4174)
Mask(4127)

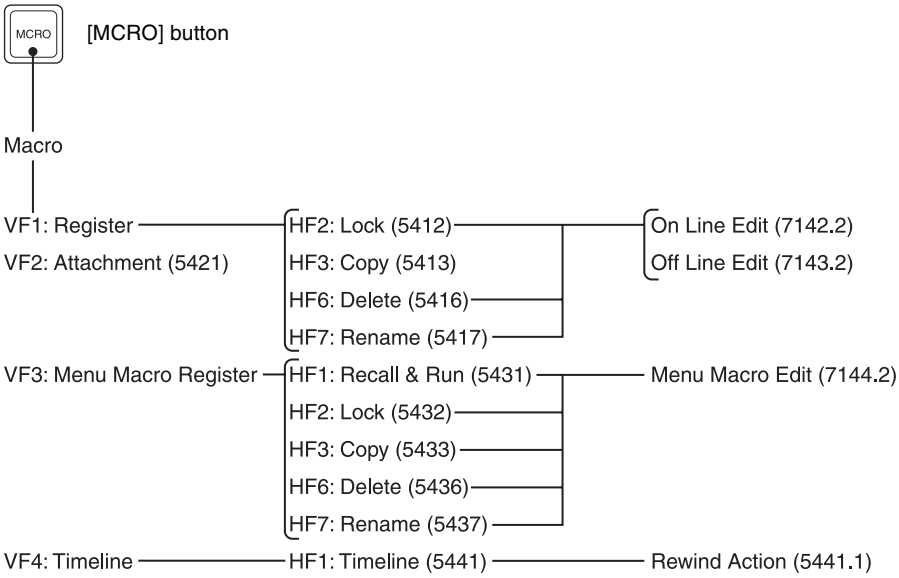
Global Effect Menu



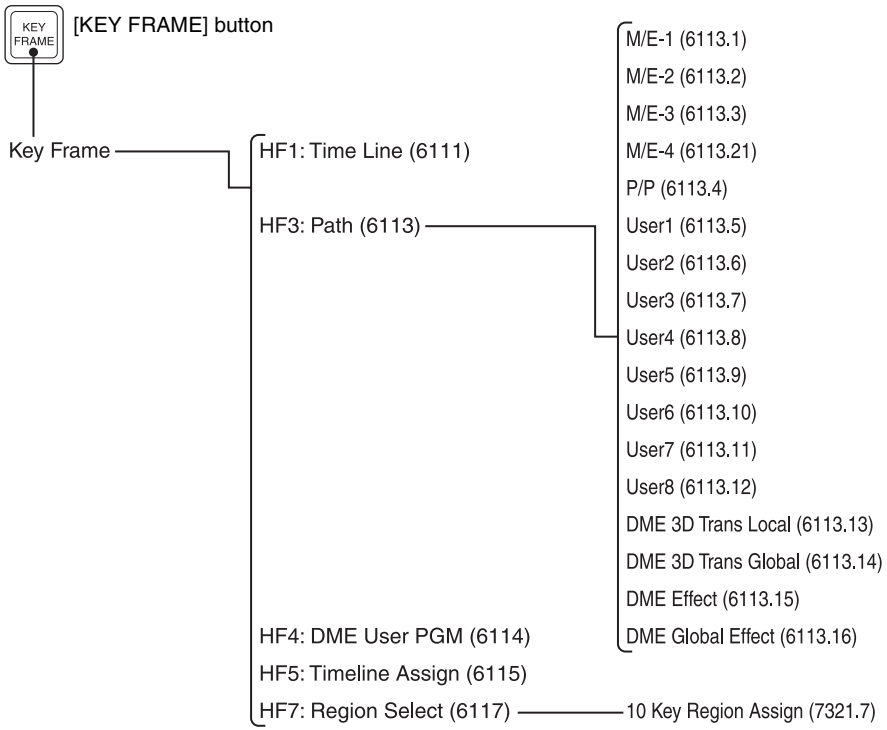
Device Menu



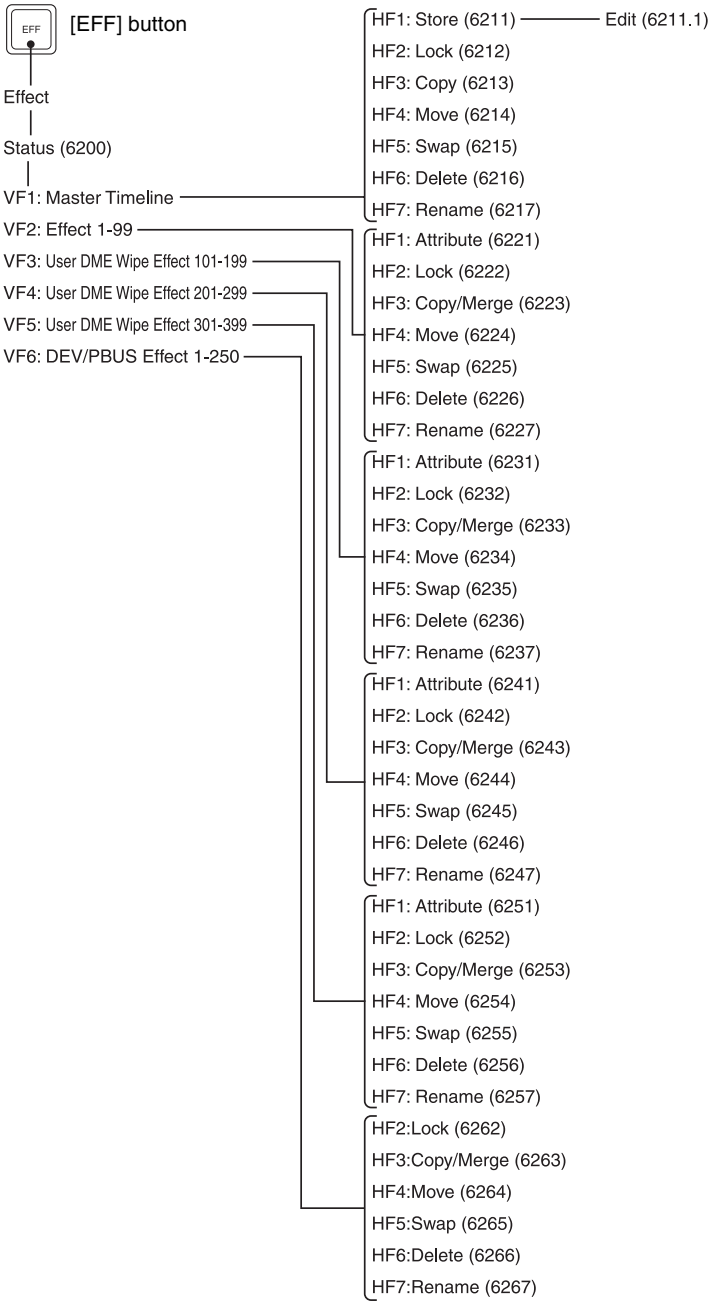
Macro Menu


MCRO
[MCRO] button
Macro
VF1: Register
VF2: Attachment (5421)
HF2: Lock (5412)
HF3: Copy (5413)
HF6: Delete (5416)
HF7: Rename (5417)
On Line Edit (7142.2)
Off Line Edit (7143.2)
VF3: Menu Macro Register
HF1: Recall & Run (5431)
HF2: Lock (5432)
HF3: Copy (5433)
HF6: Delete (5436)
HF7: Rename (5437)
Menu Macro Edit (7144.2)
VF4: Timeline
HF1: Timeline (5441)
Rewind Action (5441.1)

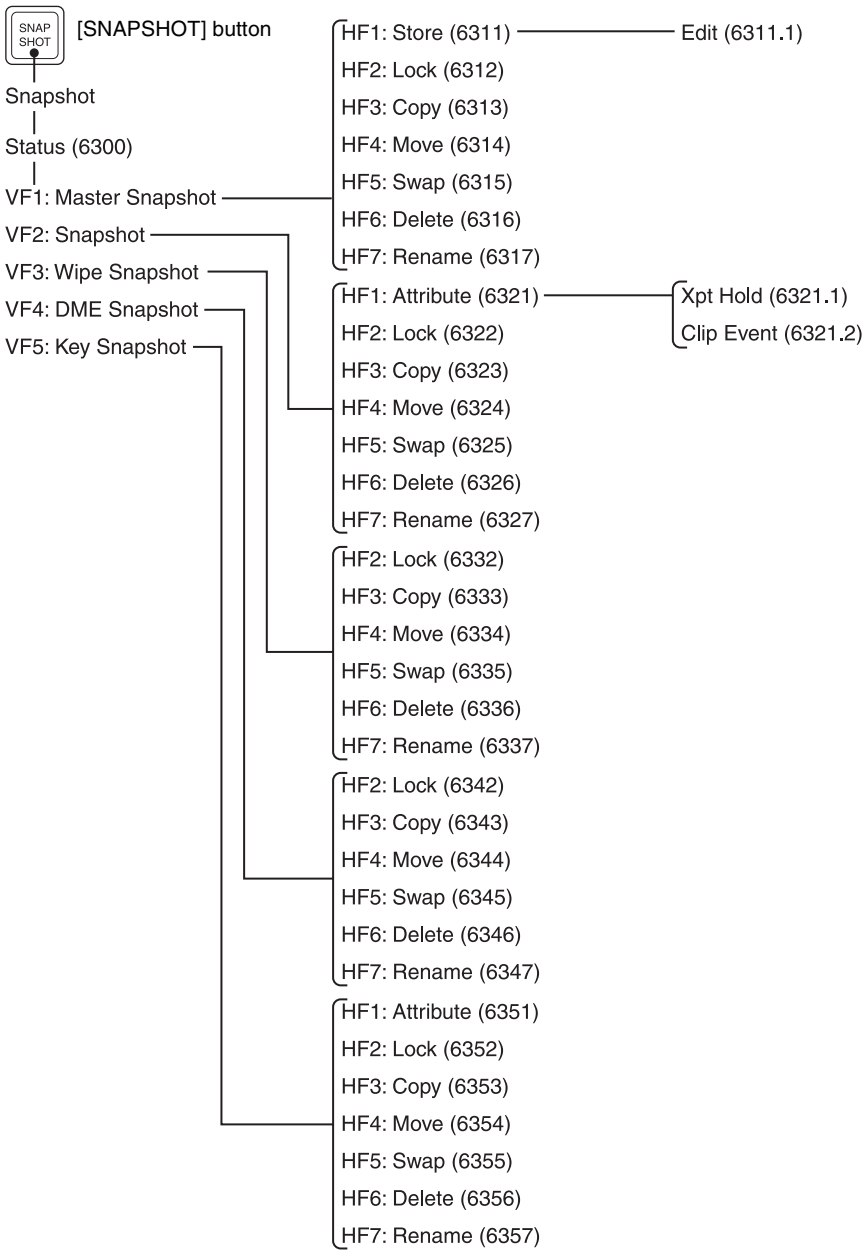
Key Frame Menu



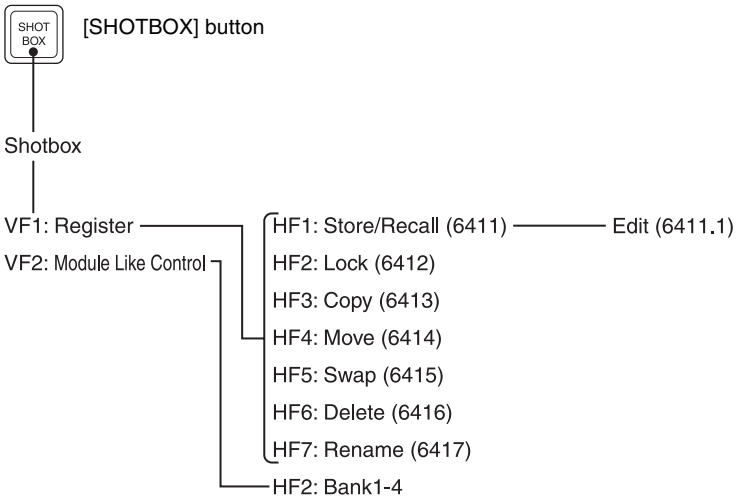
Effect Menu


EFF
[EFF] button
Effect
Status (6200)
VF1: Master Timeline
HF1: Store (6211)
Edit (6211.1)
HF2: Lock (6212)
HF3: Copy (6213)
HF4: Move (6214)
HF5: Swap (6215)
HF6: Delete (6216)
HF7: Rename (6217)
VF2: Effect 1-99
HF1: Attribute (6221)
HF2: Lock (6222)
HF3: Copy/Merge (6223)
HF4: Move (6224)
HF5: Swap (6225)
HF6: Delete (6226)
HF7: Rename (6227)
VF3: User DME Wipe Effect 101-199
HF1: Attribute (6231)
HF2: Lock (6232)
HF3: Copy/Merge (6233)
HF4: Move (6234)
HF5: Swap (6235)
HF6: Delete (6236)
HF7: Rename (6237)
VF4: User DME Wipe Effect 201-299
HF1: Attribute (6241)
HF2: Lock (6242)
HF3: Copy/Merge (6243)
HF4: Move (6244)
HF5: Swap (6245)
HF6: Delete (6246)
HF7: Rename (6247)
VF5: User DME Wipe Effect 301-399
HF1: Attribute (6251)
HF2: Lock (6252)
HF3: Copy/Merge (6253)
HF4: Move (6254)
HF5: Swap (6255)
HF6: Delete (6256)
HF7: Rename (6257)
VF6: DEV/PBUS Effect 1-250
HF2:Lock (6262)
HF3:Copy/Merge (6263)
HF4:Move (6264)
HF5:Swap (6265)
HF6:Delete (6266)
HF7:Rename (6267)

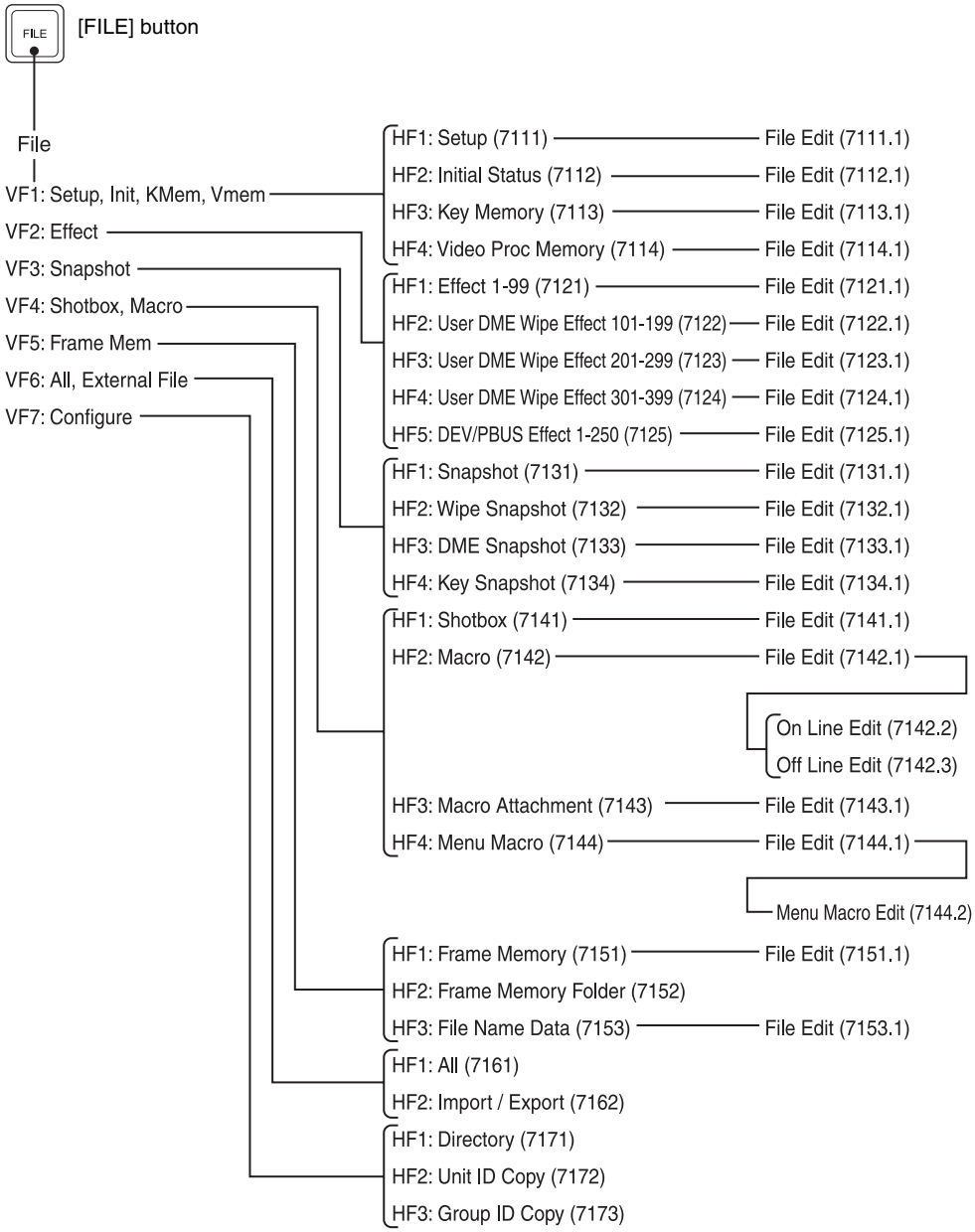
Snapshot Menu



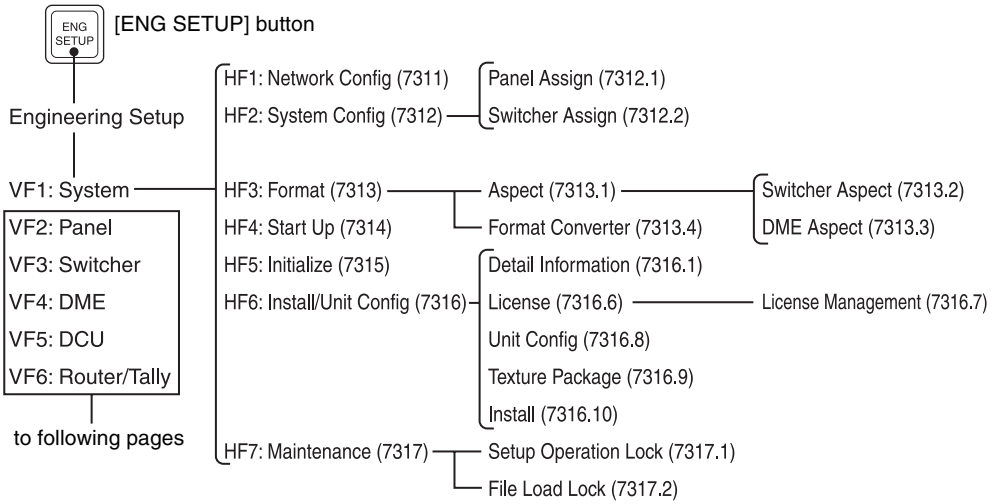
Shotbox Menu

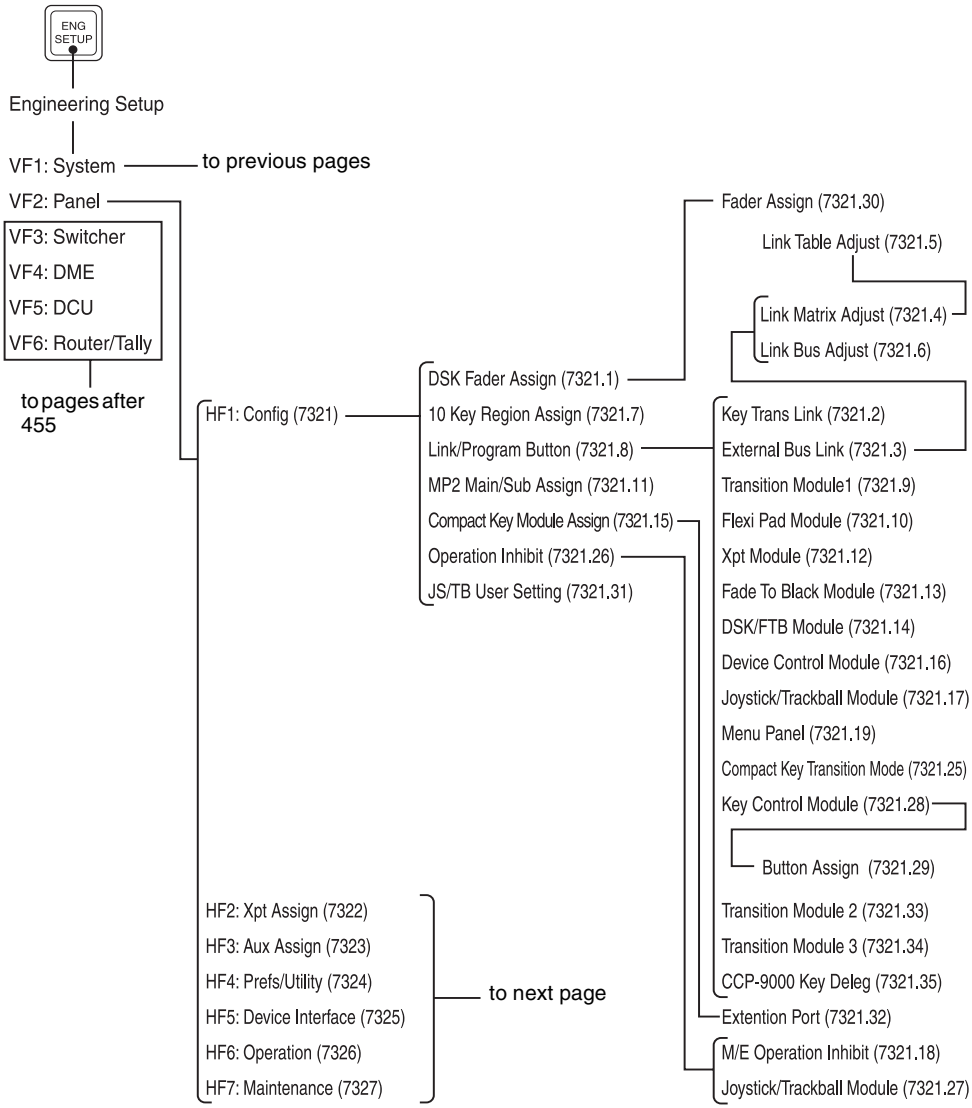


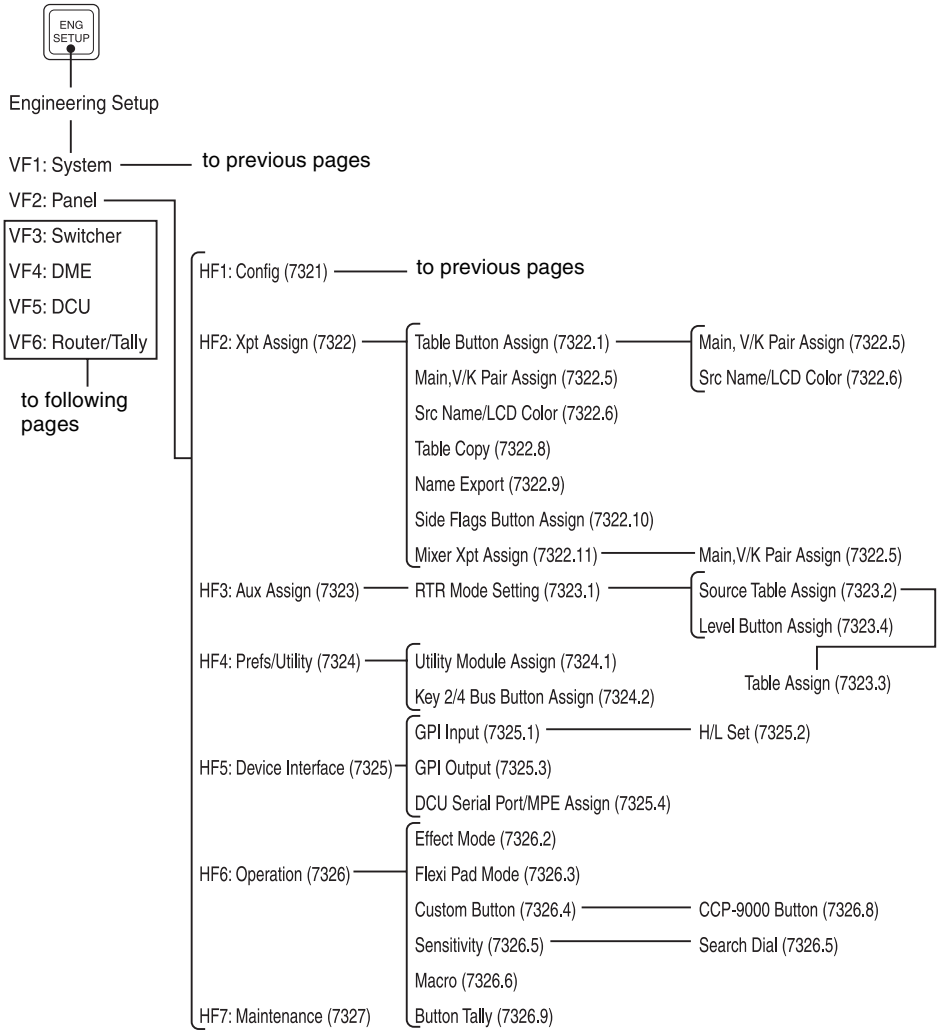
File Menu

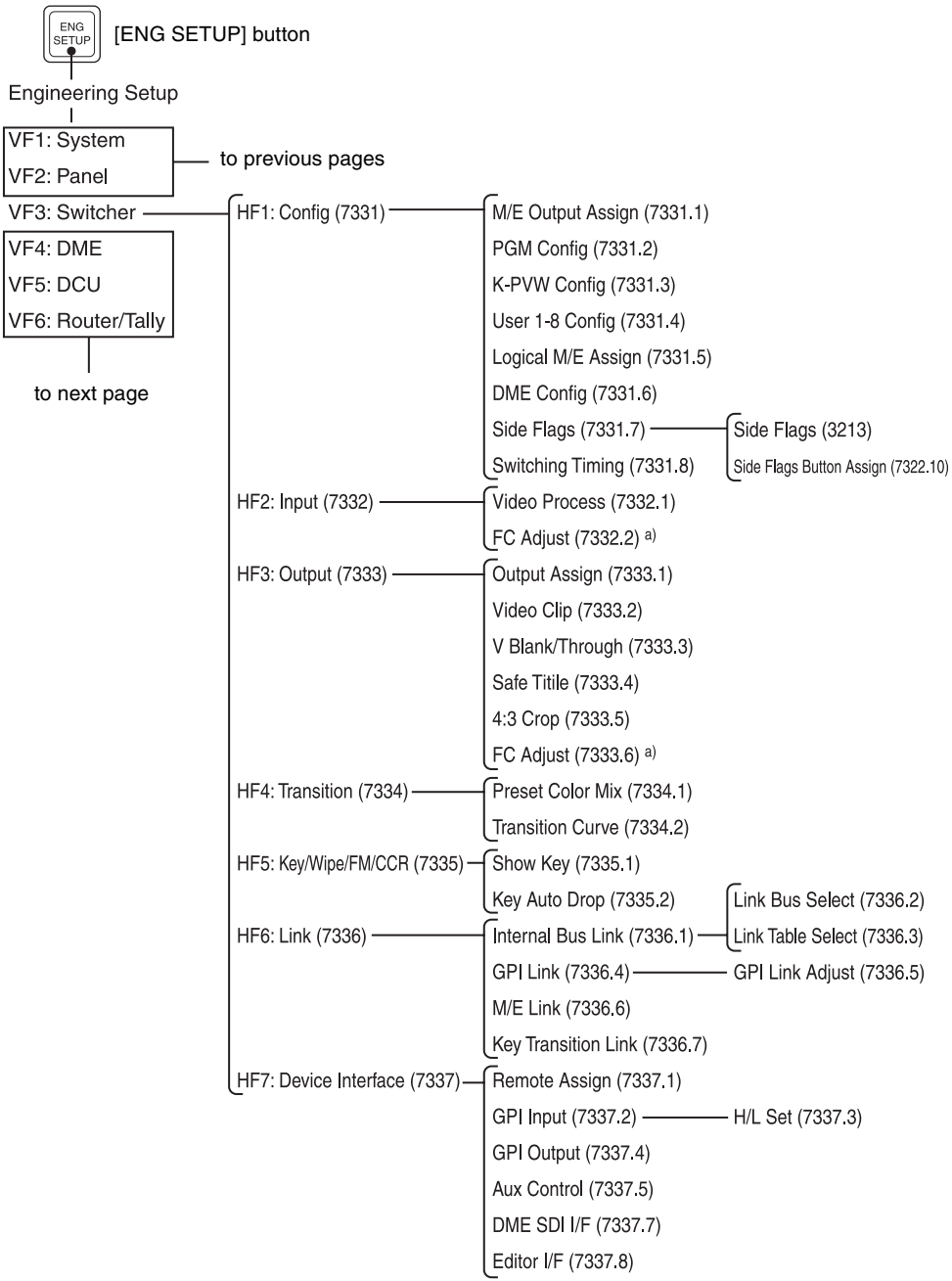

FILE
[FILE] button
File
VF1: Setup, Init, KMem, Vmem
VF2: Effect
VF3: Snapshot
VF4: Shotbox, Macro
VF5: Frame Mem
VF6: All, External File
VF7: Configure
HF1: Setup (7111)
File Edit (7111.1)
HF2: Initial Status (7112)
File Edit (7112.1)
HF3: Key Memory (7113)
File Edit (7113.1)
HF4: Video Proc Memory (7114)
File Edit (7114.1)
HF1: Effect 1-99 (7121)
File Edit (7121.1)
HF2: User DME Wipe Effect 101-199 (7122)
File Edit (7122.1)
HF3: User DME Wipe Effect 201-299 (7123)
File Edit (7123.1)
HF4: User DME Wipe Effect 301-399 (7124)
File Edit (7124.1)
HF5: DEV/PBUS Effect 1-250 (7125)
File Edit (7125.1)
HF1: Snapshot (7131)
File Edit (7131.1)
HF2: Wipe Snapshot (7132)
File Edit (7132.1)
HF3: DME Snapshot (7133)
File Edit (7133.1)
HF4: Key Snapshot (7134)
File Edit (7134.1)
HF1: Shotbox (7141)
File Edit (7141.1)
HF2: Macro (7142)
File Edit (7142.1)
On Line Edit (7142.2)
Off Line Edit (7142.3)
HF3: Macro Attachment (7143)
File Edit (7143.1)
HF4: Menu Macro (7144)
File Edit (7144.1)
Menu Macro Edit (7144.2)
HF1: Frame Memory (7151)
File Edit (7151.1)
HF2: Frame Memory Folder (7152)
HF3: File Name Data (7153)
File Edit (7153.1)
HF1: All (7161)
HF2: Import / Export (7162)
HF1: Directory (7171)
HF2: Unit ID Copy (7172)
HF3: Group ID Copy (7173)

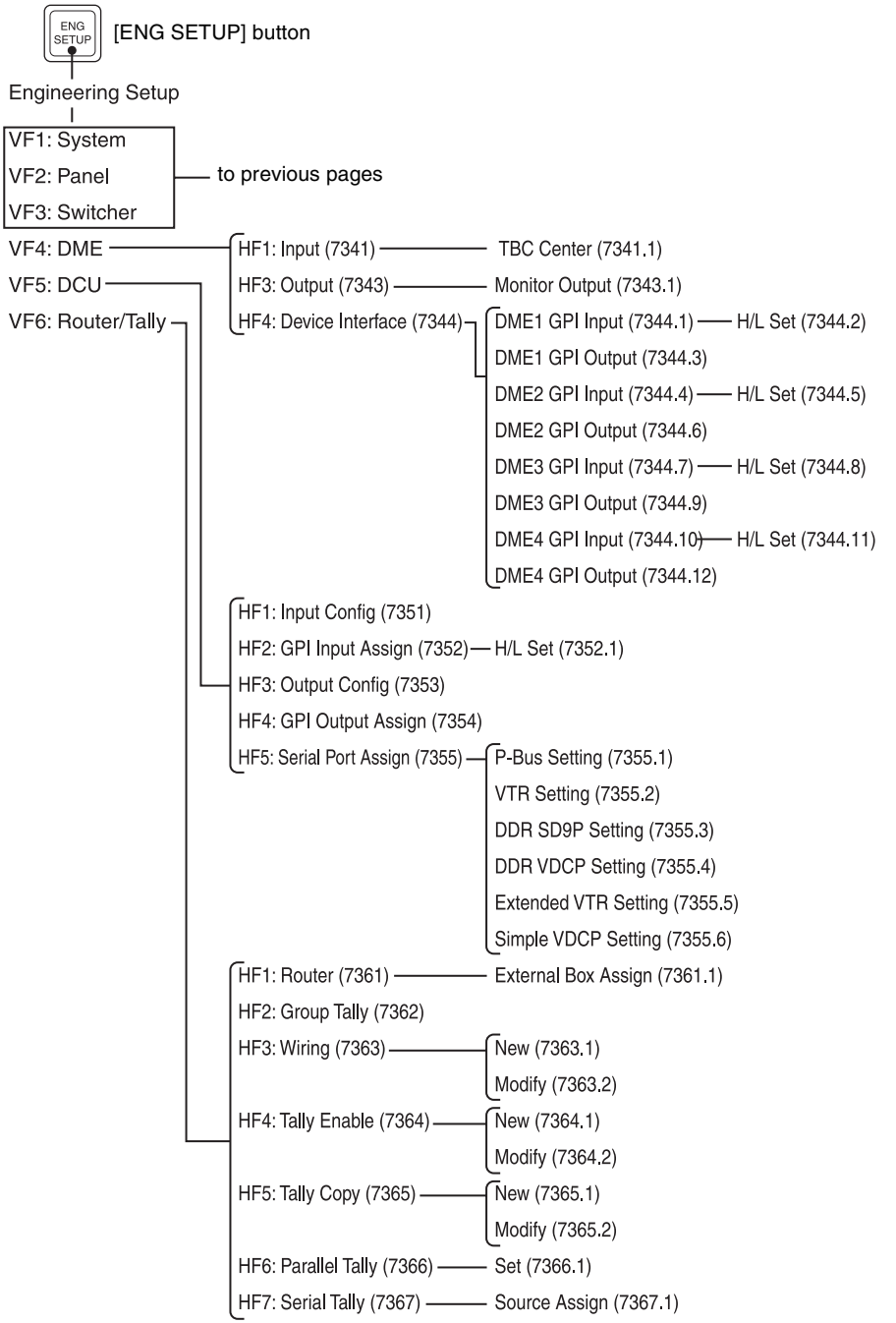
Engineering Setup Menu



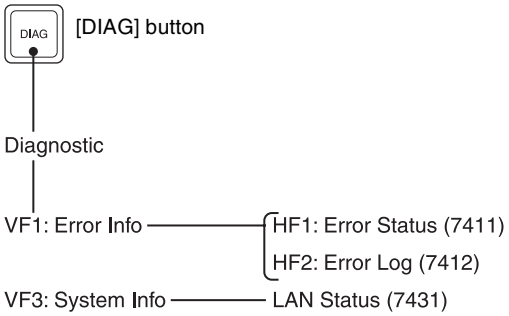

ENG SETUP
Engineering Setup
VF1: System
to previous pages
VF2: Panel
VF3: Switcher
VF4: DME
VF5: DCU
VF6: Router/Tally
to pages after 455
HF1: Config (7321)
DSK Fader Assign (7321.1)
10 Key Region Assign (7321.7)
Link/Program Button (7321.8)
MP2 Main/Sub Assign (7321.11)
Compact Key Module Assign (7321.15)
Operation Inhibit (7321.26)
JS/TB User Setting (7321.31)
Fader Assign (7321.30)
Link Table Adjust (7321.5)
Link Matrix Adjust (7321.4)
Link Bus Adjust (7321.6)
Key Trans Link (7321.2)
External Bus Link (7321.3)
Transition Module1 (7321.9)
Flexi Pad Module (7321.10)
Xpt Module (7321.12)
Fade To Black Module (7321.13)
DSK/FTB Module (7321.14)
Device Control Module (7321.16)
Joystick/Trackball Module (7321.17)
Menu Panel (7321.19)
Compact Key Transition Mode (7321.25)
Key Control Module (7321.28)
Button Assign (7321.29)
Transition Module 2 (7321.33)
Transition Module 3 (7321.34)
CCP-9000 Key Deleg (7321.35)
Extention Port (7321.32)
M/E Operation Inhibit (7321.18)
Joystick/Trackball Module (7321.27)
HF2: Xpt Assign (7322)
HF3: Aux Assign (7323)
HF4: Prefs/Utility (7324)
HF5: Device Interface (7325)
HF6: Operation (7326)
HF7: Maintenance (7327)
to next page


ENG SETUP
Engineering Setup
VF1: System
to previous pages
VF2: Panel
VF3: Switcher
VF4: DME
VF5: DCU
VF6: Router/Tally
to following pages
HF1: Config (7321)
to previous pages
HF2: Xpt Assign (7322)
Table Button Assign (7322.1)
Main, V/K Pair Assign (7322.5)
Src Name/LCD Color (7322.6)
Main,V/K Pair Assign (7322.5)
Src Name/LCD Color (7322.6)
Table Copy (7322.8)
Name Export (7322.9)
Side Flags Button Assign (7322.10)
Mixer Xpt Assign (7322.11)
Main,V/K Pair Assign (7322.5)
HF3: Aux Assign (7323)
RTR Mode Setting (7323.1)
Source Table Assign (7323.2)
Level Button Assigh (7323.4)
Table Assign (7323.3)
HF4: Prefs/Utility (7324)
Utility Module Assign (7324.1)
Key 2/4 Bus Button Assign (7324.2)
HF5: Device Interface (7325)
GPI Input (7325.1)
H/L Set (7325.2)
GPI Output (7325.3)
DCU Serial Port/MPE Assign (7325.4)
HF6: Operation (7326)
Effect Mode (7326.2)
Flexi Pad Mode (7326.3)
Custom Button (7326.4)
CCP-9000 Button (7326.8)
Sensitivity (7326.5)
Search Dial (7326.5)
Macro (7326.6)
HF7: Maintenance (7327)
Button Tally (7326.9)


ENG SETUP
[ENG SETUP] button
Engineering Setup
VF1: System
VF2: Panel
to previous pages
VF3: Switcher
VF4: DME
VF5: DCU
VF6: Router/Tally
to next page
HF1: Config (7331)
M/E Output Assign (7331.1)
PGM Config (7331.2)
K-PVW Config (7331.3)
User 1-8 Config (7331.4)
Logical M/E Assign (7331.5)
DME Config (7331.6)
Side Flags (7331.7)
Side Flags (3213)
Side Flags Button Assign (7322.10)
Switching Timing (7331.8)
HF2: Input (7332)
Video Process (7332.1)
FC Adjust (7332.2) a)
HF3: Output (7333)
Output Assign (7333.1)
Video Clip (7333.2)
V Blank/Through (7333.3)
Safe Titile (7333.4)
4:3 Crop (7333.5)
FC Adjust (7333.6) a)
HF4: Transition (7334)
Preset Color Mix (7334.1)
Transition Curve (7334.2)
HF5: Key/Wipe/FM/CCR (7335)
Show Key (7335.1)
Key Auto Drop (7335.2)
Link Bus Select (7336.2)
HF6: Link (7336)
Internal Bus Link (7336.1)
Link Table Select (7336.3)
GPI Link (7336.4)
GPI Link Adjust (7336.5)
M/E Link (7336.6)
Key Transition Link (7336.7)
HF7: Device Interface (7337)
Remote Assign (7337.1)
GPI Input (7337.2)
H/L Set (7337.3)
GPI Output (7337.4)
Aux Control (7337.5)
DME SDI I/F (7337.7)
Editor I/F (7337.8)


ENG SETUP
[ENG SETUP] button
Engineering Setup
VF1: System
VF2: Panel
VF3: Switcher
to previous pages
VF4: DME
VF5: DCU
VF6: Router/Tally
HF1: Input (7341)
TBC Center (7341.1)
HF3: Output (7343)
Monitor Output (7343.1)
HF4: Device Interface (7344)
DME1 GPI Input (7344.1)
H/L Set (7344.2)
DME1 GPI Output (7344.3)
DME2 GPI Input (7344.4)
H/L Set (7344.5)
DME2 GPI Output (7344.6)
DME3 GPI Input (7344.7)
H/L Set (7344.8)
DME3 GPI Output (7344.9)
DME4 GPI Input (7344.10)
H/L Set (7344.11)
DME4 GPI Output (7344.12)
HF1: Input Config (7351)
HF2: GPI Input Assign (7352)
H/L Set (7352.1)
HF3: Output Config (7353)
HF4: GPI Output Assign (7354)
HF5: Serial Port Assign (7355)
P-Bus Setting (7355.1)
VTR Setting (7355.2)
DDR SD9P Setting (7355.3)
DDR VDCP Setting (7355.4)
Extended VTR Setting (7355.5)
Simple VDCP Setting (7355.6)
HF1: Router (7361)
External Box Assign (7361.1)
HF2: Group Tally (7362)
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New (7363.1)
Modify (7363.2)
HF4: Tally Enable (7364)
New (7364.1)
Modify (7364.2)
HF5: Tally Copy (7365)
New (7365.1)
Modify (7365.2)
HF6: Parallel Tally (7366)
Set (7366.1)
HF7: Serial Tally (7367)
Source Assign (7367.1)

Diagnostic Menu



Using the M/E-4 Bank

Assigning a Button for M/E-4 Selection in the Setup Menu

- In the factory defaults for this system, M/E-4 is not assigned to buttons on the control panel.
- To select M/E-4, assign buttons in the Setup menu according to the following table.

Control block	**Button**	**Menu number**	**Reference in User Guide** “Control Panel Setup (Panel)” and “Cross-Point Settings (Xpt Assign Menu)” in Chapter 19 (Volume3)
Cross-point control block	Reentry buttons	7322.1 7322.5	“Creating Cross-Point Assign Tables” Engineering Setup >Panel >Xpt Assign>Table Button Assign menu Engineering Setup >Panel >Xpt Assign>Main,V/K Pair Assign menu
Entire switcher bank	-	7321	“Interchanging the Bank Order or Disabling Operation” Engineering Setup >Panel >Config menu
Key control block	Delegation buttons	7321.29	“Assigning Functions to Key Control Block Buttons” Engineering Setup >Panel >Config >Link/ Program Button >Key Control Module >Button Assign menu
Device control block	Region selection buttons	7321.17	“Assigning Functions to the Device Control Block” Engineering Setup >Panel >Config >Link/ Program Button >Joystick/Trackball Module menu
Numeric keypad control block	Region selection buttons	7321.7	“Assigning a Region to the Region Selection Buttons in the Numeric Keypad Control Block” Engineering Setup >Panel >Config >10 Key Region Assign menu
Menu control block	Top menu selection buttons	7321.19	“Assigning Functions to the Menu Control Block Top Menu and User Preference Buttons” Engineering Setup >Panel >Config >Link/ Program Button >Menu Panel menu

Using Keys 5 to 8

Notes

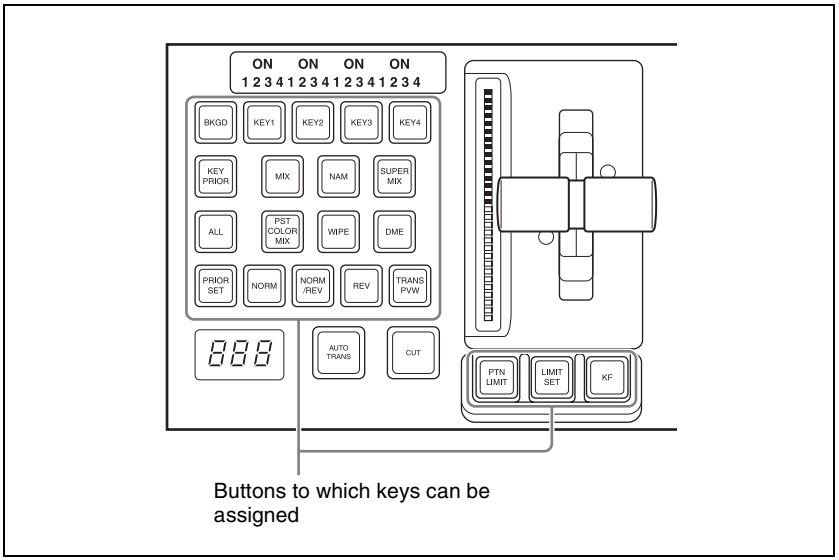
Keys 5 to 8 cannot be used when the signal format is 1080P.

Assigning Buttons for Selection of Keys 5 to 8 in the Setup Menu

In the factory defaults for this system, keys 5 to 8 are not assigned to buttons on the control panel.
To select keys 5 to 8, assign buttons in the Setup menu according to the following table.

Control block	Button	Menu number	Reference in User Guide "Control Panel Setup (Panel)" and "Cross-Point Settings (Xpt Assign Menu)" in Chapter 19 (Volume3)
Transition control block	Next transition selection buttons	7321.9	"Setting Transition Control Block Button Assignments" Engineering Setup >Panel >Config >Link/ Program Button >Transition Module1 menu
Cross-point control block	SHIFT button	7322.1	"Creating Cross-Point Assign Tables" "Setting the action of the [SHIFT] button in the cross-point control block" Engineering Setup >Panel >Xpt Assign >Table Button Assign menu
Key control block	Delegation button	7321.35	"Assigning Functions to Key Control Block Buttons" Engineering Setup >Panel >Config >Link/ Program Button >CCP-9000 Key Deleg menu
Transition control block	Independent key/ downstreamkey transition execution section	7321.34	"Setting Transition Control Block Button Assignments" Engineering Setup >Panel >Config >Link/ Program Button >Transition Module3 menu
Downstream key control block	Key delegation buttons	7321.1	"Assigning the Key Delegation in the Downstream Key Control Block" Engineering Setup >Panel >Config >DSK Fader Assign menu
Device control block (joystick)	Operating buttons	7321.31	"Selecting the Module to be the Reference for Device Control Block" Engineering Setup >Panel >Config >JS/TB User Setting menu
Device control block (trackball)			

Selecting Keys 5 to 8 for Next Transition



To select keys 5 to 8 for the next transition, in addition to assigning [KEY5] to [KEY8] for the operation, it is also possible to make the selection with [KEY1/5], [KEY2/6], [KEY3/7], [KEY4/8], [SHIFT], and [ADD].

The following describes this method of operation.

First in the Setup menu, assign the following to any buttons:

[KEY1/5], [KEY2/6], [KEY3/7], [KEY4/8], [SHIFT], and [ADD]

By way of example, this is the procedure for [KEY1/5].

To select key 5

Press [SHIFT], turning it on, then press the [KEY1/5] button.

To select keys 1 and 5 simultaneously

1 Press the [KEY1/5] button alone.

This selects key 1.

2 Press [SHIFT], turning it on.

3 Holding down [ADD], press the [KEY1/5] button.

This selects keys 1 and 5 simultaneously.

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MVS-8000X
System (SY)
4-177-908-**02** (1)

Sony Corporation

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SONY

MVS-8000X System

(With CCP-9000 Series Center Control Panel)

User's Guide

Multi Format Switcher System

Volume 2 English
1st Edition (Revised 1)
Software Version 10.00 and Later

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Chapter 11 DME Operations

DME

DME (Digital Multi Effects) allows you to add three-dimensional effects such as image movement, rotation, magnification and shrinking, as well as a wide variety of special effects. DME is the general name for all of these effects. You can use up to eight channels as dedicated DME channels.
Each channel can be used on its own or in combination with other channels, which allows you to create advanced effects with more complexity.

Functions that can be used differ with the models of DME. For details, see "Functional Differences With Models of DME" (page 876).

MVE-8000A Multi Format DME Processor

The MVE-8000A is a "Digital Multi Effects" with multi-format support.
An optional input/output board (MKE-8021A) is available as a dedicated interface for use of the MVE-8000A together with a switcher.

MVE-9000 Multi Format DME Processor

The MVE-9000 is a "Digital Multi Effects" with multi-format support.
An optional input/output board (MKE-9021M) is available as a dedicated interface for use of the MVE-9000 together with an MVS-8000 series switcher.

Three-Dimensional Transformations

Transformation is the process of placing a video image in a three-dimensional DME coordinate space and subjecting it to manipulations such as movement, rotation, magnification or shrinking.

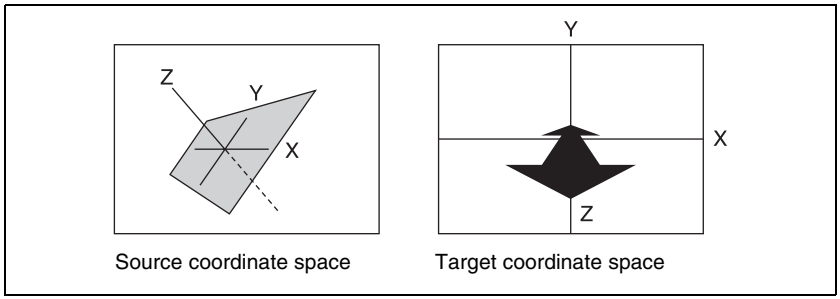
Three-dimensional coordinate space

Source coordinate space and target coordinate space

Images are placed in one of two types of coordinate space: source coordinate space and target coordinate space.

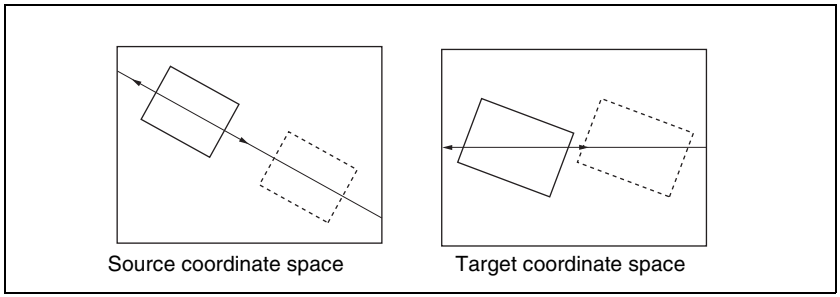
- The source coordinate space is a three-dimensional coordinate space with reference to the image itself. The x- and y-axes are defined parallel to the plane of the image, and the z-axis is defined perpendicular to the plane of the image. When you move the image, the coordinate axes also move.
- The target coordinate space is a three-dimensional coordinate space with reference to the output monitor screen. The x- and y-axes are defined parallel

to the plane of the monitor screen, and the z-axis is defined perpendicular to the plane of the monitor screen. The coordinates do not move even if the image moves.



Source coordinate space and target coordinate space

For example, as shown in the following figure, the image moves in a different direction when you move it along the x-axis of the source coordinate space and along the x-axis of the target coordinate space.

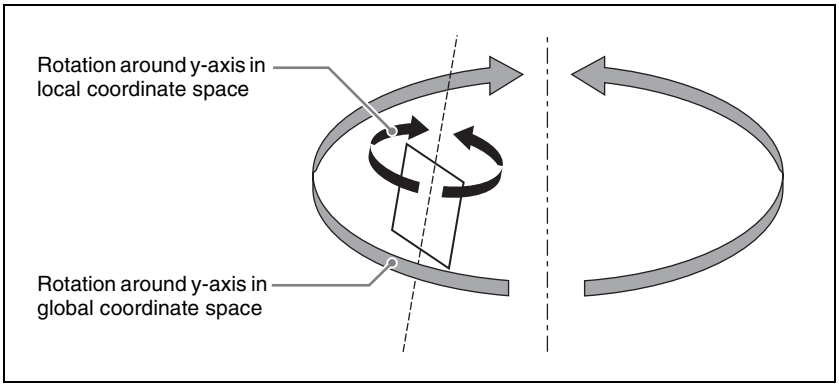


Movement along the x-axes of the source coordinate space and target coordinate space

Local coordinate space and global coordinate space

The coordinates of an individual DME channel are called its local coordinate space. The coordinates common to all channels are called the global coordinate space.

By switching from local to global coordinate space, you can add new movement to the movement of images in individual channels, and also apply transformation effects to multiple channels that have been combined by Global effects *(page 625)*.



Local coordinate space and global coordinate space

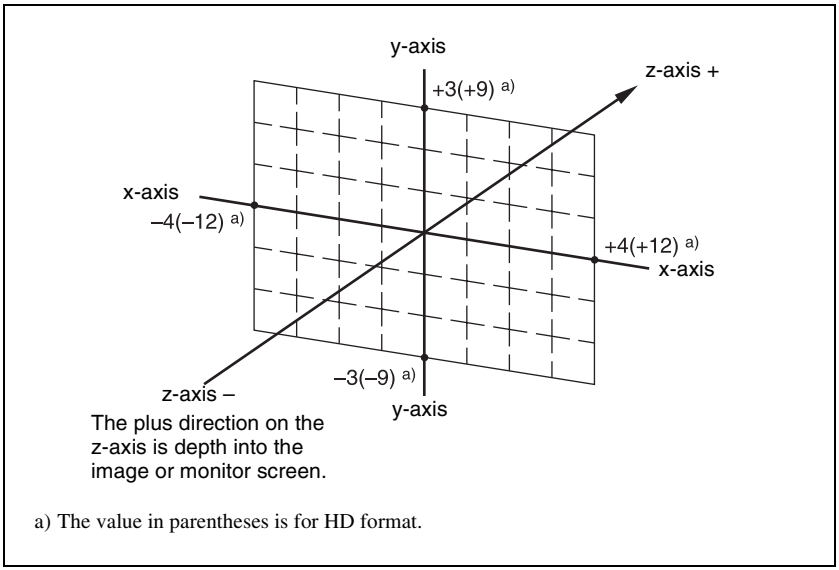
Three-dimensional parameters

Three-dimensional parameters are x, y, and z values which define the position of an image, its axis of rotation, the position of an imaginary point of view on the image, and so on.

The standard values of parameters are as follows, depending on the aspect ratio of your monitor (4:3 or 16:9).

Values for 4:3 mode

- **Origin at center of image (source coordinate space) or center of monitor (target coordinate space)**
  x = 0.00, y = 0.00, z = 0.00
- **Upper right corner of image or monitor**
  When using SD format signals: x = 4.00, y = 3.00, z = 0.00
  When using HD format signals: x = 12.00, y = 9.00, z = 0.00
- **Lower left corner of image or monitor**
  When using SD format signals: x = –4.00, y = –3.00, z = 0.00
  When using HD format signals: x = –12.00, y = –9.00, z = 0.00

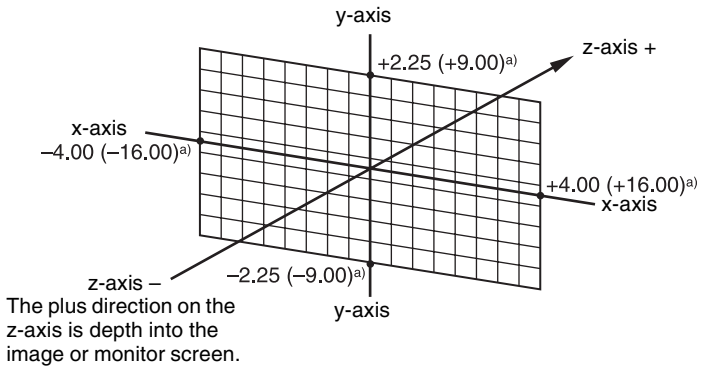


a) The value in parentheses is for HD format.

Values for x-, y-, and z-axes (4:3 mode)

Values for 16:9 mode

- **Origin at center of image (source coordinate space) or center of monitor (target coordinate space)**
  x = 0.00, y = 0.00, z = 0.00
- **Upper right corner of image or monitor**
  When using SD format signals: x = 4.00, y = 2.25, z = 0.00
  When using HD format signals: x = 16.00, y = 9.00, z = 0.00
- **Lower left corner of image or monitor**
  When using SD format signals: x = −4.00, y = −2.25, z = 0.00
  When using HD format signals: x = −16.00, y = −9.00, z = 0.00



a) The value in parentheses is for HD format.

Values for x-, y- and z-axes (16:9 mode)

Limits of three-dimensional parameters

The following table shows the limits of three-dimensional transformation parameters.

The three-dimensional parameters of an image change when you use the trackball or Z-ring to execute a transformation. You can also execute a transformation by entering parameter values from the numeric keypad control block.

Operation mode	Limits of three-dimensional transformation parameters		
Location XYZ	HD format:		–999.9999 to +999.9999
	SD format:	4:3	–333.3333 to +333.3333
		16:9	–250.0000 to +250.0000
Rotation, Spin	–999.9999 to +999.9999		
Axis Location	HD format:		–999.9999 to +999.9999
	SD format:	4:3	–333.3333 to +333.3333
		16:9	–250.0000 to +250.0000
Location Size	0.0000 to +999.9999		
Aspect	0.0000 to +2.0000		
Perspective (x, y)	HD format:		–999.9999 to +999.9999
	SD format:	4:3	–333.3333 to +333.3333
		16:9	–250.0000 to +250.0000
Perspective (z)	0.0000 to 999.9999		
Skew	–9.9999 to +9.9999		

Detents

The system defines points called detents at regular intervals on the three-dimensional space. Pressing the [CTR] button *(page 483)* in the device control block sets the current three-dimensional parameter values to the closest detent points.
The following table shows the interval between successive detents for each transformation operation mode *(see page 474)*.

Operation mode	Detent interval
Location XYZ	1.0000
Rotation, Spin	0.2500
Axis Location	1.0000
Location Size	0.2500
Aspect	1.0000 a)
Perspective (x, y) Perspective (z)	1.0000 1.0000 a)
Skew	0.1000

a) When a value is smaller than 1, 1/Aspect or 1/Perspective (z) is adjusted to an integral value.

Three-dimensional parameter default values

Each of the transformation operation modes has default values for three-dimensional parameters. If required, you can return the current value to the defaults by pressing the [CTR] *(page 483)* button in the device control block twice in rapid succession.
The following table shows the default parameter values for each transformation operation mode.

Operation mode	Default value
Location XYZ	0.0000
Rotation, Spin	0.0000
Axis Location	0.0000
Location Size	1.0000
Aspect	1.0000
Perspective (x, y) Perspective (z)	0.0000 1.0000
Skew	0.0000

Resetting of parameter values set in the source coordinate space

In some transformation operation modes, if you switch to the target coordinate space after setting up a three-dimensional transformation in the source

coordinate space, the setting values in the source coordinate space (three-dimensional parameter values) are converted to values in the target coordinate space (source/target conversion).
Once a conversion has taken place, the original source coordinate space parameters do not return to their original values when you switch back to the source coordinate space. They are reset to zeros.
Source/target conversion occurs in the following operation modes:

- Location XYZ
- Rotation

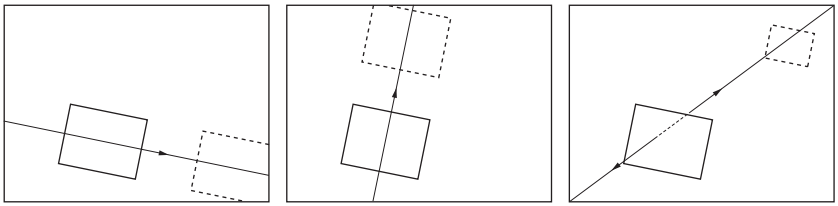
Transformation Operation Modes

The following operation modes are available for three-dimensional DME transformations. These operations are carried out in the device control block (trackball or joystick). (*For details, see "Three-Dimensional Transformation Operations" (page 481).)*

Location XYZ

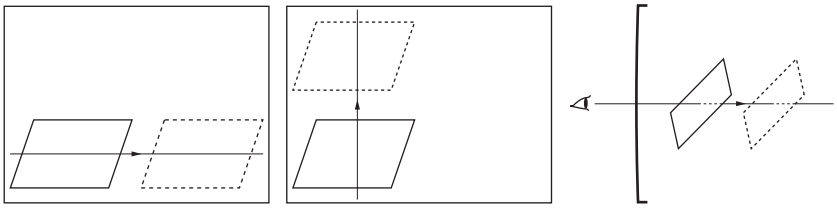
Moves the image on the x-axis, y-axis, or z-axis. The direction of movement differs depending on whether you are manipulating the image in the source coordinate space or the target coordinate space.

Image movement in the source coordinate space



Movement on the x-axis | Movement on the y-axis | Movement on the z-axis

Image movement in the target coordinate space

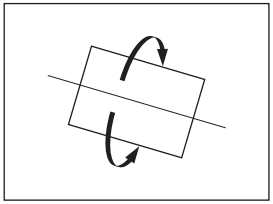


Movement on the x-axis | Movement on the y-axis | Movement on the z-axis

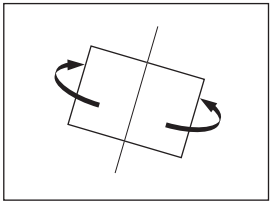
Rotation

Rotates the image on the x-axis, y-axis, or z-axis. The type of rotation differs depending on whether you are manipulating the image in the source coordinate space or the target coordinate space.

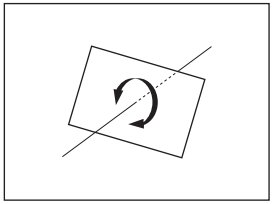
Image rotation in the source coordinate space



Rotation around the y-axis

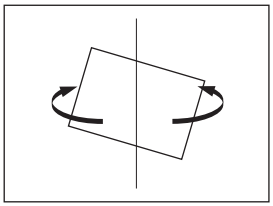


Rotation around the x-axis

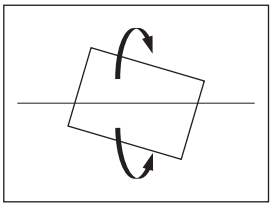


Rotation around the z-axis

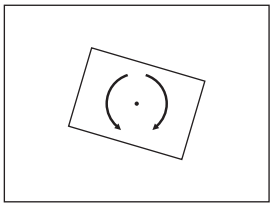
Image rotation in the target coordinate space



Rotation around the y-axis



Rotation around the x-axis



Rotation around the z-axis

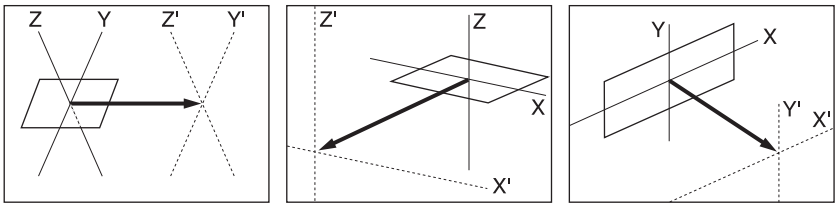
Spin

When rotating the image in Rotation mode, it may not always be possible to achieve the kind of rotation around an axis that you want. Combining Rotation mode with Spin mode creates an effect that rotates the image around a specified axis. The type of rotation differs depending on whether you are manipulating the image in the source coordinate space or the target coordinate space. (The way the image rotates around an axis is the same as in Rotation mode.)

Axis Location

Moves an axis of rotation in the source coordinate space.

Axis movement



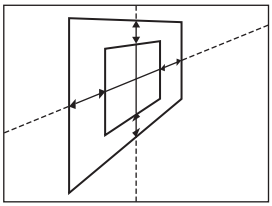
Movement on the x-axis | Movement on the y-axis | Movement on the z-axis

Location Size

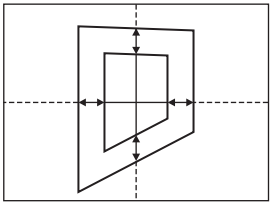
Changes the size of the whole image.

- Because shrinking and magnification of the image in the source coordinate space is done in three-dimensional space, magnifying the image emphasizes the sense of perspective.
- Because shrinking and magnification of the image in the target coordinate space is a conversion of the two-dimensional image displayed on the monitor, shrinking and magnification does not change the shape of the image.

Magnification and shrinking in the source coordinate space

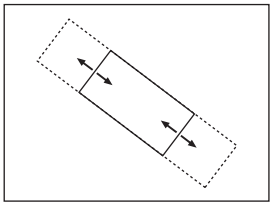


Magnification and shrinking in the target coordinate space

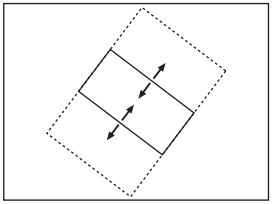


Aspect

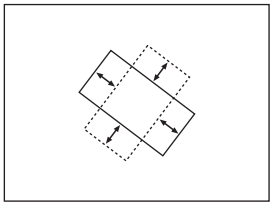
In the source coordinate space, changes the aspect ratio in the x-axis direction and y-axis direction, either independently or simultaneously.



Change of aspect ratio in x-axis direction



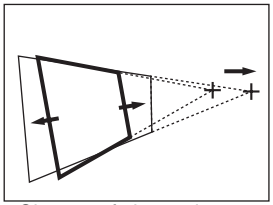
Change of aspect ratio in y-axis direction



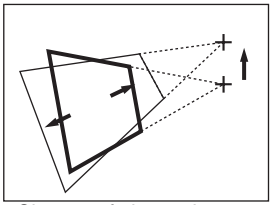
Simultaneous change aspect ratio in x-axis direction and y-axis direction

Perspective

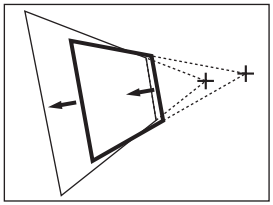
In the target coordinate space, changes the perspective on the image by changing an imaginary view point, without changing the position of the image. The x-axis and y-axis values define the position of the view point. The z-axis value defines its distance from the image.



Change of view point on x-axis



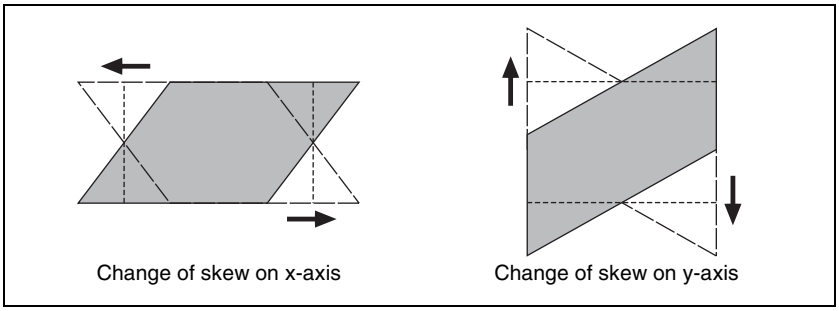
Change of view point on y-axis



Change of distance from view point to image

Skew

In the source coordinate space, change the skew of the image on the x-axis or y-axis.



Change of skew on x-axis

Change of skew on y-axis

Graphics Display

Graphics display is a function that allows you to display wire frames, coordinate axes and a grid over the current DME image, to make it easier to create effects in three-dimensional coordinate space.
Graphics displayed by this function can also be output to the monitor output connector.

To make graphics display settings, use the DME menu. (*For details, see "Graphics Display Operation" (page 489).)*
You can display the following kinds of graphics.

Wire frames

A wire frame displays an image enclosed in a frames, so that you can check the position and size of the image. If there is a shadow *(see page 637),* a frame is shown for the shadow as well.

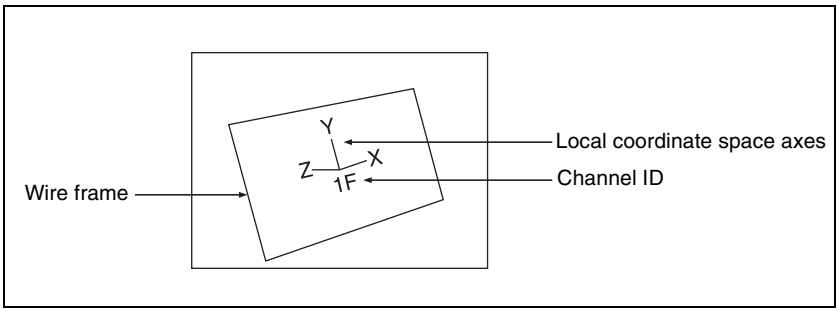
Coordinate axes

This is a three-dimensional display of coordinates in local or global coordinate space. You can check the origin of the axes and the directions of the x-, y-, and z-axes.

Channel ID

This displays the channel number so that you can check which channel you are using, a useful feature when you are working with multiple channels.
Channel IDs are displayed differently in local and global coordinate space.

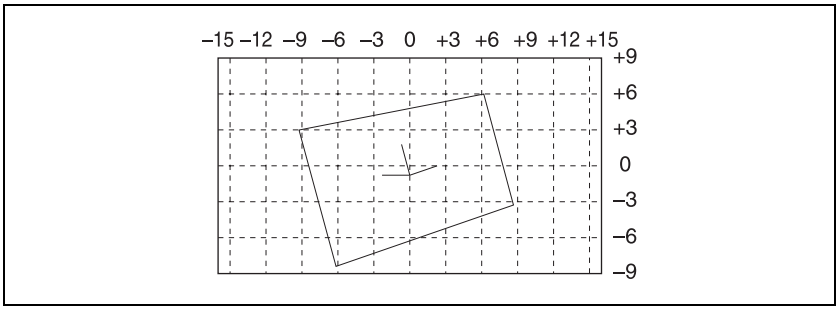
- In local coordinate space, the channel number is displayed along with "F" or "B" to indicate whether you are looking at the front (F) or back (B) of the current wire frame. For example, "1F" means the front of the wire frame on channel 1 in local coordinate space.
- In global coordinate space, the channel number is displayed along with "G" to indicate global. For example, "G2" means channel 2 in global coordinate space.



Wire frame, local coordinate space axes, and channel ID

Grid

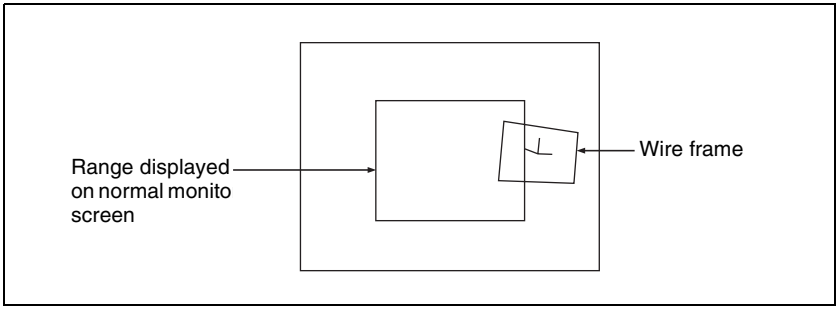
This is a grid pattern representing the whole of the monitor screen. The grid makes it easy to set the position of an image in two-dimensional coordinates.



Grid (16:9 mode)

Shrinking the graphics display

You can shrink the graphics display so that you can see beyond the range displayed on the normal monitor screen. This makes it possible to visually set the location of images in a larger space. The range displayed on a normal monitor screen is indicated by a frame.



To automatically erase the graphic display

Turn Auto Erase on. The graphic display is erased automatically whenever a keyframe is executed. It is displayed again after the keyframe ends, after the time set in Recovery Time.

Flex Shadow center axis

When using the Flex Shadow function *(see page 522)*, turn Flex Shadow Axis on to display the Flex Shadow center axis. This is an effective aid in making settings for this function.

Notes

The Flex Shadow center axis function is not supported on the MVE-8000A.

Three-Dimensional Parameter Display

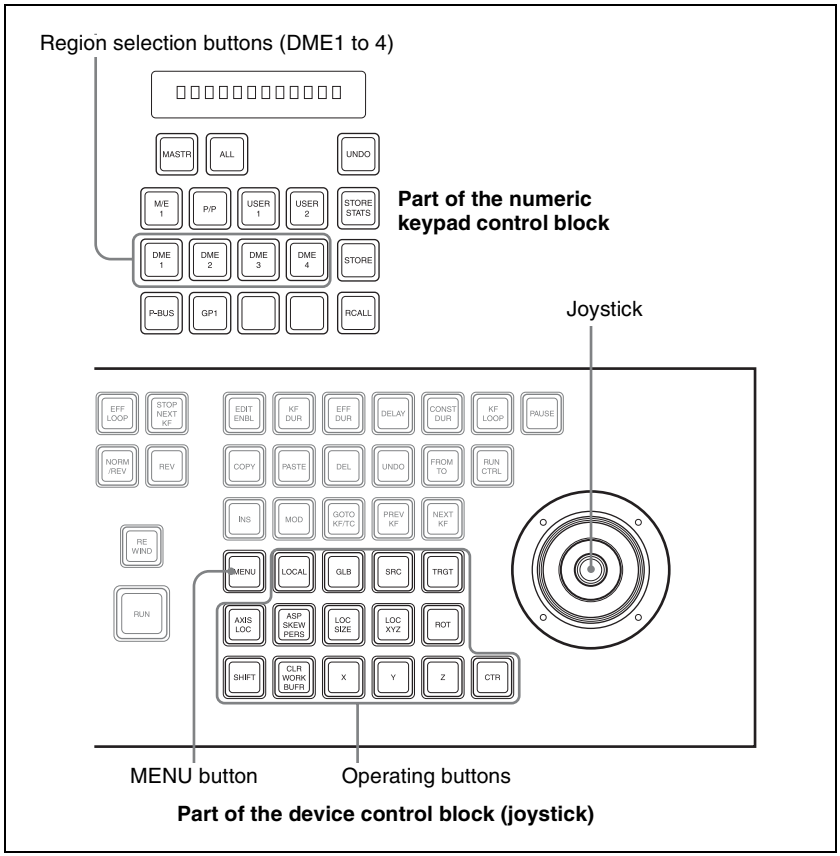
You can display a three-dimensional parameter list for the currently controlled image. When more than one DME channel is selected, the status of the reference channel is displayed.

For the method of displaying a parameter list and an example display, see "Viewing the three-dimensional parameter details" (page 487).

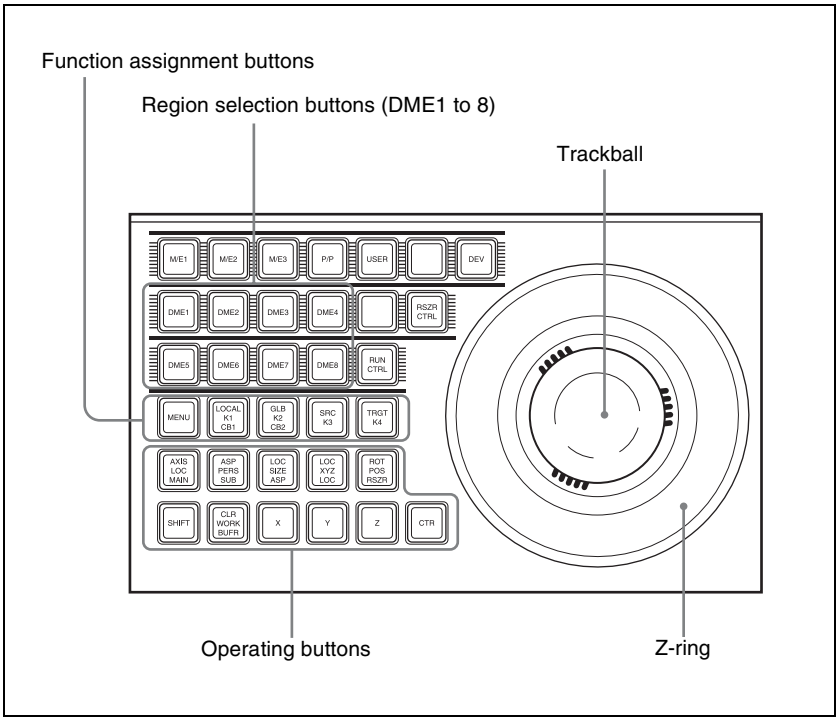
Three-Dimensional Transformation Operations

To carry out three-dimensional DME transformations, use either part of the device control block (joystick) and numeric keypad control block or the optional device control block (MKS-8031TB trackball module).

Basic Operations



Controls used for DME operations



Device control block (MKS-8031TB)

Buttons used when the three-dimensional transform operation mode is enabled

LOCAL: Enable operations in the DME local coordinate space.

GLB (global): Enable operations in the DME global coordinate space. The [LOCAL] and [GLB] buttons can be selected at the same time.

SRC (source): Enable operations in the DME source coordinate space.

TRGT (target): Enable operations in the DME target coordinate space. The [SRC] and [TRGT] buttons cannot be selected at the same time. When these buttons are held down, trackball and Z-ring operation is switched to a finer control. (fine mode)

AXIS LOC (location): When this button is lit, the trackball moves the rotational axis of the image in the x-axis and y-axis directions, and the Z-ring moves the axis in the z-axis direction.

ASP PERS (aspect/perspective): When the [SRC] button is lit, pressing this button enables the trackball to control the x-axis and y-axis directions independently, and the Z-ring controls the x-axis and y-axis directions together, to vary the aspect ratio. When the [SHIFT] button is held down and this button is pressed, the trackball controls the skew of the image in the x-axis and y-axis directions.

When the [TRGT] button is lit, pressing this button enables the trackball to control the perspective of the image in the x-axis and y-axis directions. The Z-ring controls the distance to the viewpoint.

LOC (location) SIZE: When this button is lit, the Z-ring controls the image size.

The trackball moves the image in the x-axis and y-axis directions.

LOC (location) XYZ: When this button is lit, the trackball moves the image in the x-axis and y-axis directions, and the Z-ring moves the image in the z-axis direction.

SHIFT: While holding down this button, pressing the [ASP PERS] button or [ROT] button switches to the shifted version of the corresponding function.

CLR WORK BUFR (clear work buffer): Press this button once to clear only the three-dimensional transform parameters of the information held in the work buffer. Press twice in rapid succession to clear all of the parameters, and return to the default state.

ROT (rotation): When this button is lit, the trackball rotates the image about the x- and y-axes, and the Z-ring rotates the image about the z-axis. Pressing this while holding down the [SHIFT] button enables rotation of the image in the "Spin" mode. The trackball and Z-ring operate in the same manner.

X, Y, Z: These restrict which axes the trackball and Z-ring can control. You can select more than one.

When one of these buttons is selected, you can enter the parameter value for the corresponding axis using the numeric keypad control block.

CTR (center): Pressing this button changes the values of the three-dimensional parameters currently controlled by the trackball and Z-ring to the closest detent values.

Pressing twice in rapid succession returns the parameter values to their defaults.

Transforming an image in three-dimensional coordinate space

1 With the region selection buttons, select the target channel of the operation.

You can press several of the buttons simultaneously to select several channels. In this case, the button that you pressed first lights in green, while buttons pressed subsequently light in amber.

2 With the function assignment buttons, select the three-dimensional coordinate space in which to perform the transformation.

LOCAL button: Selects local coordinate space.

GLB button: Selects global coordinate space. You can select this button and the [LOCAL] button simultaneously.

SRC button: Selects the source coordinate space.
TRGT button: Selects the target coordinate space.
([SRC] and [TRGT] cannot be selected at the same time.)

3 Press the button for the operation you want to do, turning it on, to select the transformation mode.

The joystick is assigned to the selected three-dimensional coordinate space transformation mode.

For details of the three-dimensional transformation operation modes, see "Transformation Operation Modes" (page 474).

To move the image: Press the [LOC XYZ] button, turning it on.
You can move the image with the joystick. Pressing the [LOC SIZE] button instead of the [LOC XYZ] button, turning it on, makes it possible to move the image on the x- and y-axes.

To rotate the image: Press the [ROT] button, turning it on.
You can rotate the image with the joystick.
To rotate the image in Spin mode, press the [ROT] button, turning it on, while holding down the [SHIFT] button. You can operate in the same way with the joystick.

To move an axis of rotation: With the [SRC] button selected in step **2**, press the [AXIS LOC] button, turning it on.
You can move the axis of rotation of the image with the joystick.

To magnify or shrink the image: Press the [LOC SIZE] button, turning it on.
You can magnify and shrink the image by rotating the joystick knob. Rotate counterclockwise to shrink, and clockwise to magnify.

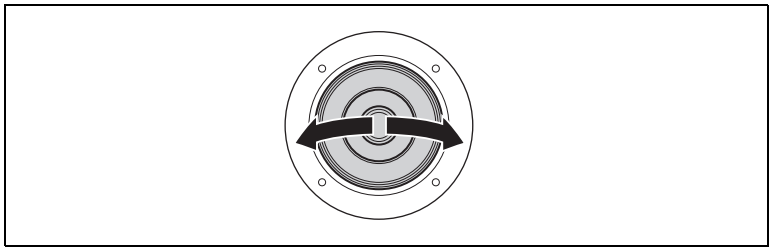
To change the aspect ratio of the image: With the [SRC] button selected in step **2**, press the [ASP PERS] button, turning it on.
You can change the aspect ratio with the joystick.

To change the perspective on the image: With the [TRGT] button selected in step **2**, press the [ASP PERS] button, turning it on.
You can change the perspective of the image on the x- and y-axes by moving the joystick horizontally or vertically, and change the distance to the view point by rotating the joystick knob.

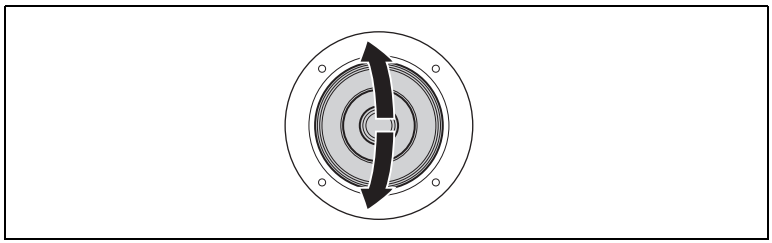
To change the skew of the image: With the [SRC] button selected in step **2**, press the [ASP PERS] button, turning it on, while holding down the [SHIFT] button.
You can change the skew of the image along the x- and y-axes with the joystick.

4 Depending on the axis of the change, operate the joystick as follows.

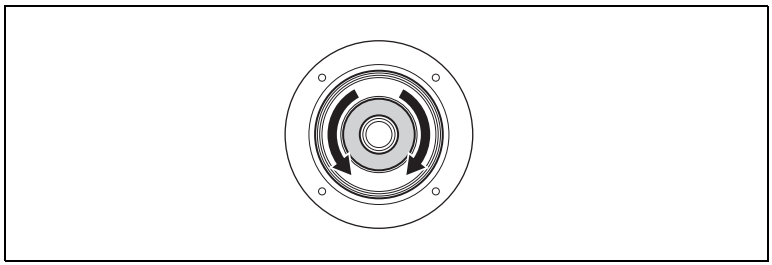
- To change on the x-axis, move the joystick horizontally.
  Parameter values increase as you move to the right, and decrease as you move to the left.



- To change on the y-axis, move the joystick vertically.
  Parameter values increase as you move upward, and decrease as you move downward.



- To change on the z-axis, rotate the joystick knob.
  Parameter values increase as you rotate clockwise, and decrease as you rotate counterclockwise.
  However, when you have pressed the [LOC XYZ] button to move the image, z-axis parameters increase as you rotate counterclockwise, and decrease as you rotate clockwise.



To reduce the rate of change of the parameters (fine mode)
Carry out the trackball or Z-ring operations while holding down the [SRC] or [TRGT] button.

5 To restrict the change in the transformation to a specific axis, press the [X], [Y], or [Z] button, tuning it on.

This enables the joystick on the selected axis only.

Functions assignable to joystick operations

Button	Usable coordinate space	Joystick x-direction	Joystick y-direction	Joystick z-direction
LOC XYZ	Source, target	Move image on x-axis	Move image on y-axis	Move image on z-axis
ROT	Source, target	Rotate image on y-axis	Rotate image on x-axis	Rotate image on z-axis
SHIFT+ ROT	Source, target	Rotate image on y-axis (Spin mode)	Rotate image on x-axis (Spin mode)	Rotate image on z-axis (Spin mode)
AXIS LOC	Source	Move x-axis of rotation	Move y-axis of rotation	Move z-axis of rotation
LOC SIZE	Source, target	Move image on x-axis	Move image on y-axis	Magnify and shrink image
ASP PERS	Source	Change aspect ratio on x-axis	Change aspect ratio on y-axis	Change aspect ratio on x- and y-axes simultaneously
	Target	Shift view point on x-axis	Shift view point on y-axis	Change distance from view point to image
SHIFT+ ASP PERS	Source	Change skew on x-axis	Change skew on y-axis	Change aspect ratio on x- and y-axes simultaneously

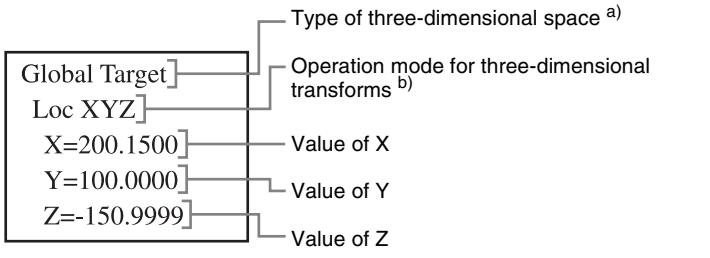
Three-Dimensional Parameter Display

You can check the values of the three-dimensional parameters in the DME menu.

Displaying the three-dimensional parameters in the DME menu

In the menu control block, select the top menu selection button [DME]. The DME menu appears. The status area shows the three-dimensional parameters currently controlled by the device control block.

- When multiple DME channels are selected, this shows the parameters for the reference channel.
- When both Global and Local are selected, the three-dimensional parameters are shown for the channel (the reference channel) for which the button is lit green.



a) This shows one of Local Target, Local Source, Global Target, and Global Source.
b) This shows one of Loc XYZ, Loc Size, Rot, Spin, Axis Loc, Skew, Asp, and Pers.

Example three-dimensional parameter display (DME menu)

Viewing the three-dimensional parameter details

In the DME menu, press the menu title button (the [DME] in the upper left part of the screen).
The Status menu appears. This menu shows the three-dimensional parameters for the DME reference channel currently selected in the device control block.



Example three-dimensional parameter details

Entering Three-Dimensional Parameter Values

In addition to setting three-dimensional parameter values with the trackball and Z-ring, you can enter them directly from the numeric keypad control block.

Entering three-dimensional parameter values

1 In the device control block, press the [X], [Y], or [Z] button, turning it on.

The numeric keypad control block enters a mode in which you can enter parameters for the selected axis.

2 Enter a parameter value with the numeric keypad.

The number of significant digits after a decimal point is 4.

3 Press the [ENTER] button.

The parameter value is changed, and the image changes.

To enter difference values

You can enter difference values by pressing the [+/–] button, entering the difference from the current value, and pressing the [TRIM] button to confirm. The [+/–] button toggles between "+" (plus) and "–" (minus) each time it is pressed.

Resetting three-dimensional parameter values

Pressing the [CTR] button in the device control block sets the current three-dimensional parameter values to the closest detent points *(page 473)*.
To reset three-dimensional parameter values to the defaults *(page 473)* for the current transformation operation mode, press the [CTR] button twice in rapid succession.

Clearing the working buffer

The working buffer is memory that holds the instantaneous state of an effect.
To clear (initialize) only the three-dimensional transform parameters in the working buffer, press the [CLR WORK BUFR] button in the device control block.
To clear all of the parameters in the working buffer and initialize the DME system, press the [CLR WORK BUFR] button twice in rapid succession. It is necessary to do this for both the local coordinate space and global coordinate space.
As the initial DME state, you can specify whether to use the factory default settings or user settings in the Setup menu. *(See "Selecting the State After Powering On (Start Up Menu)" in Chapter 18 (Volume 3).)*

Graphics Display Operation

Use the DME menu to make graphics display settings. You can make separate settings for separate channels. To select a target DME channel, use the device control block. (For the types of graphics displayed, see *"Graphics Display" (page 478)*.)

Displaying graphics

1 In the menu control block, select the top menu selection button [DME].

The DME menu appears.

2 Select VF6 'Input/Output' and HF4 'Graphic.'

The Graphic menu appears.

3 Turn [Graphic] on.

The system enters graphics display mode, enabling graphics to be displayed in the monitor screen.

4 Turn on the buttons of the graphics you want to show.

To show axes: Turn [Axis] on.
To show axis names: Turn [Axis Name] on.
To show the channel ID: Turn [Ch ID] on.
To show a wire frame: Turn [Wire Frame] on.
To show the grid: Turn [Grid] on.
To show the flex shadow axis: Turn [Flex Shadow Axis] on.

The selected graphics appear in the monitor screen.

Notes

The flex shadow axis function is not supported on the MVE-8000A.

5 If you want to shrink the graphics display to show the range not displayed on a normal monitor, turn [Scale] on and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Scale	Degree to which the graphics display is shrunk	0.00 to 100.00

As the value of the setting grows, the monitor shrinks further toward the center point.

6 To automatically erase the graphic display while the keyframes are executing, press [Auto Erase], turning it on, and then set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Recover Time	Time until graphic display appears again after keyframe execution	0 to 300 (frames)

Outputting graphics to the monitor output connector

In the Graphic menu, press [Monitor Out] to turn it on.
Graphics are displayed on the device connected to the monitor output connector.

Canceling Virtual Images

When a transformation is executed with an extreme degree of perspective, the part of the image which is beyond the imaginary view point can wrap around and show on the other side. The wrapped-around portion is referred to as a virtual image.
Using the DME menu, you can make a setting not to show the virtual images.

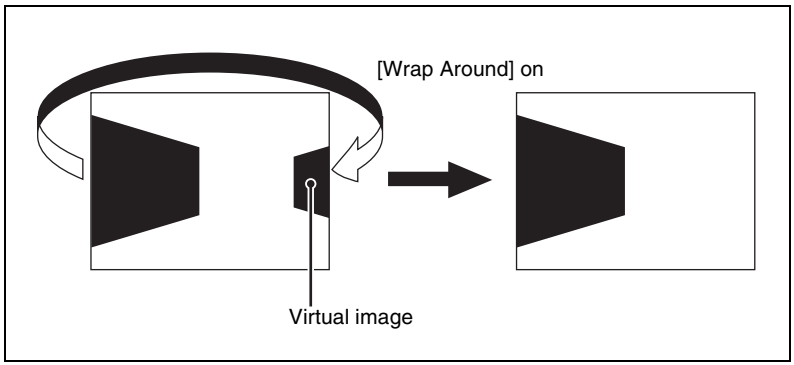
Canceling virtual images

1 In the DME menu, select VF6 ‘Input/Output’ and HF2 ‘Video/Key.’

The Video/Key menu appears.

2 Press [Wrap Around], turning it on.

The virtual image disappears.



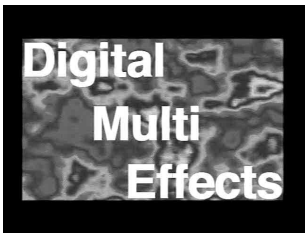
DME Special Effect Operations

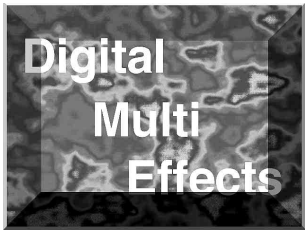
You can use DME to add a variety of special effects.

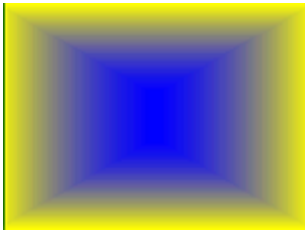
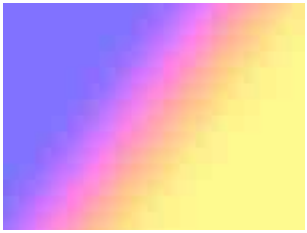
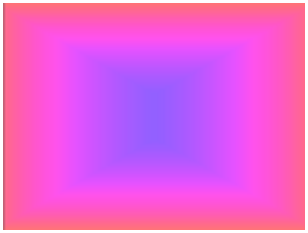
Usable function differs depending on the model. For details, see "Functional Differences With Models of DME" (page 876).

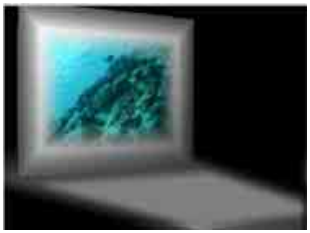
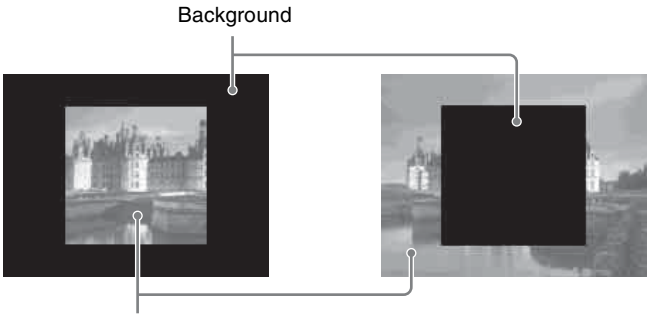
Special Effects

Edge effects

Name	Effect/Image
Border *(See page 507.)*	Adds a border to the image frame. You can adjust the width (or thickness) of the border, its color, and the softness of the border edges. 
Crop *(See page 509.)*	Crops away the edges of the image. You can crop the top, bottom, left, and right sides individually or all together. You can also soften the cropped edges. 

Name	Effect/Image
Beveled Edge *(See page 511.)*	Gives an image a beveled edge. You can set the edge width and color. The inner edge softness and edge boundary softness can also be set.  Color  Lights
Key Border *(See page 513.)*	Adds borders to keys or gives a key consisting of an outline only. 

Name	Effect/Image
Art Edge *(See page 514.)*	Adds edges to the inner and outer side of the input image. The following items can be set. • Art edge width and position • Separate softening of the art edge inner and outer sides • Color of art edges **Examples of Art Edge source**  Gradation Matte  Radial Gradation  Rainbow Matte  Radial Rainbow **Examples of Art Edge source [Rainbow Matte]** 

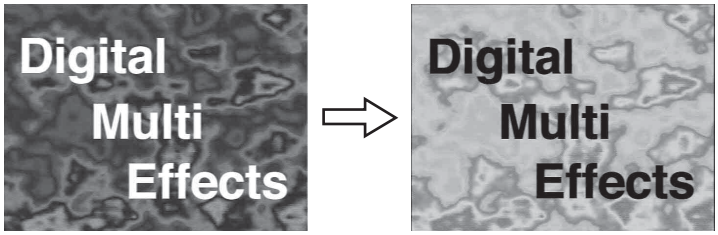
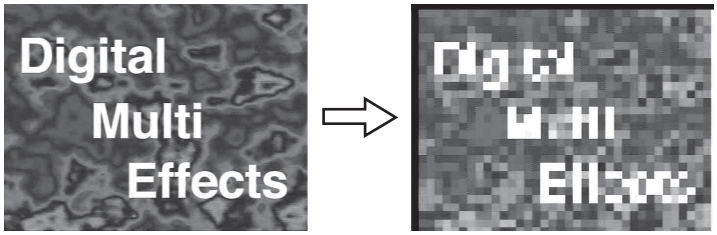
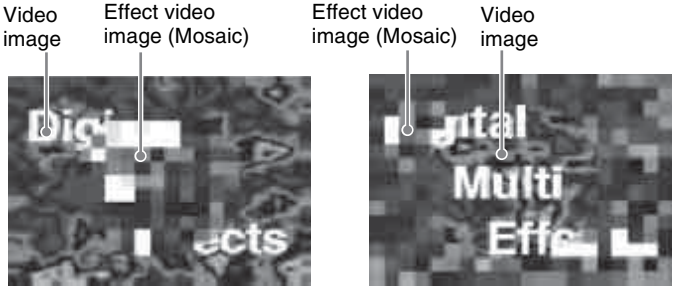
Name	Effect/Image
Flex Shadow *(See page 522.)*	Allows a shadow to be added to the image using only one DME channel. The following settings can be made for the shadow. • The signal to use for the shadow -External: Generate shadow using input key signal. -Internal: Generate shadow using an internally generated, full-size DME key signal. • Shadow shrinking and magnification • Shadow position • Shadow color and density • Center axis of deformation • Shadow slant and perspective  Rainbow Matte  Radial Rainbow
Wipe Crop *(See page 529.)*	Crops the video image to be visible inside or outside a wipe pattern.  Video image When Invert is On

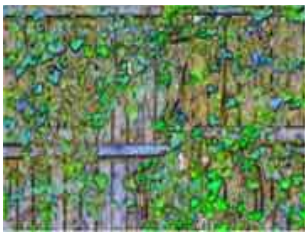
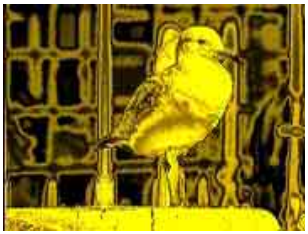
Effects for entire image

Name	Effect/Image
Defocus *(See page 535.)*	Defocuses the whole image. The degree of defocusing can be set simultaneously for video and key signals or only for video signals. You can also cancel the black level leaking that occurs at the edge of the screen when the Defocus effect is used. 
Blur *(See page 537.)*	Applies a rounded blurring to the whole image.
Multi Move *(See page 537.)*	Shrinks the image and lines up a number of copies vertically and horizontally. You can specify the center point of the shrinking, the shrinking ratio, and the aspect ratio of the image screen. 

Effects for video image

Name	Effect/Image
Sepia *(See page 538.)*	Overlays a specified color onto the image. You can adjust the sepia color that is overlaid, and specify the degree of mixing between the original image and the sepia image.
Mono *(See page 539.)*	Converts the image into a monochrome image.
Posterization *(See page 540.)*	Coarsens the luminance gradations of the image, for a paintinglike effect.
Solarization *(See page 540.)*	Coarsens the chroma gradations of the image, for a paintinglike effect.

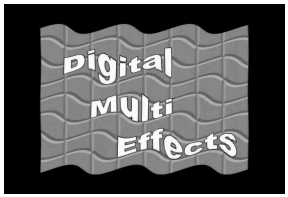
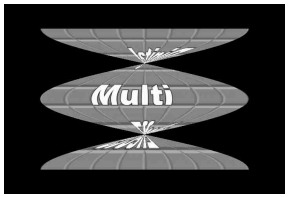
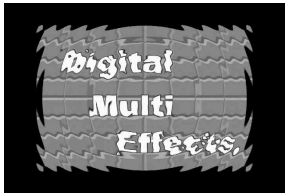
Name	Effect/Image
Nega *(See page 540.)*	Reverses the luminance or chroma of the image. 
Contrast *(See page 541.)*	Changes the contrast of the luminance and chroma of the image.
Mosaic *(See page 542.)*	Divides the image into small tiles so that it looks like a mosaic. You can specify the size and aspect ratio of the tiles. 
Mask *(See page 548.)*	Masks part of the picture, so that special effects are applied only inside a selected pattern. 

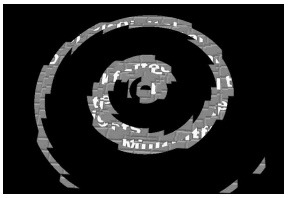
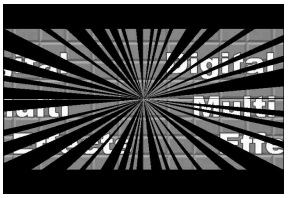
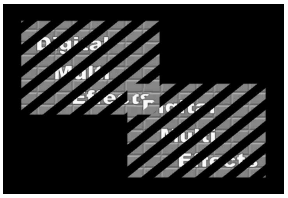
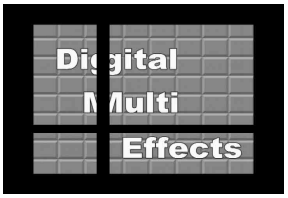
Name	Effect/Image
Sketch *(See page 542.)*	Provides a sketch-like effect based on the outlines of the image, using different touches such as sketch, edge color, drawing, relief, and sharp.  SKETCH
Metal *(See page 545.)*	Provides a metallic gloss like that from gold, silver, or a rainbow colored surface. A metallic gloss can also be given to a freely selected color. 
Dim and Fade *(See page 546.)*	The Dim effect makes the image darker as it recedes into the distance. The Fade effect makes the image fade into the background as it recedes into the distance.  FADE
Glow *(See page 547.)*	Softens the edges of highlights, giving an effect like being struck by a soft light. 

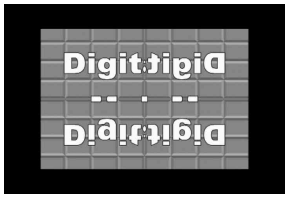
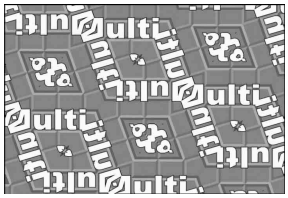
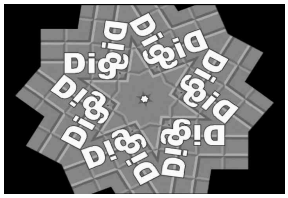
Freeze effects

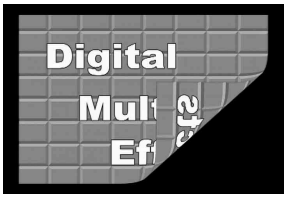
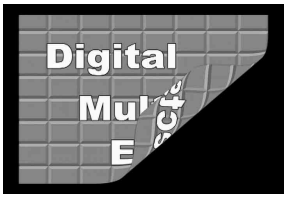
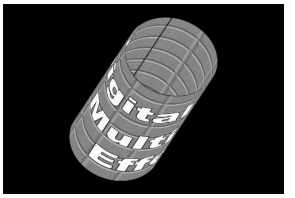
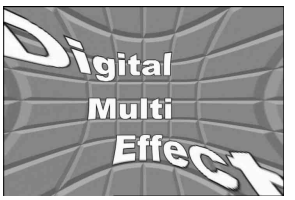
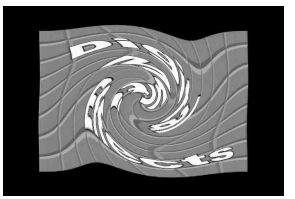
Freezes the input video. The video can also be frozen at a specified interval *(see page 551)*.

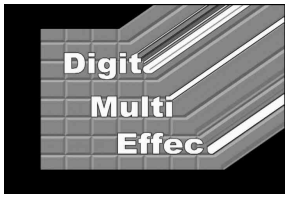
Nonlinear effects

Name	Effect/Image
Wave *(See page 553.)*	Produces a wave-like effect in the image. 
Mosaic Glass *(See page 558.)*	Makes the image rougher and finer at a specified interval. 
Flag *(See page 558.)*	Applies an effect like a flag waving in the wind. 
Twist *(See page 559.)*	Twists the image. 
Ripple *(See page 560.)*	Applies an effect like ripples moving across the image. 

Name	Effect/Image
Rings *(See page 564.)*	Partitions the image into rings that rotate while moving in the same direction. 
Broken Glass *(See page 565.)*	Partitions the image like broken glass, with shards flying outward. 
Flying Bar *(See page 566.)*	Divides the image into bars which peel off in two blocks as they move. 
Blind *(See page 566.)*	Divides the image into bars or wedges, with blocks rotating like the slats of venetian blinds. 
Split *(See page 567.)*	Splits the image upper and lower, left and right. 
Split Slide *(See page 568.)*	Divides the image into bars which slide alternately in reverse directions. 

Name	Effect/Image	
Mirror *(See page 570.)*	Partitions the image vertically and horizontally, creating an image like a reflection in a mirror.	
Multi Mirror *(See page 570.)*	Divides the image into originals and reflections, lining them up vertically and horizontally.	
Kaleidoscope *(See page 571.)*	Creates an image like a view into a kaleidoscope.	
Lens *(See page 572.)*	Creates an image like a view through a lens.	
Circle *(See page 574.)*	Makes a circle with the image.	
Panorama *(See page 574.)*	Curves the upper and lower edges of the image to emphasize the sense of perspective.	

Name	Effect/Image
Page Turn *(See page 575.)*	Turns the image like a turning page. 
Roll *(See page 576.)*	Rolls the image up. 
Cylinder *(See page 576.)*	Winds the whole image onto a cylinder. 
Sphere *(See page 577.)*	Winds the whole image onto a sphere. 
Explosion *(See page 577.)*	Divides the image into fragments which expand as they fly out. 
Swirl *(See page 579.)*	Swirls the image. 

Name	Effect/Image
Melt *(See page 580.)*	Melts the image away from a specified part. 
Character Trail *(See page 581.)*	Extends the edge of the image like a trail. 

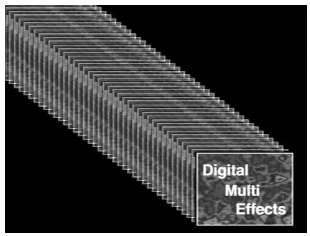
Corner Pinning effect

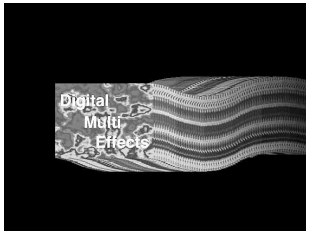
Name	Effect/Image
Corner Pinning *(See page 582.)*	Provides the effect of inserting the foreground in the background, allowing the four corners to be positioned freely, so that the image fills the quadrilateral outlined by the corners.  Background  Foreground (in cropped state)  Corner Pinning (when Crop Link is on)

Lighting effects

Name	Effect/Image
Lighting *(See page 585.)*	Provides the effect of light striking the image.  Normal  Specular  Mat
Spotlighting *(See page 601.)*	Creates the effect of a spotlight striking the surface of the image.

Recursive effects

Name	Effect/Image
Trail *(See page 591.)*	Recursively freezes the input video at regular intervals so that a trail of afterimages is created. You can make the afterimages stardust trails. 
Motion Decay *(See page 595.)*	Blurs the motion of a moving video by creating afterimages of the moving video. You can make the afterimages stardust trails. 

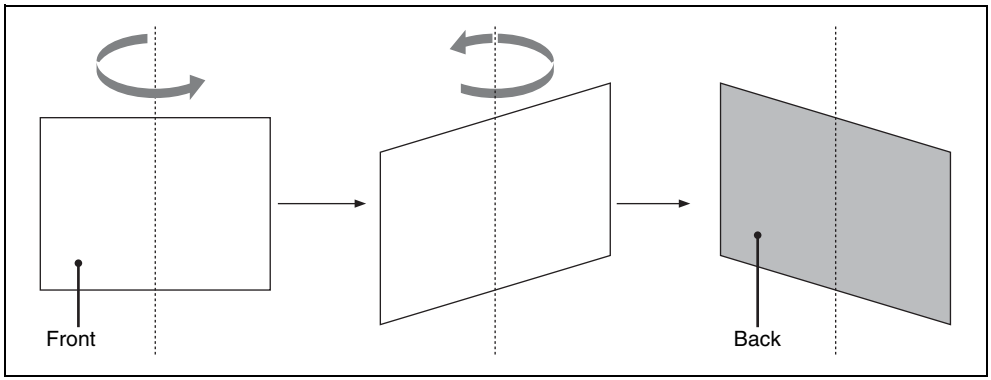
Name	Effect/Image
Keyframe Strobe *(See page 597.)*	Freezes the video each time the effect passes a keyframe. You can make the afterimages stardust trails.
Wind *(See page 599.)*	Strobes the image at regular intervals, and moves the frozen image in a fixed direction, leaving an afterimage. 

Background color

Adds a color or inputs an external signal to the background of the image *(see page 619)*.

Separate sides (effects for front and back sides)

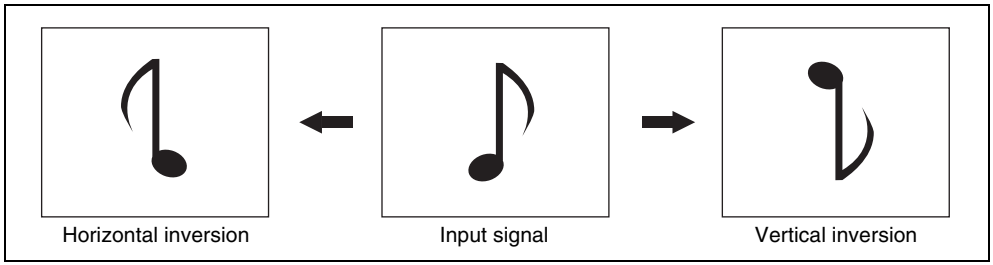
Applies separate video signals and key signals to the front and back of the image *(see page 620)*.



Front and back sides

Signal inversion (Invert effect)

Inverts the input video signal and/or key signal horizontally or vertically. You can make separate settings for the front and back *(see page 620)*.



Inversion of input signal

Key density adjustment

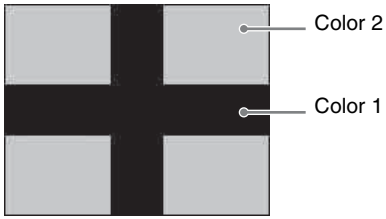
Adjusts the key density for the key signal input to the DME *(see page 621)*.

Key source selection

Selects either the key signals received from the switcher or the key signals generated in the DME for application to the front and back of the image *(see page 505 or page 621)*.

Color mix setting

This is a combination of two colors with a pattern generator. This color mix signal can be used to fill parts such as a background or border *(see page 533)*.



Operations Common to All DME Special Effects

In this section, explanations of the operating procedures for individual special effects begin with selections from the DME menu. The following are common operations that you must do prior to selecting from the DME menu.

1 In the device control block, select the target DME channel.

2 In the menu control block, select the top menu selection button [DME].

The DME menu appears.

Border Settings

Adding a border

1 In the DME menu, select VF1 ‘Edge’ and HF1 ‘Border/Crop.’

The Border/Crop menu appears.

2 Press [Border], turning it on.

The Border effect is enabled. You can adjust the border width parameters with the knobs.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

- **4:3 mode**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Border width on left and right sides	Left value shown
2	V	Border width on top and bottom sides	Top value shown
3	All	Border width on all sides	Left value shown
5	Density	Border density	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Border width on top side	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
2	Left	Border width on left side	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
3	Right	Border width on right side	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
4	Bottom	Border width on bottom side	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
5	Density	Border density	0.00 to 100.00

• **16:9 mode**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Border width on left and right sides	Left value shown
2	V	Border width on top and bottom sides	Top value shown
3	All	Border width on all sides	Left value shown
5	Density	Border density	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Border width on top side	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
2	Left	Border width on left side	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
3	Right	Border width on right side	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
4	Bottom	Border width on bottom side	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
5	Density	Border density	0.00 to 100.00

Setting the border color

The operation differs depending on the DME used (MVE-8000A or MVE-9000).

When the MVE-8000A is used

Press [Border Color], turning it on, and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

When the MVE-9000 is used

Use the buttons in the <Border Fill> group to select the signal to insert in the border.

Flat Color: single color
Mix Color: mix color signal set in the Color Mix menu *(see page 533)*
Ext Video: an external video signal input to the Ext IN connector

If Flat Color is selected, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

If Mix Color or Ext Video selected, the border color changes according to the mix color signal or external video signal.

Softening the border edges

Press [Border Soft], turning it on, and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Soft	Softness of inner side of border	0.00 to 100.00

Crop Settings

Cropping the image

1 In the DME menu, select VF1 ‘Edge’ and HF1 ‘Border/Crop.’

The Border/Crop menu appears.

2 Press [Crop], turning it on.

The Crop effect is enabled. You can adjust degree of cropping with the knobs.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

- **4:3 mode**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Crop positions on left and right sides	Left value shown
2	V	Crop positions on top and bottom sides	Top value shown
3	All	Crop positions on all sides	Left value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Crop position on top side	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
2	Left	Crop position on left side	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
3	Right	Crop position on right side	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
4	Bottom	Crop position on bottom side	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)

- **16:9 mode**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Crop positions on left and right sides	Left value shown
2	V	Crop positions on top and bottom sides	Top value shown
3	All	Crop positions on all sides	Left value shown

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Crop position on top side	–2.25 to +2.25 (SD) –9.00 to +9.00 (HD)
2	Left	Crop position on left side	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
3	Right	Crop position on right side	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
4	Bottom	Crop position on bottom side	–2.25 to +2.25 (SD) –9.00 to +9.00 (HD)

Signs of numeric settings

For H, V, and All settings, the sign (+/–) of the setting need not be considered. For example, in the case of an H setting, the value for Left is automatically regarded as a negative value, and the value for Right as a positive value, to display the image.

The following is an example of these settings.

Parameter	Entered value	Setting
H	1.5	Left=–1.50
		Right=1.50
	–1.5	Left=–1.50
		Right=1.50

4 To soften the edges of the image, press [Edge Soft], turning it on, and set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Soft	Softness of edges	0.00 to 100.00

Notes

Edges cannot be softened when the Crop effect is disabled.

To specify whether to invert the crop area when inverting the video image

In the <Invert/Crop Process> group, select either of the following.

Crop –> Invert: Set an axis of symmetry at the center of the input video, and invert both the desired area of video and the crop area horizontally and vertically around that axis of symmetry. The order of effect application is Crop > Invert.

Invert –> Crop: Set an axis of symmetry at the center of the input video, and invert only the desired area of video horizontally and vertically around that axis of symmetry. The order of effect application is Invert > Crop.

Beveled Edge Settings

Applying a beveled edge

1 In the DME menu, select VF1 'Edge' and HF2 'Beveled Edge.'

The Beveled Edge menu appears.

2 Press [Beveled Edge], turning it on.

This enables the beveled edge, and you can now use the knobs to adjust the parameters.

Notes

When the border is enabled, the edge soft function *(see page 509)* is not available.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• **4:3 mode**

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right edges	0.00 to 4.00 (SD) 0.00 to 12.00 (HD)
2	V	Simultaneously adjust width of top and bottom edges	0.00 to 3.00 (SD) 0.00 to 9.00 (HD)
3	All	Simultaneously adjust width of all four edges	Value of H shown

• **16:9 mode**

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right edges	0.00 to 4.00 (SD) 0.00 to 16.00 (HD)
2	V	Simultaneously adjust width of top and bottom edges	0.00 to 2.25 (SD) 0.00 to 9.00 (HD)
3	All	Simultaneously adjust width of all four edges	Value of H shown

4 In the <Edge Mode> group, select the type of edge.

Light: effect of light striking the edge

Knob	Parameter	Adjustment	Setting values
1	Top	Adjust luminance of top edge	–100.00 to +100.00
2	Left	Adjust luminance of left edge	–100.00 to +100.00
3	Right	Adjust luminance of right edge	–100.00 to +100.00
4	Bottom	Adjust luminance of bottom edge	–100.00 to +100.00
5	All	Simultaneously adjust luminance of all four edges	Value of Left shown

Color: colored edges. When this is selected, set the following parameters in the <Color Adjust> group.

• **To set the density**

Knob	Parameter	Adjustment	Setting values
1	Density	Adjust the color density	0.00 to 100.00

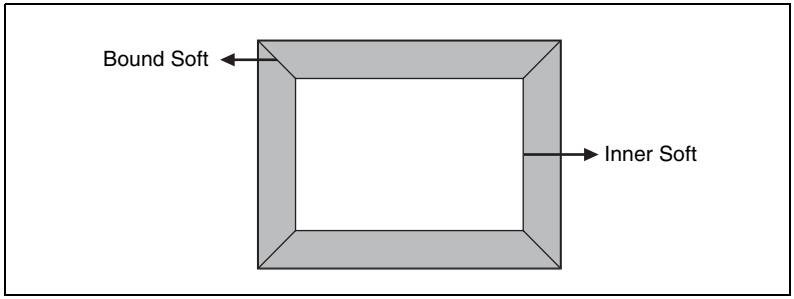
• **To set the colors for each edge (Top, Left, Right, Bottom, All)**

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00 a)
2	Saturation	Saturation	0.00 to 100.00 a)
3	Hue	Hue	359.99 to 0.00 a)

a) For the All adjustment, the value for Left is shown.

5 To soften the inside of the edges and the boundaries between adjacent edges, turn on [Edge Soft], and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Inner Soft	Softness of the inside of edges	0.00 to 100.00
2	Bound Soft	Softness of the edge boundaries	0.00 to 100.00



Key Border Settings

Notes

The Key Border function is not supported on the MVE-8000A.

Applying key borders

1 In the DME menu, select VF1 ‘Edge’ and HF3 ‘Key Border.’

The Key Border menu appears.

2 Press [Key Border], turning it on.

This enables key borders, and you can now use the knobs to adjust the parameters.

Notes

The key border function and Glow function *(see page 547)* cannot be turned on at the same time. Only the one most recently turned on is effective.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right key borders	0.00 to 100.00
2	V	Simultaneously adjust width of top and bottom key borders	0.00 to 100.00
3	All	Simultaneously adjust width of all four key borders	Value of H shown
4	Soft	Softness of the key borders	0.00 to 100.00
5	Density	Density of the key borders	0.00 to 100.00

4 To set the key border color, press [Flat Color] and adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

To select an outline only key

Press [Outline], turning it on.
The outline only effect is enabled.

Art Edge Settings

Notes

The Art Edge function is not supported on the MVE-8000A.

Applying art edges

1 In the DME menu, select VF1 ‘Edge’ and HF4 ‘Art Edge.’

The Art Edge menu appears.

2 Press [Art Edge], turning it on.

This enables art edges, and you can now use the knobs to adjust the parameters.

Notes

The Defocus, Blur, Key Border, and Glow effects cannot be applied to the Art Edge sections.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

- **4:3 mode**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right edges	Value of Left shown
2	V	Simultaneously adjust width of top and bottom edges	Value of Top shown
3	All	Simultaneously adjust width of all four edges	Value of Left shown
5	Density	Density of edges	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Width of top edge	0.00 to 6.00 (SD) 0.00 to 18.00 (HD)
2	Left	Width of left edge	0.00 to 8.00 (SD) 0.00 to 24.00 (HD)
3	Right	Width of right edge	0.00 to 8.00 (SD) 0.00 to 24.00 (HD)
4	Bottom	Width of bottom edge	0.00 to 6.00 (SD) 0.00 to 18.00 (HD)
5	Density	Density of edges	0.00 to 100.00

- **16:9 mode**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust width of left and right edges	Value of Left shown
2	V	Simultaneously adjust width of top and bottom edges	Value of Top shown
3	All	Simultaneously adjust width of all four edges	Value of Left shown
5	Density	Density of edges	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Width of top edge	0.00 to 4.50 (SD) 0.00 to 18.00 (HD)

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
2	Left	Width of left edge	0.00 to 8.00 (SD) 0.00 to 32.00 (HD)
3	Right	Width of right edge	0.00 to 8.00 (SD) 0.00 to 32.00 (HD)
4	Bottom	Width of bottom edge	0.00 to 6.00 (SD) 0.00 to 18.00 (HD)
5	Density	Density of edges	0.00 to 100.00

Adjusting the position of art edges

1 In the Art Edge menu, press [Edge Position], turning it on.

2 Adjust the following parameters.

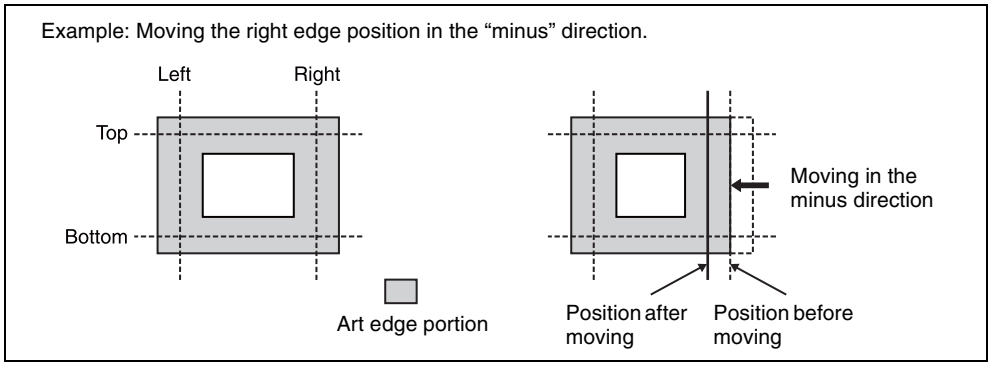
The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top edge	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
2	Left	Position of left edge	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
3	Right	Position of right edge	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
4	Bottom	Position of bottom edge	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
5	All	Adjust the position of all four edges	Value of H shown

• 16:9 mode

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top edge	–2.25 to +2.25 (SD) –9.00 to +9.00 (HD)
2	Left	Position of left edge	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
3	Right	Position of right edge	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
4	Bottom	Position of bottom edge	–2.25 to +2.25 (SD) –9.00 to +9.00 (HD)
5	All	Adjust the position of all four edges	Value of H shown



Softening the inner and outer sides of art edges

1 In the Art Edge menu, press [Soft], turning it on.

2 Adjust the following parameters.

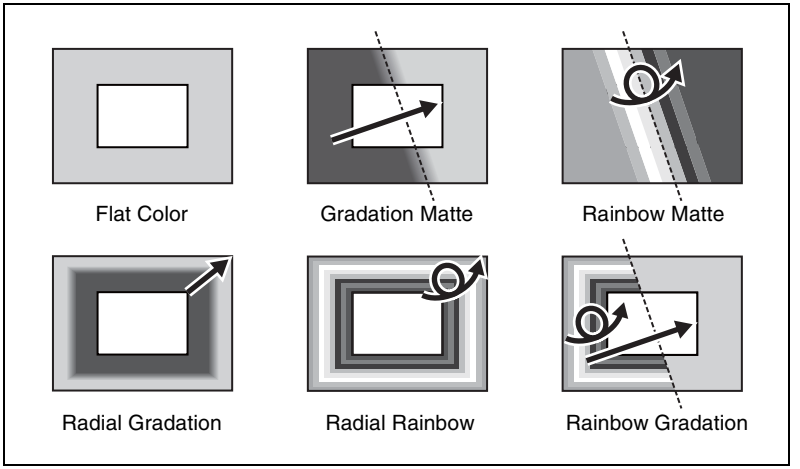
Knob	Parameter	Adjustment	Setting values
1	Inner H	Simultaneously adjust softness of left and right inner edges	0.00 to 100.00
2	Inner V	Simultaneously adjust softness of top and bottom inner edges	0.00 to 100.00
3	Outer H	Simultaneously adjust softness of left and right outer edges	0.00 to 100.00
4	Outer V	Simultaneously adjust softness of top and bottom outer edges	0.00 to 100.00
5	All	Simultaneously adjust softness of all inner and outer edges.	Value of Outer H shown

Setting the way in which art edge colors change

1 In the <Art Edge Source> group of the Art Edge menu, select the color pattern to apply to the art edges.

Flat Color: Uses Color 1 *(see page 520)* as a flat color.
Gradation Matte: Color 1 changes to Color 2 *(see page 520)* at the border lines *(see step **2** (page 518))*.
Rainbow Matte: The color set as Color 1 changes hue into color on the border lines.
Radial Gradation: Color 1 on the inner side is mixed into Color 2 on the outer side, according to the shape of the art edge.
Radial Rainbow: The hue of Color 1 on the inner side changes into Color 2 on the outer side, according to the shape of the art edge.

Rainbow Gradation: Color 3 *(see "Color 3 settings" (page 521))* overwrites Radial Rainbow, giving a gradation effect.



2 When you select other than [Flat Color], set the gradation border lines for the selected pattern.

Border line parameters for Gradation Matte and Rainbow Matte

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of gradation border in horizontal direction	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	V	Position of gradation border in vertical direction	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
3	Soft	Softness of gradation border region	0.00 to 100.00

• 16:9 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of gradation border in horizontal direction	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	V	Position of gradation border in vertical direction	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
3	Soft	Softness of gradation border region	0.00 to 100.00

Radial Gradation and Radial Rainbow parameters

Knob	Parameter	Adjustment	Setting values
3	Soft	Softness of gradation border region	0.00 to 100.00

Rainbow Gradation parameters

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

- **4:3 mode**

Knob	Parameter	Adjustment	Setting values
1	H	Position of gradation border in horizontal direction	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	V	Position of gradation border in vertical direction	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
3	RBW Soft	Softness of rainbow border region	0.00 to 100.00
4	GRD Soft	Softness of gradation border region	0.00 to 100.00

- **16:9 mode**

Knob	Parameter	Adjustment	Setting values
1	H	Position of gradation border in horizontal direction	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	V	Position of gradation border in vertical direction	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
3	RBW Soft	Softness of rainbow border region	0.00 to 100.00
4	GRD Soft	Softness of gradation border region	0.00 to 100.00

3 When Gradation Matte or Rainbow Matte is selected, set modifiers as required.

- **When turning [Angle] on in the <Rotation> group and slanting the pattern**

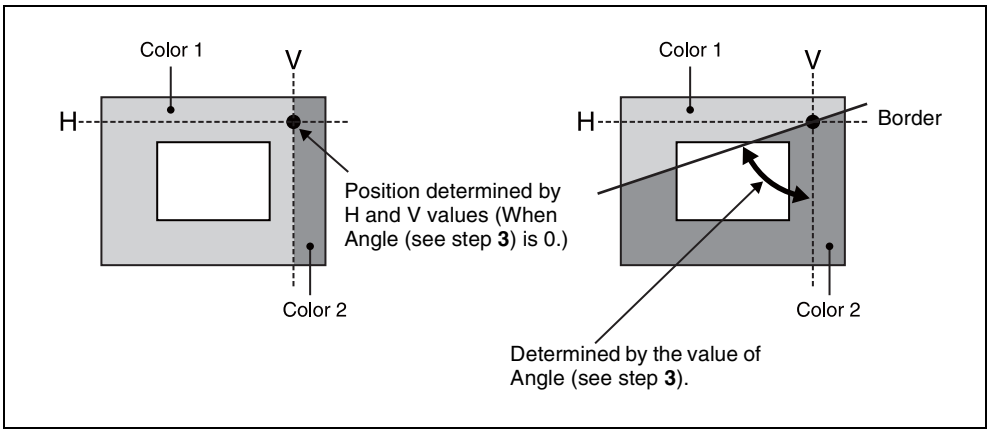
Knob	Parameter	Adjustment	Setting values
1	Angle	Rotation angle of pattern	–8.00 to +8.00 a)

a) –1.00 is one rotation in counterclockwise direction. +1.00 is one rotation in clockwise direction. 0.00 is no rotation.

- **When turning [Speed] on in the <Rotation> group and rotating the pattern at a specified speed**

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation speed of pattern	–100.00 to +100.00 a)

a) –100.00 is four rotations per second in counterclockwise direction. +100.00 is four rotations per second in clockwise direction. 0.00 is no rotation.



Setting art edge colors

1 In the Art Edge menu, turn on the button (Color 1 to Color 3) for the color for which you want to make settings in the <Color Adjust> group.

2 Adjust the following parameters.

- **Color 1 settings**

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

- **Color 2 settings**

Notes

Color 2 cannot be set when [Flat Color] is selected in the <Art Edge Source> group.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue Offset	Hue range	–540.0 to +540.0

• **Color 3 settings**

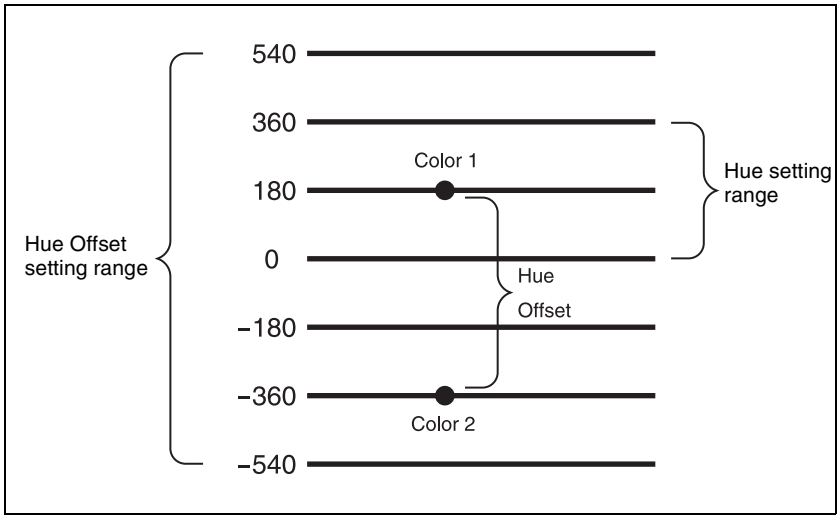
Notes

Color 3 can be set only when [Rainbow Gradation] is selected in the <Art Edge Source> group.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue Offset	Hue range	–540.0 to +540.0

Relationship between Hue and Hue Offset

For example, when the Hue value of Color 1 is 180.00, and the Hue Offset value of Color 2 is –540.00, the relationship is as shown below, with the hue changing within the Hue Offset range of Color 1 and Color 2.



Rounding art edge corners

Press [Round Corner], turning it on.

The art edge corners on the inner and outer sides are rounded.

Notes

This function is available only when [Soft] is on.

Flex Shadow Settings

Notes

- The Flex Shadow function is not supported on the MVE-8000A.
- "Mix Color" or "Ext Video" can only be applied to one of the background *(see page 619)*, flex shadow, trail *(see page 591)*, and wind *(see page 599)* effects.
  If you select "Mix Color" or "Ext Video" in one of these settings, a selection of "Mix Color" or "Ext Video" in any of the other effects is disabled, and "Flat Color" is selected in its place.
- When executing combining four channels of DME images, "Mix Color" and "Ext Video" in the flex shadow and background effects cannot be selected.

Applying a flex shadow

1 In the DME menu, select VF1 'Edge' and HF5 'Flex Shadow.'

The Flex Shadow menu appears.

2 Press [Flex Shadow], turning it on.

This enables flex shadows, and you can now use the knobs to adjust the parameters.

Notes

The Flex shadow function cannot be enabled when the following functions are enabled.

- Any nonlinear effect
- Brick
- Shadow

3 Adjust the following parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

- **4:3 mode**

Knob	Parameter	Adjustment	Setting values
1	H	Move shadow horizontally	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	V	Move shadow vertically	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
3	Size All	Enlarge or shrink horizontally and vertically	Value of Size H *(see page 524)* shown

Knob	Parameter	Adjustment	Setting values
4	Soft a)	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

a) The Soft parameter is valid only when [Internal] is selected in the <Flex Shadow Source> group.

- **16:9 mode**

Knob	Parameter	Adjustment	Setting values
1	H	Move shadow horizontally	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	V	Move shadow vertically	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
3	Size All	Enlarge or shrink horizontally and vertically	Value of Size H *(see page 524)* shown
4	Soft a)	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

a) The Soft parameter is valid only when [Internal] is selected in the <Flex Shadow Source> group.

4 In the <Flex Shadow Source> group, select the signal to use for the flex shadow.

External: Generate the shadow using an input signal.
Internal: Generate the shadow using a full-size key signal.

5 In the <Flex Shadow Fill> group, select the signal to insert in the flex shadow.

Flat Color: single color
Mix Color: mix color signal set in the Color Mix menu *(see page 533)*
Ext Video: an external video signal input to the Ext IN connector

6 Only if Flat Color is selected in step **5**, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Adjusting the size of the flex shadow

1 In the Flex Shadow menu, press [Size], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size H	Enlarge or shrink horizontally	0.00 to 2.00
2	Size V	Enlarge or shrink vertically	0.00 to 2.00
3	Size All	Enlarge or shrink horizontally and vertically	Value of Size H shown
4	Soft [a)]	Softness of shadow	0.00 to 100.00
5	Density	Density of shadow	0.00 to 100.00

a) The Soft parameter is valid only when [Internal] is selected in the <Flex Shadow Source> group.

Setting the center point of the flex shadow

1 In the Flex Shadow menu, press [Axis Loc], turning it on.

2 Adjust the following parameters.

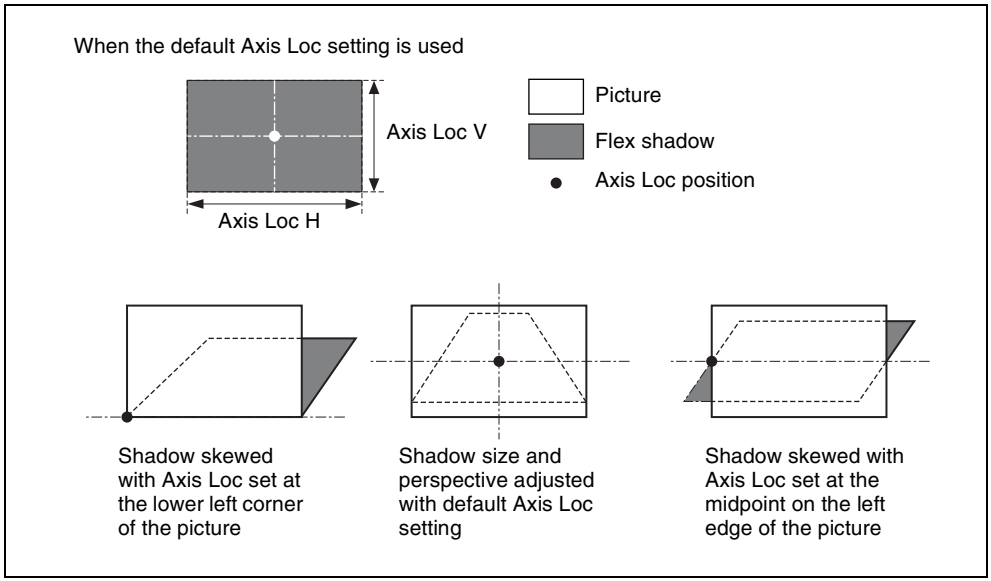
The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	Axis Loc H	Move the shadow center axis horizontally	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	Axis Loc V	Move the shadow center axis vertically	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)

• 16:9 mode

Knob	Parameter	Adjustment	Setting values
1	Axis Loc H	Move the shadow center axis horizontally	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	Axis Loc V	Move the shadow center axis vertically	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)



The flex shadow central axis appears when the [Flex Shadow Axis] function is enabled in the Graphic menu.

For details, see "Graphics Display Operation" (page 489).

Skewing the flex shadow

1 In the Flex Shadow menu, press [Skew], turning it on.

2 Adjust the following parameters.

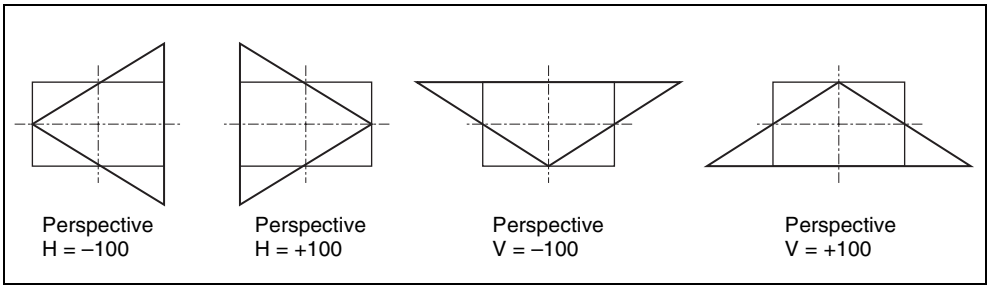
Knob	Parameter	Adjustment	Setting values
1	Skew H	Skew horizontally	–100.00 to +100.00
2	Skew V	Skew vertically	–100.00 to +100.00

Adding perspective to the flex shadow

1 In the Flex Shadow menu, press [Perspective], turning it on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Perspective H	Add horizontal perspective	–100.00 to +100.00
2	Perspective V	Add vertical perspective	–100.00 to +100.00

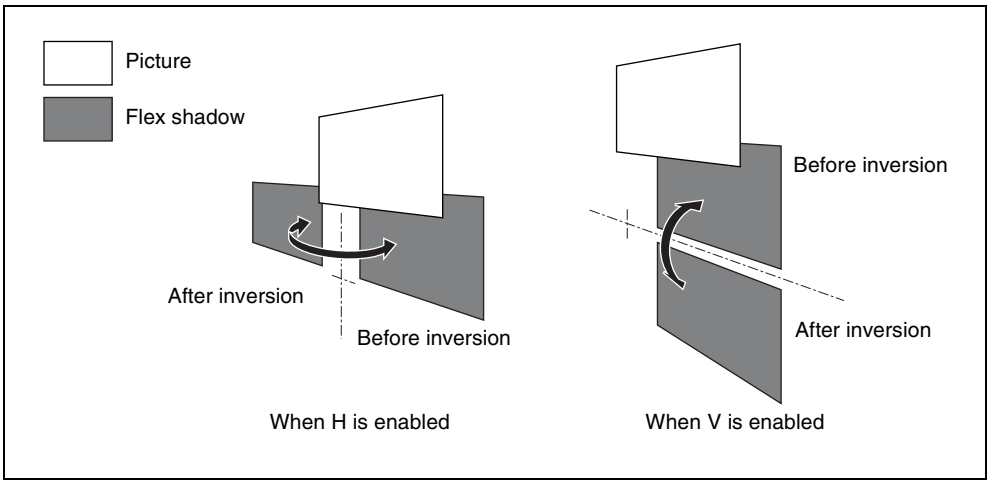


Inverting the flex shadow

In the <Invert> group of the Flex Shadow menu, select the direction to invert the shadow.

H: Invert the shadow in the horizontal direction. The inversion is applied around the axis of the knob 2 parameter Axis Loc V set with [Axis Loc].

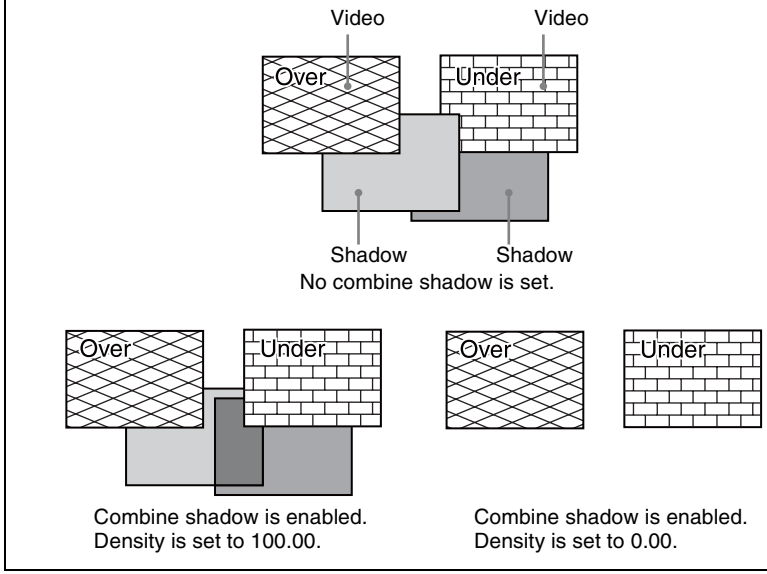
V: Invert the shadow in the vertical direction. The inversion is applied around the axis of the knob 1 parameter Axis Loc H set with [Axis Loc].



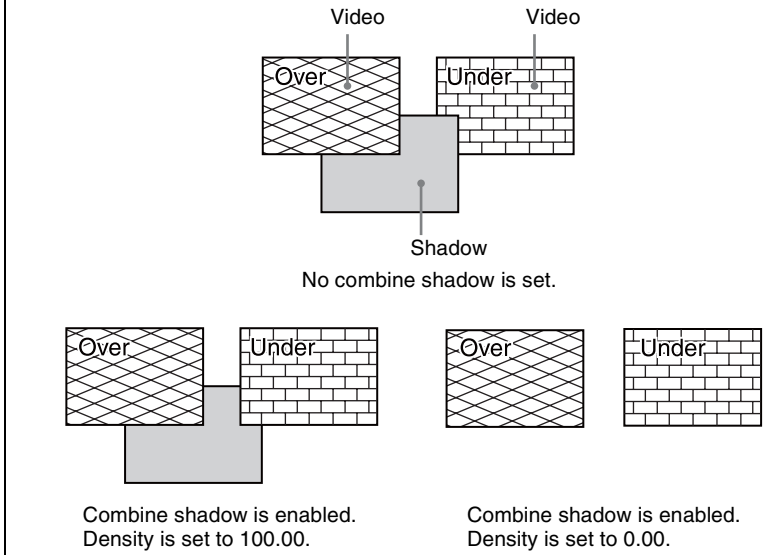
Setting a combine shadow

When there are several images, adds a flex shadow in the depth of an image or overlays multiple flex shadows.

Example 1: When Flex Shadow is enabled on both of two channels.



Example 2: Flex Shadow is enabled on one channel only.



1 In the Flex Shadow menu, press [Combine Shadow], turning it on.

2 Adjust the following parameter.

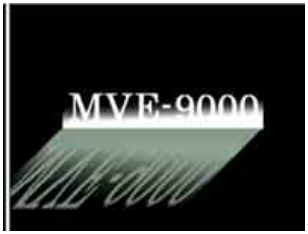
Knob	Parameter	Adjustment	Setting values
1	Density	Density of combine shadow	0.00 to 100.00

Notes

- The Combine Shadow effect is applied to all shadows, not only the sections where shadows overlap.
- Combine Shadow is enabled when the Flex Shadow effect and the global effect Combiner are enabled. In this state, Combine Shadow remains enabled even if the global effect is disabled.
- In Combine Shadow, the settings for the channel with the lowest number among the channels being combined are enabled.

Flex shadow creation example

The flow of flex pattern creation will be explained using the following pattern as an example.



1 Press [Flex Shadow], turning it on.

2 In the <Flex Shadow> group, select [External].

3 Turn [Axis Loc] on and use knob 2 to set the Axis Loc V parameter so that the center of the flex shadow deformation is at the bottom of the picture.

(For HD format and 16: 9 mode: Axis Loc V = –9.00)

The following steps will be easier if you display the flex shadow axis graphic by pressing [Flex Shadow Axis] in the Graphic menu.

4 Press [V] in the <Invert> group, turning it on, to invert the flex shadow horizontally.

5 Turn [Size] on and use knob 2 to set the Size V parameter so that the shadow extends vertically.

(For HD format and 16: 9 mode: Size V = 1.50)

6 Press [Skew], turning it on, and use knob 1 to set the Skew H parameter so that the parallel lines appear to emerge from the depth at the right.

(For HD format and 16:9 mode: Skew H = –50.00)

Wipe Crop Settings

Notes

- The wipe crop function is not supported on the MVE-8000A.
- When wipe crop is on, any mask that was on is turned off.
- When brick is on, wipe crop cannot be turned on. To turn wipe crop on, it is first necessary to turn brick off.
- In the <Shaped Video> group of the Video/Key menu, when [Output] is off, unless you set [Bkgd] in the HF1 'Bkgd' menu to on, the wipe crop effect will not function.

Applying the wipe crop effect

To select the pattern

1 In the DME menu, select VF1 'Edge' and HF6 'Wipe Crop.'

The Wipe Crop menu appears.

2 Press [Wipe Crop], turning it on.

3 Press [Pattern Select].

The Pattern Select menu appears.

4 From the displayed patterns (standard wipe patterns 1 to 24 and 304), press any pattern to select it.

In this state, you can use the knobs to adjust the size of the pattern. *(For details of parameters, see the next item.)*

To set the pattern size and position

1 In the Wipe Crop menu, press [Position/Size].

2 Set the following parameters.

The setting range for the parameters depends on the signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

- **For SD format**

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–8.00 to +8.00
2	V	Vertical position	–6.00 to +6.00 a) –4.50 to +4.50 b)
3	Size	Pattern size	0.00 to 100.00
5	Pattern	Pattern number	1 to 24, 304

a) For 4:3 mode
b) For 16:9 mode

Notes

When pattern number 304 is selected, the effect of settings in the <Edge> group varies with the Size setting.

- **For HD format**

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–24.00 to +24.00 a) –32.00 to +32.00 b)
2	V	Vertical position	–18.00 to +18.00
3	Size	Pattern size	0.00 to 100.00
5	Pattern	Pattern number	1 to 24, 304

a) For 4:3 mode
b) For 16:9 mode

Notes

When pattern number 304 is selected, the effect of settings in the <Edge> group varies with the Size setting.

To invert the regions of the cropping

In the Wipe Crop menu, press [Invert], turning it on.

Setting the aspect ratio of the wipe crop pattern (Aspect)

1 In the Wipe Crop menu, press [Aspect], turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) When set to a negative value, the image is stretched vertically, to become taller. When set to a positive value, the image is stretched horizontally, to become wider.

Rotating the wipe crop pattern (Rotation)

1 In the <Rotation> group of the Wipe Crop menu, select one of the following.

Angle: Incline the pattern through a fixed angle.
Speed: Rotate the pattern at a fixed speed.

2 Depending on the selection in step **1**, set the following parameter.

- **When Angle is selected**

Knob	Parameter	Adjustment	Setting values
1	Angle	Angle of pattern rotation	–8.00 to +8.00 a)

a) –1.00 represents a whole turn counterclockwise, and +1.00 represents a whole turn clockwise. 0.00 is the original state.

- **When Speed is selected**

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation rate of pattern	–100.00 to +100.00 a)

a) –100.00 represents a speed of four whole turns counterclockwise per second, and +100.00 represents a speed of four whole turns clockwise per second. 0.00 is the stationary state.

Applying modulation to the wipe crop pattern (Modulation)

1 In the <Modulation> group of the Wipe Crop menu, select one of the following.

H (horizontal modulation): Modulate the pattern to apply waving in the horizontal direction.
V (vertical modulation): Modulate the pattern to apply waving in the vertical direction.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Amplitude	Amplitude of modulation	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	Frequency	Frequency of modulation	0.00 to 100.00
3	Speed	Speed of waves	–100.00 to +100.00

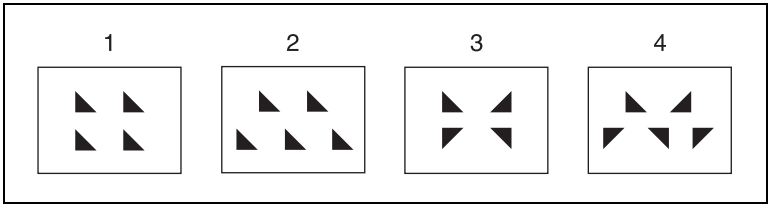
Replicating the wipe crop pattern (Multiplication)

1 In the Wipe Crop menu, press [Multi], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H Multi	Number of repetitions of pattern horizontally	1 to 63
2	V Multi	Number of repetitions of pattern vertically	1 to 63
3	Invert Type	Replication layout	1 to 4 a)

a) See the following figure.



Modifying the wipe crop pattern edge

You can apply a border to the wipe crop pattern, or soften the boundary.

1 In the <Edge> group of the Wipe Crop menu, select one of the following.

Border: border
Soft: soft edge
Soft Border: soft border

2 Depending on the selection in step **1**, set the following parameters.

- **When Border is selected**

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00

• **When Soft is selected**

Knob	Parameter	Adjustment	Setting values
1	Soft	Edge softness	0.00 to 100.00

• **When Soft Border is selected**

Knob	Parameter	Adjustment	Setting values
1	Width	Border width	0.00 to 100.00
2	Inner Soft	Border inner softness	0.00 to 100.00
3	Outer Soft	Border outer softness	0.00 to 100.00

Selecting the signal or color to be inserted in the wipe crop border

When you are applying a border or soft border to the wipe crop, you can select the signal or color to be inserted in the border.

1 In the <Border Fill> group of the Wipe Crop menu, select one of the following.

Flat Color: flat color
Mix Color: a mix color signal combining color 1 and color 2 *(see the next section, "Color Mix Settings")*
Ext Video: an external video signal input to the Ext IN connector

2 When Flat Color is selected in step **1** only, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Color Mix Settings

Notes

The color mix function is not supported on the MVE-8000A.

Creating a color combination pattern

To select the pattern

1 In the DME menu, select VF1 ‘Edge’ and HF7 ‘Color Mix.’

The Color Mix menu appears.

2 Press [Mix Pattern Select].

The Mix Pattern Select menu appears.

3 Press any of the displayed patterns (standard wipe patterns 1 to 24) to select it.

In this state, you can adjust the pattern size and border softness with the knobs.

(For details of the parameters, see the next item.)

To set the pattern size and position

1 In the Color Mix menu, press [Position/Size].

2 Set the following parameters.

The setting range for the parameters depends on the system selected signal format (SD/HD) and aspect ratio (4:3/16:9), as follows.

- **For SD format**

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–8.00 to +8.00
2	V	Vertical position	–6.00 to +6.00 a) –4.50 to +4.50 b)
3	Size	Pattern size	0.00 to 100.00
4	Soft	Softness of the pattern	0.00 to 100.00
5	Pattern	Pattern number	1 to 24

a) For 4:3 mode
b) For 16:9 mode

- **For HD format**

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–24.00 to +24.00 a) –32.00 to +32.00 b)

Knob	Parameter	Adjustment	Setting values
2	V	Vertical position	–18.00 to +18.00
3	Size	Pattern size	0.00 to 100.00
4	Soft	Softness of the pattern	0.00 to 100.00
5	Pattern	Pattern number	1 to 24

a) For 4:3 mode
b) For 16:9 mode

To invert the regions of the two colors

In the Color Mix menu, press [Color Invert], turning it on.

Adjusting the color 1 and color 2

1 In the Color Mix menu, to adjust color 1 press [Color1], and to adjust color 2 press [Color2].

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Modifying the color combination pattern

See the following pages.

- *"Setting the aspect ratio of the wipe crop pattern (Aspect)" (page 530)*
- *"Replicating the wipe crop pattern (Multiplication)" (page 532)*
- *"Rotating the wipe crop pattern (Rotation)" (page 531)*
- *"Applying modulation to the wipe crop pattern (Modulation)" (page 531)*

Defocus Settings

Applying the Defocus effect

1 In the DME menu, select VF2 'Video Modify' and HF1 'Defocus/Blur.'

The Defocus/Blur menu appears.

2 Press [Defocus], turning it on.

The Defocus effect is enabled. You can adjust the defocusing of video and key signals with the knobs.

Notes

On the MVE-8000A, the Defocus and Glow effects cannot be enabled at the same time. The effect which was turned on most recently is enabled.

3 In the <Defocus Mode> group, select the signal to which to apply the defocus effect.

Video/Key: Video signal and key signal
Video: Video signal only

4 Set the parameters.

- **When Video/Key is selected**

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal defocusing of video and key signals	0.00 to 100.00
2	V	Vertical defocusing of video and key signals	0.00 to 100.00
3	All	Horizontal and vertical defocusing of video and key signals	H value shown

- **When Video is selected**

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal defocusing of video signal	0.00 to 100.00
2	V	Vertical defocusing of video signal	0.00 to 100.00
3	All	Horizontal and vertical defocusing of video signal	H value shown

5 To cancel black level leaking that can occur at the edge of the screen when the Defocus effect is enabled, press [Clean Defocus], turning it on.

Masking the Defocus effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers.

For details, see "Mask Settings" (page 548).

Blur Settings

Applying the Blur effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF1 ‘Defocus/Blur.’

The Defocus/Blur menu appears.

2 Press [Blur], turning it on.

The Blur effect is enabled. You can adjust the blurring of video and key signals with the knobs.

Notes

On the MVE-8000A, the Glow and Blur effects cannot be enabled at the same time. The effect which was turned on most recently is enabled.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal defocusing of video and key signals	0.00 to 100.00
2	V	Vertical defocusing of video and key signals	0.00 to 100.00
3	All	Horizontal and vertical defocusing of video and key signals	H value shown

Masking the Blur effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers.

For details, see “Mask Settings” (page 548).

Multi Move Settings

Applying the Multi Move effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF2 ‘Multi Move.’

The Multi Move menu appears.

2 Press [Multi Move], turning it on.

The Multi Move effect is enabled. You can adjust the center point of shrinking, the ratio of shrinking, and the aspect ratio of the shrunken images with the knobs.

3 Set the parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	Center X	x-value of shrinking center point	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
2	Center Y	y-value of shrinking center point	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
3	Size	Shrinking ratio	0.00 to 100.00
4	Aspect	Aspect ratio of shrunken images	–100.00 to +100.00 a)

a) Specify minus values to stretch the image in the vertical direction, and plus values to stretch the image in the horizontal direction.

• 16:9 mode

Knob	Parameter	Adjustment	Setting values
1	Center X	x-value of shrinking center point	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
2	Center Y	y-value of shrinking center point	–2.25 to +2.25(SD) –9.00 to +9.00 (HD)
3	Size	Shrinking ratio	0.00 to 100.00
4	Aspect	Aspect ratio of shrunken images	–100.00 to +100.00 a)

a) Specify minus values to stretch the image in the vertical direction, and plus values to stretch the image in the horizontal direction.

Sepia Settings

Applying the Sepia effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF3 ‘Color Modify.’

The Color Modify menu appears.

2 Press [Sepia], turning it on.

The Sepia effect is enabled. You can adjust the degree of mixing between the sepia image and the original image with the knobs.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Mix Y	Y signal mix amount	0.00 to 100.00
2	Mix C	Chroma signal mix amount	0.00 to 100.00
3	Mix All	Y signal and chroma signal mix amount	Mix Y value shown

4 To set the color of the sepia image, press [Sepia Color], turning it on, and adjust the parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Masking the Sepia effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers.

For details, see "Mask Settings" (page 548).

Mono Settings

Applying the Mono effect

1 In the DME menu, select VF2 'Video Modify' and HF3 'Color Modify.'

The Color Modify menu appears.

2 Press [Mono], turning it on.

The Mono effect is enabled. The color image changes to monochrome.

Masking the Mono effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers.

For details, see "Mask Settings" (page 548).

Posterization and Solarization Settings

You can specify the degree of luminance coarsening.
You can specify the degree of chroma coarsening.

Applying the Posterization or Solarization effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF3 ‘Color Modify.’

The Color Modify menu appears.

2 Press [Poster/Solar], turning it on.

The Posterization and Solarization effects are enabled. You can adjust the coarseness of the gradations with the knobs.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Poster	Coarseness of luminance gradations (Posterization parameter)	0.00 to 100.00
2	Solar	Coarseness of chroma gradations (Solarization parameter)	0.00 to 100.00

Masking the Posterization or Solarization effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers.

For details, see “Mask Settings” (page 548).

Nega Settings

Applying the Nega effect

1 In the DME menu, select VF2 ‘Video Modify’ and HF3 ‘Color Modify.’

The Color Modify menu appears.

2 Press [Nega Y] or [Nega C], turning it on, or press both buttons, turning them on.

Nega Y: Reverse the luminance.
Nega C: Reverse the chroma.

Masking the Nega effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers.

For details, see "Mask Settings" (page 548).

Contrast Settings

Applying the Contrast effect

1 In the DME menu, select VF2 'Video Modify' and HF3 'Color Modify.'

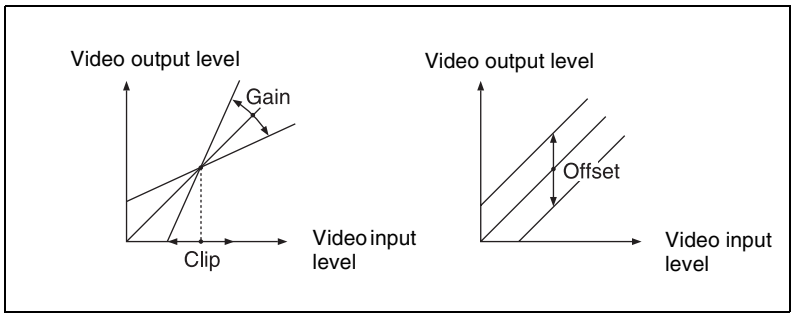
The Color Modify menu appears.

2 Press [Contrast], turning it on.

The Contrast effect is enabled. You can adjust the luminance and chroma contrast with the knobs.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Y Clip	Luminance clip level	+109.59 to –7.31
2	Y Gain	Luminance contrast gradient	–100.00 to +100.00
3	Y Offset	Luminance offset level increment	–100.00 to +100.00
4	C Gain	Chroma contrast gradient	–100.00 to +100.00



Clip, Gain, Offset

Masking the Contrast effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers.

For details, see "Mask Settings" (page 548).

Mosaic Settings

Applying the Mosaic effect

1 In the DME menu, select VF2 'Video Modify' and HF4 'Mosaic.'

The Mosaic menu appears.

2 Press [Mosaic], turning it on.

The Mosaic effect is enabled. You can adjust the size and aspect ratio of the mosaic tiles with the knobs.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Size	Size of tiles	0.00 to 100.00
2	Aspect	Aspect ratio of tiles	–100.00 to +100.00 a)

a) Specify minus values to stretch the tiles in the vertical direction, and plus values to stretch the tiles in the horizontal direction.

Masking the Mosaic effect with a selected pattern

Press [Mask] to display the Mask menu, and set the pattern type and modifiers.

For details, see "Mask Settings" (page 548).

Sketch Settings

Applying the Sketch effect

1 In the DME menu, select VF7 'Enhanced Video Modify' and HF1 'Sketch.'

The Sketch menu appears.

2 Press [Sketch], turning it on.

The Sketch effect is enabled.

3 Select the method for applying outlines in the <Sketch Mode> group.

Sketch: Apply an effect like a sketch.
Edge Color: Enhance the outlines.
Draw: Apply an effect like a line drawing.
Relief: Apply a bas-relief effect.
Sharp: Increase the apparent sharpness.

4 Set the following parameters, according to the method selected in step **3**.

- **When Sketch is selected**

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount for Sketch video and input video	0.00 to 100.00 a)
2	Clip	Reference level for outline extraction	–100.00 to +100.00 b)
3	Gain	Image gain for outline extraction	–100.00 to +100.00
4	C Gain	Chroma gain of input video	–100.00 to +100.00

a) 100.00 gives an image completely transformed by the Sketch effect. 0.00 is the original input image.
b) The larger the Clip value, the narrower the outline width.

- **When Edge Color is selected**

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount for Edge Color video and input video	0.00 to 100.00 a)
2	Clip	Reference level for outline extraction	–100.00 to +100.00 b)

a) 100.00 gives an image completely transformed by the Sketch effect. 0.00 is the original input image.
b) The larger the Clip value, the narrower the outline width.

- **When Draw is selected**

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount for Draw video and input video	0.00 to 100.00 a)
2	Clip	Reference level for outline extraction	–100.00 to +100.00 b)
3	Gain	Image gain for outline extraction	–100.00 to +100.00

a) 100.00 gives an image completely transformed by the Sketch effect. 0.00 is the original input image.

b) The larger the Clip value, the narrower the outline width.

• When Relief is selected

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount for Relief video and input video	0.00 to 100.00 a)
2	Offset	Relief luminance level	–100.00 to +100.00
3	Gain	Image gain for outline extraction	–100.00 to +100.00
4	Angle	Direction of relief image light source	–8.00 to +8.00

a) 100.00 gives an image completely transformed by the Sketch effect. 0.00 is the original input image.

• When Sharp is selected

Knob	Parameter	Adjustment	Setting values
1	H	Simultaneously adjust the left and right resolution	0.00 to 100.00
2	V	Simultaneously adjust the top and bottom resolution	0.00 to 100.00
3	All	Simultaneously adjust the resolution of all four sides	0.00 to 100.00
5	Coring	Minimum value of edge to emphasize	0.00 to 100.00

5 If you selected other than Sharp in step **3**, depending on the necessity, proceed as follows.

• To adjust the outline color for Edge Color or Draw

Turn [Edge Matte] on and set the following parameters to set the outline color.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

• To set the color of the sections other than the outlines for Draw

Press [Matte], turning it on, and adjust the following parameters to set the color of the sections other than the outlines.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

• **To select the signal to mix with the relief pattern for Relief**
In the <Chroma Type> group, select the signal to mix with the relief pattern.
Matte: Select a single color. The following parameters can be adjusted.

Knob	Parameter	Adjustment	Setting values
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Video: Select the input video signal.

6 To invert white and black in the extracted video, or to invert the outlines and the sections other than the outlines, press [Nega], turning it on.

Masking the Sketch effect with a selected pattern

Press [Mask] to display the Mask menu and set the type of pattern and modifiers.

For details, see "Mask Settings" (page 548).

Metal Settings

Applying the Metal effect

1 In the DME menu, select VF7 'Enhanced Video Modify' and HF2 'Metal.'

The Metal menu appears.

2 Press [Metal], turning it on.

This enables the Metal effect.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Mix Ratio	Mix amount for Metal video and input video	0.00 to 100.00
2	Y Clip	Clip level of input signal Y level	0.00 to 100.00
3	Y Gain	Amount of gain for clip adjusted input signal Y level	–100.00 to +100.00
4	Y Offset	Offset added to clip and gain adjusted input Y signal	0.00 to 100.00

4 In the <Metal Mode> group, select the type of metallic gloss.

Gold: Give a gold gloss to the input video.
Silver: Give a silver gloss to the input video.
Rainbow: Give a rainbow color gloss to the input video.
Variable: Give a metallic gloss to the input video in any color by adjusting the following parameters.

Knob	Parameter	Adjustment	Setting values
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Masking the Metal effect with a selected pattern

Press [Mask] to display the Mask menu and set the type of pattern and modifiers.

For details, see "Mask Settings" (page 548).

Dim and Fade Settings

Notes

The Dim and Fade functions are not supported on the MVE-8000A.

Applying the Dim effect

1 In the DME menu, select VF7 'Enhanced Video Modify' and HF3 'Dim & Fade.'

The Dim & Fade menu appears.

2 Press [Dim], turning it on.

This enables the Dim effect.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Start	Point where dimming starts (dim start point)	–100.00 to +100.00
2	Gain	Degree of dimming	0.00 to 100.00

4 Press [Flat Color] and set the parameters for the color of the depths of the picture.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Applying the Fade effect

1 In the DME menu, select VF7 ‘Enhanced Video Modify’ and HF3 ‘Dim & Fade.’

The Dim & Fade menu appears.

2 Press [Fade], turning it on.

This enables the Fade effect.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Start	Point where fading starts (fade start point)	–100.00 to +100.00
2	Gain	Degree of fading	0.00 to 100.00

Glow Settings

Applying the Glow effect

1 In the DME menu, select VF7 ‘Enhanced Video Modify’ and HF4 ‘Glow.’

The Glow menu appears.

2 Press [Glow], turning it on.

This enables the Glow effect.

Notes

- On the MVE-9000, the key border function and Glow function cannot be turned on at the same time. The function most recently turned on is effective.
- On the MVE-8000A, the Defocus and Glow effects or the Blur and Glow effects cannot be turned on at the same time. The effect most recently turned on is effective.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for highlight detection	0.00 to 100.00
2	Gain	Amount of gain for highlights	–100.00 to +100.00
3	Soft	Softness	0.00 to 100.00

4 Press [Matte] and set the glow color.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Inverting the highlight areas

Press [Glow Invert], turning it on.
The highlight and non-highlight areas are inverted.

Masking the Glow effect with a selected pattern

Press [Mask] to display the Mask menu and set the type of pattern and modifiers.

For details, see "Mask Settings" (page 548).

Mask Settings

Applying masks

1 In the DME menu, select VF2 'Video Modify' and HF7 'Mask.'

The Mask menu appears.

2 In the <Mask> group, press the button for the group of the effect to which you want to apply the mask, turning it on.

Effect Gp 1: Posterization, Solarization, Nega, Sepia, Mono, Contrast, Mosaic, Sketch, Metal
Effect Gp 2: Defocus, Blur, Glow

Notes

On the MVE-8000A, Effect Gp 1 and Effect Gp 2 cannot be turned on at the same time.

3 Press [Position/Size].

4 Set the mask source parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–8.00 to +8.00 (SD) –24.00 to +24.00 (HD)
2	V	Vertical position	–6.00 to +6.00 (SD) –18.00 to +18.00 (HD)
3	Size	Size of mask	0.00 to 100.00
4	Soft	Softness of mask	0.00 to 100.00
5	Pattern	Pattern number	21, 24, 304 a)

a) This setting value is not supported on the MVE-8000A.

• 16:9 mode

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal position	–8.00 to +8.00 (SD) –32.00 to +32.00 (HD)
2	V	Vertical position	–4.50 to +4.50 (SD) –18.00 to +18.00 (HD)
3	Size	Size of mask	0.00 to 100.00
4	Soft	Softness of mask	0.00 to 100.00
5	Pattern	Pattern number	21, 24, 304 a)

a) This setting value is not supported on the MVE-8000A.

5 To invert the mask source, press [Invert], turning it on.

6 As required, set the modifiers for the mask pattern.

• When turning [Aspect] on and adjusting the pattern aspect ratio

Knob	Parameter	Adjustment	Setting values
1	Aspect	Aspect ratio	–100.00 to +100.00 a)

a) When a minus value is specified, the picture is extended in the vertical direction. When a plus value is specified, the picture is extended in the horizontal direction.

- **When turning [Angle] on in the <Rotation> group and slanting the pattern**

Knob	Parameter	Adjustment	Setting values
1	Angle	Rotation angle of pattern	–8.00 to +8.00 a)

a) –1.00 is one rotation in counterclockwise direction. +1.00 is one rotation in clockwise direction. 0.00 is no rotation.

- **When turning [Speed] on in the <Rotation> group and rotating the pattern at a specified speed**

Knob	Parameter	Adjustment	Setting values
1	Speed	Rotation speed of pattern	–100.00 to +100.00 a)

a) –100.00 is four rotations per second in counterclockwise direction. +100.00 is four rotations per second in clockwise direction. 0.00 is no rotation.

Notes on applying a mask effect with a DME (only when using the MVE-9000)

In the <Mask> group of the DME >Video Modify >Mask menu, if [Effect Gp1] and [Effect Gp2] are simultaneously set to On, then the border or beveled edge is also masked.

The following explains this with the example of using a circular mask pattern.

Image 1: Image before applying mask

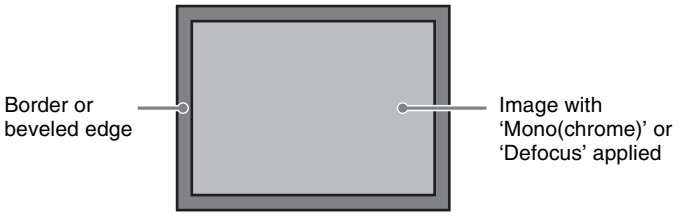
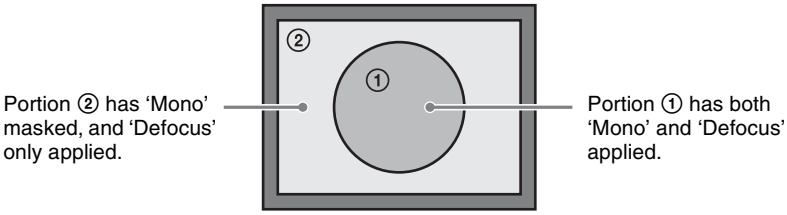


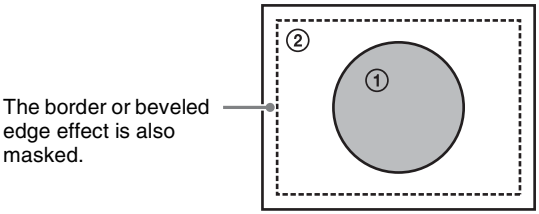
Image 2: State with [Effect Gp1] only set to On



⬇

In the state corresponding to image 2, if you switch [Effect Gp2] to On, then the mask should be applied to portion ② only, but in fact the border or beveled edge is also masked.

Image 3: State with [Effect Gp1] and [Effect Gp2] set to On



Freeze Settings

Freezes the input video. The following types are available:

Hard Freeze: Freezes the input video at an arbitrary timing.

Time Strobe: Freezes the input video at specified intervals for a specified length.

Film: Slows the apparent frame rate, for an effect like film. You can specify the ratio of advancement.

For Hard Freeze and Time Strobe, you can select the first field or the frame as the freeze timing.

Notes

When 720P or 1080P signal format is used, the Film mode cannot be selected.

To apply a Freeze effect, start by displaying the Freeze menu. In the DME menu, select VF3 'Freeze' and HF1 'Freeze.'

Applying the Hard Freeze effect

1 In the <Freeze Timing> group, select the signal freeze timing.

Frame: Freeze one frame of signal.
Field 1: Freeze the first field of signal.

2 In the <Freeze> group, press [Hard Freeze], turning it on.

The Hard Freeze is executed, displaying a still image.

Applying the Time Strobe effect

1 In the <Freeze Timing> group, select the signal freeze timing.

Frame: Freeze one frame of signal.
Field 1: Freeze the first field of signal.

Notes

The freeze timing setting is not required when the following signal formats are being used.
Signal formats: 1080P/50, 1080P/59.94, 1080PsF/23.976, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

2 In the <Freeze> group, press [Time Strobe], turning it on.

The Time Strobe freeze is enabled. You can adjust the freeze interval and the ratio of live video inserted between freeze images.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Duration	Freeze interval	1 to 255 (frames)
2	Live	Ratio of live video inserted between freeze images	0.00 to 100.00

Applying the Film effect

Notes

When 720P or 1080P signal format is used, the Film mode cannot be selected.

1 In the <Freeze> group, press [Film], turning it on.

The Film freeze is enabled. You can adjust the ratio of frame advance.

2 Set the parameter.

Knob	Parameter	Adjustment	Setting values
1	Film	Ratio of frame advance	0.00 to 100.00

Nonlinear Effect Settings

You can add a variety of effects, including effects that change the shape of the image as a whole.

1 In the DME menu, select VF4 'Non Linear/Corner Pin' and HF1 'Non Linear.'

A menu for selecting the various effects appears.

2 Display the menu for the effect that you want to apply by pressing its button.

The effect displayed is enabled.

3 Make the settings for the selected effect.

Notes

- It is not possible to apply two or more nonlinear effects at the same time. Turning any nonlinear effect on automatically turns all other nonlinear effects off.
- The Flex Shadow function cannot be enabled when any of the nonlinear effects Page Turn, Roll, Cylinder, and Sphere is enabled. However, the Flex Shadow function is not supported on the MVE-8000A.

To turn an effect off

In the setting menu, press the button for the effect name, turning it off, or in the Type menu press [OFF] in the lower right part of the window.

Wave settings

There are two modes: H&V and Size. You can set the size and frequency of the waves, the wave form, the amount of wave movement, and the range. In H&V mode, you can also set the wave angle.

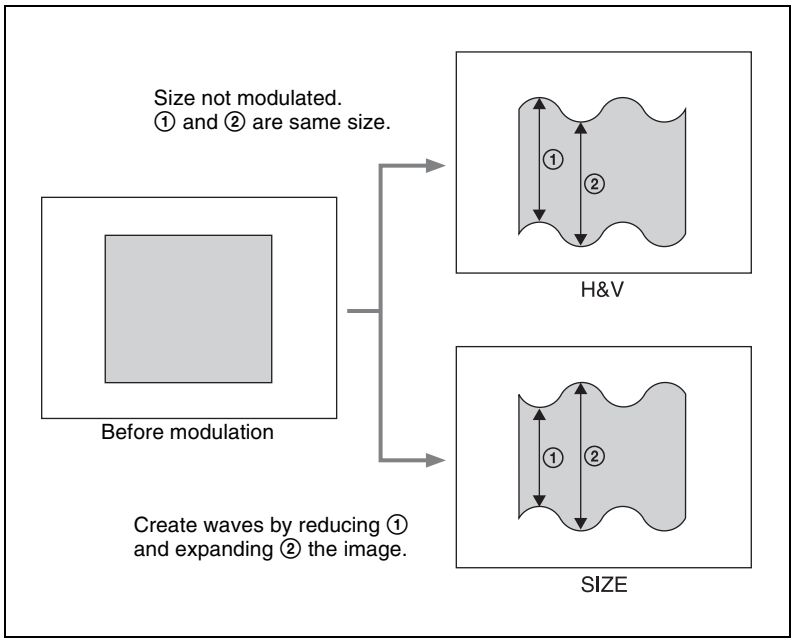
To apply the Wave effect

With the Wave menu displayed, use the following procedure.

1 In the <Mode> group, select the wave modulation mode.

H&V: Modulate vertically and horizontally without changing the size of the image. This mode allows waves to be created in both the vertical and horizontal directions at the same time.

Size: Create waves by reducing and expanding the image. This mode allows waves to be created in one direction only.



2 Set the following parameters, according to the selected mode.

- **When H&V is selected**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Amp H	Amplitude of waves in horizontal direction	0.00 to 100.00
2	Freq H	Frequency of waves in horizontal direction	0.00 to 100.00
3	Offset H [a)]	Horizontal direction in which to offset wave phase and amount of movement	–16.00 to +16.00 [c)] –64.00 to +64.00 [d)]
4	Speed H [b)]	Horizontal direction and speed of waves	–100.00 to +100.00
5	Slant	Slant of waves	–8.000 to +8.000

Parameter group [2/2]

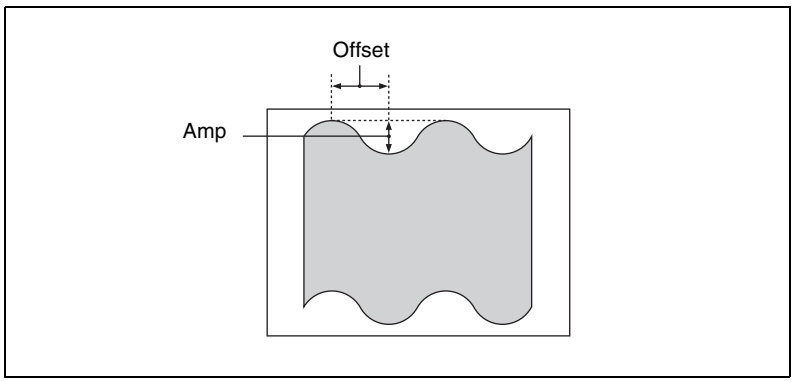
Knob	Parameter	Adjustment	Setting values
1	Amp V	Amplitude of waves in vertical direction	0.00 to 100.00
2	Freq V	Frequency of waves in vertical direction	0.00 to 100.00
3	Offset V a)	Vertical direction in which to offset wave phase and amount of movement	–16.00 to +16.00 c) –64.00 to +64.00 d)
4	Speed V b)	Vertical direction and speed of waves	–100.00 to +100.00
5	Slant	Slant of waves	–8.000 to +8.000

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

- **When Size is selected**

Knob	Parameter	Adjustment	Setting values
1	Amp H	Amplitude of waves	0.00 to 100.00
2	Freq H	Frequency of waves	0.00 to 100.00
3	Offset H a)	Direction in which to offset wave phase and amount of movement	–16.00 to +16.00 c) –64.00 to +64.00 d)
4	Speed H b)	Direction and speed of waves	–100.00 to +100.00
5	Slant	Slant of waves	–8.000 to +8.000

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9



To stop the waves

Press [Lock], turning it on.
With each press, the waves alternately stop and start moving again.

To select the waveform

Press [Form] and set the following parameters.

• When H&V mode is selected

Knob	Parameter	Adjustment	Setting values
1	Form H	Waveform in horizontal direction	1 to 6 a)
2	Form V	Waveform in vertical direction	1 to 6 a)

• When Size mode is selected

Knob	Parameter	Adjustment	Setting values
1	Form H	Waveform	1 to 6 a)

a) 1 (SINE): Sine wave
2 (PARABOLA): Parabola wave
3 (TRIANGLE): Triangular wave
4 (RECTANGLE): Rectangular wave
5 (CIRCLE): Circular wave
6 (CUBIC): Cubic wave

To randomize the modulated waveform

1 Press [Random], turning it on.

2 Set the following parameters.

• When H&V mode is selected

Knob	Parameter	Adjustment	Setting values
1	Random H	Degree of randomness in horizontal waveform modulation	0.00 to 100.00
2	Random V	Degree of randomness in vertical waveform modulation	0.00 to 100.00
3	Random All	Degree of randomness in both vertical and horizontal directions	Random H value shown

• When Size mode is selected

Knob	Parameter	Adjustment	Setting values
1	Random H	Degree of randomness in waveform modulation	0.00 to 100.00

To limit the wave range

1 Press [Range], turning it on.

2 Set the following parameters.

- **When H&V mode is selected**

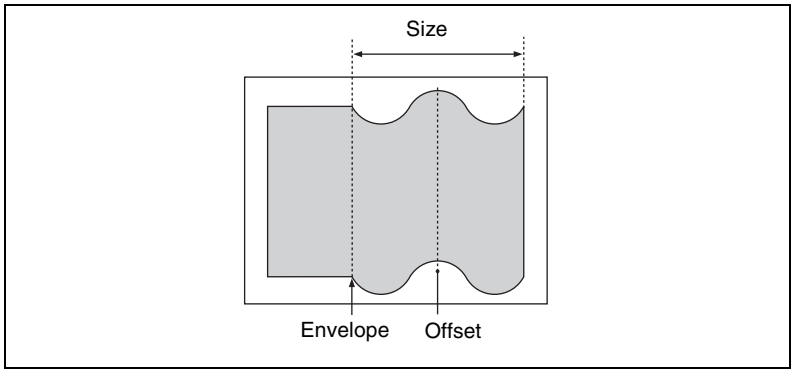
Knob	Parameter	Adjustment	Setting values
1	Size H	Amount of horizontal wave modulation	0.00 to 100.00
2	Offset H	Center point of horizontal modulation range	–8.000 to +8.000 a) –32.000 to +32.000 b)
3	Size V	Amount of vertical wave modulation	0.00 to 100.00
4	Offset V	Center point of vertical modulation range	–8.000 to +8.000 a) –32.000 to +32.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

- **When Size mode is selected**

Knob	Parameter	Adjustment	Setting values
1	Size H	Amount of wave modulation	0.00 to 100.00
2	Offset H	Center point of modulation range	–8.000 to +8.000 a) –32.000 to +32.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9



To smooth the range envelope when the wave range is limited

1 Press [Range Envelope], turning it on.

2 Set the following parameters.

- **When H&V mode is selected**

Knob	Parameter	Adjustment	Setting values
1	Envelope H	Smoothness of envelope in horizontal direction	0.00 to 100.00
2	Envelope V	Smoothness of envelope in vertical direction	0.00 to 100.00

- **When Size mode is selected**

Knob	Parameter	Adjustment	Setting values
1	Envelope H	Smoothness of envelope	0.00 to 100.00

To reverse the wave range

To reverse the horizontal wave range set with [Range]: Press [Range Rev H], turning it on.

To reverse the vertical wave range set with [Range]: Press [Range Rev V], turning it on.

Mosaic Glass settings

There are two modes: H&V and Size. You can set the size and frequency of waves in the image, the wave form, the amount of wave movement, and the range. In H&V mode, you can also set the wave angle.

To apply the Mosaic Glass effect

Display the Mosaic Glass menu.

The items displayed in the Mosaic Glass menu and the functions of the knobs are the same as for the Wave menu.

For more information about how to make settings, see "Wave settings" (page 553).

Flag settings

There are two modes: H&V and Size. You can set the size and frequency of waves in the image, the wave form, the amount of wave movement, and the range. In H&V mode, you can also set the wave angle.

To apply the Flag effect

Display the Flag menu.

The items displayed in the Flag menu and the functions of the knobs are the same as for the Wave menu.

For more information about how to make settings, see "Wave settings" (page 553).

Twist settings

You can twist the image in the horizontal or vertical direction.
You can set the size and frequency of waves in the image, the wave form, the amount of wave movement, and other parameters.

To apply the Twist effect

With the Twist menu displayed, set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Amp V	Amplitude of twist in vertical direction	0.00 to 100.00
2	Freq V	Frequency of twist in vertical direction	0.00 to 100.00
3	Offset V [a)]	Amount of movement in twist phase in the vertical direction	–16.00 to +16.00 [c)] –64.00 to +64.00 [d)]
4	Speed V [b)]	Speed and direction of twist movement in vertical direction	–100.00 to +100.00
5	Slant	Slant of twist	–8.000 to +8.000

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Amp H	Amplitude of twist in horizontal direction	0.00 to 100.00
3	Offset H [a)]	Amount of movement in twist phase in the horizontal direction	–100.00 to +100.00
5	Slant	Slant of twist	–8.000 to +8.000

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

To stop the waves

Press [Lock], turning it on.
With each press, the waves alternately stop and start moving again.

To select the waveform

Press [Form] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Form H	Waveform in horizontal direction	1 to 6 [a)]
2	Form V	Waveform in vertical direction	1 to 6 [a)]

a) 1 (SINE): Sine wave
2 (PARABOLA): Parabola wave
3 (TRIANGLE): Triangular wave
4 (RECTANGLE): Rectangular wave

5 (CIRCLE): Circular wave
6 (CUBIC): Cubic wave

Ripple settings

There are four modes: Radial, Angular, Both, and Shape. The direction of modulation differs depending on the mode. You can set the size and frequency of the ripples, their direction and speed, their center point, and other parameters. In Shape mode, you can select ripple shapes other than circles (stars, etc.).

To apply the Ripple effect

With the Ripple menu displayed, use the following procedure.

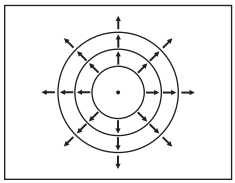
1 In the <Mode> group, select the ripple modulation mode.

Radial: Points on radii of the same length from the center of the ripples behave in the same way.

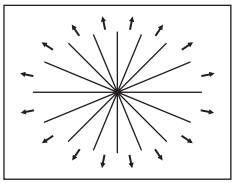
Angular: Points at the same angle from the center of the ripples behave in the same way.

Both: Both Radial and Angular ripples are applied.

Shape: The ripples can have shapes such as stars or hearts in addition to circles.



Modulation along radii
(Radial mode)



Modulation along periphery
(Angular mode)

Modulation modes and directions

2 Set the following parameters, depending on the selected modulation mode.

- **When Radial mode is selected**

Knob	Parameter	Adjustment	Setting values
1	Amp R	Ripple amplitude along radius	0.00 to 100.00
2	Freq R	Ripple frequency along radius	0.00 to 100.00
3	Offset R [a)]	Direction along radius in which to offset ripple phase and amount of movement	–8.000 to +8.000 [c)] –32.000 to +32.000 [d)]

Knob	Parameter	Adjustment	Setting values
4	Speed R [b]	Ripple direction along radius and speed	–100.00 to +100.00
5	Amp A	Ripple amplitude along periphery	0.00 to 100.00

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

• When Angular mode is selected

Knob	Parameter	Adjustment	Setting values
1	Amp A	Ripple amplitude along periphery	0.00 to 100.00
2	Freq A	Ripple frequency along periphery	0.00 to 100.00
3	Offset A [a]	Direction along periphery in which to offset ripple phase and amount of movement	–8.000 to +8.000
4	Speed A [b]	Ripple direction along periphery and speed	–100.00 to +100.00
5	Amp R	Ripple amplitude along radius	0.00 to 100.00

a) Set when Lock is on.
b) Set when Lock is off.

• When Both mode is selected

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Amp R	Ripple amplitude along radius	0.00 to 100.00
2	Freq R	Ripple frequency along radius	0.00 to 100.00
3	Offset R [a]	Direction along radius in which to offset ripple phase and amount of movement	–8.000 to +8.000 [c] –32.000 to +32.000 [d]
4	Speed R [b]	Ripple direction along radius and speed	–100.00 to +100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Amp A	Ripple amplitude along periphery	0.00 to 100.00
2	Freq A	Ripple frequency along periphery	0.00 to 100.00
3	Offset A [a]	Direction along periphery in which to offset ripple phase and amount of movement	–8.000 to +8.000
4	Speed A [b]	Ripple direction along periphery and speed	–100.00 to +100.00

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

- **When Shape mode is selected**

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Amp R	Ripple amplitude	0.00 to 100.00
2	Freq R	Ripple frequency	0.00 to 100.00
3	Offset R [a)]	Direction in which to offset ripple phase and amount of movement	–8.000 to +8.000 [c)] –32.000 to +32.000 [d)]
4	Speed R [b)]	Ripple direction and speed	–100.00 to +100.00
5	Shape	Ripple shape	1 to 4 [e)]

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Aspect	Ripple aspect ratio	–100.00 to +100.00
2	Angle	Ripple angle	–8.000 to +8.000

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9
e) 1 (Circle): Circle
2 (Rectangle): Rectangle
3 (Star): Star
4 (Heart): Heart

To limit the direction in which modulation is applied

By pressing [Plus Only], turning it on, you can limit the direction in which modulation is applied (the direction in which the image expands) to the plus direction only.

To set the ripple center point

1 Press [Position], turning it on.

2 Set the following parameters, depending on the selected modulation mode.

- **When Shape is selected**

Knob	Parameter	Adjustment	Setting values
1	H	Ripple center point in horizontal direction	–5.000 to +5.000 [a)] –20.000 to +20.000 [b)]

Knob	Parameter	Adjustment	Setting values
2	V	Ripple center point in vertical direction	–3.000 to +3.000 a) –12.000 to +12.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

• When other than Shape is selected

Knob	Parameter	Adjustment	Setting values
1	H	Ripple center point in horizontal direction	–8.000 to +8.000 a) –32.000 to +32.000 b)
2	V	Ripple center point in vertical direction	–6.000 to +6.000 a) –18.000 to +18.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To limit the ripple range

1 Press [Range], turning it on.

2 Set the following parameters.

• When Radial or Shape mode is selected

Knob	Parameter	Adjustment	Setting values
1	Size R	Amount of ripple modulation along radius	0.00 to 100.00
2	Offset R	Center of modulation range along radius	–8.000 to +8.000 a) –32.000 to +32.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

• When Angular mode is selected

Knob	Parameter	Adjustment	Setting values
1	Size A	Amount of ripple modulation along periphery	0.00 to 100.00
2	Offset A	Center of modulation range along periphery	–8.000 to +8.000

• When Both mode is selected

Knob	Parameter	Adjustment	Setting values
1	Size R	Amount of ripple modulation along radius	0.00 to 100.00
2	Offset R	Center of modulation range along radius	–8.000 to +8.000 a) –32.000 to +32.000 b)

Knob	Parameter	Adjustment	Setting values
3	Size A	Amount of ripple modulation along periphery	0.00 to 100.00
4	Offset A	Center of modulation range along periphery	–8.000 to +8.000

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To reverse the ripple range

When modulation mode is Radial, Both, or Shape: Press [Range Rev R], turning it on.

When modulation mode is Both or Angular: Press [Range Rev A], turning it on.

Other settings

You can turn [Lock], [Form], [Random], and [Range Envelope] on to do the following.

- Stop the waves
- Select the wave shape
- Randomize the waveform
- Smooth the range envelope when the wave range is limited

For Lock, Form, Random, and Range Envelope functions, see "Wave settings" (page 553).

Rings settings

You can set the degree of transition, the degree of randomness in the distance moved by each block, the amount of movement, the width of the partitions, the degree of randomness in partition width, the center point, the starting angle, and other parameters.

To apply the Rings effect

With the Rings menu displayed, use the following procedure.

1 To make transition settings, press [Transition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.000 to 100.000
2	Random	Degree of randomness in distance moved by each block	0.000 to 100.000
3	Spiral	Amount of movement toward periphery accompanying transition	–1.000 to +1.000

2 To set the partition method, press [Partition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Width	Width of partition	0.000 to 100.000
2	Random	Degree of randomness in partition width	0.000 to 100.000
3	Angle	Starting angle of effect	–8.000 to +8.000

3 To set the ring center position, press [Position] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal center position	–5.000 to +5.000 a) –20.000 to +20.000 b)
2	V	Vertical center position	–4.000 to +4.000 a) –16.000 to +16.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

4 To partition into pixels, press [Pixel], turning it on, and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears around periphery	0.00 to 100.00
2	Random	Degree of jaggies at block edges	0.00 to 100.00

Broken Glass settings

You can set the degree of transition, the degree of randomness in the distance moved by each block, the amount of movement, the width of the partitions, the degree of randomness in partition width, the center point, the starting angle, and other parameters.
You can also fix the direction in which shards scatter.

To apply the Broken Glass effect

Display the Broken Glass menu.
The functions of the knobs in the Broken Glass menu are the same as those of the Rings menu, with the exception of [Direction].

For details about operation, see "Rings settings" (page 564).

To fix the direction in which shards scatter

Press [Direction], turning it on.

Flying Bar settings

You can set the degree of transition, the degree of randomness in the distance moved by each block, the direction of movement, the width of the partitions, the degree of randomness in partition width, the partition angle, and other parameters.

To apply the Flying Bar effect

With the Flying Bars menu displayed, use the following procedure.

1 To make transition settings, press [Transition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.000 to 100.000
2	Random	Degree of randomness in distance moved by each block	–100.000 to +100.000
3	Angle	Direction of movement	–8.000 to +8.000

2 To set the partition method, press [Partition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Width	Width of partition	0.000 to 100.000
2	Random	Degree of randomness in partition width	0.000 to 100.000
3	Angle	Partition angle	–8.000 to +8.000

Blind settings

There are two modes: Bar and Wedge. You can set the number of rotations by blocks, the perspective, the width and position of blocks, the direction, the center position, and other parameters.

To apply the Blind effect

With the Blind menu displayed, use the following procedure.

1 In the <Mode> group, select [Bar] or [Wedge].

2 To make transition settings, press [Transition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Rotation	Number of rotations of the blocks	–8.000 to +8.000
2	Perspective	Degree of randomness in distance moved by each block	0.000 to 100.000

3 To set the partition method, press [Partition] and set the following parameters.

• When Bar was selected in step 1

Knob	Parameter	Adjustment	Setting values
1	Width	Width of partition	0.000 to 100.000
2	Offset	Degree of randomness in partition width	–5.000 to +5.000 a) –20.000 to 20.000 b)
3	Angle	Starting angle of effect	–8.000 to +8.000

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

• When Wedge was selected in step 1

Knob	Parameter	Adjustment	Setting values
4	No	Width of blocks	0.000 to 100.000
5	Phase	Partition position	–8.000 to +8.000

To set the wedge center position

When Wedge is selected in the <Mode> group, you can set the wedge center position.

1 Press [Position].

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal center position	–8.000 to +8.000 a) –32.000 to +32.000 b)
2	V	Vertical center position	–6.000 to +6.000 a) –18.000 to +18.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Split settings

You can set the degree to which the image is split, the split positions, and other parameters.

To apply the Split effect

With the Split menu displayed, use the following procedure.

1 In the <Mode> group, select the split method.

Single: Leave gaps between splits.
Double: Fill gaps between splits with the same image.

2 Set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Transition H	Degree of left and right separation	–100.00 to +100.000
2	Transition V	Degree of top and bottom separation	–100.00 to +100.000

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Top	Amount of movement of top	–100.00 to +100.000
2	Left	Amount of movement of left	–100.00 to +100.000
3	Right	Amount of movement of right	–100.00 to +100.000
4	Bottom	Amount of movement of bottom	–100.00 to +100.000

To set the split position

1 Press [Position].

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Degree of left and right separation	–4.000 to +4.000 a) –16.000 to +16.000 b)
2	V	Degree of top and bottom separation	–3.000 to +3.000 a) –12.000 to +12.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Split Slide settings

You can set the degree of transition, the degree of randomness in the distance moved by each block, the degree of sliding, block width, block angle, and other parameters.

To apply the Split Slide effect

With the Split Slide menu displayed, set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Transition H	Degree of transition in horizontal direction	–100.00 to +100.000
2	Random H	Degree of randomness in distance moved by blocks in horizontal direction	0.00 to 100.00
3	Skew H	Degree of skew in horizontal direction	0.00 to 100.00
4	Width H	Horizontal width of partition	0.00 to 100.00
5	Angle	Angle of partition line	–8.000 to +8.000

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Transition V	Degree of transition in vertical direction	–100.00 to +100.000
2	Random V	Degree of randomness in distance moved by blocks in vertical direction	0.00 to 100.00
3	Skew V	Degree of skew in vertical direction	0.00 to 100.00
4	Width V	Vertical width of partition	0.00 to 100.00
5	Angle	Angle of partition line	–8.000 to +8.000

To set the partition position

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal partition position	–5.000 to +5.000 a) –20.000 to +20.000 b)
2	V	Vertical partition position	–5.000 to +5.000 a) –20.000 to +20.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

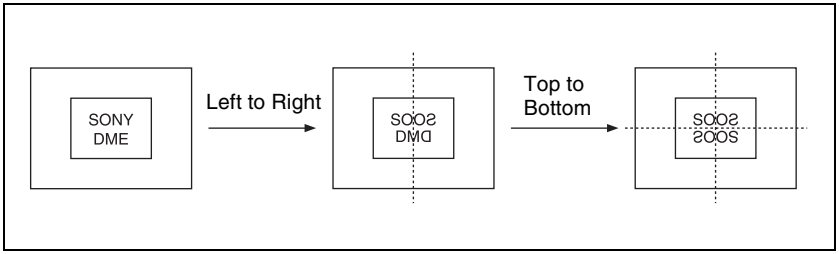
Mirror settings

You can choose to reflect in the directions left to right, right to left, bottom to top, top to bottom, or any combination of directions. You can also set the position of the border between original and reflections.

To apply the Mirror effect

With the Mirror menu displayed, press [Left to Right], [Right to Left], [Top to Bottom], or [Bottom to Top] to set the reflection method (multiple selections possible).

Left to Right: Reflect left side on right.
Right to Left: Reflect right side on left.
Top to Bottom: Reflect top side on bottom.
Bottom to Top: Reflect bottom side on top.



To set the position of the border between original and reflection

1 Press [Position].

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal border position	–8.000 to +8.000 a) –32.000 to +32.000 b)
2	V	Vertical border position	–6.000 to +6.000 a) –24.000 to +24.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Multi Mirror settings

You can set the width of the original, the center position of the original, the offset of the image with fixed mirrors, the direction of the mirrors, and other parameters.

To apply the Multi Mirror effect

With the Multi Mirror menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Interval H	Horizontal distance between mirrors (original width)	0.000 to 10.000 a) 0.000 to 40.000 b)
2	Offset H	Amount of horizontal offset of image with mirrors fixed	–4.000 to +4.000 a) –16.000 to +16.000 b)
3	Interval V	Vertical distance between mirrors (original width)	0.000 to 10.000 a) 0.000 to 40.000 b)
4	Offset V	Amount of vertical offset of image with mirrors fixed	–4.000 to +4.000 a) –16.000 to +16.000 b)
5	Angle	Mirror angle	–8.000 to +8.000

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To set the center position of original image

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal original image center position	–4.000 to +4.000 a) –16.000 to +16.000 b)
2	V	Vertical original image center position	–4.000 to +4.000 a) –16.000 to +16.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Kaleidoscope settings

You can set the number of blocks, the partition reference point and angle, horizontal and vertical offsets, a reflection position, and other parameters.

To apply the Kaleidoscope effect

With the Kaleidoscope menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Number	Number of blocks	0.00 to 100.00
2	Phase	Angle of partition reference point	–8.000 to +8.000
3	Offset H	Amount of horizontal offset	–4.000 to +4.000 a) –16.000 to +16.000 b)

Knob	Parameter	Adjustment	Setting values
4	Offset V	Amount of vertical offset	–3.000 to +3.000 a) –12.000 to +12.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To reflect the kaleidoscope image as if in a mirror

1 To reflect in the horizontal direction, press [Mirror H], turning it on.

2 To reflect in the vertical direction, press [Mirror V], turning it on.

To set the reflection position

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal reflection position	0.000 to 4.000 a) 0.000 to 16.000 b)
2	V	Vertical reflection position	0.000 to 3.000 a) 0.000 to 12.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To cyclically repeat part of the original and its reflection

Press [Cyclic], turning it on.

Lens settings

You can set the shape and aspect ratio of the lens, the angle, the magnification ratio, the curve ratio, the size, the center position, and other parameters. You can also choose to display only the portion of the image that is seen through the lens.

To apply the Lens effect

With the Lens menu displayed, use the following procedure.

1 In the <Mode> group, select the lens shape.

- Circle
- Rectangle
- Star

- Heart
- Bar
- Cross

2 Depending on the selected lens shape, set the following parameters.

• When Circle, Rectangle, Star, or Heart is selected

Knob	Parameter	Adjustment	Setting values
1	Magnify H	Magnification ratio	–100.00 to +100.00
2	Curve H	Curve ratio	–100.00 to +100.00
3	Size H	Size	0.00 to 100.00
4	Angle	Slant angle	–8.000 to +8.000
5	Aspect	Aspect ratio	–100.00 to +100.00

• When Bar is selected

Knob	Parameter	Adjustment	Setting values
1	Magnify H	Magnification ratio	–100.00 to +100.00
2	Curve H	Curve ratio	–100.00 to +100.00
3	Size H	Size	0.00 to 100.00
4	Angle	Slant angle	–8.000 to +8.000

• When Cross is selected

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Magnify H	Horizontal magnification ratio	–100.00 to +100.00
2	Curve H	Horizontal curve ratio	–100.00 to +100.00
3	Size H	Horizontal size	0.00 to 100.00

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Magnify V	Vertical magnification ratio	–100.00 to +100.00
2	Curve V	Vertical curve ratio	–100.00 to +100.00
3	Size V	Vertical size	0.00 to 100.00

To make only the lens part visible

Press [Lens Only], turning it on.
The parts of the image outside the lens are removed.

To set the lens center position

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal lens center position	–5.000 to +5.000 a) –20.000 to +20.000 b)
2	V	Vertical lens center position	–4.000 to +4.000 a) –16.000 to +16.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Circle settings

You can set the size of the circle, and make the axis of modulation vertical.

To apply the Circle effect

With the Circle menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Radius	Size of circle	0.00 to 100.00

To make the axis of modulation vertical

Press [Mod V], turning it on.
The axis of modulation when converting to the circle becomes vertical.

Panorama settings

You can set the horizontal and vertical curve ratio, and the curve center position.

To apply the Panorama effect

With the Panorama menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Curve H	Horizontal curve ratio	–100.00 to +100.00
2	Curve V	Vertical curve ratio	–100.00 to +100.00
3	Position H	Horizontal curve center position	–4.000 to +4.000 a) –16.000 to +16.000 b)
4	Position V	Vertical curve center position	–3.000 to +3.000 a) –12.000 to +12.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Page Turn settings

There are four modes: H&V, H, V, and Off. You can select the turn position, the radius of the turned portion, the amount and angle of turning, and the input video for the front and back pages.

To apply the Page Turn effect

With the Page Turn menu displayed, use the following procedure.

1 In the <Split Mode> group, select the split mode.

H&V: The image turns as it is split from the center into 4 parts: left, right, upper, lower.
H: The image turns as it is split from the center into 2 parts: left, right.
V: The image turns as it is split from the center into 2 parts: upper, lower.
When nothing is selected (Off): There are no splits and the image turns from the edge.

2 Press [Page Turn], then set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Radius	Radius of turn part	0.00 to 100.00
2	Offset	Amount of turn	–100.00 to +100.00
3	Angle	Angle of turn	–0.250 to +0.000 a) –0.250 to +0.250 b) –0.500 to +0.000 c) –8.000 to +8.000 d)

a) When split mode is H&V
b) When split mode is H
c) When split mode is V
d) When split mode is off

To set the input signal of the back page

1 In the <Back Video> group, select the signal input into the back page.

Self: Use the same signal as the front page.
Flat: Use a flat color.
Hue Rotation: Gradually vary the hue.
2nd Ch: Use the 2nd channel video signal.
To select "2nd Ch," it is first necessary to select the second DME on the keyer using DME.

2 Adjust the following parameters, according to the selected input signal.

• **When Flat is selected**

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

• **When Hue Rotation is selected**

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Speed	Speed at which hue changes	–12.00 to +12.00

Notes

When using a page turn effect with one channel, the following restrictions apply.
In an MVE-8000A HD system, when the input is for example a title, parts of the back page other than the title appear as black.

Roll settings

There are four modes: H&V, H, V, and Off. You can select the turn position, the radius of the turned portion, the amount and angle of turning, and the input video for the front and back pages.

To apply the Roll effect

Display the Roll menu.
The knobs in the Roll menu have the same functions as those in the Page Turn menu.

For details about operation, see "Page Turn settings" (page 575).

Notes

When using a roll effect with one channel, the following restrictions apply.
In an MVE-8000A HD system, when the input is for example a title, parts of the back page other than the title appear as black.

Cylinder settings

You can set the degree of winding onto the cylinder, the radius, the horizontal position of the wound image, and front and back side output for the image.

To apply the Cylinder effect

With the Cylinder menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Radius	Degree to which image is wound onto the cylinder	0.00 to 100.00
2	Min R	Radius of the cylinder	0.00 to 100.00
3	Offset	Horizontal position of the image wound onto cylinder	–100.00 to +100.00

The procedure for selecting the input signal in the <Back Video> group is the same as for the Page Turn menu.

For details about operation, see "Page Turn settings" (page 575).

Notes

When using a cylinder effect with one channel, the following restrictions apply.
In an MVE-8000A HD system, when the input is for example a title, parts of the inner surface other than the title appear as black.

Sphere settings

You can set the degree of winding onto the sphere, the radius, the horizontal position of the wound image, and front and back side output for the image.

Notes

You cannot monitor the part of a rotating sphere that corresponds to its axis on the monitor screen.

To apply the Sphere effect

Display the Sphere menu.
The knobs in the Sphere menu have the same functions as those in the Cylinder menu.

For details about operation, see "Cylinder settings" (page 576).

Notes

When using a sphere effect with one channel, the following restrictions apply.
In an MVE-8000A HD system, when the input is for example a title, parts of the inner surface other than the title appear as black.

Explosion settings

You can set the pattern shape and aspect ratio, the center position, the amount of movement by fragments, the curvature of the transition path, and other parameters.

To apply the Explosion effect

With the Explosion menu displayed, use the following procedure.

1 In the <Mode> group, select the explosion pattern.

- Circle
- Rectangle
- Star
- Heart
- Ellipse

2 Set the following parameters.

• When Circle was selected in step 1

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.00 to 100.00
2	Curve	Degree to which image periphery expands	0.00 to 100.00
3	Spiral	Degree of curvature of transition path	–100.00 to +100.00

• When Rectangle, Star, Heart, or Ellipse was selected in step 1

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.00 to 100.00
2	Curve	Degree to which image periphery expands	0.00 to 100.00
3	Aspect	Aspect ratio of waveform	–100.00 to +100.00
4	Angle	Slant of waveform	–8.000 to +8.000

To make the fragments stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears	0.00 to 100.00
2	Random	Degree of randomness in flying out fragment positions	0.00 to 100.00

To set the explosion center point

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Center point in horizontal direction	–5.000 to +5.000 a) –20.000 to +20.000 b)
2	V	Center point in vertical direction	–4.000 to +4.000 a) –16.000 to +16.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Swirl settings

You can set the amount of swirl, the swirl region, the amount of rotation, and the swirl center position.

To apply the Swirl effect

With the Swirl menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Swirl amount	0.00 to 100.00
2	Center	Amount of rotation in center of swirl	–8.000 to +8.000
3	Outer	Amount of rotation outside of Area	–8.000 to +8.000
4	Area	Region of swirl	0.00 to 100.00

To make the tip of the swirl stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears	0.00 to 100.00
2	Random	Trail type and amount of stardust	0.00 to 100.00

To set the center position of the swirl

1 Press [Position], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	H	Horizontal center position of swirl	–8.000 to +8.000 a) –32.000 to +32.000 b)
2	V	Vertical center position of swirl	–6.000 to +6.000 a) –18.000 to +18.000 b)

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

Melt settings

You can set the degree of transition, the degree of extension in the image, the jaggedness of the melting sections, and the amplitude, frequency, amount of movement, and speed of the melting sections. You can also set the slant of the borders, the shape of the sections that begin to melt, and other parameters.

To apply the Melt effect

With the Melt menu displayed, use the following procedure.

1 In the <Direction> group, select the direction in which the image melts away.

Up: Melting occurs upward.
Down: Melting occurs downward.

2 To make transition settings, press [Transition] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Degree of transition	0.00 to 100.00
2	Curve	Degree to which image stretches	0.00 to 100.00
3	Random	Degree of jaggies at melted part	0.00 to 100.00

3 To make wave settings for melting part, press [Border] and set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Amp	Amplitude of waves	0.00 to 100.00
2	Freq	Frequency of waves	0.00 to 100.00
3	Offset a)	Amount of wave phase offset	–16.000 to +16.000 c) –64.000 to +64.000 d)
4	Speed b)	Direction and speed of waves	–100.00 to +100.00
5	Slant	Slant of border	–100.00 to +100.00

a) Set when Lock is on.
b) Set when Lock is off.
c) Setting for SD 4:3, SD 16:9
d) Setting for HD 4:3, HD 16:9

To stop the waves in the melting part

Press [Lock], turning it on.
With each press, the waves alternately stop and start moving again.

To select the shape of the part beginning to melt

Press [Form] and set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Form	Waveform	1 to 8 a)

a) 1 (SINE): Sine wave
2 (PARABOLA): Parabola wave
3 (TRIANGLE): Triangular wave
4 (RECTANGLE): Rectangular wave
5 (CIRCLE): Circular wave
6 (CUBIC): Cubic wave
7 (MELT1): Melting wave 1
8 (MELT2): Melting wave 2

To make the melting part stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears	0.00 to 100.00
2	Random	Degree to which pixel positions become more randomized further from the center	0.00 to 100.00

Character Trail settings

You can set the effect starting position, the degree of expansion, the slant angle of the effect region, and trail direction, the degree to which the image disappears, the trail type and amount of stardust, and other parameters.

To apply the Character Trail effect

With the Character Trail menu displayed, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Transition	Position where effect starts	–8.000 to +8.000 a) –32.000 to +32.000 b)

Knob	Parameter	Adjustment	Setting values
2	Expand	Degree of expansion	0.00 to 100.00
3	Trans Angle	Angle of slanting in effect region	–8.000 to +8.000
4	Trail Angle	Direction of trail	–100.00 to +100.00

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

To make the tip of the swirl stardust

1 Press [Pixel], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Density	Degree to which image disappears	0.00 to 100.00
2	Random	Trail type and amount of stardust	0.00 to 100.00

Corner Pinning Settings

Notes

When the Brick effect is enabled, the Corner Pinning function cannot be used.

Setting the Foreground Corner Pinning positions

1 In the DME menu, select VF4 ‘Non Linear/Corner Pin’, HF2 ‘Corner Pinning.’

The Corner Pinning menu appears.

2 Set [Corner Pinning] to On.

3 Set [Corner Marker] to On.

A marker appears for each corner. The marker for the selected corner is distinguished from the other markers.



4 In the <Corner Select> group, select the corner to operate on.

Top Left: Top left
Top Right: Top right
Bottom Left: Bottom left
Bottom Right: Bottom right
All: All four corners

5 Turn the knobs to adjust the position of the corner selected in step **4**.

The parameter setting ranges depend on the system's selected signal format (SD/HD) and aspect ratio (4:3/16:9) combination, as follows.

- **4:3 mode**

Knob	Parameter	Adjustment	Setting values
1	Pos X	Movement in x-axis direction	–8.00 to +8.00 (SD) a) –24.00 to +24.00 (HD) a)
2	Pos Y	Movement in y-axis direction	–6.00 to +6.00 (SD) a) –18.00 to +18.00 (HD) a)

a) When the selection for operation is "All," the Top Left value appears, and the knobs move all four corners correspondingly.

- **16:9 mode**

Knob	Parameter	Adjustment	Setting values
1	Pos X	Movement in x-axis direction	–8.00 to +8.00 (SD) a) –32.00 to +32.00 (HD) a)
2	Pos Y	Movement in y-axis direction	–4.50 to +4.50 (SD) a) –18.00 to +18.00 (HD) a)

a) When the selection for operation is “All,” the Top Left value appears, and the knobs move all four corners correspondingly.

Resetting the corner positions

In the Corner Pinning menu, press [Reset Corner].

Selecting the area used for pinning

When the foreground is cropped, press [Crop Link] to select either of the following.

On: Use the area of the cropped image for positioning

Off: Use the area of the entire image, including the part hidden by cropping (shaded in the diagram below) for positioning

(The bold frame shows the area used for positioning.)

	
Area positioned by pinning when Crop Link is On	Area positioned by pinning when Crop Link is Off

Adjusting the density of the foreground

You can adjust the density of the foreground image to be translucent so that the background shows through, making it easier to position the corners.

Notes

This setting is not saved in a key frame or snapshot.

1 In the Corner Pinning menu, set [Video Through] to On.

2 Turn the knob to adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
4	Density	Image density	0.00 to 100.00

Adjusting the zoom

You can enlarge the image around the corner being adjusted, to allow fine positioning of the corner.

Notes

- This setting is not saved in a key frame or snapshot.
- This function is only enabled when combine is set.
- When all four corners are being positioned, this function cannot be used.

1 In the Corner Pinning menu, press [Zoom Enable], turning it On.

2 Turn the knob to adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
5	Zoom	Degree of zooming in on the corners	1.00 to 16.00



Zoom Off



Zoom On

Lighting Settings

You can specify the intensity and color of the light and the lighting pattern. The following lighting patterns are available:

Plane: Illumination of the entire screen.

Bar: Bar illumination. You can specify the width and angle of the bar, and its softness.

Preset: Lighting pattern suitable for nonlinear effects.

When Bar is selected, the following modes can be selected.

Normal: Emphasizes the bar highlight area.

Specular: An effect like light striking a surface with metallic reflections.

Mat: An effect like light striking paper, cloth, or another diffusively reflective surface.

Notes

The function for setting the bar mode of the lighting area is not supported on the MVE-8000A.

Applying the Lighting effect

1 In the DME menu, select VF5 ‘Light/Trail’ and HF1 ‘Lighting.’

The Lighting menu appears.

2 Press [Lighting], turning it on.

The Lighting effect is enabled.

3 In the <Light Pattern> group, select the lighting pattern Plane, Bar or Preset.

You can adjust the intensity of the light and other parameters with the knobs.

4 Set the parameters.

The parameters differ as follows, depending on the selected lighting pattern.

- **When Plane is selected**

Knob	Parameter	Adjustment	Setting values
1	Light	Intensity of light in highlight area	0.00 to 100.00
5	Total Ambient	Brightness of whole image	0.00 to 100.00 a)

a) You can make the Lighting effect more effective by adjusting [Total Ambient] to lower the brightness of the entire image. This setting is used both by this effect and by the Spotlighting effect.

Notes

The Total Ambient parameter is not supported on the MVE-8000A.

- **When Bar is selected**

Knob	Parameter	Adjustment	Setting values
1	Light	Intensity of light in highlight area	0.00 to 100.00
2	Ambient	Intensity of light in ambient area	0.00 to 100.00
5	Total Ambient	Brightness of whole image	0.00 to 100.00 a)

a) You can make the Lighting effect more effective by adjusting [Total Ambient] to lower the brightness of the entire image. This setting is used both by this effect and by the Spotlighting effect.

Notes

The Total Ambient parameter is not supported on the MVE-8000A.

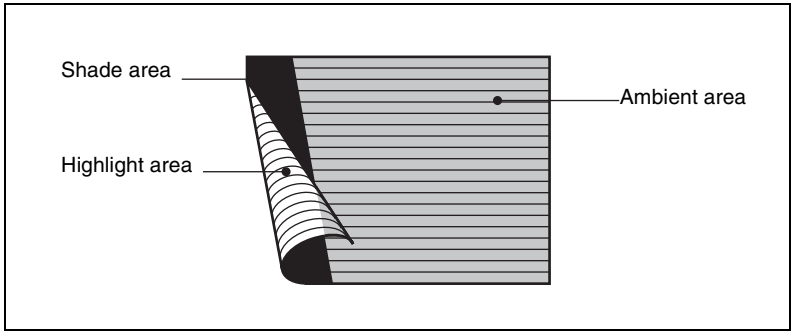
- **When Preset is selected**

Knob	Parameter	Adjustment	Setting values
1	Light	Intensity of light in highlight area	0.00 to 100.00
2	Ambient	Intensity of light in ambient area	0.00 to 100.00
3	Shade	Intensity of light in shade area	0.00 to 100.00 a)
5	Total Ambient	Brightness of whole image	0.00 to 100.00 b)

a) Setting is available when nonlinear effect page turn, roll, cylinder, or sphere is selected.
b) You can make the Lighting effect more effective by adjusting [Total Ambient] to lower the brightness of the entire image. This setting is used both by this effect and by the Spotlighting effect.

Notes

The Total Ambient parameter is not supported on the MVE-8000A.



The three regions for which the light intensity can be set

Setting the bar shape of the highlight area

When you select [Bar] or [Preset] in step **3** of "Applying the Lighting effect" *(page 586)*, use the following procedure to set the shape of the bar.

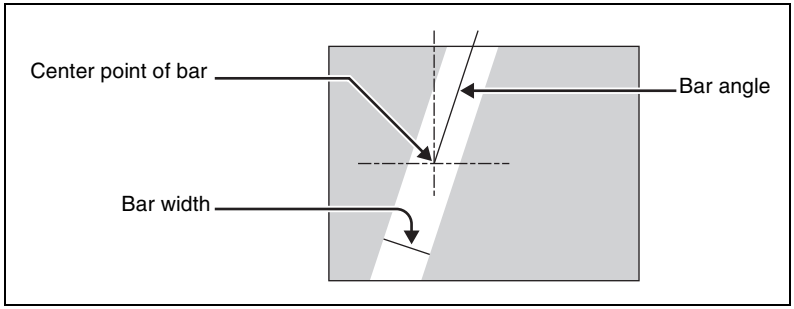
1 Turn [Light Modify] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	X	X-value of bar center point	–8.00 to +8.00 a) b) –24.00 to +24.00 c) –32.00 to +32.00 d)

Knob	Parameter	Adjustment	Setting values
2	Y	Y-value of bar center point	–6.00 to +6.00 a) –4.50 to +4.50 b) –18.00 to +18.00 c) d)
3	Angle e)	Angle of bar	–8.00 to +8.00
4	Width	Width of bar	0.00 to 100.00
5	Soft	Softness of edges	0.00 to 100.00

a) For SD 4:3
b) For SD 16:9
c) For HD 4:3
d) For HD 16:9
e) There are some nonlinear effects for which Angle cannot be used.



Bar shape parameters

Setting the color of the light in the highlight area

1 Turn [Light Color] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Setting the bar shape of the shade area

When you select [Preset] in step **3** of "Applying the Lighting effect" *(see page 586),* use the following procedure to set the bar shape of the shade area.

1 Turn [Shade Modify] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	X	X-value of bar center point	–8.00 to +8.00[a)] –24.00 to +24.00 [b)] –32.00 to +32.00 [c)]
4	Width	Width of bar	0.00 to 100.00
5	Soft	Softness of edges	0.00 to 100.00

a) For SD 4:3 and SD 16:9
b) For HD 4:3
c) For HD 16:9

Setting the color of the shade in the shade area

1 Turn [Shade Color] on.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Setting the bar mode of the highlight area

When you select [Bar] in step **3** of "Applying the Lighting effect" *(see page 586)*, use the following procedure to set the bar mode of the highlight area.

Notes

The bar mode of the highlight area is not supported on the MVE-8000A.

1 Select the mode in the <Bar Light Mode> group.

Normal: Emphasizes the bar highlight area.
Specular: An effect like light striking a surface with metallic reflections.
Mat: An effect like light striking paper, cloth, or another diffusively reflective surface.

2 Set the following parameters.

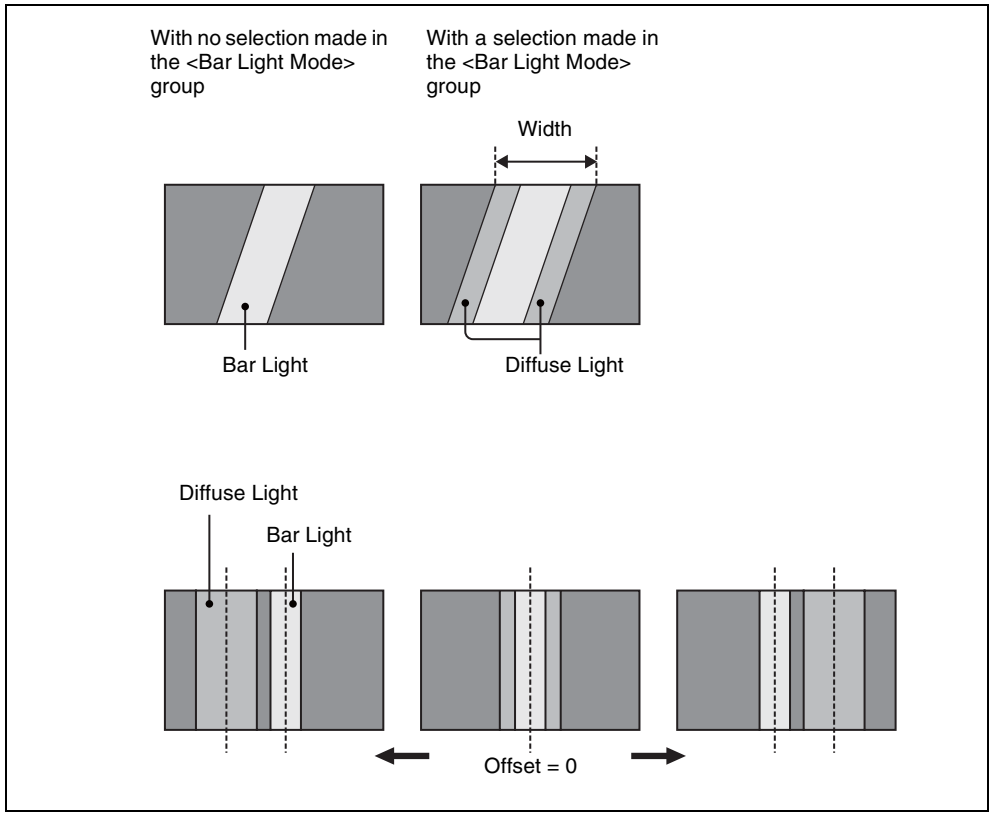
Knob	Parameter	Adjustment	Setting values
1	Intensity	Intensity of diffuse light area	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	Offset	Offset of center of diffuse light area	–4.00 to +4.00 a) –12.00 to +12.00 b) –16.00 to +16.00 c)
3	Width	Width of diffuse light area	0.00 to 100.00
4	Soft	Softness of diffuse light area	0.00 to 100.00

a) For SD 4:3 and SD 16:9
b) For HD 4:3
c) For HD 16:9

3 When you select Normal or Mat in step **1**, press [Bar Diffuse Color], turning it on, and adjust the following parameters to set the color of the diffuse light area.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00



Trail Settings

Notes

- Of the three effects of trail, motion decay and keyframe strobe, only one can be on at a time. When one of them is on, turning another of them on automatically turns off the one that has been on.
- Turning Trail on when Motion Decay *(see page 595)*, Keyframe Strobe *(see page 597)* or Wind *(see page 599)* is on turns it off automatically.

Applying the Trail effect

1 In the DME menu, select VF5 ‘Light/Trail’ and HF2 ‘Trail.’

The Trail menu appears.

2 Press [Trail], turning it on.

The Trail effect is enabled. You can adjust the parameters with the knobs.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Decay	Degree to which the trail is left	0.00 to 100.00 a)
2	Interval	Freeze interval	1 to 255 (frames)
3	Live	Proportion of the interval between two successive freeze images for which the video is run	0.00 to 100.00

a) 0.00 is no trail. At 100.00, the trail does not disappear.

4 To erase the trail, press [Trail Eraser], turning it on.

Switching the priority between the current image and trail superimposed

In the <Priority> group, select the method of superimposition.
Over: Current image is on top.
Under: Trail is on top.

Selecting the source to create a trail

In the <Trail Source> group, select the source to create a trail.

Notes

- "Rainbow," "Mix Color," and "Ext Video" are not supported on the MVE-8000A.
- "Mix Color" or "Ext Video" can only be applied to one of the background *(see page 619)*, flex shadow *(see page 522)*, trail, and wind *(see page 599)* effects.
  If you select "Mix Color" or "Ext Video" in one of these settings, a selection of "Mix Color" or "Ext Video" in any of the other effects is disabled, and "Flat Color" is selected in its place.
- When executing combining four channels of DME images, "Mix Color" and "Ext Video" in the flex shadow and background effects cannot be selected.

Freeze Video: Use freeze images of the input video as source of the trail.
Flat Color: Use a flat color matte as source of the trail. You can set the following parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
3	Hue	Hue	359.99 to 0.00

Hue Rotate: Use a color matte whose hue varies slightly with each frame for the trail of the afterimages. You can set the following parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue Speed	Speed at which the hue changes	–12.00 to +12.00

Mix Color: Insert a mix color signal set in the Color Mix menu *(see page 533)* in the afterimage portion.

Ext Video: Insert the external video signal input to the Ext IN connector in the afterimage portion.

Rainbow: Use a freeze image with the hue changing every frame in the afterimage portion. The difference from "Hue Rotate" is that many colors appear simultaneously.

For details of the Rainbow parameters, see the "Hue Rotate" item above.

Erasing the afterimages that remain in memory whenever a keyframe is passed

Press [Trail Eraser], turning it on.
When the effect passes a keyframe, the afterimage is erased before writing a new afterimage.

Selecting the freeze timing

In the <Trail Freeze Timing> group, select the timing for freezing a trail.
Frame: freeze in frame units.
Field: freeze in field units.

Notes

The freeze timing setting is not required when the following signal formats are being used.

Signal formats: 1080P/50, 1080P/59.94, 1080PsF/23.976,1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Defocusing the afterimage portion (Defocus)

Notes

The function to defocus the trail afterimage portion is not supported on the MVE-8000A.

1 Press [Defocus], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Defocus V	Defocusing of the video signal	0.00 to 100.00
2	Defocus K	Defocusing of the key signal	0.00 to 100.00

Applying stardust to the afterimage portion

The afterimage portion becomes stardust, and gradually disappears.

1 Press the [DUST] button, turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Trail Dust	Amount of the afterimage disappearing as stardust [a)]	0.00 to 100.00
2	Dust Soft	Timing with which stardust disappears	0.00 to 100.00
3	Dust Size	Size of stardust	0.00 to 100.00
4	Dust Aspect	Aspect ratio of stardust	–100.00 to +100.00

a) The way in which the afterimage disappears is affected by both Decay and Trail Dust parameter adjustments.

Setting a combine process

Select whether to add the Trail effect before or after the combine.

Notes

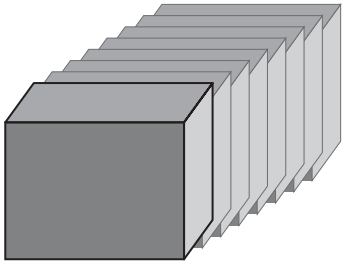
- The combine process function is not supported on the MVE-8000A.
- When you change the selection in the <Combine Process> group, the afterimages which had been added up to then disappear.

- When you do not combine images, the Trail effect only is applied, regardless of the selection in the <Combine Process> group.

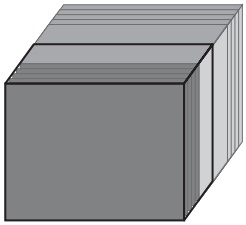
Select one of the following in the <Combine Process> group.

Combine –> Trail: Add the Trail effect after the combine. As the trail parameters, the data for the channel with the lowest number among the channels being combined is enabled.

Trail –> Combine: Add the Trail effect before the combine. Trails parameters can be set independently for each channel.



Combine –> Trail



Trail –> Combine

Motion Decay Settings

Notes

When you turn on motion decay, if the Trail, Keyframe Strobe or Wind effect is on, it automatically goes off.

Blurring image motion

1 In the DME menu, select VF5 ‘Light/Trail’ and HF3 ‘Motion Decay.’

The Motion Decay menu appears.

2 Press [Motion Decay], turning it on.

This enables motion decay, and you can now use the knobs to adjust the parameters.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Video Decay	Degree of blurring of the video signal	0.00 to 100.00 a)

a) At the setting 0.00, there is no afterimage. At a setting of 100.00, the afterimage does not decay.

4 In the <Decay Mix Mode> group, select the way in which the video signal is blurred.

Soft: mix the live image and the afterimage.
Hard: show the lighter of the live image and afterimage.

5 To erase the afterimage, press [Decay Eraser], turning it on.

Erasing the afterimages that remain in memory whenever a keyframe is passed

Press [Decay Eraser], turning it on.
When the effect passes a keyframe, the afterimage is erased before writing a new afterimage.

Selecting the freeze timing

In the <Decay Freeze Timing> group, select the timing for motion decay freezing.
Frame: freeze in frame units.
Field: freeze in field units.

Notes

The freeze timing setting is not required when the following signal formats are being used.

Signal formats: 1080P/50, 1080P/59.94, 1080PsF/23.976, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Applying stardust to the afterimage portion

The afterimage portion becomes stardust, and gradually disappears.

1 Press the [DUST] button, turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Decay Dust	Amount of the afterimage disappearing as stardust a)	0.00 to 100.00

Knob	Parameter	Adjustment	Setting values
2	Dust Soft	Timing with which stardust disappears	0.00 to 100.00
3	Dust Size	Size of stardust	0.00 to 100.00
4	Dust Aspect	Aspect ratio of stardust	–100.00 to +100.00

a) The way in which the afterimage disappears is affected by both the Video Decay and Decay Dust parameter adjustments for the motion decay.

Keyframe Strobe Settings

Notes

When you turn on keyframe strobe, if the Trail, Motion Decay or Wind effect is on, it automatically goes off. *(See "Note" in the section "Trail.")*

Leaving a trail of afterimages of the image

1 In the DME menu, select VF5 'Light/Trail' and HF4 'KF Strobe.'

The KF Strobe menu appears.

2 Press [KF Strobe], turning it on.

This enables the Keyframe Strobe effect, and you can now use the knobs to adjust the parameters.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Decay	Degree of blurring of the video signal	0.00 to 100.00 a)

a) At the setting 0.00, there is no afterimage. At a setting of 100.00, the afterimage does not decay.

4 To erase the afterimage, press [KF Strobe Eraser], turning it on.

Selecting the overlay priority for movie and still images (video freeze image)

In the <Priority> group, select the way in which the images are overlaid.
Over: the movie is on top, and the still image is underneath.
Under: the movie is underneath, and the still image is on top.

Mix: the movie and still images are mixed; adjust the following parameter with the knob.

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix amount of the still image with respect to the movie	0.00 to 100.00 a)

a) The 0.00 setting is the same as Over, and the 100.00 is the same as Under.

Selecting the freeze timing

In the <KF Freeze Timing> group, select the timing for freezing the keyframe strobe.
Frame: freeze in frame units.
Field: freeze in field units.

Notes

The freeze timing setting is not required when the following signal formats are being used.

Signal formats: 1080P/50, 1080P/59.94, 1080PsF/23.976, 1080PsF/24, 1080PsF/25, 1080PsF/29.97, 720P/50, 720P/59.94

Erasing the afterimages that remain in memory whenever a keyframe is passed

Press [KF Strobe Eraser], turning it on.
When the effect passes a keyframe, the afterimage is erased before writing a new afterimage.

Applying stardust to the afterimage portion

The afterimage portion becomes stardust, and gradually disappears.

1 Press the [DUST] button, turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	KF Strobe Dust	Amount of the afterimage disappearing as stardust a)	0.00 to 100.00
2	Dust Soft	Timing with which stardust disappears	0.00 to 100.00
3	Dust Size	Size of stardust	0.00 to 100.00
4	Dust Aspect	Aspect ratio of stardust	–100.00 to +100.00

a) The way in which the afterimage disappears is affected by both the Decay and KF Strobe Dust parameter adjustments for the keyframe strobe.

Disabling the keyframe strobe afterimage

Press [KF Strobe Disable], turning it on.
If you turn this function on when creating a keyframe, even as the effect passes a keyframe, no afterimage remains.

Setting a combine process

Select whether to add the Keyframe Strobe effect before or after the combine.

Notes

- The combine process function is not supported on the MVE-8000A.
- When you change the selection in the <Combine Process> group, the afterimages which had been added up to then disappear.
- When you do not combine images, the Keyframe Strobe effect only is applied, regardless of the selection in the <Combine Process> group.

Select one of the following in the <Combine Process> group.

Combine –> KF STRB: Add the Keyframe Strobe effect after the combine. As parameters, the data for the channel with the lowest number among the channels being combined is enabled.

KF STRB –> Combine: Add the Keyframe Strobe effect before the combine. Parameters can be set independently for each channel.

Wind Settings

Notes

- The wind function is not supported on the MVE-8000A.
- When wind is turned on, any of the following effects that are on are turned off.
  – Trail
  – Motion decay
  – Keyframe strobe

Applying the wind effect

1 In the DME menu, select VF5 ‘Light/Trail’ and HF5 ‘Wind.’

The Wind menu appears.

2 Press [Wind], turning it on.

This enables the wind, and you can now adjust the parameters with the knobs.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Decay	Amount of afterimage displayed	0.00 to 100.00 a)
2	Shift H	Extension in the horizontal direction	–100.00 to +100.00
3	Shift V	Extension in the vertical direction	–100.00 to +100.00

a) 0.00 represents no afterimage, and 100.00 represents no decay in the afterimage.

4 To erase the afterimages, press [Wind Eraser], turning it on.

Selecting the signal for the afterimage portion

In the <Wind Source> group, select the image to fill the afterimage portion.

Notes

- "Mix Color" or "Ext Video" can only be applied to one of the background *(see page 619)*, flex shadow *(see page 522)*, trail *(see page 591)*, and wind effects.
  If you select "Mix Color" or "Ext Video" in the wind settings, a selection of "Mix Color" or "Ext Video" in any of the other effects is disabled, and "Flat Color" is selected in its place.
- When executing combining four channels of DME images, "Mix Color" and "Ext Video" cannot be selected.

Freeze Video: Freeze the input image to use as the afterimage.

Flat Color: Use a single color matte for the afterimage; you can set the following parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Hue Rotate: Use a single color matte with the hue changing for each frame as the afterimage; you can set the following parameters with the knobs.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue Speed	Rate at which hue changes	–12.00 to +12.00

Mix Color: Insert a mix color signal *(see page 533)* in the afterimage portion.

Ext Video: Insert the external video signal input to the Ext IN connector in the afterimage portion.

Rainbow: Use a freeze image with the hue changing every frame in the afterimage portion. The difference from "Hue Rotate" is that many colors appear simultaneously.

For details of the Rainbow parameters, see the "Hue Rotate" item above.

Applying modulation to the afterimage portion (Modulation)

1 In the Wind menu, press [Modulation], turning it on.

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Amp H	Horizontal amplitude of the wave	0.00 to 100.00
2	Freq H	Horizontal frequency of the wave	–100.00 to +100.00
3	Amp V	Vertical amplitude of the wave	0.00 to 100.00
4	Freq V	Vertical frequency of the wave	–100.00 to +100.00

For details of Priority, Wind Freeze Timing, Wind Eraser, Defocus, Dust, and Combine Process in the Wind menu, see "Trail Settings" (page 591).

Spotlighting Settings

You can set up to three light sources (lights 1 to 3).

Notes

- The Spotlighting effect is not supported on the MVE-8000A.
- The BZDM-9050 Texture Lighting Software (for MVE-9000) is required to set lights 2 and 3.

- When the global effect Combiner is enabled, the settings of the smallest-numbered channel selected for the Combiner are used.

Adjustments to the image surface

The following adjustments can be made to the image surface struck by the light.

- Adjusting the brightness of the whole image
- Selecting the image surface effect
- Test sphere function
- Adjusting the bumpiness of the image surface
- Coordinate axis on surface of image
- Texture deformations

Selecting the image surface effect

Flat: The image surface is unchanged, causing the selected light source to appear as the effect.

Texture: A texture appears on the surface of the image. Textures can be selected from among 30 patterns.

See "Texture Patterns" (page 874) for the texture patterns.

Non Linear: Spotlighting effect is applied to an area to which a DME nonlinear effect is applied.

Notes

The BZDM-9050 is required to enable Texture and Non Linear settings.

Test sphere function

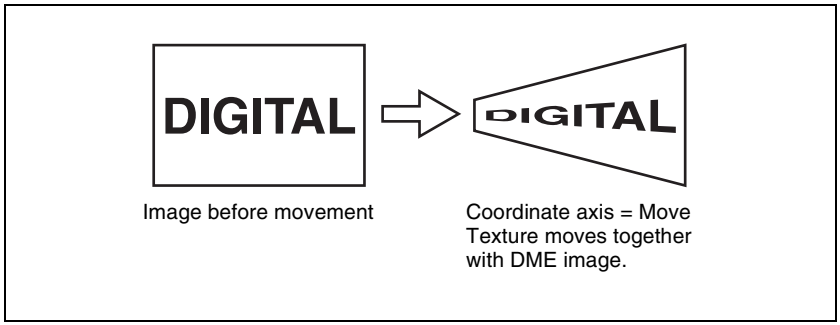
A test sphere is a translucent sphere virtually embedded in the center of the input picture to provide an intuitive way for you to check the position and direction of the spotlight. When you change the position or direction of a light source, the side of the sphere closest to the light source grows brighter. You can easily check the position and direction of the light source by viewing the test sphere.

For more information about test sphere, see "Relation between test spheres and parallel rays" (page 606).

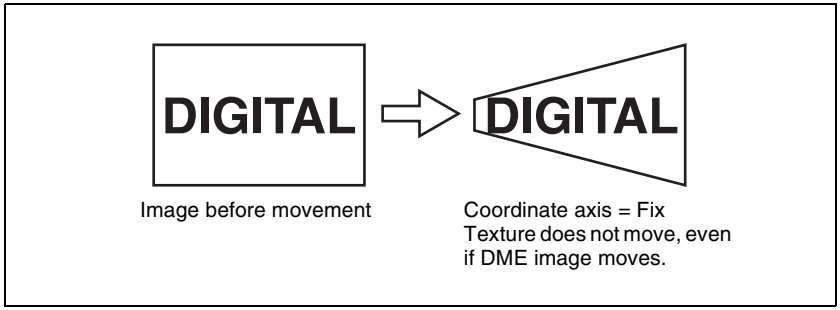
Coordinate axis on surface of image

Specify where to apply the texture or test sphere on the image surface.

Move: The texture moves together with the DME image.



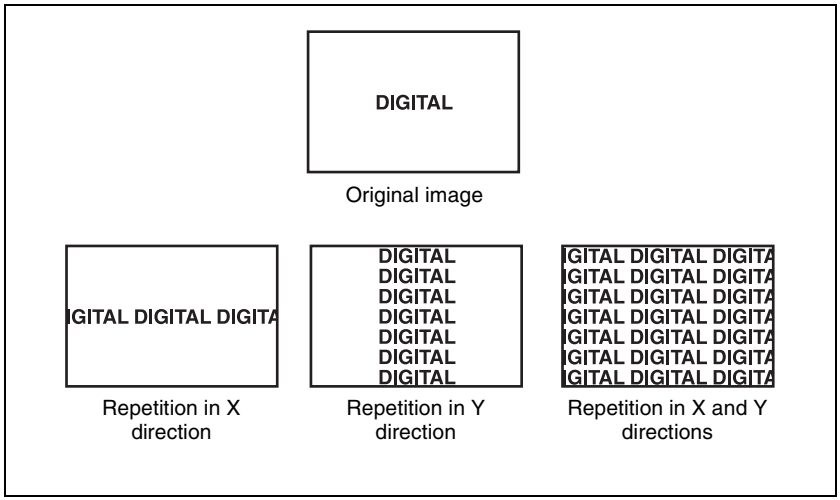
Fix: The texture does not move, even if the DME image moves.



Texture deformations

You can change the texture pattern, position, and size, and use the repetition function.

The following figure shows examples of a texture pattern repeated in the X and Y directions.



Setting lights

Light source types

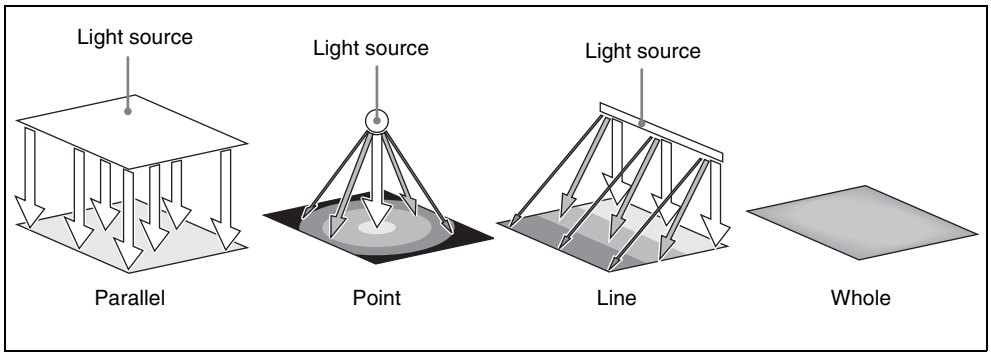
The following type of light sources are available (*see figure*).

Parallel: Parallel light source

Point: Point light source. As the light source is placed further away, the illuminated range becomes wider and the light become weaker.

Line: Line light source

Whole: Non-directional light source which illuminates the whole image.

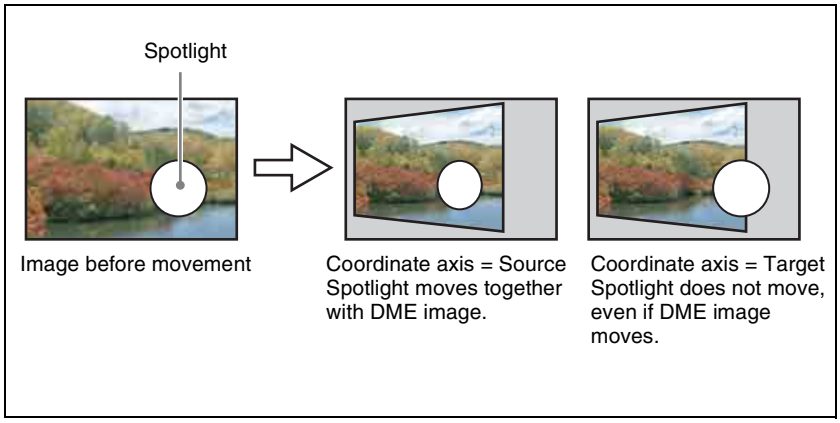


Linking and unlinking image and spotlight

The spotlight can move together with a DME image, or be fixed in place.

Source: Place the light source in source coordinate space. The spotlight is linked and moves when the image moves.

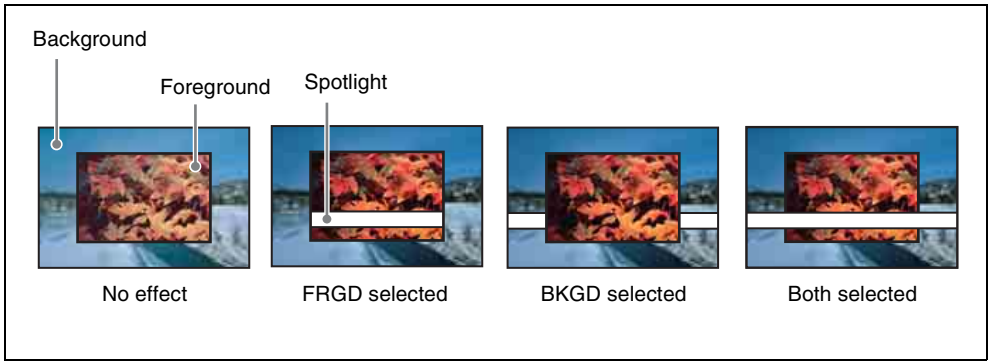
Target: Place the light source in target coordinate space. The spotlight does not move, even when the image moves.



Selecting the lighted area

You can select the area lit by the spotlight.

FRGD: The light strikes the image foreground.
BKGD: The light strikes the image background.
Both: The light strikes both foreground and background.



Surface Flat

For the currently selected light source only, you can forcibly make the image surface effect flat.
This is effective when you have selected texture as image surface effect and want a flat effect for one light source only.

Light shape

Creates the light shape.

- Select the shape pattern

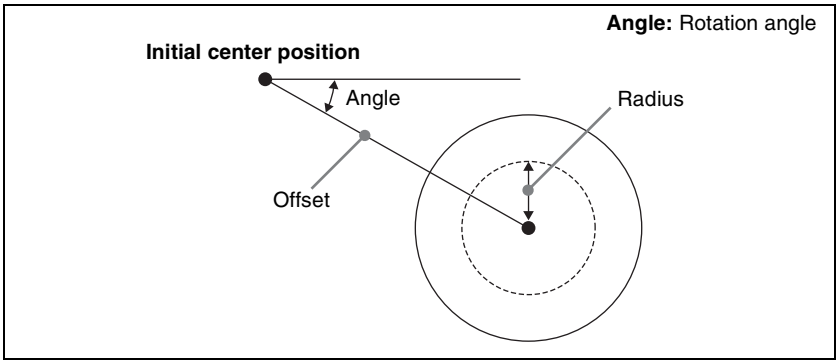
  For shape patterns, see "Shape Patterns" (page 875).

- Set the size, degree of deformation, softness, and rotation.

Ring settings

Shines the light with a hole in the middle, like a doughnut. Adjust the following parameters.

Offset: Distance to move the center of the ring from the initial position (the position set when selecting the light source in the <Spot Mode> group).
Radius: Inner side radius of the ring.
Angle: When an Offset is set, the rotation angle of the ring around the initial center position.

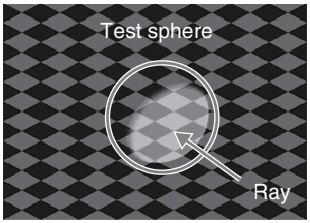


Fill blending modes

Specifies the way in which the light is blended with the image.
Mix: Light as if reflected from a mirror. The light can be given a color.
Multiply: Light as if reflected from a dull surface (diffuse reflection).

Relation between test spheres and parallel rays

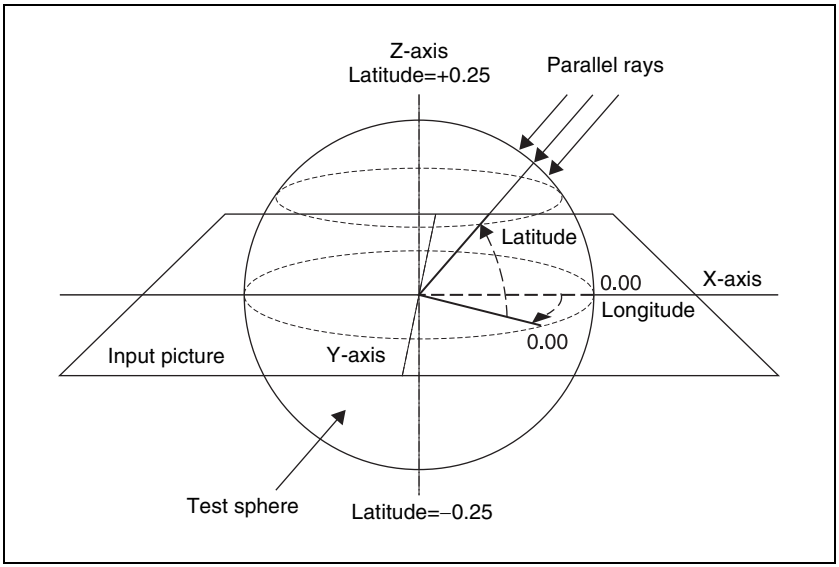
The following figure shows an example of the effect of parallel rays on a test sphere.



The direction of a ray is defined by longitude and latitude.

- Longitude: A direction (angle), expressed as a plus value for clockwise rotation in the plus direction with respect to the X axis of the input picture.
- Latitude: Latitude

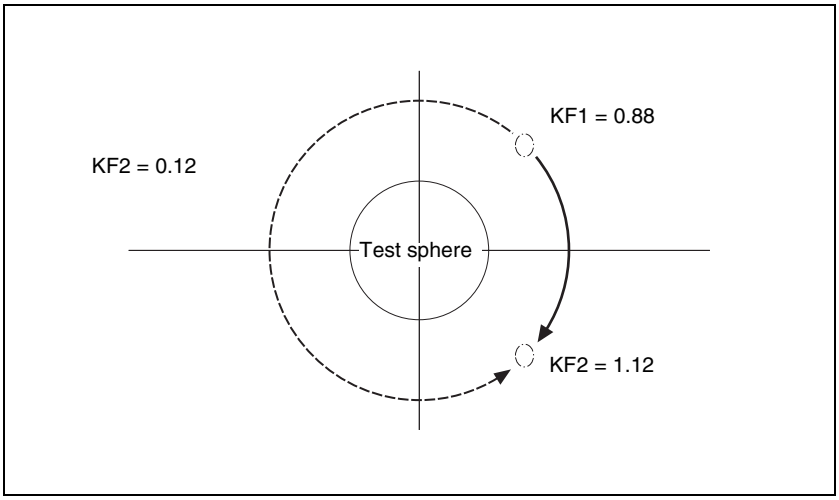
The following figure shows the relationships between the longitude and latitude of parallel rays, input picture, and test sphere.



The unit of these direction parameters is the number of rotations, with 360° (1 rotation) expressed as 1.00, in the same way as 3D rotation parameters. The following relationships apply in the example shown in the figure.

Parameter	Setting	Angle
Longitude	0.12	45°
Latitude	0.12	45°

The fractional part of the setting after the decimal point corresponds to an angle 0 to 360°. If the fractional parts of two setting values are the same, the effect is the same even if the integral parts are different.
The integral part of a setting value is used when moving a light source with keyframes.
For example, when the longitude of a light source rotates in the clockwise direction from 0.88 (315°) to 0.12 (45°), it rotates in the counterclockwise direction (the angle grows smaller) if the above values are used. In this case, the value of the second keyframe can be set to 1.12 (360° + 45°).



Keyframe trajectory

Setting the surface where light strikes the image

1 In the DME menu, select VF5 'Light/Trail' and HF6 'Spot Lighting.'

The Spot Lighting menu appears.

2 Press [Spot Lighting], turning it on.

This enables Spotlighting, and you can now use the knobs to adjust the parameters.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Total Ambient	Brightness of whole image	0.00 to 100.00

- Lowering the brightness of the image makes Spotlighting more effective.
- The Total Ambient setting is shared with the Lighting function.

4 In the <Surface Select> group, select the state of the surface struck by the light.

Flat: The image surface is unchanged, causing the selected light source to appear as the effect.
Texture: A texture appears on the surface of the image.
Non Linear: The Spotlighting effect is applied to an area to which a DME nonlinear effect is applied.

Notes

- The BZDM-9050 Texture Lighting Software (for MVE-9000) is required to enable Texture or Non Linear.
  An install key must be entered to use the software *(For details, see "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 3).)*
- The Spotlighting Non Linear setting is effective for the following nonlinear effects. For any other nonlinear effect, the result of selecting the Non Linear setting is the same as selecting Flat.
  Wave, Mosaic Glass, Flag, Ripple, Lens, Panorama, Page Turn, Roll.

5 If you selected Texture or Non Linear in step **4**, set the following parameters.

Parameters when you selected Texture

• SD format

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–8.00 to +8.00 a)
2	Y	Movement in Y-axis direction	–6.00 to +6.00 b)
3	Size X	Image size in X-axis direction	0.50 to 16.00
4	Size Y	Image size in Y-axis direction	0.50 to 16.00
5	Amp	Emphasize bumps and depressions	–100.00 to +100.00 c)

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Plus emphasizes bumps in texture, minus emphasizes depressions. 0.00 is a flat surface.

• HD format

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–32.00 to +32.00 a)
2	Y	Movement in Y-axis direction	–24.00 to +24.00 b)
3	Size X	Image size in X-axis direction	0.50 to 16.00
4	Size Y	Image size in Y-axis direction	0.50 to 16.00
5	Amp	Emphasize bumps and depressions	–100.00 to +100.00 c)

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Plus emphasizes bumps in texture, minus emphasizes depressions. 0.00 is a flat surface.

Parameters when you selected Non Linear

Knob	Parameter	Adjustment	Setting values
5	Amp	Distance of light	–100.00 to +100.00 a)

a) Light appears from Z direction. At –100.00 the light goes deepest, at +100.00 the whole image is lit like a flat effect.

6 If you selected Texture in step **4**, select the pattern as explained in the next section "To select a texture pattern."

7 If you selected Texture in step **4**, select the way it is applied in the <Surface Axis> group.

Move: The texture moves together with the DME image.
Fix: The texture does not move, even if the DME image moves.

For the difference between these application methods, see "Coordinate axis on surface of image" (page 602).

Notes

If Non Linear is selected in the <Surface Select> group, Fix is disabled. Behavior is the same as Move.

To select a texture pattern

1 In the Spot Lighting menu, press [Texture Ptn Select].

The Texture Ptn Select menu appears.
Two lists appear in the status area. The list on the left displays the number and name of the currently selected texture. The list on the right is for selecting a texture.

2 In the <Texture Pattern> group, press [User] or [Factory] to select the texture pattern list.

[User]: List of texture patterns created by the user. (*See "Adding User Texture Patterns" in Chapter 18 (Volume 3).*
[Factory]: List of texture patterns stored in the system when shipped from the factory.

3 Do one of the following to select a texture.

- Press directly on the list on the right of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Texture No	Texture	1 to 30 [a] 101 and upwards [b]

a) When Factory is selected
b) When User is selected. The setting value range depends on the number of texture patterns installed.

4 Press [Set].

The texture selected in step **2** appears in the list on the left of the status area.

To set a test sphere

1 In the Spot Lighting menu, press [Test Sphere], turning it on.

A test sphere effect appears on the image surface.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
5	Amp	Distance of light	–100.00 to +100.00 a)

a) Light appears from Z direction. At –100.00 the light goes deepest, at +100.00 the whole image is lit like a flat effect.

For details of the relationship of test spheres and parallel rays, see "Relation between test spheres and parallel rays" (page 606).

Setting light sources

Up to three light sources (Light 1 to Light 3) for Spotlighting can be set by menus.

Light source menu

The following three light source menus are available.

Light source	Menu
Light 1	DME >Light/Trail >Spot Lighting >Light 1
Light 2	DME >Light/Trail >Spot Lighting >Light 2
Light 3	DME >Light/Trail >Spot Lighting >Light 3

Notes

The BZDM-9050 Texture Lighting Software (for MVE-9000) is required to enable Light 2 and Light 3.
An install key must be entered to use the software. *(For details, see "Installation and Device Setup (Install/Unit Config Menu)" in Chapter 18 (Volume 3).)*

To set light source data

The following example shows how to set light source data with the Light 1 menu.
If you use multiple light sources, use the same procedure for all light sources.

1 In the <Spot Lighting Adjust> group of the Spot Lighting menu, press [Light 1].

The Light 1 menu appears.

2 Press [Light 1], turning it on.

This enables the Light 1 light source, and you can now use the knobs to adjust the parameters.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Total Ambient	Brightness of whole image	0.00 to 100.00
2	Intensity	Intensity (brightness) of the light source	0.00 to 100.00
3	Soft	Softness of the lighted area	0.00 to 100.00

- Lowering the brightness of the image makes Spotlighting more effective.
- The Total Ambient setting is shared with the Lighting function.

4 In the <Spot Mode> group, select the type of light source.

Parallel: Parallel light source. The direction can be set.
Point: Point light source. The position can be set.
Line: Line light source. The position and angle can be set.
Whole: Non-directional light source which illuminates the whole image (no settings).

For more information about light source types, see "Light source types" (page 604).

5 According to the selected light source type, set the following parameters.

When you selected Parallel

Knob	Parameter	Adjustment	Setting values
1	Longitude	Longitude	–8.00 to +8.00 a)
2	Latitude	Latitude	–8.00 to +8.00

a) Minus moves counterclockwise, plus moves clockwise.

When you selected Point

- **SD format**

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–6.00 to +6.00 a)
2	Y	Movement in Y-axis direction	–6.00 to +6.00 b)
3	Z	Movement in Z-axis direction	–6.00 to +6.00 c)

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Minus moves forward, plus moves deeper.

- **HD format**

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–24.00 to +24.00 a)
2	Y	Movement in Y-axis direction	–24.00 to +24.00 b)
3	Z	Movement in Z-axis direction	–24.00 to +24.00 c)

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Minus moves forward, plus moves deeper.

When you selected Line

- **SD format**

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–6.00 to +6.00 a)
2	Y	Movement in Y-axis direction	–6.00 to +6.00 b)
3	Z	Movement in Z-axis direction	–6.00 to +6.00 c)
4	Longitude	Longitude	–8.00 to +8.00 d)

a) Minus moves left, plus moves right.
b) Minus moves down, plus moves up.
c) Minus moves forward, plus moves deeper.
d) Minus moves counterclockwise, plus moves clockwise.

- **HD format**

Knob	Parameter	Adjustment	Setting values
1	X	Movement in X-axis direction	–24.00 to +24.00 a)
2	Y	Movement in Y-axis direction	–24.00 to +24.00 b)
3	Z	Movement in Z-axis direction	–24.00 to +24.00 c)
4	Longitude	Longitude	–8.00 to +8.00 d)

a) Minus moves left, plus moves right.

b) Minus moves down, plus moves up.
c) Minus moves forward, plus moves deeper.
d) Minus moves counterclockwise, plus moves clockwise.

6 In the <Axis Select> group, select the coordinate space in which to place the light source.

Source: Place the light source in the source coordinate space. The spotlight moves when the image moves.
Target: Place the light source in the target coordinate space. The spotlight does not move, even when the image moves.

For details of the coordinate space in which to place the light source, see "Linking and unlinking image and spotlight" (page 604).

To set a test sphere

1 In the Light 1 menu, press [Test Sphere], turning it on.

A test sphere effect appears on the surface of the image.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
5	Amp	Distance of light	–100.00 to +100.00 a)

a) Light appears from Z direction. At –100.00 the light goes deepest, at +100.00 the whole image is lit like a flat effect.

To select the lighted area

In the <Area Select> group, select one of the following.
FRGD: The light strikes the image foreground.
BKGD: The light strikes the image background.
Both: The light strikes both foreground and background.

For more information about the lighted area, see "Selecting the lighted area" (page 604).

Notes

- If you select [Multiply] in the <Fill Blending Mode> group of the Light Color Adjust menu *(see page 617)*, the light effect is not applied to the background, even if you select BKGD or Both.
- If the setting of [Brilliancy] in the <Fill Source> group of the Light Color Adjust menu *(see page 617)* is 100.00, the light effect is not applied to the background, even if you select BKGD or Both.
- When the global effect Combiner is set to Mix or Depth, the light effect is not applied to the background, even if you select BKGD or Both.

To select Surface Flat

Press [Surface Flat], turning it on.

If you have selected anything other than Flat in the <Surface Select> group of the Spot Lighting menu, the part corresponding only to the surface being struck by the currently set light from the light source is shown in the same way as if Flat had been selected.

To set the shape of the light

1 Press [Shape], turning it on.

2 Set the following parameters.

- **SD format**

Knob	Parameter	Adjustment	Setting values
1	Shape Ptn	Shape pattern	1 to 2 a)
2	Size	Shape size	0.00 to 6.00
3	Deform	Amount of shape deformation	0.00 to 100.00 b)
4	Soft	Softness of shape pattern	0.00 to 100.00
5	Angle	Angle of shape pattern rotation	–8.00 to +8.00 c)

a) For more information about the shape patterns, see “Shape Patterns” (page 875) in the Appendix.

b) 0 is a round shape, and 100 is the shape itself. Smaller values make the pattern more rounded.

c) –1.00 is one rotation in the counterclockwise direction. +1.00 is one rotation in the clockwise direction.

- **HD format**

Knob	Parameter	Adjustment	Setting values
1	Shape Ptn	Shape pattern	1 to 2 a)
2	Size	Shape size	0.00 to 24.00
3	Deform	Amount of shape deformation	0.00 to 100.00 b)
4	Soft	Softness of shape pattern	0.00 to 100.00
5	Angle	Angle of shape pattern rotation	–8.00 to +8.00 c)

a) For more information about the shape patterns, see “Shape Patterns” (page 875) in the Appendix.

b) 0 is a round shape, and 100 is the shape itself. Smaller values make the pattern more rounded.

c) –1.00 is one rotation in the counterclockwise direction. +1.00 is one rotation in the clockwise direction.

To rotate the shape pattern

1 Press [Shape Speed], turning it on.

The display on knob 5 that was visible when [Shape] was selected changes.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
5	Speed	Rotation direction and speed	–100.00 to +100.00 a)

a) –100.00 is four rotations per second in the counterclockwise direction, and +100.00 is four rotations per second in the clockwise direction. 0.00 stops the rotation.

To change the light to a ring shape

Notes

If you select Parallel or Whole *(see page 612)* in the <Spot Mode> group and shaping is disabled, the Ring parameter cannot be set.

1 Press [Ring], turning it on.

2 Set the following parameter.

- **SD format**

Knob	Parameter	Adjustment	Setting values
1	Offset	Offset from center position (radius)	–6.00 to +6.00
2	Radius	Radius of ring	0.00 to 6.00
3	Angle	Rotation angle of ring	–8.00 to +8.00 a)

a) –1.00 is one rotation in the counterclockwise direction and +1.00 is one rotation in the clockwise direction.

Notes

There is no Radius setting when Line is selected in the <Spot Mode> group.

- **HD format**

Knob	Parameter	Adjustment	Setting values
1	Offset	Offset from center position (radius)	–24.00 to +24.00
2	Radius	Radius of ring	0.00 to 6.00
3	Angle	Rotation angle of ring	–8.00 to +8.00 a)

a) –1.00 is one rotation in the counterclockwise direction and +1.00 is one rotation in the clockwise direction.

Notes

There is no Radius setting when Line is selected in the <Spot Mode> group.

To rotate the ring

1 Press [Ring Speed], turning it on.

The display on knob 3 that was visible when [Ring] was selected changes.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
3	Speed	Rotation speed and direction	–100.00 to +100.00 a)

a) –100.00 is four rotations per second in the counterclockwise direction, and +100.00 is four rotations per second in the clockwise direction. 0.00 stops the rotation.

To invert the lighted area

Press [Light Invert], turning it on.
The lighted area is inverted.

To add color to the light source

1 In the Light 1 menu, press [Light Color Adjust].

The Light Color Adjust menu appears.

2 In the <Fill Blending Mode> group, select how the light and image should be blended.

Mix: Light as if reflected from a mirror.
Multiply: Light as if reflected from a dull surface (diffuse reflection).

3 If you selected Mix, select the fill color in the <Fill Source> group.

Flat Color: A monochrome matte.
Hue Rotation: Color matte with a color that gradually varies.

4 According to the selection, set the following parameters.

- **When you selected Flat Color**

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Knob	Parameter	Adjustment	Setting values
4	Brilliancy	Brilliance of surface struck by light	0.00 to 100.00 a)

a) 100.00: The image beneath the light shines through.

- **When you selected Hue Rotation**

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Speed	Speed at which hue changes	–12.00 to +12.00 a)
4	Brilliancy	Brilliance of surface struck by light	0.00 to 100.00 b)

a) –12.00 is a 360-degree rotation every second in the counterclockwise direction. +12.00 is a 360-degree rotation every second in the clockwise direction.
b) 100.00: The image beneath the light shines through.

Copying or swapping light source settings

You can copy or swap the setting from one light source (Light 1 to Light 3) to another light source.

1 In the Spot Lighting menu, press [Copy/Swap].

The Copy/Swap menu appears.
Two lists appear in the status area. The list on the left shows the copy or swap sources, and the list on the right shows the copy or swap destinations.

2 Do one of the following to select the target data.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Left No	Copy or swap source data	1 to 3
2	Right No	Copy or swap destination data	1 to 3

3 Press [Copy] to copy, or [Swap] to swap.

The data is copied or swapped.

To undo a copy or swap

Press [Undo]. Settings are returned to their values before the copy or swap.

Background Settings

Adds a color or inputs an external signal to the background of the image.

Notes

Signal selection for this purpose is not supported on the MVE-8000A.

Applying the Background effect

1 In the DME menu, select VF6 ‘Input/Output’ and HF1 ‘Bkgd.’

The Bkgd menu appears.

2 Press [Bkgd], turning it on.

The Background effect is enabled. Only if Flat Color is selected in the <Bkgd Fill> group, you can adjust the parameters with the knobs.

3 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Selecting the signal to insert in the background

When using the MVE-9000, you can select the signal to insert in the background.
With [Bkgd] set on, use the following procedure.

1 In the <Bkgd Fill> group, select one of the following.

Flat Color: single color
Mix Color: mix color signal set in the Color Mix menu *(see page 533)*
Ext Video: an external video signal input to the Ext IN connector

Notes

- “Mix Color” or “Ext Video” can only be applied to one of the background, flex shadow *(see page 522)*, trail *(see page 591)*, and wind *(see page 599)* effects.
  If you select “Mix Color” or “Ext Video” in one of these settings, a selection of “Mix Color” or “Ext Video” in any of the other effects is disabled, and “Flat Color” is selected in its place.

- When executing combining four channels of DME images, “Mix Color” and “Ext Video” cannot be selected.

2 Only if Flat Color is selected in step **1**, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

Separate Sides Settings

Applies separate video signals and key signals to the front and back of the image.

Applying the Separate Sides effect

1 In the DME menu, select VF6 ‘Input/Output’ and HF2 ‘Video/Key.’

The Video/Key menu appears.

2 Press [Separate Side], turning it on.

The Separate Sides effect is enabled. If the video and key signals currently being output to the monitor are the front side, you can select the front signals. If they are the back side, you can select the back signals. Video and key signals are selected with the cross-point control blocks of each M/E bank or the PGM/PST bank.

Invert Settings

Inverts the input video signal and/or key signal horizontally or vertically. You can make separate settings for the front and back.

Applying the Invert effect

1 In the DME menu, select VF6 ‘Input/Output’ and HF2 ‘Video/Key.’

The Video/Key menu appears.

2 In the <Front> group (to invert front signals) or the <Back> (to invert back signals), press the following buttons, turning them on.

H Invert: Invert video and key signals horizontally.
V Invert: Invert video and key signals vertically.

Key Density Settings

You can adjust the key density for the key signal input to the DME.

Setting the key density

1 In the DME menu, select VF6 'Input/Output' and HF2 'Video/Key.'

The Video/Key menu appears.

2 Press [Key Density], turning it on.

This enables the key density function, and you can now use the knobs to adjust the parameters.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Key Density	Key density	0.00 to 100.00

Key Source Selection

You can select either the key signals received from the switcher or the key signals generated in the DME for application to the front and back of the image.

Selecting the key source signals

Notes

It is not possible to select the key source for the first channel. It is fixed at "Ext Key" as below.

1 In the DME menu, select VF6 'Input/Output' and HF2 'Video/Key.'

The Video/Key menu appears.

2 In the <Front Key> group or <Back Key> group respectively, press one of the following, turning it on.

Ext Key: Use the key signal sent from the switcher as the key source.
Int Key: Use the full-size DME internal key signal as the key source.
Lum Key: Use the input video luminance signal as the key source.

3 When Ext Key or Lum Key is selected in step **2**, set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Clip	Reference level for key signal generation	–7.31 to +109.59
2	Gain	Key sensitivity	–100.00 to +100.00

Notes

- The Ext Key and Lum Key in the <Front Key> group share clip and gain settings. Similarly, Ext Key and Lum Key in the <Back Key> group also share clip and gain settings.
- When the first channel is selected, it is not possible to set the Ext Key parameter.

Interpolation Settings

Specifies the methods used for interpolation processing of input video signals and input key signals.

For input video signals, you can select from the following four methods.
- Detect changes in the luminance and chrominance signals separately, and switch automatically between fields and frames. You can select the degree of change detection.
- Detect changes in the luminance signal separately, and switch automatically between fields and frames. You can select the degree of change detection.
- Do interpolation in field units.
- Do interpolation in frame units.

For input key signals, you can select from the following three methods.
- Detect changes in the luminance signal separately, and switch automatically between fields and frames. You can select the degree of change detection.
- Do interpolation in field units.
- Do interpolation in frame units.

You can also select the number of pixels used in interpolation processing, and select the method used to show the picture reduced or expanded.

Further, you can apply an anti-moire filter to reduce the moire patterns created by interpolation.

Notes

- Interpolation processing is possible for the following signal formats and DME systems.
  – MVE-8000A: 480i/59.94, 576i/50
  – MVE-9000: 480i/59.94, 576i/50, 1080i/59.94, 1080i/50
- The anti-moire filter is only effective when the MVE-8000A is used in an HD system.

Selecting an interpolation method for input video signals

1 In the DME menu, select VF6 'Input/Output' and HF3 'Process.'

2 In the <Video Field/Frame Mode> group, select the interpolation method for the video signal.

Adaptive Y/C: Detect changes in the luminance and chrominance components of the video signal separately, and switch automatically between fields and frames.
Adaptive Y: Detect changes in the luminance component of the video signal separately, and switch automatically between fields and frames.
Field: Do interpolation in field units. This gives natural movement, suitable for moving video.
Frame: Do interpolation in frame units. This gives higher image precision, suitable for still pictures.

3 When you select Adaptive Y/C or Adaptive Y in step **2**, set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Mode	Degree of motion detection	1 to 4

4 In the <Key Field/Frame Mode> group, select the interpolation method for the key signal.

Adaptive: Detect changes in the luminance component of the key signal separately, and switch automatically between fields and frames.
Field: Do interpolation in field units. This gives natural movement, suitable for moving video.
Frame: Do interpolation in frame units. This gives higher image precision, suitable for still pictures.

5 When you select Adaptive in step **4**, set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Mode	Degree of motion detection	1 to 4

6 In the <Interpolation Mode> group, set the number of pixels to use in interpolation.

Multi: Use multi-point interpolation. This gives higher picture quality.
Linear: Use two-point interpolation.

7 In the <Filter Mode> group, select the method used to show the picture reduced or expanded.

Mode1 (standard): Even when the picture is reduced, add compensation so that it can be seen clearly.
Mode2 (soft): Suppress aliasing when expanding or reducing the picture.
Mode3 (sharp): Do not suppress aliasing when expanding or reducing the picture.

Applying the anti-moire filter

You can reduce the moire patterns created by interpolation when an image is enlarged, compressed, or rotated.

Notes

This function is effective only when the HD signal format is used on the MVE-8000A.

1 In the DME menu, select VF6 'Input/Output' and HF3 'Process.'

The Process menu appears.

2 Press [Anti Moire Filter], turning it on.

3 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Anti Moire Filter	Amount of moire reduction	1 to 8

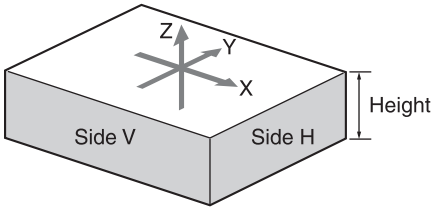
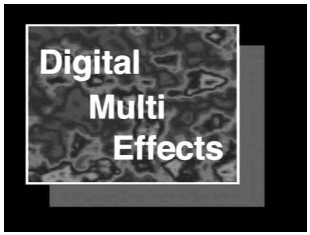
Global Effect Operations

Global effects are special effects created by combining the images of successive channels. The Global Effect menu is used to add these effects. The following types of global effects are available.

Notes

When the signal format is 1080P, of the following effects, three or more channel combiner and brick effects cannot be used.

Global effects

Name	Effect/Image
Combiner	Automatically combines the selected images when multiple channels are selected on one keyer or for one transition.
Brick	Creates a rectangular parallelepiped from 3 successive channels. 
Shadow	Gives the image a shadow. 

Operations common to all global effects

In this section, explanations of the operating procedures for individual global effects begin with selections from VF1 ‘Ch1 - Ch4’ in the Global Effect menu. The following are common operations that you must do prior to selecting from this menu.

1 In the device control block, select the target DME channel.

2 In the menu control block, press the top menu selection button [GLB EFF], then select VF1 ‘Ch1 - Ch4.’

The Global Effect >Ch1 - Ch4 menu appears.

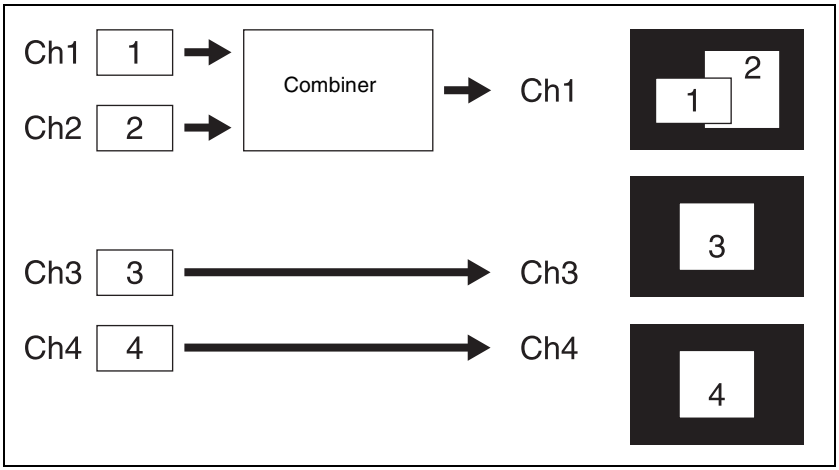
Combiner Settings

When multiple channels are selected on one keyer or for one transition, the Combiner automatically combines the selected images. Up to four channels can be combined.
You can also control the way in which the combination is carried out, as a mix or an overlap with priority set automatically. For a mix, you can control the relative amounts of each channel.
Images can also be crossed in three dimensions.

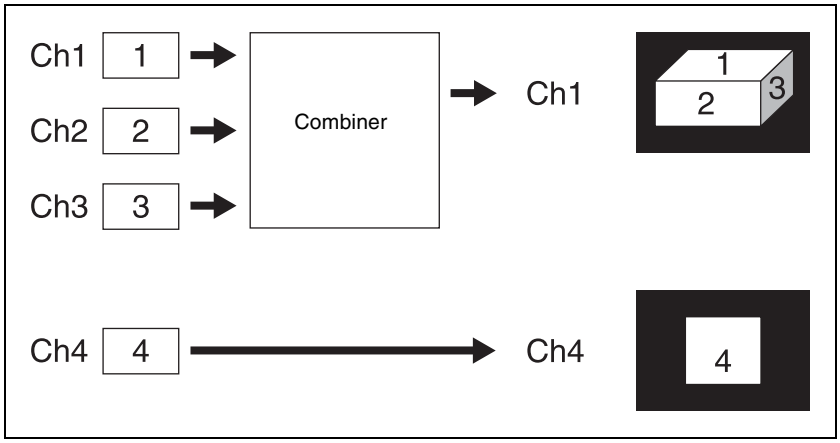
Notes

Three-dimensional image crossing is not supported on the MVE-8000A.

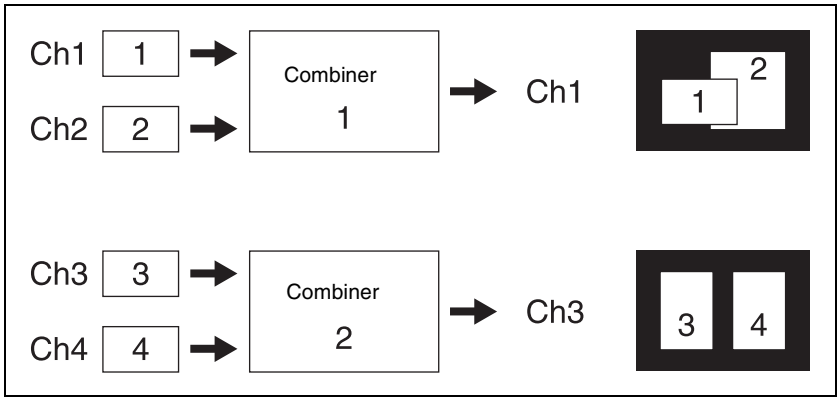
Combination of channel 1 (Ch1) and channel 2 (Ch2)



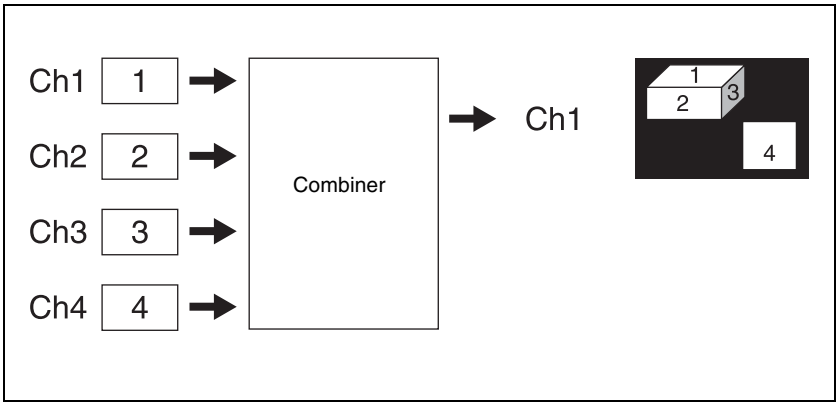
Combination of Ch1, Ch2, and Ch3



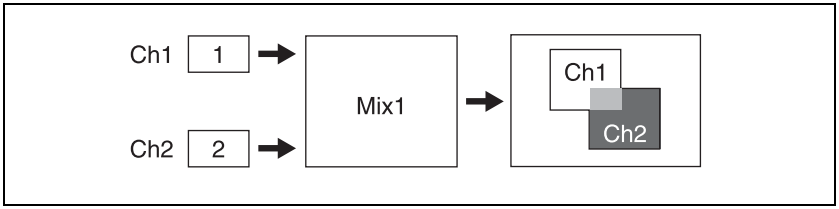
Combination of Ch1 and Ch2 / combination of Ch3 and Ch4



Combination of Ch1, Ch2, Ch3, and Ch4



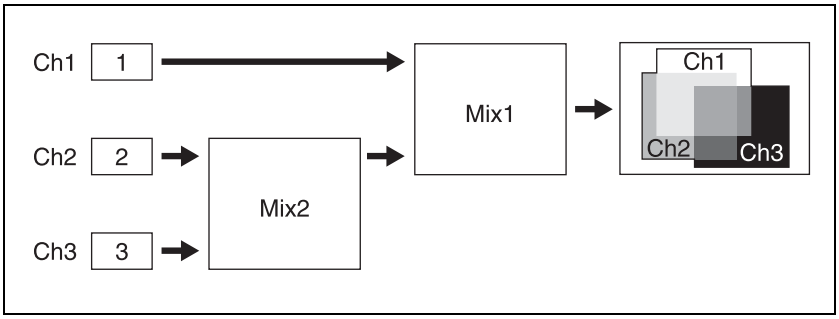
Mixing Ch1 and Ch2



If the Mix1 setting is 70, the proportion of the channels in the mixed portion in the previous illustration is as shown in the following table.

Combination	Indication in figure	Ch1	Ch2
Ch1 and Ch2		30%	70%

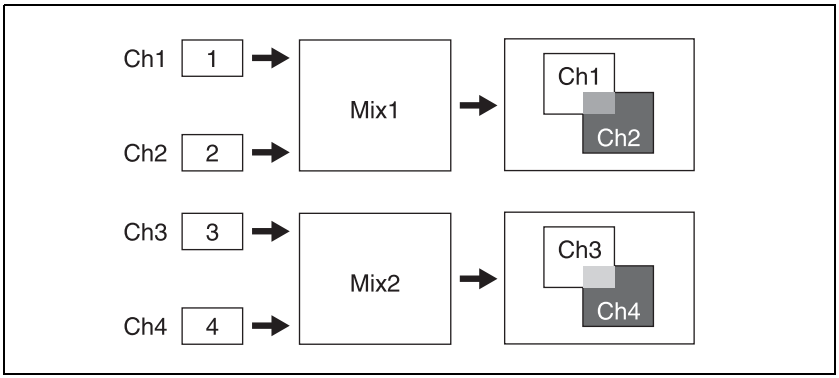
Mixing Ch1, Ch2, and Ch3



If the Mix1 setting is 70 and the Mix2 setting is 40, the proportions of the channels in the mixed portions in the previous illustration are as shown in the following table.

Combination	Indication in figure	Ch1	Ch2	Ch3
Ch1 and Ch2		30%	70%	–
Ch2 and Ch3		–	60%	40%
Ch1 and Ch3		30%	–	70%
Ch1, Ch2, and Ch3		30%	42%	28%

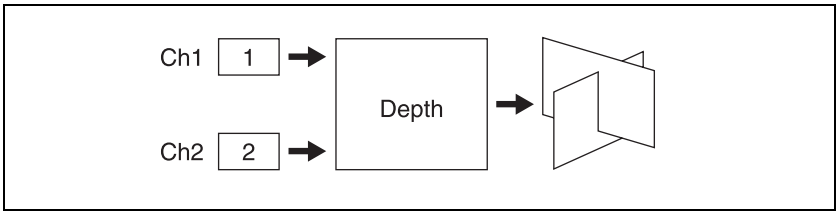
Pairwise mixing of Ch1 and Ch2, and Ch3 and Ch4



If the Mix1 setting is 70 and the Mix2 setting is 40, the proportions of the channels in the mixed portions in the previous illustration are as shown in the following table.

Combination	Indication in figure	Ch1	Ch2	Ch3	Ch4
Ch1 and Ch2		30%	70%	–	–
Ch3 and Ch4		–	–	60%	40%

Ch1 crossed with Ch2



Setting the combiners

The setting menu differs according to the combiner usage status.
This section shows the cases of “Ch1+Ch2+Ch3” and “Ch1+Ch2, Ch3+Ch4” as examples.

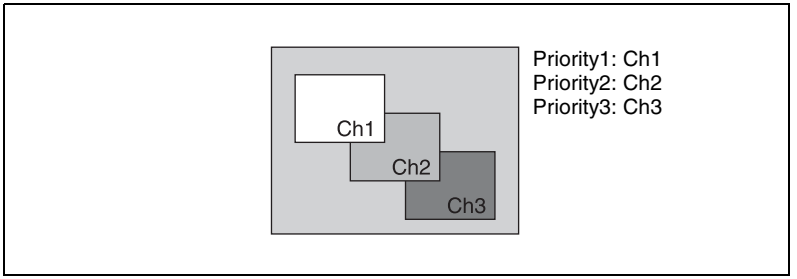
1 In the Global Effect >Ch1- Ch4 menu, select HF1 ‘Combiner Priority.’

The Combiner Priority menu appears.

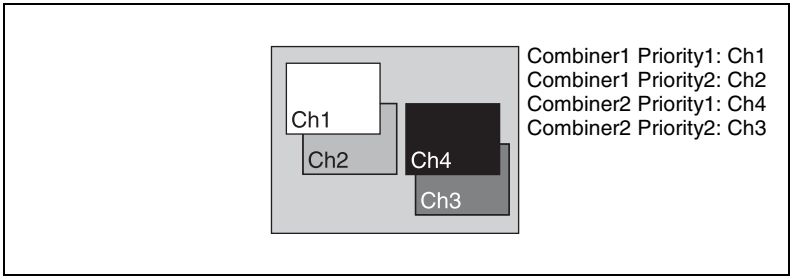
2 If [Mix], [Auto] or [Depth] is on, turn it off.

3 Set the overlap priority for “Ch1+Ch2+Ch3” or “Ch1+Ch2, Ch3+Ch4” as follows.

For case “Ch1+Ch2+Ch3”
Under <Priority1> to <Priority3>, press [Ch1], [Ch2], and [Ch3], respectively, to set the overlap priority.
Priority1: Select the channel with the highest priority.
Priority2: Select the channel with the second highest priority.
Priority3: Select the channel with the lowest priority.



For case “Ch1+Ch2, Ch3+Ch4”
Under <Combiner 1 Priority 1> and <Combiner 1 Priority 2>, press [Ch1] and [Ch2] respectively, and under <Combiner 2 Priority 1> and <Combiner 2 Priority 2>, press [Ch4] and [Ch3] respectively, to set the respective priorities for overlaying the images.



Mixing the images of up to four consecutive channels

1 In the Combiner Priority menu, press [Mix], turning it on.

2 Adjust the following parameters.

For case "Ch1+Ch2"

Knob	Parameter	Adjustment	Setting values
1	Mix	Mix degree	0.00 to 100.00 a)

a) See "Mixing Ch1 and Ch2" *(page 628)*.

For case "Ch1+Ch2+Ch3"

Knob	Parameter	Adjustment	Setting values
1	Mix1	Mix degree for mix of channel 1 with result of Mix2	0.00 to 100.00 a)
2	Mix2	Mix degree for channels 2 and 3	0.00 to 100.00 a)

a) See "Mixing Ch1, Ch2, and Ch3" *(page 628)*.

For case "Ch1+Ch2+Ch3+Ch4"
Knobs 1 and 2 set the same parameters as "For case 'Ch1+Ch2+Ch3'," respectively. Knob 3 is additionally effective, which sets the parameter Mix3 (in the same setting value range as with knobs 1 and 2).

Mixing pairwise the images of channels 1 and 2, and channels 3 and 4

1 In the Combiner Priority menu, press [Combiner1 Mix], turning it on.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Mix1	Mix degree for channels 1 and 2	0.00 to 100.00 a)

a) See "Pairwise mixing of Ch1 and Ch2, and Ch3 and Ch4" *(page 629)*.

3 Press [Combiner2 Mix], turning it on.

4 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Mix2	Mix degree for channels 2 and 3	0.00 to 100.00 a)

a) See “Pairwise mixing of Ch1 and Ch2, and Ch3 and Ch4” *(page 629)*.

Automatically setting the priority of overlapping images

To set the system so that the priority of overlapping images is automatically determined by their position on the z-axis, in the Combiner Priority menu, press [Auto], turning it on.

Notes

It is not possible to cross images. If an image is rotated, the priority is determined by the position on the z-axis of the center of the image.

Crossing images from up to four consecutive channels in three dimensions

Notes

The three-dimensional crossing function is not supported on the MVE-8000A.

1 In the Combiner Priority menu, press [Depth], turning it on.

2 Set the following parameters.

For case “Ch1+Ch2”

Knob	Parameter	Adjustment	Setting values
1	Soft	Softness of edges of crossed section	0.00 to 100.00

For case “Ch1+Ch2+Ch3”

Knob	Parameter	Adjustment	Setting values
1	Soft1	Softness of edges of channel 1 and channel 2 crossed section	0.00 to 100.00
2	Soft2	Softness of edges of channel 2 and channel 3 crossed section	0.00 to 100.00

For case “Ch1+Ch2+Ch3+Ch4”

Knobs 1 and 2 set the same parameters as “For case ‘Ch1+Ch2+Ch3’,” respectively. Knob 3 is additionally effective, which sets the parameter Soft3 (in the same setting value range as with knobs 1 and 2).

Crossing images from channels 1 and 2, and channels 3 and 4 in three dimensions

Notes

The three-dimensional crossing function is not supported on the MVE-8000A.

1 In the Combiner Priority menu, press [Combiner1 Depth], turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Soft1	Softness of edges of channel 1 and channel 2 crossed section	0.00 to 100.00

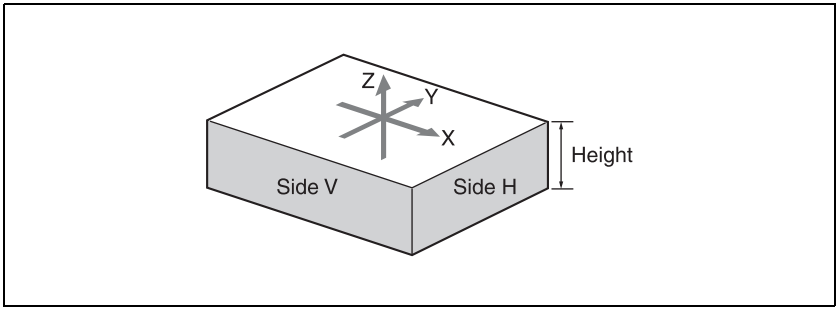
3 Press [Combiner2 Depth], turning it on.

4 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Soft2	Softness of edges of channel 3 and channel 4 crossed section	0.00 to 100.00

Brick Settings

The Brick effect can combine Ch1, Ch2, and Ch3, or combine Ch2, Ch3, and Ch4. The three images are displayed as shown in the following figure.



Combinations of Ch1, Ch2, and Ch3

Upper side: Ch1 image
Side V: Ch2 image
Side H: Ch3 image

Combinations of Ch2, Ch3, and Ch4
Upper side: Ch2 image
Side V: Ch3 image
Side H: Ch4 image

You can adjust the height of the brick, the overlap between the three images and the way to insert the side images.

Applying the Brick effect

1 In the Global Effect >Ch1 - Ch4 menu, select HF2 'Brick.'

The Brick menu appears.

2 Press [Brick], turning it on.

The Brick effect is enabled, and a rectangular parallelepiped (brick) showing the images of three channels appears. You can use the knobs to adjust parameters for the height of the brick and the overlap between the three images.

Notes

- When the Brick effect is enabled, the z-axis position of the front image in the source coordinate frame is shifted by the amount of half the height. Therefore, the image is somewhat magnified.
- The flex shadow function cannot be enabled when Brick is enabled. However, the flex shadow function is not supported on the MVE-8000A.

3 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Height	Height of brick	0.00 to 8.00 a) 0.00 to 32.00 b)
2	Front Overlap	Front overlap	–100.00 to +100.00
3	Side H Overlap	Side H overlap	–100.00 to +100.00
4	Side V Overlap	Side V overlap	–100.00 to +100.00

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

4 Specify the way to insert the side images when the height is changed by pressing one of the following buttons in the <Side V> group or the <Side H> group.

Crop: Crop the parts that do not fit into the side without shrinking the picture. You can set the following parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of left crop	–4.00 to +4.00 (SD) –12.00 to +12.00 (HD)
2	V	Position of top crop	–3.00 to +3.00 (SD) –9.00 to +9.00 (HD)
3	Rotation	Angle of rotation, when rotated around the Z-axis of the source space	0/90/180/270°

• 16:9 mode

Knob	Parameter	Adjustment	Setting values
1	H	Position of left crop	–4.00 to +4.00 (SD) –16.00 to +16.00 (HD)
2	V	Position of top crop	–2.25 to +2.25(SD) –9.00 to +9.00 (HD)
3	Rotation	Angle of rotation, when rotated around the Z-axis of the source space	0/90/180/270°

The set position becomes the upper left corner of Side V or Side H. The right and bottom sides of the inserted image are set automatically.

Compress: Images are inserted after being compressed. You can set the following parameters.

The valid ranges of the parameter values depend on the combination of signal format (SD/HD) and aspect ratio (4:3/16:9) selected in the system, as follows.

• 4:3 mode

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top crop	–2.83 to +3.00 (SD) –8.50 to +9.00 (HD)
2	Left	Position of left crop	–4.00 to +3.83 (SD) –12.00 to +11.50 (HD)
3	Right	Position of right crop	–3.83 to +4.00 (SD) –11.50 to +12.00 (HD)
4	Bottom	Position of bottom crop	–3.00 to +2.83 (SD) –9.00 to +8.50 (HD)
5	Rotation	Angle of rotation, when rotated around the Z-axis of the source space	0/90/180/270°

• **16:9 mode**

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top crop	–2.12 to +2.25 (SD) –8.50 to +9.00 (HD)
2	Left	Position of left crop	–4.00 to +3.87 (SD) –16.00 to +15.50 (HD)
3	Right	Position of right crop	–3.87 to +4.00 (SD) –15.50 to +16.00 (HD)
4	Bottom	Position of bottom crop	–2.25 to +2.12 (SD) –9.00 to +8.50 (HD)
5	Rotation	Angle of rotation, when rotated around the Z-axis of the source space	0/90/180/270°

The part of the image defined by Top, Left, Right, and Bottom is magnified or shrunk to fit into Side V or Side H.

To invert the image in a side face

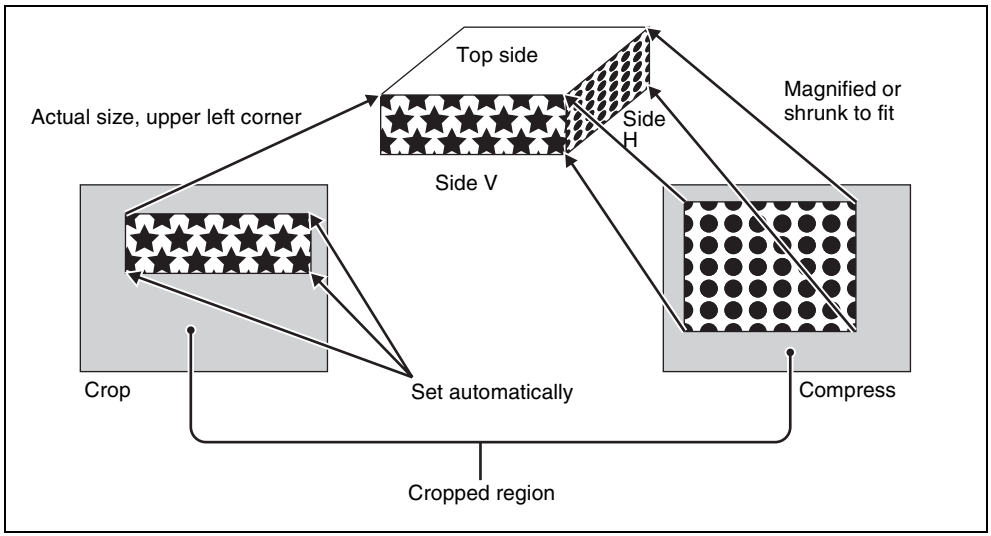
For example, to invert the image on the front of Side H in the <Side H Front> group, press the following buttons, turning them on.

Invert H: To invert horizontally.

Invert V: To invert vertically.

For the images on the other faces, use a similar operation in the following groups:

- Back image of Side H: <Side H Back> group
- Front image of Side V: <Side V Front> group
- Back image of Side V: <Side V Back> group



Shadow Settings

The effect uses two successive channels. You can adjust the position and density of the shadow with respect to the image, and the color of the shadow. The channel with the largest number (for example, Ch2 in the case of Ch1 and Ch2) becomes the shadow.

Notes

When the Combiner function is off, the shadow effect cannot be used.

Applying the Drop Shadow effect

The Shadow menu allows you to apply the Drop Shadow effect. To access the Shadow menu, in the Global Effect>Ch1 - Ch4 menu select HF3 'Shadow.' Depending on the selected combiner channels, the valid buttons differ as follows.

Combiner channel selection	Button				
	Ch1 Shadow	Ch2 Shadow	Ch3 Shadow	Ch1+Ch2 Shadow	Ch2+Ch3 Shadow
Ch1+Ch2	Valid				
Ch2+Ch3		Valid			
Ch3+Ch4			Valid		
Ch1+Ch2+Ch3	Valid	Valid		Valid	
Ch2+Ch3+Ch4		Valid	Valid		Valid
Ch1+Ch2+Ch3+Ch4	Valid	Valid	Valid	Valid	

Taking Ch1 Shadow as an example, the following explains the procedure for applying the Drop Shadow effect.

1 Press [Ch1 Shadow], turning it on.

The Drop Shadow effect is enabled, and channel 2 becomes the channel for the shadow to the image. You can adjust the position and density of the shadow with the knobs.

Notes

The flex shadow function cannot be enabled when Drop Shadow is enabled.
However, the flex shadow function is not supported on the MVE-8000A.

2 Set the parameters.

Knob	Parameter	Adjustment	Setting values
1	Position H	Horizontal shadow position	–8.00 to +8.00 a) –32.00 to +32.00 b)
2	Position V	Vertical shadow position	–8.00 to +8.00 a) –32.00 to +32.00 b)
3	Density	Density of shadow	0.00 to 100.00

a) Setting for SD 4:3, SD 16:9
b) Setting for HD 4:3, HD 16:9

3 In the <Ch1 Shadow Source> group, select the shadow source signal.

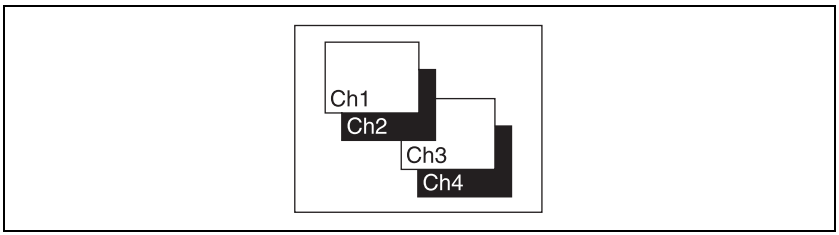
Video: Select Ch2 video input as the shadow.
Flat Color: Select a matte color as the shadow.

4 When you select Flat Color in step **3**, adjust the parameters.

Knob	Parameter	Adjustment	Setting values
1	Luminance	Luminance	0.00 to 100.00
2	Saturation	Saturation	0.00 to 100.00
3	Hue	Hue	359.99 to 0.00

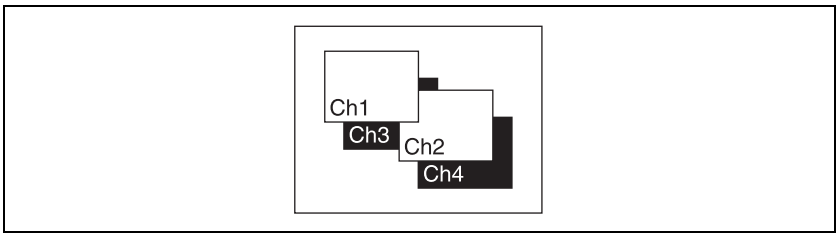
To combine the video images after applying a shadow

Use the Combiner function to select channel 1 + channel 2 and channel 3 + channel 4, then turn [Ch 1 Shadow] and [Ch 3 Shadow] on.



To apply a shadow after combining the video images

Use the Combiner function to select channel 1 + channel 2 + channel 3 + channel 4, then turn [Ch 1 + Ch 2 Shadow] on.



Chapter 12 External Devices

Control of External Devices

In this system, you can operate while controlling the following types of external device:

- Devices supporting P-Bus (Peripheral II protocol) (referred to as "P-Bus devices" in the manual)
- Devices supporting GPI
- VTRs
- Disk recorder (Sony disk 9-pin protocol and video disk communications protocol)
- Extended VTR (Abekas A53 protocol)

For details on the devices that can be connected, consult your Sony representative.

Use the Device menu to carry out operations for controlling above external devices.

To access the Device menu

In the menu control block, press the top menu selection button [DEV].

VTR, Extended VTR, and disk recorder operations are only possible when the optional device control block (MKS-8031TB trackball module or MKS-8036A search dial module) is installed.

Notes

- To operate P-Bus devices, VTRs, Extended VTRs, and disk recorders in the this system, the following settings are required on the DCU 9-pin serial port.
  - Device type setting
  - Device name
  - Setting of control panel (SCU) to be used

  For details of the settings, see "Making Serial Port Settings" in Chapter 22 (Volume 3).

- When using a disk recorder or Extended VTR, be sure to go to the Device >DDR/VTR >File List menu, and recall the file.

  For details of the operation, see "Recalling a file" (page 677).

Shared Functions for External Device Control

Keyframe functions

There are 250 registers, numbered 1 to 250, holding external device control data as keyframe data (only 99 registers for the GPI timeline).
The following are the keyframe functions that can be used.

- RECALL (1-250), STORE (1-250), RECALL UNDO, STORE UNDO, empty register search, AUTO SAVE, RECALL MODE (RECALL, RECALL & REWIND)
- EDIT ENABLE, EDIT UNDO
- CONST DUR, EFF DUR, KF DUR, DELAY, PAUSE, INSERT BEFORE, INSERT AFTER, MODIFY, DELETE, COPY, PASTE BEFORE, PASTE AFTER, FROM TO, ALL
- PREV KF, NEXT KF, GOTO TC, GOTO KF, RUN, REWIND, FF, STOP NEXT KF, NORMAL, JOG, KF FADER

Notes

Actions set in a keyframe are executed only when the keyframe effect is executed in the normal direction. Take care when executing simultaneously with a switcher or DME keyframe effect, since the actions are not executed in the reverse direction.

The following keyframe functions cannot be used.

- KF LOOP, EFFECT LOOP, REVERSE, NORMAL/REVERSE
- PATH

Saving to registers

Set the data for controlling external devices in the Device menu. You can save the set data in keyframe, snapshot, or shotbox registers. You can recall the register in which the data is saved, and carry out operations on it with the keyframe control block.

Editing registers

You can carry out the following operations on the registers in which the data for controlling external devices is saved.

- Copy
- Move
- Swap
- Merge (this cannot be carried out for registers holding VTR, disk recorder, or Extended VTR control data.)
- Lock
- Name

File related functions

As effect data, you can save and recall, using the File menu.

Control of P-Bus Devices

You can control P-Bus devices from this system through the 9-pin serial port of a DCU.

P-Bus device control modes

There are two modes of P-Bus device control, as follows.

Trigger: Operating a previously specified button outputs the command for an action assigned to that button.

Timeline: Carrying out a keyframe effect under the control of the center control panel controls external devices.

In the setup, select which of Trigger mode and Timeline mode to use.
You can set the following actions (set what action command is output to which device) in both modes.

- Store
- Recall
- Trigger

Creating and Editing the P-Bus Timeline

At a keyframe point on the P-Bus timeline, you can set an action. At any single keyframe point you can set actions for a maximum of 24 devices.

For details of keyframe creation and editing operations, see "Creating and Editing Keyframes" (page 709).

For the action setting (or P-Bus timeline editing), use the Device menu.
You can save the data set in the Device menu in keyframe effect registers. Recalling the register starts execution of the keyframe effect, and when this reaches the keyframe point at which actions are set, action commands are output to external devices through the 9-pin serial port assigned to P-Bus.

Notes

Using the P-Bus timeline function requires the P-Bus control mode to be set to [Timeline]. Carry out this setting in the Engineering Setup >Panel >Device Interface menu. *(For details, see "Setting the Control Mode for P-Bus Devices" in Chapter 19 (Volume 3).)*

Setting an action

1 In the Device menu, press VF2 ‘P-Bus Timeline.’

The Device >P-Bus Timeline menu appears.
The status area shows two lists. The left list is for setting combinations of devices and actions. The settings in this list will be saved as keyframe point data. The right list is for selecting the action.

2 Select the P-Bus device for which you want to set an action, by using any of the following methods to specify the device ID.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	ID	Device number	0 to 23

3 Using either of the following methods, select the action.

- Press directly on the list on the right of the status area.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	Action No	Action	1 to 4 [a]

a) 1: Off (no specification)
2: Store
3: Recall
4: Trigger

4 If in step **3** you selected 2 (Store), 3 (Recall), or 4 (Trigger), turn knob 3 to select the register number or trigger number.

The indication for knob 3 changes to reflect the selection of Store, Recall, or Trigger.

Knob	Parameter	Adjustment	Setting values
3	Store No	Register number for Store	1 to 250
3	Recall No	Register number for Recall	1 to 250
3	Trigger No	Trigger number	0 to 15

The setting is reflected in the list on the right of the status area.

5 Press [Set].

For the device selected in the list on the left of the status area, this sets the action specified in step **4**.

Repeat steps **2** to **5** as required for other devices.

Testing an action command

To produce a test output of the action command, press [Test Fire].
The action command is output from the 9-pin serial port of the DCU according to the setting in the list on the left of the status area.

Clearing an action setting

To clear the setting for separate devices

1 In the list on the left of the status area, select the device for which you want to clear the action setting.

2 In the list on the right, select "Off."

3 Press [Set].

To clear the action settings for all devices in a single operation

Press [All Off].

Setting the action for a rewind operation

On the P-Bus timeline, when the [REWIND] button in the keyframe control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.
To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To carry out this setting, in the Device >P-Bus Timeline menu, press [Rewind Action] to recall the Rewind Action menu. In this setting screen, use the same setting method as in the screen for setting an action on the P-Bus timeline.

Alternatively, you can select the reverse arrangement, whereby when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details of the setting, see "Setting the First Keyframe When a Rewind Is Executed" in Chapter 19 (Volume 3).

Carrying out a Direct Store

You can carry out a Learn with the register number specified for the device selected in the menu.

1 Using any of the following methods, select the device.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Setting	Setting values
1	ID	Device ID	0 to 23

2 In the Device >P-Bus Timeline menu, press [Direct Store].

The numeric keypad window appears.

3 Enter the register number for which you want to carry out the Learn. The setting range is from 1 to 250.

4 Press [Enter].

This carries out a Learn with the specified register number.

P-Bus Trigger

"P-Bus trigger" is a function whereby a button operation in the numeric keypad control block or keyframe control block outputs an action command to a P-Bus device.

Notes

To use the P-Bus trigger function, the P-Bus control mode must be set to [Trigger]. Make this setting in the Engineering Setup >Panel >Device Interface menu. *(For details, see "Setting the Control Mode for P-Bus Devices" in Chapter 19 (Volume 3).)*

The relation between the operation in each of the control blocks and the action command output is as follows.

Action command for an operation in the numeric keypad control block

- RECALL: Recall
- STORE: Store

This recalls the register specified in the numeric keypad control block, and a Recall or Store is carried out, according to the setting.

Action command for an operation in the keyframe control block

- RUN: Trigger 1

- REWIND: Trigger 4
- NEXT KF: Trigger 7
- PREV KF: Trigger 8

Outputting an action command

As an example, to output a Recall, use the following procedure.

1. In the numeric keypad control block, press the [EFF] button, turning it on.

   The [RCALL] button in the numeric keypad control block lights.

2. Press the [P-BUS] button in the numeric keypad control block, turning it on, to select the P-Bus region.

3. Enter the number of the register (1 to 250) to be recalled with the numeric keypad buttons.

4. Press the [ENTER] button in the numeric keypad control block.

   This carries out the Recall.

Control of GPI Devices

You can control GPI devices from the control panel of this system, or through the GPI output port of a DCU.

GPI timeline

For a keyframe effect controlled from the center control panel, the GPI timeline allows you to set an action (setting a trigger output from a particular GPI output port) at a keyframe point on the GPI timeline. At any keyframe point, you can make a maximum of eight GPI output port settings.

GPI timeline actions

The actions that can be used on the GPI timeline are as follows.

- Control panel GPI output port
- DCU GPI output port

For the GPI output settings (keyframe editing), use the Device menu.
The data set in the Device menu are saved in a keyframe effect register. When you recall this register and start execution of the keyframe effect, and advance the effect to the keyframe point for which the GPI output is set, a trigger pulse is output to the external device from the specified GPI output port.

GPI Timeline Creation and Editing

This section describes how to set GPI output ports to be registered at a keyframe point, and how to carry out creation and editing of the GPI timeline.

For details of keyframe creation and editing operations, see "Creating and Editing Keyframes" (page 709).

GPI output port settings

Set the GPI output port number of the control panel or DCU which outputs GPI pulses at a keyframe point on the GPI timeline.
Use the following procedure. (Use the same procedure to subsequently change the settings.)

1 In the Device menu, press VF1 'GPI Timeline.'

The Device >GPI Timeline menu appears.
The status area shows the "GPI Output" list on the left and the "GPI Port" list on the right.

The “GPI Output” list (on the left) shows the relation between ports 1 to 8 for the GPI timeline and the trigger pulse output destination ports. The content of this list is saved as keyframe data.
The “GPI Port” list (on the right) is for selecting the GPI trigger pulse output destination.

2 Using either of the following methods, select the GPI timeline port you want to set on the GPI Timeline.

- Press directly on the list on the left of the status area.
- Turn the knob.

Knob	Parameter	Setting	Setting values
1	GPI Output No	GPI timeline port number	1 to 8

3 Using either of the following methods, trigger output destination.

- Press directly on the list on the right of the status area.
- Turn the knob.

Knob	Parameter	Setting	Setting values
2	GPI Port No	SCU/DCU GPI port to be the trigger output destination	1 to 3 a)

a) 1: Off (no specification)
2: Control panel (SCU) GPI port
3: DCU GPI port

4 If in step **3** you selected 2 (SCU) or 3 (DCU), then use the knob to select the port number.

The indication for knob 3 depends on whether SCU or DCU is selected.

Knob	Parameter	Setting	Setting values
3	SCU Port No	SCU GPI port number	1 to 8
3	DCU Port No	DCU GPI port number	1 to 50 a)

a) The number of DCU GPI ports depends on the settings in Engineering Setup.

The setting is reflected in the list on the right of the status area.

Notes

For the output port you have set here, be sure to set the trigger type to “Rising Edge,” “Falling Edge” or “Any Edge.”

For details of the trigger type settings, see “Making Control Panel GPI Output Settings” in Chapter 19 (Volume 3) and “Making DCU GPI Output Settings” in Chapter 22 (Volume 3).

5 Press [Set].

This specifies the SCU/DCU GPI port whose number you specified in step **4** as the pulse output destination for the GPI output port selected in the list on the left of the status area.

Repeat steps **1** to **5** for other GPI output ports as required.

Testing trigger output

To test the trigger output, press [Test Fire].
According to the list settings on the left of the status area, a pulse is output from the selected output port.

Clearing output port settings

To clear the settings for each device (GPI output port)

1 In the list on the left of the status area, select the GPI output port whose settings you want to clear.

2 In the list on the right, select "Off."

3 Press [Set].

To clear the settings for all devices (GPI output ports) in a single operation

Press [All Off].

Setting the action for a rewind operation

On the GPI timeline, when the [REWIND] button in the keyframe control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.
To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To carry out this setting, in the Device >GPI Timeline menu, press [Rewind Action] to recall the Rewind Action menu. In this setting screen, use the same setting method as in the screen for setting an action on the GPI timeline.

Alternatively, you can select the reverse arrangement, whereby when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details of the setting, see "Setting the First Keyframe When a Rewind Is Executed" in Chapter 19 (Volume 3).

Control of VTRs, Extended VTRs, and Disk Recorders

In this system, for up to 12 VTRs, disk recorders or Extended VTRs connected to a DCU, you can carry out the following manual operations and timeline settings.

- Controlling manually from the device control block (MKS-8031TB or MKS-8036A, option)
- Saving a start point, stop point, start delay time, variable speed and so on in a data register, then recalling the register to control automatically from the keyframe control block. (Cueup & Play and VTR/disk recorder/Extended VTR timeline)
- In the Device menu, you can check the following VTR, disk recorder and Extended VTR information:
  - Device name
  - Register number
  - VTR/disk recorder/Extended VTR status
  - Current time
  - Start point
  - Stop point
  - Variable speed
  - Start delay time
  - Loop setting
  - Recue setting

Operations of a VTR, Extended VTR, or disk recorder require the optional device control block (trackball module or search dial module).
To control a VTR, Extended VTR, or disk recorder in this system, the following settings are required.

- Button assignment: For a VTR, Extended VTR, or disk recorder connected to the DCU 9-pin serial port, assign a device selection button in the device control block.
- Timecode source: When using a VTR, specify a reference signal used for determining the tape position.

For details, see "Making DCU Serial Port Settings" in Chapter 19 (Volume 3) and "Making Detailed Settings on the External Device Connected to the Serial Port" in Chapter 22 (Volume 3).

Manual Operation

In the device control block, you can carry out the following operations manually.

- **VTR, disk recorder or Extended VTR selection**
- **Tape transport and disk drive control:** You can use the following tape transport and disk drive control buttons:

  REC, REW, PLAY, FF, CUE UP, VAR PLAY, SHTL, JOG, STANDBY OFF, STOP, and ALL STOP. *(For details of the operation of the buttons, see "Device Control Block (MKS-8031TB Trackball Module, Option)" and "Device Control Block (MKS-8036A Search Dial Module, Option)" in Chapter 2 "Menus and Control Panel" (Volume 1).)*

  Depending on the settings made in the Setup menu, the CUE UP, PLAY and STOP operations can be carried out from the transition control block. *(For details of the operation of the buttons, see "Transition Control Block" in Chapter 2 "Menus and Control Panel" (Volume 1).)*
- **Setting a start point:** For each selected VTR/disk recorder/Extended VTR you can set the start point timecode value as keyframe data.
- **Setting a stop point:** For each selected VTR/disk recorder/Extended VTR you can set the stop point timecode value as keyframe data.
- **Setting a start delay time:** For each selected VTR/disk recorder/Extended VTR you can set the start delay as key frame data.
- **Recording to VTR or disk recorder:** Record video to the selected VTR/disk recorder.
- **Loop/recue setting:** You can select loop or recue as the playback mode. These operate as follows.

  When loop is selected: Playback repeats from the start to the end of the currently recalled file.

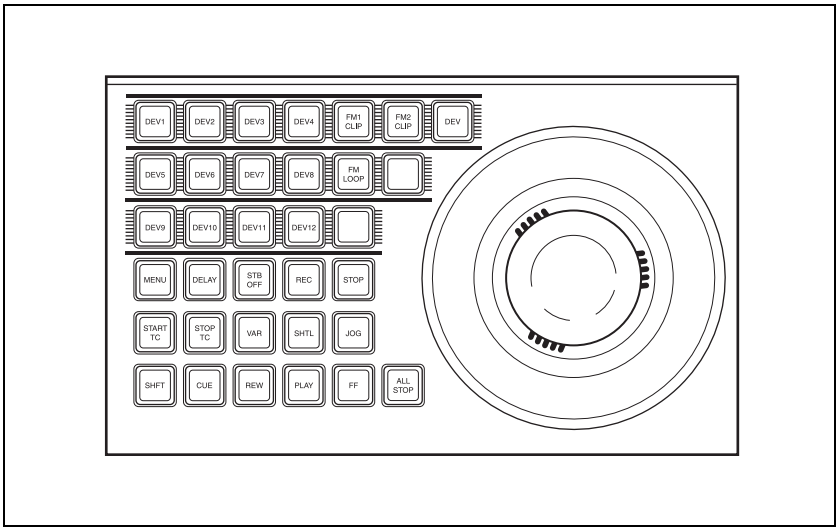
  When recue is selected: When playback reaches the stop point, automatically cue up to the start point.

To use the loop or recue function, it is necessary to enable the function in setup. For details, see "Making Detailed Settings on the External Device Connected to the Serial Port" in Chapter 22 (Volume 3).

Controlling the Tape/Disk Transport

To switch to VTR/disk recorder operation mode

To control a VTR/Extended VTR/disk recorder with the optional device control block (trackball module), press the [DEV] button in the device control block, turning it on, to switch the device control block to the VTR/disk recorder operation mode. The button assignment changes as follows (the [SHIFT] button is disabled in VTR/disk recorder operation mode).



Device control block in the VTR/disk recorder operation mode (trackball module)

In the device control block (search dial module), there is no such a mode selection button and you can directly select a device.

Buttons used when the VTR/disk recorder/frame memory operation mode is enabled

DELAY: Press this button, turning it on, to enter a delay value from the numeric keypad control block.

STB OFF (standby off): Press this button to switch to standby off mode. This button cannot be used for frame memory clip operations.

REC (record): Press this button at the same time as the [Y] button to start recording. This button cannot be used for frame memory clip operations.

STOP: Press this button to stop the tape, disk or frame memory clip.

START TC (start timecode): Press this button to set the timecode of the start point at that time. The timecode of the start point is updated to the current time each time this button is pressed.

When the device the operation applies to is a VTR/disk recorder, the start point updated by the setting of the [MENU] button is as follows.

When the [MENU] button is On: start point of the timeline

When the [MENU] button is Off: start point of Cueup & Play

STOP TC (stop timecode): Press this button to set the timecode of the stop point at that time. The timecode of the stop point is updated to the current time each time this button is pressed.

When the device the operation applies to is a VTR/disk recorder, the stop point updated by the setting of the [MENU] button is as follows.

When the [MENU] button is On: stop point of the timeline
When the [MENU] button is Off: stop point of Cueup & Play

VAR (variable speed playback): Pressing this button and turning the Z-ring plays back the tape, disk or frame memory clip at a variable speed and direction proportional to the rotation angle of the Z-ring. The variable speed range is –1 to +3 times normal playback speed.

SHTL (shuttle): Pressing this button and turning the Z-ring plays back the tape, disk or frame memory clip at a speed and direction proportional to the rotation angle of the Z-ring.

JOG: Pressing this button and turning the Z-ring plays back the tape, disk or frame memory clip at a speed and direction proportional to the rotation of the Z-ring. You can set the Z-ring operation sensitivity to any of six levels, in the setup menus.

You can also change the sensitivity by holding down this button during an operation. You can select the sensitivity in this case from six levels.

For details of the settings, see "Setting Trackball, Joystick, Search Dial, and Double-Click Sensitivity" in Chapter 19 (Volume 3).

CUE: Pressing this button cues the tape, disk or frame memory clip automatically to the start point.

REW (rewind): Press this button to rewind the tape, disk or frame memory clip.

PLAY: Press this button to play the tape, disk or frame memory clip.

FF: Press this button to fast forward the tape, disk or frame memory clip.

ALL STOP: Press this button to stop all tape transport/disk drive/frame memory operations.

Selecting a VTR/Extended VTR/disk recorder

To select the VTR/Extended VTR/disk recorder to be controlled, in the device selection buttons of the device control block, press a selection of those buttons turning them on.

For details on frame memory clip operations, see "Frame Memory Clip Operations" in Chapter 7 (Volume 1).

Controlling the tape/disk transport

Using the buttons in the device control block, you can control the tape transport or the disk transport.

For more details of the effect of buttons in VTR/disk recorder operation mode, see "Device Control Block (MKS-8031TB Trackball Module, Option)" and "Device Control Block (MKS-8036A Search Dial Module, Option)" in Chapter 2 "Menus and Control Panel" (Volume 1).

If an appropriate setup setting has been made, VTR, Extended VTR, or disk recorder can also be operated with the transition control block.

For more details of the effect of buttons in VTR/disk recorder operation mode, see "Transition Control Block" in Chapter 2 "Menus and Control Panel" (Volume 1).

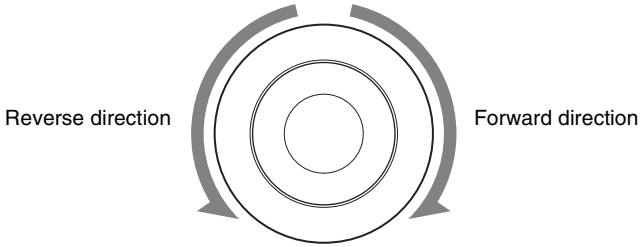
For details of settings in setup, see "Setting VTR Operation Button Assignment" in Chapter 19 (Volume 3).

Controlling the tape/disk transport with the search dial

With the device control block, you can play back the material on an external device in variable speed.
This section describes the three playback modes, taking the optional device control block (MKS-8036A search dial module) as an example.
If you turn this dial during video playback, the direction and speed of playback depend on the direction and angle of rotation. To use this dial, press the [ENBL] button to the upper right of the dial, lighting it amber. This dial has three operation modes: jog, shuttle, and variable.
To prevent overheating, if the search dial is on continuously for 10 seconds, it is automatically turned off. However, in this state, if a movement of the dial is detected, it switches on again.

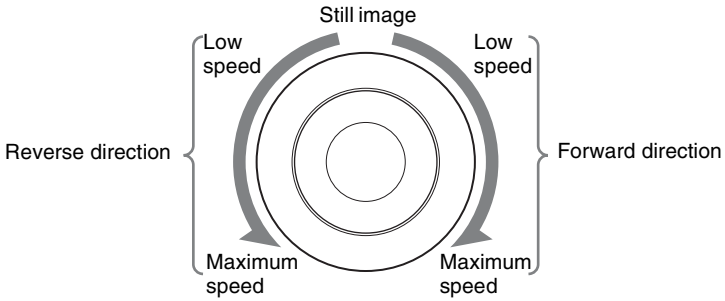
Jog mode

Press the [JOG] button, lighting the button amber, to switch the dial to jog mode. In this mode, you can advance material frame by frame at a speed proportional to the rotation angle of the dial. To show a still image, stop turning the search dial.



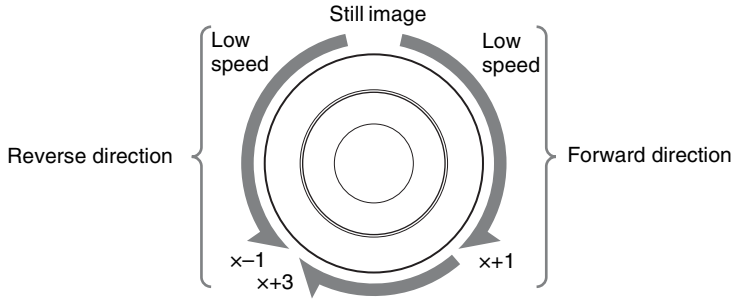
Shuttle mode

Press the [SHTL] button, lighting the button amber, to switch the dial to shuttle mode. In this mode, the playback speed varies in steps according to the rotation angle of the dial, to a maximum of 50 times normal. If the valid angle is exceeded, the dial makes a clicking sound. To show a still image, return the dial to the home position, where it stops with a clicking sound.



Variable mode

Press the [VAR] button, lighting the button amber, to switch the dial to variable mode. In this mode, the playback speed varies according to the rotation angle of the dial from –1 to +3 times normal speed. The dial indicates the positions where the playback speed is –1 times normal speed, +1 times normal speed, and +3 times normal speed by making a clicking sound at those positions. To show a still image (playback speed 0%), return the dial to its home position, where it stops with a clicking sound.



×–1: –1 times normal speed
×+3: +3 times normal speed
×+1: +1 times normal speed

To disable the search dial and end variable mode, press the [STOP] button. Additionally, pressing any of the [REW], [PLAY], [FF], [STB OFF], and [ALL STOP] editing buttons ends the variable mode. For shuttle mode and variable mode, you can set the valid range of the operating angle in the Engineering Setup >Panel >Operation >Sensitivity >Search Dial menu to either of the following.

Narrow operating angle

- Shuttle mode: approx. –150 to +150°
- Variable mode: approx. –120 to +210°(+1 times normal speed is +120°)

Wide operating angle

- Shuttle mode: approx. –180 to +180°
- Variable mode: approx. –200 to +348°(+1 times normal speed is +200°)

Recording to VTRs and disk recorders

You can record to the VTR or disk recorder selected in the device control block. Proceed as follows.

Notes

- Recording is not possible if the VTR or disk recorder is not set to Recorder.
- The disk recorder type must be specified to use the video disk communications protocol.

  See "Making Detailed Settings on the External Device Connected to the Serial Port" in Chapter 22 (Volume 3) for more information about how to make this setting.

- When using a disk recorder, recording is not possible unless a new file name is specified.

  See "Creating new files" (page 678) for more information about how to specify file names.

1 Using the buttons of the device control block, select the VTR or disk recorder to which you want to record.
You can select more than one button.

The first button pressed lights green to indicate the reference device, and the subsequent buttons light amber.

2 While holding down the [REC] button in the device control block, press the [PLAY] button.

Recording starts. During recording, the [REC] button lights red and the [PLAY] button lights amber.

Notes

Note the following points about recording to a disk recorder.

- The maximum length of time that can be recorded in one operation is 30 minutes.
- If you want to record to a different file than the file used in the previous recording, use the Device >DDR/VTR >File List menu to create a new file.
- If you resume recording without executing [Unload] from the Device >DDR/VTR >File List menu, recording starts at the position in the same file where recording was interrupted.

To stop recording

Press the [STOP] button or the [ALL STOP] button in the device control block.

Checking VTR/Disk Recorder/Extended VTR Information

You can check the VTR/disk recorder/Extended VTR information (timecode information and operating status) set in the device control block, in the Device menu display.

To check the VTR/disk recorder/Extended VTR information, press VF3 'VTR' and HF1 'Cueup & Play' or HF2 'Timeline' in the Device menu.
The Device >DDR/VTR >Cueup & Play menu or Device >DDR/VTR >Timeline menu appears, and a list shows the timecode information and operating status for each device. The columns of the list show the following information.

DEV (device name): DEV1 to DEV12 represent respectively device 1 to device 12.
Reg (register): Number of the register to which settings apply.
Status: Status of each device. The meaning of the indications is as follows.

Operating status display	When VTR, Extended VTR, or Sony disk 9-pin protocol is used	When video disk communications protocol is used
XXXX	Communications with the device are being carried out normally, but status information is not received.	Not communicating, or communicating but the device type cannot be read.
Local	The REMOTE/LOCAL switch of the device is set to LOCAL.	Port is not open.
Tape Out	No tape is loaded (VTR). No file loaded. (Sony disk 9-pin protocol or Extended VTR)	No file loaded.
Rec	Recording.	Recording.
Cue>	Cueing up in the forward direction.	—
Cue<	Cueing up in the reverse direction.	—
Eject	Ejecting cassette.	—
Stb Off	Stopped in standby off mode.	—
Stop	Stopped in standby on mode.	Stopped.
Play	Playing.	Playing.

Operating status display	When VTR, Extended VTR, or Sony disk 9-pin protocol is used	When video disk communications protocol is used
FF	Fast forwarding.	—
Rewind	Rewinding.	—
Shtl>	Playing in the forward direction in shuttle mode.	—
Shtl<	Playing in the reverse direction in shuttle mode.	—
Var>	Playing in the forward direction in “variable” mode.	Playing in the forward direction in “variable” mode.
Var<	Playing in the reverse direction in “variable” mode.	Playing in the reverse direction in “variable” mode.
Jog>	Playing in the forward direction in jog mode.	Playing in the forward direction in jog mode.
Jog<	Playing in the reverse direction in jog mode.	Playing in the reverse direction in jog mode.
Still	Playing still image.	—

Current: Shows timecode for current device position.
Start TC: Shows timecode for start point set on device.
Stop TC: Shows timecode for stop point set on device.
Variable: Shows the variable speed set for each device.
Delay: Shows start delay time set on device.
Mode: Shows operation mode (Loop or Recue) set for the device (only when the EVS XT server is operated with video disk communications protocol).

Cueup & Play

You can use the device control block or Device menu to save Cueup & Play settings (start point timecode, stop point timecode, start delay time, and so on) for a VTR, disk recorder or Extended VTR in an effect register. By recalling this register, you can operate the following buttons in the keyframe control block to automatically control the VTR, disk recorder or Extended VTR.
[REWIND] button: Cue up to the start point timecode
[RUN] button: Play
With this function you can also stop the VTR, disk recorder or Extended VTR used for playback at the stop point timecode recalled from the same register.

Disk recorder (video disk communications protocol) operation when loop /recue is set

When loop is set: playback repeatedly between the start point and stop point.
When recue is set: when playback reaches the stop point, automatically cue up to the start point.

Notes

- In an effect register set on the VTR/disk recorder timeline, Cueup & Play settings are not possible. To add Cueup & Play settings to such a register, first clear the VTR/disk recorder timeline setting before carrying out the operation.
- When using a disk recorder with Cueup & Play, if you carry out the following sequence of operations, the system may freeze on the frame of the start point.
  1. Press the [RUN] button to play to a point close to the end of a file.
  2. Stop playback.
  3. Press the [RUN] button once more.

  In such cases, first recall a different register, then carry out the following sequence:
  1. Recall the original register again.
  2. Press the [REWIND] button.
  3. Press the [RUN] button.

Making and saving settings relating to Cueup & Play

1 Press the [EFF] button in the numeric keypad control block, turning it on.

This assigns the numeric keypad control block to keyframe operations, and the [RCALL] button lights.

2 Press the region selection button for the region for which you want to make the setting, turning it on.

You can select more than one button.

3 Enter the number of the register to be recalled with the numeric keypad buttons.
To search for an empty register, instead of entering a number, press the [.] (period) button.

The display shows the register number. A letter "e" or "E" after the number indicates the register status, as follows:
e: This register is empty in the selected region.
E: This register is empty in all selectable regions.

4 Press the [ENTER] button.

This recalls the register you selected in step **3**.

5 When using the MKS-8031TB trackball module, press the [DEV] button in the device control block, turning it on.

Notes

Check that the [MENU] button is not lit. If it is lit, press to turn it off.

6 With the device selection buttons in the device control block, select the VTR, Extended VTR, or disk recorder for which you want to make the setting.

You can select more than one button.

The first button pressed lights green to indicate the reference region, and the subsequent buttons light amber.

7 Set the start point.

- Using the [START TC] button:
  Play the VTR, Extended VTR or disk recorder by control from the device control block. Find the desired start point, and press the [START TC] button at that position.
  If using the [START TC] button, each time you press the button the start point timecode is overwritten.
- Using the [SET START TC]:
  Press the [SET START TC] button in the optional device control block (search dial module, option).

  The display in the numeric keypad control block shows "START TC." Enter the desired timecode from the numeric keypad control block, and press [ENTER].

  For details of timecode entry, see "Setting the start point and stop point with the [SET XX] buttons" (page 664).

- Setting with the Cueup & Play menu:

  For details of settings in the Cueup & Play menu, see "Setting the start point, stop point, and start delay time in a menu" (page 666).

8 Set the stop point or duration.

When two of the start point, stop point and duration are set, the remaining one is automatically determined. For example, if you set the stop point in the following procedure, you do not need to enter the value of the duration.

- Using the [STOP TC] button:
  Play the VTR, Extended VTR or disk recorder by control from the device control block. Find the desired stop point, and press the [STOP TC] button at that point.
  If using the [STOP TC] button, each time you press the button the stop point timecode is overwritten.

- Using the [SET STOP TC] button of the optional device control block (search dial module):
  Press the [SET STOP TC] button in the search dial module. The display in the numeric keypad control block shows “STOP TC.” Enter the desired timecode from the numeric keypad control block, and press [ENTER].
- Using the [SET DUR] button of the optional device control block (search dial module):
  Press the [SET DUR] button in the search dial module. The display in the numeric keypad control block shows “DUR” and the current setting. Enter the desired duration from the numeric keypad control block, and press [ENTER].

  For details of timecode entry, see “Setting the start point and stop point with the [SET XX] buttons” (page 664).

- Setting with the Cueup & Play menu:

  For details of settings in the Cueup & Play menu, see “Setting the start point, stop point, and start delay time in a menu” (page 666).

9 To set a start delay time, press the [DELAY] button in the device control block, and enter a value in the numeric keypad control block.
Alternatively, make the setting in the Device >DDR/VTR >Cueup & Play menu.
If no setting is required, continue to step **10**.

For details of settings in the Cueup & Play menu, see “Setting the start point, stop point, and start delay time in a menu” (page 666).

10 Press the [STORE] button, turning it on, in the numeric keypad control block.

11 Enter the number of the register in which to save the settings.

When overwriting the settings in the register recalled in step **3**, continue to step **12** without changing the displayed register number.

12 Press the [ENTER] button.

This saves the settings in the register.

Automatically cueing up and playing VTR/Extended VTR/disk recorder

By recalling a register in which you have saved setting data for Cueup & Play, you can control the VTR/Extended VTR/disk recorder automatically in the same way as when automatically executing a keyframe effect.

1 In the numeric keypad control block, press the [EFF] button, turning it on.

The [RCALL] button in the numeric keypad control block lights.

2 With the region selection buttons in the numeric keypad control block, select the region.
You can select more than one button.

3 Enter the number of the register to be recalled with the numeric keypad buttons.

4 Press the [REWIND] button in the keyframe control block.

The VTR/Extended VTR/disk recorder automatically advances to the timecode value set as the start point.
While the VTR/Extended VTR/disk recorder is operating, the [ALL STOP] button in the device control block flashes amber, and when the start point is reached lights green.
If the operating VTR/Extended VTR/disk recorder is selected as the reference region in the device control block, the [CUE] button also flashes and lights in the same way as the [ALL STOP] button. Also, when the start point is reached, the [STOP] button lights amber.

5 Press the [RUN] button in the keyframe control block.

The VTR/Extended VTR/disk recorder is now controlled according to the keyframe data.

Setting the start point and stop point with the [SET XX] buttons

When you enter a timecode and make a setting with the [SET START TC], [SET STOP TC], or [SET DUR] button in the optional device control block (MKS-8036A search dial module), the timecode display changes as follows. With these buttons you can set the start point and stop point timecodes, and the duration (the duration is not displayed). When two of these values are set, the remaining one is automatically determined.

Example 1

1 Press the [SET START TC] button, and enter “00000000” from the numeric keypad control block.

START TC STOP TC (DUR (not displayed)	00:00:00:00 --:--:--:--)

2 Press the [SET STOP TC] button, and enter “200” from the numeric keypad control block. This automatically sets DUR.

START TC	00:00:00:00
STOP TC	00:00:02:00
(DUR	0:02:00)

3 Press the [SET DUR] button, and enter “–100” from the numeric keypad control block.

START TC remains the same, and STOP TC changes.[a)]

START TC	00:00:00:00
STOP TC	00:00:01:00
(DUR	0:01:00)

Example 2

1 Press the [SET DUR] button, and enter “200” from the numeric keypad control block.

START TC	--:--:--:--
STOP TC	--:--:--:--
(DUR	0:02:00)

2 Press the [SET STOP TC] button, and enter “01000000” from the numeric keypad control block.

This automatically sets START TC.

START TC	00:59:58:00
STOP TC	01:00:00:00
(DUR	0:02:00)

3 Press the [SET STOP TC] button, and without entering anything from the numeric keypad control block, press [ENTER].

The STOP TC display, and the START TC display automatically calculated in step **2** disappear, and the setting of the DUR does not change.

START TC	--:--:--:--
STOP TC	--:--:--:--
(DUR	0:02:00)

a) If after pressing the [SET XX] button you press the [+ / –] button in the numeric keypad control block, you can enter offsets from the existing setting values. Each time you press this button, the sign of the offset cycles through the settings “ ”(absolute value) → “+” → “–”... , and the sign appears in the numeric keypad control block display. If there is no existing setting value, then it is only possible to enter an absolute value, and not an offset value.

Setting the start point, stop point, and start delay time in a menu

In the Device menu, you can set the start point, stop point, and start delay time.

1 In the Device menu, press VF3 'DDR/VTR' and HF1 'Cueup & Play.'

The Device >DDR/VTR >Cueup & Play menu appears.
The status area shows the device number, register number, status information, current time, start point, stop point, and start delay time.

2 Using any of the following methods, select the device.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Dev	Device number	1 to 12

3 Carry out any of the following operations as required.

- To set the start point, press [Set] in the <Start TC> group.
- To set the stop point, press [Set] in the <Stop TC> group.
- To set the start delay time, press [Set] in the <Delay> group.

A timecode window appears.

4 Set the timecode value for the start point, stop point, or start delay time.

Notes

You can enter a start delay time in the range that depends on the signal format as follows:

00:00 to 59:nn,
where nn = (number of frames per second) – 1 frame.

5 Press [Enter].

The set start point, stop point, or start delay time is reflected in the status area.

Clearing the start point, stop point, and start delay time settings in a menu

In the Device menu, use the following procedure.

1 Press VF3 'DDR/VTR' and HF1 'Cueup & Play.'

2 Using any of the following methods, select the device for which you want to clear the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

3 Carry out any of the following operations as required.

- To clear the start point, press [Clear] in the <Start TC> group.
- To clear the stop point, press [Clear] in the <Stop TC> group.
- To clear the start delay time, press [Clear] in the <Delay> group.

This clears the setting of the start point, stop point, or start delay time.

Selecting Loop or Recue as the playback mode

You can set the device operation mode to loop or recue.

Loop: Carry out playback from the start point of a file to the stop point, then indefinitely repeat playback from the start point.

Recue: Carry out playback from the start point of a file to the stop point, then return to the start point and stop.

Notes

Loop and recue functions are only available when the EVS XT server is operated with the video disk communications protocol.

In the Device menu, use the following procedure.

1 Press VF3 'DDR/VTR' and HF1 'Cueup & Play.'

The Device >DDR/VTR >Cueup & Play menu appears.
The status area shows the device number, register number, status information, current time, start point, stop point, start delay time, and playback mode.

2 Using any of the following methods, select the device.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Dev	Device number	1 to 12

3 In the <Mode> group, press [Loop] or [Recue], turning it on.

VTR/Disk Recorder/Extended VTR Timeline

For a keyframe effect controlled from the center control panel, the timeline allows you to set a VTR, disk recorder or Extended VTR action at a keyframe point on the timeline.

Timeline actions

The actions that can be used on the timeline are as follows.

- Start
- Stop
- Cue up
- Variable speed

Notes

- The timeline does not support loop and recue.
- For a disk recorder, the maximum number of files for a single register is eight.

For the action settings (VTR/disk recorder/Extended VTR timeline editing), use the Device menu.

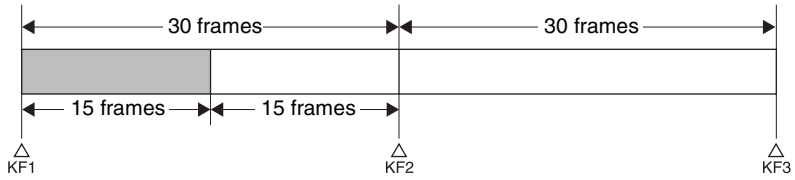
The data set in the Device menu are saved in a keyframe effect register. When you recall this register and start execution of the keyframe effect, and advance the effect to the keyframe point for which the action is set, an action command is output to the external device through the 9-pin serial port assigned to the VTR, disk recorder or Extended VTR.

Notes

When executing a timeline using a disk recorder or Extended VTR, note the following points.

- It is not possible to use loop and recue on the timeline.
- When carrying out keyframe settings, be sure to recall the file for operation first.
- If the duration of the recorded video clip is less than the keyframe duration, after playback to the end of the clip, the remainder of the keyframe duration is filled with a still of the last frame of the clip *(see figure below).*

Example: When the recorded clip for keyframe 1 has a duration of 15 frames



: Interval for which clip is recorded

: Interval in which still frame is displayed

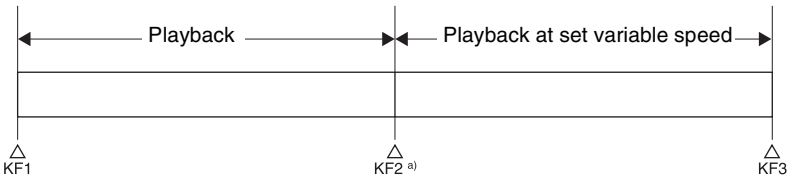
In this example, when keyframe 1 is executed, the first 15 frames consist of clip playback and the remaining 15 frames show the 15th frame as a still image.

When executing the timeline using a disk recorder, also take note of the following points.

- Set the keyframe duration to at least 30 frames.
- From pressing the [RUN] button to the time when the effect actually starts execution may take around one second.
  In order that pressing the [RUN] button after [REWIND] make the effect start execution as soon as possible, set cueing up of the file for operation as rewind operation [1]. In the first keyframe [2] to be executed with [RUN], for the cued-up file, do not set the start point, but set only the start command.

  1) If the setting when the [REWIND] button is pressed is for the first keyframe to be executed, then the first keyframe is executed, and otherwise the setting for the Rewind Action is carried out.

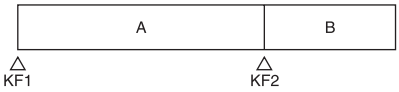
  2) If the setting when the [REWIND] button is pressed is for the first keyframe to be executed, then the second keyframe is executed, and otherwise the first keyframe is executed.
- To execute an effect, be sure to carry out a Rewind.
  For example, when the start command only is set for a keyframe, playback starts from the current position, in the same way as with a VTR (no automatic cue-up).
- During file playback, to play the next keyframe at variable speed, for the next keyframe set variable speed only, and do not set the start point *(see figure below)*.



a) In keyframe 2, set variable speed only, and do not set the start point.

- When using a disk recorder with the VTR/disk recorder timeline, if you carry out the following sequence of operations, the system may freeze on the frame of the start point.
  1. Press the [RUN] button to play to a point close to the end of a file.
  2. Stop playback.
  3. Press the [RUN] button once more.

  In such cases, first recall a different register, then carry out the following sequence:
  1. Recall the original register again.
  2. Press the [REWIND] button.
  3. Press the [RUN] button.
- Some operating limitations apply when the video disk communications protocol is used. These are explained with reference to the following figure, which illustrates creation of a timeline that plays from the video of file A to the video of file B.



– Operation with no problems:

KF1 action setting	Operating status of file A	KF2 action setting
Start	Playing	Start

– Black video or still image appears momentarily when play switches from file A to file B:

KF1 action setting	Operating status of file A	KF2 action setting
Start	Playing	Cueup
Variable Speed set	Playing at variable speed	Cueup
Cueup	Cueup	Cueup

– Partial operating limitation:

KF1 action setting	Operating status of file A	KF2 action setting
Start	Playing	Variable Speed set [a)]
Variable Speed set	Playing at variable speed	Variable Speed set [a)]
Cueup	Cueup	Variable Speed set [a)]

a) Failure to operate when variable speed is set to minus value. However, operates when the file B action is set to Start, and then variable speed is set to minus after file B starts playing.

– Play does not switch from file A to file B:

KF1 action setting	Operating status of file A	KF2 action setting
Variable Speed set	Playing at variable speed	Start
Cueup	Cueup	Start

If play continues to show video of file A without switching to file B, a Stop action is required in file A in order to switch to file B.

VTR/disk recorder/Extended VTR timeline editing

This section describes how to set an action at a keyframe point, and how to edit the timeline.

For details of the operations for keyframe creation and editing, see "Creating and Editing Keyframes" (page 709).

To set an action in the menu

1 In the Device menu, press VF3 'DDR/VTR' and HF2 'Timeline.'

The Device >DDR/VTR >Timeline menu appears.
The status area shows two lists. The upper list shows the device number, register number, keyframe number, and action type (start point, stop point, and variable speed) set for the keyframe.
The lower list is used for setting the action for the device selected above, and shows the port name, current file, current time, status information, start point, stop point, variable speed, and file name (for a disk recorder or Extended VTR).

2 Using any of the following methods, select the device for which you want to set the action.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

3 To set the name of a file when using an Extended VTR or disk recorder, recall the file using the Device >DDR/VTR >File List menu.

Notes

- There is a limit of eight disk recorder files that can set on a single timeline.
- If you have not set the file name when using an Extended VTR, the file recalled in the Extended VTR when the keyframe point is passed is the subject of the action.

For details of settings required to recall a file, see "Sharing Disk Recorder/Extended VTR File Lists" in Chapter 19 (Volume 3).

When not using an Extended VTR or disk recorder, or when the file name has not been set for an Extended VTR, skip to step **4**.

4 In the <Action> group, select the action.

Cueup: Output a command to cue up to the currently displayed start point.
Start: Output a Play command.

Notes

When the stop point and variable speed are both set, the variable speed setting takes priority.

Stop: Output a Stop command.

Notes

Before executing the Stop command, if the timecode for the set stop point has been reached, or on an Extended VTR or disk recorder if the end of the file has been reached, then at that point the device stops.

5 To set a start point, in the <Start TC> group, press the [Set] button.

A timecode window appears.

If you do not want to set the start point, skip to step **8**.

Notes

For a disk recorder on which the start point is not set, the file recalled in the disk recorder when the keyframe point is passed is the subject of the action.

6 Set the start point as a timecode value.

7 Press [Enter].

The new start point setting is reflected in the status area.

8 To set the stop point, in the <Stop TC> group press the [Set] button.

A timecode window appears.
If you do not want to set the stop point, skip to step **11**.

9 Set the stop point as a timecode value.

10 Press [Enter].

The new stop point setting is reflected in the status area.

11 To set the variable speed, in the <Variable Speed> group, carry out either of the following.

- Press [Fit].
  Without setting a speed value, this automatically carries out playback according to automatically calculated values for the duration and keyframe duration to fit the set start point and stop point.
- Press the [Set] button, and adjust the parameter with the knob.

Knob	Parameter	Setting	Setting values
2	Variable	Variable speed	–100 to +200 a)

a) The setting range of the variable speed depends on the type of connected device.

The new variable speed setting is reflected in the status area.

Repeat steps **2** to **11** as required for other devices.

To carry out start point and stop point settings and cueing up operations in the device control block

With the following buttons in the device control block, you can set the start point or stop point of a keyframe point on the timeline, or carry out a cueing up operation.

Notes

- When using the optional device control block (trackball module), check that the [MENU] button in the block is lit amber. If it is not lit, press it, turning it on.
- When using the device control block (search dial), check that the [TIMELINE] is lit amber.

[START TC] button: Set the start point of the keyframe point to the current time.

[STOP TC] button: Set the stop point of the keyframe point to the current time.

[SET START TC] button (of the search dial module, option): Enable to input the timecode of the start point of the keyframe point with the numeric keypad control block.

[SET STOP TC] button (of the search dial module, option): Enable to input the timecode of the stop point of the keyframe point with the numeric keypad control block.

[SET DUR] button (of the search dial module, option): Enable to input the duration between the start point and stop point of a keyframe point with the numeric keypad control block.

[CUE] button: Cue up to the start point set for the keyframe point.

To display or check the settings, use the Device >DDR/VTR >Timeline menu.

To test an action command output

To test an action command output, select the desired device from the upper list in the status area, and press [Test Fire].

An action command is output from the DCU 9-pin serial port, according to the settings in the list.

To clear the start point, stop point, and variable speed settings

1 In the upper list in the status area, select the device for which you want to clear the settings.

2 Carry out any of the following operations as required.

- To clear the start point setting, press [Clear] in the <Start TC> group.
- To clear the stop point setting, press [Clear] in the <Stop TC> group.
- To clear the variable speed setting, press [Clear] in the <Variable Speed> group.

To set the action for a rewind operation

On the VTR/disk recorder/Extended VTR timeline, when the [REWIND] button in the keyframe control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.

To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To carry out this setting, in the Device >DDR/VTR >Timeline menu, press [Rewind Action] to recall the Rewind Action menu. In this setting screen, use the same setting method as in the screen for setting an action on the VTR/disk recorder timeline.

Alternatively, you can select the reverse arrangement, whereby when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details of the setting, see "Setting the First Keyframe When a Rewind Is Executed" in Chapter 19 (Volume 3).

Disk Recorder/Extended VTR File Operations

Material held on a disk recorder/Extended VTR is managed in units of files. You can recall a file to play it back. (In the case of an Extended VTR, the register number is recalled.)
To carry out disk recorder/Extended VTR file operations, use the Device menu.

Accessing the file list

Before playback and suchlike operations on a disk recorder/Extended VTR, it is first necessary to display a list of the disk recorder files on the DCU. The file list includes the following information.

- File name
- Date of last update [1)]
- Duration of recorded material [1)]

To recall the file list, use the Device menu.

1) Not displayed in the case of an Extended VTR

Recalling a file

In the recalled list of files, select the file you want to play back, and open the file.

File list sharing

You can connect multiple DCU serial ports to a single disk recorder/Extended VTR.
You can share the recalled list of files between serial ports connected to the same disk recorder/Extended VTR.

For settings relating to file list sharing, see "Serial Port Settings (Serial Port Assign Menu)" in Chapter 22 (Volume 3).

File creation

To record a new file on the disk recorder, use the Device menu to create a new file.

Notes

In the case of an Extended VTR, it is not possible to record a new file.

Refreshing (recalling) the disk recorder/Extended VTR file list

1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR > File List menu appears.
In the status area, two lists appear.
The upper list shows the selected device name, and the currently selected file name (register number), and set file name.
The lower list shows a list of files for the selected device (the device appearing in the upper list). In this list is shown the file name (register number) set when the material was recorded, the length of the file data (timecode value), and the file update information.

Notes

- File update information is not shown when using the video disk communications protocol.
- When using an Extended VTR, the length of file data and file update information are not shown, and the register number is shown in place of the file name.

2 Select the device for which you want to recall the file list, using the knob.

Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

3 Press the [File List Update] button.

This starts the process of recalling the file list, and a message box appears. When the file list recall is completed, the message box disappears.

To cancel recalling the file list
During the recall, press the [Cancel] button in the message box.

File list sharing

You can share the recalled file list across serial ports connected to the same disk recorder.

For details of file list sharing settings, see "Sharing Disk Recorder/Extended VTR File Lists" in Chapter 19 (Volume 3).

Sorting files in the list

You can sort the files in the list by name, number, or update date.

1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR >File List menu appears.

2 Select the device for which you want to recall the file list, using the knob.

Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

3 In the <Sort> group, press one of [File Name], [File No], and [Update].

File Name: Sort in alphabetical order of file name.
File No: Sort in ascending file number order.
Update: Sort in file update date order, newest first.

Notes

- Files cannot be sorted by the file update date and time when using the video disk communications protocol.
- When using an Extended VTR, it is not possible to sort files.

This sorts the files in the selected order.

Recalling a file

To recall a file from the file list, use the following procedure.

Notes

Files cannot be recalled when the disk recorder is set to Recorder.

1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR >File List menu appears.

2 Select the device from which you want to recall a file, using the knob.

Knob	Parameter	Setting	Setting values
1	Dev	Device number	1 to 12

3 Using any of the following methods, select the file you want to recall.

- Press directly on the lower list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Setting	Setting values
2	No	File selection	1 to 5000 a) 0 to 99 b)

a) For disk recorders. The range of setting values depends on the total number of files.
b) For Extended VTRs. The range of setting values depends on the total number of files.

4 Press [Load].

This recalls the selected file, and the file name appears at the top of the status area.

Creating new files

A file name must be specified to record to a new file on a disk recorder.

Notes

- New files cannot be created when the disk recorder is set to Player or Recorder/Player.
- In the case of Extended VTRs, new files cannot be created.

1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR >File List menu appears.

2 Press [New File].

The keyboard window appears.

3 Enter a file name and press [Enter].

When using the Sony disk recorder 9-pin protocol: Up to 23 characters.
When using the video disk communications protocol: Up to 8 characters (in Fixed 8 Character mode) or 23 characters (in Variable Length mode)

For details of how to select the file name character count mode in the video disk communications protocol, see "Making Detailed Settings on the External Device Connected to the Serial Port" in Chapter 22 (Volume 3).

The name appears as the current file name at the top of the status area.

When the loaded file is not a target for recording

When a file that is not a target for recording is loaded in the disk recorder, proceed as follows.

1 In the Device menu, press VF3 'DDR/VTR' and HF3 'File List.'

The Device >DDR/VTR >File List menu appears.

2 Press [Unload].

The current file name at the top of the status area is cleared.

Chapter 13 Keyframe Effects

Regions

The term “region” refers to some sort of functional block of the system. When saving or recalling snapshot registers and effect registers, or creating or editing effects, you first select the region to which the operation applies. You can also select multiple regions simultaneously.

Classification of the regions

The regions are classified as follows.

- Master region
- The following 34 regions
  - Switcher: M/E1, PGM/PST, User1 to User8
  - DME: DME ch1 to DME ch8 (inclusive of Global)
  - External devices: P-Bus, Device 1 to Device 12, GPI, Macro

Only the regions assigned to the region selection buttons of the numeric keypad control block can be used simultaneously.

For details of the region assignment to the region selection buttons, see “Overall Control Panel Settings (Config Menu)” in Chapter 19 (Volume 3).

Regions applicable to keyframe operations

All the regions less the Router region.

Regions applicable to snapshot operations

Fifteen regions, that is, the above regions less all of the external device regions.

“User” regions

You can optionally assign the following regions to the regions User1 to User8. The User regions shown in parenthesis are the default assignments.

- Color backgrounds 1 and 2 (User1)
- AUX1 to AUX48 (User2)
- Frame Memory 1 to 8 (User4)
- Color correctors 1 and 2

For details of the User1 to User8 region assignment, see “Setting User Regions” in Chapter 20 (Volume 3).

Notes on saving or recalling a frame memory still image for or by a snapshot/keyframe

- The saving and recalling of frame memory images for snapshots and keyframes is restricted to the still images or clips on the eight frame memory outputs. The settings made for frame memory images in the Freeze menu or other menus do not apply to snapshots or keyframes.

- To reproduce a frame memory still image or a clip of them by recalling a snapshot or keyframe, you must have the same images that were present in the frame memory when you saved the snapshot or keyframe. Therefore, when saving a snapshot or keyframe using frame memory, you must also save the images to a storage media such as the hard disk.

Reference region

When multiple regions are selected, only one region appears in the displays for menu and numeric keypad operations. This is called the "reference region." The reference region is determined according to the following precedence.

M/E1 >P/P >User1 >User2 >User3 >User4 >User5 >User6 >User7 >User8 >DME ch1 >DME ch2 >DME ch3 >DME ch4 >DME ch5 >DME ch6 >DME ch7 >DME ch8 >Device1 >Device2 >Device3 >Device4 >Device5 >Device6 >Device7 >Device8 >Device9 >Device10 >Device11 >Device12 >P-Bus >GPI >Router >Macro

Master region

The regions saved in a master snapshot register or master timeline register and the register numbers saved in such regions can be recalled at a time as the master region.

The master region can be saved or recalled using the numeric keypad control block.

Registers

A register is an area of memory in a device which holds a snapshot, keyframe, macro, and so on.

For details of macros, see "Macros" (page 784).

Keyframe effect registers

Dedicated effect registers

There are 99 dedicated registers for keyframe effects in each region, numbered 1 to 99.

Shared user-programmable DME registers

In addition to the 99 DME registers for each region (i.e. each channel), there are also shared registers for each processor as shown in the following table. These are used for user-programmable DME.

Register number	Register allocation
101 to 199	Shared register for one-channel effects
201 to 299	Shared register for two-channel effects
301 to 399	Shared register for three-channel effects

Notes

When operating with these shared registers, be sure to select the appropriate regions depending on the number of channels.

When recalling registers in the 200 range, select two consecutive channels for the regions, as for example [DME1] and [DME2]. Similarly, for registers in the 300 range, select three consecutive registers.

Registers for P-Bus Device regions

There are 250 registers for P-Bus and Device1 to Device12 in each region, numbered 1 to 250.

Work register

This is a temporary register used when editing keyframes.

When you recall an effect, it is read from the effect register into the work register, and when you save, the contents of the work register are written to the effect register.

Master timeline registers

There are 99 master timeline registers, numbered 1 to 99, for each control panel. They store keyframe effect regions and the register numbers saved in the regions.

Snapshot registers

These are registers for snapshots, and there are 99, numbered 1 to 99 for each region.

Master snapshot registers

There are 99 master snapshot registers, numbered 1 to 99, for each control panel. They store snapshot regions and the register numbers saved in the regions.

Keyframes

A keyframe represents an instantaneous state of an image; it can be saved and recalled for reuse.

Effects

By arranging a number of keyframes on the time axis, and interpolating between successive keyframes, you can create an effect in which there is a continuous change from each keyframe to the next.

You can save the sequence of keyframes representing a single effect in a register. Then by recalling this register, you can replay the same effect.

For details of keyframe effect registers, see "Regions" (page 680) and "Registers" (page 682).

Saving and Recalling Effects

To create a new effect, first recall an empty register, then create the keyframes one at a time in this register. To run an effect, it is also necessary to set the time and the path.
To edit an existing effect, recall the register holding the effect, then make the changes.
When you have finished creating or editing the effect, save it in the recalled register or another specified register.

Auto save function

When you recall an effect, the currently recalled effect is automatically saved in a register. This is called the auto save function. You can disable this function in a Setup menu.

Effect Attributes

An individual effect may also have attached special conditions relating to switcher or DME operation when the effect is recalled.

These conditions are called “attributes” of the effect, and can be added when the keyframe effect is saved or recalled.

Type of attribute

The attribute that can be attached to an effect is as follows.

Effect dissolve: The transition from the state before the effect recall to the state at the effect start point is carried out smoothly, by a dissolve. The dissolve duration can be set in the Effect menu.

Temporary attributes

When a keyframe is recalled, independently of the attributes held in the register, you can also enable or disable temporary attributes. These temporary attributes are set when the keyframe effect is recalled.

Effect Editing

For editing operations such as to insert, delete, or modify a keyframe, it is necessary to stop the effect at the corresponding point on the time axis. This is termed an “edit point.”

You can edit either on a keyframe within the effect, or at any point between keyframes.

Insert: Insert the current image as a keyframe. Inserting a keyframe in an existing effect may change the duration of the effect *(see page 687)*.

Modify: Modify a keyframe. You can modify a single keyframe or a range of keyframes in the effect together.

Delete: Delete a keyframe. You can delete a single keyframe or a range of keyframes in the effect together. Deleting keyframes from an effect reduces the duration of the effect *(see page 688)*.

After deleting a keyframe, you can reinsert the keyframe with a paste operation.

Copy: Copy a keyframe. You can copy a single keyframe or a range of keyframes in the effect together.

Paste: Paste the keyframe last copied or deleted anywhere within the effect.

Pause: You can set a pause on a particular keyframe, so that when the effect is run it pauses on this keyframe. You can make this setting on any number of keyframes. To restart the paused effect, repeat the operation to run the effect.

KF Loop: Execute the effect the specified number of times through the keyframes in the specified range.

Undo an edit operation: Undo the effect of the last operation to insert, modify, delete, or paste a keyframe.

Duration modes

In keyframe editing, there are two duration modes; switch between them in the keyframe operation section. *(See "Creating and Editing Keyframes" (page 709).)*

Variable duration mode: In this mode, inserting or deleting a keyframe increases or reduces the duration.

Constant duration mode: In this mode, inserting or deleting a keyframe does not change the duration. This is useful for keyframe editing of an effect with a fixed duration.

In the variable and constant duration modes, the keyframes to which a modify operation applies, and the effect of a paste operation are different.

Difference in keyframes to which a modify operation applies

Effect position	Variable duration mode	Constant duration mode
On a keyframe	Applies to currently selected keyframe	Applies to currently selected keyframe
Between two keyframes	Applies to previous keyframe	Modify operation not possible [a)]

a) A new keyframe is inserted at the effect position.

Difference in the effect of a paste operation

Variable duration mode: The copied keyframe is inserted at the specified position.

Constant duration mode: The copied keyframe is written over the specified position.

Transition mode

You can use an effect created with keyframes as a DME wipe pattern on the switcher. In this case, it is necessary to set the transition mode (the way in which the effect behaves).

For details of the setting, see "Transition Mode Settings for User Programmable DME" (page 721).

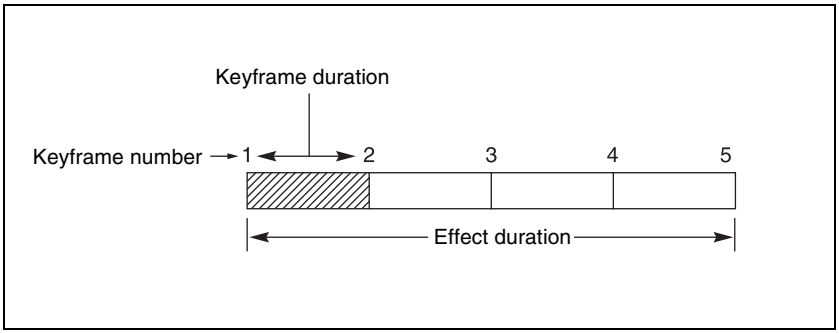
Time Settings

Keyframe duration and effect duration

You can determine the execution time of an effect by setting either the keyframe durations or the effect duration.

Keyframe duration: This is the time from the keyframe to the next keyframe. You can set this time in the keyframe control block. *(See "Setting the Keyframe Duration" (page 722).)*
In constant duration mode *(see page 686)*, it is not possible to change the keyframe duration setting.

Effect duration: This is the total execution time of the effect, from the first keyframe to the last. You can set this time in the keyframe control block. *(See "Setting the Effect Duration" (page 723).)*
When you change the effect duration, the keyframe duration for each keyframe in the effect is automatically recalculated proportionally.



Schematic view of keyframe duration and effect duration

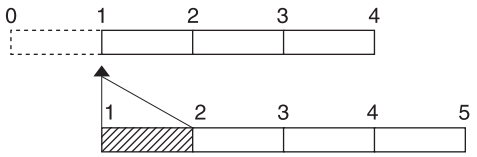
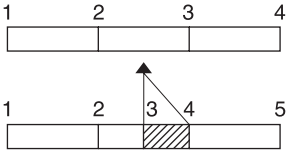
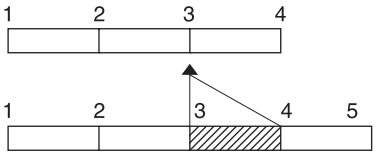
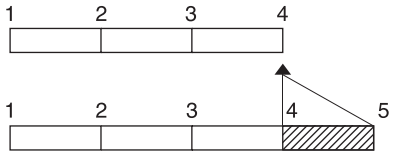
The effect duration may also be changed by inserting or deleting keyframes.

Changes in the effect duration caused by inserting a keyframe

- When the effect is stopped on a keyframe, inserting a keyframe increases the effect duration by the duration of the inserted keyframe.
- When the effect is stopped between two keyframes, inserting a keyframe does not change the effect duration.

Notes

In constant duration mode *(see page 686)*, the duration of the current keyframe is reduced to zero, and the new keyframe is inserted with the previous duration of the current keyframe. Thus the effect duration does not change.

Insertion position	Change in effect duration
Insertion before the first keyframe	
Insertion between two keyframes	
Insertion at an existing keyframe	
Insertion at the last keyframe	

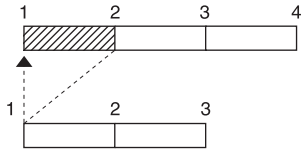
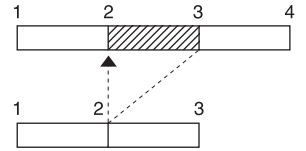
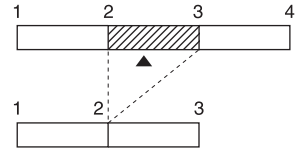
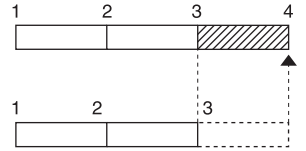
Keyframe insertion position and the change in effect duration

Changes in the effect duration caused by deleting a keyframe

- When the effect is stopped on a keyframe, a delete operation deletes the keyframe, and reduces the effect duration by the duration of the deleted keyframe.
- When the effect is stopped between two keyframes, a delete operation deletes the preceding keyframe, and reduces the effect duration by the duration of the deleted keyframe.

Notes

In constant duration mode *(see page 686)*, the duration of the keyframe before the deleted keyframe is increased by the duration of the deleted keyframe. Thus the effect duration does not change.

Deletion position	Change in effect duration
Deletion of the first keyframe	
Deletion of an intermediate keyframe	
Deletion between two keyframes	
Deletion of the last keyframe	

Keyframe deletion position and the change in effect duration

Delay setting

You can set the delay from the time of executing an operation to run the effect, and the effect actually starting (that is, the delay until the first keyframe). You can make this setting in the keyframe control block.

Note that changing the delay does not alter the duration of the effect.

Paths

The term “path” refers to the specification of how interpolation is carried out from one keyframe to the next.
Images are interpolated from an edit point to the next one according to the path setting.

For details of the path setting procedure, see “Path Setting” (page 725).

Switcher path settings

Carry out path settings in the Key Frame menu.
For each menu, the following settings are available.

M/E-1 and P/P menus

Item		Paths that can be set
M/E1, P/P All		For each M/E and PGM/PST, path settings for the following items are made simultaneously.
Key1 to Key8		Overall path settings for items relating to keys 1 to 8 are made simultaneously.
	Key 1 All to Key 8 All	
	Source	Key source path for keys 1 to 8
	Fill	Key fill path for keys 1 to 8
	Proc	Proc path for keys 1 to 8
	Trans	Transition path for keys 1 to 8
Bkgd/Util		Overall path settings for items relating to backgrounds and utility buses are made simultaneously.
	Bkgd/Util All	
	Bkgd A	Path for background A
	Bkgd B	Path for background B
	Util 1	Path for utility 1
	Util 2	Path for utility 2
	DME 2nd Video	Path for video to be used for second DME channel
Wipe/DME Wipe		Overall path settings for items relating to wipes and DME wipes are made simultaneously.
	Wipe/DME Wipe All	
	Wipe	Path for wipes
	DME Wipe	Path for DME wipes
Trans	**–**	Transition path for each M/E and P/P bank

User1 to User8 menus

The items that can be adjusted depend on the settings in the Setup menu.

For details, see "Settings for Switcher Configuration (Config Menu)" in Chapter 20 (Volume 3).

Item		Paths that can be set
User1 All to User8 All		Overall path settings for the following items for each "User" are made simultaneously.
FM All		Overall path settings for frame memory items are made simultaneously.
FM Still Store		Overall path settings for frame memory freeze image output are made simultaneously.
	FM Still Store All	
	FM Still Store 1 to 8	Paths for frame memory freeze image outputs 1 to 8
Aux		Overall path settings for AUX buses are made simultaneously.
	Aux All	
	Aux 1 to 48	Paths for Aux 1 to 48
Color Bkgd		Overall path settings for color backgrounds are made simultaneously.
	Color Bkgd All	
	Color Bkgd 1	Paths for color background 1
	Color Bkgd 2	Paths for color background 2
CCR		Overall path settings for color corrector
	CCR All	
	CCR 1	Path for color corrector 1
	CCR 2	Path for color corrector 2

Paths relating to DME

DME 3D Trans Local menu

Item		Paths that can be set
3D Trans Local All		Overall path settings for local channel three-dimensional transform items are made simultaneously.
Loc Size		Overall path settings for items relating to image size changes and movement are made simultaneously.
	Loc Size All	
	Size	Path for image size
	Post Loc X, Post Loc Y	Paths for movement in the x- and y-axes
	Post Size	Path for size

Item		Paths that can be set
Loc XYZ		Overall path settings for items relating to image movement are made simultaneously.
	Loc XYZ All	
	Loc X, Loc Y, Loc Z	Paths for the x-, y- and z-axes
Rot		Overall path settings for items relating to image rotation are made simultaneously.
	Rot All	
	Rot X, Rot Y, Rot Z	Paths for the x-, y- and z-axes
Spin		Overall path settings for items relating to spin are made simultaneously.
	Spin All	
	Spin Src X, Spin Src Y, Spin Src Z	Paths for the x-, y- and z-axes
	Spin X, Spin Y, Spin Z	Paths for the x-, y- and z-axes
Asp		Overall path settings for items relating to aspect ratio are made simultaneously.
	Asp All	
	Rate X, Rate Y	Paths for the x- and y-axes
Skew		Overall path settings for items relating to skew are made simultaneously.
	Skew All	
	Skew X, Skew Y	Paths for the x- and y-axes
	Aspect	Path for aspect ratio
Pers		Overall path settings for items relating to perspective are made simultaneously.
	Pers All	
	Pers X, Pers Y, Pers Z	Paths for the x-, y- and z-axes
Axis Loc		Overall path settings for items relating to image rotation axis are made simultaneously.
	Axis All	
	Axis X, Axis Y, Axis Z	Paths for the x-, y- and z-axes

DME 3D Trans Global menu

Item		Paths that can be set
3D Trans Global All		Overall path settings for three-dimensional transform items in the global channel are made simultaneously.
Loc Size		Overall path settings for items relating to image size changes and movement are made simultaneously.
	Loc Size All	
	Size	Path for image size
	Post Loc X, Post Loc Y	Paths for movement in the x- and y-axes
	Post Size	Path for size

Item		Paths that can be set
Loc XYZ		Overall path settings for items relating to image movement are made simultaneously.
	Loc XYZ All	
	Loc X, Loc Y, Loc Z	Paths for the x-, y- and z-axes
Rot		Overall path settings for items relating to image rotation are made simultaneously.
	Rot All	
	Rot X, Rot Y, Rot Z	Paths for the x-, y- and z-axes
Spin		Overall path settings for items relating to spin are made simultaneously.
	Spin All	
	Spin Src X, Spin Src Y, Spin Src Z	Paths for the x-, y- and z-axes
	Spin X, Spin Y, Spin Z	Paths for the x-, y- and z-axes
Pers		Overall path settings for items relating to perspective are made simultaneously.
	Pers All	
	Pers X, Pers Y, Pers Z	Paths for the x-, y- and z-axes
Axis Loc		Overall path settings for items relating to image rotation axis are made simultaneously.
	Axis All	
	Axis X, Axis Y, Axis Z	Paths for the x-, y- and z-axes

DME Effect menu

Item		Paths that can be set
Effect All		Overall path settings for DME effect items are made simultaneously.
Edge		Overall path settings for edge items are made simultaneously.
	Edge All	
	Border	Path for border
	Crop/Edge Soft	Path for crop/edge softness
	Beveled Edge	Path for beveled edge
	Key Border	Path for key border [a)]
	Art Edge	Path for art edge [a)]
	Flex Shadow	Path for flex shadow [a)]
	Wipe Crop	Path for wipe crop [a)]
	Color Mix	Path for color mix [a)]

Item		Paths that can be set
Video Modify		Overall path settings for video modify items are made simultaneously.
	Video Modify All	
	Defocus/Blur	Path for defocus/blur
	Multi Move	Path for “multi-move”
	Color Modify	Path for color modify
	Mosaic	Path for mosaic
	Mask	Path for mask
	Sketch	Path for sketch
	Metal	Path for metal
	Dim/Fade	Path for dim/fade [a)]
	Glow	Path for glow
Freeze		Path for freeze
Non-Linear		Path for nonlinear effects
Light		Overall path settings for lighting items are made simultaneously.
	Light All	
	Lighting	Path for lighting
	Spot Lighting	Path for spotlighting [a)]
Trail		Path for trails
In/Out		Overall path settings for items relating to input/output are made simultaneously.
	In/Out All	
	Bkgd	Path for background
	Video/Key	Path for video/key

a) This cannot be used on the MVE-8000A.

DME Global Effect menu

Item	Paths that can be set
Global Effect All	Overall path settings for DME global effect items are made simultaneously.
Combine	Path for combiner
Shadow	Path for shadow
Brick	Path for brick

Types of path

Path types for Curve

There are five types, as follows.



OFF: Executing the effect causes no change.



Step: There is no interpolation between keyframes, so that the effect parameters are updated each time a keyframe is passed.



Linear: Linear interpolation between keyframes, resulting in constant speed movement.



S-Curve: The rate of change accelerates and decelerates before and after a keyframe, so that the rate of change is maximum midway between two keyframes.



Spline: The effect follows a smooth curved path from each keyframe to the next.

Path types for Hue

There are four types, as follows.



CW: The hue changes in a clockwise direction as seen on a Vectorscope.



CCW: The hue changes in a counterclockwise direction as seen on a Vectorscope.



Short: The hue changes in whichever of the clockwise and counterclockwise directions is shorter.



Long: The hue changes in whichever of the clockwise and counterclockwise directions is longer.

Path types for Xpt

There are two types, as follows.



Xpt Hold off: When replaying a keyframe, change the inputs to the settings saved in memory.



Xpt Hold on: When replaying a keyframe, do not change the inputs.

Effect Execution

By using the [RUN] button in the keyframe control block, you can replay the effect as a continuous sequence of images. This is referred to as effect execution.

Range of execution

Each time the [RUN] button is pressed, the range of execution of the effect is from timecode 01:00:00:00 or the current time (the position at which the current effect is stopped) to the end point of the effect. However, if there is a

pause set on a keyframe, the execution range is up to that point. Pressing the [RUN] button again resumes the effect, which then runs to the next pause point or the end of the effect.

Run mode setting

You can select from the following run modes for when the effect is executed.
DIRECTION: Specify the effect execution direction.
STOP NEXT KF: Run the effect, and stop at the next keyframe.
EFFECT LOOP: Repeat the effect in an endless loop.
Make these settings in the keyframe control block. *(See "Run mode setting" (page 696).)*

Master Timelines

You can save the regions selected for a keyframe effect and the register numbers saved in the regions in a master timeline register so that operation can be applied to two or more regions at a time.
Master timeline registers can be saved or recalled from the numeric keypad control block or using a menu operation.

For more details, see "Creating and Saving a Master Timeline" (page 733).

Sequence of Keyframe Operations

The following table shows the principal operations involved in the sequence from creating keyframes to executing an effect. For details of each operation, see the page number in parenthesis.

For the overview of keyframes, see "Keyframes" in Chapter 1 (Volume 1).

Recalling a register *(see page 702)*
To create a new effect, recall an empty register; to edit an effect, open the register containing it.

⬇

Specifying the region and edit points *(see page 705)*
Select the region in which editing applies, and set the edit points.

⬇

Creating and editing keyframes ***(see page 709)***
Create the keyframes that make up the effect, using operations to create, insert, modify, or delete keyframes.

⬇

Time settings ***(see page 722)***
Set the overall duration of the effect or the duration of each keyframe.

⬇

Path setting ***(see page 725)***
Set the type of interpolation used between successive keyframes.

⬇

Executing effects ***(see page 728)***
This provides a smooth effect, based on the time and path settings.

⬇

Saving effects ***(see page 731)***
Save a completed effect in a register.

Displaying the Timeline Menu

By displaying the Timeline menu, you can view keyframe effects on the timeline for each region, and the associated information.

Recalling the Timeline menu

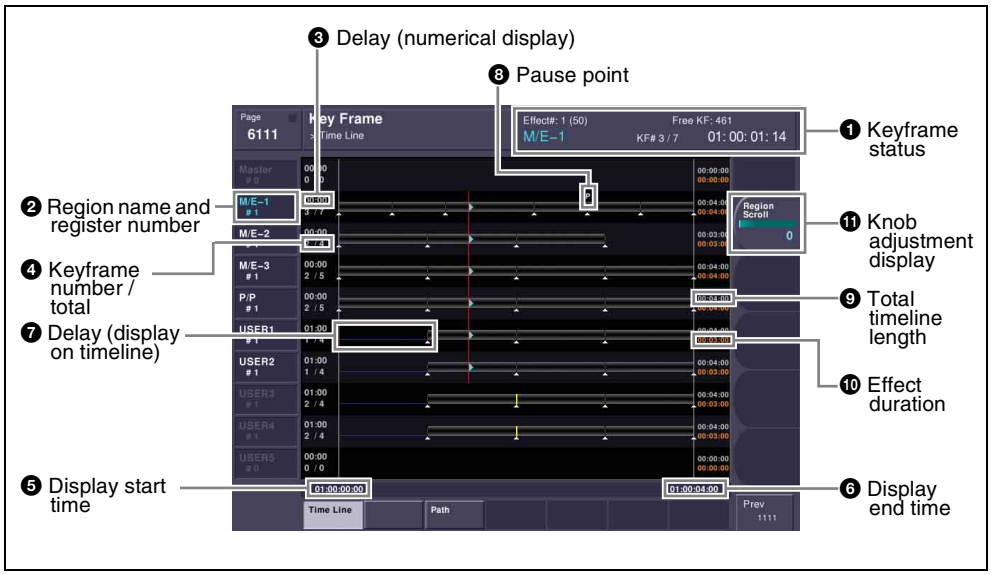
1 In the menu control block, press the top menu selection button [KEY FRAME].

2 Select HF1 ‘Time Line.’

The Time Line menu appears.

Interpreting the Timeline Menu

The following are the main parts of the menu display.



Key Frame >Timeline menu

❶ Keyframe status
This shows the region name, register number, register name, number of remaining keyframes, current position and timecode with regard to the reference region.

❷ Region name and register number
This shows the region name and the number of the register recalled in this region.
The display color indicates the region selection as follows.
Blue: reference region
White: selected region
Gray: not selected region

❸ Delay (numerical display)
This shows the delay between carrying out an effect operation, and the start of the actual effect.

❹ Keyframe number / total
This shows the number of the keyframe at the cursor position, and the total number of keyframes in the register.

❺ Display start time
This shows the timecode value for the timeline display start point.

❻ Display end time
This shows the timecode value for the timeline display end point.

❼ Delay (display on timeline)
When a delay is set, the interval is shown by a blue line.

❽ Pause point
A “P” appears where a pause is set.

❾ Total timeline length
The total time of delays and effect duration appears in white.

❿ Effect duration
The total duration of the effect appears in orange.

⓫ Knob adjustment display
Turning the corresponding knob scrolls the timeline display, allowing you to see the timeline for regions that were previously hidden.

Settings in the Timeline Menu

Selecting the region to be displayed

The Timeline menu shows a timeline for each region, but you can also restrict the regions to be shown.

Recalling the Timeline Assign menu

1 In the menu control block, press the top menu selection button [KEY FRAME].

2 Select HF5 'Timeline Assign.'

The Key Frame >Timeline Assign menu appears.
The right of the status area shows a list of the regions (including the global region) assigned to the region selection buttons in the numeric keypad control block. The left shows the regions in order of precedence, and whether each region is shown on the Timeline menu.

Deciding which regions appear on the timeline

In the Timeline Assign menu, press [Active Region], toggling it on or off.

On: The regions for which the region selection buttons in the numeric keypad control block are lit are shown in the precedence order *(see next item)* set in this menu, followed by the regions for which the buttons are off, in the same order.

Off: The regions appear according to the precedence order *(see next item)* and display on/off setting *(see page 701)* set in this menu.

Deciding the precedence order for timeline display

To change the precedence order, insert and delete regions in the list, in the desired order.

1 In the Timeline Assign menu, use any of the following methods to select the desired precedence order position and the region you want to insert.

- Press directly on the precedence order position in the list on the left and the region you want to insert in the list on the right.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs to make the setting.

Knob	Parameter	Adjustment	Setting values
1	Priority	Precedence order of insertion position	1 to upwards

Knob	Parameter	Adjustment	Setting values
2	Region	Region to be inserted	1 to upwards

2 In the <Priority> group, press [Insert].

This inserts the selected region before the specified precedence order. If the inserted region is already present in a different precedence order, it is deleted from that precedence order.

3 To delete a region from a precedence order, use any of the following methods to select the region.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Priority	Precedence order assigned to the region to be deleted	1 to upwards

4 To carry out the deletion, press [Delete] in the <Priority> group.

This deletes the selected region from the precedence order list.

Setting the display of regions in the Timeline menu on or off

When [Active Region] is off, to select which regions are displayed in the Timeline menu, use the following procedure.

1 In the Timeline Assign menu, use any of the following methods to select the region.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Priority	Region selection	1 to upwards

2 For no display, press [Display], turning it off. To display, press once more, turning it on.

When [Active Region] is off, regions with the "Display Off" setting are not displayed in the Timeline menu.

To return to the default precedence order and timeline menu display settings

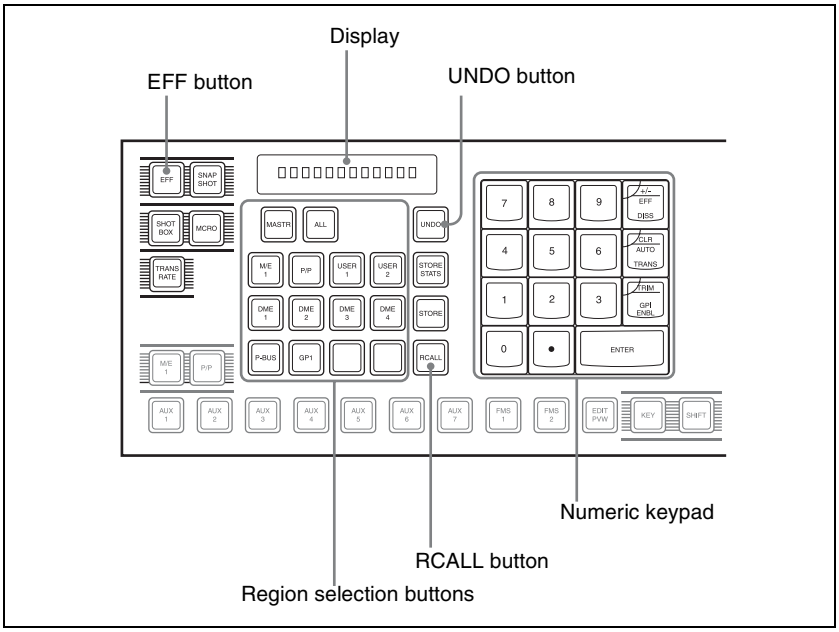
Press [Default] in the <Priority> group.

Recalling a Register

Use the numeric keypad control block to recall a register. For each region there are 99 registers dedicated to keyframes, numbered from 1 to 99.
When creating an effect as a user programmable DME, use a 3-digit register number which is commonly used for all DME regions (channels).

For a description of the concept of regions and registers, see "Regions" (page 680) and "Registers" (page 682).

Recalling a register from the numeric keypad control block



Numeric keypad control block

1 Press the [EFF] button, turning it on.

This allocates the numeric keypad control block to keyframe operations, and the [RCALL] button lights.

2 Press the button corresponding to the region you want to select, turning it on.
You can also press more than one button.

[M/E 1], [P/P]: These select the corresponding M/E-1 and PGM/PST regions.
[USER 1] to [USER 8]: These select the User regions.
[DME 1] to [DME 8]: These select the DME channels.
[DEV 1] to [DEV 12]: These select the regions Device 1 to Device 12, respectively.
[P-BUS]: This selects P-Bus.
[GPI]: This selects GPI.
[MCRO]: This selects Macro.
[ALL]: This selects all valid regions.
[MASTR]: This selects the master timeline *(see "Creating and Saving a Master Timeline Using the Buttons in the Numeric Keypad Control Block" (page 733)).*

Notes

The regions that can be selected simultaneously are those assigned to the region selection buttons in the numeric keypad control block. *(See "Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block" in Chapter 19 (Volume 3).)*
It is not possible to select [MASTR] and other regions simultaneously. If selected simultaneously, the master timeline takes precedence.

The first button pressed lights green as the reference region, and any subsequently pressed buttons light amber.
Pressing one of the amber-lit buttons, while holding down [EFF], turns the button green to indicate its corresponding region as the new reference region.

For details of the precedence order for becoming the reference region, see "Reference region" (page 681).

The display shows the name of the reference region, and the number of the last register recalled for this region.

3 Enter the number of the register you want to recall, using the numeric keypad.

To find an empty register, instead of entering a number, press the [.] (period) button. To search for an empty register common to all currently selectable regions, press the [.] button again.
To search for an empty register in the 100 range, press [1], [0], [0], [.] (period) in this order. Similarly, to search for an empty register in the 200 range, press [2], [0], [0], [.] (period), and to search for an empty register in the 300 range, press [3], [0], [0], [.] (period).
The register number appears in the display. If the number is followed by a letter 'e' or 'E,' this indicates the following.
e: The selected register is empty for the regions selected in step **2**.

E: The selected register is empty for all currently selectable regions.

4 To apply a temporary attribute (effect dissolve), press the [+/–/EFF DISS] button.

Notes

It is not possible to apply temporary attributes to the master timeline.

5 Press the [ENTER] button.

This recalls the specified register.
When the master timeline is recalled, the region selection buttons light according to the saved region information.

To undo the recall of a register

Immediately after recalling the register, press the [UNDO] button to undo the operation.

Notes

After recalling the master timeline, you cannot undo the recall.

Specifying the Region and Edit Points

Selecting the Region in Which Editing Applies

Selecting by control panel

Select the region in which the editing is applied by the effect consisting of keyframes, using the region selection buttons in the numeric keypad control block. *(See step **2** of "Recalling a register from the numeric keypad control block" (page 702)).)*

Selecting by menus

This is convenient for selecting some of the regions assigned to the numeric keypad control block or changing the reference region.

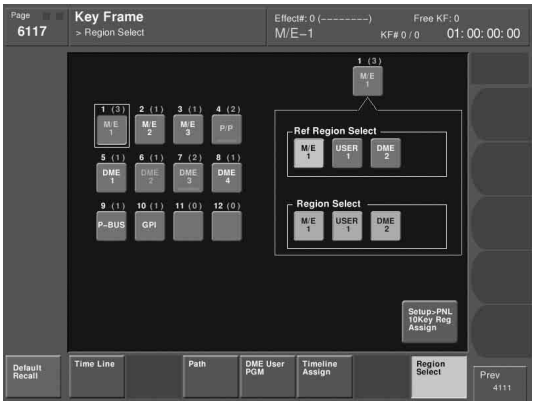
Notes

The function of region selection buttons in the numeric keypad control block is linked to the menu. If you carry out region selection by pressing a region selection button, then all the regions assigned to that button are selected.

1 In the Key Frame menu, press HF7 'Region Select.'

The Key Frame >Region Select menu appears.
On the left of the status area, region selection buttons appear.
Depending on the region selection state, the following indications appear.
Green text: the assigned regions include the reference region.
Orange text: one of the assigned regions is selected.
White text: no assigned region is selected.

When any one or more of the regions assigned to the region selection buttons is not selected, a red bar appears within the button indication. The [STORE] and [RCALL] buttons in the numeric keypad control block flash amber.



2 Press a button indication on the left of the status area, to select the button you want to assign.

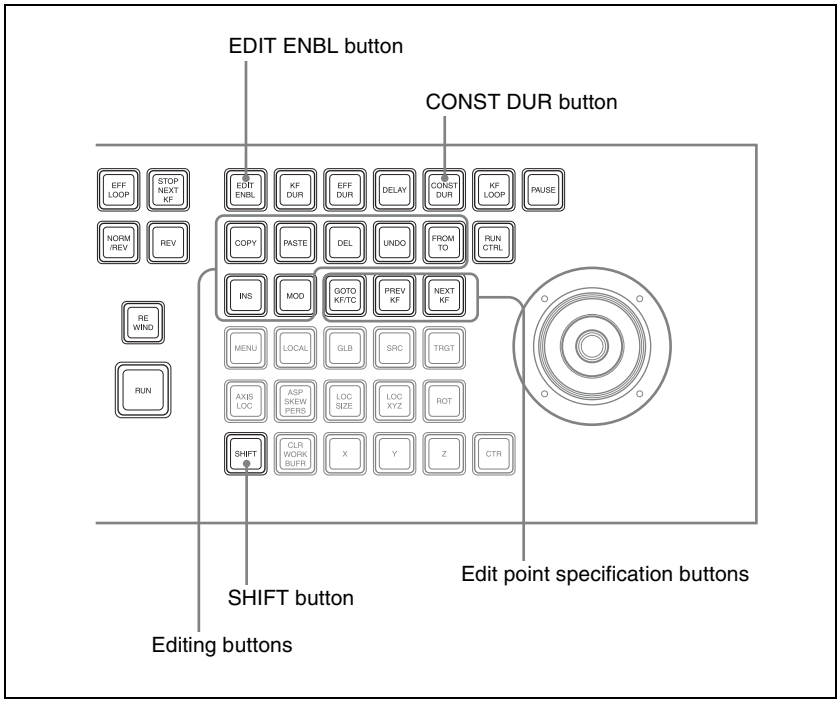
The regions currently assigned to the button you pressed appear on the right side of the status area.

3 In the <Region Select> group, press the button for the region you want to select, turning it on.

4 In the <Ref Region Select> group, press the button indication you want to make the reference region.

The button you pressed lights green.

Setting the Edit Points



Keyframe control block

To set the edit points, use any of the following operations in the keyframe control block.

- To move the edit point to the keyframe immediately after the current time (the position at which the effect is currently stopped), press the [NEXT KF] button.
- To move the edit point to the keyframe immediately before the current time, press the [PREV KF] button.
- To move the edit point to a keyframe specified by number, press the [GO TO KF/TC] button turning its LED on, then enter the keyframe number with the numeric keypad in the numeric keypad control block, and press the [ENTER] button to confirm.
- To move the edit point to a specified timecode, holding the [SHIFT] button, press the [GO TO KF/TC] button turning its LED on, then enter the timecode value with the numeric keypad in the numeric keypad control block and press the [ENTER] button to confirm.

To enter a difference value

When moving to a point specified with the [GO TO KF/TC] button, you can also enter the difference from the current keyframe number or timecode value. Press the numeric keypad [+/–] button, and enter the difference, then press the [TRIM] button. Each time you press the [+/–] button, it toggles between plus (+) and minus (–).

Creating and Editing Keyframes

Creation

Creating new keyframes

To create new keyframes, after recalling an empty register, use the following procedure to create and insert each new keyframe. Use the keyframe control block for carrying out the operation.

1 Press the [EDIT ENBL] button, turning it on.

This enables effect editing in the keyframe control block.

2 Create the image you want to be the first keyframe.

3 Press the [INS] button.

This takes the current image as the first keyframe.
You can make a setting in the Setup menu so that when you recall an empty register, the system state at that point is automatically captured as the first keyframe.

4 Create the image you want to be the next keyframe.

5 Press the [INS] button.

This inserts the current image as the second keyframe after the first keyframe.

Repeat steps **4** and **5** to create the required number of keyframes.

To insert a new keyframe before an existing keyframe

Hold down the [SHIFT] button and press the [INS] button, to insert a new keyframe before the current keyframe.

Insertion

Inserting keyframes

To insert a keyframe in an existing effect, use the following procedure in the keyframe control block.

1. Press the [EDIT ENBL] button, turning it on.
2. Stop the effect at the desired edit point.
3. Create the image for the keyframe you want to insert.
4. Press the [INS] button.
   When the edit point is on a keyframe, to insert the new keyframe before the existing keyframe, hold down the [SHIFT] button and press the [INS] button.

   This inserts the current image as the new keyframe.
   Inserting a keyframe may change the total duration of the effect. *(See "Time Settings" (page 686).)*

Modification

Modifying keyframes

Use the following procedure in the keyframe control block.

1. Press the [EDIT ENBL] button, turning it on.
2. Stop the effect at the desired edit point.

   When the edit point is on a keyframe, this is what you modify. If the edit point is between two keyframes, the previous keyframe is what you modify.

   Notes

   In constant duration mode *(see page 686)* modification is only possible when the edit point is on a keyframe.
3. Using image transformations or adding special effects, modify the keyframe.

4 Press the [MOD] button.

This modifies the keyframe.

Modifying more than one keyframe simultaneously

You can modify a number of keyframes simultaneously. There are three different cases for this operation.

- Modifying from the edit point to a particular keyframe
- Modifying all keyframes in the effect
- Modifying the keyframes in a specified range

The different procedures for these cases are now described.

To modify from the edit point to a particular keyframe

1 Press the [EDIT ENBL] button, turning it on.

2 Stop the effect at the first keyframe of the range to be modified.

3 Carry out the necessary modifications.

4 Press the [FROM TO] button, turning it on.

The display in the numeric keypad control block shows the current keyframe number, followed by "TO."

5 Enter the number of the last keyframe to be modified from the numeric keypad control block and press the [ENTER] button to confirm.

6 Press the [MOD] button. Alternatively, hold down the [SHIFT] button and press the [MOD] button.

For the difference in the result, see "Differences in the changes when a number of keyframes are modified" (page 712).

This makes the modification simultaneously to all keyframes from the edit point to the specified keyframe.

To modify the keyframes in a specified range

1 Press the [EDIT ENBL] button, turning it on.

2 Stop the effect at any keyframe within the range to be modified.

3 Carry out the necessary modifications.

4 Press the [FROM TO] button, turning it on.

The display in the numeric keypad control block shows the current keyframe number, followed by “TO.”

5 Using the numeric keypad in the numeric keypad control block, carry out the following operations.

- To set the first keyframe in the range to be modified, press the [CLR] button, then enter the keyframe number, and press the [ENTER] button to confirm.
- To set the last keyframe in the range to be modified, enter the keyframe number from the numeric keypad, and press the [ENTER] button to confirm.

6 Press the [MOD] button. Alternatively, hold down the [SHIFT] button and press the [MOD] button.

For the difference in the result, see “Differences in the changes when a number of keyframes are modified” (page 712).

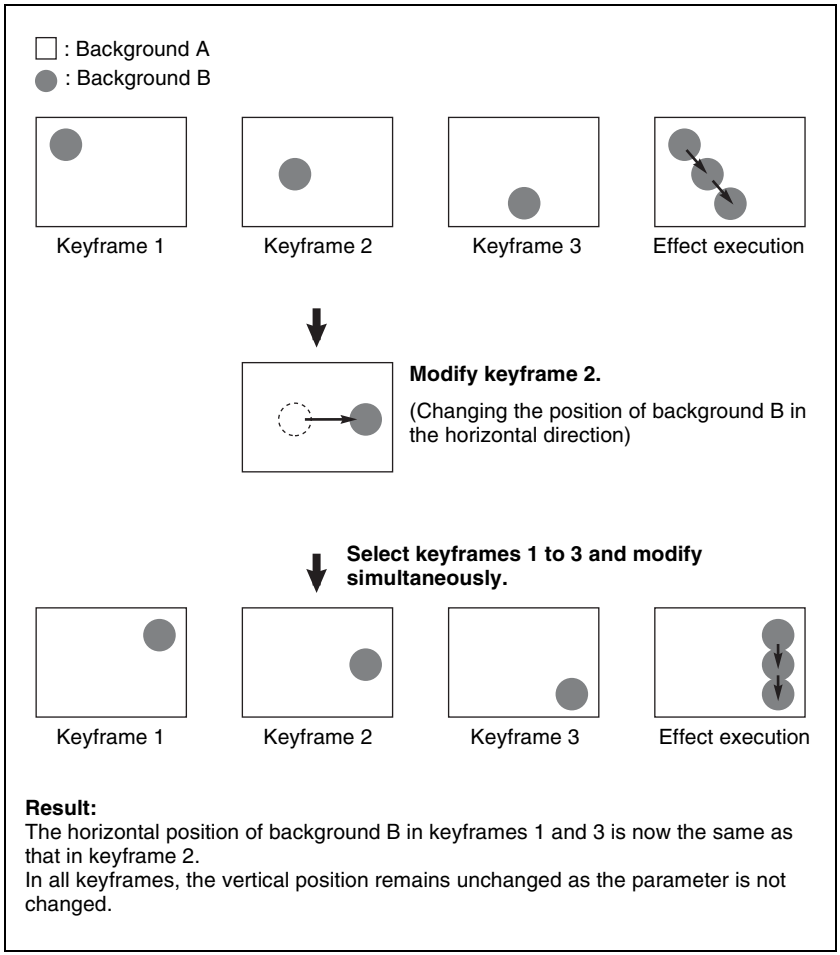
This makes the modification simultaneously to all keyframes in the specified keyframe range.

Differences in the changes when a number of keyframes are modified

When you select a number of keyframes to modify, and press the [MOD] button alone or in combination with the [SHIFT] button, the result of the operation differs as shown below.

Modifying the keyframes by pressing the [MOD] button alone

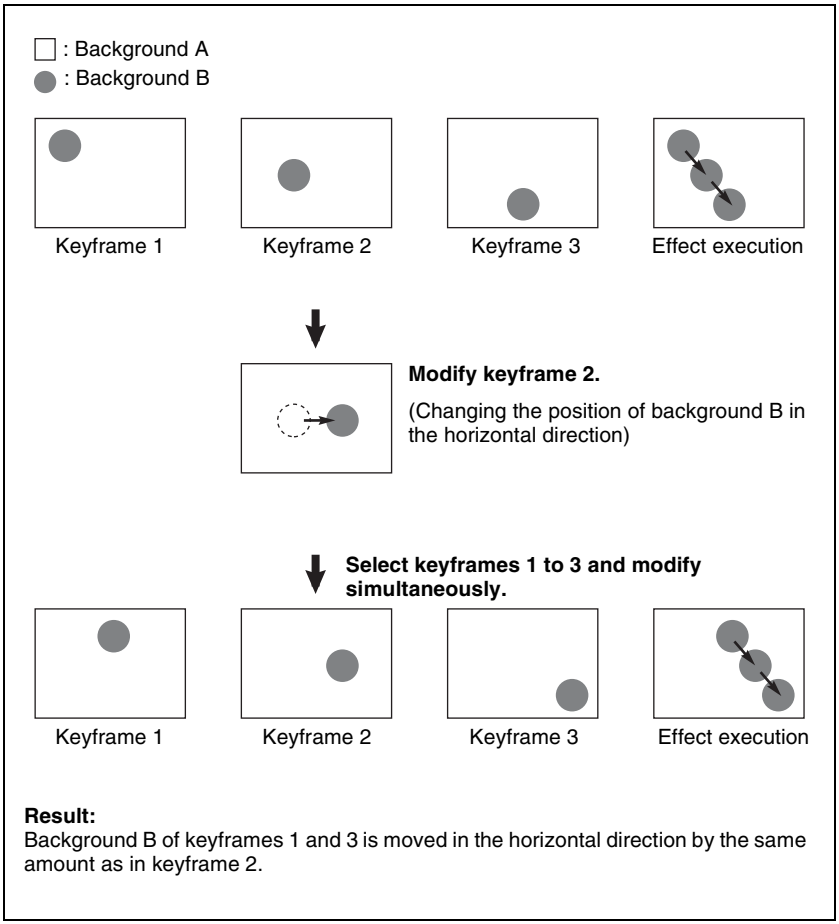
The modified parameter values are taken as absolute values, and applied to all of the selected keyframes.



Result:
The horizontal position of background B in keyframes 1 and 3 is now the same as that in keyframe 2.
In all keyframes, the vertical position remains unchanged as the parameter is not changed.

Modifying the keyframes by holding down the [SHIFT] button and pressing the [MOD] button

The modified parameter values are taken as relative values, which modify all of the selected keyframes.



Deletion

Deleting keyframes

1 Press the [EDIT ENBL] button, turning it on.

2 Stop the effect at the desired edit point.

When the edit point is on a keyframe, this is what you delete. If the edit point is between two keyframes, the previous keyframe is what you delete.

3 To delete a number of keyframes in a single operation, press the [FROM TO] button, turning it on.

For how to specify a range of keyframes, see "Modifying more than one keyframe simultaneously" (page 711).

4 Press the [DEL] button.

This deletes the keyframe.
Deleting a keyframe reduces the total duration of the effect.
In constant duration mode *(see page 720)*, however, the duration does not change.

For details, see "Changes in the effect duration caused by deleting a keyframe" (page 688).

Movement

Moving keyframes

1 Press the [EDIT ENBL] button, turning it on.

2 Stop the effect at the edit point you want to move.

3 To move a number of keyframes in a single operation, press the [FROM TO] button, turning it on, to specify the keyframes.

For how to specify a range of keyframes, see "Modifying more than one keyframe simultaneously" (page 711).

4 Press the [DEL] button.

This deletes the keyframe, and saves it in the paste buffer.

5 Move the edit point to the position to which you want to move the keyframe.

6 Press the [PASTE] button.

This inserts the keyframe you have moved after the current keyframe. In constant duration mode, the moved keyframe overwrites the edit point.

To insert the moved keyframe before a keyframe

Hold down the [SHIFT] button, and press the [PASTE] button to insert the moved keyframe before the current keyframe.

Copying

Copying keyframes

1 Press the [EDIT ENBL] button, turning it on.

2 Stop the effect at the edit point you want to copy.

3 To copy a number of keyframes in a single operation, press the [FROM TO] button, turning it on.

For how to specify a range of keyframes, see "Modifying more than one keyframe simultaneously" (page 711).

4 Press the [COPY] button.

This copies the specified keyframe, and saves it to the paste buffer.

5 Move the edit point to the position where you want to insert the copied keyframe.

6 Press the [PASTE] button.

This inserts the keyframe you have copied after the current keyframe. In constant duration mode, the copied keyframe overwrites the edit point.

To insert the copied keyframe before a keyframe

Hold down the [SHIFT] button, and press the [PASTE] button to insert the copied keyframe before the current keyframe.

Pause

To apply a pause to a keyframe, use the following procedure.

1 Press the [EDIT ENBL] button, turning it on.

2 Stop the effect on the keyframe to which you want to apply a pause.

3 Press the [PAUSE] button.

This applies a pause to the specified keyframe.

Keyframe Loop (Repeated Execution of a Specified Range)

By setting the range of the loop within the effect, and the number of loop executions, you can execute the loop range repeatedly.

Notes

It is only possible to set one keyframe loop for each region.

Creating a new keyframe loop

To specify the loop range and loop count, carry out the following procedure.

1 Press the [EDIT ENBL] button, turning it on.

2 Stop the effect on the keyframe you want to make the first of the loop range (start point). (Here, by way of example, keyframe 2 is taken as the start point.)

3 Press the [KF LOOP] button in the keyframe control block, turning it on.

The numeric keypad control block display shows the start point keyframe number as follows.

FM 2 TO

The example shown means “from (keyframe) 2 to...,” where the end keyframe is to follow.

4 With the numeric keypad buttons of the numeric keypad control block, enter the number of the last keyframe in the loop range (end point). (Here, by way of example, keyframe 5 is the end point.)

FM 2 TO 5

5 Press the [ENTER] button to confirm the entry.

The display changes as follows, prompting you to enter the loop count.

COUNT

6 Enter the loop count. (Here, by way of example, “15” is entered.)

- To specify a loop count, enter a number in the range 1 to 99.
- To specify an endless loop, enter “0” (zero).

COUNT 15

7 Press the [ENTER] button to confirm the entry.

The start point, end point, and loop count that you have set are reflected in the Timeline menu.
If you enter the loop count as “0” (endless loop), the count is shown as “inf” (infinity).
The numeric keypad control block display changes back to the state shown in step **4**.

Changing the keyframe loop settings

To change the loop range or count for the currently recalled effect, carry out the following procedure.

1 When the [KF LOOP] button in the keyframe control block is lit amber, press it, turning it green.

The numeric keypad control block display shows the current loop range. If, for example, the start point is keyframe 2 and the end point is keyframe 5, this appears as follows.

FM 2 TO 5

2 To change the loop range, press the [CLEAR] button in the numeric keypad control block.
To change the loop count only, press the [ENTER] button, then skip to step **6**.

When you press the [CLEAR] button, this appears as follows.

FM TO

3 Enter the keyframe number for the new start point, and press the [ENTER] button.

4 Enter the keyframe number for the new end point, and press the [ENTER] button.

The display shows the currently set loop count.

5 To change the setting, press the [CLEAR] button.

This clears the set loop count.

COUNT

6 Enter the new loop count, and press the [ENTER] button.

Executing a keyframe loop

In the keyframe control block, press the [RUN] button.
The set loop range is executed repeatedly for the set loop count number of times.
The screen shows the total loop count and the number of loops remaining. (If the loop count is infinite (inf), the remaining number is not shown.)
If the [REV] button is lit, the loop is played in the reverse order.

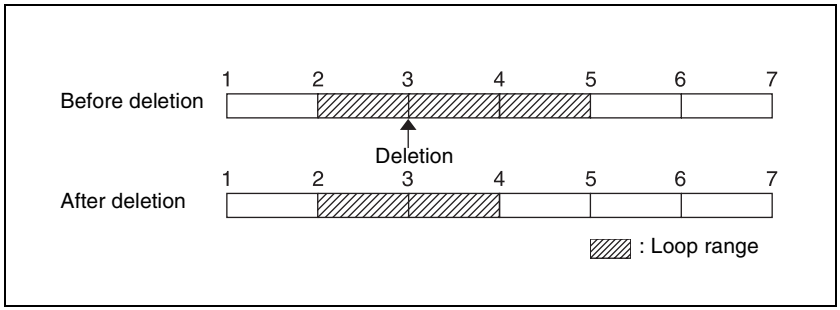
Canceling keyframe loop execution

Press the [REWIND] button in the keyframe control block.

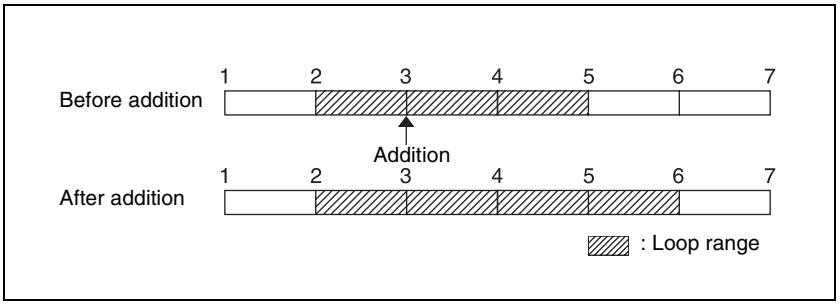
Changes to the loop range caused by keyframe insertion/ deletion

When a keyframe is inserted or deleted within the loop range, the loop range also changes. The following are examples.

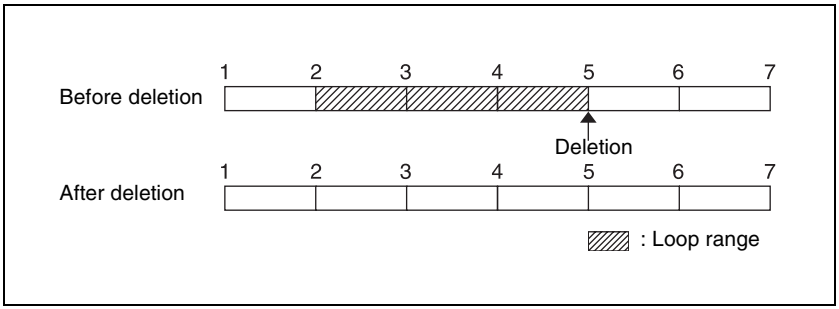
Example 1: If keyframe 3 is deleted, the loop end point moves forward as follows.



Example 2: If keyframe 3 is added, the end point keyframe number moves back.



Example 3: If the keyframe at the end of the loop range (the end point) is deleted, the keyframe loop settings are all cleared, as follows, and the [KF LOOP] button goes off. The same occurs if the first keyframe in the loop range (the start point) is deleted.



Undoing an Edit Operation

To undo a keyframe insert, modify, delete, or paste operation immediately after execution, press the [UNDO] button.

Duration Mode Setting

There are two keyframe duration modes: variable duration mode, and constant duration mode in which the effect duration is fixed *(see page 686)*.

- To select variable duration mode, turn the [CONST DUR] button off.
- To select constant duration mode, press the [CONST DUR] button, turning it on.

Transition Mode Settings for User Programmable DME

To create an effect for user programmable DME, it is necessary to set the transition mode.

Setting the transition mode

1 In the Key Frame menu, select HF4 'DME User PGM.'

The DME User PGM menu appears.

2 In the <Transition Mode> group, select the transition mode according to the DME wipe action.

Single: select single transition mode.
Flip/Tumble: select the flip/tumble transition mode.
Dual: select dual transition mode.
P in P: select picture-in-picture mode.
Compress: select compress mode.
Frame I/O: select frame in-out transition mode.
Frame I/O H: select frame in-out transition mode in the horizontal direction.
Frame I/O V: select frame in-out transition mode in the vertical direction.

For details of creating an effect for user programmable DME, see "Creating User Programmable DME Patterns" in Chapter 6 (Volume 1).

Notes

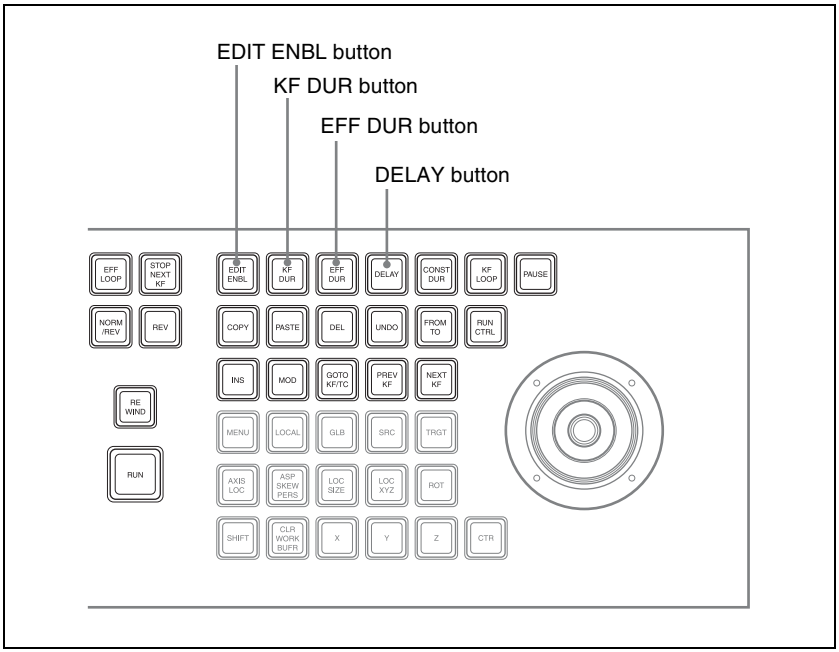
Which DME channel is selected as the reference region (lit green) in the numeric keypad control block is reflected in the <Transition Mode> group display.

Time Settings

You can determine the execution time of an effect by setting either the keyframe durations or the effect duration.

For details of keyframe duration and effect duration, see "Keyframe duration and effect duration" (page 686).

Setting the Keyframe Duration



Keyframe control block

Setting the keyframe duration

You can set the value of the keyframe duration independently for each keyframe, by the following method.

1 Press the [EDIT ENBL] button, turning it on.

2 Stop the effect on the keyframe for which you want to set the duration.

The time from this keyframe to the following keyframe is what you set.

3 Press the [KF DUR] button, turning it on.

The display in the numeric keypad control block shows “KF DUR” followed by the duration of the current keyframe (seconds:frames).

4 Using the numeric keypad in the numeric keypad control block, enter the timecode value for the keyframe duration, as a maximum of four digits.

For example, to set 9 seconds and 20 frames, enter 920. You can also use the [TRIM] button to enter a difference value. *(See “To enter a difference value” (page 708).)*

5 Press the [ENTER] button to confirm the entry.

This changes the keyframe duration to the new setting.

Notes

In addition to the above operation, the keyframe duration may also be automatically changed as a result of changing the effect duration. *(See the next section.)*

Setting the Effect Duration

To set the effect duration, use the following procedure.

1 Press the [EDIT ENBL] button, turning it on.

2 Press the [EFF DUR] button, turning it on.

The display in the numeric keypad control block shows “DUR” followed by the effect duration (minutes:seconds:frames).

3 Using the numeric keypad in the numeric keypad control block, enter the timecode value for the effect duration, as a maximum of six digits.

For example, to set 3 minutes 7 seconds and 15 frames, enter 30715. You can also use the [TRIM] button to enter a difference value.*(See “To enter a difference value” (page 708).)*

4 Press the [ENTER] button.

This changes the effect duration to the new setting.

Notes

In addition to the above operation, the effect duration may also be changed as a result of inserting or deleting keyframes. *See "Time Settings" (page 686).*

Setting the Delay

To set the delay *(see "Delay setting" (page 689))*, use the following procedure.

1. Press the [EDIT ENBL] button, turning it on.
2. Press the [DELAY] button, turning it on.

   The display in the numeric keypad control block shows "DELAY" followed by the delay time (seconds:frames).
3. Using the numeric keypad in the numeric keypad control block, enter the timecode value for the delay, as a maximum of four digits.

   You can also use the [TRIM] button to enter a difference value. *(See "To enter a difference value" (page 708).)*
4. Press the [ENTER] button to confirm the entry.

   This changes the delay setting.

Path Setting

The term “path” refers to the specification of how interpolation is carried out from one keyframe to the next.

For details of the notion of path, see “Paths” (page 690).

Set keyframe paths in the Key Frame >Path menu.

To access the Key Frame >Path menu

In the menu control block, press the top menu selection button [KEY FRAME], then select HF3 ‘Path.’

Basic Procedure for Path Settings

Selecting the category

From the 16 buttons in the function button area, select the category for which you want to make the setting.

First row: path settings for the switcher M/E1 and PGM/PST banks

Second and third rows: path settings for User1 to User8

Fourth row: path settings for DME local channel and global channel 3D transforms and effects

Making switcher path settings

This section describes settings for M/E-1 Key1 as an example.

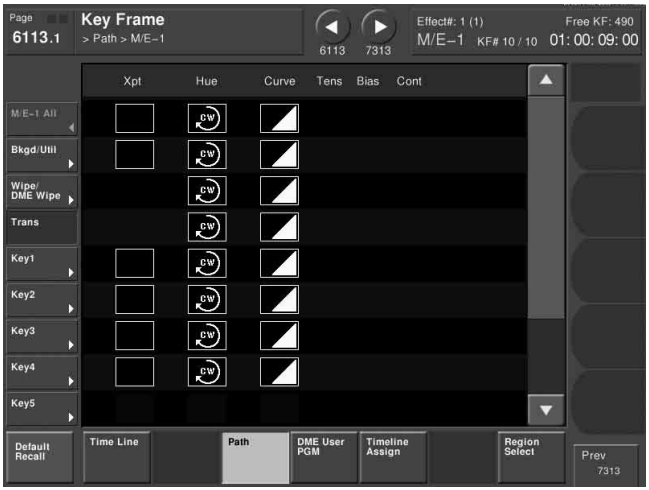
The area for the VF buttons shows the names of items.

A ▶ sign by a button indicates that pressing it opens a more detailed setting menu.

The status area shows the settings for Xpt, Hue, and Curve. However, depending on the item, these parameters may or may not be present.

Notes

Whenever you set a path or modify its setting, be sure to press the [MOD] button in the keyframe control block. The setting does not become effective unless the [MOD] button is pressed.



Changing the path type for Curve

1 In the Path menu, press [M/E-1].

The M/E-1 menu appears.

2 Press the Curve path type indication for the Key1 item that you want to change.

A path selection window appears.

3 Press the indication for the desired path type, to select it.



OFF: Executing the effect causes no change.



Step: There is no interpolation between keyframes, so that the effect parameters are updated each time a keyframe is passed.



Linear: Linear interpolation between keyframes, resulting in constant speed movement.



S-Curve: The rate of change accelerates and decelerates before and after a keyframe, so that the rate of change is maximum midway between two keyframes.



Spline: The effect follows a smooth curved path from each keyframe to the next.

The status area reflects the selected path type.
At this point, depending on the setting for Curve, the effect for Hue and Xpt is also affected as shown in the following table. In the menu, the Hue and Xpt settings do not change, but the path type indication is dimmed out.

Curve setting	Hue change	Xpt change
OFF	Does not change	Hold
Step	Changes as with the Step setting	Is not affected

4 If you selected Spline as the path type, set the following parameters, using the knobs.

Knob	Parameter	Adjustment	Setting values
1	Tens	Spline interpolation tension	–4.00 to +4.00
2	Bias	Spline interpolation bias	–4.00 to +4.00
3	Cont	Spline interpolation continuity	–4.00 to +4.00

Changing the path type for Hue

1 Press the Hue path type indication for the item that you want to change.

2 Turn knob 1 to change the Hue path type.

The path type indications shown in the menu represent the change in hue as seen on a Vectorscope.



CW: Rotate clockwise.



CCW: Rotate counterclockwise.



Short: The hue changes in whichever of the clockwise and counterclockwise directions is shorter.



Long: The hue changes in whichever of the clockwise and counterclockwise directions is longer.

Changing the path type for Xpt

1 Press the Xpt path type indication for the item that you want to change.

A path selection window appears.

2 Press the indication for the desired path type, to select it.



Xpt Hold off: When replaying a keyframe, change the inputs to the settings saved in memory.



Xpt Hold on: When replaying a keyframe, do not change the inputs.

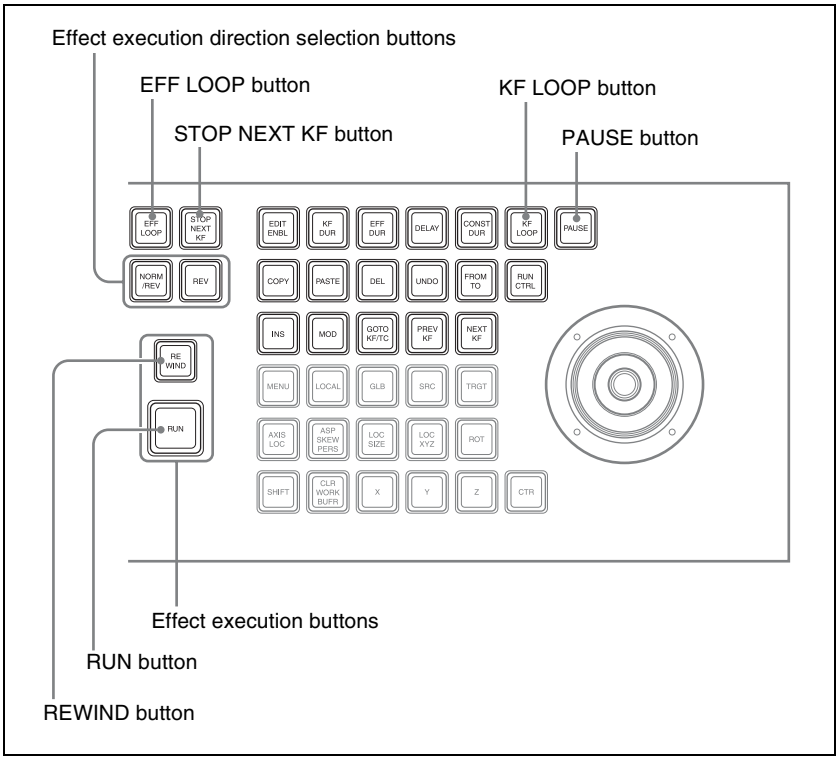
Executing Effects

By means of the [RUN] button in the keyframe control block, you can play an effect as a continuously varying image. This is referred to as effect execution.

See also "Effect Execution" (page 695).

It is also possible to execute an effect from the device control block *(see Chapter 2 (Volume 1))*.

Executing Effects in the Keyframe Control Block



Keyframe control block

Executing an effect automatically

1 Select the region in which you want to execute the effect, using the region selection buttons in the numeric keypad control block. *(See step **2** of "Recalling a register from the numeric keypad control block" ().)*

2 With the numeric keypad, enter the number of the register in which the effect you want to execute is saved, and press the [ENTER] button to confirm.

This recalls the effect saved in the register.

3 In the keyframe control block, press the [RUN] button.

The [RUN] button lights amber and the effect is executed automatically.

Executing an effect manually

In step **3** above, operate the fader lever.

To use the transition control block fader lever as a keyframe fader

Press the [KF] button in the transition control block, turning it on, to execute a keyframe effect with the fader lever in the same control block.
You can also assign the [KF] button to a transition type selection button in the transition control block.

For the operation of assigning the [KF] button to the transition type selection buttons, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3).

Notes

- It is not possible for the [KF] button to be on for multiple banks (M/E or PGM/PST) at the same time. If you press the [KF] button in more than one bank, only the last button pressed remains on.
- If a macro is assigned to the transition control block fader lever, then while in use as a keyframe fader the macro is not executed.

Moving to the first keyframe of the effect

To move to the first keyframe of the effect, press the [REWIND] button.

Setting the Run Mode

You can set the run mode in which an effect is executed when you press the [RUN] button.

Specifying the effect execution direction

To specify the effect execution direction, press the [REV] button, turning it on (for reverse direction) or off (for normal direction).
To execute the effect so as to alternate the normal and reverse directions, press the [NORM/REV] button, turning it on.

When the [REV] button is off: The effect is executed in the direction from the first keyframe to the last keyframe.

When the [REV] button is on: The effect is executed in the direction from the last keyframe to the first keyframe.

When the [NORM/REV] button is on: Each time the effect is executed, the direction reverses.

Executing an effect up to the next keyframe

1 Press the [STOP NEXT KF] button, turning it on.

2 Press the [RUN] button.

This executes the effect as far as the next keyframe. When the [REV] button is lit, it is executed as far as the previous keyframe.

Repeating an effect

1 Press the [EFF LOOP] button, turning it on.

2 Press the [RUN] button.

This executes the effect repeatedly, from the first keyframe to the last keyframe.
When the [REV] button is lit, the effect is executed in the reverse direction.

3 To stop the repeating effect, press the [EFF LOOP] button, turning it off, or press the [REWIND] button.

Saving Effects

When you recall an effect, the currently recalled effect is automatically saved in a register. This is referred to as the auto save function.
You can disable the auto save function in a Setup menu.
By means of the following operation, you can also specify a register and save an effect in it.

Saving an effect in a specified register

Specify the register using the numeric keypad control block.

1 Press the [EFF] button, turning it on.

This assigns the numeric keypad control block to keyframe operations.

2 Press the region selection button corresponding to the region for which you want to save the register, turning it on.

*See step **2** of "Recalling a register from the numeric keypad control block" ().*

3 Press the [STORE] button, turning it on.

4 With the numeric keypad, enter the number of the register in which you want to save the effect.

To find an empty register, instead of entering a number, press the [.] (period) button. To search for an empty register common to all currently selectable regions, press the [.] button again.
To search for an empty register in the 100 range, press [1], [0], [0], [.] (period) in this order. Similarly, to search for an empty register in the 200 range, press [2], [0], [0], [.] (period), and to search for an empty register in the 300 range, press [3], [0], [0], [.] (period).

The register number appears in the display. If the number is followed by a letter 'e' or 'E,' this indicates the following.
e: The selected register is empty for the regions selected in step **2**.
E: The selected register is empty for all selectable regions.

5 To add an attribute (effect dissolve), press the [+/–/EFF DISS] button, turning it on.

For details of attributes, see "Effect Attributes" (page 684).

6 Press the [ENTER] button.

This saves the current effect in the specified register, and turns off the [STORE] button. The [RCALL] button and [STORE STATS] button both light.

To undo the saving of an effect

Immediately after saving an effect, hold down the [STORE STATS] button and press the [UNDO] button to undo the save.

Creating and Saving a Master Timeline

Creating and Saving a Master Timeline Using the Buttons in the Numeric Keypad Control Block

Creating and saving a master timeline

You can save region information (information on any regions, including the register numbers associated with the regions) referred to as a master timeline in a dedicated register. By recalling that register, you can manipulate the regions and registers together.

1 Press the [EFF] button, turning it on.

This assigns the numeric keypad control block to keyframe effect operations.

2 Recall the register number of the effect you want to save on the master timeline for each region. *(See .)*

3 Of the region selection buttons, press those buttons for the regions you want to save on the master timeline, turning them on.

4 Press the region selection button [MASTR], turning it on.

The display shows the number of the register last used for master timeline register operation.

5 Press the [STORE] button, turning it on.

6 With the numeric keypad buttons, enter the number of the register in which you want to save the master timeline.

To find an empty register, instead of entering a number, press the [.] (period) button.

The display shows the register number. If the number is followed by a letter “E,” the register is empty.

7 Press the [ENTER] button.

The regions selected in step **3** and the register numbers recalled in those regions are saved in the master timeline register, and the [STORE] button goes off. At the same time, the [RCALL] button lights.

Notes

- It is not possible to undo a master timeline save.
- Saving the master timeline does not carry out a save of effects. Save the effects for each region first, then carry out the master timeline save.

Changing a master timeline

You can change information already saved in a master timeline.
As an example, to change the M/E-1 register from Effect 5 to Effect 10, use the following procedure.

Information in master timeline register 1 before change

Region	Register
M/E-1	Effect 5
P/P	Effect 5

⬇

Information in master timeline register 1 after change

Region	Register
M/E-1	Effect 10
P/P	Effect 5

1 Recall the master timeline register you want to change. *(See .)*

This simultaneously recalls M/E-1 register 5 and P/P register 5, and the [M/E-1] and [P/P] region selection buttons light.

2 Press the region selection button [MASTR], turning it off.

3 Turn on only the button for the region you want to change (here, [M/E-1]), and recall the desired register (here, Effect 10).

This recalls M/E-1 register 10, while on P/P register 5 remains selected.

4 Press the buttons for the regions you want to save on the master timeline (here, [M/E-1] and [P/P]), turning them on.

5 Press the region selection button [MASTR], turning it on.

The display shows the register number last used for master timeline operation.

6 Press the [STORE] button, turning it on.

7 With the numeric keypad buttons, enter the number of the register (here "1") in which you want to save the master timeline, and press the [ENTER] button.

This saves M/E-1 register 10 and P/P register 5 in master timeline register 1, and the [STORE] button goes off. At the same time, the [RCALL] button lights.

Checking the regions saved on a master timeline

For example in the course of changing a master timeline, you can check which regions are saved in the register. With the [MASTR] button in the numeric keypad control block lit, hold down the [STORE] button. While it is held down, the buttons for the saved regions light. When the button is released, the state before it was held down is restored.

Creating and Saving a Master Timeline With the Menu

You can save a master timeline using the Effect >Master Timeline >Store menu.

Recalling the Store menu

1 Do either of the following.

- In the menu control block, press the top menu selection button [EFF].
- In the numeric keypad control block, press the [EFF] button twice in rapid succession.

The Effect menu appears.

2 Press VF1 'Master Timeline' and HF1 'Store.'

The Master Timeline >Store menu appears.
The status area shows the master timeline register names, register lock status, register number for each region, and so on.

3 If required, press the following buttons in the status area to change the region display.

M/E, P/P: indicate assignment of M/E-1 ("M/E1") and P/P ("P/P").
User: indicate assignment of User1 ("USR1"), User2 ("USR2"), User3 ("USR3"), User4 ("USR4"), User5 ("USR5"), User6 ("USR6"), User7 ("USR7"), and User8 ("USR8").

DME: indicate assignment of DME ch1 (“DME1”), ch2 (“DME2”), ch3 (“DME3”), ch4 (“DME4”), ch5 (“DME5”), ch6 (“DME6”), ch7 (“DME7”), and ch8 (“DME8”).

DEV1-8: indicate assignment of Device1 (“DEV1”), Device2 (“DEV2”), Device3 (“DEV3”), Device4 (“DEV4”), Device5 (“DEV5”), Device6 (“DEV6”), Device7 (“DEV7”), and Device8 (“DEV8”).

DEV9-12: indicate assignment of Device9 (“DEV9”), Device10 (“DEV10”), Device11 (“DEV11”), and Device12 (“DEV12”).

Misc: indicate assignment of P-Bus (“PBUS”), GPI (“GPI”), and Macro (“MCRO”).

Creating and saving a master timeline

To save a master timeline register with the menu, use the following procedure.

1 In the Store menu, using any of the following methods, select the register in which you want to save the master timeline.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Master Reg	Master timeline register number	1 to 99 a)

a) For P-Bus and Device1 to Device12, register numbers 1 to 250 can be set.

2 Press [Edit].

The Edit menu appears, and you can now save the master timeline in the specified register. In this menu again, you can turn the knob to select the master timeline register.
The status area shows the status of each region in this master timeline.

3 Using any of the following methods, select the region. Multiple selections are also possible.

- Press directly on the display in the status area.
- To cancel the selection, press once more to return to the normal display.
- To select all regions, press [ALL].
  To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].

4 Press [Assign], turning it on.

- If the selected register is locked, a confirmation message appears asking whether or not to cancel the operation. Press [OK] to return to the previous menu display without carrying out the registration.

- If the operation is carried out, the region selected in step **3** is registered on the master timeline, and the parameters are now valid.

5 Turn the knob to select the number of the effect register.

Knob	Parameter	Adjustment	Setting values
3	Effect Reg	Effect register number	1 to 399

6 Repeat steps **3** to **5** as required to set all regions and register numbers to be saved on the master timeline.

7 In the <Store> group, press [Store].

This saves the settings.

To return to the state before saving the master timeline content

In the <Store> group, press [Undo].

Register Operations in the Menus

Using the Effect menu, you can carry out the following effect register operations.

- Attribute setting
- Status display
- Register editing

To display the Effect menu

Press the top menu selection button [EFF] in the menu control block.

The menus for editing registers are divided up by registers. Here the menu for registers 1 to 99 is described as an example, but you can carry out operations in the same way on registers 101 to 199, 201 to 299, and 301 to 399, using VF3 to VF5.
Also for registers for P-Bus and Device1 to Device12, carry out similar operations using VF6 'DEV/PBUS Effect 1-250.'

Effect Attribute Settings

Applying effect dissolve

To apply the "effect dissolve" attribute to a keyframe effect, use the following procedure.

1 In the Effect menu, press VF2 'Effect 1-99' and HF1 'Attribute.'

The Attribute menu appears.
The status area shows the region names, register numbers and status, and attribute settings.

2 Press the region display in the upper part of the list, and in the selection window select the region. Selecting multiple regions is also possible.
To select all regions, press [ALL].

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the register.

- Press directly on the list in the status area.

- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Register	Register number	1 to 99
3	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

5 Press [Effect Dissolve], turning it on.

6 Turn the knob to set the duration.

Knob	Parameter	Adjustment	Setting values
4	Eff Diss Duration	Dissolve duration	1 to 999 (frames)

Setting the duration for a temporary attribute

To set the duration for a temporary attribute set in the numeric keypad control block, turn knob 5.

Knob	Parameter	Adjustment	Setting values
5	Temp Dur	Temporary attribute dissolve duration	0 to 999 (frames)

Effect Status Display

The Effect >Effect 1-99 menu displays the following information.

Region name: The selected region name appears in the upper part of the list.
Register number
Register name
Write-protected status: When the register is write-protected, a letter “L” appears.
Empty status: When the register is empty, a letter “E” appears.

Effect Register Editing

You can carry out the following editing on effect registers and master timeline registers.

- **Lock:** Write-protect the contents of the register.
- **Copy:** Copy the contents of one register to another register.

- **Merge:** Merge the data of two registers. It is not possible to merge master timeline registers.
- **Move:** Move the contents of one register to another register.
- **Swap:** Swap the contents of two registers.
- **Delete:** Delete the contents of a register.
- **Name:** Attach a name to a register.

Write-protecting the contents of the effect register

Notes

It is not possible to write-protect an empty register.

1 In the Effect menu, press VF2 ‘Effect 1-99’ and HF2 ‘Lock.’

The Lock menu appears.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible.
To select all regions, press [ALL].

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the register.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Register	Register number	1 to 99
3	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

5 Press [Lock], turning it on.

To unlock the register

Select the register you want to unlock, and press [Lock], turning it off.

Copying, moving, and swapping effect register data

This section describes the procedure for copying. You can move or swap registers using a similar procedure.

1 In the Effect menu, press VF2 ‘Effect 1-99’ and HF3 ‘Copy/Merge.’

- The Copy/Merge menu appears.
- The left side of the status area shows the register number of the copy source, and the right side shows the register number of the copy destination.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible.
To select all regions, press [ALL].

Operation between regions
Operation between regions is possible in the following cases.
- M/E-1 and P/P regions
- Two of the User1 to 8 regions of the same configuration
- Two of the DME ch1 to 8 (including Global) regions

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the desired registers.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	From Reg	Copy source register number	1 to 99
2	To Reg	Copy destination register number	1 to 99
3	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

5 To copy without transferring the name, in the <Copy> group, press [W/o Name], turning it on.

6 In the <Copy> group, press [Copy].

This carries out the copy.
If, for example, the copy destination register is write-protected or the same register is specified both as the copy source and destination registers, a confirmation message appears. Press [OK] to cancel the copy.

Merging effect registers

1 In the Effect menu, select VF2 ‘Effect 1-99’ and HF3 ‘Copy/Merge.’

- The Copy/Merge menu appears.
- The left side of the status area shows a list for the register coming afterward when merged. The right side shows a list for the register coming before when merged.

2 Press the region display in the upper part of the list, and in the selection window select the region. Selecting multiple regions is also possible.
To select all regions, press [ALL].

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the register.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	From Reg	The register coming afterwards when merged	1 to 99
2	To Reg	The register coming before when merged	1 to 99

5 Press [Merge].

This carries out the merge.

Deleting data from effect registers

1 In the Effect menu, press VF2 ‘Effect 1-99’ and HF6 ‘Delete.’

The Delete menu appears.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible.
To select all regions, press [ALL].

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the desired registers.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Register	Register number	1 to 99
3	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

5 Press [Delete].

Attaching a name to an effect register

1 In the Effect menu, press VF2 ‘Effect 1-99’ and HF7 ‘Rename.’

The Rename menu appears.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible.
To select all regions, press [ALL].

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the register you want to name.

- Press directly on the list in status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register number	1 to 99

The selected register appears in reverse video.

5 Press [Rename].

A keyboard window appears.

For details of keyboard window operation, see “Menu Operations” in Chapter 2 (Volume 1).

6 Enter the name, of not more than eight characters, and press [Enter].

The set name is reflected in the status area.

Notes

The following names cannot be used.

CON, PRN, AUX, CLOCK$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Displaying a List of Effect Registers for Editing

You can display a list of effect registers including status information (whether data is present and so on), then carry out lock, copy, delete, and rename operations.

Displaying the list of effect registers with status information

Press the menu title button at the top left of the Effect menu.
The Effect >Status menu appears. The status area shows a list of effect registers (1 to 99).

Register name displays

For the same number, the register name for the M/E-1 region takes precedence. If there is no data for the M/E-1 region, then the register name appears in the sequence P/P >User1 to User8 >DME ch1 to DME ch8 >Device1 to Device12 >P-Bus >GPI >Macro.

Indication colors

Each register has a color-coded border, indicating its status.
Selected register: pale blue border
Register containing data: shown amber within the border. If, however, there are one or more locked regions, the display is in red.

Write-protecting the contents of the register (lock function)

(This applies to all regions.)

In the Effect >Status menu, use the following procedure.

1 Using any of the following methods, select the register you want to lock.

- Press directly on the corresponding register indication in the status area.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register selection	1 to 99

2 Press [Lock].

The register is locked, and the background of the register indication appears in red.

To release the lock

Press [Lock] once more, turning the contents of the frame to amber.

Copying the contents of a register

(This applies to all regions.)
In the Effect >Status menu, use the following procedure.

1 Using any of the following methods, select the copy source register.

- Press directly on the corresponding register indication in the status area.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register selection	1 to 99

2 In the <Copy> group, press [From __].

3 Select the copy destination register.

4 In the <Copy> group, press [To __].

This executes the copy.

Deleting the contents of a register

(This applies to all regions.)
In the Effect >Status menu, use the following procedure.

1 Using any of the following methods, select the register you want to delete.

- Press directly on the corresponding register indication in the status area.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register selection	1 to 99

2 Press [Delete].

This deletes the data from the register.

Renaming a register

(This applies to all regions.)
In the Effect >Status menu, use the following procedure.

1 Using any of the following methods, select the register you want to rename.

- Press directly on the corresponding register indication in the status area.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Register	Register selection	1 to 99

2 Press [Rename].

A keyboard window appears.

3 Enter a name of up to eight characters, and press [Enter].

This changes the name.

Chapter 14 Snapshots

Overview

The term “snapshot” refers to a function whereby the various settings required to apply a particular effect to an image are saved in memory as a set of data, for recall as required, to recover the original state.
You can carry out snapshot operations using the numeric keypad control block *(see page 751)* and the Snapshot menu *(see page 756)*.

Notes
If the M/E bank has the Inhibit setting *(see “Overall Control Panel Settings (Config Menu)” in Chapter 19 (Volume 3))*, it is not possible to recall a snapshot on that M/E bank.

Snapshot Types

Snapshots are divided as follows.

Snapshots applying to a particular region (functional block of the switcher or DME)

The term “snapshot” alone usually refers to this type of snapshot. This only applies to regions assigned to region selection buttons in the numeric keypad control block.

For details about a region, see “Regions” (page 680).

Master snapshot: This applies to the selected regions and the register numbers saved in the regions.
A master snapshot can be saved and recalled using the numeric keypad control block.

Snapshots applying only to particular functions

This type of snapshot includes the following.

Key snapshot: This includes the key on/off state and all key settings other than key priority for each keyer. *(See “Key Snapshots” in Chapter 4 (Volume 1).)*
To use this function requires the optional MKS-8032 DSK Fader Module.

Wipe snapshot: This includes the wipe settings of each of the M/E-1 to M/E-4 and PGM/PST banks. *(See “Wipe Snapshots” in Chapter 5 (Volume 1).)*

DME wipe snapshot: This includes the DME wipe settings of each of the M/E-1 to M/E-4 and PGM/PST banks.

The rest of this section describes the snapshots that apply to a particular region or regions.

Snapshot Attributes

An individual snapshot may also have attached special conditions relating to switcher or DME operation when the snapshot is recalled.
These conditions are called "attributes" of the snapshot, and can be added when the snapshot is saved or recalled.

Types of attribute

There are five snapshot attributes, as follows.

Cross-point hold: When the snapshot is recalled, the cross-point button selection remains unchanged. This can be set independently for each bus.

Key disable: When the snapshot is recalled, the key settings remain unchanged. This can be set independently for each keyer. A Setup menu allows you to select whether or not the key on/off state should also remain unchanged.

For details of the setting operation, see "Settings Relating to Keys, Wipes, Frame Memory and Color Correction (Key/Wipe/FM/CCR Menu)" in the Chapter 20 (Volume 3).

Effect dissolve: The transition from the state before the snapshot recall to the snapshot settings is carried out smoothly, by a dissolve. The dissolve duration can be set in the Snapshot menu.

Auto transition: An auto transition starts the instant the snapshot is recalled. The auto transition setting is valid only for M/E-1 and PGM/PST.

Notes

If both effect dissolve and auto transition are selected as attributes, the auto transition takes precedence.

GPI output: A GPI output is sent to the allocated GPI port the instant the snapshot is recalled.
The trigger type depends on the switcher GPI output settings made in the Setup menu.

For details, see "Interfacing With External Devices (Device Interface Menu)" under "Switcher Setup" in Chapter 20 (Volume 3).

Clip event: Recall a frame memory clip immediately after the snapshot is recalled.

Auto play: Play a frame memory clip immediately after the snapshot is recalled.

Table of available attributes

The attributes that can be used depend on the region, as follows.

Yes: Can be used No: Cannot be used

Attribute	Region		
	M/E-1 and PGM/PST	User 1 to User 8	DME ch 1 to DME ch 8
Cross-point hold	Yes	Yes	Yes
Key disable	Yes	No	No
Effect dissolve	Yes	Yes	Yes
Auto transition	Yes	No	No
GPI outputs	Yes	Yes	No
Clip event	No	Yes	No
Auto play	No	Yes	No

Attribute display

You can view the attributes of a snapshot in the Snapshot menu.

For more details, see "Snapshot Operations in the Menus" (page 756).

Temporary attributes

When recalling a snapshot, you can temporarily apply attributes distinct from the attributes set for each register. These are called "temporary attributes." You can set temporary attributes when recalling a snapshot.

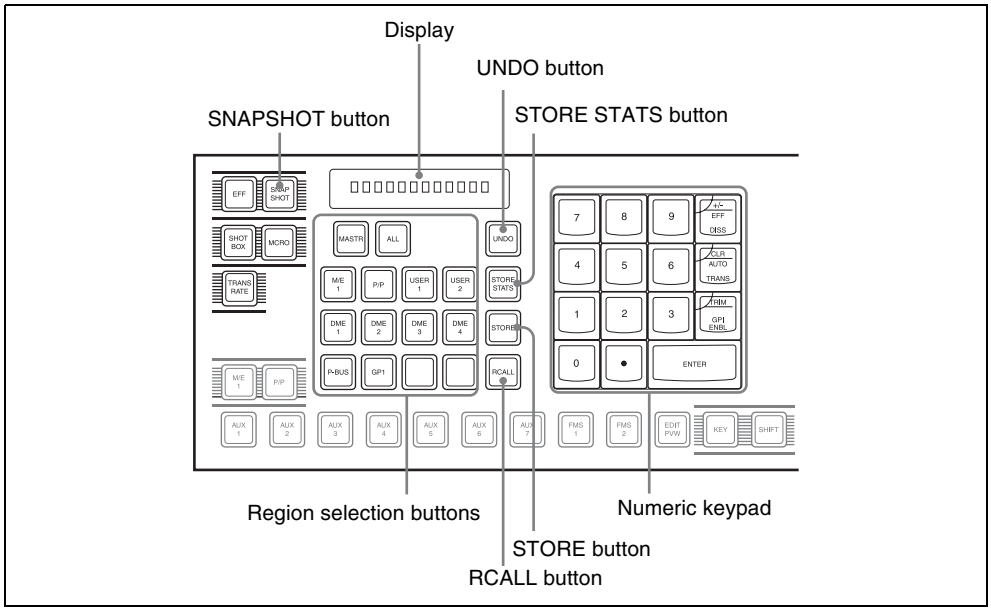
Bus override

If you recall a snapshot while holding down an A or B bus button, the selection of the signal on the A or B bus does not change when the snapshot is recalled. This function is called "bus override."
This function is effective when cross-point hold is off, and you want to temporarily maintain the cross-point setting. When cross-point hold is on, the above operation is not necessary.

Snapshot Operations From the Numeric Keypad Control Block

Saving and Recalling Snapshots

Snapshot operations with the numeric keypad control block use the following buttons.



Numeric keypad control block

Saving a snapshot from the numeric keypad control block

1 Make the settings for the state you want to save as a snapshot.

2 In the numeric keypad control block, press the [SNAPSHOT] button, turning it on.

This allocates the numeric keypad control block to snapshot operations, and the [RCALL] button lights.

3 Press the region selection button corresponding to the region for which you want to save, turning it on. You can select more than one region.

[M/E 1], [P/P]: These select the corresponding M/E-1 and PGM/PST regions.
[USER 1] to [USER 8]: These select the User regions.
[DME 1] to [DME 8]: These select the DME channels.
[RTR]: This selects the Router region.
[ALL]: This selects all regions.

Notes

The regions that can be selected simultaneously are those assigned to the region selection buttons in the numeric keypad control block. *(See "Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block" in Chapter 19 (Volume 3).)*

The first button pressed lights green as the reference region, and any subsequently pressed buttons light amber.
Pressing one of the amber-lit buttons, while holding down [SNAPSHOT], turns the button green to indicate its corresponding region as the new reference region.

For details of the precedence order for becoming the reference region, see "Reference region" (page 681).

The display shows the name of the reference region and the number of the register previously recalled for that region.

4 Press the [STORE] button, turning it on.

5 Enter the desired register number from the numeric keypad.

To find an empty register, instead of entering a number, press the [.] (period) button. To search for an empty register common to all currently selectable regions, press the period button again.

Notes

If you choose a register which already contains a snapshot, and save a snapshot, then the existing register contents are overwritten.

The register number appears in the display. If the number is followed by a letter 'e' or 'E,' this indicates the following.
e: The selected register is empty for the regions selected in step **3**.
E: The selected register is empty for all currently selectable regions.
The entered register number appears in the display.

6 To apply attributes, press the following buttons, turning them on.

Attribute to apply	Button
Effect dissolve	[+/–/EFF DISS] button
Auto transition	[CLR/AUTO TRANS] button
GPI output a)	[TRIM/GPI ENBL] button

a) The GPI port that can be set is 1 (fixed).

For details of attributes, see "Snapshot Attributes" (page 749).

Notes

In the numeric keypad control block, it is not possible to apply the cross-point hold. *For details, see "Applying snapshot attributes" (page 756).*

7 Press the [ENTER] button.

This saves the snapshot, and the [STORE] button goes off. The [RCALL] and [STORE STATS] buttons light.

To cancel a snapshot save operation

After saving a snapshot, to cancel the save, hold down the [STORE STATS] button and press the [UNDO] button.

Recalling a snapshot from the numeric keypad control block

1 In the numeric keypad control block, press the [SNAPSHOT] button, turning it on.

This allocates the numeric keypad control block to snapshot operations, and the [RCALL] button lights.

2 Press the region selection button corresponding to the region you want to recall, turning it on. Multiple selections are also possible.

[M/E 1], [P/P]: These select the M/E-1 and PGM/PST regions.
[USER 1] to [USER 8]: These select the User regions.
[DME 1] to [DME 8]: These select the DME channels.
[RTR]: This selects the Router region.
[ALL]: This selects all regions.
[MASTR]: This selects a master snapshot.

Notes

The regions that can be selected simultaneously are those assigned to the region selection buttons in the numeric keypad control block. *(See "Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block" in Chapter 19 (Volume 3).)*

It is not possible to select [MASTR] and other regions simultaneously. If selected simultaneously, the master snapshot takes precedence.
The first pressed button lights green as the reference region, and subsequently pressed buttons light amber.
Pressing one of the amber-lit buttons, while holding down [SNAPSHOT], turns the button green to indicate its corresponding region as the new reference region.

For details of the precedence order for becoming the reference region, see "Reference region" (page 681).

The display shows the name of the reference region and the number of the register previously recalled for that region.

3 Enter the desired register number from the numeric keypad.

*See step **5** (page 752) in "Saving a snapshot from the numeric keypad control block."*

The entered register number appears in the display.

4 To apply temporary attributes, press the following buttons, turning them on.

Control block	Temporary attribute to apply	Button
Cross-point control block	A/B bus cross-point hold	[XPT HOLD] button in the background A/B bus
	Key cross-point hold	[XPT HOLD] button [a]
Numeric keypad control block	Effect dissolve	[+/–/EFF DISS] button
	Auto transition	[CLR/AUTO TRANS] button

a) Enabled by a setup setting.

For the setup setting, see "Operation Settings (Operation Menu)" in Chapter 19 (Volume 3).

For details of temporary attributes and available attributes, see "Snapshot Attributes" (page 749).

Notes

- The cross-point hold and key disable settings are maintained until you next press the [XPT HOLD] button.
- Applying temporary attributes does not affect the contents of the register.
- It is not possible to apply temporary attributes to a master snapshot.

5 Press the [ENTER] button.

This recalls the specified snapshot, and the reference region name and recalled register number appear in the display.
If you applied the effect dissolve or auto transition temporary attributes in step **4**, the corresponding buttons go off.
When a master snapshot is recalled, the region selection buttons light according to the saved region information.

To cancel a snapshot recall operation

After saving a snapshot, to cancel the recall, press the [UNDO] button.

Notes

It is not possible to cancel recalling a master snapshot.

Creating and saving a master snapshot with the numeric keypad control block

To create and save a master snapshot with the numeric keypad control block, refer to the operations in *"Creating and Saving a Master Timeline Using the Buttons in the Numeric Keypad Control Block" (page 733)*. Note, however, that in place of the [EFF] button in the numeric keypad control block, the [SNAPSHOT] button is used.

Snapshot Operations in the Menus

Operations in the Snapshot menu

You can also set snapshot or key snapshot attributes in the Snapshot menu, which also displays the status of the registers. To access the Snapshot menu, press the top menu selection button [SNAPSHOT] in the menu control block. In the Snapshot menu, as well as setting snapshot attributes, you can carry out editing operations on snapshots, including copy and delete.

For details, see "Snapshot Register Editing" (page 762).

Operations in the Misc >Snapshot menu

For M/E and PGM/PST snapshots only, you can carry out saving, recalling, applying attributes, and so on using the same menu. (See page 763.)

Selecting a Region or Reference Region in a Menu

During snapshot operations, you can select a region in the menu. This is convenient for selecting some of the regions assigned to the numeric keypad control block or changing the reference region.

For details of the operations, see "Selecting by menus" (page 705).

Setting Snapshot Attributes

Applying snapshot attributes

1 In the Snapshot menu, press VF2 'Snapshot' and HF1 'Attribute.'

The Snapshot >Attribute menu appears.
The status area shows the region names, register numbers, and the status and attributes set.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible. To select all regions, press [ALL].

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the register.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Register	Register number	1 to 99
2	Num	Select number of registers	1 to 99

- To select all registers, press [ALL].

5 In the <Attribute> group, press the buttons for the attributes you want to apply, turning them on.

Carry out the following procedures for each of the attributes.

To apply the cross-point hold attributes

Notes

Applying the key disable attribute (so the key state is not reflected) to cross-point hold requires a setting in setup. *For details, see "Selecting the Bank to Make the Settings" in Chapter 20 (Volume 3).*

1 Press [XPT Hold].

The Snapshot >Attribute>Xpt Hold menu appears. The status area shows a list of the currently selected regions and bus names.

2 Using any of the following methods, select the register.

- Press directly on the list in the status area. To select one or more buses, press [Plural] and then select buses.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
2	Destination a)	Destination selection	1 to 128
3	Bus b)	Bus name selection	1 and upwards

a) Appears when the region is RTR.
b) Appears when the region is other than RTR.

- To select all registers, press [ALL].

3 When the region is set to RTR (Router) only, press [RTR Level].

A window appears for selecting the router level.

4 Press the level for which you want to set the cross-point hold, turning it on, and press [OK]. To select all levels, press [ALL].

5 Press [On].

This enables cross-point hold on the selected bus or buses.
To switch cross-point hold off, press [Off].

To apply the effect dissolve attribute

1 Press [Effect Dissolve], turning it on.

2 Turn the knob to set the effect dissolve duration.

Knob	Parameter	Adjustment	Setting values
3	Eff Diss Duration	Dissolve duration	0 to 999 (frames)

To set the duration for a dissolve set as a temporary attribute effect

To set the duration for a dissolve set as a temporary attribute effect in the numeric keypad control block, turn the knob.

Knob	Parameter	Adjustment	Setting values
5	Temp Dur	Temporary attribute dissolve duration	0 to 999 (frames)

To apply the auto transition attribute

Press [Auto Transition], turning it on.

To apply the GPI output attribute

1 Press [GPI Output], turning it on.

2 Turn the knob to set the port number.

Knob	Parameter	Adjustment	Setting values
4	GPI Out Port	GPI output port number	1 to 8

To apply the clip event attribute

Notes

The following operating procedure can be used only for the frame memory channels assigned to a user region.

For details of frame memory assignment, see "Setting User Regions" in Chapter 20 (Volume 3).

1 Press [Clip Event].

The Snapshot >Attribute >Clip Event menu appears.

2 In the <Frame Memory Select> group, press the desired button.

On the left of the status area, the name and content of the selected region (for example, USER1) are shown. On the right, the content of the clip of the current frame memory is shown.

3 Press [Clip Event], turning it on.

The clip event attribute is applied.

4 To select the clip of the current frame memory, press [Set].

5 To play the clip as soon as it is recalled, press [Auto Play], turning it on.

For details of attributes and available attributes, see "Snapshot Attributes" (page 749).

Snapshot Status Display

The Snapshot >Attribute menu displays the following information.

For details of how to access the Snapshot >Attribute menu, see page 756.

Region name: The selected region name appears in the upper part of the list.
Register number
Register name
Write-protected status: When the register is write-protected, an "L" (for "lock") appears.
Empty status: When the register is empty, an "E" (for "empty") appears.
Attribute settings: The attributes set for a register are shown by the following character codes.

When the cross-point hold is set:

Displayed character codes	Attributes set
A, B	Cross-point hold is set for the A or B background bus.
1, 2, 3, 4, 5, 6, 7, 8	Cross-point hold is set for key bus 1, 2, 3, 4, 5, 6, 7 or 8.
U1, U2	Cross-point hold is set for the utility 1 or utility 2 bus.

Displayed character codes	Attributes set
D2	Cross-point hold is set for video bus selected for 2nd DME channel.
FvFkBvBk	Cross-point hold is set for all of the DME front video bus, DME front key bus, DME back video bus, and DME back key bus.
Aux	Cross-point hold is set for one of the AUX buses.
Fm1, Fm2	Cross-point hold is set for one of the frame memory 1 and 2 buses.
Ccr1, Ccr2	Cross-point hold is set for one of the CCR 1 and 2 buses.
RTR	Cross-point hold is set for the Router region.

When an effect dissolve is set:

Displayed character codes	Attributes set
Duration value	The effect dissolve attribute is set, with the displayed duration.

When an auto transition is set:

Displayed character codes	Attributes set
T	Auto transition is set.

When a GPI output is set:

Displayed character codes	Attributes set
Port number	GPI output is set for the port of the displayed number.

When a clip event is set:

Displayed character codes	Attributes set
On	Clip event is set.

Setting Key Snapshot Attributes

Applying key snapshot attributes

1 In the Snapshot menu, press VF5 ‘Key Snapshot’ and HF1 ‘Attribute.’

The Snapshot >Key Snapshot >Attribute menu appears.
The status area shows the region names, register numbers, and whether the registers are locked or not.

2 Press the region display in the upper part of the list to display a selection window, then select the region in the selection window. Selecting multiple regions is also possible.

3 Press [OK].

The selected region name appears in the upper part of the list.

4 Using any of the following methods, select the register.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Register	Register number	1 to 4

5 In the <Recall Mode> group, select one of the following modes for save and recall operations.

XPT: Only the key material selection data is saved or recalled.
Modifier: Only the key modifier settings are saved or recalled.
Transition: Only the independent key transition settings are saved or recalled.

Creating and Saving a Master Snapshot

To save a master snapshot in the Snapshot menu, after recalling the Snapshot >Master Snapshot >Store menu, refer to the operations in *"Creating and Saving a Master Timeline With the Menu" (page 735).*

Recalling the Store menu

1 Do either of the following.

- In the menu control block, press the top menu selection button [SNAPSHOT].
- In the numeric keypad control block, press the [SNAPSHOT] button twice in rapid succession.

The Snapshot menu appears.

2 Press VF1 'Master Snapshot' and HF1 'Store.'

The Master Snapshot >Store menu appears.

The status area shows the master snapshot register names, register lock status, register number for each region, and so on.

3 If required, press the following buttons in the status area to change the region display.

M/E, P/P: indicate assignment of M/E-1 (“M/E1”) and P/P (“P/P”).
User: User1 (“USR1”) to User8 (“USR8”)
DME: indicate assignment of DME ch1 (“DME1”), ch2 (“DME2”), ch3 (“DME3”), ch4 (“DME4”), ch5 (“DME5”), ch6 (“DME6”), ch7 (“DME7”), and ch8 (“DME8”).

Snapshot Register Editing

You can carry out the following editing on snapshot registers.
(You can use similar procedures also on master snapshot, wipe snapshot, DME wipe snapshot and key snapshot registers.)

- **Lock:** Write-protect the contents of the register.
- **Copy:** Copy the contents of one register to another register.
- **Move:** Move the contents of one register to another register.
- **Swap:** Swap the contents of two registers.
- **Delete:** Delete the contents of a register.
- **Name:** Attach a name to a register.

For details of snapshot register operations, see “Effect Register Editing” (page 739).

Displaying a List of Snapshot Registers for Editing

You can display a list of snapshot registers including status information (whether data is present and so on), then carry out lock, copy, delete, and rename operations.

Displaying the list of snapshot registers with status information

Press the menu title button at the top left of the Snapshot menu.
The Snapshot >Status menu appears. The status area shows a list of snapshot registers (1 to 99).

For details of lock, copy, delete, and rename operations, see “Displaying a List of Effect Registers for Editing” (page 744).

Register name displays

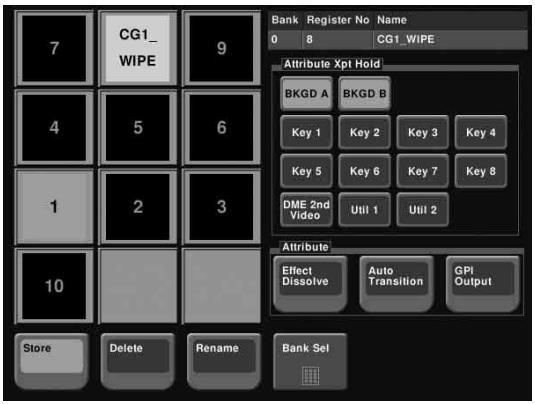
For the same number, the register name for the M/E-1 region takes precedence. If there is no data for the M/E-1 region, then the register name appears in the sequence M/E-2 >P/P >User1 to User8 >DME ch1 to DME ch8 >RTR.

Operations in the Misc >Snapshot Menu

Recalling a snapshot

1 In the Misc menu, press [Snapshot].

The Snapshot menu appears.



2 As required, change the bank *(see page 764)*.

3 Press the button for the number or name you want to recall.

This recalls the snapshot, and the button you pressed lights green.

Saving a snapshot

1 Display the Misc >Snapshot menu.

2 Set the state you want to save as a snapshot.

3 Press [Store].

The button lights amber.

4 As required, change the bank *(see page 764)*.

5 Press the button for the number or name you want to save.

This saves the snapshot, and the button goes off.

Changing the bank

Change the combination shown on the memory recall buttons (the bank).

1 Press [Bank Sel].

2 Select the bank in the numeric keypad window.

For example, to show the numbers or names corresponding to registers 11 to 20, select "1" in the numeric keypad window.

Applying attributes

To apply an attribute to the snapshot represented by a lit-green memory recall button, use the following procedure.

1 To apply the cross-point hold attribute, in the <Attribute Xpt Hold> group select the appropriate bus.

Notes

A setting in the Setup menu determines whether key disable is applied to cross-point hold or not. For details, see *"Setting the Operation Mode of the Key Bus [XPT HOLD] Button" in Chapter 20 (Volume 3).*

2 Select the following attributes in the <Attribute> group as required.

Effect Dissolve: Apply effect dissolve.
Auto Transition: Apply auto transition.
GPI Output: Apply GPI output. When this is selected, select the GPI number with the knob.

Deleting a snapshot

1 In the Misc >Snapshot menu, press [Delete].

The button lights amber.

2 As required, change the bank.

3 Press the button for the number or name you want to delete.

This deletes the snapshot, and the button you pressed goes off.

Renaming a snapshot register

1. In the Misc >Snapshot menu, press [Rename].

   The button lights amber.

2. As required, change the bank.

3. Press the button for the number you want to rename.

   A keyboard window appears.

4. Enter the register name, and press [Enter].

   The new name appears on the memory recall button.

Chapter 15 Utility/Shotbox

Utility Execution

The utility function refers to a function whereby you can assign an arbitrary action or a shortcut for frequently used menu to a particular button, then instantly recall the action or menu by pressing the button.
The functions you can assign include menu shortcuts, enabling/disabling functions (recalling utility commands), and recalling (shotbox registers or macro registers).
Carry out the button assignment in the Setup menu.

For details of the operation, see "Setting Button Assignments (Prefs/Utility Menu)" in Chapter 19 (Volume 3).

You can carry out the utility function in the utility/shotbox control block *(see page 769)* or using the user preference buttons in the menu control block *(see page 769)*.

For details of the menu control block, the utility/shotbox control block, and the cross-point control block, see "Menu Control Block," and "Cross-Point Control Block" in Chapter 2 (Volume 1).

For details of the settings for assigning functions to buttons, see "Setting Button Assignments (Prefs/Utility Menu)" in Chapter 19 (Volume 3).

Executing a Utility With the User Preference Buttons (Menu Control Block)

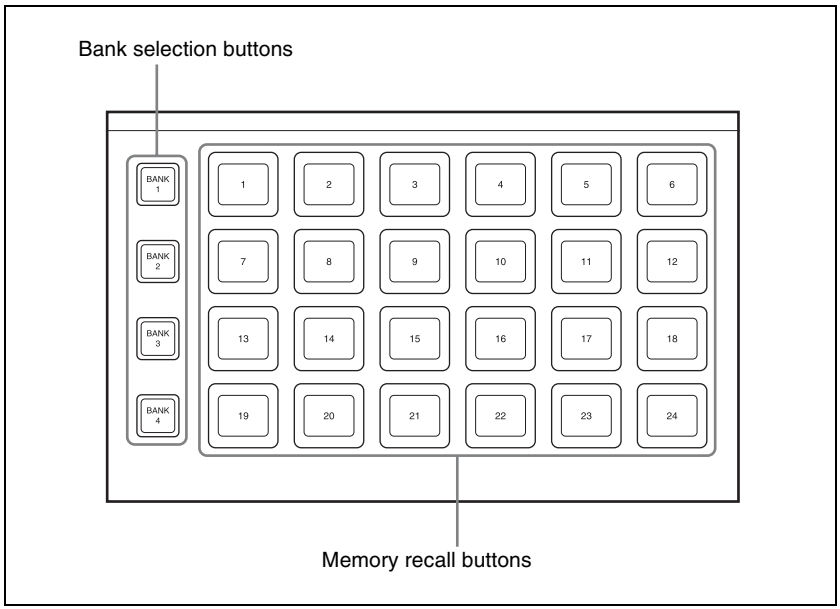
In the setup menu, you can assign any 16 actions to the user preference buttons in the menu control block.

To execute an assigned action

Press the corresponding user preference button ([PREFS 1] to [PREFS 16]).

- In the case of a function on/off action, the button you pressed lights amber, and this enables the function.
  To disable the function, press the button once more.
- For other actions, the button you pressed momentarily lights amber, and then the function is executed.

Executing a Utility in the Utility/Shotbox Control Block (MKS-8033 Utility/Shotbox Module, Option)



Utility/shotbox control block (MKS-8033)

By default, the memory recall buttons in the utility/shotbox control block are assigned to shotbox registers 1 to 96, in banks 1 to 4 *(see page 779)*, but in the setup menu, you can assign these to any 96 actions.

To execute an assigned action

When the action is to execute a shotbox register, follow the procedure in .

1 Press one of the bank selection buttons [BANK1] to [BANK4] to select a bank.

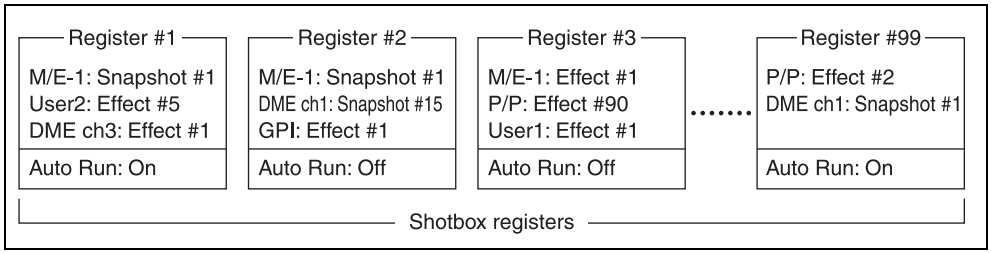
- The bank selection button you pressed lights amber.
- For the selected bank, the memory recall buttons show the button numbers and corresponding button states. If a button has been given a name in the setup menu, this name appears.
  Not lighted: buttons with nothing saved
  Lit orange: buttons saving a utility command or menu shortcut

2 Press the memory recall button for which the action you want to execute has been registered.

- In the case of a function on/off action, the button you pressed lights green, and this enables the function.
  To disable the function, press the button once more.
- For other actions, the button you pressed momentarily lights green, and then the function is executed.

Shotbox

The term “shotbox” refers to a function whereby for each specified region any snapshot or keyframe effect can be recalled simultaneously.
The simultaneous recall setting data such as region names, snapshot numbers and keyframe effect numbers are stored in “registers.” There are 99 registers for each control panel.



The previous figure shows schematically the settings in the 99 shotbox registers.
Each register may contain any combination of the regions to which the register applies, with the snapshots or effects to be recalled.
The Auto Run function is an attribute which can be set for each register. When this is set to On, an effect recalled by a shotbox operation is automatically run.

- When register 1 is executed, this recalls M/E-1 snapshot 1, User2 effect 5, and DME ch3 effect 1. For register 1, auto run is On, and therefore the User2 and DME ch3 effects are run as soon as they have been recalled.
- When register 3 is executed, M/E-1 effect 1, P/P effect 90, and User1 effect 1 are recalled. For register 3, auto run is off, and therefore to run the recalled effects, press the [RUN] button in the keyframe control block.

Shotbox Register Creation

You can create (save) shotbox registers in the following control blocks.
- Numeric keypad control block *(See "Numeric Keypad Control Block" in Chapter 2 (Volume 1).)*
- Menu control block *(See "Menu Control Block" in Chapter 2 (Volume 1).)*

Creating a Shotbox Register in the Numeric Keypad Control Block

When you create a shotbox register in the numeric keypad control block, you carry out separate operations in respect of the snapshot setting data and the effect setting data, and save in the register. The procedure described here makes the snapshot settings first, followed by the effect settings.

Creating a shotbox register

1 In the numeric keypad control block, press the [SNAPSHOT] button, turning it on.

This assigns the numeric keypad control block to snapshot operations.

2 Specify the register number of the snapshot you want to save in a shotbox register, and then recall it for each region.

For details of the procedure for recalling a register, see "Recalling a snapshot from the numeric keypad control block" (page 753).

3 Press the [SHOTBOX] button, turning it on.

This assigns the numeric keypad control block to shotbox operations.

4 Press the [STORE] button, turning it on.

The [SNAPSHOT] button lights green.
If not lighted, press the [SNAPSHOT] button to turn it on.

Notes

Only in [SHOTBOX] operation mode with the [STORE] button lit, the [SNAPSHOT] button or [EFF] button lights green to indicate that a setting

operation is in progress for the purpose of saving snapshot data or effect data in a shotbox register.

5 Press the region button for the snapshot you want to save, turning it on.

6 Enter the desired shotbox register number with the numeric keypad buttons.

To find an empty register, instead of entering a number, press the [.] (period) button.

The display shows the relevant register numbers. When a register number is postfixed with an "E," the register is empty.

7 Press [ENTER].

This saves the region you turned on in step **5**, and the register number you recalled for that region as a snapshot setting in a shotbox register, and the [STORE] button goes off. At the same time, the [RCALL] button lights.

8 In the numeric keypad control block, press the [EFF] button, turning it on.

9 Specify the register number of the keyframe effect you want to save in a shotbox register, and then recall it for each region.

For details of the procedure for recalling a register, see "Recalling a Register" (page 702).

10 Referring to steps **3** to **5**, carry out the setting operation for effect register saving. In step **4**, however, press the [EFF] button, lighting it green.

11 Enter the shotbox register number specified in step **6** using the numeric keypad buttons.

12 Press the [ENTER] button.

This saves the effect setting in a shotbox register, and the [STORE] button goes off. At the same time, the [RCALL] button lights.

To change the contents of a shotbox register

After recalling the shotbox register you want to change, referring to the previous item "*Creating a shotbox register,"* change the contents of the shotbox register, and save.

To check the region saved in a shotbox register

During operations to change the contents of a shotbox register, to check which region is saved in the register, use the following procedure.

1 With the [SHOTBOX] button lit, press the [STORE] button, turning it on.

2 Press the required button, as follows, turning it on.

To check the snapshot region: [SNAPSHOT] button
To check the effect region: [EFF] button

3 Hold down the [STORE] button.

While this button is held down, the button for the saved region lights. Releasing the button returns you to the state before holding down the [STORE] button.

Notes

While the [STORE] button is lit, the mode selection buttons ([TRANS RATE] button and so on) in the numeric keypad control block do not operate. To change the mode, press the [RCALL] button or [SHOTBOX] button so that the [STORE] button goes off.

Creating a Shotbox Register Using the Menus

Accessing the Shotbox menu

Carry out creation and editing of shotbox registers in the Shotbox menu.
To access the Shotbox menu, use either of the following methods.

- In the menu control block, press the top menu selection button [SHOTBOX].
- In the numeric keypad control block, press the [SHOTBOX] button twice in rapid succession.

Creating a shotbox register

1 In the Shotbox menu, press VF1 'Register' and HF1 'Store/Recall.'

The Store/Recall menu appears.
In the status area, the settings for each register appear as follows.

Region settings: Appear as "Sxxx" when a snapshot is allocated, and as "Exxx" when an effect is allocated. (xxx is the register number.) The register name also appears. If nothing is allocated, nothing appears in the display.

Register lock setting: When the register is write-protected, an "L" (for "lock") appears.

Empty status: When the register is empty, an "E" (for "empty") appears.

Auto run setting: When this is enabled, so that an effect is executed simultaneously with recall, "AR" appears.

Shotbox register name: This shows the shotbox register name.

2 If necessary, switch the region display by pressing one of the following buttons in the status area.

M/E, P/P: Shows the allocations for M/E-1 (“M/E1”) and P/P (“P/P”).
User: Shows the allocations for User1 (“USR1”) to User8 (“USR8”).
DME: Shows the allocations for DME ch1 (“DME1”) to ch8 (“DME8”).
DEV1-8: Shows the allocations for Device1 (“DEV1”) to Device8 (“DEV8”).
DEV9-12: Shows the allocations for Device9 (“DEV9”) to Device12 (“DEV12”).
Misc: Shows the allocations for P-Bus (“PBUS”), GPI (“GPI”), Router (“RTR”), and Macro (“MCRO”).

3 Using any of the following methods, select the register you want to create (or edit).

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Shotbox Reg	Shotbox register number	1 to 99

4 Press [Edit].

The Edit menu appears, and it is now possible to make the settings for the specified register.
You can also use knob 1 to select the register in this menu.
In the status area, the shotbox register status for each region appears.

5 Using any of the following methods, select the desired region. You may select more than one region.

- Press directly on the region display in the status area, turning it to reverse video.
- Press [ALL] to select all regions.
- To select all switcher-related regions (M/E, P/P, User), press [SWR ALL].
- To cancel a selection, press once more to return to the normal display.

6 In the <Assign> group, select the snapshot or effect to be allocated to the region.

Snapshot: Allocate a snapshot register.
Effect: Allocate a keyframe effect.

- If the selected register is locked, a confirmation message appears asking whether or not to cancel the operation. Press [OK] to return to the previous menu display without carrying out the registration.
- If the operation is carried out, the region selected in step **5** is registered on the master timeline, and the parameters are now valid.

7 Depending on the selection in step **6**, set the parameters as follows.

- **When a snapshot is selected**

Knob	Parameter	Adjustment	Setting values
3	Snapshot	Snapshot register number	1 to 99

- **When an effect is selected**

Knob	Parameter	Adjustment	Setting values
3	Effect	Keyframe effect number	1 to 99 a)

a) For the DME region, you can also set register numbers 101 to 199, 201 to 299, and 301 to 399.
For P-Bus and Device1 to Device12, you can also set register numbers 1 to 250.

8 To run the allocated effect as soon as it is recalled, press [Auto Run], turning it on.

9 Repeat steps **5** to **8** as required.

10 In the <Store> group, press [Store] to save the setting.

To return to the state before saving the setting

In the <Store> group, press [Undo].

To execute the settings to check them

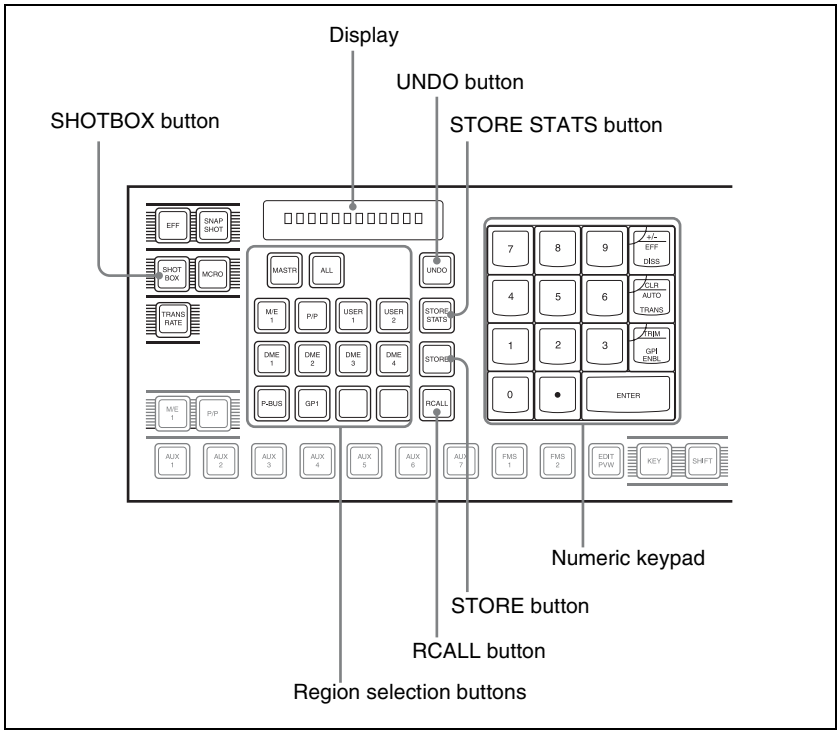
Press [Recall] to execute the shotbox.

Shotbox Execution

You can recall (and run) shotbox registers from the following control blocks. This section describes the various methods of operation.

- Numeric keypad control block *(see page 777)*
- Utility/shotbox control block

Shotbox Execution From the Numeric Keypad Control Block



Numeric keypad control block

1 In the numeric keypad control block, press the [SHOTBOX] button, turning it on.

- This allocates the numeric keypad control block to shotbox operations.

- The [RCALL] button lights amber.
- The display shows the last recalled register number.

2 With the numeric keypad buttons, enter the desired register number.

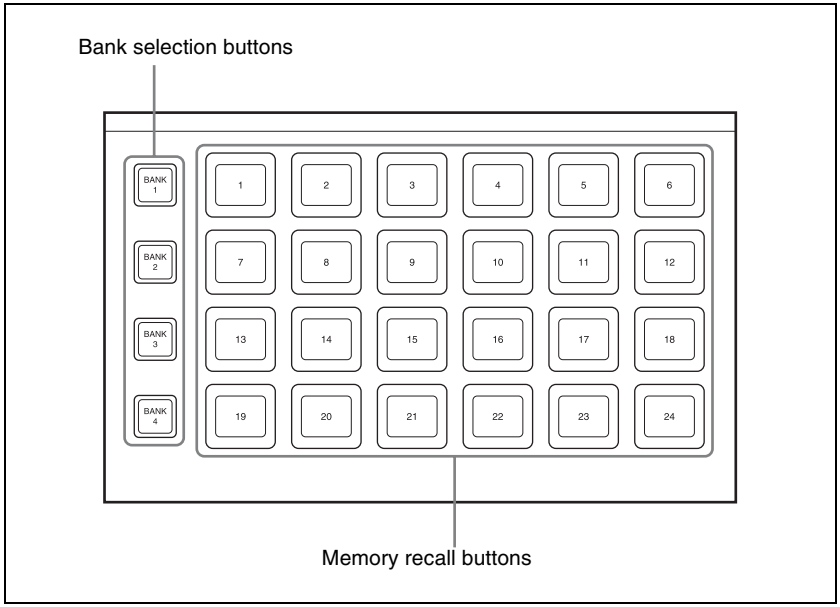
- The display now shows the entered register number.
- If the specified register is empty, an “E” automatically appears after the register number.

3 Press the [ENTER] button.

- This runs the specified shotbox register.
- The number of the recalled register appears in the display.
- The region selection buttons corresponding to the regions for which the effect is set light.
- If auto run is set for the specified shotbox register, on recall the effect is immediately executed.
- If you recall an empty register, then shotbox execution has no effect.

When auto run is not set for the recalled register
Simply recalling the register does not run the effect. To do this, in the keyframe control block, press the [RUN] button.

Shotbox Execution in the Utility/Shotbox Control Block (MKS-8033 Utility/Shotbox Module, Option)



Utility/shotbox control block (MKS-8033)

In the utility/shotbox control block, as the default setting the memory recall buttons have registers 1 to 96 allocated to banks 1 to 4.

Bank	Register allocation to memory recall buttons
1	1 to 24
2	25 to 48
3	49 to 72
4	73 to 96

1 Press one of the bank selection buttons [BANK1] to [BANK4] to select the bank.

- The pressed bank selection button lights amber.
- The memory recall buttons show the names and states of the registers corresponding to the selected bank.
  Off: register in which nothing is saved
  Lit orange: register holding shotbox settings
  Lit yellow: last recalled register

2 Press the memory recall button to which the shotbox register you want to run is allocated.

- The shotbox execution is carried out.
- The pressed button lights yellow.
- The numeric keypad control block [SHOTBOX] button lights, and the region selection button corresponding to the region for which the effect is set also lights.
- If the selected shotbox register has auto run set, on recall the effect is immediately executed.

When auto run is not set for the recalled register

Simply recalling the register does not run the effect. To do this, press the [RUN] button in the keyframe control block.

Shotbox Register Editing

You can carry out the following editing on shotbox registers.
- **Lock:** Write-protect the contents of the register.
- **Copy:** Copy data from one register to another.
- **Move:** Move data from one register to another.
- **Swap:** Swap the contents of two registers.
- **Delete:** Delete the contents of a register.
- **Name:** Attach a name to a register.

The procedures for shotbox register editing are similar to the procedures described in *"Effect Register Editing" (page 739).*
Unlike in effect register editing, however, it is not necessary to specify a region in shotbox register editing.

Chapter 16 Macros

Macros

Overview

The term “macro” refers to the function whereby a sequence of signal selections and other operations on the control panel is saved as data in memory, so that it can be recalled as required to automatically execute the same sequence of operations.
To record menu operations in memory, use a menu macro *(see page 822)*.

Macro registers

The area of memory that holds a macro is termed a “macro register.” For each control panel there are 250 macro registers, numbered 1 to 250.

Events

The individual control panel operations constituting a macro are termed “events.” One macro can contain a maximum of 99 events.
The following table shows the operations for each control block of the control panel that can be saved as events in a macro.

Control block	Event
Auxiliary bus control block	Bus selection
Cross-point control block	Cross-point selection
Transition control block	• Auto transition and cut for the transition execution section • Auto transition and key on/off for the independent key transition execution section [a)] • Next transition setting • Transition type selection • Pattern limit on/off • VTR/disk recorder/Extended VTR/frame memory clips playback [b)] • VTR/disk recorder/Extended VTR/frame memory clips stop [b)] • VTR/disk recorder/Extended VTR/frame memory clips cue-up [b)]
Numeric keypad control block	Recalling the following data • Effects • Snapshots • Shotbox • Master snapshots • Master timeline

Control block	Event
Keyframe control block	• Effect rewind • Effect execution • Effect fast forward • Selection of effect execution direction
Device control block (trackball) (search dial) [c)]	• VTR/disk recorder/Extended VTR/frame memory clips start point setting • VTR/disk recorder/Extended VTR/frame memory clips playback • VTR/disk recorder/Extended VTR/frame memory clips stop • VTR/disk recorder/Extended VTR/frame memory clips cue-up • VTR/disk recorder/Extended VTR/frame memory clips fast forward • VTR/disk recorder/Extended VTR/frame memory clips rewind • VTR/disk recorder record • Frame memory clip loop setting
Downstream key control block	• Auto transition and cut for the independent key transition execution section [a)] • Key snapshot recall
Menu control block	• Disk recorder/Extended VTR file recalling • Recalling the functions assigned to [PREFS 1] to [PREFS 16] buttons • Execution of a menu macro • Recalling frame memory clips
Utility/Shotbox control block	Recalling the functions assigned to memory recall buttons

a) In the case of an event that inserts or deletes a key, the key state at the time of event registration (inserted or not inserted) is also saved in the macro. When the macro is executed, the event is only replayed if the key state matches the saved state. (Example: For a macro with an event that deletes a key, when the macro is executed, if the key is inserted it is deleted, but otherwise nothing occurs as concerns keying.)

b) Function valid only when [PLAY], [STOP], and [CUEUP] have been set in the Setup menu.

c) When a search dial module is connected, this operates as the reference module. When not connected, this operates on the module selected in the Panel >Config menu.
For details of reference module selection, see "Overall Control Panel Settings (Config Menu)" in Chapter 19 (Volume 3).

Macro Creation and Editing

You can create or edit a macro by recalling a macro register.
To create a new macro, recall an empty macro register, and create the desired sequence of events (by executing the sequence of operations on the control panel that you want to save as events in the macro).
To add an event to an existing macro, recall the register holding the macro, and create the event you want to add.

Notes

While editing a macro, it is not possible to execute another macro.

Creating a macro

To include all information associated with an operation when registering a macro event

When registering an auto transition operation as an event, you can register the auto transition event to include the transition rate and background A/B bus selection status. When registering an effect execution, rewind, or fast forward as an event, you can also save the region to which this applies.

To use this capability, assign the following functions to user preference buttons in the menu control block or buttons in the utility/shotbox control block, and turn the relevant button on before you start an event to register.

Macro AT with Rate (Macro Auto Trans Event with/without Rate): When registering an auto transition macro event in one of the M/E banks or the PGM/PST bank, include the transition rate.

Macro AT with A/B Bus (Macro Auto Trans Event with/without A/B Bus): When registering an auto transition macro event in the transition control block, include the background A/B bus cross-point.

Macro TL with Region (Macro Timeline with Region): When registering an effect execution, rewind, or fast forward as a macro event, save the affected region together in the macro.

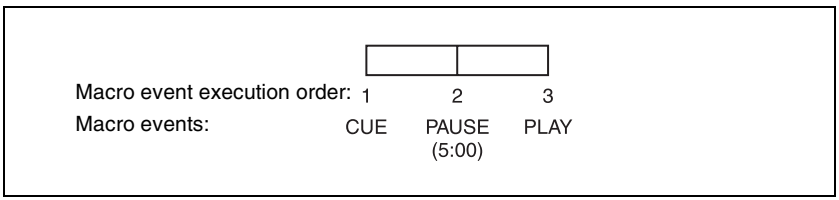
For details of the method of assigning these functions to buttons, see "Setting Button Assignments (Prefs/Utility Menu)" in Chapter 19 (Volume 3).

Events requiring adjustment when creating a macro

The following events require time for execution to complete, and therefore when executed within a macro sequence, a pause event must be inserted to adjust the timing.

- Rewinding effects involving external device control
- VTR/disk recorder/Extended VTR cue-up

For example, create a macro to cue up a VTR and then play back as follows.



Auto insert mode on/off setting

You can switch on or off the mode (auto insert mode) in which at the same time that a control panel operation is carried out, the event is automatically saved in a macro. To switch this on or off, assign this function to a utility/shotbox control block button or user preference button, then use that button.

Editing a macro

You can carry out the following macro editing operations.

Event insertion

Insert the control panel operation as an event in a macro.

Event modification

Modify any event. You can modify all events within a macro, or events within a specified range in a single operation.

Event deletion

Delete any one event. You can delete all events within a macro, or events within a specified range in a single operation. You can then paste the deleted event using the paste function.

Event copy

Copy any one event. You can copy all events within a macro, or events within a specified range in a single operation.

Event paste

Paste a copied or deleted event at a desired position within a macro.

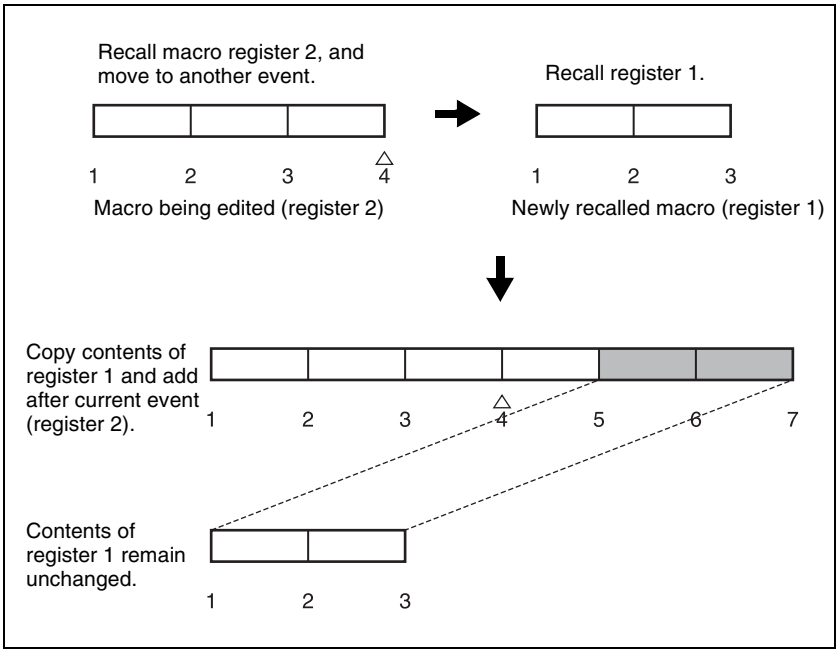
Undoing an editing operation

You can undo the last event insertion, modification, deletion, or paste operation.

Macro merging

During macro editing, you can recall and copy another register to merge it with the macro being edited.

For example, while editing macro register 2 you can recall and copy register 1 to merge it as shown in the following figure.



Macro Execution

To execute a macro, recall the register in which the macro is held. Simultaneous with the register recall, all events stored in the macro are played back (executed) in sequence without pause.

Pausing and restarting macro execution

It is also possible to execute a macro in the following ways.

Pause event

To adjust the execution timing of a particular event (to delay the start of execution of the event by a particular time interval), you can store a special event which pauses macro execution. This event is called a “pause event.” When you store a pause event, you can set the interval for which the macro is paused (the pause length) to any value in the range 1 to 999 frames. When the set time has elapsed, the macro is automatically executed.

Pause zero event

By including a pause event with the time set to zero, you can make macro execution pause at the pause event.

Step execution (requires a Setup menu setting)

By selecting step execution mode in the Setup menu, you can make macro execution pause every time an event is executed.

Take operation

When a paused macro is restarted, this is referred to as a "Take" operation.

Macro take operation using a GPI input

You can carry out a macro take operation using a GPI input on the control panel and DCU.

For GPI input settings, see "Interfacing With External Devices (Device Interface Menu" in Chapter 19 (Volume 3) and "GPI Input Setting (GPI Input Assign Menu)" in Chapter 22 (Volume 3).

Macro Operations in the Numeric Keypad Control Block and the Keyframe Control Block

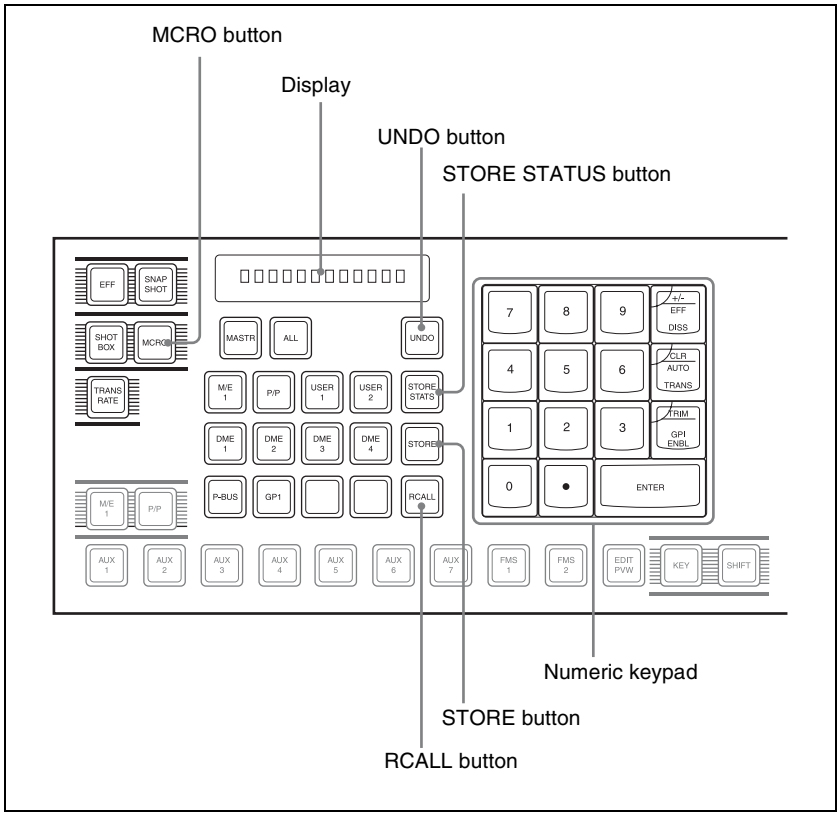
This section describes macro operations carried out in the numeric keypad control block and the keyframe control block.

Notes

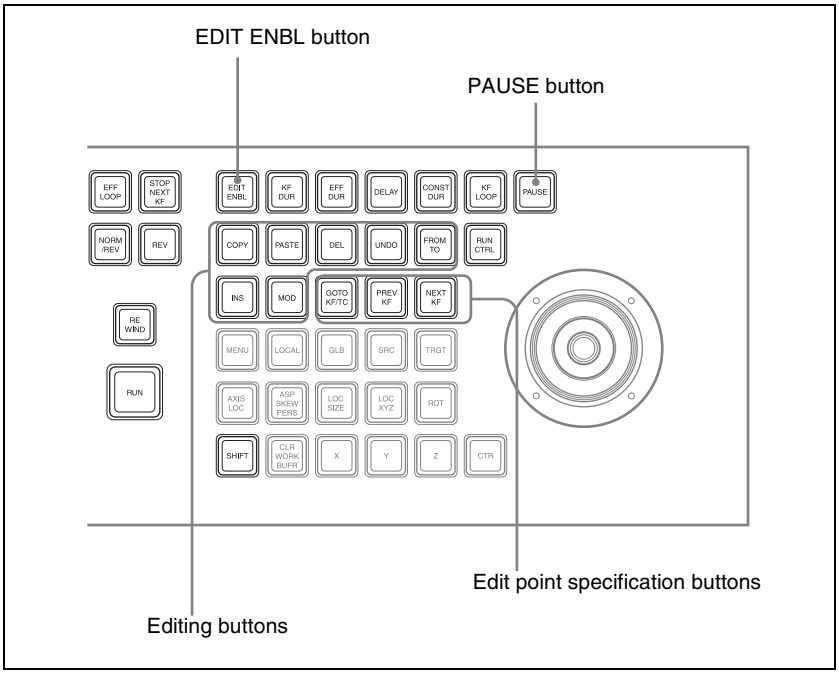
For a macro take operation *(see "Macro Execution" (page 788))*, do not use the numeric keypad control block or keyframe control block. Operate with the take assigned to a utility/shotbox control block or user preference button. *(See "Setting Button Assignments (Prefs/Utility Menu)" in Chapter 19 (Volume 3).)*

For an overview of macros, see "Macros" (page 784).

For macro operations in the numeric keypad control block, use the following buttons. *(See the figure on next page.)*



For macro operations in the keyframe control block, use the following buttons. *(See the following figure.)*



Recalling a Macro Register and Executing a Macro

To carry out a macro operation, recall a macro register. Recalling an empty register allows you to carry out macro editing operations. Recalling a register holding a macro executes the macro immediately.
To recall a macro register, use the following procedure.

1 In the numeric keypad control block, press the [MCRO] button, turning it on.

This assigns the numeric keypad control block to macro operations, and the [RCALL] button lights.

2 Enter the number of the register to be recalled with the numeric keypad buttons. (1 to 250)

To search for an empty register, instead of entering a number, press the [.] (period) button.
The display shows the corresponding register number. A letter “E” after the number indicates that the corresponding register is empty.

3 Press the [ENTER] button.

This recalls the specified register.

When you recall an empty register

This assigns the numeric keypad control block and keyframe control block to macro editing.

For details of macro editing, see "Creating and Editing a Macro" (see below).

When you recall a register holding a macro

This immediately executes the macro. While the macro is executed, the [RCALL] button flashes.

Notes

- It is not possible to execute more than one macro at a time.
- If the same register is recalled again during macro execution or when the macro is paused, the following operation depends on a setting in setup.

  For details of the settings, see "Setting the Macro Execution Mode" in Chapter 19 (Volume 3).

- Individual events stored in a macro are executed according to the settings in setup. If you change the settings in setup, a saved macro may not have the expected effect.
- During macro execution, if you switch the control panel to macro editing mode, the macro being executed stops.
- During macro editing it is not possible to execute a macro.
- While executing a macro with a button with a macro attachment set, if you recall another macro with the numeric keypad control block, the following operation depends on a setting in setup.

  For details of the settings, see "Setting the Macro Execution Mode" in Chapter 19 (Volume 3).

Creating and Editing a Macro

Use the numeric keypad control block and keyframe control block to create and edit a macro.
After carrying out creation and editing, be sure to carry out a save operation *(see page 800)*, using the numeric keypad control block.

Switching auto insert mode on or off for macro creation/editing

In the auto insert mode, when creating or editing a macro, an operation carried out on the control panel is automatically registered as an event.
When this mode is off, it is necessary to press the [INS] button in the keyframe control block for each operation to register the event.
To switch the auto insert mode on or off, press the [AUTO INS] button assigned to a utility/shotbox control block button or user preference button.

Notes

When you start macro editing using the numeric keypad control block with the macro execution mode set to "Normal" *(see "Setting the Macro Execution Mode" in Chapter 19 (Volume 3))*, the auto insert mode is automatically on. When "Step" is selected as the macro execution mode, the auto insert mode is automatically off.

Creating a new macro

1 Recall an empty register. (1 to 250)

For details of the method of operation, see "Recalling a Macro Register and Executing a Macro" (page 792).

This assigns the numeric keypad control block and keyframe control block to macro editing, and the [MCRO] button in the numeric keypad control block and the [EDIT ENBL] button in the keyframe control block light red. The [STORE] button in the numeric keypad control block flashes red.

2 If required, press the [AUTO INS] button assigned to a utility/shotbox control block or user preference button, to toggle the auto insert mode on or off.

3 Create the events (carry out the control panel operations to be registered as events in the macro).

You can include pause events *(see page 798)*.

For details of events that can be registered, see "Events" (page 784).

- When auto insert mode *(see page 794)* is on, execution of a control panel operation automatically registers an event in the macro.
- When auto insert mode is off, proceed to step **4**.

Notes

- During macro editing, if you press any of the mode selection buttons in the numeric keypad control block other than the [MCRO] button

([TRANSRATE] button, and so on), the executed operation is also registered as an event. In this case, the [MCRO] button stays lit red.
- Even during macro editing, you can carry out keyframe operations using the fader lever in the keyframe control block and the following buttons: [EFF LOOP], [STOP NEXT KF], [REV], [NORM/REV], [REWIND], [RUN]
- During macro editing, if you press a button for which a macro attachment is set, the outcome is as described in the next item.

4 When auto insert mode is off, press the [INS] button in the keyframe control block to register the event.

5 Repeat steps **2** and **3** to register the required events in the macro.

This registers the events in the macro, in the order the operations were carried out on the control panel.

6 Press the [STORE] button.

Macro editing finishes, and the [MCRO] button and [STORE] button in the numeric keypad control block light amber. The keyframe control block returns to the state before starting macro editing.

Merging a macro for which a macro attachment is set

While creating/editing a macro, if you press a button for which a macro attachment is set, the macro in the register assigned to the button is recalled, and the following occurs.
- When auto insert mode is on, it is merged with the macro being edited. However, the macro assigned to the button is not executed.
- When auto insert mode is off, it is copied to the paste buffer. Pressing the [PASTE] button in the keyframe control block merges it with the macro being edited.

Specifying an edit point

To specify an edit point with the numeric keypad control block and keyframe control block, use the following procedure.

1 Recall the register of the macro you want to edit. (1 to 250)

For details of the method of operation, see "Recalling a Macro Register and Executing a Macro" (page 792).

2 In the numeric keypad control block, hold down the [MCRO] button, and press the [STORE] button.

This assigns the numeric keypad control block and keyframe control block to macro editing, and the [MCRO] button in the numeric keypad control block and the [EDIT ENBL] button in the keyframe control block light red. The [STORE] button in the numeric keypad control block flashes red.

3 Using any of the following methods, specify the edit point.

- To move the edit point to the event immediately following the current macro event, press the [NEXT KF] button in the keyframe control block.
- To move the edit point to the event immediately preceding the current macro event, press the [PREV KF] button in the keyframe control block.
- To move to an edit point by specifying an event number (the number showing the position of the event in the macro execution sequence), press the [GO TO KF] button in the keyframe control block, then in the numeric keypad control block, enter the target number and confirm with the [ENTER] button.

Inserting an event

1 Specify the edit point. *(See page 795.)*

2 If required, press the [AUTO INS] button assigned to a utility/shotbox control block or user preference button, to toggle the auto insert mode on or off.

3 Create the event.

- When auto insert mode *(see page 794)* is on, the event is automatically added to the macro.
- When auto insert mode is off, proceed to step **4**.

4 When auto insert mode is off, press the [INS] button in the keyframe control block.

5 Repeat steps **2** and **3** to insert the required events in the macro.

Modifying a single event

1 Specify the edit point. *(See page 795.)*

2 When the [AUTO INS] button assigned to a utility/shotbox control block button or user preference button is lit, press this to turn the auto insert mode off.

3 Create the event.

4 Press the [MOD] button in the keyframe control block.

Modifying a particular range of events

1 Carry out steps **1** to **3** of the procedure in *"Modifying a single event" (the previous item).*

2 Press the [FROM TO] button in the keyframe control block, turning it on.

The numeric display in the numeric keypad control block shows the current event number and the indication "TO."

3 To set the start of the range to other than the current event number, press the [CLR/AUTO TRANS] button in the numeric keypad control block, then enter the desired event number with the numeric keypad and press the [ENTER] button. (This operation is not required when using the current event number.)

4 Enter the event number for the end of the range and press the [ENTER] button.

5 Press the [MOD] button in the keyframe control block.

This modifies the specified range of events simultaneously.

Deleting an event

1 Specify the edit point. *(See page 795.)*

2 To delete multiple events simultaneously, press the [FROM TO] button in the keyframe control block, then enter the event numbers from the numeric keypad control block to specify a range to be deleted.

3 Press the [DEL] button.

This deletes the specified events.

Moving events

1 Specify the edit point for the start of the range to be moved. *(See page 795.)*

2 To move multiple events simultaneously, press the [FROM TO] button in the keyframe control block, then specify the range in the numeric keypad control block.

3 Press the [DEL] button.

This temporarily deletes the specified events from the macro, and copies them to the paste buffer.

4 Move to the edit point which is the destination within the macro to which you want to move the events.

5 To paste the contents of the paste buffer after the edit point, press the [PASTE] button in the keyframe control block.
To paste before the edit point, hold down the [SHIFT] button in the keyframe control block and press the [PASTE] button.

This pastes the events from the paste buffer.

Copying events

1 Specify the edit point for the start of the range to be copied.

2 To copy multiple events simultaneously, press the [FROM TO] button in the keyframe control block, then specify the range in the numeric keypad control block.

3 Press the [COPY] button.

This copies the specified events into the paste buffer.

4 Move to the edit point which is the destination within the macro to which you want to copy the events.

5 To paste the contents of the paste buffer after the edit point, press the [PASTE] button in the keyframe control block.
To paste before the edit point, hold down the [SHIFT] button in the keyframe control block and press the [PASTE] button.

This copies the events from the paste buffer.

Inserting a pause event

1 Press the [PAUSE] button in the keyframe control block, lighting it green.

The indication “PAUSE” appears in the numeric keypad control block display.

2 If required, press the [AUTO INS] button assigned to a utility/shotbox control block or user preference button, to toggle the auto insert mode on or off.

3 Enter the pause duration with the numeric keypad control block (0 or 1 to 999 (frames)).

4 Press the [ENTER] button.

- If auto insert mode is on, this sets the pause duration, and inserts the pause event.
- When auto insert mode is off, continue to step **5**.

5 When auto insert mode is off, press the [INS] button in the keyframe control block to insert the pause event.

Merging macro register data

1 Specify the edit point. *(See page 795.)*

2 Press the [RCALL] button in the numeric keypad control block, lighting it amber.

3 Enter the number of the macro register you want to copy using the numeric keypad buttons.

The display shows the register number.

4 Press the [ENTER] button.

The [RCALL] button goes off, and the specified register data is copied to the paste buffer.

- When auto insert mode is on, the data from the specified register is included after the edit point.
- When auto insert mode is off, continue to step **5**.

5 When auto insert mode is off, to include after the edit point, press the [PASTE] button in the keyframe control block.
To include before the edit point, hold down the [SHIFT] button in the keyframe control block, and press the [PASTE] button.

The same effect is obtained if you use a button which has a macro attachment set. In this case, the data from the assigned macro register is copied into the paste buffer.

Undoing a macro editing operation with the numeric keypad control block

Immediately after inserting, modifying, deleting, or pasting an event, you can undo the operation by pressing the [UNDO] button in the numeric keypad control block.

Saving a Macro

Use the following procedure to save the register after creating or editing/modifying a macro.

1 In the numeric keypad control block, press the [MCRO] button, turning it on.

This assigns the numeric keypad control block to macro operations.

2 Press the [STORE] button, turning it on.

3 Enter the number of the register in which you want to save the macro with the numeric keypad buttons. (1 to 250)

To search for an empty register, instead of entering a number, press the [.] (period) button.
The display shows the corresponding register number. A letter “E” after the number indicates that the corresponding register is empty.

4 Press the [ENTER] button.

This saves the macro data in the specified register, and the [STORE] button goes off.
The [RCALL] and [STORE STATS] buttons light.

To cancel the saving of a macro

To cancel the saving of a macro immediately after performing it, hold down the [STORE STATS] button and press the [UNDO] button.

Macro Editing Using Menus

Using any of the menus in the following table, you can edit macro registers and macro events.

Menu	Function	Operations
Register menu (macro register editing)	Carry out macro register editing.	• Locking a register • Copying a register • Deleting a register • Naming a register
On Line Edit menu (online editing of macro events)	Edit events in a macro register, using the control panel and menus.	• Inserting an event • Deleting an event • Modifying an event
Off Line Edit menu (offline editing of macro events)	Edit events in a macro register, on the hard disk, or on a memory card, using the menus.	• Inserting an event • Adding an event • Deleting an event • Creating a new macro

Macro Register Editing

You can display the current state of a macro register using the Macro >Register menu.
The items displayed are the same as under *"Effect Status Display" (see page 739)*, with the exception that the region name is not displayed and that the total number of macro events saved in the register is displayed.

In the Macro >Register menu, you can do the following editing operations on macro registers.
- **Lock:** Write-protect the contents of the register.
- **Copy:** Copy the contents of one register to another register.
- **Delete:** Delete the contents of a register.
- **Name:** Attach a name to a register.

The operations for macro register editing are the same as those for effect register editing *(see page 739)* except the region selection operation, which is not necessary for macro register editing.

Online Editing of Macro Events

Using the On Line Edit menu, you carry out online editing of macro events.

In the On Line Edit menu, you can check the control panel operating sequence in the menu. You can also carry out editing using the control panel and menu.

To display the On Line Edit menu

1 Recall the macro register (1 to 250) you want to edit with the control panel, and select the macro editing mode [1)].

1) With the numeric keypad control block or keyframe control block assigned to macro editing *(see step **2** in "Specifying an edit point" (page 795))*

2 In any of the following menus, select the same register as the register recalled in step **1**, and press [On Line Edit] in the button area.

- Macro >Register >Lock menu
- Macro >Register >Delete menu
- Macro >Register >Rename menu
- File >Shotbox, Macro >Macro >File Edit menu

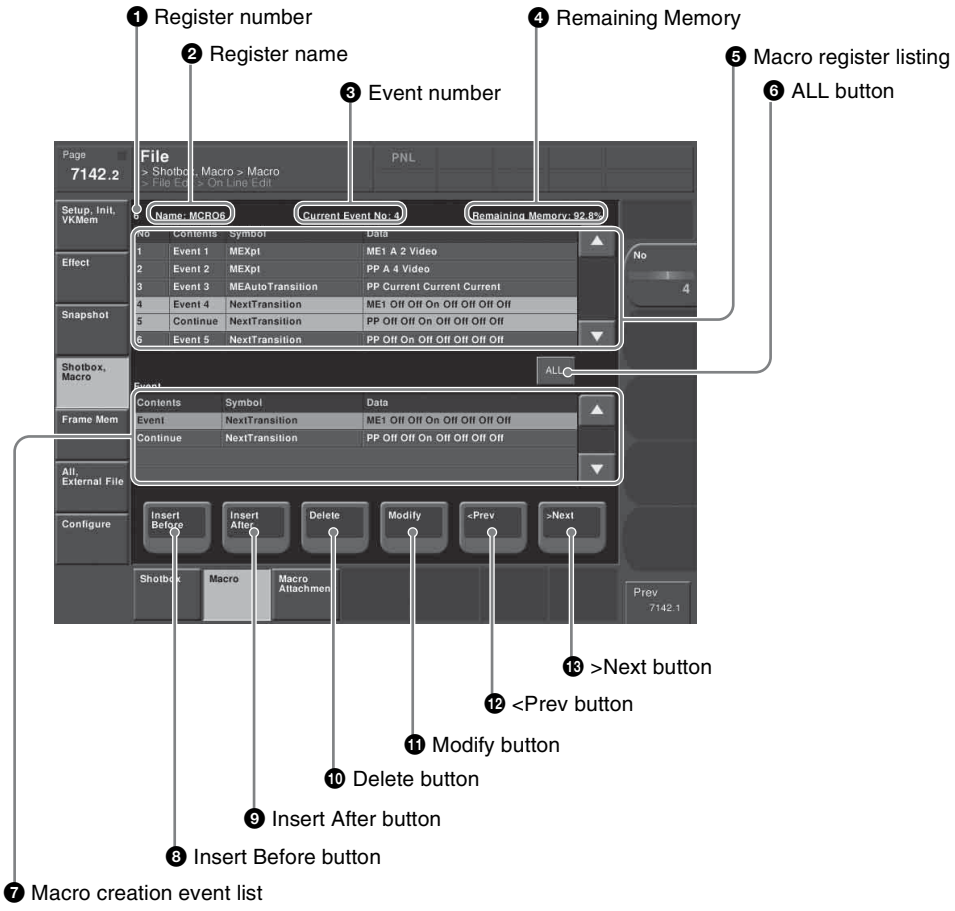
The On Line Edit menu appears, and you can now carry out online editing of the events held in the recalled register. Meanwhile, the control block of the control panel operated in step **1** is assigned to control editing operations.

Notes

In the following cases, [On Line Edit] is disabled, and it is not possible to display the On Line Edit menu.

- When the recalled register and the register selected in the menu are different.
- When a device other than [Register] is selected ([HDD] or [Memory Card]) in the File >Shotbox, Macro >Macro >File Edit menu.
- If the recalled register is locked.

On Line Edit menu



❶ Register number
Shows the number of the register being edited. (1 to 250)

❷ Register name
Shows the name of the register being edited.

❸ Event number
Shows the current event number. When the [FROM TO] button in the keyframe control block is pressed to select a range of events, this appears as a range, “From X To Y.”

The event number reflects the position of the cursor in the macro register listing.

❹ Remaining Memory
Shows the percentage of memory still available for recording events.

❺ Macro register listing
When a macro is stored in the register, this shows a list of the macro events. Each macro event consists of the following components, which you can check in the list.
- **Contents:** Identifies this as an Event statement, Continue statement, or event number
- **Symbol:** Type of event (ASCII character string)
- **Data:** Event details in the form of parameters and data

For details of the event components, see "Macro File Editing Rules" (page 878).

The cursor shows the current event in the list, in reverse video. You can turn knob 1 to scroll the list, but this does not change the cursor position. Depending on the switcher status, the cursor color changes as follows.
- **Yellow:** in macro editing mode
- **Gray:** when the editing mode is exited by a control panel operation
- **Blue:** during macro execution

❻ ALL button
Selects all events in the macro register listing.

❼ Macro creation event list
Shows the event being created or executed in the control panel.

❽ Insert Before button
Inserts a created event immediately before the selected event in the macro register listing.

❾ Insert After button
Inserts a created event immediately after the selected event in the macro register listing.

❿ Delete button
Deletes the selected event in the macro register listing.

⓫ Modify button
Replaces the selected event in the macro register listing with a created event.

⓬ <Prev button
Moves the cursor to the event immediately before the selected event in the macro register listing.

⓭ >Next button
Moves the cursor to the event immediately after the selected event in the macro register listing.

Carrying out online editing of macro events

In the On Line Edit menu, you can carry out the following editing operations on the events in the macro register.
- **Insert:** Insert a macro event.
- **Delete:** Delete a macro event.
- **Modify:** Modify a macro event.

Notes
It is not possible to save editing results using this menu alone. Carry out the necessary control panel operations to save the edited register.

To insert an event

1 On the control panel, if auto insert mode is on, switch it off.

2 On the control panel, create a macro event.

The created event appears in the macro creation event list.

For more details of the display, see "Macro File Editing Rules" (page 878).

3 In the macro register listing, press [<Prev] or [>Next] to select the position where you want to insert the created event.

4 Carry out either of the following.

To insert before the event selected in the list: Press [Insert Before].
To insert after the event selected in the list: Press [Insert After].

This inserts the created event either before or after the specified event.

Notes
In the following cases, [Insert Before] and [Insert After] are disabled, and it is not possible to insert the event.
- If the memory or register is full.
- The size of the created macro event is larger than the memory or register space available.

- When multiple events are selected.
- When the number of events has reached 99.
- When not in macro editing mode. [1)]

1) While a macro is being executed on the control panel, or when macro saving has been executed

5 Operate the control panel to save the editing result.

To delete an event

1 In the macro register listing, press [<Prev] or [>Next] to select the event you want to delete.

To select all events in the register
Press [All].

2 Press [Delete].

This deletes the selected event.

Notes
If not in macro editing mode [1)], [Delete] is disabled, and it is not possible to delete the selected event.

1) While a macro is being executed on the control panel, or when macro saving has been executed

3 Operate the control panel to save the editing result.

To modify an event

1 On the control panel, if auto insert mode is on, switch it off.

2 In the macro register listing, press [<Prev] or [>Next] to select the event you want to modify.

3 On the control panel, modify the macro event.

The modified event appears in the macro creation event list.

For more details of the display, see "Macro File Editing Rules" (page 878).

4 Press [Modify].

This modifies the event selected in the list.

Notes

If not in macro editing mode [1], [Modify] is disabled, and it is not possible to modify the event.

1) While a macro is being executed on the control panel, or when macro saving has been executed

5 Operate the control panel to save the editing result.

Offline Editing of Macro Events

Using the Off Line Edit menu, you carry out offline editing of macro events. In the Off Line Edit menu, you can carry out editing in the menu only, unrelated to operation of the control panel.

To display the Off Line Edit menu

In any of the following menus, select the register or device holding the macro you want to edit, and press [Off Line Edit] in the button area.

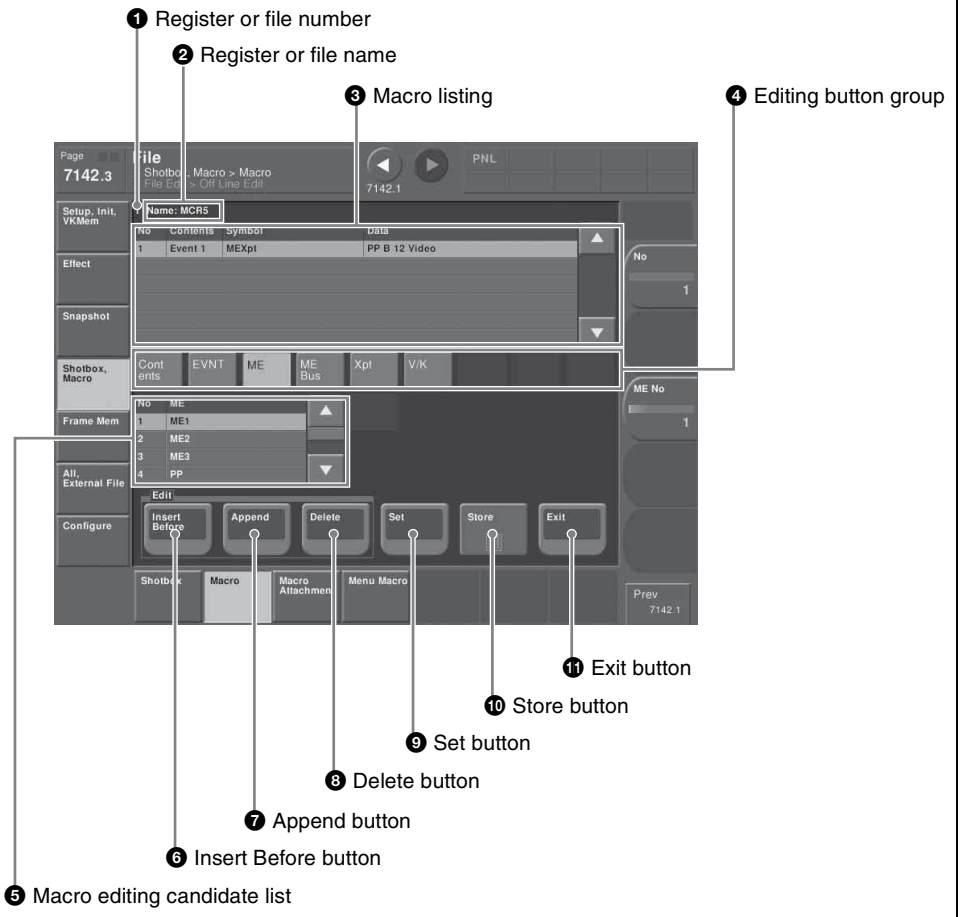
- Macro >Register >Lock menu
- Macro >Register >Delete menu
- Macro >Register >Rename menu
- File >Shotbox, Macro >Macro >File Edit menu

This recalls the selected macro register or macro file, and offline editing is now possible.

Notes

If the selected register is locked, [Off Line Edit] is disabled, and it is not possible to display the Off Line Edit menu.

Off Line Edit menu



❶ Register or file number
Shows the number of the register or file being edited.

❷ Register or file name
Shows the name of the register or file being edited.

❸ Macro listing
Lists the macro events that are saved in the register or file. The cursor moves to the selected event. Each macro event consists of the following components, which you can check in the list.

- **Contents:** Event statement, Continue statement, comment (#), or event number, as selected in the editing button group [Contents]
- **Symbol:** Event type (ASCII character string), as selected in the editing button group [EVNT]
- **Data:** Parameters and data as set in the editing button group

For more details of the event components, see "Macro File Editing Rules" (page 878).

❹ Editing button group
This row of buttons shows the components of an event. To carry out event editing: (1) press an editing button, then (2) select an item from the list of macro editing candidates, and repeat this process as required.

❺ Macro editing candidate list
Shows the list of editing candidates for the selection from the editing button group.

❻ Insert Before button
Inserts immediately before the event selected in the macro listing.

❼ Append button
Adds an empty row at the end of the macro listing.

❽ Delete button
Deletes the event selected in the macro listing.

❾ Set button
Reflects the item selected in the macro editing candidate list, in the macro listing and editing buttons.

❿ Store button
Saves the results of the macro register or macro file editing.

⓫ Exit button
Closes the Off Line Edit menu without saving the results of the macro register or macro file editing, and returns to the File Edit menu.

Carrying out offline editing of macro events

In the Off Line Edit menu, you can carry out the following editing operations on the events in the macro register or macro file.
- **Insert:** Insert a macro event.
- **Add:** Add a macro event.
- **Delete:** Delete a macro event.

You can also create a new macro.

To insert an event

1 In the macro listing, select the event immediately after the position where you want to insert an event.

2 Press [Insert Before].

This inserts a blank row before the event selected in step **1**.

3 Press [Contents] in the editing button group.

The following event types appear in the macro editing candidate list.
- **Event:** Event
- **Continue:** Event continuation
- **#:** Comment

For details of the items, see "Macro File Editing Rules" (page 878).

4 Select the desired item from the macro editing candidate list, and press [Set].

The selected item appears at the event insertion position in the macro listing, as an event component. Additionally, in the leftmost blank position of the editing button group (to the right of [Contents]), a button appears, corresponding to the item in the macro editing candidate list. For example, if "Event" is selected, an [EVNT] button appears.



5 In the editing button group, press the button that has just appeared.

The item corresponding to the button appears in the macro editing candidate list.
If you press the [EVNT] button, the symbol indicating the event contents appears.

For details of symbols, see "Correspondence Between Events and Symbols" (page 881).

6 Select the desired item from the macro editing candidate list, and press [Set].

At the event insertion position of the macro listing, the selected item is added as an event component. Additionally, in the next blank position of the editing button group, a button appears, corresponding to the item in the macro editing candidate list. For example, if "MEAutoTransition" is

selected, a button for the parameters and data for the MEAutoTransition appears.



Notes

If you select an item from the macro editing candidate list, be sure to press [Set]. If [Set] is not pressed, the selection is not confirmed.

7 Repeat steps **5** and **6**, to edit the event components.

At the event insertion position of the macro listing, the confirmed item is added as an event component.

To further add an event

Repeat steps **1** to **7**.

To close the Off Line Edit menu without saving the editing results

Press [Exit] to return to the menu that was on the screen immediately before the offline editing.

8 Press [Store].

The numeric keypad window appears.

9 Enter the register number as required, and press [Enter].

The current macro is stored in the register.
The menu screen switches to the menu that was on the screen immediately before the offline editing.

To append an event

This adds an event at the end of the macro.

1 Press [Append].

A blank row is added at the end of the macro listing.

2 Carry out steps **3** to **8** of the previous item, “To insert an event,” to edit an event.

To delete an event

1 In the macro listing, select the event you want to delete.

2 Press [Delete].

This deletes the selected event.
If a deleted Event statement is followed by a Continue statement, the Continue statement is converted to an Event statement.

To close the Off Line Edit menu without saving the editing results
Press [Exit] to return to the File Edit menu.

3 Press [Store].

This saves the results of the macro register or macro file editing, and returns to the File Edit menu.

To create a new macro

1 From the list in any of the following menus, select an empty register or file, and press [Off Line Edit] in the button area.

- Macro >Register >Lock menu
- Macro >Register >Delete menu
- Macro >Register >Rename menu
- File >Shotbox, Macro >Macro >File Edit menu

The Off Line Edit menu appears.

2 Carry out steps **3** to **8** of the procedure “To insert an event” *(page 810)*, to create an the event.

Macro Attachment Assigning

Macro attachment is a function whereby a macro register is assigned to a control panel button or a particular position of a fader lever, linking the execution of the button function or a fader lever operation with a macro execution.

Setting a macro attachment to a button

Select one of the following three linking modes to make the macro attachment.

Pre-macro: Mode in which the button function is executed after macro execution has completed

Post-macro: Mode in which the macro is executed after carrying out the button function

Macro only: Mode in which the button function is not executed, and the macro only is executed

Assign the linking mode selection function to a utility/shotbox control block button or user preference button.

You can assign any one of the 250 macro registers to a button.
For a button whose function is switched by delegation, you can make a separate macro attachment for each function.
For each control panel, you can make up to 1000 macro attachment settings.
The macro attachment setting is possible for the following bus buttons.

For button locations, see Chapter 2 "Menus and Control Panel" (Volume 1).

Block	Button
Cross-point control block	• Background A row cross-point buttons • Background B row cross-point buttons • Cross-point buttons in the key row of the bus assigned by key delegation button setting • Cross-point buttons in the key row of the bus assigned by AUX delegation button setting • Buttons set to "Inhibit"
Keyframe control block	• [RUN] and [REWIND] buttons • [REV] and [NORM/REV] buttons
Device control block (trackball)	The buttons to which the same functions as those of VTR/disk recorder/Extended VTR/frame memory clips play, cue, stop, and start tc buttons
Device control block (search dial)	[PLAY], [CUE], [STOP] and [START TC] buttons

Block	Button
Downstream key control block	• [DSK1 ON] to [DSK8 ON] buttons a) b) • [KEY1 ON] to [KEY8 ON] buttons a) c) • [TAKE] button a) • [MIX], [WIPE], [DME], and [CUT] buttons
Transition control block	All buttons except [PRIOR SET], [TRANS PVW], [SHIFT], [ADD], [KF], [MAIN], [SUB], [LIMIT SET], [K-SS], and [K-SS STORE] buttons
Utility/shotbox control block	Memory recall buttons
Menu control block	[PREFS 1] to [PREFS 16] buttons

a) In the case of an event that inserts or deletes a key by an independent key transition, the key state at the time of event registration (inserted or not inserted) is also saved in the macro. When the macro is executed, the event is only replayed if the key state matches the saved state. (Example: For a macro with an event that deletes a key, when the macro is executed, if the key is inserted it is deleted, but otherwise nothing occurs as concerns keying.)

b) KEY5 to KEY8 and DSK5 to DSK8 require an assignment.

c) Assignment is required

Notes

- After setting a macro attachment to a cross-point button of the bus assigned by AUX delegation setting, if in the Setup menu you change the bus assignment to the button, the macro attachment setting disappears.
- After setting a macro attachment to a button for which you can perform function replacement or function assignment, if you change the function assignment to the button, the macro attachment setting disappears.
- After setting a macro attachment to a cross-point button in the cross-point control block, if you change the function assignment to the button, the macro attachment setting disappears.

Enabling and disabling macro attachment

You can temporarily disable the macro attachment settings. When a macro attachment is disabled, pressing the button does not cause execution of the assigned macro.

You can enable or disable macro attachments for the individual control panels. Assign the function to enable or disable macro attachments to a button in the utility/shotbox control block or a user preference button, and turn the button on and off as required.

Setting a macro attachment to a fader lever

You can set a macro attachment to any particular position of a fader lever in the transition control block.

Notes

- In macro-only mode it is not possible to set a macro attachment.

- It is not possible to set a macro attachment to a fader lever in the keyframe control block or downstream key control block.

Clearing the macro attachments

You can clear all of the macro attachments in a single operation.

Displaying the macro attachment list

You can display the macro attachment settings in the form of a list in the menu display to check them.

Setting and Canceling a Macro Attachment

Setting a macro attachment to a button

This section describes the example of setting a macro attachment for the background A row cross-points.

See "Setting a macro attachment to a button" (page 813) for the buttons for which a macro attachment can be set.

Notes

For each of the [PRE MCRO] and [POST MCRO] settings, it is necessary to make assignments to user preference buttons in the menu control block or to the utility/shotbox control block. Carry out these assignments in the Eng Setup >Panel >Prefs/Utility menu. *(For details, see "Setting Button Assignments (Prefs/Utility Menu)" in Chapter 19 (Volume 3).)*

1 Recall the macro register you want to assign to the button. (1 to 250)

For details of recall, see page 792.

2 To make the setting in pre macro mode, hold down the [PRE MCRO] button assigned to a utility/shotbox control block button or user preference button. To make the setting in post macro mode, hold down the similar [POST MCRO] button, then press the desired button in the background A row.

The cross-point button you pressed flashes amber, and the register you recalled in step **1** is assigned to the button.

If you make both pre macro and post macro settings for the same button

The later setting is valid.

To set a macro attachment without changing cross-points

When you set a macro attachment to a cross-point button, you can make the setting without changing the bus cross-points. Carry out this selection in the Engineering Setup >Panel >Operation menu. *For details, see "Setting the Macro Execution Mode" in Chapter 19 (Volume 3).*

To make a macro attachment setting in macro only mode

Notes

To carry out this operation, it is first necessary to assign the "Macro Only Set" function to the user preference buttons in the menu control block or the utility/shotbox control operation. Carry out this assignment in the Eng Setup >Panel >Prefs/Utility menu. *(For details, see "Setting Button Assignments (Prefs/Utility Menu)" in Chapter 19 (Volume 3).)*

To make a macro attachment in macro only mode, use the following procedure.

1 Recall the macro register you want to assign to the button. (1 to 250)

For details of recall, see page 792.

2 Press the button to which [MCRO ONLY SET] is assigned, turning it on.

3 Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block button or user preference button, and press the desired button in the background A row.

The cross-point button you pressed flashes green, and the register you recalled in step **1** is assigned to the button. The [MCRO ONLY SET] button goes off.
Without switching to macro only mode in step **2**, if you hold down the [PRE MCRO] and [POST MCRO] buttons together and press the desired button, it is possible to set a macro attachment in macro only mode for that button.

To check macro attachment settings

Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block button or user preference button. While this is held down, the buttons for which a macro attachment is set flash as follows.

While the [PRE MCRO] button is held down:

- Buttons set in pre macro mode: flash amber
- Buttons set in macro only mode: flash green

While the [POST MCRO] button is held down:

- Buttons set in post macro mode: flash amber
- Buttons set in macro only mode: flash green

Setting a macro attachment to a fader lever

You can set a macro attachment to any particular position of a fader lever in the transition control block.

Notes

- In macro only mode it is not possible to set a macro attachment.
- It is not possible to set a macro attachment to a fader lever in the downstream key control block.

1 Recall the macro register that you want to assign to the fader lever. (1 to 250)

For details of recall see page 792.

2 Move the fader lever to the position where you want to set the macro attachment.

3 Hold down the [PRE MCRO] or [POST MCRO] button [1] assigned to a utility/shotbox control block or user preference button, and press the [LIMIT SET] or [PRIOR SET] button in the control block containing the fader lever operated in step **2**.

1) Only when setting a macro attachment to the start point or end point of fader lever operation, use [PRE MCRO] and [POST MCRO] in distinction, as follows.
To set the operation start point (0%): hold down [PRE MCRO] for the operation.
To set the operation end point (100%): hold down [POST MCRO] for the operation.

This assigns the register recalled in step **1** to the fader lever position selected in step **2**.

To check a macro attachment setting

Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block or user preference button. While it is held down, the fader lever position where the macro attachment is set appears in the following places.

- **Transition indicator in the transition execution section:** The indicator lights at the position where the macro attachment is set.
- **Transition rate indication in the transition execution section:** This shows the fader lever position where the macro attachment is set, as a percentage value. (Fader lever start position as 0%, end position 100%)

Removing macro attachment settings

To cancel a macro attachment to a button

Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block button or user preference button, and press the background A row button that is flashing. The button for which a macro attachment was set stops flashing and goes off, and the setting is canceled.

To cancel a macro attachment to a fader lever

Hold down the [PRE MCRO] or [POST MCRO] button assigned to a utility/shotbox control block or user preference button, and press the [LIMIT SET] or [PRIOR SET] button in the control block containing the fader lever having the macro attachment set.

To remove all macro attachment settings in a single operation

You can remove all macro attachment settings in a single operation.

1 In the Macro menu, select VF2 ‘Attachment.’

2 Press [All Clear].

A confirmation message appears.

3 Select [Yes].

This deletes all macro attachment setting data.

Displaying the Macro Attachment List

In the Macro >Attachment menu, you can display the macro attachment list to check the macro attachment settings.

The macro attachment list includes the following columns.

- **Block:** Shows the names of control panel blocks.
- **Button:** Shows the names of macro attachment assigned buttons (of up to 30 characters).
- **Reg:** Shows the names of assigned registers.
- **Name:** Shows the names of macro registers.
- **Mode:** Shows the names of macro modes (Pre/Post/Only/--- [1)]).

Above the list is shown the names of the block and macro attachment assigned button currently selected in the list.

1) When no macro mode is set

For details of the macro modes, see "Setting a macro attachment to a button" (page 813).

For details of the macro attachment list display, see "About the Macro Attachment List Display" (page 890) in the Appendix.

Moving quickly within the macro attachment list from one block to another

When you are viewing the macro attachment settings for a block in the macro attachment list, you can move quickly from the current block to another block to check the settings for that block by pressing the following buttons in the <Block Select> group.

- **P/P**: Move to a block in the PGM/PST bank.
- **M/E-1:** Move to a block in the M/E-1 bank.
- **M/E-2:** Move to a block in the M/E-2 bank.
- **M/E-3:** Move to a block in the M/E-3 bank.
- **M/E-4:** Move to a block in the M/E-4 bank.
- **Aux:** Move to a section in the auxiliary bus control block.
- **Others:** Move to a block/section in a location other than the PGM/PST bank, M/E-1 to M/E-4 banks, and the auxiliary bus control block.

Scrolling the list

To scroll the macro attachment list, do one of the following.

- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Macro attachment settings scrolling	1 and upwards

Executing a Macro by Macro Attachment

Notes

To carry out this operation, it is first necessary to assign the "MCRO ATTCH ENBL" function to the user preference buttons in the menu control block or the utility/shotbox control block. Carry out this assignment in the Eng Setup >Panel >Prefs/Utility menu. *(For details, see "Setting Button Assignments (Prefs/Utility Menu)" in Chapter 19 (Volume 3).)*

Executing a macro assigned to a button

1 Press the [MCRO ATTCH ENBL] button assigned to a utility/shotbox control block button or user preference button, turning it on.

2 Press the desired button for which a macro attachment has been set.

This recalls the macro register assigned to the button, and the macro is executed as follows, according to the operation mode.

Pre macro mode: The macro is executed first, and then the button function is executed.

Post macro mode: The button function is executed first, and then the macro is executed.

Macro only mode: The button function is not executed, and the macro only is executed.

During macro execution, the button you pressed flashes.

Notes

- It is not possible to execute more than one macro at a time. Therefore, even if you simultaneously press multiple buttons for which macro attachments are set, only one macro is executed.
- If a button is pressed twice during macro execution or when the macro is stopped, or if another macro is recalled, the following operation (stop or continue) depends on a setting in setup.

  For details of the settings, see "Setting the Macro Execution Mode" in Chapter 19 (Volume 3).

- Individual events stored in a macro are executed according to the settings in setup. If you change the settings in setup, a saved macro may not have the expected effect.
- During macro execution, if you switch the control panel to macro editing mode, the macro being executed stops.
- During macro editing, pressing a button for which a macro attachment is set does not execute the macro.

To disable macro attachment settings

Press the [MCRO ATTCH ENBL] button assigned to a utility/shotbox control block button or user preference button, turning it off.
In this state, pressing a button for which a macro attachment is set does not execute the macro.

Executing a macro assigned to a fader lever

1 Press the [MCRO ATTCH ENBL] button assigned to a utility/shotbox control block button or user preference button, turning it on.

2 Move the fader lever from the start position to the end position.

When the fader lever passes the position at which the macro attachment is set, the macro register is recalled, and the macro is executed.

Notes

- Unless you move the fader lever to the end position (completing the travel), it is not possible to execute the macro again.
- When the preset color mix stroke mode is Normal *(see "Settings Relating to Video Switching (Transition Menu)" in Chapter 20 (Volume 3))*, the first lever operation executes the macro, but the second lever operation does not.
- If a button is pressed twice during macro execution or when the macro is stopped, or if another macro is recalled, the following operation (stop or continue) depends on a setting in setup.

  For details of the settings, see "Setting the Macro Execution Mode" in Chapter 19 (Volume 3).

- Individual events stored in a macro are executed according to the settings in setup. If you change the settings in setup, a saved macro may not have the expected effect.
- During macro execution, if you switch the control panel to macro editing mode, the macro being executed stops.
- During macro editing, even if you operate a fader lever with a macro attachment set, the macro is not executed.

To disable a macro attachment setting

Press the [MCRO ATTCH ENBL] button assigned to a utility/shotbox control block button or user preference button, turning it off.
In this state, operating a fader lever with a macro attachment set does not execute the macro.

Menu Macros

The term “menu macro” refers to the function whereby a sequence of menu operations is saved as data in memory, so that it can be recalled as required to automatically execute the same sequence of operations.
Using any of the menus in the following table, you can edit menu macro registers and menu macro events.

Menu	Function	Operations
Menu Macro Register menu (menu macro register editing)	• Carry out menu macro register editing. • Recall a menu macro register and execute a menu macro.	• Recalling a register and executing a menu macro • Locking a register • Copying a register • Deleting a register • Naming a register
Menu Macro Edit menu (editing of menu macro events)	Edit events in a menu macro register.	• Inserting an event • Deleting an event • Modifying an event

Menu macro registers

The area of memory that holds a menu macro is termed a “menu macro register.” For each control panel there are 99 menu macro registers, numbered 1 to 99. You can manipulate these in the menu macro register menu.

Menu macro events

The events that can be recorded in a menu macro are operations carried out in a menu.

For menu operations which are not recorded in menu macros, see “Menu Operations Not Recorded in a Menu Macro” (page 896).

Menu macro creation and editing

Carry out menu macro creation and editing in the menu.

Executing menu macros

You execute a menu macro after recalling a menu macro register.
You can recall and execute simultaneously. You can also recall and execute a menu macro from a macro recalled on the control panel.

Recalling a Menu Macro Register and Executing a Menu Macro

Menu macro operation is carried out by recalling a menu macro register.

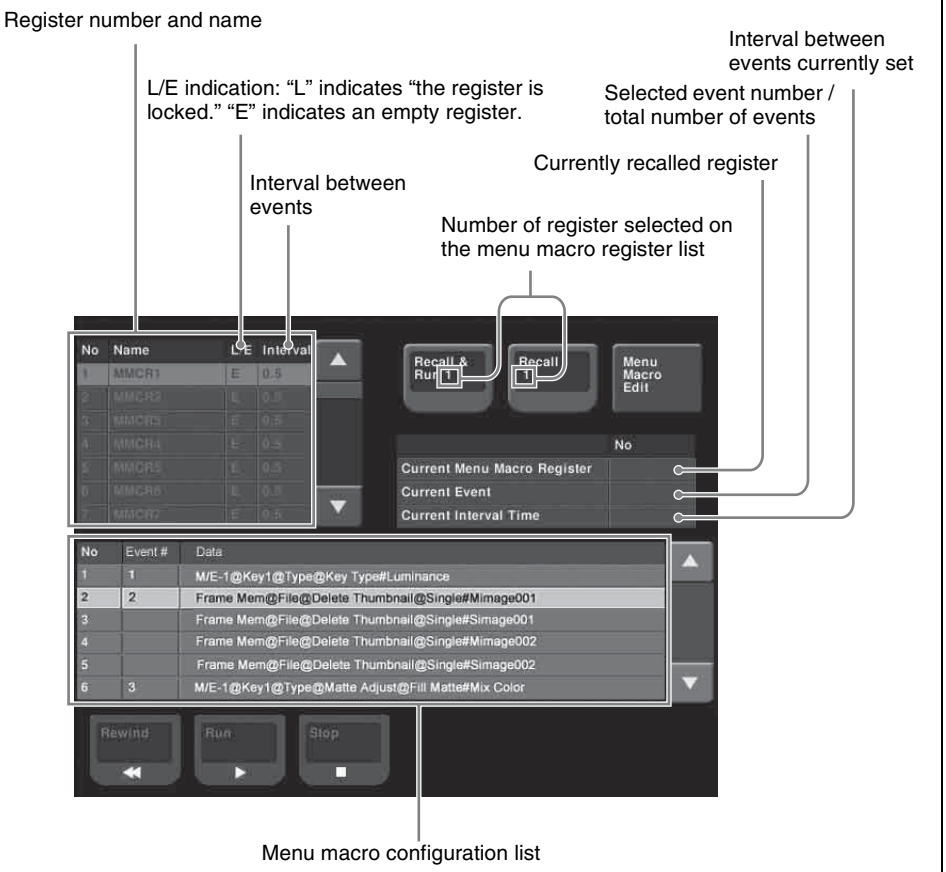
Notes

- Menu macros and macros recalled with a control panel button operate independently. Therefore, to synchronize these, adjustment of the execution timing is required.
- Events saved in a menu macro are executed according to the settings in setup, and therefore if you change the setup settings, it may not be possible to replay an event.
- When two menu macros are recalled successively, the later coming macro is ignored as far as the first macro is being executed.

Recalling a Menu Macro Register

1 In the Macro menu, select VF3 ‘Menu Macro Register’ and HF1 ‘Recall & Run.’

The Recall & Run menu appears.



2 Using any of the following methods, select the register to be recalled.

- Press directly on the menu macro register list.
- Press the arrow keys on the right list to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Menu Macro Register	Register selection	1 to 99

3 Press [Recall & Run x] or [Recall x] (x is the number of the register selected in the menu macro register list).

- To execute the menu macro at the same time as recalling the register, press [Recall & Run x].

- To recall the register only, press [Recall x].

Executing a menu macro

In the Macro >Menu Macro Register >Recall & Run menu, check that you are not in macro editing mode, then use the following procedure.

1 Using any of the following methods, specify the event from which you want to execute.

- Press directly on the menu macro register configuration list.
- Press the arrow keys on the right list to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
3	No	Select start event	1 and upwards

2 Press [Run].

This executes the menu macro from the specified event.

To stop execution of a macro
Press [Stop].

To move to the start of a menu macro event
Press [Rewind].

Recalling a menu macro register from a macro register

Menu macro recall and execution operations can be saved as events in a control panel macro, and then recalled.
If with the control panel in macro editing mode you execute a menu macro, then this operation is recorded as an event.

For details of recalling operations, use the following references, depending on the control panel or menu used.

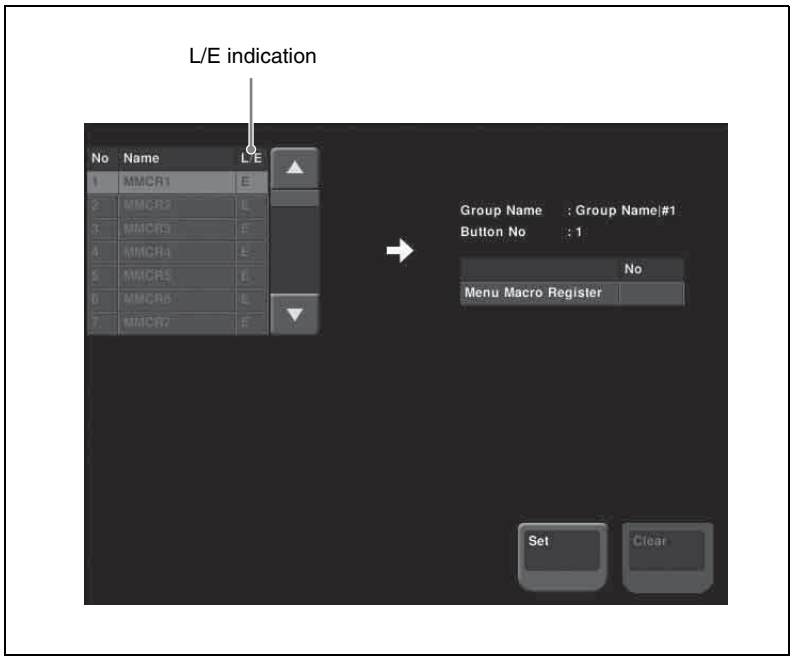
- Using the numeric keypad control block and the keyframe control block: *page 792*
- Using menus: *page 807*

Executing by assigning a menu macro register to a button in the menu

1 In the Home >Favorites >Button Edit menu, select a button to register.

2 Press [Menu Macro Set].

The Menu Macro Set menu appears.
The “L/E” indications have the following meanings.
L: The register is locked.
E: The register is empty.



3 In the list on the left, select the button number to be assigned.

4 Press [Set].

Executing a menu macro with a menu button

1 Select the Home >Favorites >Shortcut menu.

The following screen appears.



2 Press the group name button.

3 Press the button to which the menu macro is assigned.

This executes the menu macro.

To stop a menu macro during execution

Press [MenuMacro Stop].

Menu Macro Creation and Editing

Create or edit menu macro registers.

Notes

It is not possible to execute a menu macro during editing. To run the macro, first press the [Store] button to end editing.

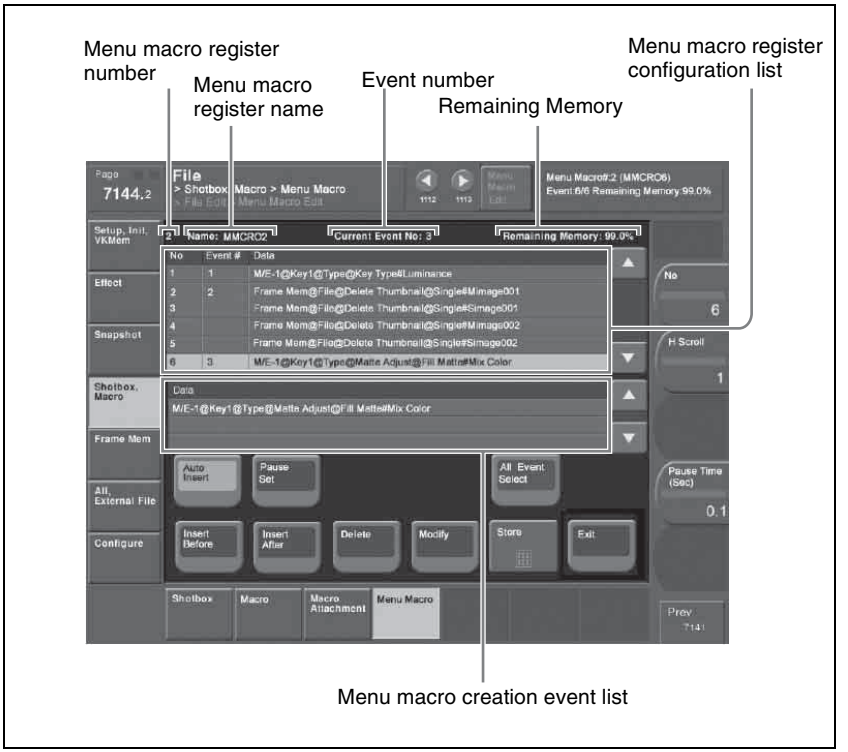
Creating a new menu macro

1 In the Macro >Menu Macro Register >Recall & Run menu, select an empty register in the menu macro register list.

For details of the method of operation, see "Recalling a Menu Macro Register" (page 823).

2 Press [Menu Macro Edit].

The menu macro register is recalled, and the system is now in menu macro editing mode.
The Menu Macro Edit menu appears.



3 If required, press [Auto Insert] to switch the auto insert mode on or off.

In the auto insert mode, when you carry out a menu operation, this is automatically recorded as an event in the menu macro.

4 Create an event (carry out the menu operation you want to record as an event in the menu macro).

For details of menus that can be recorded, see page 822.

- When auto insert mode *(see page 794)* is on, carrying out a menu operation automatically saves the event in a menu macro.
- When auto insert mode is off, skip to step **5**.

5 When auto insert mode is off, press [Insert Before] or [Insert After] to save the event.

6 Repeat steps **4** and **5**, to record the required events in the menu macro.

7 Turn the knob to input the event execution interval.

Knob	Parameter	Adjustment	Setting values
5	Interval Time	Event interval	0.0 to 0.5 (sec)

This value can be set for each menu macro register.

8 Press the [Store] button.

The numeric keypad window appears.

9 Enter the menu macro register number as required, and press [Enter].

The menu macro is saved with the specified number.
The menu returns to the state in step **1**.

To set a pause duration

During menu macro editing, use the following procedure.

1 Enter the pause duration by turning the knob.

Knob	Parameter	Adjustment	Setting values
4	Pause Time (Sec)	Pause duration	0.1 to 99.9 (sec)

2 Press [Pause Set].

- When auto insert mode *(see page 794)* is on, this sets the pause duration, and inserts the pause event.
- When auto insert mode is off, use the same operations as in step **5** of *"Creating a new menu macro" (page 827)* to save the event.

Editing a menu macro

To edit the content of a menu macro, use the following procedure.

1 In the Macro >Menu Macro Register >Recall & Run menu, select the desired register on the menu macro register list.

For details of the menu macro register list, see "Recalling a Menu Macro Register" (page 823).

2 Press [Menu Macro Edit].

The Menu Macro Edit menu *(see previous figure)* appears. The menu macro register is recalled, and the system is now in menu macro editing mode.

3 Select the event you want to edit.

- Press directly on the menu macro register configuration list.
- Press the arrow keys on the right list to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Event number	1 and upwards

- To select all events, press [All Event Select].

4 If required, press [Auto Insert] to switch the auto insert mode on or off.

- When auto insert mode *(see page 794)* is on, a new menu is automatically inserted after the event selected in step **3**.
- When auto insert mode is off, skip to step **5**.

5 Carry out the editing, using any of the following methods.

- To delete the selected event, press the [Delete] button.
- To overwrite the selected event, carry out the new menu operation, then press the [Modify] button.
- To insert an event before the selected event, carry out the new menu operation, then press the [Insert Before].
- To insert an event after the selected event, carry out the new menu operation, then press the [Insert After].

6 With the same operation as step 7 of *"Creating a new menu macro" (page 827)*, change the event execution interval.

7 With the same operation as steps **8** and **9** of *"Creating a new menu macro" (page 827)* save the register.

Exiting the Menu Macro Edit menu without saving the results of editing

In the Menu Macro Edit menu, press [Exit].

Scrolling event display using the menu macro listing

1 Move the cursor to the event you want to display.

2 Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	H Scroll	Scroll the characters in the "Data" field.	1 and upwards

About the menu macro editing mode display

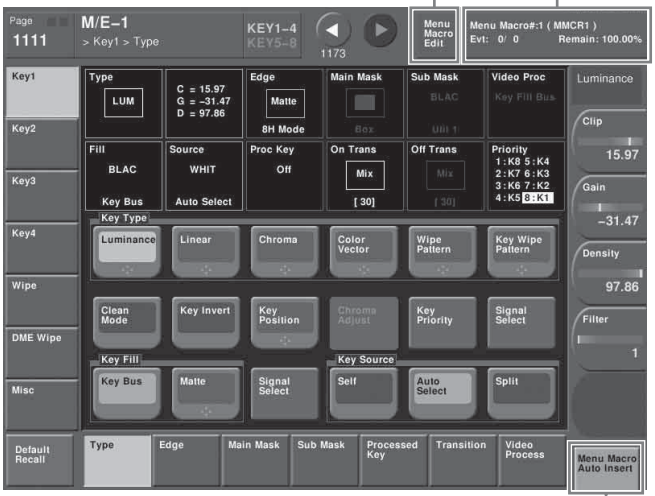
If while in menu macro editing mode you switch to another menu, the display is as shown in the following figure.

Screen when the keyframe status is displayed

The keyframe status section appears as follows.

- Menu macro register number
- Menu macro register name
- Current event number / total number of events
- Remaining memory

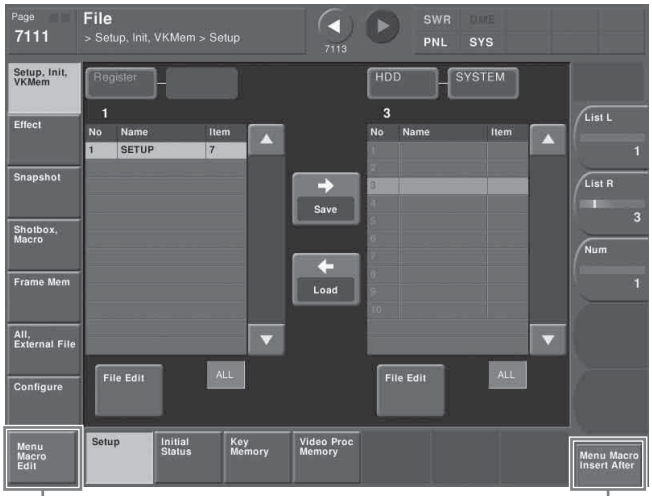
Menu shortcut button to Menu Macro Edit menu



The Previous page button shows one of the following:

- When [Auto Insert] is on, “Menu Macro Auto Insert” appears.
- When [Auto Insert] is off, “Menu Macro Insert After” appears, but operates as [Insert After].

Screen when the keyframe status is not displayed



The Default Recall button shows the following.

Menu shortcut button to Menu Macro Edit menu

The Previous page button shows one of the following:

- When [Auto Insert] is on, “Menu Macro Auto Insert” appears.
- When [Auto Insert] is off, “Menu Macro Insert After” appears, but operates as [Insert After].

Menu Macro Register Editing

You can display the current state of a menu macro register using the Menu Macro menu.
The items displayed are the same as under *“Effect Status Display” (see page 739)*, with the exception that the region name is not displayed.

In the Menu Macro menu, you can do the following editing operations on menu macro registers.

- **Lock:** Write-protect the contents of the menu macro register.
- **Copy:** Copy the contents of one menu macro register to another menu macro register.
- **Delete:** Delete the contents of a menu macro register.
- **Name:** Attach a name to a menu macro register.

The operations for menu macro register editing are the same as those for effect register editing *(see page 739)* except the region selection operation, which is not necessary for menu macro register editing.

Macro Timeline

By recording macro recall and execute action on a timeline, in the same way as for key frames in an effect, you can automatically execute them in a sequence. This timeline is called a “macro timeline,” and one macro timeline can have up to 99 macros being executed simultaneously in parallel.
There are 99 registers in the Macro region that can be recorded on the macro timeline, numbered 1 to 99. These registers are distinct from the registers where individual macros are stored.

Notes

If you use a macro timeline to superimpose more than one macro, the macros may not be executed according to the timing information registered in the timeline.

Available key frame functions

The following lists the key frame functions that can be used on the macro timeline.

- RECALL(1 to 99), STORE(1 to 99), RECALL UNDO, STORE UNDO, search for empty register, AUTO SAVE, RECALL MODE (RECALL, RECALL & REWIND)
- EDIT ENABLE, EDIT UNDO
- CONST DUR, EFF DUR, KF DUR, DELAY, PAUSE, INSERT BEFORE, INSERT AFTER, MODIFY, DELETE, COPY, PASTE BEFORE, PASTE AFTER, FROM TO, ALL
- PREV KF, NEXT KF, GOTO TC, GOTO KF, RUN, REWIND, FF, STOP NEXT KF, NORMAL, JOG, KF FADER

The following key frame functions cannot be used

- KF LOOP, EFFECT LOOP, REVERSE, NORMAL/REVERSE
- PATH

Saving to a register

Set the recall and execute actions for the macros to be registered in the timeline, using the Macro Timeline menu. The setting data can be saved in a register as key frame data. You can manipulate this data by recalling the register in which it is saved, and using the key frame control block.

For details, see “Recalling a Menu Macro Register and Executing a Menu Macro” (page 823).

Notes

An action set for a key frame is only executed when the key frame effect is executed in the forward direction. It is important to remember that the action is not executed in the reverse direction when executing simultaneously with switcher and DME key frame effects.

Forcibly ending a macro timeline

- If the timeline has completed but a macro is still executing, press the [REWIND] or [RUN] button in the key frame control block to forcibly end the macro timeline.
- In a macro timeline, since a take operation is not possible, if a macro included in the timeline has a pause event with a pause time of zero, the remainder of the timeline after the pause is ignored, and the macro timeline ends at that point.

Register editing functions

You can use the following editing functions on a register in which a macro timeline is stored.

- Copy
- Move
- Swap
- Merge
- Lock
- Name
- Delete

File-related functions

You can save and recall a created macro timeline as effect data, in the File menu.

Timeline operations are carried out on a macro timeline in the same way as for normal effects.

For details of timeline operations, see "Chapter 13 Keyframe Effects" (page 679).

Notes

When using a macro timeline, note the following.

- To use a macro timeline, the Macro region must be assigned to a region selection button in the numeric keypad control block.

For details of region assignment operations, see "Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block" in Chapter 19 (Volume 3).

- On a macro timeline, only macro recall and execution actions are stored. The data for a macro to be recalled on the macro timeline is not held on the timeline. It is necessary to create the macro data first.
- A macro timeline can be saved and recalled on the master timeline or a shotbox register, but cannot be saved as a snapshot.

Creating and Editing a Macro Timeline

This section describes how to set actions, and add keyframe points. Note that path settings are not needed on the macro timeline.

For details of keyframe operations, see "Creating and Editing Keyframes" (page 709).

Saving a keyframe

For the operations, use the Macro Timeline menu and the [INS] button in the keyframe control block.

1 Press the [EDIT ENBL] button, turning it on.

This enables timeline editing in the keyframe control block.

2 In the Macro menu, select VF4 'Timeline' and HF1 'Timeline.'

The Macro Timeline menu appears.

3 Select one of the actions (Recall, Take, Take All, No Action) that appear on the right.

When you have selected Recall or Take, turn the knob to select the number of the macro register.

Knob	Parameter	Adjustment	Setting values
3	Reg No	Selection of macro register	1 to 250

4 Press the [Set] button.

The selected action appears in the Action column on the left.

5 Press the [INS] button in the keyframe control block.

This creates the keyframe 1 on the macro timeline.

To set the action for a rewind operation

On the macro timeline, when the [REWIND] button in the keyframe control block is pressed the action set for the first keyframe is not executed; when the [RUN] button is pressed, then the first keyframe action is executed.
To execute an action when the [REWIND] button is pressed, it is necessary to set this action (Rewind Action). To carry out this setting, in the Macro >Timeline >Timeline menu, press [Rewind Action] to recall the Rewind Action menu. In this setting screen, use the same setting method as in the screen for setting an action on the macro timeline.

Alternatively, you can select the reverse arrangement, whereby when the [REWIND] button is pressed, this executes the action set for the first keyframe, and when the [RUN] button is pressed the first keyframe action is not executed. In this case, the Rewind Action setting is still valid.

For details of the setting, see "Setting the First Keyframe When a Rewind is Executed" in Chapter 19 (Volume 3).

Chapter 17 Files

Overview of File Operations

You can save register data, including setup information and snapshot information, as a file on a hard disk or memory card, and recall it as required. You can operate on individual files or registers, or together in a batch. Regarding frame memory, it is possible to capture image data stored in an external device into frame memory. You can also convert the format of image data in frame memory into a different format and save it in an external device.

Files that can be manipulated

The following files can be saved and recalled.

- Operation mode setup data for system as a whole and individual devices
- Device status data for system startup
- Key memory setting data
- Video process memory setting data
- Keyframe effect setting data
- Snapshot setting data
- Wipe snapshot setting data
- DME wipe snapshot setting data
- Key snapshot setting data
- Shotbox setting data
- Macro setting data
- Macro attachment data
- Menu macro setting data
- Frame memory image data
- List of files automatically created in a frame memory file backup to DDR/VTR (single data set)

File operations

You can carry out the following file operations.

When operating on individual files or registers

Save: Save the data in a register to the hard disk or memory card.

Load: Load a file from the hard disk or memory card.

Copy: Copy a file within a directory or from one directory to another. When a remote panel is used, this function applies to it, too.

Rename: Rename a file on the hard disk or memory card.

Delete: Delete a file from the hard disk or memory card.

When operating on files or registers in a batch

The Save, Load, Copy and Delete operations are performable.

Notes on transferring multiple frame memory files together to a memory card

- Transferring all of the files within frame memory together fails if the capacity of the memory card is too small to hold all of the images. In this case, replace with a larger capacity memory card, or delete files until saving is possible.
  The following table roughly shows the relation between memory card capacity and number of files that can be saved.

Memory card capacity	Number of files that can be saved	
	SD system	HD system (except 720P)
256 MB	214	46

  Note that when transferring to the hard disk, there is ample capacity, so that problems such as this do not occur.
- If you cancel the operation during a data transfer between frame memory and hard disk or memory card, then an image which was not completely transferred will not be reproducible. Avoid canceling such operations.
- When loading a file from hard disk or memory card, if [Freeze Enable] in the Freeze menu is on, the loaded file may sometimes be overwritten by the frame memory input image.
  To avoid this when loading a file, ensure that [Freeze Enable] is turned off.

Importing or exporting files to or from frame memory

Import: Import a file in a different format from hard disk or memory card into frame memory after changing its format.

Export: Export a file in a register to hard disk or memory card after changing its format.

You can import TIFF, BMP, and TARGA files as follows into frame memory.

File type	Format	File name	Notes
TIFF file	RGB uncompressed format	Maximum eight characters, plus extension .tif required	• Layers cannot be used. • If an alpha channel is present, two files are created as a pair.
BMP file	Windows [a] 24-bit format	Maximum eight characters, plus extension .bmp required	–
TARGA file	RGB uncompressed/ compressed format	Maximum eight characters, plus extension .tga required	• Layers cannot be used. • If an alpha channel is present, two files are created as a pair.
PNG file	RGB compressed format	Maximum eight characters, plus extension .png required	• Layers cannot be used. • If an alpha channel is present, two files are created as a pair.

a) Windows is a registered trademark or trademark of Microsoft Corporation in the United States and/or other countries.

Notes

This functionality has been tested and confirmed to work with TIFF files created by Photoshop, but it may not be possible to use TIFF files created with some other software. (Photoshop is a trademark of Adobe Systems Incorporated.)

About import image size

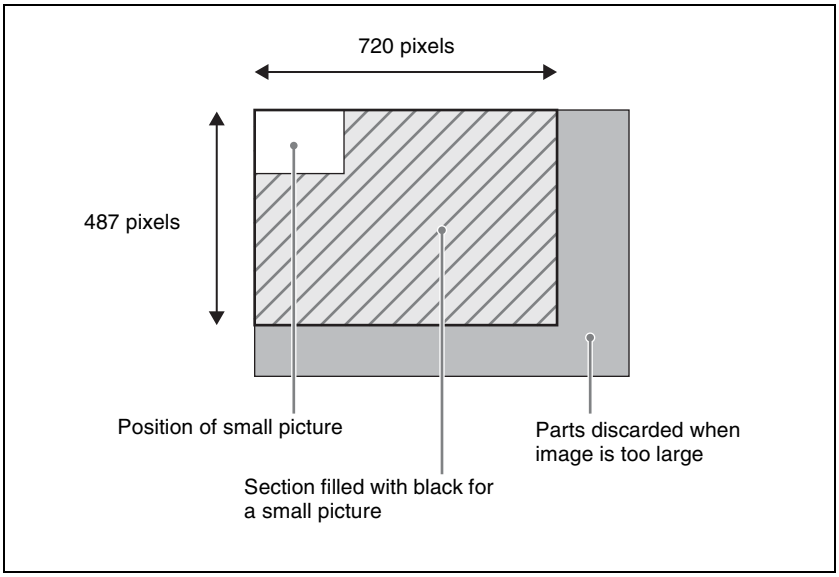
Pay attention to the following, depending on the signal format which you use.

SDTV (480i)

Images 720 × 487 pixels in size are exactly the size which fills the full screen. The following figure shows how an import image is processed when the 480i/59.94 format is used.

Images are placed with the upper left of the screen as the origin.

When an image is smaller than the screen, the remainder of the screen is filled with black. When it is larger, parts which extend beyond the screen are discarded.



No pixel ratio conversion is performed when images are imported for the SDTV format.

When the signal format is 480i/59.94, if you create an image with a size of 720 × 540 on a computer and then import it just as it is, the image will be too tall. To maintain the shape of the image, first create it as a 720 × 540 image and then

use computer software tools to compress the vertical dimension to 487 pixels before importing it.

HDTV (1080i)

Images of 1920 × 1080 pixels in size are exactly the size which fills the full screen.

Like SDTV, images are placed with the upper left of the screen as the origin. When an image is smaller or larger than the screen, processing is the same as for SDTV.

Since the pixel ratio of the HDTV format is 1:1, files created on computers are imported in their original shapes.

The following table shows the image sizes which exactly fill the full screen for the various signal formats.

Signal format	Image size (H × V)
480i/59.94	720 × 487
576i/50	720 × 576
1080i/50	1920 × 1080
1080i/59.94	
1080PsF/23.976	
1080PsF/24	
1080PsF/25	
1080PsF/29.97	
1080P/50, 1080P/59.94	
720P/50	1280 × 720
720P/59.94	

Importing 720P and 1080P movie material

- To import movie material in 720P or 1080P format, it is necessary to treat each frame as a separate image file.
- For 1080P format, the individual files must have numbers which start from an even number. (E.g.: consecutive numbers from 0000)

Directory operations

You can create a new directory within a hard disk or memory card, and carry out other operations, such as renaming and deleting.

For details of operations, see "Directory Operations" (page 866).

File copying between different unit IDs

Switcher and DME files within the hard disk or memory card are managed by unit ID.
To copy files between different unit IDs, use the Unit ID Copy menu.

For details of operations, see "Copying Files Between Different Unit IDs" (page 868).

Saving data recalled by autoload

At power on, you can automatically recall data previously stored on the hard disk. (Autoload function)
The following data can be loaded by the autoload function.

- Keyframe effect setting data
- Snapshot setting data
- Wipe snapshot setting data
- DME wipe snapshot setting data
- Key snapshot setting data
- Shotbox setting data
- Macro setting data
- Macro attachment data
- Frame memory image data

To use the autoload function, the data required must first be saved.

For the on/off setting of the autoload function, see "Selecting the State After Powering On (Start Up Menu)" in Chapter 18 (Volume 3).

For details of saving operations, see "Saving Files Recalled by Autoload" (page 870).

Locking file recall operations

For each of the following categories, in setup you can apply a lock on recalling files.

Setup, Initial Status, Key Memory, Video Proc Memory, Effect, Snapshot, Wipe Snapshot, DME Snapshot, Key Snapshot, Shotbox, Macro, Macro Attachment, Menu Macro

A locked file cannot be downloaded from the File menu.

For details of the settings, see "Locking the Setup Menu Settings" in Chapter 18 (Volume 3).

Operations on Individual Files

You can save or load the contents of an individual file or register. Carry out these operations in the File menu.

Displaying the Individual File Operation Menus

1 In the menu control block, press the top menu selection button [FILE].

2 Depending on the type of file to be manipulated, select the following 'VF' and 'HF' combination.

Button	HF1	HF2	HF3	HF4	HF5
VF1	Setup	Initial Status	Key Memory	Video Proc Memory	–
VF2	Effect 1-99	User DME Wipe Effect 101-199	User DME Wipe Effect 201-299	User DME Wipe Effect 301-399	DEV/PBUS Effect 1-250
VF3	Snapshot	Wipe Snapshot	DME Snapshot	Key Snapshot	–
VF4	Shotbox	Macro	Macro Attachment	–	–
VF5	Frame Memory	Frame Memory Folder	File Name Data	–	–
VF6	All	Import/Export	–	–	–
VF7	Directory	Unit ID Copy	Group ID Copy	–	–

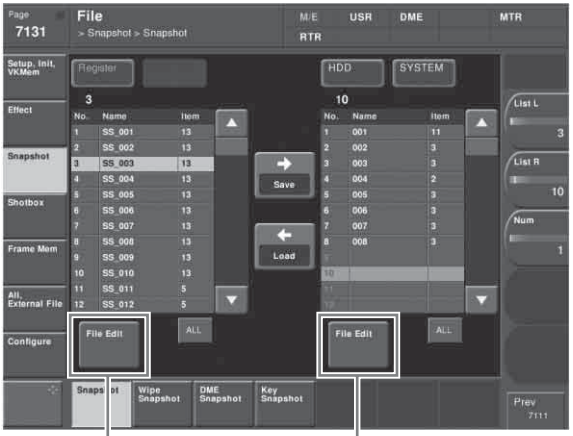
The following description refers to the example of carrying out operations on snapshot files, but the procedure is similar in the other menus.

Viewing Detailed File Information

As an example, to view detailed snapshot file information, carry out the following procedure.

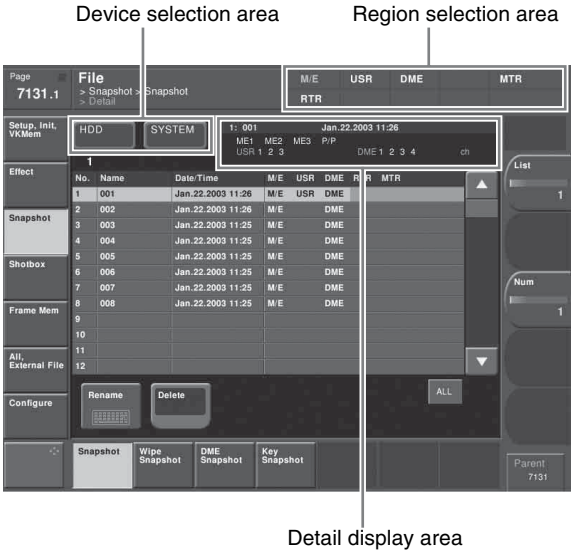
1 In the File menu, select VF3 'Snapshot' and HF1 'Snapshot.'

The Snapshot menu appears.
The status area shows the device status, and a list of files present on the device.



2 Press [File Edit].

The file details appear (reference region file name, creation date, regions including data) in table form.



Selecting a particular file displays more detailed information about that file in the detail display area at the top right of the file list.

In the Frame Memory menu, the following items are also shown.
Pair: In the case of a pair file, “P” is shown.
Ext: In the case of an extended clip file, “Ext” is shown.

Selecting Regions

You can carry out a file operation on a number of regions simultaneously. However, a region selection is not required for the following files.

- Key memory
- Video process memory
- Shotbox
- Macro
- Macro attachment
- Frame memory
- Setup
- Initial status

In the above list, for setup and initial status, you can similarly separate the files to be operated on by device in a way similar to the region selection.

To make a region selection

1 Press the region selection area at the top right of the screen *(see page 846)*.

The region selection window appears.

2 Press the region names you do not want to select, turning them off.

3 Press [OK].

Selecting a Device for Operations

To carry out file operations, you need to specify the device holding the data (or file), as one of the following: register, hard disk, memory card, and so on. You can then further select a directory.
If you have enabled NFS (Network File System) in setup, you can add “Network” to the device for operations.
If you specify “Network,” you can access System Manager through the network for file saving and loading.

For details of the NFS settings, see “Making the Network Settings” in Chapter 18 (Volume 3).

Notes

- Files saved on the hard disk may be lost if the hard disk fails. Always keep separate backup copies of important files on a memory card.
- Format a memory card before using it for the first time.

For details on formatting a memory card, see "Using a Memory Card" in Chapter 18 (Volume 3).

As an example, to select a memory card, use the following procedure.

1 In the File menu, press the device selection indication above the file list (default is [HDD] (hard disk)).
(If [Memory Card] appears, then since the memory card is already selected, steps **1** and **2** are not necessary.)

A pull-down menu appears.

2 Press [Memory Card].

A list of directories on the memory card appears. (Maximum 40 per page) The maximum number of directories is 120 on a memory card and NFS, or 200 on an internal hard disk.

3 As required, press the ◀ or ▶ button, to switch directory pages.

4 Press the name of the directory you want to use.

This selects the specified directory on the memory card to be manipulated.

Saving Files

As an example, to save snapshot register data to hard disk or memory card, use the following procedure.

1 In the File menu, select VF3 'Snapshot' and HF1 'Snapshot.'

2 In the device selection area on the left, select [Register].

3 In the device selection area on the right, select [HDD] or [Memory Card], then select a directory.

See "Selecting a Device for Operations" (page 847).

4 Using either of the following methods, select the data to be saved, and the file in which to save it.

- To select all files within the list, press [ALL] below the list.
- To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List L	Select the first register whose data is to be saved	1 to 99
2	List R	Select the first file to which data is to be saved	1 to 99
3	Num	Number of registers to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or press directly on the list in the status area.

5 Press [→ Save].

This saves the selected register data in the specified location.
If there is already data in the specified location, a confirmation message appears.
- Select "Yes" to overwrite the data.
- Select "No" to cancel saving all of the data.

Saving frame memory files

Notes
When the signal format is 1080P, saving a still image file creates two still image files for each frame. An 'A' is automatically appended to the first file name, and a 'B' is appended to the second file name. If either of these files is missing, it is not possible to recreate the image, and therefore for correct operation the two files must always be handled together.

Between steps **3** and **4** of the procedure above, "Saving Files," do as follows.

1 To select the frame memory folder, press [Default] in the device selection in the list on the left.

A pull-down menu appears.

2 Press the required folder name.

3 Carry out the same operations as in steps **1** and **2** on the list on the right.

4 Select the type of data to be displayed.

- To display still image files, press [Still].
- To display clip files, press [Clip].
- To display extended clip files, press [Ext Clip].

• To display all types of file, press [All].

Loading Files

As an example, to load a snapshot file from hard disk or memory card to a register, use the following procedure.

1 In the File menu, select VF3 ‘Snapshot’ and HF1 ‘Snapshot.’

2 In the device selection area on the left, select [Register].

3 In the device selection area on the right, select where the file is held ([HDD] or [Memory Card]), and then specify a directory.

See “Selecting a Device for Operations” (page 847).

4 Using any of the following methods, select the register to which you want to load, and the file to be loaded.

- To select all files within the list, press [ALL] below the list.
- To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List L	Select the first register into which the data is to be loaded	1 to 99
2	List R	Select the first file in which data is held	1 to 99
3	Num	Number to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or press directly on the list in the status area.

5 Press [← Load].

This loads the contents of the selected file from the specified location. (Setup data is first loaded.)

Loading frame memory files

Between steps **3** and **4** of the procedure above, “Loading Files,” do as follows.

Notes

- When the signal format is 1080P, extended clip files cannot be recalled.
- In a still image file saved in the 1080P signal format, there are two still image files for each frame. If either of these two files is missing, it is not possible

to recreate the image, and therefore for correct operation the two files must always be recalled together.

1 To select the frame memory folder, press [Default] in the device selection in the list on the left.

A pull-down menu appears.

2 Press the required folder name.

3 Carry out the same operations as in steps **1** and **2** on the list on the right.

4 Select the type of data to be displayed.

- To display still image files, press [Still].
- To display clip files, press [Clip].
- To display extended clip files, press [Ext Clip].
- To display all types of file, press [All].

Copying Files

You can copy files either within a directory or between directories, on the hard disk, or memory card.
As an example, to copy a snapshot file from memory card to hard disk, use the following procedure.

1 In the File menu, select VF3 'Snapshot' and HF1 'Snapshot.'

2 In the device selection area on the left, specify the location of the file to be copied (in this case [Memory Card] and a directory). *(See page 847.)*

3 In the device selection area on the right, select the destination of the copied file (in this case [HDD] and a directory).

4 Using any of the following methods, select the source and destination files.

- To select all files within the list, press [ALL] below the list.
- To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List L	Select the first copy source file	1 to 99
2	List R	Select the first destination file	1 to 99
3	Num	Number to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or press directly on the list in the status area.

5 Press [→ Copy].

This copies the selected file or files to the specified destination.
If there is already data in the specified location, a confirmation message appears.
- Select "Yes" to overwrite the data.
- Select "No" to cancel copying all of the files.

Copying frame memory files

Between steps **3** and **4** of the procedure above, "Copying Files," do as follows.

Notes

In a still image file saved in the 1080P signal format, there are two still image files for each frame. If either of these two files is missing, it is not possible to recreate the image, and therefore for correct operation the two files must always be copied together.

1 To select the frame memory folder, press [Default] in the device selection in the list on the left.

A pull-down menu appears.

2 Press the required folder name.

3 Carry out the same operations as in steps **1** and **2** on the list on the right.

4 Select the type of data to be displayed.

- To display still image files, press [Still].
- To display clip files, press [Clip].
- To display extended clip files, press [Ext Clip].
- To display all types of file, press [All].

Renaming Files

You can rename a file on the hard disk or memory card and a register. As an example, to rename a snapshot file, use the following procedure.

1 In the File menu, select VF3 'Snapshot' and HF1 'Snapshot.'

The Snapshot menu appears. The status area shows the device status, and a list of files present on the device.

2 Press [File Edit].

A detailed list appears. Here too, you can select a device or specify a directory. *(See page 847.)*

3 Using any of the following methods, select the file you want to rename.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	List	File selection	1 to 99

4 Press [Rename].

The keyboard window appears. *(See "Menu Operations" in Chapter 2 (Volume 1).)*

5 Enter a name of not more than eight characters, and press [Enter].

The name you have entered is reflected in the status area.

Notes

- Within the switcher, the names for Initial Status and Setup data are fixed. You can change the file names on the hard disk or memory card, but the next time they are reloaded they will revert to the default names.
- The following names cannot be used.
  CON, PRN, AUX, CLOCK$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

Renaming frame memory files

Notes

- In a still image file saved in the 1080P signal format, there are two still image files for each frame. When a register is selected for the operation, if you change one of the file names, the other file name of the pair also changes automatically.
- When a device other than a register is selected for the operation, if you change one file name, the other file name of the pair does not automatically change. Except for the final 'A' or 'B' in the file name, you must manually keep the names matching.

E.g.: img111A and img111B (file names must have the underscored parts the same)

1 In the File menu, select VF5 ‘Frame Mem’ and HF1 ‘Frame Memory.’

The Frame Memory menu appears. The status area shows the device status, and a list of files present on the device.

2 Press [File Edit].

3 Select the type of data to be displayed.

- To display still image files, press [Still].
- To display clip files, press [Clip].
- To display extended clip files, press [Ext Clip].
- To display all types of file, press [All].

4 Using any of the following methods, select the file you want to rename. (When you selected [Clip] or [Ext Clip] in step **3**, you cannot select multiple files.)

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	List L	File selection in the left list	1 and upwards
2	List R	File selection in the right list	1 and upwards
3	Num	Number to be selected	1 and upwards

5 Press [Rename].

The keyboard window appears.

6 Depending on the selections of steps **3** and **4**, enter a name as follows and press [Enter].

- When you selected a single file with [Still] or [All]: Enter a name of not more than eight characters.
- When you selected more than one file with [Still] or [All]: Enter a name of not more than four characters.
- When you selected a clip file or an extended clip file: Enter a name of not more than four characters.

The name you have entered is reflected in the status area.

Notes

- If you select [Register] in the operation device selection block, then with [Still] or [All] select multiple files and change a file name, these still images are converted to a clip.
- It is not possible to simultaneously select a file for which the Ext field in the status area is empty and a file for which the Ext field shows “Ext” to change the name.
- When the signal format is 1080P, a still image file name must be a maximum of seven characters.

Deleting Files

You can delete data from the hard disk or memory card and snapshot or effect data from a register. As an example, to delete a snapshot file, use the following procedure.

1 In the File menu, select VF3 ‘Snapshot’ and HF1 ‘Snapshot.’

The Snapshot menu appears. The status area shows the device status, and a list of files present on the device.

2 Press [File Edit].

A detailed list appears. Here too, you can select a device or specify a directory. *(See page 847.)*

3 Using any of the following methods, select the file you want to delete.

- To select all files within the list, press [All] below the list.
- To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List	Select the first file	1 to 99
3	Num	Number to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or press directly on the list in the status area.

4 Press [Delete].

A confirmation message appears.

- Select “Yes” to delete.
- Select “No” to cancel the deletion.

Deleting frame memory files

Between steps **2** and **3** of the procedure above, “Deleting Files,” do as follows.

Notes

- In a still image file saved in the 1080P signal format, there are two still image files for each frame. When a register is selected for the operation, if you delete one still image file, the other file of the pair is automatically deleted.
- When a device other than a register is selected for the operation, if you delete one still image file, the other file of the pair is not automatically deleted. You must manually delete both files.

1 To select the frame memory folder, press [Default] in the device selection in the list.

A pull-down menu appears.

2 Press the required folder name.

3 Select the type of data to be displayed.

- To display still image files, press [Still].
- To display clip files, press [Clip].
- To display extended clip files, press [Ext Clip].
- To display all types of file, press [All].

Converting Between Frame Memory Clips and Extended Clips

Notes

When the signal format is 1080P, this operation is not possible.

1 In the File menu, select VF5 ‘Frame Mem’ and HF1 ‘Frame Memory.’

The Frame Memory menu appears. The status area shows the device status and a list of files on the device.

2 Press [File Edit].

3 In the device selection section of the list, select where the file is held ([HDD] or [Memory Card]), and specify the directory, and frame memory folder.

4 Press either of the following at the top of the list, to select the type of data displayed.

- To display clip files, press [Clip].
- To display extended clip files, press [Ext Clip].

5 Using any of the following methods, select the files you want to convert.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	List L	File selection in the left list	1 and upwards
2	List R	File selection in the right list	1 and upwards
3	Num	Number of files selected	1 and upwards

6 Carry out either of the following.

- To convert clips to extended clips, press [Clip -> Ext Clip].
- To convert extended clips to clips, press [Ext Clip ->Clip].

Creating a frame memory folder on the device (HDD or Memory Card)

1 In the File menu, press VF5 ‘Frame Mem’ and HF2 ‘Frame Memory Folder.’

The Frame Memory Folder menu appears. The status area shows the device status, and a list of files present on the device.

2 In the pull-down menu of the device selection section, select [HDD] or [Memory Card], and then specify the directory.

3 Press [New].

A keyboard window appears. *(See the section “Menu Operations” in Chapter 2 (Volume 1).)*

4 Enter a name of up to eight characters, and press [Enter].

The name entered appears in the status area as a frame memory folder.

Notes

- The following names cannot be used.
  Default, Flash1, Flash2

CON, PRN, AUX, CLOCK$, NUL, COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, COM9, LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, LPT9

- It is not possible to create 12 or more directories in the frame memory folder.

To rename a frame memory folder

1 Using any of the following methods, select the folder.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	List L	Folder selection	1 and upwards

2 Press [Rename].

A keyboard window appears. *(See the section "Menu Operations" in Chapter 2 (Volume 1).)*

3 Enter a name of up to eight characters, and press [Enter].

The name entered appears in the status area as a frame memory folder.

To delete a frame memory folder

1 With the same operations as in step **1** of the procedure "To rename a frame memory folder," select the folder.

2 Press [Delete].

A confirmation message appears; select "Yes" to carry out the deletion.

Saving the list of frame memory files to hard disk or memory card

If you save all files currently held in frame memory as a single backup data set, by high-speed recording on video tape or other medium, is created a file of file list data that is needed for successful frame memory file restore operation. It is necessary to save this file in a hard disk or memory card.

1 In the File menu, select VF5 'Frame Memory' and HF3 'File Name Data.'

2 In the operating device selection section on the left or right, select [Register].

The register name “FM_Bkup” appears. In the device selection section on the opposite side, the destination for saving automatically appears.

3 As the destination for saving select [HDD] or [Memory Card], then specify the directory.

4 Select the destination file for saving.

5
- To save to disk, press ‘Save.’
- To load from disk, press ‘Load.’

To view details of files

Press ‘File Edit.’
A list of the saved file names appears. You can manipulate these files like any other files.

File Batch Operations

You can batch process all files or registers. Carry out these operations using the File >All, External File >All menu.

Displaying the Batch Operation Menu

1 Press the top menu selection button [FILE].

2 Select VF6 ‘All, External File’ and HF1 ‘All.’

The All menu appears.

Batch Saving Files

To save the data of all registers to hard disk or memory card, use the following procedure.

Notes

- Files saved on the hard disk may be lost if the hard disk fails. Always keep separate backup copies of important files on a memory card.
- Format a memory card before using it for the first time.

For details on formatting a memory card, see “Using a Memory Card” in Chapter 18 (Volume 3).

1 In the device selection area of the All menu, select the destination for saving the files ([HDD] or [Memory Card] and directory). *(See page 847.)*

2 If there are registers you do not want to save, in the <Category> group, exclude them from the operation. To select all registers, press [All Select].

For details of the data to which operations apply, see “Files that can be manipulated” (page 840).

Notes

The frame memory is not selected when you press [All Select]. To apply the setting to frame memory, press [Frame Memory], turning it on. When

frame memory is selected, it is not possible to apply settings to the <Category> group data.

3 Press [→ Save].

A confirmation message appears.
- Select "Yes" to carry out the batch save.
- Select "No" to cancel the batch save.

Batch Loading Files

To load files from hard disk or memory card, use the following procedure.

Notes

It is not possible to recall a file from a category for which recall operations are locked.

For details of the settings, see "Locking the Setup Menu Settings" in Chapter 18 (Volume 3).

1 In the device selection area of the All menu, select where the files are held ([HDD] or [Memory Card] and directory). *(See page 847.)*

2 If there are files you do not want to load, in the <Category> group, exclude them from the operation. To select all files, press [All Select].

For details of the data to which operations apply, see "Files that can be manipulated" (page 840).

Notes

The frame memory is not selected when you press [All Select]. To apply the setting to frame memory, press [Frame Memory], turning it on. When frame memory is selected, it is not possible to apply settings to the <Category> group data.

3 Press [← Load].

A confirmation message appears.
- Select "Yes" to carry out the batch load. (Setup data is first loaded.)
- Select "No" to cancel the batch load.

To execute the load after clearing the data in the destination regions

Before pressing [← Load], press [CLR Before Load], turning it on.
The following categories of data can be cleared before execution of the load.

Effect, Snapshot, Wipe Snapshot, DME Wipe Snapshot, Key Snapshot, Shotbox, and Macro

Notes

When frame memory is selected for the setting, the data is always deleted before recalling.

Batch Copying Files

To copy files between the hard disk and a memory card, use the following procedure.

1 In the operating device selection section to the left of the All menu, select the storage location ([HDD] or [Memory Card] and directory) of the source files *(see page 847)*.

2 In the operating device selection section to the right of the All menu, select the destination storage location ([HDD] or [Memory Card] and directory) *(see page 847)*.

3 If there are files you do not want to copy, remove them from the selection in the <Category> group. To select all files, press [All Select].

For details of the data to which the operation applies, see "Files that can be manipulated" (page 840).

Notes

The frame memory is not selected when you press [All Select]. To apply the setting to frame memory, press [Frame Memory], turning it on. When frame memory is selected, it is not possible to apply settings to the <Category> group data.

4 Press [→ Copy].

This copies the selected files to the specified destination.
If there is already data present in the destination location, a confirmation message appears.

- Select "Yes" to overwrite.
- Select "No" to cancel copying all of the files.

Importing and Exporting Files

You can import or export frame memory image data from or to external media.

Import: to transfer a file in a different format from hard disk or memory card to frame memory as image data.

Export: to change the file format of register data and save the data on hard disk or memory card.

To carry out these operations, use the File >All, External File >Import/Export menu.

For details of the formats supported for import and export, see "Importing or exporting files to or from frame memory" (page 841).

Notes

When the signal format is 1080P, exporting is not possible.

Displaying the Import/Export Menu

In the File menu, select VF6 'All, External File' and HF2 'Import/Export.' The list on the left shows the frame memory registers, and the list on the right shows the content of the external recording media.

Importing Frame Memory Data

As an example, to import data in a bitmap format from a memory card to a frame memory register, use the following procedure.

Notes

When the signal format is 1080P, importing as an extended clip file is not possible.

About the points you should take note of when importing data, see "About import image size" (page 842).

1 In the Import/Export menu, press the file format selection area at the top of the screen to select [Frame Memory (.BMP)].

Files of the selected type are shown in the list on the right.

2 Press one of the buttons at the top left to select the type of data to display.

- To display still image files, press [Still].
- To display clip files, press [Clip].
- To display extended clip files, press [Ext Clip]

All of the selected type of frame memory data appears in the list on the left.

3 In the folder selection area on the left, select the frame memory folder to which you want to import the file.

4 Press the device selection area on the right to select [Memory Card].

5 Select the directory to hold the imported files.

Notes

Files on a memory card to be imported must always be in a directory immediately below root.

6 Using any of the following methods, select the file you want to import.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
4	List R	File selection	1 and upwards

7 Press [← Import].

This transfers the external file to the frame memory register.

Exporting Frame Memory Data

As an example, to save image data from frame memory in a bitmap format on a memory card, use the following procedure.

1 In the Import/Export menu, press the file format selection area at the top of the screen to select [Frame Memory (.BMP)].

Files of the selected type are shown in the list on the right.

2 Press one of the buttons at the top left to select the type of data to display.

- To display still image files, press [Still].
- To display clip files, press [Clip].

• To display extended clip files, press [Ext Clip]

All of the selected type of frame memory data appears in the list on the left.

3 Press the device selection area on the right to select [Memory Card].

4 Select the directory to which to export the files.

Notes

The displayed directories are only those directories immediately below root.

5 In the folder selection area on the left, select the frame memory folder that contains the file you want to export.

6 Using any of the following methods, select the file you want to export from the list on the left.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	List L	Register selection	1 and upwards
2	Num	Number of files to be selected	1 and upwards

7 Press [→ Export].

This adds the image data from the frame memory in a bitmap format on the memory card.
If the specified destination file name already exists, an overwriting confirmation message appears.

- Select “Yes” to overwrite the data.
- Select “No” to cancel the whole file export operation.

Directory Operations

You can create a new directory on hard disk or memory card, rename, or delete a directory.
To carry out these operations, use the File >Configure >Directory menu.

Displaying the Directory Menu

In the File menu, select VF7 ‘Configure’ and HF1 ‘Directory.’
The Directory menu appears.

Creating a New Directory

You can create a maximum of 120 directories on a memory card and NFS, or 200 on an internal hard disk.

1 In the device selection pull-down menu, select [HDD] or [Memory Card]. *(See page 847.)*

2 Press [New].

The keyboard window appears. *(See “Menu Operations” in Chapter 2 (Volume 1).)*

3 Enter a name of not more than eight characters, and press [Enter].

A new directory with the name you have entered appears in the status area.

Notes

The following names cannot be used for directories:

CON, PRN, AUX, CLOCK$, and NUL
COM0, COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8, and COM9
LPT0, LPT1, LPT2, LPT3, LPT4, LPT5, LPT6, LPT7, LPT8, and LPT9

Renaming a Directory

1 In the device selection pull-down menu, select [HDD] or [Memory Card]. *(See page 847.)*

2 Using any of the following methods, select the directory.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	List	Directory selection	1 and upwards

3 Press [Rename].

The keyboard window appears. *(See "Menu Operations" in Chapter 2 (Volume 1).)*

4 Enter a new name of not more than eight characters, and press [Enter].

The new name appears in the status area.

Deleting a Directory

1 In the device selection pull-down menu, select [HDD] or [Memory Card]. *(See page 847.)*

2 Using any of the following methods, select the directory.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	List	Directory selection	1 and upwards

3 Press [Delete].

A confirmation message appears.
- Select "Yes" to delete the directory.
- Select "No" to cancel the deletion.

Copying Files Between Different Unit IDs

Switcher and DME files on the hard disk or a memory card are handled separately for each unit ID.
With the normal file copy operation, it is not possible to copy files between different unit IDs. To copy files between different unit IDs, use the following procedure.

For details of unit IDs, see "Setup for the Whole System" in Chapter 18 (Volume 3).

Displaying the Unit ID Copy menu

In the File menu, select VF7 'Configure' and HF2 'Unit ID Copy.'
The Unit ID Copy menu appears.

Copying files between different unit IDs

To copy files between different unit IDs, grouped by category, use the following procedure.

1 In the Unit ID Copy menu, press the category selection section at the top right of the screen.

2 Press the categories you do not want to select, turning them off.

3 Press [OK].

4 In the operating device selection section on the left list, select the storage location of the source files, and in the operating device selection section on the right list, specify the destination storage location (*see "Selecting a Device for Operations" (page 847)*).

5 Using either of the following methods, select the copy source and copy destination unit IDs.

- Press directly on the list for the copy source on the left of the status area, and on the right for the copy destination.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	List L	Selection of copy source unit ID	1 to 4
2	List R	Selection of copy destination unit ID	1 to 4

6 Press [→Copy].

A confirmation message appears.

- Select “Yes” to carry out the copy to the specified destination of the selected file categories.
- Select “No” to cancel the copy.

Notes

If there is already data present in the copy destination, note that this will overwrite all of the data.

Saving Files Recalled by Autoload

If you save effect setting data, frame memory image files and so on in the PWON_LD directory on the hard disk, then when the system is powered on this data is recalled automatically. This is known as the autoload function.
To save the data to be recalled by the autoload function, use the menu for operations on individual files.

For the data recalled by the autoload function, see "Saving data recalled by autoload" (page 844).

For the setting enabling or disabling the autoload function, see "Setting Automatic Loading of Register Data at Power On (Autoload Function)" in Chapter 18 (Volume 3).

For example, to save snapshot data, use the following procedure.

1 In the File menu, select VF3 'Snapshot' and HF1 'Snapshot.'

The Snapshot menu appears.

2 In the device selection area on the left, select [Register].

3 In the device selection area on the right, select [HDD].

Be sure to select [HDD] as the saving destination.

4 Select the PWON_LD directory.

The PWON_LD directory is automatically created when [Power On File Load] is set to On in the System >Start Up menu. If set to Off, the directory does not appear.

5 Using any of the following methods, select the data to be saved, and the file in which to save it.

- To select all files within the list, press [ALL] below the list.
- To select multiple files, turn the knobs to select in the following ranges.

Knob	Parameter	Adjustment	Setting values
1	List L	Select the first register whose data is to be saved	1 to 99
2	List R	Select the first file to which data is to be saved	1 to 99
3	Num	Number of registers to be selected	1 to 99

- To select a single file, press the arrow keys to scroll the reverse video cursor, or directly press on the list in the status area.

6 Press [→Save].

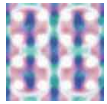
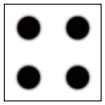
The data from the selected registers is saved in the specified destination. If the specified destination already contains data, a confirmation message appears.

- Select “Yes” to overwrite the existing data.
- Select “No” to cancel the entire saving operation.

Appendix (Volume 2)

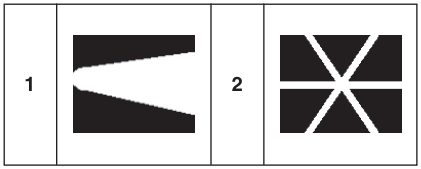
SpotLighting

Texture Patterns

1		2		3		4	
5		6		7		8	
9		10		11		12	
13		14		15		16	
17		18		19		20	
21		22		23		24	
25		26		27		28	
29		30					

Material provided by Digital Archive Japan, INC

Shape Patterns



Functional Differences With Models of DME

Function	Menu number	MVE-8000A	MVE-9000	See
Selection of signal to insert in the border	4111	Flat Color only	Flat Color Ext Video Mix Color	page 508
Key Border	4113	No	Cannot be turned on when Glow is on.	*page 513*
Art Edge	4114	No	Yes	*page 514*
Flex Shadow	4115	No	Yes	*page 522*
Wipe Crop	4116	No	Yes	*page 529*
Color Mix	4117	No	Yes	page 533
Defocus/Blur	4121	Cannot be turned on when Glow is on.	Yes	*page 535*
Mask	4127	Yes [a)]	Yes	*page 548*
Adjustment of entire image brightness in Lighting/Spotlighting (parameter Total Ambient)	4151 4156	No	Yes	page 586 page 608
Setting the bar mode of the highlight area	4151	No	Yes	page 589
Adjustment of color of the diffuse light area (parameter Bar Diffuse Color)	4151	No	Yes	page 590
Selection of signal to insert in the trail afterimage portion	4152	Freeze Video Flat Color Hue Rotate	Without limitation	page 592
Combine process for Trail	4152	No	Yes	page 594
Defocus function for Trail	4152	No	Yes	page 594
Combine process for Keyframe Strobe	4154	No	Yes	page 599
Wind	4155	No	Yes	*page 599*
Spotlighting	4156	No	Yes	*page 601*
Selection of signal to insert in the background	4161	Flat Color only	Flat Color Ext Video Mix Color	page 619
Interpolation settings	4163	Yes (SD only)	Yes (both SD/HD)	page 622
Anti-moire filter	4163	Yes (HD only)	No	page 624

Function	Menu number	MVE-8000A	MVE-9000	See
Flex shadow axis settings	4164	No	Yes	page 490
Dim and Fade	4173	No	Yes	*page 546*
Glow	4174	Cannot be turned on when Defocus/ Blur is on.	Cannot be turned on when Key Border is on.	*page 547*
Combiner depth settings (three-dimensional crossing function) (parameter Depth)	4211	No	Yes	page 632
Adding user texture patterns (for Spotlighting)	7316.9	No	Yes	“Adding User Texture Patterns” in Chapter 18 (Volume 3)
Setting AUX bus output/reentry input	7337.7	It is not possible to make settings for DME 1 to 8 Ext In.	It is not possible to make settings for DME 1 to 8 Ext In.	“Setting the AUX Bus Output and Reentry Input” in Chapter 20 (Volume 3)
1080P supported	7313.1	Yes	No	“Setting the Signal Format (Format Menu)” in Chapter 18 (Volume 3)

a) Effect groups 1 and 2 cannot be selected at the same time. Pattern 304 (round corner) is not supported.

Macro File Editing Rules

When editing a macro file, follow the rules described below.

Macro File Syntax

The macro file syntax is as follows.

File format

The file is in CSV (comma-separated value) format.

Newline code

CR (ASCII code 0D), LF (ASCII code 0A), or CRLF may be used.

Statement syntax

There are four types of statement, each terminated by a newline code.

File header: This must always appear as the first line of the file. It comprises 28 characters, as follows.
Example: PNL (space) 0001PNL_rrrr.PMRnnnnnnnn
rrrr: macro register number (0001 to 0099)
nnnnnnnn: In a file created on the switcher, this is a register name automatically set by the switcher.
When creating a new file, it is recommended to set this to be the same as the file name *(see page 880)*.
The name is limited to eight characters.
The following characters may not be used.
space, \, /, :, ;, , (comma), . (dot), <, >, *, ?, “ ”

Comment: Begins with “#”. The content of the line following the “#” up to the next newline has no effect on macro execution, and can be used as a comment.

Notes

You can only use comments in files saved to the hard disk or a memory card. When you load a macro file into a register, the comments are discarded.

Event statement: Begins with “Event?”, and defines the macro event. *(See next item, “Syntax of Event and Continue Statements.”)*

Continue statement: Begins with “Continue?”, and defines the macro event. *(See next item, “Syntax of Event and Continue Statements.”)*

Some events cannot be used. (*See "Correspondence Between Events and Symbols" (page 881).*)

Syntax of Event and Continue Statements

An event can be written with an Event statement only, or with an Event statement followed by any number of Continue statements. The Event statements and Continue statements have the following syntax.

Word separator character

Use "," (comma).

Ignored

Spaces and tabs are ignored. There is no distinction between lowercase and uppercase. If two or more separator characters appear consecutively, later ones are ignored. Separator characters at the beginning of a line are also ignored.

Content of line

Must begin with "Event?" or "Continue?", followed by symbols and parameters.

Event?,[symbol], [parameter], [parameter], ...
Continue?,[symbol], [parameter], [parameter], ...

symbol: ASCII character string showing the type of event. *(See "Correspondence Between Events and Symbols" (page 881).)*

parameter: Shows details of an event. Consists of parameter names and arguments, and these must appear in pairs. The number and type of parameters depends on the event. *(See "Symbols and Parameters" (page 882).)*

If the same parameter appears twice or more, the last occurrence is valid.

How to use Continue statements

When a single parameter has more than one argument, use a Continue statement. The following example is of a snapshot event.
An event to recall a snapshot in region M/E-1 is written as:

```
Event?,Snapshot,Region?,ME1,Register?,1,Attribute?,Off,Time?,Current
```

In the Event statement, only one region can be specified.
To specify both regions M/E-1 and DME1, use a Continue statement, thus:

```
Event?,Snapshot,Region?,ME1,Register?,1,Attribute?,Off,Time?,Current
Continue?,Snapshot,Region?,DME1,Register?,1,Attribute?,Off,Time?,Current
```

To specify more than one argument for a region parameter, follow the Event statement by a Continue statement on the next line.

File Name

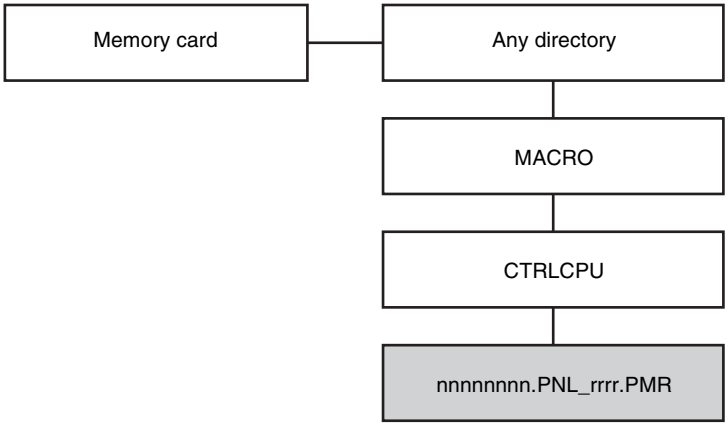
Set the file name as follows.

Example: nnnnnnnn.PNL_rrrr.PMR
nnnnnnnn: In a file created on the switcher, this is a register name automatically set by the switcher.
The name is limited to eight characters.
The following characters may not be used.
space, \, /, :, ;, , (comma), . (dot), <, >, *, ?, “ ”
rrrr: macro register number (0001 - 0099)

Saving and Recalling a File

For a newly created file, if you create a directory on the memory card *(see figure below)*, and move the file to the prescribed location, you can then recall it in the File >All, External File menu.

Notes
When amending a file saved on the switcher, be sure to save it in the original directory.



Path example: Memory Card\Sample\MACRO\CTRLCPU\
nnnnnnnn.PNL_rrrr.PMR

Errors

If any of the following problems occur, it is not possible to recall the file. Attempting to recall the file will produce an error message.

- If there is a syntax error.
- If a required parameter is not present.

For details of error messages, see "Error Messages" in Appendix (Volume 3).

Correspondence Between Events and Symbols

For details of events, see "Events" *(page 784)*.

Event	Symbol	Using Continue
Cross-point selection in the auxiliary bus control block	AuxXpt	No
Cross-point selection in the auxiliary bus control block in router control mode	RouterXpt	Yes
Cross-point selection in the cross-point control block	MEXpt	Yes
Auto transition and take in the transition execution section	MEAutoTransition	Yes
Cut in the transition execution section	MECut	No
Transition type selection	TransitionType	No
Next transition setting	NextTransition	No
Pattern limit on/off	PatternLimit	No
Fade-to-black execution	FadeToBlack	No
Auto transition and take in the independent key transition execution section	KeyAutoTransition	Yes
Key insertion and deletion in the independent key transition execution section	KeyCut	Yes
Independent key transition type selection	KeyTransitionType	No
VTR/DDR/clip start point setting	StartTc	Yes
VTR/DDR/clip playback	Play	Yes
VTR/DDR/clip stop	Stop	Yes
VTR/DDR/clip cue-up	Cue	Yes
VTR/DDR/clip fast forward	FF	Yes
VTR/DDR/clip rewind	Rewind	Yes

Event	Symbol	Using Continue
Disk recorder/Extended VTR file recall	DiskFileLoad	No
Recall snapshot	Snapshot	Yes
Recall key snapshot	KeySnapshot	Yes
Recall wipe snapshot	WipeSnapshot	Yes
Recall DME wipe snapshot	DMEWipeSnapshot	Yes
Recall shotbox	Shotbox	No
Recall master snapshot	MasterSnapshot	No
Recall master timeline	MasterTimelineRecall	No
Recall effect	TimelineRecall	Yes
Execute effect	TimelineRun	Yes
Rewind keyframe	TimelineRewind	Yes
Fast forward effect	TimelineFF	Yes
Effect execution direction selection (normal)	TimelineDirectionNormal	Yes
Effect execution direction selection (reverse)	TimelineDirectionReverse	Yes
Effect execution direction selection (normal/reverse on)	TimelineNormalReverseOn	Yes
Effect execution direction selection (normal/reverse off)	TimelineNormalReverseOff	Yes
Pause [a)]	Pause	No
Recall of function assigned to memory recall button/user preference button	UtilityButton	No
Recall of function assigned to the key 2 row cross-point buttons	Key Bus Utility Button	No
Frame memory clip loop on/off	FMLoop	Yes
Menu macro recall and execution	MenuMacroRun	No
Recall of frame memory clip	ClipRecall	No
Record with device	DeviceRecord	Yes

a) For details of pause events, see *"Macro Execution" (page 788)*.

Symbols and Parameters

n: indicates a numeral 0 to 9.
x: indicates an alphanumeric character.

Symbol	Parameter name	Arguments	Description
MEXpt	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	MEBus?	A, B, Key1 to Key8, Key1Source to Key8Source, Utility1, Utility2, DMEExternalVideo	Applicable bus
	Xpt?	1 to 300	Main table cross-point button number set in the Xpt Assign menu
	VideoKey?	Video, Key	Signal type selected on the applicable bus (video signal or key signal)
AuxXpt	AuxBus?	EditPreview, AUX1 to AUX48, FrameMemory1, FrameMemory2, DME1Video to DME8Video, DME1Key to DME8Key, DME1Video2nd to DME8Video2nd (a), DME1Key2nd to DME8Key2nd (b), DMEUtility1, DMEUtility2, CCR1, CCR2	Applicable AUX bus (a): DMEnVideo2nd= Bus for selecting back video signal of DMEn channel (n=1 to 8), (b): DMEnKey2nd= Bus for selecting back key signal of DMEn channel (n=1 to 8)
	Xpt?	1 to 300	Cross-point button number in the main table set in the Xpt Assign menu
	VideoKey?	Video, Key	Type of signal (video signal or key signal) to be selected on the applicable bus

Symbol	Parameter name	Arguments	Description
MEAutoTransition	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	Time?	Current (a), 0 to 999	Transition rate (number of frames) (a): Mode in which the current value set on the transition control block is used
	ABusXpt?	Current (a), 1 to 300	A bus or B bus cross-point button number. Use the button number of the main table set in the Xpt Assign menu. (a): Mode in which the cross-point number set for the current A bus or B bus is used
	BBusXpt?	Current (a), 1 to 300	
MECut	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
KeyAutoTransition	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	Key?	Key1 to Key8	Key of the applicable independent key transition control block
	Time?	Current (a), 0 to 999	Transition rate (number of frames) (a): Mode in which the current value set on the independent key transition control block is used
	Direction?	ToOn (a), ToOff (b), Any (c)	Transition execution mode (a): Key is inserted (b): Key is deleted (c): Transition is always executed
KeyCut	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	Key?	Key1 to Key8	Key of the applicable independent key transition control block
	Direction?	ToOn (a), ToOff (b), Any (c)	Transition execution mode (a): Key is inserted (b): Key is deleted (c): Transition is always executed

Symbol	Parameter name	Arguments	Description
Play	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
	Mode?	Normal (a), Recue (b), Loop (c)	Playback mode (a): Normal mode As for Frame Memory 1 Clip to Frame Memory 8 Clip, settings are ignored and operation mode is fixed to “Normal.” (b): Recue mode (c): Loop mode
Cue	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
	Timecode?	Current (a), hh:mm:ss:ff	Start point timecode hh=hours (00 to 23) As for Frame Memory 1 Clip to Frame Memory 8 Clip, hh is fixed to “01.” mm=minutes (00 to 59) ss=seconds (00 to 59) ff=frames (00 to 29) (a): Mode in which the currently set timecode is used
Stop	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
FF	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
Rewind	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
DiskFileLoad	Device?	1 to 12	Applicable device
	FileName?	File Name	Name of file being set (max. 23 characters)

Symbol	Parameter name	Arguments	Description
Snapshot	Region?	ME1 to ME4, PP, User1 to User8, DME1 to DME8, Router	Applicable region
	Register?	1 to 99	Applicable register number
	Attribute?	Off, Dissolve, AutoTransition, Dissolve&AutoTransition	Applicable snapshot attributes
	Time?	Current (a), 0 to 999	Duration of effect dissolve (number of frames) (a): Mode in which the currently set value is used
KeySnapshot	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	Key?	Key1 to Key8	Applicable key
	Register?	1 to 4	Applicable register number
WipeSnapshot	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	Register?	1 to 10	Applicable register number
DMEWipeSnapshot	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	Register?	1 to 10	Applicable register number
TimelineRecall	Region?	ME1 to ME4, PP, User1 to User8, DME1 to DME8, PBus, Device1 to Device12, GPI	Applicable region
	Register?	1 to 399	Applicable register number
TimelineRun	Region?	ME1 to ME4, PP, User1 to User8, DME1 to DME8, PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineRewind	Region?	ME1 to ME4, PP, User1 to User8, DME1 to DME8, PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineFF	Region?	ME1 to ME4, PP, User1 to User8, DME1 to DME8, PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block

Symbol	Parameter name	Arguments	Description
Shotbox	Register?	1 to 99	Applicable register number
Pause	Time?	0 to 999	Time for which macro is paused (number of frames)
StartTc	Device?	1 to 12, FrameMemory1Clip to FrameMemory8Clip	Applicable device
MasterSnapshot	Register?	1 to 99	Applicable register number
MasterTimelineRecall	Register?	1 to 99	Applicable register number
RouterXpt	DestinationButton?	1 to 128	Router cross-point button
	Source?	1 to 1024	Router source number
	Level?	1 to 8	Router level selection
PatternLimit	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	Status?	ToOn (a), ToOff (b), Any (c)	Pattern limit status (a): Pattern limit applies (b): Pattern limit does not apply (c): The pattern limit status always changes
TransitionType	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	TransitionType?	Mix, NAM, SuperMix, PresetColorMix, Wipe, DMEWipe, FM1&2Clip, FM3&4Clip, FM5&6Clip, FM7&8Clip	Transition type
KeyTransitionType	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	Key?	Key1 to Key8	Key of the applicable independent key transition control block
	Direction?	On (a), Off (b), Any (c)	Independent key transition execution mode (a): Key is inserted (b): Key is deleted (c): Transition is always executed
	KeyTransitionType?	Mix, Wipe, DMEWipe, Cut	Transition type of the independent key transition control block

Symbol	Parameter name	Arguments	Description
NextTransition	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	All?	On, Off	Applicable next transition
	KeyPriority?	On, Off	Applicable next transition
	BKGD?	On, Off	Applicable next transition
	Key1? to Key8?	On, Off	Applicable next transition
FadeToBlack	Time?	Current (a), 1 to 999	Transition rate (number of frames) (a): Mode in which the current value set on the fade to black control block is used
TimelineDirectionNormal	Region?	ME1 to ME4, PP, User1 to User8, DME1 to DME8, PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineDirectionReverse	Region?	ME1 to ME4, PP, User1 to User8, DME1 to DME8, PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineNormalReverseOn	Region?	ME1 to ME4, PP, User1 to User8, DME1 to DME8, PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
TimelineNormalReverseOff	Region?	ME1 to ME4, PP, User1 to User8, DME1 to DME8, PBus, Device1 to Device12, GPI, Current (a)	Applicable region (a): Mode in which operation takes place in the region currently specified in the numeric keypad control block
UtilityButton	UtilityModule?	UserPrefs, UtilityBox	Applicable control block
	Button?	1 to 96	Applicable button
	UtilityStatus?	On, Off, Current (a)	Status of function assigned to button (a): Operates according to currently assigned function
FMLoop	Device?	FrameMemory1Clip to FrameMemory8Clip	Applicable clip
	FMLoopMode?	On (a), Off (b)	Frame memory clip loop on/off (a): Loop is enabled (b): Loop is disabled

Symbol	Parameter name	Arguments	Description
MenuMacroRun	Register?	1 to 99	Applicable register number
KeyBusUtilityButton	ME?	ME1 to ME4, PP	Control blocks on the applicable bank
	BANK?	Bank1 to Bank5	Applicable bank
	KeyBusUtilityButton?	1 to 32	Applicable button
	UtilityStatus?	On, Off, Current (a)	Status of function assigned to button (a): Operates according to currently assigned function
ClipRecall	Device?	FrameMemory1Clip to FrameMemory8Clip	Applicable clip
	ClipType?	Pair, Single	File type of clip (pair/single)
	Clip?	Clip Name	Name of clip (up to four characters)
Device Record	Device?	1 to 12	Applicable device

Example of File Contents

Line	Content	Description
1	PNL 0001PNL_0000.PMRMACROREG	File header
2	#,Sample,	Comment
3	Event?,Snapshot,Region?,ME1,Register?,1,Attribute?,Off,Time?,Current	Simultaneously recall snapshots from register number 1 in the M/E-1 and DME1 regions.
4	Continue?,Snapshot,Region?,DME1,Register?,1,Attribute?,Off,Time?,Current	
5	Event?,MEXpt,ME?,ME2,MEBus?,A,Xpt?,121,VideoKey?,Video	Select button number 121 on the M/E-2 A bus.

About the Macro Attachment List Display

The Button column in the macro attachment list displayed in the status area of the Macro >Attachment menu screen shows character strings which identify macro attachment assigned buttons. Each of these character strings is in fact a combination of characters shown in the Button(1), Button(2), and Button(3) columns in the following tables.
For example, if Block and Button(1) to Button(3) are combined as:

Block: P/P XPT
Button(1): UTIL1 Bus
Button(2): V
Button(3): XPT2

The Button column in the macro attachment list in the Macro >Attachment menu screen shows “UTIL1 Bus V XPT2,” which means “utility 1 bus, video signal, cross-point number 2.”

M/E and PGM/PST Banks

The following table shows only the macro attachment assignable buttons in the PGM/PST bank.
For the M/E-1 (M/E-2 to M/E-4) bank, “P/P” in the Block Select and Block columns changes to “M/E-1” (“M/E-2” to “M/E-4”) and “DSK” in the Button(1) and Button(2) columns changes to “KEY.” The contents of the Button(3) column do not change.

Block Select	Block	Button(1)	Button(2)	Button(3)
P/P	P/P XPT	A Bus B Bus DSK1 Bus : DSK8 Bus	(nothing) Shift	XPT 1 : XPT 128
		DSK1 Src Bus : DSK8 Src Bus	V K V Shift K Shift	
		Sub A Bus Sub B Bus Sub DSK1 Bus : Sub DSK8 Bus Main&Sub A Bus Main&Sub B Bus Main&Sub DSK1 Bus : Main&Sub DSK8 Bus	(nothing) Shift	
		Sub DSK1 Src Bus : Sub DSK4 Src Bus Main&Sub DSK1 Src Bus : Main&Sub DSK8 Src Bus	V K V Shift K Shift	

Block Select	Block	Button(1)	Button(2)	Button(3)
P/P	P/P XPT	UTIL1 Bus UTIL2 Bus EXT DME Bus Sub UTIL1 Bus Sub UTIL2 Bus Sub EXT DME Bus Main&Sub UTIL1 Bus Main&Sub UTIL2 Bus Main&Sub EXT DME Bus	(nothing) Shift	XPT 1 : XPT 128
		EDIT PVW AUX 1 : AUX 48 FM1 FM2	V K V Shift K Shift	
		DMEUtility1 DMEUtility2	V K V Shift K Shift	
		DME1V : DME8V DME1K : DME8K	(nothing) Shift	
		CCR1 CCR2	V K V Shift K Shift	
		P/P UTIL1 P/P UTIL2 M/E-1 UTIL1 M/E-1 UTIL2 M/E-2 UTIL1 M/E-2 UTIL2 M/E-3 UTIL1 M/E-3 UTIL2 M/E-4 UTIL1 M/E-4 UTIL2	V K V Shift K Shift	

Block Select	Block	Button(1)	Button(2)	Button(3)
P/P	P/P XPT	DSK1 : DSK8 M/E-1 KEY1 : M/E-1 KEY8 M/E-2 KEY1 : M/E-2 KEY8 M/E-3 KEY1 : M/E-3 KEY8 M/E-4 KEY1 : M/E-4 KEY8	V V Shift	XPT 1 : XPT 128
		DSK1 Src : DSK8 Src M/E-1 KEY1 Src : M/E-1 KEY8 Src M/E-2 KEY1 Src : M/E-2 KEY8 Src M/E-3 KEY1 Src : M/E-3 KEY8 Src M/E-4 KEY1 Src : M/E-4 KEY8 Src	V K V Shift K Shift	
		P/P EXT DME M/E-1 EXT DME M/E-2 EXT DME M/E-3 EXT DME M/E-4 EXT DME		

Block Select	Block	Button(1)	Button(2)	Button(3)
P/P	P/P Trans	(blank) DSK1 : DSK8 Sub Sub DSK1 : Sub DSK8 Main&Sub Main&Sub DSK1 : Main&Sub DSK8	MIX a) NAM a) SUPER MIX a) PST COLOR MIX a) WIPE a) DME a) AUTO TRANS CUT ALL a) KEY PRIOR a) BKGD a) DSK1 a) : DSK4 a) NORM a) NORM/REV a) REV a) PTN LIMIT a) LIMIT SET a) KF a) Fader PRIOR SET a) TRANS PVW a)	(nothing)

a) These buttons can be assigned with their functions in the setup menu. They can be assigned with any of the following functions: transition type selection (MIX, NAM, SUPER MIX, PST COLOR MIX, WIPE, DME, FM1&2, FM3&4, FM5&6, FM7&8), next transition selection (BKGD, DSK1 to DSK8, PRIOR, ALL), wipe direction selection (NORM, NORM/REV, REV), PLAY, CUEUP, STOP, and PTN LIMIT.

Other Blocks

Block Select	Block	Button(1)	Button(2)	Button(3)
Others	Keyframe	RUN REWIND FF NORM REV NORM/REV	(nothing)	(nothing)
	Joystick Trackball	DEV	CLR WORK BUFR (CUEUP) Y (PLAY) TRGT (STOP) AXIS LOC (START TC)	
	Device Control	(nothing)	CUE UP PLAY STOP START TC	
	Utility Box 1 Utility Box 2 Menu	Utility 1 : Utility 96	(nothing)	
	DSK/FTB	Key1 Key2	AUTO TRANS KEY_ON FTB	
	FTB	(blank)	FTB	
	DSK Fader 1 : DSK Fader 4	P/P M/E1 M/E2 M/E3 M/E4	KEY1 : KEY8	MIX WIPE DME CUT TAKE KEY_ON

Menu Operations Not Recorded in a Menu Macro

The menu operations not recorded in a menu macro comprise some operations common to all menus and some operations inhibited in individual menus.

Operations not recorded in menu macros, common to all menus

- Recalling a menu
- Delegation operations: region selection, channel delegation, operations assigning a parameter to a knob, and so forth
- Parameter setting operations using the knobs, trackball, or joystick (value input operations from the numeric keypad are recorded)

Operations not recorded in menu macros, in individual menus

Menu number	Menu including operations not recorded
0011 to 0023	All menus under Home
2544	FrameMemory >File >Move
2545	FrameMemory >File >Delete
2546	FrameMemory >File >Rename
2551	FrameMemory >File >Folder
2561	FrameMemory >External Device >Format
2562	FrameMemory >External Device >Backup/Restore
5333	Device >DDR/VTR >File List
5412 to 5437	All menus under Macro
7111 to 7172	All menus under File
7311 to 7317.1	All menus under Engineering Setup >System
7327	All menus under Engineering Setup >Panel >Maintenance

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MVS-8000X
System (SY)
4-177-908-**02** (1)

Sony Corporation

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SONY

MVS-8000X System

(With CCP-9000 Series Center Control Panel)

User's Guide

Multi Format Switcher System

Volume 3 English
1st Edition (Revised 1)
Software Version 10.00 and Later

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Chapter 18 System Setup (System)

Setup for the Whole System

Carry out operations relating to setup for the whole system in the Engineering Setup menu.
To access the Engineering Setup menu, press the top menu selection button [ENG SETUP].
Here the "whole system" refers to all devices connected on the Control LAN. The DCU is connected through the control panel, but is also included in the "whole system."

For an overview of setup, see "Setup" in Chapter 1 (Volume 1).

Setting the unit ID

When there are two switchers and connected DME units on the same network, it is necessary to set the unit ID on each device, as follows.

Switcher	ID
1st switcher	1
2nd switcher	2

DME	ID
DME1 for 1st switcher (channels 1 to 4)	1
DME2 for 1st switcher (channels 5 to 8)	2
DME1 for 2nd switcher (channels 1 to 4)	3
DME2 for 2nd switcher (channels 5 to 8)	4

When the signal format is 1080P

You can connect up to four MVE-8000A units to the first switcher. The unit IDs for these DMEs are assigned as follows.

DME	ID
DME1 for 1st switcher (Ch1/2)	1
DME2 for 1st switcher (Ch3/4)	2
DME3 for 1st switcher (Ch5/6)	3
DME4 for 1st switcher (Ch7/8)	4

Notes

The signal format for the second switcher cannot be changed to 1080P.

For more details of how to make the unit ID settings, refer to the installation manual for the particular device.

Network Settings (Network Config Menu)

This provides automatic configuration of all devices connected to the Data LAN (excluding the DCU), and displays a list of them.
To make the network settings, use System >Network Config menu.

To display the Network Config menu
In the Engineering Setup menu, select VF1 'System' and HF1 'Network Config.'
The status area shows the device ID, and Control LAN and Data LAN IP addresses for each device excluding the DCU.

Making the Network Settings

Checking IP address automatically

1 In the System >Network Config menu, press [Auto Config].

This automatically checks all devices (excluding the DCU) connected to the Data LAN.

2 Once switch to another menu, then display the Network Config menu again.

Now the status area of the System >Network Config menu shows the results of the automatic check.

Notes
Be sure to carry out this operation after reconfiguring the system, or after a software upgrade.

Using the NFS server

The address of the currently selected NFS server appears in the [NFS Server Address] box in the lower status area.

Notes
When the control panel is reset, no NFS server can be used via the Network Config menu. In this case, to use an NFS server, make sure to carry out the following procedure.

1 In the System >Network Config menu, press [NFS Server].

A keyboard window appears.

2 Enter the address of the server you want to use.

3 Press [NFS Mount].

System Settings (System Config Menu)

To make the system settings, use the System >System Config menu. Specify the hierarchical relationship of the devices.

To display the System Config menu

In the Engineering Setup menu, select VF1 'System' and HF2 'System Config.'

Notes

After changing the following settings, be sure to press [Execute] to save the new values. If you want to cancel the setting changes without saving them, press [Clear].

Device hierarchical relationship setting

- **Panel Assign:** Specify the switcher controlled by a control panel.
- **Switcher Assign:** Specify the DME connected to a switcher.

Specifying the Switcher Controlled by the Control Panel

The number of control panels that can be connected to a single switcher depends on the signal format setting.
1080P: 2
Other than 1080P: 4

1 In the System >System Config menu, press the [Panel Assign] button.

The Panel Assign menu appears.

2 Select the switcher to be controlled by the selected control panel, as follows.

In the <1st Switcher> group, set either [SWR1] or [SWR2] to On to select the switcher to be operated.
In the <2nd Switcher> group, set both [SWR1] and [SWR2] to Off.

3 To set the selected control panel as tally control master panel, press [Tally Master], turning it on.

If there are multiple panels and processors, the control panel for which [Tally Master] is set to On carries out tally control for the whole system.

Notes

When there are multiple control panels, make sure that one of them has [Tally Master] set to On. When you change the master panel, be sure to copy and save the setup tally (TLY) and router (RTR) data in the File menu, and make the same settings for other panels.

If you load the master panel tally data into a panel with a different unit ID, then [Tally Master] changes to Off.

To select the lighting mode of the switcher bus selection buttons on the remote panel

When switching buses with the MKS-8080/8082 AUX Bus Remote Panel or other remote panel connected via S-Bus data link, you can select the lighting mode of the bus selection buttons.

In the System >System Config >Panel Assign menu, select either of the following in the <S-Bus Remote Sw'er Status> group.

Mode 1: The inhibited buttons do not light even when pressed, and the other buttons light after a longer delay time than in Mode 2.

Mode 2: The delay time for button lighting is reduced, but even the inhibited buttons may light for a moment when pressed.

Notes

- Make sure that [Tally Master] is set to On.
- When simple connection is used between the center control panel and remote panel *(see page 1117)*, this setting is disabled.

Specifying the DME Connected to the Switcher

1 In the System >System Config menu, press [Switcher Assign].

The Switcher Assign menu appears.

2 Using either of the following methods, select the switcher to which the settings apply.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

The selected switcher appears in reverse video.

3 Make the DME settings as follows.

- **When making DME settings for SWR1,** for the first DME, select [DME1] in the <1st DME> group. For the second DME, select [DME2] in the <2nd DME> group. When a second DME is not connected, turn all buttons in the <2nd DME> group off.

- **When making DME settings for SWR2,** for the first DME, select [DME3] in the <1st DME> group. For the second DME, select [DME4] in the <2nd DME> group. When a second DME is not connected, turn all buttons in the <2nd DME> group off.

When the signal format is 1080P

You can connect up to four MVE-8000A units to SWR1.
For SWR1, you can select a DME combination as follows, depending on the number of DMEs connected.
Only one DME connected: DME1
Tow DMEs connected: DME1 and DME2
Three DMEs connected: DME1, DME2, and DME3
Four DMEs connected: DME1, DME2, DME3, and DME4

Depending on the selected DME combination, press [DME1] (first DME), [DME2] (second DME), [DME3] (third DME), or [DME4] (fourth DME), turning them on.
For SWR2, the signal format cannot be changed to 1080P.

Enabling the FM Data Port of the Switcher

With the FM data port enabled, frame memory data can be transferred in a short time between the switcher and the control panels.

Notes
If multiple control panels are in use, [FM Data Port Enbl] can be turned on for only one control panel per switcher.

1 In the System >System Config menu, press [Switcher Assign].

The Switcher Assign menu appears.

2 Using any of the following methods, select the switcher to be set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

The selected switcher is displayed in reverse video.
If there is only one switcher on the network, make the setting only for SWR1 (the first switcher).

3 Press [FM Data Port Enbl], turning it on.

Setting the Signal Format (Format Menu)

To set the format, that is, the frame frequency and number of scan lines handled by each device, use the System >Format menu.

To display the Format menu

In the Engineering Setup menu, select VF1 ‘System’ and HF3 ‘Format.’

Notes

After changing any of the following settings, be sure to press [Execute] (or [FC Format Execute] for changing the format converter signal format) to save the new values. If you want to cancel the settings and return to the original state, press [Clear] without pressing [Execute] or [FC Format Execute]. When you press [Execute], some data is lost (such as frame memory images). If you press [FC Format Execute], memory is not initialized, and this data is not lost.

Setting the Signal Format

Specify the signal format to be handled by the devices.
The combinations of signal formats that can be selected are as follows.

System	Field frequency	Effective number of scan lines
HD system	50	1080i
	59.94	
	50	1080P
	59.94	
	23.976	1080PsF
	24	
	25	
	29.97	
	50	720P
	59.94	
SD system	59.94	480i
	50	576i

1 In the System >Format menu, select the device for operations.

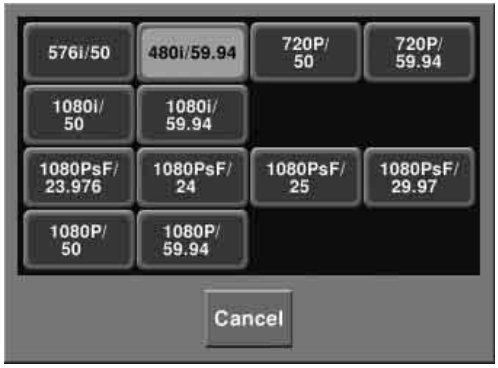
- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

• Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Device	Selection of device for operations	1 and upwards

2 Press [Signal Format].

A pop-up window appears.



3 Press the button for the desired signal format.

Switching the Input Reference Signal for HD System

This changes the input reference signal.

- **Tri Sync:** tri-level sync for an HD system
- **BB (Black Burst):** black burst or sync

The following table shows the relation between signal format and the frequency of a signal that can be used as the input reference signal.

Signal format	Input reference signal		
	Tri Sync	Black burst	
1080PsF/29.97 1080P/59.94, 1080i/59.94	59.94	Black Burst 59.94	Sync 59.94
1080PsF/25 1080P/50, 1080i/50	50	Black Burst 50	Sync 50
1080PsF/23.976	47.952	Black Burst 59.94 a)	Sync 59.94 a)
1080PsF/24	48	–	
720P/59.94	59.94	Black Burst 59.94	Sync 59.94
720P/50	–	Black Burst 50	Sync 50

a) Interlock mode

Setting Conversion Formats

Installing the MKS-8450X Format Converter Board in the MVS-8000X enables signal video format conversions.
This operation is valid only when BB is selected in the <Ref Input Format> group.

Format converter

Installing the Format Converter Board in the switcher enables the following signal video format conversions.

- Up-conversion: from SD (4:3) to HD (16:9)
- Down-conversion: from HD (16:9) to SD (4:3)
- Cross-conversion: from HD (720P) to HD (1080i), or from HD (1080i) to HD (720P)

The maximum number of input signals for which format conversion is possible is 16 (or 8 when only one MKS-8450X board is installed), and the maximum number of output signals is 4 (two outputs when the MKS-8160X is not installed).

Notes

- After format conversion, input and output signals have one-frame delays with respect to the reference signals. To synchronize converted input signals and unconverted input signals, it is possible to delay the unconverted input signal by one frame.

  For details, see "To delay unconverted input signals by one frame" (page 912).

- When the input reference signal for HD system is set to Tri Sync, the format converter function is not available.

  For details, see "Switching the Input Reference Signal for HD System" (page 909).

Format combinations allowing conversion

The supported combinations of switcher signal format and format converter (inputs 1 to 8 and inputs 9 to 16) are as follows.

Notes

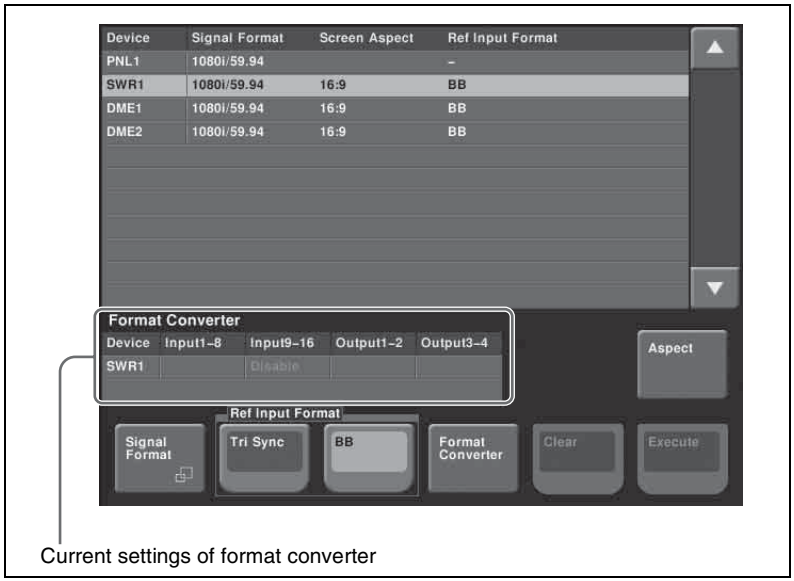
The format converter cannot be used when the signal format is 1080PsF.

Switcher signal format setting	Format converter signal format setting			
	FC Input 1-8	FC Input 9-16	FC Output 1-2	FC Output 3-4
480i/59.94	720P/59.94 1080i/59.94	720P/59.94 1080i/59.94	720P/59.94 1080i/59.94	720P/59.94 1080i/59.94
576i/50	720P/50 1080i/50	720P/50 1080i/50	720P/50 1080i/50	720P/50 1080i/50
720P/50	576i/50 1080i/50	576i/50 1080i/50	576i/50 a) 1080i/50 a)	576i/50 a) 1080i/50 a)
720P/59.94	480i/59.94 1080i/59.94	480i/59.94 1080i/59.94	480i/59.94 a) 1080i/59.94 a)	480i/59.94 a) 1080i/59.94 a)
1080i/50	576i/50 720P/50 1080i/50	576i/50 720P/50 1080i/50	576i/50 720P/50	576i/50 720P/50
1080i/59.94	480i/59.94 720P/59.94 1080i/59.94	480i/59.94 720P/59.94 1080i/59.94	480i/59.94 720P/59.94	480i/59.94 720P/59.94

a) Output signals converted from 720P format are not synchronized to the switcher input reference signal.
On the destination device, do not use an external reference signal, but use an operation mode that can synch to the format converter output signal.

Setting the conversion format

1 Display the System >Format menu.



2 Click [Format converter].

The Format Converter menu appears.

3 To select the conversion format for format converter inputs 1 to 8, press [Input 1-8 Format] in the <FC Input> group.

A pop-up window appears.

4 Press the button for the desired signal format.

5 To select the conversion format for format converter inputs 9 to 16, press [Input 9-16 Format], then press the button for the desired signal format in the <FC Input> group.

6 To set the output format for format converters 1 and 2, in the <FC Output> group press [Output 1-2 Format], then press the button for the desired format.

7 To set the output format for format converters 3 and 4, in the <FC Output> group press [Output 3-4 Format], then press the button for the desired format.

To delay unconverted input signals by one frame

For the format converter input signal, select the same format as the system format.

Notes

This setting is only possible when the system format is 1080i.

Setting the Screen Aspect Ratio (Format Menu)

Switch the screen aspect ratio to 16:9 or 4:3.
To set the screen aspect ratio, use the System >Format menu.

Setting the screen aspect ratio

1 In the System >Format menu, press [Aspect].

The Aspect menu appears.

2 In the <Screen Aspect> group, select one of the following.

- 16:9
- 4:3
- Independ: Set the screen aspect ratio separately for M/E, P/P, and USER on the switcher, and for each channel independently on the DME.

3 If you selected [Independ] in step **2**, select from the following.

Switcher Aspect: Make the setting for the switcher.
DME Aspect: Make the setting for the DME.

A menu appears according to the selection.

4 Carry out either of the following, depending on the selection you made in step **3**.

When you selected [Switcher Aspect]: In each of the <M/E-1>, <M/E-2>, <M/E-3>, <M/E-4>, <P/P>, and <USER> groups, select either [16:9] or [4:3].
When you selected [DME Aspect]: For each of the <CH1> to <CH4> groups, select either [16:9] or [4:3].

5 To confirm the above setting, press [Aspect Execute].
To cancel the setting and return to the original state, press [Clear] without pressing [Aspect Execute].

When you press [Aspect Execute], a confirmation message appears.

6 Press [Yes].

This saves the screen aspect ratio setting.

Selecting the State After Powering On (Start Up Menu)

Set the initial state of the devices when the system is powered on.
For each device, you can select Resume mode or Custom mode.

Resume mode

This resumes the setting state at the previous power-off operation. This setting is only available for the switcher processor and control panel.

Custom mode

This uses the settings saved in non-volatile memory or ROM within the device. In this mode, there are Setup and Initial Status settings which can be set separately.

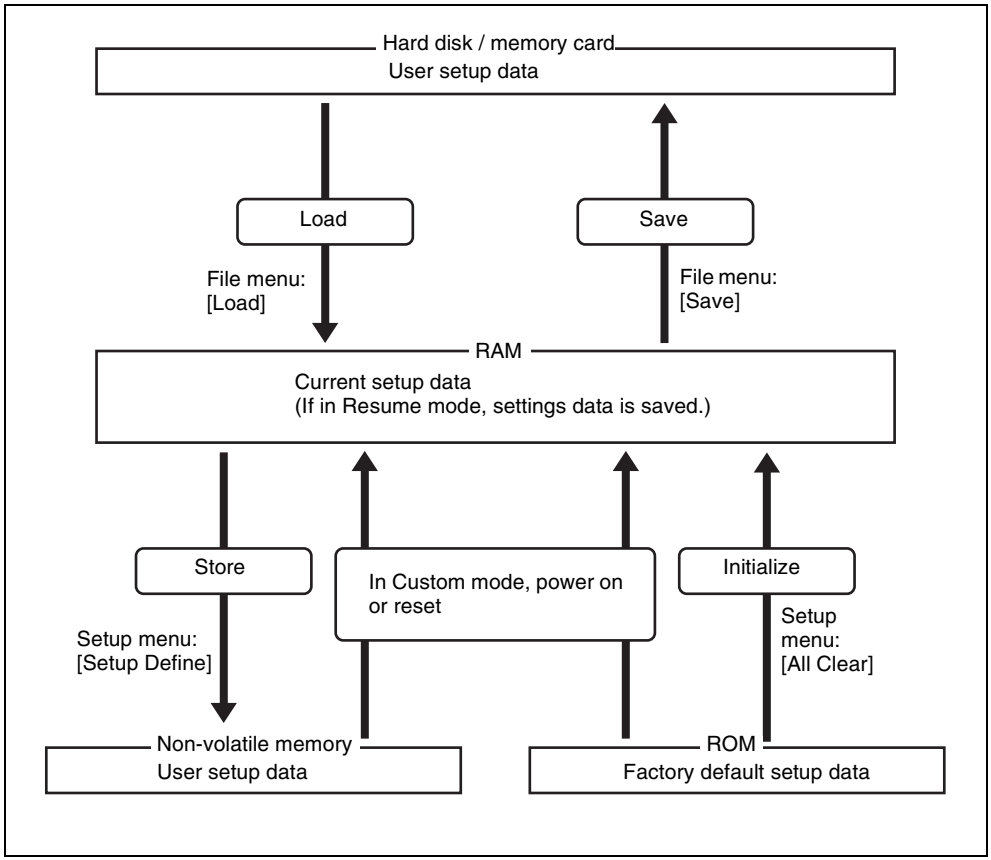
- **Setup mode:** Select the setup state to be used after powering on from the following.
  User: Start up using the user data previously saved with [Setup Define].
  Factory: Start up with the factory default settings.
- **Initial status mode:** Select the state of each device after powering on (excluding the settings to which "setup" applies).
  User: Start up using the user data previously saved with [Initial Status Define]. For the control panel, this applies to the key bus delegation buttons only.
  Factory: Start up with the factory default settings.

For details of saving and recalling setup data, see "Saving and Recalling Setup Data" (page 915) and the appendix "Data Saved by [Setup Define] and [Initial Status Define]" (page 1126).

Autoload function

Switch on or off the function to automatically load predetermined register data or frame memory image data at power on. Set the data to be read in the File menu.

Saving and Recalling Setup Data



Concept of saving and recalling setup data

Updating the switcher or control panel setup data saves the updated setup data in RAM in each device.

- In Resume mode *(see page 914)*, even if devices are reset or powered off, the data is preserved in RAM, and recalled when the power is turned back on.

Notes

The Resume mode cannot be used for DMEs and DCUs.

- In Custom mode *(see page 914)*, the user-defined settings (user setup data) saved in non-volatile memory or factory default setup data held in ROM in each device is recalled when a reset is made or the power is turned back on. *(See "Selecting the State at Start-up" (page 916).)*

Note that the setup data in RAM can also be saved to the control panel hard disk or memory card.

To set the initial state at start-up, use the System >Start Up menu.

Notes

It is not possible to set the DCU state at start-up, but its settings can be saved in the control panel.

To display the Start Up menu

In the Engineering Setup menu, select VF1 'System' and HF4 'Start Up.' The status area shows the current start-up mode settings of each device.

Selecting the State at Start-up

1 In the status area of the System >Start Up menu, select the device to which the settings are to apply.

2 In the <Start Up Mode> group, select one of the following modes.

Resume: When this is on, Resume mode is enabled.
Custom: When this is on, Custom mode is enabled.

Notes

The Resume mode is only valid when a switcher or control panel is selected for the setting.

3 When Custom mode is selected, in each of the <Setup> group and <Initial Status> group, select one of the following.

User: When this is on, user-defined settings are used for the Setup or Initial Status settings. For the method of saving the user-defined settings, *see the next item.*
Factory: When this is on, factory default settings are used for the Setup or Initial Status settings.

4 To confirm the settings, press [Execute]. If you want to cancel the setting changes without saving them, press [Clear].

When [Execute] is pressed, a confirmation message appears.

5 Select [Yes].

The start-up state settings are saved.

Saving User-Defined Settings

Saving the Setup settings

1 After selecting the devices to which the settings apply to, in the System >Start Up menu, press [Setup Define].

A confirmation message appears.

2 Press [Yes].

This saves the setup settings for the selected devices in non-volatile memory within the respective devices.

For details about the settings which will be saved, see"Data Saved by [Setup Define] and [Initial Status Define]" (page 1126).

Saving the Initial Status settings

1 After selecting the devices to which the settings apply to, in the System >Start Up menu, press [Init Status Define].

A confirmation message appears.

2 Press [Yes].

This saves the initial status settings other than the "setup" settings for the selected devices in non-volatile memory within the respective devices.

For details about the settings which will be saved, see "Data Saved by [Setup Define] and [Initial Status Define]" (page 1126).

Setting Automatic Loading of Register Data at Power On (Autoload Function)

To have specified data read in at power on, in the System >Start Up menu, press [Power On File Load], turning it on.
This enables the autoload function.
When the autoload function is enabled, a directory "PWON_LD" appears in the corresponding File menu.

About saving data which can be loaded by the autoload function, see "Saving Files Recalled by Autoload" in Chapter 17 (Volume 2).

Reset and Initialization (Initialize Menu)

To carry out a reset or memory initialization for a device, use the System >Initialize menu.

- **Reset:** Reset to state after powering on.
- **All Clear:** Clear the memory, and carry out initialization. The Network Config, System Config, Format, and Start Up setup values are set by reference to data stored in non-volatile memory, and the system automatically starts up. It is not necessary to reset the Date/Time settings.

For more details, see "Saving and Recalling Setup Data" (page 915).

To display the Initialize menu

In the Engineering Setup menu, select VF1 'System' and HF5 'Initialize.' The status area shows the current start-up mode settings.

Resetting the device and initializing memory

1 In the status area of the System >Initialize menu, select the device to which the settings are to apply.

2 In the <Initialize> group, select one of the following modes.

Reset: Reset the device.
All Clear: Initialize memory.

3 Press [Execute].

A confirmation message appears.

4 Select [Yes].

Depending on the selection in step **2**, the following is the result.

- When you selected [Reset], a reset is applied to the device causing it to be restarted in the start-up state.
- When you selected [All Clear], all memory in the device is cleared, including snapshots, keyframe effects, setup, and so on, and the device returns to its factory default settings. However, the Network Config, Format, Start Up, and Date/Time settings are not initialized.

Installation and Device Setup (Install/Unit Config Menu)

To install software or firmware in a device, use the System >Install/Unit Config menu.
This installs the software and firmware in all devices (including the DCU) connected to the Data LAN.

To display the Install/Unit Config menu

In the Engineering Setup menu, select VF1 'System' and HF6 'Install/Unit Config.'
The status area shows the version of the software and the firm ware installed in each device.

The following functions are available here.

Install: Automatically detects the software that can be installed on each device, and installs the selected software.

Detail Information: Gives details of the software and firmware installed in each device.

Unit Config: Makes switcher processor settings and changes the DME input/output signal format.

License: Makes the license valid or invalid.

Displaying installation details

In the System >Install/Unit Config menu, press [Detail Information].
This accesses the Detail Information menu, and displays the detailed information on the software and firmware installed in the currently selected device.

Installing Software

1 Insert the memory card holding the software into the memory card slot.

2 In the System >Install/Unit Config menu, press [Install].

The Install menu appears; the status area shows the following information.

Upper list: For each connected device, this shows the device name, current software version (Current), and the latest version that can be installed (Install, Title).

OK: Installation already completed.
On: For installation, but not completed.
Error: An error occurred during installation.
Cancel: Installation canceled.

Lower list: For the device selected in the upper list, this shows an automatically detected list of software that can be installed on the particular device. Also, software selected as a candidate for installation in the upper list is marked in the lower list with an bullet.

3 If you are satisfied with the currently installed version of all items in the upper list, skip to step **6**.

To change the items to be installed, use any of the following methods to select the relevant device.

- Press directly on the list in the status area.
- Use the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Device	Device selection	1 and upwards

The display of the lower list changes according to the selected device.

To display all related software
Press [Display All Software], turning it on.
Not just the automatically detected software, but the names of all related software for the selected device appear.

4 In the lower list, select the software you want to install.

- Press directly on the list in the status area.
- Use the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
3	No	Software selection	1 and upwards

5 Press [Set].

The selection is reflected under “Install” and “Title” in the upper list.

6 Press [Install].

The “Install” box shows “On,” confirming that this is to be installed. To cancel this installation setting, press “Install” once more, making the box blank.

7 Repeat steps **3** to **6**, to confirm all software to be installed.

8 Press [Execute].

A confirmation message appears.

9 Press [Yes].

This carries out the installation, and when it completes normally, the "Install" box shows "OK."

Making Settings Required to Use the Software

To use the software listed below, you are required to enter an install key which validates the software. (If the software has been factory installed, the install key is not required.)
For the method of obtaining an install key, contact your Sony representative. To obtain a key, you may be required to submit the unique device ID of the switcher you are using. You can check the unique device ID in the Install/Unit Config menu of the switcher, using the following procedure.

BZDM-9050	Texture Lighting Software (for MVE-9000)
BZS-8050	Editing Control Software
BZS-8200X	Multi Program 2 Software
BZS-8420X	Color Corrector Software
BZS-8560X	Switcher Upgrade Software
BZDM-8560	DME Upgrade Software [a)]

a) This can be used only on the MVE-8000A.

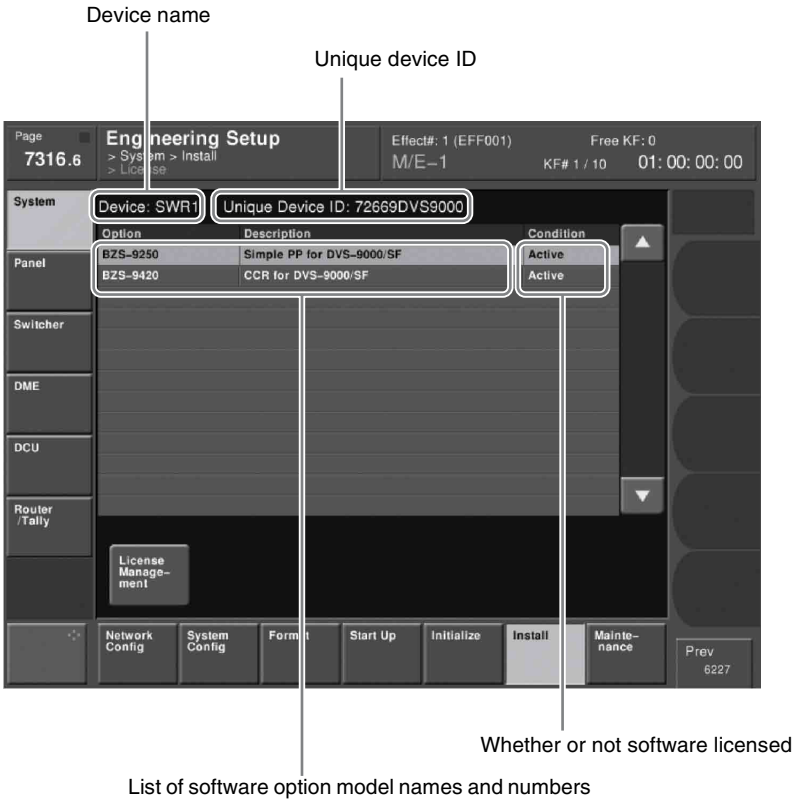
To display the unique device ID

1 In the System >Install/Unit Config menu, use either of the following methods to select the device for which you want to register the license.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

2 Press [License].

The License menu appears as follows.



Entering the install key

When you have the install key, carry out the following procedure.

1 In the System >Install/Unit Config menu, use either of the following methods to select the device for which you want to register the license.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

2 Press [License].

The License menu appears.

3 Press directly on the name of the software you want to license (the Condition box is blank).

4 Press [License Management].

The License Management menu appears.

5 Press [Activate License].

A keyboard window appears.

6 Enter the 16-character install key you have been given, and press [Enter].

A license registration completed message appears.

7 Press [OK].

The status area Condition box shows “Active.”

8 Using either of the following methods, restart the device.

- In the System >Initialize menu, with only the device for which you registered the license being selected, press [Reset] in the <Initialize> group and then press [Execute].
- Power off and on again.

After restarting, the licensed software is now available for use.

(In case it becomes necessary to cancel the license registration, you can use the following procedure.)

To cancel the license registration

1 In the System >Install/Unit Config menu, use either of the following methods to select the device for which you want to cancel the license registration.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

2 Press [License].

The License menu appears.

3 Press directly on the name of the software for which you want to cancel the license registration (the Condition box shows “Active”).

4 Press [License Management].

The License Management menu appears.

5 Press [Deactivate License].

A confirmation message appears.

6 Press [Yes].

A license registration canceled message appears.

7 Press [OK].

The status area Condition box showing “Active” changes to blank.

8 Using either of the following methods, restart the device.

- In the System >Initialize menu, select only the device for which you registered the license, and press [Reset] in the <Initialize> group.
- Power off and on again.

After restarting, the software for which the license registration has been canceled is no longer available.

Adding User Texture Patterns

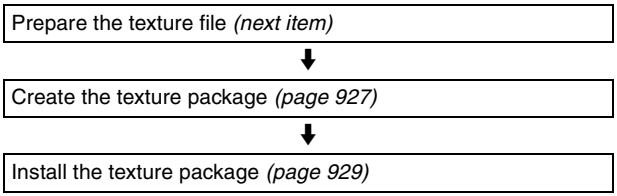
You can add user created texture patterns to the repertory of texture patterns with which the spotlighting function enables the light falls on the image surface.

Notes

This function is not supported on the MVE-8000A.

For details of spotlighting and texture patterns, see “Spotlighting Settings” in Chapter 11 (Volume 2).

The procedure for adding a texture pattern is as follows.



To prepare a texture file

Create a texture file meeting the following conditions, and save it on a memory card.

File format: Windows bmp (“bitmap”) (extension: bmp, 24-bit RGB)
File name: alphanumeric (maximum 8 characters) + extension (bmp)

Example: wood_01.bmp

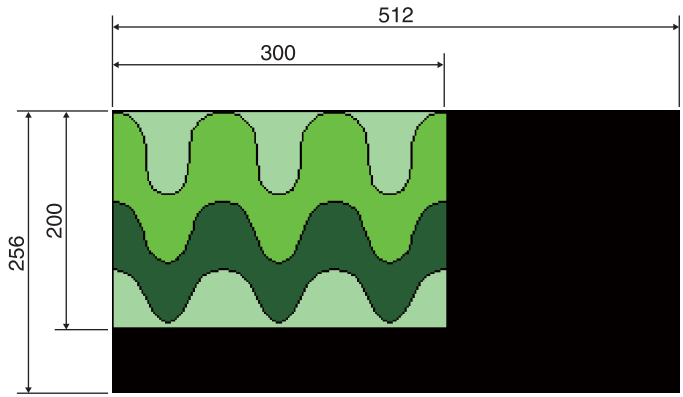
Image size (horizontal × vertical): 128 × 128 to 1024 × 1024 pixels

The maximum number of texture files that can be handled by the system is related to the image size of the texture files, as shown in the following table (when all images are the same size).

	Maximum number of texture files handled			
Dimension (horizontal) / Dimension (vertical)	128 pixels	256 pixels	512 pixels	1024 pixels
128 pixels	64	32	16	8
256 pixels	32	16	8	4
512 pixels	16	8	4	2
1024 pixels	8	4	2	1

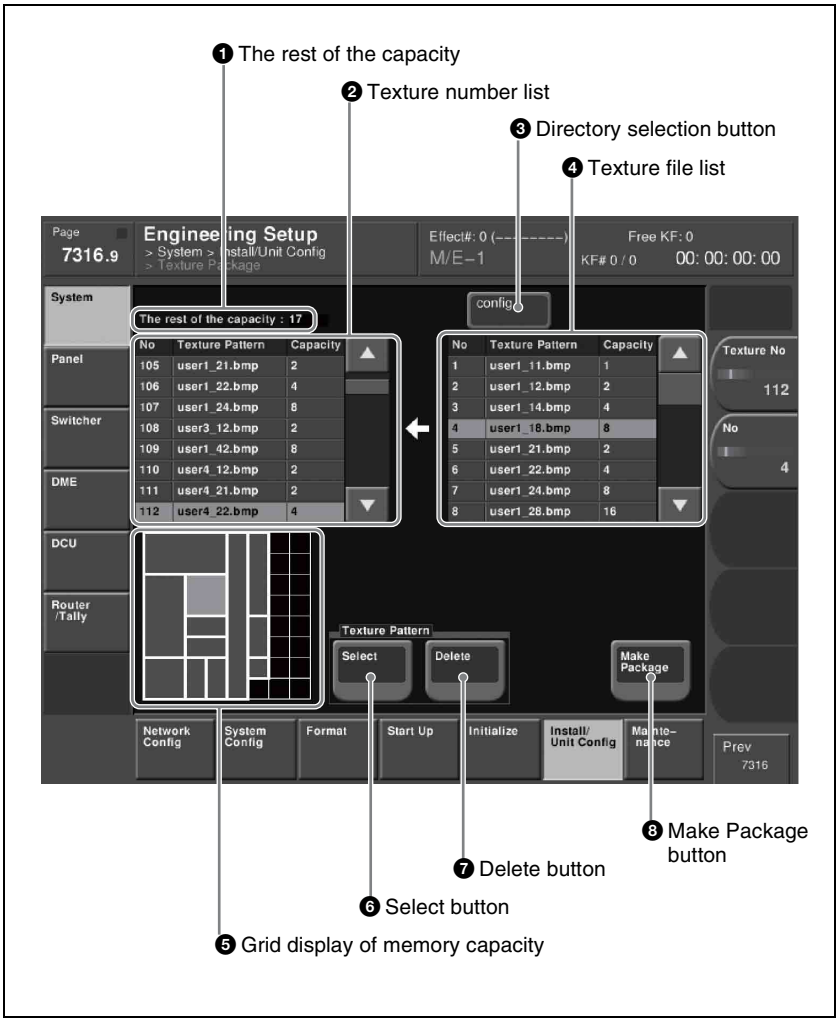
Notes

- Different image sizes can be combined, but this affects the total number of texture files that can be handled.
- The number of texture files that can be handled may be reduced, depending on the way in which they are stored in memory *(see "Texture Package menu" (page 925))*.
- For a texture file with an image size outside the specification, the minimum enclosing image size is applied *(see table above)*, and the region below and to the right is filled with black.
  Example: a 300 × 200 pixel texture file is treated as 512 × 256 pixels.



Texture Package menu

To create user texture patterns, use the Texture Package menu.



❶ The rest of the capacity (available memory space)
This shows an available memory space in units of 128×128 pixels (a maximum of 64 units of memory space is available).

❷ Texture number list
This shows the texture numbers (101 to 164) registered in the texture package. The list Capacity shows the file size in units of 128×128 pixels (a total maximum of 64 units of texture files can be registered).

❸ Directory selection button
By pressing this button to display the popup window, you can select a directory on the memory card.

❹ Texture file list
This shows the texture files stored on the memory card.
If a texture file is stored in a directory, press the directory selection button and select the directory in the popup window, to show a list of files.
The list Capacity shows the file size in units of 128×128 pixels.

❺ Grid display of memory capacity
This shows how the texture files are stored in memory (an 8×8 grid, of 64 squares, each equivalent to 128×128 pixels).
And this shows the location where the texture files are stored in memory by bold frames. The grid for the texture file selected in the texture number list is shown in amber.

❻ Select button
Pressing this button assigns the texture file selected in the texture file list to the number selected in the texture number list.

❼ Delete button
Pressing this button deletes the texture file assigned to the number in the texture number list.

❽ Make Package button
Pressing this button creates the texture package.

Creating a texture package

To use a user-provided texture pattern with the spotlighting function, it is necessary to convert the texture files to vector files for bump mapping. This operation is referred to as “creating a texture package.”

1 Insert the memory card holding the texture file into the memory card slot.

2 In the Engineering Setup menu, select VF1 ‘System’ and HF6 ‘Install/Unit Config.’

The Install/Unit Config menu appears; the status area shows the version information for the software installed on the various devices.

3 Using any of the following methods, select a DME for which the spotlighting license is valid.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

- Turn the knob.

4 Press [Texture Package].

Notes

If you select a device for which the spotlighting license is not enabled, then [Texture Package] is not enabled.

The Texture Package menu appears.

For details of the Texture Package menu, see page 925.

5 In the texture number list, select the number for which you want to register the texture package, by any of the following methods.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Texture No	Texture number selection	101 to 164

6 In the texture file list, select the texture file by any of the following methods.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	No	Texture file selection	1 and upwards a)

a) The range of the setting values depends on the number of saved files on a memory card.

7 In the <Texture Pattern> group, press [Select].

This assigns the texture file selected in step **6** to the number selected in step **5**, and updates the texture number list.
The grid display of memory capacity shows the location where the texture files are stored in memory by bold frames. The grid portion for the texture file selected in the texture number list is shown in amber.

8 Repeat steps **5** to **7**, to assign all of the texture files to texture packages.

Notes

- If you assign a texture file that is already in the texture number list to a different texture number, then the previous assignment is deleted. (It is

not possible to assign the same texture file to two or more different texture numbers.)

- In the following cases, texture file assignment is not possible.
  - If there is no available memory space ("The rest of the capacity:0" appears)
  - If the selected texture file is too large to fit in the available memory space

To delete a texture file assignment

Select the texture file (multiple selections are not possible) you want to delete in the texture number list, and in the <Texture Pattern> group press [Delete].

9 To create the texture package, press [Make Package].

A confirmation message appears.

10 Select [OK].

The texture package is created in the same location that the texture file is stored on the memory card (extension: zsp, file name generated automatically).

Notes

- If you remove the memory card on which the texture file is stored, it is not possible to create the texture package.
- If a texture package is already present on the memory card, it is overwritten by a new texture package.
- If you carry out steps **9** and **10** without having assigned even one texture file, it is not possible to create a texture package.
- If there is insufficient space on the memory card to store the texture package, an error message appears, and the process is aborted. If this happens, delete unwanted files from the memory card using your computer, so that there is enough free space on the memory card, and repeat the process. (As a guide, the space required is approximately equal to total number of bytes of the texture files assigned in steps **5** to **8**.)

Installing the texture package

1 Insert the memory card holding the texture package into the memory card slot.

2 In the Engineering Setup menu, select VF1 'System' and HF6 'Install/Unit Config.'

The Install/Unit Config menu appears; the status area shows the version information for the software installed on the various devices.

3 Press [Install].

The System >Install/Unit Config >Install menu appears; the status area shows the following information.

Upper list: For each connected device, this shows the device name, current software version (Current), and the information about the texture package that can be installed (Install, Title).
OK: Installation already completed.
On: For installation, but not completed.
Error: An error occurred during installation.
Cancel: Installation canceled.

Lower list: For the device selected in the upper list, this shows an automatically detected list of software that can be installed on the particular device. Also, software selected as a candidate for installation in the upper list is marked in the lower list with an asterisk.

4 Using any of the following methods, select in the upper list a DME for which the spotlighting license is valid.

- Press directly on the list in the status area.
- Use the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Device	Device selection	1 and upwards

5 Press [Display All Software], turning it on.

The lower list shows the texture packages.

6 Using any of the following methods, select the texture package you want to install from the lower list.

- Press directly on the list in the status area.
- Use the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
3	No	Package selection	1 and upwards

7 Press [Set].

The selection is reflected under “Install” and “Title” in the upper list.

8 Press [Install].

The “Install” box shows “On,” confirming that this is to be installed. To cancel this installation setting, press “Install” once more, making the box blank.

9 To carry out the installation, press [Execute].

A confirmation message appears.

10 Select [Yes].

This carries out the installation, and when it completes normally, the “Install” box shows “OK.”

Setting the DME input/output signal format

Notes

This setting is only valid when the system signal format is set to 1080P.

1 In the System >Install/Unit Config menu, select [SWRx], and press [Unit Config].

The Unit Config menu appears.

2 In the <DME I/F Type> group, press one of the following.

3G Mode: Use 3G mode (single 3G SDI signal) for DME input/output. [1)]
Dual Link Mode: Use dual link mode (two 1.5G SDI signals) for DME input/output. [2)]

1) 3G SDI: Standard defined by SMPTE 424M
2) Dual link: Standard defined by SMPTE372M

Notes

When “Dual Link Mode” is selected, half as many DME units can be connected to the switcher. In this case, the available channels are DME1 channels 1 and 2, and DME2 channels 3 and 4.

3 Press [Execute].

A popup window appears, showing a message.

4 Check the message, and select [Yes].

System Maintenance (Maintenance Menu)

- Date and time setting
- Formatting a memory card
- Primary settings for USB external storage device
- Reloading a USB driver
- Formatting the hard disk
- Locking setup menu operations
  - For each VF button group, selecting a set of candidate menus to be locked, then locking all of the candidates using a password. Except for list scrolling, moving menus, and similar operations, menu operations for all settings can be locked.
  - Changing the password
- Locking file recall operations
  - Locking file recall operations by category
  - Locking and removing the lock using the password (You can change the password.)

To display the Maintenance menu

In the Engineering Setup menu, select VF1 'System' and HF7 'Maintenance.' In the status area, the current date and time, and details of the memory card appear.

Setting the Date and Time

For system date and time settings, use the following procedure.

1 In the System >Maintenance menu, turn the knobs to set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
1	Hour	Hour	0 to 23
2	Min	Minute	0 to 59
3	Sec	Second	0 to 59

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
1	Month	Month	1 to 12
2	Day	Day	1 to 31

Knob	Parameter	Adjustment	Setting values
3	Year	Year	2000 to 2037

The set date and time appears in the “Set” box in the status area.

2 Press the [Set Date/Time] button.

This sets the current time to the date and time set in step **1**, and the setting in the “Current” box of the status area changes accordingly.

Using a Memory Card

Displaying memory card information

1 Insert the memory card into the memory card slot.

2 In the <USB Storage Device> group of the System >Maintenance menu, press [Refresh].

Formatting a memory card

Notes

Format a memory card before using it for the first time.

1 Insert the memory card in the memory card slot.

2 In the System >Maintenance menu, using either of the following methods, select the USB device.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

3 In the <USB Storage Device> group, press [Format].

A confirmation message appears.

4 To carry out the formatting, press [YES].

This formats the memory card.

Carrying Out the Primary Setting

To specify a USB device with a storage device connected as a primary device, use the following procedure.

Notes

Without this setting, you cannot use the “Memory Card” item in the File menu to access a memory card on a storage device connected to the USB device.

1 In the System >Maintenance menu, using any of the following methods, select the USB device you want to set as primary.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
5	Mount Point	USB device selection	1 to 18

2 In the <USB Storage Device> group, press [Set Primary].

Making the primary setting automatic

In the <USB Storage Device> group, press [Auto Detect].

Reloading a USB Driver

To reload a USB driver, in the System >Maintenance menu, press [Reload USB Driver].

Notes

If even after this operation the memory card is not recognized, remove the memory card and reinsert it, then try again.

Initializing the Hard Disk

If a file system corruption error has occurred on the hard disk, you should initialize the hard disk.

1 In the <HDD> group of the System >Maintenance menu, press [HDD Format].

Notes

When the hard disk is operating normally, pressing [HDD Format] has no effect.

An initialization confirmation message appears.

2 To execute the initialization operation, press [Yes]. To cancel, press [No].

If you have pressed [Yes], the hard disk initialization operation is executed, and a finished message appears. If you have pressed [No], the initialization operation is canceled, and the System >Maintenance menu appears again.

3 Press [OK].

The processor is reset.

Locking the Setup Menu Settings

To protect the data, you can inhibit operations in selected setup menus. Use the following procedure. (It is not possible to lock the Setup Operation Lock menu.)

1 In the System >Maintenance menu, press [Setup Operation Lock].

The Setup Operation Lock menu appears.

2 In the <VF Group> group, select the group including the desired menu.

The status area shows a list of menu numbers and menu names in the selected group.
Subsequent lock operations apply within the group selected here.

3 Using any of the following methods, select the menu or the set of menus as candidates for the locking operation.

- Press directly on the list in the status area.
- Use the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	No	Selection of a menu by its number in the list	1 and upwards
3	Num	Selection of number of menus in the list	1 and upwards

- To select all setup menus within the selected group, press [ALL].

You can also select a menu while it is open. *For details, see "Selecting an opened setup menu for locking" (page 937).*

4 Press [Lock Item Select].

This makes the selected menus candidates for locking, and a padlock icon appears in the "Lock" box (in the unlocked state)  .

Notes

If there are already one or more locked menus, selection of lock candidates is not possible.

To deselect a lock candidate

After selecting a menu, press [Lock Item Select] once more, to clear the Lock box.

To deselect all lock candidates in the selected VF group

Press [Lock Item All Clear].

5 Repeat steps **2** to **4**, to select all of the lock candidates.

6 Press [Lock].

A keyboard window appears.

7 Enter the password with a maximum of 16 characters, and press [Enter].

If the password is correct, the menus selected in the list of candidates are all locked. The padlock icon changes to the locked state  .

Releasing the lock

When a lock is already applied, use the following procedure.

1 In the System >Maintenance >Setup Operation Lock menu, press [Lock].

A keyboard window appears.

2 Enter the password.

If the password is correct, the lock is released, and the padlock icon disappears.

Changing the lock password

1 In the System >Maintenance >Setup Operation Lock menu, press [Change Password].

A confirmation message appears.

2 Press [Yes].

A keyboard window labeled “Old Password” appears.

3 Enter the old password, and press [Enter].

If the password is correct, a keyboard window labeled “New Password” appears.

4 Enter the new password, and press [Enter].

A keyboard window labeled “New Password(Confirm)” appears.

5 Enter the new password once more for confirmation, and press [Enter].

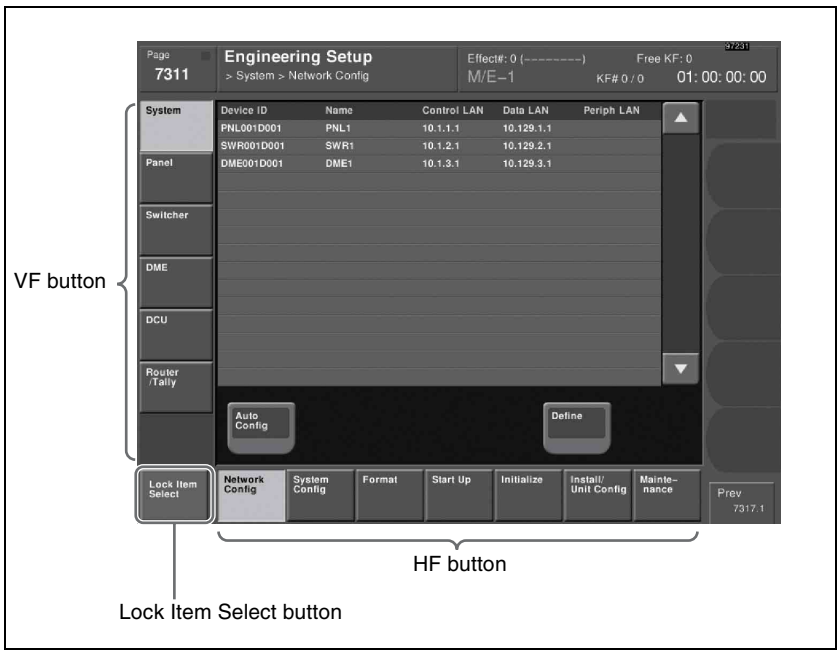
If the password is correct, the password change completed message appears.

6 Press [OK].

This sets the new password.

Selecting an opened setup menu for locking

With the menu you want to lock open, press [Lock Item Select] button at the lower left.



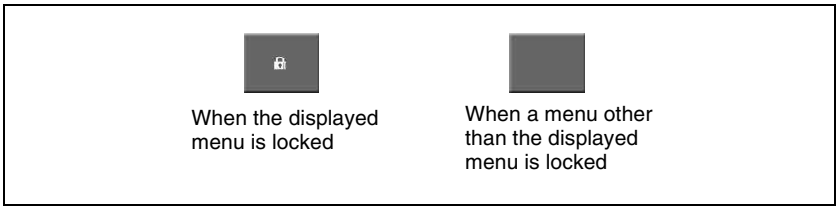
The [Lock Item Select] button turns red, and a padlock icon appears.



This selection is reflected in the lock candidate list in the Setup Operation Lock menu.

Notes

If there are already one or more locked menus, selection of lock candidates is not possible.
In this case, the indication of the [Lock Item Select] button changes as follows.



If you want to select lock candidates, first remove the lock in the Setup Operation Lock menu.

Locking File Loading Operations

You can inhibit load operations for a specified file category.

1 In the System >Maintenance menu, press [File Load Lock].

The File Load Lock menu appears.
The status area shows a list of file category numbers, category names, and the lock status.
Subsequent lock operations apply to the category selected here.

2 Using any of the following methods, select the category or the set of categories as candidates for the locking operation.

- Press directly on the desired list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	No	Selection of a category by its number in the list	1 to 13
3	Num	Selection of number of categories in the list	1 to 13

- To select all categories, press [ALL].

3 Press [Lock].

This makes the selected categories candidates for locking. The category name display color changes to yellow, and the indication “Lock” is displayed in yellow in the Lock box.

To deselect a lock candidate
After selecting a category, press [Clear] to clear the indication “Lock” in the Lock box.

4 Repeat steps **2** and **3**, to select all of the lock candidates.

5 Press [Execute].

A keyboard window appears.

6 Enter the password with a maximum of 16 characters, and press [Enter].

If the password is correct, the categories selected in the list of candidates are all locked. The category name display color and the “Lock” indication color in the Lock box both change to white.

To release the lock

When a lock is already applied, use the following procedure.

1 In the System >Maintenance >File Load Lock menu, press [Lock].

A keyboard window appears.

2 Enter the password.

If the password is correct, the lock is released, and the indication “Lock” in the Lock box disappears.

To change the lock password

In the System >Maintenance >File Load Lock menu, press [Change Password], and carry out step **2** and following of *“Changing the lock password” (page 936)*.

Chapter 19 Control Panel Setup (Panel)

Overall Control Panel Settings (Config Menu)

To carry out the overall control panel settings, use the Panel >Config menu.

To display the Config menu

In the Engineering Setup menu, select VF2 'Panel' and HF1 'Config.'
The status area shows the "Bank numbers 1 to 4" (physical locations) of the M/E and PGM/PST banks, the allocated bank names, and whether or not operation is enabled.

Panel Setup

In panel setup, you carry out settings particular to the control panel.
You can make the following settings.

Panel settings (Config)

- **M/E Assign:** Set the logical configuration of the M/E and PGM/PST banks.
- **M/E Operation:** For each of the M/E and PGM/PST banks, make operations possible, not possible, or disabled (Enable/Disable/Inhibit).
- **Dual M/E Assign:** Using two M/E banks, assign the shift and non-shift button rows of a single M/E bank.
- **Dual M/E Xpt Swap:** When a setting has been made for Dual M/E Assign, swap the shift and non-shift button rows.
- **DSK Fader Assign:** Carry out fader function assignment and key delegation for the key delegation buttons, in each of the maximum of four downstream key control blocks.
- **External Bus Link:** Make link settings relating internal switcher buses to routing switcher destinations.
- **Key Trans Link:** Select whether or not to link transitions between keyers, and if so which keyer to link to. You can set the links between keyers for each M/E bank separately.
- **Joystick/Trackball User Setting:** When a trackball module and a joystick module are both connected as device control blocks, select which is used as the reference. Also select whether key wipe positioning applies to keys 1 to 8, or to keys 1 to 4.
- **10 Key Region Assign:** Assign any regions to the region selection buttons in the numeric keypad control block. Also used for setting the regions included in the selection when the [All] button is pressed.

- **Program Button:** Make assignments for buttons of some control blocks such as assigning the buttons in a transition control block for controlling a VTR.
- **Compact Key Module Assign:** You can select which keys can be operated with an independent key transition control block (simple type).
- **M/E Operation Inhibit:** For each M/E or PGM/PST bank, enable or inhibit utility 2 bus-related and key-related operations.
- **Joystick/Trackball Module:** Enable or inhibit DME channel selection operations from the device control block (trackball) or device control block (joystick).

Interchanging the Bank Order or Disabling Operation

1 In the Panel >Config menu, select the Bank you want to set, using any of the following methods.

- Press directly on the status area display.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Bank	Select the position of the bank you want to set	1 to 7

The Bank selection here indicates the physical position on the control panel, numbering from the top as the 1st Row, 2nd Row, 3rd Row, and 4th Row.
On the MKS-9011 1M/E Control Panel only the 1st Row is valid. On the MKS-9012 2M/E Control Panel, only the 1st Row and 2nd Row are valid.

2 Select the bank that you want to assign to the selected Bank number in the <M/E Assign> group.

The status area shows the interchanged state of the banks.

Notes

- It is not possible to assign the same M/E logical bank to more than one physical bank. Be sure to make different M/E assignments.
- When the bank order is changed, the state of region selection button assignment in the numeric keypad control block also changes correspondingly.

3 For the selected Bank number, in the <M/E Operation> group, select one of the following.

Enable: Enable panel display and operation of the bank.

Disable: Enable only panel display, and disable operation of the bank.
Inhibit: Disable both the panel display and operation of the bank.

Notes
When this is set to Inhibit, snapshots of the bank are not recalled.

Assigning Two M/E Banks to One M/E Bank

1 In the Panel >Config menu, select the M/E bank for which you want to make the setting.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Bank	Selection of position of bank for which you want to make the setting	1 to 7 a)

a) Depends on the center control panel configuration. When 7 (Ext 3) is selected, or a switcher bank is selected which is immediately above a switcher bank to which nothing is assigned, then [Dual M/E Assign] is invalid.

For example, if the furthest bank from you is assigned to M/E-1, and you want no shift button operation for the bank, select 1 (1st Row) for Bank.

2 Press [Dual M/E Assign].

This assigns the furthest M/E bank from you to the unshifted (shifted) cross-points and the M/E bank in front of it to the shifted (unshifted) cross-points. For fader lever operations, only the M/E bank closer to you is enabled.

The shift/non-shift assignment is set by [Dual M/E Xpt Swap]. For more details, see the next section, "Interchanging shifted and non-shifted operations for a dual M/E."

To return to the original assignment

Interchange the bank order *(see page 943)*.

Interchanging shifted and non-shifted operations for a dual M/E

1 In the Panel >Config menu, select the M/E bank for which the dual M/E setting is made.

- Press directly on the list in the status area.

- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Bank	Bank to be selected for dual M/E setting	1 to 7

2 Press [Dual M/E Xpt Swap], toggling it on or off.

On: The lower M/E bank is non-shifted, and the higher M/E bank is shifted.

Off: The lower M/E bank is shifted, and the higher M/E bank is non-shifted.

Assigning the Key Delegation in the Downstream Key Control Block (MKS-8032 DSK Fader Module, Option)

As an example, to assign key 4 of the M/E-1 bank to key delegation button 1 of the downstream key control block 1, use the following procedure.

1 In the Panel >Config menu, press the [DSK Fader Assign].

The DSK Fader Assign menu appears.

2 Directly press on the indications in the status area, to select the downstream key control block for which you want to make the setting, and select the key delegation.
Here, press on the intersection of the “1st Module” column and “Key1 Assign” row.

3 In the <M/E Select> group, select the bank of the key you want to assign.
Here, select [M/E-1] as an example.

4 In the <Key Link Select> group, select the key you want to assign.
Here, select [Key4] as an example.

5 Press [Fader Assign] in the DSK Fader Assign menu.

The Fader Assign menu appears.

6 To disable the fader lever of the selected downstream key control block, select [Disable] in the <Fader Assign> group.
To enable the fader lever, select one of the following in the <Fader Assign> group, determine the key to which the fader lever operation applies.

All: Key selected with one of the key delegation buttons
Key1 to Key4: Key assigned to key delegation buttons 1 to 4 ([DSK1] to [DSK4] buttons)

Linking Switcher Bus and Router Destination

To provide links between the switcher bus and router destination, make the following settings as required.
Matrix selection: Select the target of link setting from the eight matrices (1 to 8).
Matrix position definition: Set the start address and level for the source and destination on the S-Bus.
Link table setting: Link a switcher cross-point button and matrix source.
Link bus setting: Link a switcher bus address and router destination.

Selecting a matrix number

1 In the Panel >Config menu, press [Link/Program Button].

The Link/Program Button menu appears.

2 In the <Link> group, press [External Bus Link].

The External Bus Link menu appears.
The status area shows the current link status.

3 Turn the knobs to select the matrix.

Knob	Parameter	Adjustment	Setting values
1	Link No	Link number	1 to 64
2	Link Matrix	Matrix number	1 to 8

In the status area, the color of the selected part changes.

4 Press [Link Matrix Set].

This confirms the matrix selection and the selected part in the status area returns to the previous color.

To delete a link

With the link selected, press [Clear].

Defining the position of a matrix

Specify where in the 1024 × 1024 S-Bus space the link matrix is to be provided, by setting the source and destination start address.
For the matrix selected in the External Bus Link menu, use the following procedure.

1 In the Panel >Config >Link/Program Button >External Bus Link menu, press [Link Matrix Adjust].

The Link Matrix Adjust menu appears.
The status area shows the status of the currently selected matrix, and a list of the source and destination start addresses that can be selected.
In this menu too, you can use the knobs to select the link for the setting.

2 Using any of the following methods, define the position of the matrix to be linked.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
2	Source	Source start address	1 to 897
3	Destination	Destination start address	1 to 897
4	Level	Level	1 to 8

3 To confirm a source address selected in step **2**, press [Source Set], to confirm a destination address press [Destination Set], and to confirm a level press [Level Set].

This confirms the selection, which is reflected in the status area.

Setting a link table

For the link selected in the External Bus Link menu, make the settings as follows.

1 In the Panel >Config >Link/Program Button >External Bus Link >Link Matrix Adjust menu, press [Link Table Adjust].

The Link Table Adjust menu appears.
The status area lists the status of the currently selected link, combinations of video signals and sources, and the sources that can be selected.

2 Using any of the following methods, select the switcher cross-point button and the matrix source to be linked to the button.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Main No	Switcher cross-point button	1 to 300
2	Source No	Matrix source selection	1 to 128

3 To confirm the matrix source selection made in step **2**, press [Link Source Set].

This confirms the selection, which is reflected in the status area.

4 As required, repeat steps **2** and **3** to select the matrix sources to be linked to other cross-point buttons.

To initialize the set links

In the Panel >Config >Link/Program Button >External Bus Link >Link Matrix Adjust menu, press [Init Link Table].
A confirmation message appears.
Press [Yes].
The links set using the above procedure are initialized to the default settings, and this is reflected in the status area.

Making link bus settings

For the link number selected in the External Bus Link menu, use the following procedure.

1 In the Panel >Config >Link/Program Button >External Bus Link menu, press [Link Bus Adjust].

The Link Bus Adjust menu appears. The status area lists the current link status, and the switcher buses and router destinations that can be selected. In this menu too, you can use knob 1 to select the link to be set.

2 Using any of the following methods, select the switcher bus and the router destination to be linked to the switcher bus.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
2	Internal Bus	Switcher bus selection	1 to 128
3	Destination	Router destination selection	1 to 128

3 To confirm the bus selected in step **2**, press [Master Bus Set], and to confirm the destination press [Linked Dest Set].

This confirms the selection, which is reflected in the status area.

Linking Transitions Between Keyers

1 In the Panel >Config menu, press [Link/Program Button].

The Link/Program Button menu appears.

2 In the <Link> group, press [Key Trans Link].

The Key Trans Link menu appears.
The status area shows the keyers for each M/E bank and the linked keyers.

3 Using any of the following methods, select the keyer to be the master.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Master Key	Select keyer to be master	1 to 40

The selected keyer appears in reverse video.

4 In the <Key Select> group, select the keyer to be linked to the transition of the master.

Notes

Linking does not apply to a transition carried out with the downstream key control block.

Linking the Next Transition Selection Buttons

To the transition links between keyers, you can add a link for the next transition selection buttons in the transition control block. The effect of this additional link is such that if for example, two keyers (Key 2 and Key 3) are linked with the master keyer (Key 1), pressing the [KEY1] next transition selection button also selects the [KEY2] and [KEY3] buttons.

1 Set the transition links between keyers.

For details of the operation, see the previous section "Linking Transitions Between Keyers."

2 Press [Next Trans Link], turning it on.

The [KEY1] to [KEY8] next transition selection buttons in the transition control block are now selected coupled to the settings in the Key Trans Link menu for transition links between keyers.

Notes

These settings apply to the whole Key Trans Link menu. It is not possible to make separate settings for each master keyer.

Selecting the Module to be the Reference for Device Control Block

When both trackball and joystick device control blocks are connected, select which is to be the reference. Also select the range to which key wipe positioning applies.

To select the reference module

1 In the Panel >Config menu, press [JS/TB User Setting].

The JS/TB User Setting menu appears.

2 In the <Reference Module> group, select one of the following.

Trackball: Trackball device control block
Joystick: Joystick device control block

To select the range to which key wipe positioning applies

In the Panel >Config menu <Wipe Pos Key Select Module> group, select one of the following.
KEY1-4: Applies to keys 1 to 4.
KEY1-8: Applies to keys 1 to 8.

Notes

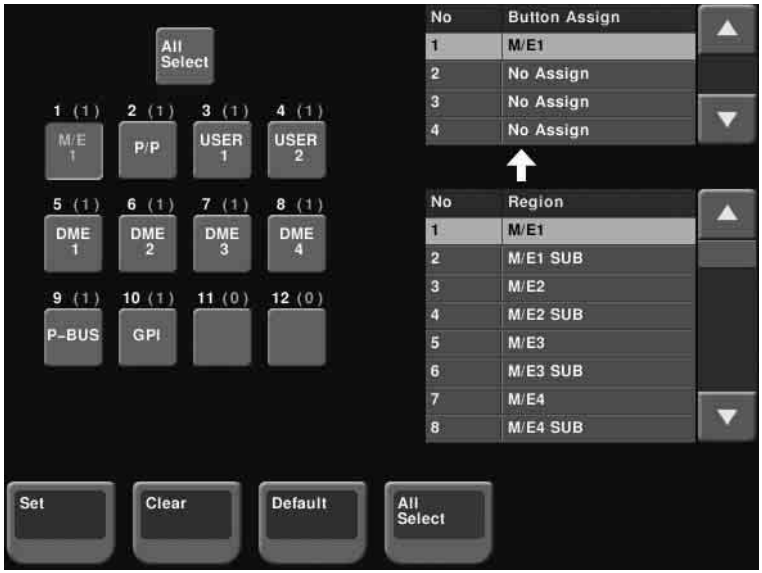
When "KEY1-8" is selected, after selecting more than one key it is not possible to carry out key wipe positioning. There is no such restriction when "KEY1-4" is selected.

Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block

A maximum of four regions can be set for a single region selection button in the numeric keypad control block.

1 In the Panel >Config menu, press [10 Key Region Assign].

The 10 Key Region Assign menu appears.



The left side of the status area shows region selection buttons; the upper part of the right side shows a list of regions assigned to region selection buttons, and the lower part shows a list of assignable regions.

2 Press the indication of the button for the assignment.

The button you pressed appears in reverse video.

3 Using any of the following methods, select one of the four regions for the setting.

- Press directly on the list in the upper part of the right side.
- Press the arrow keys to scroll the reverse video cursor in the list in the upper part of the right side.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Button Assign	Selection to which setting applies	1 to 4

4 Using any of the following methods, select the region to be assigned.

- Press directly on the list in the lower part of the right side.
- Press the arrow keys to scroll the reverse video cursor in the list in the lower part of the right side.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	Region	Region selection	1 and upwards

5 Press [Set], to confirm the selection.

This assigns the region to the region selection button in the numeric keypad control block.

Notes

Only regions assigned here can be used for keyframe or snapshot recall.

To return the region assignment to the factory default state

In the Panel >Config >10 Key Region Assign menu, press [Default].
This returns the assignment of region selection buttons in the numeric keypad control block to the factory default state.

To delete a region assignment

In step **3** of the procedure "Assigning a Region to a Region Selection Button in the Numeric Keypad Control Block" *(page 951)*, make the selection to which the operation applies, then press [Clear].
This clears the assignment of the selected region.

Setting the region selection buttons selected when the [ALL] button is pressed

1 In the Panel >Config >10 Key Region Assign menu, press [All Select] in the button area, or the [All Select] button indication in the status area, setting it to On.

The [All Select] button indication in the status area changes to orange, and the system switches to a mode for assigning region selection buttons to the [ALL] button. In the factory default state, all buttons appear in reverse video, and are assigned to the [ALL] button.

2 If you do not want to assign any region selection button to the [ALL] button, press the corresponding button indication, setting it to Off.

The button you pressed returns to normal display.

Notes

Assignment to the [ALL] button is region by region. Changing the assignment of a region selection button does not change the regions assigned to the [ALL] button.

Setting Transition Control Block Button Assignments

There are three separate menus for these settings, for the left part of the transition control block (Transition Module1), upper right part (Transition Module2), and lower right part (Transition Module3).

The following example describes the operation for the left part (Transition Module1 menu), but operations in the Transition Module2 and Transition Module3 menus are similar.

1 In the Panel >Config menu, press [Link/Program Button].

The Link/Program Button menu appears.

2 Press [Transition Module1].

The Transition Module1 menu appears.

3 Select the bank of the transition control block you want to set in the <Bank Select> group.

The current assignment of the buttons appears at the left.

4 Press the transition type selection button for which you want to change the assignment.

The button you pressed appears in reverse video.

5 Using any of the following methods, select the function to be assigned, from the list on the right.

- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Button Assign	Selection of function	1 and upwards

6 Press [Set].

The texts on the button illustrations change to reflect the selection.

To cancel the assignment
Press [Clear].

To make the assignment the default
Press [Default].

Setting the Assignment of Macro Operation Buttons

Notes
This setting is disabled for the CCP-9000A.

To switch the [UNDO] button on a simple type Flexi Pad control block to a [MCRO] button for macro operation, use the following procedure.

1 In the Panel >Config >Link/Program Button menu, press [Flexi Pad Module].

The Flexi Pad Module menu appears.

2 Select the assignment of the [UNDO] button in the simple type Flexi Pad control block from the <UNDO Button Assign> group.

UNDO: use as an [UNDO] button.
MACRO: use as a [MCRO] button.

Assigning Keys to the DSK1 and DSK2 Buttons in the Downstream Key/Fade-to-Black Control Block

It is possible to select the key used for downstream key/fade-to-black control block operations.

Notes
This operation cannot be done in the CCP-9000A.

1 In the Panel >Config >Link/Program Button menu, press [DSK/FTB Module].

The DSK/FTB Module menu appears.
The left side of the status area shows the DSK1 and DSK2 buttons, and the right side shows a list of keys to be assigned.

2 Press the indication (DSK1, DSK2) of the button for the assignment.

The button you pressed changes to reverse video.

3 Using any of the following methods, select the key to be assigned.

- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Key No	Selection of key assigned to button	1 to 40

4 Press [Set], to confirm the selection.

This assigns the selected key to the key delegation button.

To return the key delegation button assignment to the factory default state

In the DSK/FTB Module menu, press [Default].
This returns the key delegation assignment to the factory default state.

Assigning Keys to the Independent Key Transition Control Block (Simple Type)

It is possible to select the keys that can be used in an independent key transition control block (simple type) operation.

Notes
This operation cannot be done in the CCP-9000A.

The control panel comprises a main base for installing the principal switcher bank control blocks, and an extension section for extended control blocks. The independent key transition control block (simple type) can be installed in either, but the assignable keys differ as follows.

When the independent key transition control block (simple type) is installed in the main base

Select the keys to be assigned from the following.

- Key1,2 (keys 1 and 2) 1)
- Key3,4 (keys 3 and 4) 1)
- Key5, 6 (keys 5 and 6) 1)
- Key7, 8 (keys 7 and 8) 1)

  1) The M/E bank depends on the settings in the M/E Assign menu where the independent key transition control block is installed.
- DSK1,2 (downstream keys 1 and 2)
- DSK3,4 (downstream keys 3 and 4)
- DSK5, 6 (downstream keys 5 and 6)
- DSK7, 8 (downstream keys 7 and 8)
- N/A (no assignment)

When the independent key transition control block (simple type) is installed in the extension section

Select the keys to be assigned from the following.

- M/E-1 Key1,2
- M/E-1 Key3,4
- M/E-1 Key5, 6
- M/E-1 Key7, 8
- M/E-2 Key1,2
- M/E-2 Key3,4
- M/E-2 Key3, 4
- M/E-2 Key5, 6
- M/E-2 Key7, 8
- M/E-3 Key1, 2
- M/E-3 Key3, 4
- M/E-3 Key5, 6
- M/E-3 Key7, 8
- M/E-4 Key1, 2
- M/E-4 Key3, 4
- M/E-4 Key5, 6
- M/E-4 Key7, 8
- DSK1, 2
- DSK3, 4
- DSK5, 6
- DSK7, 8
- Key1, 2 1)
- Key3, 4 1)
- Key5, 6 1)
- Key7, 8 1)

  1) These keys are the keys of the M/E-1, M/E-2, M/E-3, M/E-4 or PGM/PST bank depending on the settings of the M/E Assign menu of the interface port for the extension section in which the independent key transition control block is installed.
- N/A (no assignment)

To assign a key to the main base

To assign a key to the independent key transition control block (simple type), use the following procedure. Here the example shown is the case in which keys 3 and 4 (“Key3,4”) are assigned to the second row switcher bank of the main base.

1 In the Panel >Config menu, press [Compact Key Module Assign].

The Compact Key Module Assign menu appears.
The left side of the status area shows data for the main base (physical layout and switcher bank names and key assignment).

2 Press directly on the display on the left, to select the control block for the assignment.
Here, press on the intersection of the “2nd Row” column and “Module” row.

3 Select the key from the table on the right.

4 Press [Set].

To return the key assignment to the default

In the Compact Key Module Assign menu, press [Default].
This returns all key assignments for the main base to their factory default state.

To assign a key to an extension

Press [Extension Port], to display the Extension Port menu, then continue as for the main base.
To return the extension assignments to their original values, press [Default].

Assigning Functions to Key Control Block Buttons

Select one of the four key control blocks installed in the main base and extension, then assign functions to the 30 buttons.

1 In the Panel >Config menu, press [Link/Program Button].

The Link/Program Button menu appears.

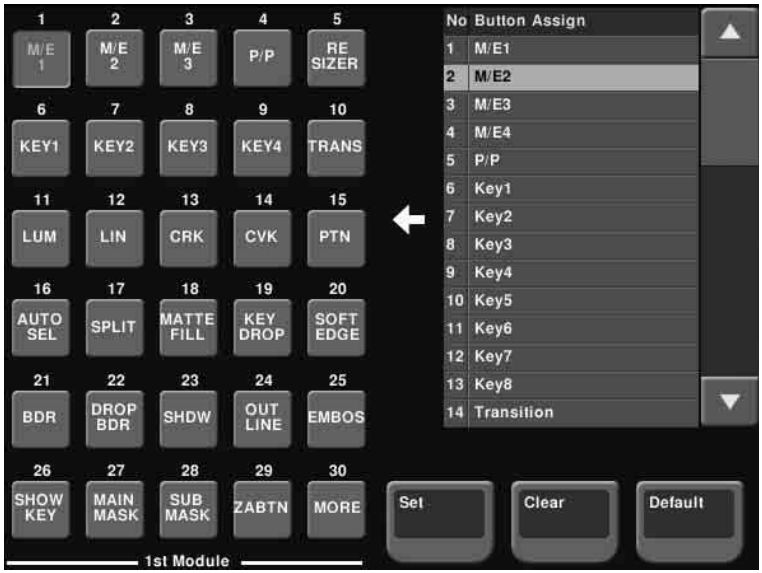
2 Press [Key Control Module].

The Key Control Module menu appears.

3 Press one of [1st], [2nd], [3rd], and [4th], to select the key control block.

4 Press [Button Assign].

The assignment status of the control block you selected in step 3 above appears.



5 Press the button to which you want to assign a function, displaying it in reverse video.

6 Using any of the following methods, select the function you want to assign from the Button Assign list.

- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Button Assign	Select function to be assigned to button	1 to maximum value

7 When you have completed the required assignments, press [Set].

Assigning Preview Output to Preview Selection Buttons

It is possible to assign any preview output to a preview selection button.

This applies to the preview selection buttons in the fade-to-black control block and the downstream key/fade-to-black control block.

Notes

This operation cannot be done in the CCP-9000A.

1 In the Panel >Config menu, press [Link/Program Button].

The Link/Program Button menu appears.

2 Press [Fade To Black Module].

The Fade To Black Module menu appears.
On the left of the status area, preview selection buttons (1 to 11) appear.
On the right side a list of signals to be assigned appears.

3 In the button indications on the left, press the button for the assignment.

4 Using any of the following methods, select the signal to be assigned.

- Press directly on the list on the right.
- In the list on the right, press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Button	Button selection	1 and upwards

5 Press [Set].

This assigns the signal selected in the list to the button.

To cancel an assignment

Select the button, then press [Clear].
This leaves nothing assigned.

To return all preview selection button assignments to the factory default state

In the Fade To Black Module menu, press [Default].

Assigning Functions to the Device Control Block

Assigning devices or functions to the device selection buttons and other buttons of the device control block (search dial)

You can assign devices and functions to the device selection buttons, SBOX buttons and [DELAY] button of the device control block (search dial).

For details of the device control block (search dial), see Chapter 2 (Volume 1).

1 In the Panel >Config menu, press [Link/Program Button].

The Link/Program Button menu appears.

2 Press [Device Control Module].

The Device Control Module menu appears.
The left of the status area shows the device selection buttons, SBOX buttons and [DELAY] button of the device control block (search dial). The list on the right shows the devices and functions that can be assigned.

3 In the button displays on the left, press the button for the assignment.

4 Using any of the following methods, select the device or function to be assigned.

- Press directly on the list on the right.
- In the list on the right, press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Device Function	Selection of device or function to be assigned	1 and upwards

5 Press [Set].

This assigns the device or function selected in the list to the button.

To cancel an assignment

Select the button, then press [Clear].
This removes the assignment to that button.

To return all device selection button assignments to the factory default state

In the Device Control Module menu, press [Default].

Assigning devices and functions to the region selection buttons of the device control block (MKS-8031TB Trackball Module, option)

You can assign devices and functions to the region selection buttons of the optional device control block (trackball).

For details of the device control block (MKS-8031TB Trackball Module, option), see Chapter 2 (Volume 1).

1 In the Panel >Config menu, press [Link/Program Button].

The Link/Program Button menu appears.

2 Press [Joystick/Trackball Module].

The Joystick/Trackball Module menu appears.

3 In the lower right <Mode Select> group, select [Device/Clip] or [Wipe/RSZR].

Device/Clip: Assignment while the device control block DEV button is lit
Wipe/RSZR: Assignment while no button is lit on the device control block or the RSZR button is lit
According to the selection, the left of the status area shows the region selection buttons of the device control block. The list on the right shows the devices and functions that can be assigned.

4 In the button displays on the left, press the button for the assignment.

5 Using any of the following methods, select the device or function to be assigned.

- Press directly on the list on the right.
- In the list on the right, press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Function	Selection of device or function to be assigned	1 and upwards

6 Press [Set].

This assigns the device or function selected in the list to the button.

To cancel an assignment

Select the button, then press [Clear].
This removes the assignment to that button.

To return all device selection button assignments to the factory default state

In the Joystick/Trackball Module menu, press [Default].

Inhibiting Utility 2 Bus and Key Operations

You can inhibit operations on the utility 2 bus and keys 1 to 8 of the M/E and PGM/PST banks by menu operations.
This inhibitions apply for the following control blocks.

- Cross-point control block
- Transition control block
- Independent key transition control block [1)]

1) Only when the Key1, 2, Key 3, 4, Key5, 6 or Key7, 8 are assigned by the Compact Key Module Assign menu.

Notes

This operation cannot be done in the CCP-9000A.

1 In the Panel >Config menu, press [Operation Inhibit].

Operation Inhibit menu appears.

2 Press [M/E Operation Inhibit].

The M/E Operation Inhibit menu appears.

3 In the list in the status area, using any of the following methods, select the switcher bank for which operations are to be inhibited.

- Press directly on the desired switcher bank in the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Bank	Switcher bank selection for inhibiting operations	1 and upwards

4 In the <M/E Operation Inhibit> group, press the utility 2 bus or key button ([Util2 Bus] or [Key1] to [Key8]) for which operations are to be inhibited.

Inhibiting DME Channel Selection Operations

You can inhibit DME channel selection operations from the device control block (trackball) or device control block (joystick).

1 In the Panel >Config menu, press [Operation Inhibit].

The Operation Inhibit menu appears.

2 Press [Joystick/Trackball Module].

The Joystick/Trackball Module menu appears.

3 In the list in the status area, using any of the following methods, select the DME channel for which operations are to be inhibited.

- Press directly on the desired DME channel in the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	DME Ch	DME channel selection for inhibiting operations	1 to 8

4 Press [Inhibit].

Assigning Functions to the Menu Control Block Top Menu and User Preference Buttons

To these 41 buttons, you can freely assign a menu recall or user preference button function.

For details of the menu control block, see Chapter 2 (Volume 1).

1 In the Panel >Config menu, press [Link/Program Button].

The Link/Program Button menu appears.

2 Press [Menu Panel].

The Menu Panel menu appears.
The left side of the status area shows the Top menu selection buttons and user preference buttons, and the right side shows a list of menus and actions to be assigned.

3 Using any of the following methods, scroll the display.

- Press the arrow keys.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Scroll	Scroll	1 to 5

4 In the button indications on the left, press the button for the assignment.

5 Using any of the following methods, select the menu or action to be assigned.

- Press directly on the right list.
- Press the arrow keys on the right list to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
3	Menu/Action	Select the menu or action	1 to 43

6 Press [Set] you confirm the setting.

This assigns the menu or action selected in the list to the button.
To cancel an assignment, select the button, then press [Clear].
To return all button assignments to the factory default state, in the Menu Panel menu, press [Default].

Assigning Keys to the Cross-Point Control Block Key Delegation Buttons

1 In the Panel >Config menu, press [Link/Program Button].

The Link/Program Button menu appears.

2 Press [CCP-9000 Key Deleg].

The CCP-9000 Key Delegation menu appears.
Four buttons appear for each of the M/E and P/P banks.

3 Press the button to which you want to assign a key, displaying it in reverse video.

4 Using any of the following methods, select the key you want to assign from the Button Assign list.

- Press directly on the list.

- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Button Assign No	Select function to be assigned to button	1 to 8

5 Press [Set].

Cross-Point Settings (Xpt Assign Menu)

To carry out the cross-point settings, use the Panel >Xpt Assign menu.

To display the Xpt Assign menu

In the Engineering Setup menu, select VF2 'Panel' and HF2 'Xpt Assign.' The status area shows a list of "cross-point assign tables" to use for the M/E banks, PGM/PST bank, and various buses.

The following functions are available here.

- **Xpt Assign:** For each control block or bus, display and set the assignments to the main table and tables 1 to 14. You can also carry out settings to link switcher signal selection to the audio mixer.
- **Main, V/K Pair Assign:** Make cross-point settings for the main table.
  - Assign video/key sources for button numbers 1 to 300.
  - For each table, specify whether the rightmost cross-point button in each row is used as a shift button, and the operation mode when it is used as a shift button.
  - For the [SHIFT] button in the cross-point control block and for each table, select the mode in which this is a shift button dedicated to the source name displays, or the mode in which it is a shift button for all buses.
  - Disable cross-point buttons to work.
- **Mixer Xpt Assign:** Assign audio mixer cross-points to cross-point buttons in the main table.
- **Table Button Assign:** Create tables 1 to 14 in the same way as the main table.
- **Src Name:** Set source names of up to 16 characters.
- **LCD Color:** Set the LCD color for source name display.
- **Table Copy:** Copy table contents from the main table to tables 1 to 14 or between tables 1 to 14 (it is not possible to copy tables 1 to 14 to the main table).
- **Name Export:** This function sends the source name and destination name to the S-Bus.
- **Side Flags Button Assign:** Assign the rightmost button in the background A/B row to the side flag function (inserting a selected image on both sides of a 4:3 image).

Creating Cross-Point Assign Tables

As cross-point assign tables, you can create a “main” table and up to 14 other tables (table 1 to table 14). However, you can only carry out assignment of the video and key combinations in the main table.

Creating the main table

In the main table, a pair consisting of a video signal and a key signal is assigned to each button number. You can also assign the same signal to another button number at the same time. Further, you can delete currently assigned signals from the main table.

1 In the Panel >Xpt Assign menu or Panel >Xpt Assign >Table1 (Table2, Table3, or Table4) menu, press [Main, V/K Pair Assign].

The Main, V/K Pair Assign menu appears.
The left of the status area shows the video and key signal names, source number, and audio mixer cross-points (machine numbers) currently assigned in the main table. On the right is a list of the source numbers and signals that can be assigned. When the shift button is pressed, the number column is distinguished by color.

For details of audio mixer cross-point assignment operations, see “Setting the audio mixer cross-points” (page 975).

2 Using any of the following methods, select the button number.

- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	V/K Pair No	Selection of video and key pair number	1 to 300

3 When assigning a video signal, press [Video] in the <Assign> group. When assigning a key signal, press [Key]. (You can select a video signal and a key signal at the same time.)

Notes

[Video] and [Key] in the <Assign> group cannot be turned off at the same time. At least the one or the other is always on.

4 Use any of the following methods to select the signal to assign.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

• Turn the knob.

Knob	Parameter	Adjustment	Setting values
3	Source No	Selection of source to be assigned	1 to 228

5 Using the buttons in the <Xpt Assign> group, assign the selected signal to the button number currently selected in the main table.

Set: Delete the signal currently assigned to the selected button number and make a new assignment.

Insert: Move down one line the signal currently assigned to the selected button number and following signals, and make a new assignment.

Notes

When a button number upper than 121 is selected, execution of "Insert" is impossible. The signal assignments to button numbers upper than 121 cannot be changed. When "Insert" is executed for any other number, moving down of signals ends at number 120, and the signals assigned to numbers upper than 121 are maintained in their original lines.

To disable a button

In the Panel >Xpt Assign >Main, V/K Pair Assign menu, select the button you want to disable, and press [Inhibit].

To delete any currently assigned signal

In the Panel >Xpt Assign >Main, V/K Pair Assign menu, select the button corresponding to the signal you want to delete, and press [Delete] in the <Xpt Assign> group.

Signal deletion is executed in accordance with the selection in the <Assign> group, and the signal assigned to the button number next to the selected button number and following signals move up one line.

Notes

When a button number upper than 121 is selected, execution of "Delete" is impossible. The signal assignments to button numbers upper than 121 cannot be changed. When a signal assigned to any other button number is deleted, moving up of signals ends when the signal assigned to number 120 has moved to number 119, and the signals assigned to numbers upper than 121 are maintained in their original lines.

Creating tables 1 to 14

When creating tables 1 to 14, in the same way as when creating the main table, you can assign the same signal to more than one button number, or delete

currently assigned signals. However, assignment of video and key combinations is impossible.

1 In the Panel >Xpt Assign menu, press [Table Button Assign].

The Table Button Assign menu appears.
The table number appears on the upper left part of the status area.
The left part of the status area shows the cross-point button numbers, video and key pair numbers, video signal source names and source numbers, and key signal source names and source numbers. When the shift button is pressed, the number column is distinguished by color.
The right part shows the video and key pair numbers, and the names of video signals and key signals set in the main table.
The Table Button Assign menu also allows you to access the Main, V/K Pair Assign menu and the Src Name/LCD Color menu.

2 Using the knob, select the table number.

Knob	Parameter	Adjustment	Setting values
1	Table No	Selection of the table to be set	1 to 14

3 Using any of the following methods, select the button number.

- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	Button No	Cross-point button selection	1 to 300

4 Using any of the following methods, select the pair number.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
3	V/K Pair No	Selection of video and key pair number to be assigned	1 to 300

5 Using the buttons in the <Button Assign> group, assign the selected pair number to the button number currently selected in table 1.

Set: Delete the signal currently assigned to the selected button number and make a new assignment.

Insert: Move down one line the signal currently assigned to the selected button number and following signals, and make a new assignment.

Notes

When a button number upper than 121 is selected, execution of “Insert” is impossible. The signal assignments to button numbers upper than 121 cannot be changed. When “Insert” is executed for any other number, moving down of signals ends at number 120, and the signals assigned to numbers upper than 121 are maintained in their original lines.

To disable a button

In the Panel >Xpt Assign >Table Button Assign menu, select the button you want to disable, and press [Inhibit].

To delete any currently assigned signal

In the Panel >Xpt Assign >Table Button Assign menu, select the button corresponding to the signal you want to delete, and press [Delete] in the <Button Assign> group.
The signal assigned to the button number next to the selected button number and following signals move up one line.

Notes

When a button number upper than 121 is selected, execution of “Delete” is impossible. The signal assignments to button numbers upper than 121 cannot be changed. When a signal assigned to any other button number is deleted, moving up of signals ends when the signal assigned to number 120 has moved to number 119, and the signals assigned to numbers upper than 121 are maintained in their original lines.

Returning the table to its default state

1. In the Panel >Xpt Assign >Main, V/K Pair Assign menu or Panel >Xpt Assign >Table Button Assign menu, press [Default Recall].

   A confirmation message appears, asking whether or not to return to the default state.

2. To return to the default state, press [Yes], and to cancel the operation, press [No].

Setting the cross-point button shift operation

You can set the operation of the rightmost button in each row of cross-point buttons excluding the reentry buttons.
In the <Xpt Shift Mode> group of the Panel >Xpt Assign >Main, V/K Pair Assign menu or Panel >Xpt Assign >Table Button Assign menu, select one of the following for each cross-point table.

Hold: Acts as a shift button, and the shifted version of the cross-point buttons is enabled while the button is held down.

Lock: Acts as a shift button, and pressing the button toggles between the shifted version and the unshifted version.

Off: Acts as a cross-point button, in a 16-button system as button number 16, in a 24-button system as button number 24, and in a 32-button system as button number 32.

Setting the action of the [SHIFT] button in the cross-point control block

In the <Display Shift Mode> group of the Panel >Xpt Assign >Main, V/K Pair Assign menu or Panel >Xpt Assign >Table Button Assign menu, select either of the following.

Shift All Bus: When this is On, it functions as a shift button for all buses.

Key5-8 Select: This functions as a shift button dedicated to the key 1 and key 2 rows. When On, keys 5 to 8 are selected, and when Off, keys 1 to 4 are selected.

Notes

- It is not possible to make this setting separately for each of the M/E and PGM/PST banks.
- "Shift All Bus" is only valid when the cross-point button shift operation *(see previous item)* is set to "Lock" or "Off."
- If both Shift All Bus and Key5-8 Select are off, this button functions as a shift button for the source name display. It is not possible to set both Shift All Bus and Key5-8 Select to On.

Setting the source signal name

1 In the Panel >Xpt Assign menu or Panel >Xpt Assign >Table Button Assign menu, press [Src Name/LCD Color].

The Src Name/LCD Color menu appears.

2 Turn the knob to select the signal to be set.

Knob	Parameter	Adjustment	Setting values
1	Source No	Source signal selection	1 to 228
2	Num	Number of source signals to be selected	1 to 228

3 Press [Source Name].

A keyboard window appears.

4 Enter any name of not more than 16 characters, then press [Enter].

For details of keyboard window operation, see "Menu Operations" in Chapter 2 (Volume 1).

Sequential names for multiple signals

When you specify a number at the end of a signal name, all of the signals in the range selected by knobs 1 and 2 are automatically assigned names ending with sequential numbers.

Example: To assign sequential names to source signal 2 through source signal 4

1. In step **2** above, set knob 1 to "2," and set knob 2 to "3."
2. Set the name of source signal 2 to "CAM2."
   The name "CAM3" is assigned automatically to source signal 3, and the name "CAM4" is assigned automatically to source signal 4.

Setting the source name display color

1 In the Panel >Xpt Assign >Table Button Assign >Src Name/LCD Color menu, turn the knobs to select the setting target.

Knob	Parameter	Adjustment	Setting values
1	Source No	Source signal selection	1 to 228
2	Num	Number of source signals to be selected	1 to 228

2 In the <LCD Color> group, select the color (Orange/Green/Yellow).

Copying Cross-Point Assign Tables

The contents of a cross-point assign table can be copied to another cross-point assign table, and vice versa.

Notes

The contents of a sub table cannot be copied to the main table.

1 In the Panel >Xpt Assign menu, press [Table Copy].

The Table Copy menu appears.
The status area shows a list of copy sources and a list of copy destinations.

2 Using any of the following methods, select the number of the table to use as the copy source and the number of the table you want to be the copy destination.

- Press directly on the list of copy sources (left-side list) or the list of copy destinations (right-side list) in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Left No	Selection of copy source	1 to 15
2	Right No	Selection of copy destination	1 to 14

3 Press [Copy].

A confirmation message appears, asking whether or not to execute the copy.

4 To execute the copy, press [Yes], and to cancel the operation, press [No].

Selecting Cross-Point Assign Tables

For the M/E-1 bank or PGM/PST bank, you can select the cross-point assign table to be used.
When the AUX delegation buttons of the AUX control block in the control panel are selected, the table set for the M/E or P/P bank is used as the cross-point assign table in the cross-point control block.

Notes
When manipulating the switcher buses with the MKS-8080/8082 AUX bus remote panel, you can assign a different cross-point table for each bus. However, it is not possible to assign cross-point tables 5 to 14.

1 In the Panel >Xpt Assign menu, use any of the following methods to select the switcher bank.

- Press directly on the list on the left of the status area.
- Press the arrow keys on the list on the left to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Bank/Bus No	Switcher bank selection	1 and upwards

Knob	Parameter	Adjustment	Setting values
2	Num	Number of selected switcher banks	1 and upwards

2 Using any of the following methods, select the table.

- Press directly on the list on the right of the status area.
- Press the arrow keys on the list on the right to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Values
3	Table No	Selection of table to be assigned	1 to 15

3 Press [Table Assign Set].

This sets the table for the selected switcher bank.

Exporting Source Names and Destination Names

To send the source names and destination names to the S-Bus, use the following procedure.

1 In the Panel >XPT Assign menu, press [Name Export].

The Name Export menu appears.

2 Turn the knob to set the station ID.

Knob	Parameter	Adjustment	Setting values
1	Station ID	Station ID setting	1 to 255 a)

a) If set to 255, the information is sent to all stations (with display of “All”).

3 Press [Src Name Export].

This exports the source names to the station selected in step **2**.

4 Press [Dest Name Export].

This exports the destination names to the station selected in step **2**.

Notes

Since destination names cannot be selected freely, fixed names are used.

Making Settings for Audio Mixer

Enabling the function to link the audio mixer

Notes

For audio mixer operations in this system, it is necessary to set Mixer ESAM-II for the DCU 9-pin serial port.

For details, see "Serial Port Settings (Serial Port Assign Menu)" (page 1088).

1 In the Panel >Xpt Assign menu, using any of the following methods, select the M/E bank or bus.

- Press directly on the list on the left of the status area.
- Press the arrow keys in the list on the left, to scroll the reverse video cursor.
- Turn the knob.

2 Press [Audio Follow].

"Enable" appears in the "Audio Follow" column.

Setting the audio mixer cross-points

To assign an audio mixer cross-point to a switcher cross-point pair (video/key), carry out the following procedure.

1 In the Panel >Xpt Assign menu, press [Mixer Xpt Assign].

The Mixer Xpt Assign menu appears.

2 In the list on the left, select the number for the setting.

3 In the list on the right, select the audio mixer cross-point (machine number).

4 Press [Set].

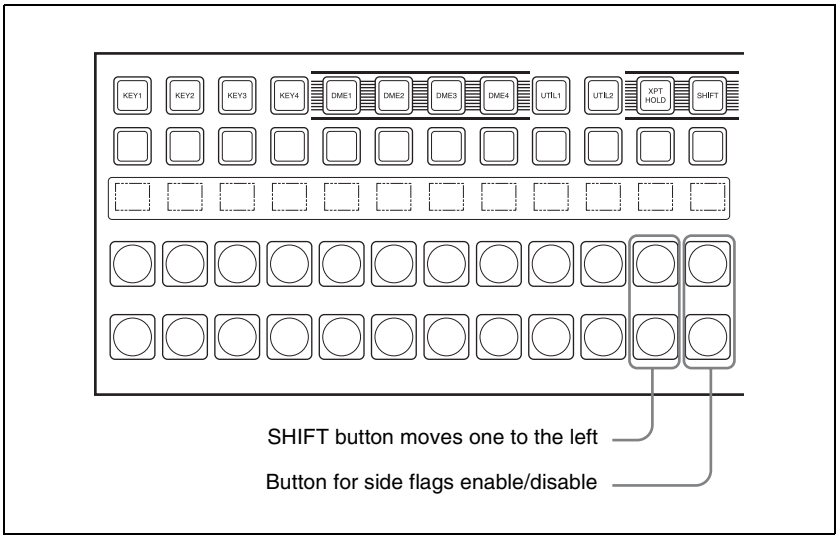
The audio mixer number appears in the "Mixer Xpt" column.

Assigning a Cross-Point Button to Enable/Disable Side Flags

By assigning the side flag function to the rightmost button in a cross-point button row, you can use this button to enable/disable side flags for each of the M/E and PGM/PST banks.
This setting applies to all of the M/E and PGM/PST banks.
When you make this assignment, the SHIFT button (the button assigned to the shift function) is moved one to the left.

Notes

If a macro attachment is set, when you assign the button to the side flag function, the button numbers are offset, and therefore when you press the button this does not execute the macro. The settings, however, are maintained, so that when you cancel the side flag assignment, the macro can be accessed once more.



For details of side flag operations, see "Side Flag Settings" in Chapter 10 (Volume 1).

1 In the Panel >XPT Assign menu, press [Side Flags Button Assign].

The Side Flags Button Assign menu appears.

2 Press [Side Flags Btn Assign], turning it on.

This assigns the rightmost cross-point button to enabling/disabling the side flag function.

Auxiliary Bus Control Block Settings (Aux Assign Menu)

To carry out the settings of the AUX delegation buttons in the auxiliary bus control block, use the Panel >Aux Assign menu.

To display the Aux Assign menu

In the Engineering Setup menu, select VF2 'Panel' and HF3 'Aux Assign.' The left side of the status area shows the delegation numbers, and the list of buses set; the right side shows a list of buses that can be assigned.

The following functions are available here.

- **Aux Assign:** Assign the AUX delegation buttons in the auxiliary bus control block to any bus.
- **Shift Mode:** Specify whether the rightmost button of the AUX delegation buttons is used as a shift button, and when it is used as a shift button, the operation mode.

Assigning a Bus to an AUX Delegation Button

1 In the Panel >Aux Assign menu, using any of the following methods, select the delegation button and the bus to be assigned.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Deleg No	Selection of AUX delegation button	1 to 128 a)
2	Bus No	Selection of bus to be assigned	1 to 166 b)

a) The setting can be from 1 to 20. The valid settings, however, depend on the number of buttons and the delegation button shift mode.

Shift mode	Valid settings
OFF	1 to 10
ON	1 to 20

b) The buses that can be assigned are as follows.
AUX1 to AUX48, DME1V to DME8V, DME1K to DME8K, and M/E1 Utility1 and 2 P/P Utility1 and 2, Frame Memory Source1 and 2, Edit Preview, DSK1 to 8 Fill/Source,

and M/E-1 Key 1 to 8 Fill/Source
M/E-1 EXT DME, P/P EXT DME, DME Utility 1 and 2, and CCR 1 and 2

- For a button for which you want to disable operation, press [Inhibit].

2 Press [Set] to confirm the selection.

To set the AUX delegation button shift operation

To set the operation mode of the rightmost button in the row of AUX delegation buttons, select one of the following in the <Shift Mode> group of the Panel >Aux Assign menu.

Hold: Acts as a shift button, and the shifted version of the AUX delegation buttons is enabled while the button is held down.

Lock: Acts as a shift button, and pressing the button toggles between the shifted version and the unshifted version of the AUX delegation buttons.

Off: Acts as an AUX delegation button. In a 16-button system it acts as button number 16, in a 24-button system as button number 24, and in a 32-button system as button number 32.

Using the Auxiliary Bus Control Block for Router Control

To make router control settings, display the Setup >Panel >Aux Assign >RTR Mode Setting menu.
This menu is used to make settings related to “Router Control Menu Operations” in Chapter 8 (Volume 1).

To display the RTR Mode Setting menu

1 In the Engineering Setup menu, select VF2 ‘Panel’ and HF3 ‘Aux Assign.’

The Aux Assign menu appears.

2 Press [RTR Mode Setting].

The RTR Mode Setting menu appears. The left of the status area shows the destination number assignment status and source table, and the right side lists the destinations that can be assigned.

Assigning a destination to a destination selection button

In the Panel >Aux Assign >RTR Mode Setting menu, use the following procedure.

1 Using any of the following methods, select a destination selection button and the destination to be assigned to the button.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Dest No	Destination selection button selection	1 to 128
2	No	Destination selection in S-Bus space	1 to 1024

For a button whose operation you want to disable, press [Inhibit].

Notes

When a destination selection button having a number in the range 65 to 128 is selected, source table selection automatically becomes invalid, and therefore the Inhibit function also becomes invalid.

2 Press [Dest Set] to confirm the selection.

3 If in step **1** you selected a value in the range 1 to 64, turn the knob to select the source table.

Knob	Parameter	Adjustment	Setting values
3	Source Table	Source table selection	1 to 5

4 Press [Source Table Set] to confirm the selection.

5 Repeat steps **1** to **4** as required.

To set the shift operation of the destination selection buttons

To set the operation mode of the rightmost button in the destination selection button row, select one of the following in the <Dest Shift Mode> group of the Panel >Aux Assign >RTR Mode Setting menu.

Hold: Acts as a shift button, and the shifted destination selection buttons are enabled while the button is held down.

Lock: Acts as a shift button, and pressing the button toggles between the shifted and unshifted states of the destination selection buttons.

Off: Acts as a destination selection button, that is, button number 16 on a 16-button system, button number 24 on a 24-button system, and button number 32 on a 32-button system.

Setting the source table

1 In the Panel >Aux Assign >RTR Mode Setting menu, press [Source Table Assign].

The Source Table Assign menu appears.

2 In the <Source Table Select> group, select the source table you want to manipulate.

3 Press [Table Assign].

The Table Assign menu appears.
The left of the status area lists the button numbers and set sources, and the right side lists the source that can be assigned.

4 Using any of the following methods, select a source selection button and the source you want to assign.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Source No	Source selection button selection	1 to 128
2	No	Source selection in S-Bus space	1 to 1024

For a button whose operation you want to disable, press [Inhibit].

5 Press [Source Set] to confirm the selection.

To set the shift operation of the source selection buttons

To set the operation mode of the rightmost button in the source selection button row with different destinations assigned to the 1st and 2nd rows, select the source table in the Source Table Assign menu, then in the <Xpt Shift Mode> group select one of the following.

Hold: Acts as a shift button, and the shifted source selection buttons are enabled while the button is held down.

Lock: Acts as a shift button, and pressing the button toggles between the shifted and unshifted states of the source selection buttons.

Off: Acts as a cross-point button, that is, button number 16 on a 16-button system, button number 24 on a 24-button system, and button number 32 on a 32-button system.

To expand the shift function

To set the [KEY] button as a shift operation expansion button, in the Source Table Assign menu select the source table, then in the <Expand Xpt Shift Assign> group, press [Key Button].
In order not to expand the shift operation, press [No Assign] in the <Expand Xpt Shift Assign> group.

Assigning levels to a level selection button

To assign levels to the [LEVEL1] to [LEVEL4] buttons in the auxiliary bus control block, use the following procedure.

1 In the Panel >Aux Assign >RTR Mode Setting menu, press [Level Button Assign].

The Level Button Assign menu appears. The status area shows a list of the assignment status of levels to each button.

2 In the <Level Button Select> group, select the button you want to set.

3 In the <Level Assign> group, press the levels you want to assign to the button, turning them on.

You can select plural of levels. You can also make a selection that overlaps that of another button.

Selecting a destination selection button for a snapshot

To set whether snapshots are recalled for each destination selection button individually, use the Panel >Aux Assign >RTR Mode Setting menu as follows.

1 Use any of the following methods to select the destination selection button to which the setting applies.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Dest No	Selection of destination selection button	1 to 128

2 Press [SS Enable], turning it on or off.

On: When a snapshot applying to the router is recalled, the recall also applies to the selected destination selection button.

Off: When a snapshot applying to the router is recalled, the recall does not apply to the selected destination selection button.

Notes

When a destination selection button is set to Inhibit, then even if SS Enable is on, the snapshot for that destination is not recalled.

Setting Button Assignments (Prefs/Utility Menu)

Assign the [PREFS 1] to [PREFS 16] buttons in the menu control block, and the utility/shotbox control block buttons.
This assigns recalling frequently used menus (menu shortcuts), enabling/disabling functions (recalling utility commands) and recalling shotbox registers or macro registers.

- **User Preference:** Make the settings for the user preference buttons in the menu control block.
- **Utility Module Assign:** Make the utility/shotbox control block settings.

To display the Prefs/Utility menu

In the Engineering Setup menu, select VF2 'Panel' and HF4 'Prefs/Utility.' The status area shows the settings of the user preference buttons.

Assigning Functions to User Preference Buttons

1 In the Panel >Prefs/Utility menu, using any of the following methods, select the button to be assigned.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	User preference button selection	1 to 16

2 In the <Action> group, select the function to be assigned.

Menu Shortcut: Assign a frequently used menu to be recalled (menu shortcut).
Utility Command: Assign a function enable/disable or similar operation (utility command).
Macro Recall: Assign a macro register recall.
Shotbox Recall: Assign a shotbox register recall.

3 Depending on the selection in step **2**, make the following settings.

When Menu Shortcut is selected: For the subsequent operations, *see the next item "Assigning a menu shortcut to a user preference button" (page 988).*

When Utility Command is selected: A list of commands appears on the right of the status area; using any of the following methods, select the command you want to assign.

- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
3	Command	Utility command selection	1 and upwards
4 a)	GPI No	GPI port number	1 and upwards

a) When the Command parameter is set to Sw'er GPI Test Fire, Panel GPI Test Fire, DCU GPI, or Test Fire

When Macro Recall is selected: Turn the knob to select the macro register you want to assign.

Knob	Parameter	Adjustment	Setting values
3	Macro	Macro register selection	1 to 250

When Shotbox Recall is selected: Turn the knob to select the shotbox register you want to assign.

Knob	Parameter	Adjustment	Setting values
3	Shotbox	Shotbox register selection	1 to 99

4 Press [Action Set].

This assigns the selected action, which is reflected in the status area.

To cancel an assignment

After selecting the relevant button, press [Clear].

To display register names in the Utility Command column

If in step **2** you select [Macro Recall] or [Shotbox Recall], press the [Reg Name Display] button to select whether or not register names appear in the Utility Command column.

Using the [PREFS 9] to [PREFS 16] settings

There are sixteen user preference buttons that can be set, [PREFS 1] to [PREFS 16], but there are only eight user preference buttons present in the menu control block. By default these buttons are assigned to the [PREFS 1] to [PREFS 8] settings. Therefore, to use the settings of [PREFS 9] to [PREFS 16], it is

necessary to access the Engineering Setup >Panel >Config >Link/Program Button >Menu Panel menu, and assign these settings to buttons in the menu control block.

List of utility commands and user preference button status

The following table shows the utility commands that can be assigned to user preference buttons.

Command name [a]	Function	Button status	
		Lit amber	Off
SWR Remote1 Enbl | SWR Remote4 Enbl	Switcher Remote 1 enabled/disabled | Switcher Remote 4 enabled/disabled	Enabled	Disabled
DME1 Editor Port Enbl	DME1 editor port enabled/disabled	Enabled	Disabled
DME2 Editor Port Enbl	DME2 editor port enabled/disabled	Enabled	Disabled
DME3 Editor Port Enbl	DME3 editor port enabled/disabled	Enabled	Disabled
DME4 Editor Port Enbl	DME4 editor port enabled/disabled	Enabled	Disabled
ME1 PGM1 ST | ME1 PGM4 ST	M/E-1 PGM1 output safe title on/off | M/E-1 PGM4 output safe title on/off	On	Off
ME1 PVW ST	M/E-1 preview output safe title on/off	On	Off
ME1 Clean ST	M/E-1 clean output safe title on/off	On	Off
ME1 K-PVW ST	M/E-1 key preview output safe title on/off	On	Off
ME2 PGM1 ST | ME2 PGM4 ST	M/E-2 PGM1 output safe title on/off | M/E-2 PGM4 output safe title on/off	On	Off
ME2 PVW ST	M/E-2 preview output safe title on/off	On	Off
ME2 Clean ST	M/E-2 clean output safe title on/off	On	Off
ME2 K-PVW ST	M/E-2 key preview output safe title on/off	On	Off
ME3 PGM1 ST | ME3 PGM4 ST	M/E-3 PGM1 output safe title on/off | M/E-3 PGM4 output safe title on/off	On	Off
ME3 PVW ST	M/E-3 preview output safe title on/off	On	Off
ME3 Clean ST	M/E-3 clean output safe title on/off	On	Off
ME3 K-PVW ST	ME-3 key preview output safe title on/off	On	Off
ME4 PGM1 ST | ME4 PGM4 ST	M/E-4 PGM1 output safe title On/Off | M/E-4 PGM4 output safe title On/Off	On	Off
ME4 PVW ST	M/E-4 preview output safe title On/Off	On	Off
ME4 Clean ST	M/E-4 clean output safe title On/Off	On	Off

Command name [a]	Function	Button status	
		Lit amber	Off
ME4 K-PVW ST	ME-4 key preview output safe title On/Off	On	Off
PP PGM1 ST | PP PGM4 ST	P/P PGM1 output safe title on/off | P/P PGM4 output safe title on/off	On	Off
PP PVW ST	P/P preview output safe title on/off	On	Off
PP Clean ST	P/P clean output safe title on/off	On	Off
PP K-PVW ST	P/P key preview output safe title on/off	On	Off
DME MON1 ST	DME Monitor 1 output safe title on/off	On	Off
DME MON2 ST	DME Monitor 2 output safe title on/off	On	Off
Edit PVW ST	Edit preview output safe title on/off	On	Off
Preset ST	Preset output safe title on/off	On	Off
AUX1 ST | AUX48 ST	AUX1 output safe title on/off | AUX48 output safe title on/off	On	Off
FM Src1 Frame Freeze	Frame freeze of frame memory source 1	During frame freeze	Either of the other two states
FM Src1 Filed Freeze	Field freeze of frame memory source 1	During field freeze	Either of the other two states
FM Src1 Freeze Off	Release freeze of frame memory source 1	While freeze being released	Either of the other two states
FM Src2 Frame Freeze	Frame freeze of frame memory source 2	During frame freeze	Either of the other two states
FM Src2 Field Freeze	Field freeze of frame memory source 2	During field freeze	Either of the other two states
FM Src2 Freeze Off	Release freeze of frame memory source 2	While freeze being released	Either of the other two states
SWR GPI Enbl	Enable/disable switcher GPI	Enabled	Disabled
DME1 GPI Enbl	Enable/disable DME1 GPI	Enabled	Disabled
DME2 GPI Enbl	Enable/disable DME2 GPI	Enabled	Disabled
DME3 GPI Enbl	Enable/disable DME3 GPI	Enabled	Disabled
DME4 GPI Enbl	Enable/disable DME4 GPI	Enabled	Disabled
Panel GPI Enbl	Enable/disable panel GPI	Enabled	Disabled
SWR GPI1 Test Fire | SWR GPI8 Test Fire	Output test trigger from switcher GPI1 | Output test trigger from switcher GPI8	Output (lights only at the instant the button is pressed)	When the output is assigned
Panel GPI1 Test Fire | Panel GPI8 Test Fire	Output test trigger from panel GPI1 | Output test trigger from panel GPI8	Output (lights only at the instant the button is pressed)	When the output is assigned

Command name [a]	Function	Button status	
		Lit amber	Off
DCU GPI1 Test Fire | DCU GPI50 Test Fire	Output test trigger from port assigned to DCU GPI1 | Output test trigger from port assigned to DCU GPI50	Output (lights only at the instant the button is pressed)	When the output is assigned
Macro Attachment Enbl	Enable/disable macro attachment	Enabled	Disabled
Macro Only Set	Macro only mode on/off	On	Off
Pre Macro	Set macro attachment in pre macro mode	Can be set only while pressed (lit)	When the function is assigned
Post Macro	Set macro attachment in post macro mode	Can be set only while pressed (lit)	When the function is assigned
Macro Take	Macro execution	During execution	When the function is assigned
Macro Auto Ins	Macro auto insert mode on/off	On	Off
Macro AT with Rate	When registering an auto transition macro event, on/off setting of mode to save transition rate	On	Off
Macro AT with A/B Bus	When registering an auto transition macro event for the transition control block, on/off setting of mode to save A/B Bus cross-point settings	On	Off
Macro TL with Region	When registering a timeline macro event, on/off setting of mode to save applicable region	On	Off
DME Override	DME override on/off	On	Off
DME Graphic	DME graphics on/off (Applies to graphics for channel selected in device control block)	On	Off
System Manager Enbl	Enable/disable operation from System Manager	Enabled	Disabled
Plug-In Editor Enbl	Enable/disable operation from an editing keyboard	Enabled	Disabled
Inhibit Set	Inhibit cross-point button	Can be set only while pressed (lit)	When the function is assigned
Inhibit All Clear	Clear all cross-point button inhibit settings	Can be set only while pressed (lit)	When the function is assigned
K-SS Store	Enable/disable key snapshot saving [b]	Enabled	Disabled

a) For the safe title on/off commands (from ME1 PGM1 ST-ME1 PGM4 ST to AUX1 ST-AUX48 ST), the name of the assigned output signal is shown.

b) Pressing this button to turn it on enables key snapshot operations for all control blocks.

Assigning a menu shortcut to a user preference button

1 Referring to the procedure up to step **2** of "Assigning Functions to User Preference Buttons" *(page 983)*, select [Menu Shortcut].

The user preference buttons [PREFS 1] to [PREFS 16] flash amber.

2 Using any of the following methods, display the menu to which you want to make a shortcut.

- In the menu control block, press the relevant top menu selection button, then select VF and HF.
- Press the menu page number button in the upper left corner of the menu screen, then enter a menu number from the numeric keypad window.
- Press a particular control panel button twice in rapid succession.

3 Press the user preference button to which you want to assign the shortcut.

The menu screen goes back to the Prefs/Utility menu, and the selection is reflected in the status area. The user preference buttons [PREFS 1] to [PREFS 16] flash amber.

4 Repeat steps **2** and **3** as required, to assign all desired menu shortcuts to the user preference buttons.

To abandon the process of menu shortcut assignment

In the Prefs/Utility menu, press [Menu Shortcut] once more.
This exits the menu shortcut assignment mode.

Assigning a Function to a Memory Recall Button in the Utility/Shotbox Control Block (MKS-8033 Utility/ Shotbox Module, Option)

1 In the Prefs/Utility menu, press [Utility Module Assign].

The Prefs/Utility >Utility Module Assign menu appears. The status area shows the settings in the utility/shotbox control block.

2 Using any of the following methods, select the button to be assigned.

- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Bank	Bank selection	1 to 4
2	Button No	Control block button selection	1 to 24

3 In the <Action> group, select the function you want to assign.

Menu Shortcut: Assign a frequently used menu to be recalled (menu shortcut).
Utility Command: Assign a function on/off or similar operation (utility command).
Macro Recall: Assign a macro register recall.
Shotbox Recall: Assign a shotbox register recall.

4 Depending on the selection in step **3**, make the following settings.

When Menu Shortcut is selected: For the subsequent operations, *see the next item "Assigning a menu shortcut to a memory recall button" (page 993).*
When Utility Command is selected: A list of commands appears on the right of the status area; using any of the following methods, select the command you want to assign.
- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
3	Command	Utility command selection	1 and upwards
4 a)	GPI No	GPI port number	1 and upwards

a) When the Command parameter is set to Sw'er GPI Test Fire, Panel GPI Test Fire, DCU GPI, or Test Fire

When Macro Recall is selected: Turn the knob to select the macro register you want to assign.

Knob	Parameter	Adjustment	Setting values
3	Macro	Macro register selection	1 to 250

When Shotbox Recall is selected: Turn the knob to select the shotbox register you want to assign.

Knob	Parameter	Adjustment	Setting values
3	Shotbox	Shotbox register selection	1 to 99

5 Press [Action Set].

This assigns the selected action, which is reflected in the status area.

In the utility/shotbox control block, the assigned button lights orange. If a shotbox register was assigned, the register name appears.

To cancel an assignment

After selecting the relevant button, press [Clear].

To display register names in the Utility Command column

If in step **3** you select [Macro Recall] or [Shotbox Recall], press the [Reg Name Display] button to select whether or not register names appear in the Utility Command column.

List of utility commands and memory recall button status

The following table shows the utility commands that can be assigned to memory recall buttons.

Command name [a]	Function	Button status	
		Lit green	Lit orange
SWR Remote1 Enbl | SWR Remote4 Enbl	Switcher Remote 1 enabled/disabled | Switcher Remote 4 enabled/disabled	Enabled	Disabled
DME1 Editor Port Enbl	DME1 editor port enabled/disabled	Enabled	Disabled
DME2 Editor Port Enbl	DME2 editor port enabled/disabled	Enabled	Disabled
DME3 Editor Port Enbl	DME3 editor port enabled/disabled	Enabled	Disabled
DME4 Editor Port Enbl	DME4 editor port enabled/disabled	Enabled	Disabled
ME1 PGM1 ST | ME1 PGM4 ST	M/E-1 PGM1 output safe title on/off | M/E-1 PGM4 output safe title on/off	On	Off
ME1 PVW ST	M/E-1 preview output safe title on/off	On	Off
ME1 Clean ST	M/E-1 clean output safe title on/off	On	Off
ME1 K-PVW ST	M/E-1 key preview output safe title on/off	On	Off
ME2 PGM1 ST | ME2 PGM4 ST	M/E-2 PGM1 output safe title on/off | M/E-2 PGM4 output safe title on/off	On	Off
ME2 PVW ST	M/E-2 preview output safe title on/off	On	Off
ME2 Clean ST	M/E-2 clean output safe title on/off	On	Off
ME2 K-PVW ST	M/E-2 key preview output safe title on/off	On	Off
ME3 PGM1 ST | ME3 PGM4 ST	M/E-3 PGM1 output safe title on/off | M/E-3 PGM4 output safe title on/off	On	Off
ME3 PVW ST	M/E-3 preview output safe title on/off	On	Off
ME3 Clean ST	M/E-3 clean output safe title on/off	On	Off

Command name [a]	Function	Button status	
		Lit green	Lit orange
ME3 K-PVW ST	ME-3 key preview output safe title on/off	On	Off
ME4 PGM1 ST | ME4 PGM4 ST	M/E-4 PGM1 output safe title On/Off | M/E-4 PGM4 output safe title On/Off	On	Off
ME4 PVW ST	M/E-4 preview output safe title On/Off	On	Off
ME4 Clean ST	M/E-4 clean output safe title On/Off	On	Off
ME4 K-PVW ST	ME-4 key preview output safe title On/Off	On	Off
PP PGM1 ST | PP PGM4 ST	PP PGM1 output safe title on/off | PP PGM4 output safe title on/off	On	Off
PP PVW ST	P/P preview output safe title on/off	On	Off
PP Clean ST	P/P clean output safe title on/off	On	Off
PP K-PVW ST	P/P key preview output safe title on/off	On	Off
DME MON1 ST	DME Monitor 1 output safe title on/off	On	Off
DME MON2 ST	DME Monitor 2 output safe title on/off	On	Off
Edit PVW ST	Edit preview output safe title on/off	On	Off
Preset ST	Preset output safe title on/off	On	Off
AUX1 ST | AUX48 ST	AUX1 output safe title on/off | AUX48 output safe title on/off	On	Off
FM Src1 Frame Freeze	Frame freeze of frame memory source 1	During frame freeze	Either of the other two states
FM Src1 Filed Freeze	Field freeze of frame memory source 1	During field freeze	Either of the other two states
FM Src1 Freeze Off	Release freeze of frame memory source 1	While freeze being released	Either of the other two states
FM Src2 Frame Freeze	Frame freeze of frame memory source 2	During frame freeze	Either of the other two states
FM Src2 Field Freeze	Field freeze of frame memory source 2	During field freeze	Either of the other two states
FM Src2 Freeze Off	Release freeze of frame memory source 2	While freeze being released	Either of the other two states
SWR GPI Enbl	Enable/disable switcher GPI	Enabled	Disabled
DME1 GPI Enbl	Enable/disable DME1 GPI	Enabled	Disabled
DME2 GPI Enbl	Enable/disable DME2 GPI	Enabled	Disabled
DME3 GPI Enbl	Enable/disable DME3 GPI	Enabled	Disabled
DME4 GPI Enbl	Enable/disable DME4 GPI	Enabled	Disabled
Panel GPI Enbl	Enable/disable panel GPI	Enabled	Disabled

Command name [a]	Function	Button status	
		Lit green	Lit orange
SWR GPI1 Test Fire | SWR GPI8 Test Fire	Output test trigger from switcher GPI1 | Output test trigger from switcher GPI8	Output (lights only at the instant the button is pressed)	When the output is assigned
Panel GPI1 Test Fire | Panel GPI8 Test Fire	Output test trigger from panel GPI1 | Output test trigger from panel GPI8	Output (lights only at the instant the button is pressed)	When the output is assigned
DCU GPI1 Test Fire | DCU GPI50 Test Fire	Output test trigger from port assigned to DCU GPI1 | Output test trigger from port assigned to DCU GPI50	Output (lights only at the instant the button is pressed)	When the output is assigned
Macro Attachment Enbl	Enable/disable macro attachment	Enabled	Disabled
Macro Only Set	Macro only mode on/off	On	Off
Pre Macro	Set macro attachment in pre macro mode	Can be set only while pressed (lit)	When the function is assigned
Post Macro	Set macro attachment in post macro mode	Can be set only while pressed (lit)	When the function is assigned
Macro Take	Macro execution	During execution	When the function is assigned
Macro Auto Ins	Macro auto insert mode on/off	On	Off
Macro AT with Rate	When registering an auto transition macro event, on/off setting of mode to save transition rate	On	Off
Macro AT with A/B Bus	When registering an auto transition macro event for the transition control block, on/off setting of mode to save A/B Bus cross-point settings	On	Off
Macro TL with Region	When registering a timeline macro event, on/off setting of mode to save applicable region	On	Off
DME Override	DME override on/off	On	Off
DME Graphic	DME graphics on/off (Applies to graphics for channel selected in device control block)	On	Off
Plug-In Editor Enbl	Enable/disable operation from an editing keyboard	Enabled	Disabled
Inhibit Set	Inhibit cross-point button	Can be set only while pressed (lit)	When the function is assigned
Inhibit All Clear	Clear all cross-point button inhibit settings	Can be set only while pressed (lit)	When the function is assigned
K-SS Store	Enable/disable key snapshot saving [b]	Enabled	Disabled

a) For the safe title on/off commands (from ME1 PGM1 ST-ME1 PGM4 ST to AUX1 ST-AUX48 ST), the name of the assigned output signal is shown.
b) Pressing this button to turn it on enables key snapshot operations for all control blocks.

Assigning a menu shortcut to a memory recall button

1 Referring to the procedure up to step **3** on *"Assigning a Function to a Memory Recall Button in the Utility/Shotbox Control Block (MKS-8033 Utility/Shotbox Module, Option)" (page 988)*, select [Menu Shortcut].

The memory recall buttons in the utility/shotbox control block flash orange.

2 Using any of the following methods, display the menu to which you want to make a shortcut.

- In the menu control block, press the relevant top menu selection button, then select VF and HF.
- Press the menu page number button in the upper left corner of the menu screen, then enter a menu number from the numeric keypad window.
- Press a particular control panel button twice in rapid succession.

3 In the utility/shotbox control block, select the bank, and press the button to which you want to assign the shortcut.

The menu screen goes back to the Prefs/Utility >Utility Module Assign menu, and the selection is reflected in the status area.
The buttons in the utility/shotbox control block flash.

4 Repeat steps **2** and **3** as required, to assign all desired menu shortcuts to the buttons in the utility/shotbox control block.

To abandon the process of menu shortcut assignment

In the Prefs/Utility >Utility Module Assign menu, press [Menu Shortcut].
This exits the menu shortcut assignment mode.

Setting names to be displayed in memory recall buttons

Notes

The name you set using the following procedure is displayed only when "Menu Shortcut" or "Utility Command" has been assigned to the selected memory recall button. To set a name for display in a memory recall button to which "Shotbox Recall" or "Macro Recall" has been assigned, use the Shotbox menu or Macro menu.

1 In the Prefs/Utility >Utility Module Assign menu, select the button using any of the following methods.

- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Bank	Bank selection	1 to 4
2	Button No	Control block button selection	1 to 24

2 Press [Name].

A keyboard window appears.

3 Enter a name of not more than eight characters, and press [Enter].

The name you have set is reflected in the status area and on the memory recall button in the utility/shotbox control block.

Interfacing With External Devices (Device Interface Menu)

To carry out setup relating to connections with external devices, display the Panel >Device Interface menu.

To display the Device Interface menu

In the Engineering Setup menu, select VF2 ‘Panel’ and HF5 ‘Device Interface.’

The following functions are available here.

- **GPI Input:** Set the GPI input ports and trigger type, and make the action settings.
- **GPI Output:** Set the GPI output ports and trigger type, and make the action settings.
- **P-Bus Control:** Set the control mode for P-Bus devices.
- **DCU Serial Port Assign:** Assign the devices (disk recorder/VTR/Extended VTR) connected to a DCU and accessible from the control panel to the [DEV1] to [DEV12] buttons which become operative when you press the [DEV] button on the device control block. For a disk recorder or Extended VTR, you can also make settings relating to sharing of file lists. Further, you can make settings for devices (disk recorder/VTR/Extended VTR) operable from an editing keyboard.
- **Editor Port Assign:** When the BZS-8050 license is valid, make settings for the SCU editor panel port.
- **Aux Bus Override Mode:** Set the operating mode when “Aux ? O’ride Src ??” is selected as the GPI input action.

Making Control Panel GPI Input Settings

1 In the Panel >Device Interface menu, press [GPI Input].

The GPI Input menu appears.

2 Using any of the following methods, select the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port	Port selection	1 to 8

3 In the <Trigger Type> group, select the trigger type.

(Rising Edge): Apply the trigger on a rising edge of an input pulse.

(Falling Edge): Apply the trigger on a falling edge of an input pulse.

(Any Edge): Apply the trigger on a change in the polarity of the input signal.

(Level): Carry out the specified operation when the input is low or high.

No Operation: Apply no trigger on an input pulse.

4 In the <Target> group, select the action block.

M/E-1, M/E-2, M/E-3, M/E-4, P/P: Set the action for one of the banks.

Common/Setup: Set an action for something other than the above, or a setup action.

5 Using any of the following methods, select the action to be set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
2	Action	Action selection	1 and upwards [a]
4	Aux Bus No	AUX bus selection	1 to 48 [b]
5	Reg No	Register number	1 to 4 [c] 1 to 99 [d] 1 to 250 [e] 1 to 399 [f]
5	Src No	Source signal selection	1 and upwards [b]
5	No	User preference button selection	1 to 16 [g]

a) As for the setting values, see “Selectable actions for various trigger types” *(page 997)*.
b) When knob 2 selection is “Aux ? O’ride Src ??”
c) When knob 2 selection is “Key Snapshot”
d) When knob 2 selection is “Snapshot” or “Shotbox”
e) When knob 2 selection is “Macro”
f) When knob 2 selection is “Effect”
g) When knob 2 selection is “Prefs Button?”
h) For primary inputs: 1 to 144
For premium inputs: 145 to 164 ((PREM1) to (PREM20) indicated after the number)

For format converter dedicated inputs: 165 to 180 ((FC1) to (FC16) indicated after the number)

6 Press [Action Set] to confirm the action selection.

The selected setting appears in the status area.

Selectable actions for various trigger types

- **When the trigger type is other than "Level"**
  (In M/E-x, the x is the M/E bank number (1 to 4); in DSKx the x is the DSK number (1 to 8); in Keyx the x is the key number (1 to 8)).
  When Target is M/E-x: Cut, Auto Trans, Keyx Cut, Keyx Auto Trans, Keyx SS ? Recall
  When Target is P/P: Cut, Auto Trans, DSKx Cut, DSKx Auto Trans, DSKx SS ? Recall, FTB Auto Trans, FTB Cut
  When Target is Common/Setup:
  Master SS ? Recall, Master Effect ? Recall, SS ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, FM Src1 Frame Freeze, FM Src1 Field Freeze, FM Src1 Freeze Off, FM Src2 Frame Freeze, FM Src2 Field Freeze, FM Src2 Freeze Off, FM Src1 Clip Record, FM Src1 Clip Stop, FM Src2 Clip Record, FM Src2 Clip Stop, FM1 to FM8 Clip Cueup, FM1 to FM8 Clip Play, FM1 to FM8 Clip Stop, Shotbox ? Recall, Macro Take, Prefs Button?, Macro ? Recall, No Action
- **When the trigger type is only "Rising Edge" or "Falling Edge"**
  Aux? O'ride Src??
- **When the trigger type is "Level"**
  When Target is M/E-1, M/E-2, M/E-3, M/E-4 or P/P: No Action
  When Target is Common/Setup: System Format
  Aspect (overall system settings), Level Enable, No Action

Notes

- "Level Enable" is a function that determines whether GPI inputs are enabled ("Enable") or disabled ("Disable") for the "Aspect" and "Format" actions that can be used when the trigger type is Level. When Level Enable is used, if the input is "Disable" then it is not possible to switch "Aspect" or "Format" by GPI input.
  If a GPI to switch "Aspect" or "Format" occurs when powering the system off, the action triggered by the GPI may start immediately before the power goes off and the power may go off before the action is completed. This may corrupt the setup settings. It is therefore recommended to use Level Enable to avoid such a situation.
- As for "Aux ? O'ride Src ??," when "Rising Edge" is selected, on a rising edge the set AUX bus input is used. On a falling edge, the original state of the cross-point is restored. If the GPI trigger is applied repeatedly at short intervals (0.5 second or less), the cross-point switching may not be carried out correctly. In this case, apply the GPI trigger again.

- If “System Format” is selected for “Action” when the format converter is used on the switcher, you can set the conversion formats of the format converter for “FC Input 1-8”, “FC Input 9-16”, “FC Output 1-2” and “FC Output 3-4”.

Carrying out level settings

To set the low level and high level, first set the trigger type to “Level,” then use the following procedure.

1 In the Panel >Device Interface menu, select the action to be set, and press [H/L Set].

The H/L Set menu appears.

2 Using any of the following methods, select the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Signal format/screen aspect ratio selection	1 and upwards

3 To apply the selection made in step **2** when the input is the GPI high level, press [H Set]. To apply the selection made in step **2** when the input is low, press [L Set].

This confirms the setting, which appears in the status area.

Making Control Panel GPI Output Settings

1 In the Panel >Device Interface menu, press [GPI Output].

The GPI Output menu appears.

2 Using any of the following methods, select the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port	Port selection	1 to 8

3 In the <Trigger Type> group, select the trigger polarity.

 **(Rising Edge):** The trigger causes the relay contacts to be open-circuit or drives the output high, and holds this state for the specified pulse width.

 **(Falling Edge):** The trigger causes the relay contacts to be shorted or drives the output low, and holds this state for the specified pulse width.

 **(Any Edge):** Each time the trigger occurs, the relay contacts are alternately closed or opened, or the output is switched between high and low.

Status: Depending on the status, the relay contacts are closed or opened, or the output is switched between high and low.

No Operation: The trigger has no effect on the relay state or output level.

4 Turning the knobs, select the pulse width and timing to be set.

Knob	Parameter	Adjustment	Setting values
3	Pulse Width	Pulse width	1 to 60 (fields)
4	Timing	Output timing	1 to 3 a)

a) 1: Field 1, 2: Field 2, 3: Any

When "⨉" is selected as the trigger polarity, there is no Pulse Width setting. When "Status" is selected, there is no Pulse Width or Timing setting.

5 In the <Source> group, select the action block.

M/E-1 to M/E-4 and P/P: Set an action for the M/E or PGM/PST bank.
Common: Set an action for error status.

6 Using any of the following methods, select the action to be set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
2	Action	Action selection	1 and upwards a)
5	Reg No	Register number	1 to 4 b)

a) **• Action list when the trigger type is other than "Status"**
(In M/E-x, the x is the M/E bank number (1 to 4); in DSKx the x is the DSK number (1 to 8); in Keyx the x is the key number (1 to 8)).
When Source is M/E-x: Keyx SS ? Recall, No Action
When Source is P/P: DSKx SS ? Recall, No Action
When Source is Common: KF Run, No Action

• **Action list when the trigger type is "Status"**
(In M/E-x, the x is the M/E bank number (1 to 4); in DSKx the x is the DSK number (1 to 8); in Keyx the x is the key number (1 to 8)).
When Source is M/E-x: Keyx SS ? Recall, Keyx On, No Action
When Source is P/P: DSKx SS ? Recall, DSKx On, No Action
When Source is Common: Error Make, Error Break, Keep Break, Keep Make, PREFS1, PREFS2, PREFS3, PREFS4, PREFS5, PREFS6, PREFS7, PREFS8, PREFS9, PREFS10, PREFS11, PREFS12, PREFS13, PREFS14, PREFS15, PREFS16, Device Recording, No Action

b) When knob 2 selection is "Key Snapshot"

7 Press [Action Set] to confirm the action selection.

The selected setting appears in the status area.

Test firing the trigger

To test fire the trigger, press [Test Fire].
This outputs a trigger from the selected output port. This is not output when the trigger type is "Status."

Setting the Control Mode for P-Bus Devices

In the <P-Bus Control> group of the Panel >Device Interface menu, select the mode.

Trigger: When a predetermined button is pressed, the action command assigned to that button is output, to control an external device.

Timeline: The external device is controlled as a keyframe effect controlled by the center control panel.

Setting the SCU Editor Panel Port

When an editing keyboard is used, this port setting is for the editing keyboard if the license for the BZS-8050 is valid *(see page 921)*, and for the serial tally if the license for the BZS-8050 is invalid.
If you want to use the port setting for the serial tally when the license for the BZS-8050 is valid, select [Serial Tally] from the <Editor Port Assign> group in the Panel >Device Interface menu.

Serial Tally: Use the SCU editor panel port for the serial tally.

Editor Keyboard: Use the SCU editor panel port for the editing keyboard.

Making DCU Serial Port Settings

You can assign buttons in the device control block (DEV1 to DEV12) to DCU serial ports, to operate the devices (disk recorder/VTR/Extended VTR) connected to these ports. For a disk recorder/Extended VTR, you can also set the sharing of file lists.

For details of DCU serial port settings, see "Serial Port Settings (Serial Port Assign Menu)" (page 1088).

Associating a serial port with a device selection button

1 In the Panel >Device Interface menu, press [DCU Serial Port/MPE Assign].

The DCU Serial Port/MPE Assign menu appears.

2 Using any of the following methods, select the DCU serial port.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Serial port selection	1 and upwards a)

a) The range of the setting value depends on the DCU port settings.

The DCU number, slot number, and serial port number appear.

3 Select the device selection button to be assigned from the <Assign> group.

Notes

- It is not possible to assign more than one device selection button to the same port. The later assigned device selection button takes priority, and the previous selection is invalidated.
- If P-Bus/Mixer ESAM-II is assigned to a serial port, it is not possible to assign a device selection button to that port.

4 Repeat steps **2** and **3** as required to make assignments to other ports.

To select whether to use an editing keyboard

If you want to use an editing keyboard for the selected device, select a port using the same operation as in step **2**, then press [Plug-In Editor Enbl] to display "Enbl" in the Editor column. If you do not want to use an editing keyboard, press [Plug-In Editor Enbl] to make the "Enbl" display disappear.

Notes

- This selection is possible when the BZS-8050 license is valid *(see page 921)*.
- A port to which Mixer ESAM-II is assigned is automatically set to Enbl, and you cannot change this setting.

Sharing Disk Recorder/Extended VTR File Lists

To share files between devices connected to the same disk recorder/Extended VTR, use the following procedure.

Notes

The following operation can only be carried out for the ports to which a disk recorder or Extended VTR is assigned.

1 In the Panel >Device Interface >DCU Serial Port/MPE Assign menu, select the target disk recorder/Extended VTR.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Serial port selection	1 and upwards a)

a) The range of the setting value depends on the DCU port settings.

2 Turn the knob to select the device selection button (DEV1 to DEV12) for sharing the file list.

Knob	Parameter	Adjustment	Setting values
2	File List	Device selection button for sharing the file list	1 to 12

3 Press [Same File List Set].

This is reflected in the file list in the status area.

4 Repeat steps **1** to **3** as required to select other devices for sharing the file list.

Setting the AUX Bus Override Operating Mode

Set the operating mode when the trigger type is “Rising Edge” or “Falling Edge,” and “Aux ? O’ride Src ??” is selected as the GPI input action.
In the <Aux Bus Override Mode> group of the Panel >Device Interface menu, select one of the following modes.

Momentary: On an input pulse rising (falling) edge, the input of the selected AUX bus is used, and on a falling (rising) edge this returns to the original cross-point.

Latch: On an input pulse rising (falling) edge, the input of the selected AUX bus is used, and this does not return to the original cross-point change even on a falling (rising) edge.

This setting is also valid when AUX bus override is selected as the DCU GPI input *(see page 1079)*.

Operation Settings (Operation Menu)

To make settings relating to panel operation, use the Panel >Operation menu.

To display the Operation menu

In the Engineering Setup menu, select VF2 'Panel' and HF6 'Operation.' The status area shows the items that can be set and a list of the settings.

The following functions are available here.

- **Button Tally:** Set whether or not the system tally generation results are reflected in the panel tally.
- **Trans Rate Display:** Select whether the transition rate display mode is in frames or timecode units.
- **S-Bus Name Link:** Copy the S-Bus description name to the source name.
- **Effect:** For keyframe effects, you can make the following settings. *(See Chapter 13 "Keyframe Effects" (Volume 2).)*
  - Recall mode
  - Automatically turning off the [EDIT ENBL] button when an effect is recalled
  - Automatic insertion of a first keyframe when an empty register is recalled
  - Effect Auto Save
  - Default KF Duration
  - Setting whether or not to replay the first keyframe after rewinding a GPI/P-Bus/disk recorder/VTR/Extended VTR/Macro effect
- **Source/Dest Name:** For the Source/Dest (source/destination) names used by the system, select one of the following:
  - Source name set by cross-point assignment or fixed bus name
  - Description name set on routing switcher
  - "Type + Num" name set on routing switcher

  Names assigned with Xpt Assign can be replaced later with description names.
- **Name Display:** Specify the number of characters for display of the names selected in Source/Dest Name above, as two characters, four characters, or Auto.
- **Flexi Pad Mode:** Make menu settings for wipe snapshots.
- **Custom Button:** Set the following button operation modes.
  - [ALL] button for next transition selection
  - [AUTO TRANS] or [TAKE] button during auto transition execution
  - [RUN] button during keyframe execution
  - [AUTO TRANS] and [CUT] button replacement
  - [TRANS PVW] button
  - Key delegation [DME1] to [DME4] button selection mode
  - Key delegation [XPT HOLD] button operation mode

– Selection of signal assigned to the auxiliary bus control block key source bus (either key signal only, or either video signal or key signal selectable)

- **Sensitivity:** Adjust trackball, joystick and double-click sensitivity, or set the relationship between the angle of the search dial and the playback speed or the sensitivity for the search dial in jog mode.
- **Macro:** Set the macro execution mode.

Setting the On-Air Tally

To set the high tally state reflected on the control panel, use the following procedure.

1 In the Panel >Operation menu, press [Button Tally].

The Button Tally menu appears.

2 In the <Tally Type> group, select either of the following.

[R1] to [R8]: Reflect any of tally groups 1 to 8 as the tally state.
Independent: Reflect only the switcher tally state.

3 Press [Execute].

A popup window appears and shows the progress of the operation.

Setting the Transition Rate Display Mode

To determine whether to display transition rate values in menus and on the control panel in frames or as timecode values, select either of the following in the <Trans Rate Display> group.
Frame: display in frames.
Timecode: display as timecode (SS:FF).

Making Settings Relating to Effects

To make settings relating to the functions used when carrying out keyframe effect operations, use the following procedure.

1 In the Panel >Operation menu, press [Effect Mode].

The Effect Mode menu appears.
The status area shows a list of the items with their settings.

2 Make the following settings as required.

Effect recall mode: To select the state of the first keyframe when an effect is recalled, select [Recall] (the first keyframe is not recalled) or [Recall&Rewind] (the first keyframe is recalled) in the <Recall Mode> group.

Automatically turning [EDIT ENBL] off: When an effect is recalled with the [EDIT ENBL] button on, to automatically turn this button off, disabling keyframe editing, turn [Edit Enable Auto Off] on.

Automatic first keyframe insertion: When an empty register is recalled, to automatically insert a first keyframe of the state at that point, turn [1st KF Auto Insert] on.

Automatic effect saving: To automatically save an effected when it is recalled after being edited, turn [Effect Auto Save] on.

Keyframe duration default value: Press [Default KF Duration], then enter the default value from the numeric keypad window.

Setting the First Keyframe When a Rewind is Executed

For P-Bus, GPI, and DDR/VTR timeline operations, to execute the first keyframe when a rewind is carried out, set each external device on in the <REWIND&1st KF> group in the Effect Mode menu.

Notes

When an effect is executed by pressing the [RUN] button with this setting on, the first keyframe action is not executed.

GPI: setting for the GPI timeline
P-Bus: setting for the P-Bus timeline
DDR/VTR: setting for the VTR/disk recorder/Extended VTR timeline
Macro: setting for the macro timeline

Setting the Source and Destination Names

To set the Source and Destination names used in the control panel, use the following procedure.

Notes

Before carrying out these settings, it is necessary to set the number of the S-Bus description name.

For details of the operation, see "Setting the group number of an S-Bus description name" (page 1102).

1 In the <Source/Dest Name> group of the Panel >Operation menu, select the names to be used from the following.

Sw'er Local: Source names set in the Xpt Assign menu, and fixed bus names
S-Bus Descript: Description names set in the router
S-Bus Type + Num: Type + Num set in the router (In this case always eight characters.)

2 In the <Name Display Mode> group, select the method of display in the source name displays.

Auto: Optimize display according to number of characters. A name of up to two characters appears as two characters in one line. A name of up to four characters appears as four characters in one line. Otherwise, up to the first eight characters are shown in two lines.
2 Character: The first two characters appear.
4 Character: The first four characters appear.

To replace a name set in the Xpt Assign menu with an S-Bus description name

Turn [S-Bus Name Link] on.
This has such effect that each time a description name is changed on the router, the corresponding source name is automatically changed. Thus, the same description name can always be used both on the router and the switcher. Even when [Sw'er Local] is selected, the same name as when [S-Bus Descript] is selected can be displayed. The S-Bus description name can also be displayed in the Xpt Assign menu.

Settings for the Wipe Snapshot Menu

You can select the pattern numbers or register names as the button indications for the following menus.
- M/E-1 >Wipe >Wipe Snapshot menu
- M/E-1 >DME Wipe >DME Wipe Snapshot menu
- Misc >Snapshot menu

1 In the Panel >Operation menu, press [Flexi Pad Mode].

The Flexi Pad Mode menu appears.
The status area shows a list of the items with their settings.

2 Make the following settings as required.

When making settings for the Wipe Snapshot menu or DME Wipe Snapshot menu memory recall buttons: In the <Wipe/DME Display> group, press to select [Pattern] or [Register Name].

When making settings for the Misc >Snapshot menu memory recall buttons: In the <Snapshot/Effect Display> group, press to select [Register No] or [Register Name].

Setting the Button Operation Mode

1 In the Panel >Operation menu, press [Custom Button].

The Custom Button menu appears.
The status area shows a list of the items with their settings.

2 Make the following settings as required.

Operation mode during an auto transition: For the operation mode when the [AUTO TRANS] or [TAKE] button is pressed once more during an auto transition, select [Continue] or [Cancel] in the <Auto Trans/Take> group.

Continue: Continue the auto transition.

Cancel: Cancel the auto transition and return to the state before starting the auto transition.

Operation mode during keyframe execution: For the operation mode when the [RUN] button is pressed once more during effect execution, select [Continue] or [Cancel] in the <Run> group.

Continue: Continue the execution.

Cancel: Cancel the execution and return to the state before starting the execution.

Status display for auto transition execution button: When the [AUTO TRANS] or [TAKE] button is pressed to carry out an auto transition, select how the button is lit or off in the <Auto Trans/Take Key On Stats> group.

Disable: Lights amber during the transition, and goes off at the end of the transition.

Enable: Lights green during the transition, and at the end of the transition lights red if on air and amber if not on air.

Notes

This setting is only valid in the independent key transition execution section of the following control block.

- Downstream key control block (MKS-8032 DSK Fader Module, option)

Interchanging the [AUTO TRANS] and [CUT] buttons: To interchange the [AUTO TRANS] and [CUT] buttons in the transition control block, press the [Auto Trans/Cut Swap] button, turning it on.

Transition preview operation mode: For the operation mode of the [TRANS PVW] button, select [Lock] or [Hold] in the <Trans Pvw> group. The setting as to whether to use the "One-time mode" in which the transition preview terminates when the transition completes, or to use button control, is made on the switcher side *(see page 1043)*.

[KEY] button operation mode for key source bus operations: For key source bus operations, specify the operation mode of the [KEY] button in the auxiliary bus control block in the <Key Source Bus Select Mode> group, as follows.

Key: If you select this, the [KEY] button is always unlit, and this mode allows only key signals to be selected with the cross-point buttons.

Video & Key: The [KEY] button is enabled, and either video or key signals can be selected.

CCP-9000A-specific button settings: Press [CCP-9000 Button], and skip to step **3**.

3 If required, make the following settings.

DME channel selection mode: To set the mode when one of the [DME1] to [DME4] buttons in the key delegation section is pressed to select the DME channel, select either of the following in the <DME Select> group.

Override: Forcibly select the selected channel. (Later selection takes precedence).

Pre Select: It is not possible to select a channel that has already been otherwise selected. (Earlier selection takes precedence.)

Operation mode of the [XPT HOLD] button in the key delegation section: To set the operation mode of the [XPT HOLD] button in the key delegation section, select either of the following in the <Xpt Hold> group.

A/B Bus: When the [XPT HOLD] button is pressed, turning it on, cross-point hold is enabled for the A and B buses only.

All Bus: When the [XPT HOLD] button is pressed, turning it on, cross-point hold is enabled for all buses used on the bank being currently operated.
(A/B buses, Key 1 to Key 8 buses, Utility 1/2 buses, external DME bus, DME Utility 1/2 buses)

Setting the Operation Mode of the [ALL] Button in the Transition Control Block

Specify the next transition selected by pressing the [ALL] button in the transition control block.

Notes

If everything here is set to Off, then pressing the [ALL] button does not change the specification of the next transition.

1 In the Panel >Operation >Custom Button menu, press [Next Trans All].

The Next Trans All menu appears.

2 Press the button for the next transition you want to select with the [ALL] button, turning it On.

Setting Trackball, Joystick, Search Dial, and Double-Click Sensitivity

You can set the operational sensitivity for trackball, joystick and the buttons which recall the relevant menus when pressed twice, and the relation of the rotation angle of search dial with the playback speed.

1 In the Panel >Operation menu, press the [Sensitivity].

The Sensitivity menu appears.
The status area shows a list of the items with their settings.

2 Make the following settings as required.

Trackball and Z-ring sensitivity in normal mode: In the <Trackball Normal Mode> group, select [×1], [×2], or [×4].

Trackball and Z-ring sensitivity in fine mode: In the <Trackball Fine Mode> group, select [$^1/_2$], [$^1/_4$], or [$^1/_8$].

Joystick sensitivity in normal mode: In the <Joystick Normal Mode> group, select [×1], [×2], or [×4].

Joystick sensitivity in fine mode: In the <Joystick Fine Mode> group, select [$^1/_2$], [$^1/_4$], or [$^1/_8$].

Touch sensitivity for recalling menus by double-clicking buttons: In the <Double Click> group, select [Fast], [Normal], or [Slow].

Making advanced settings for the search dial

1 In the Panel >Operation >Sensitivity menu, press [Search Dial].

The Search Dial menu appears.
The status area shows a list of the settings and their content.

2 Set the sensitivity for the search dial in jog mode.

When operated with the [JOG] button pressed to be lit amber: In the <Jog Sensitivity> group, press one of [1 (Slow)] to [6 (Fast)].
When operated with the [JOG] button held down: In the <Jog Sensitivity (While pressing [JOG] button)> group, press one of [1 (Slow)] to [6 (Fast)].

3 In the <SHTL/VAR Dial Range> group, select [Narrow] or [Wide] to set the sensitivity for the search dial in shuttle mode or variable mode.

Narrow: The search speed varies in a relatively narrow range.
Wide: The search speed varies in a relatively wide range.

For details of search dial operations, see "Controlling the Tape/Disk Transport" in Chapter 12 (Volume 2).

Specifying Main Split Fader

In the <Main Split Fader> group of the Panel >Operation menu, select [Left] or [Right].

Notes
This setting is disabled for the CCP-9000A.

Setting the Macro Execution Mode

1 Press [Macro] in the Panel >Operation menu.

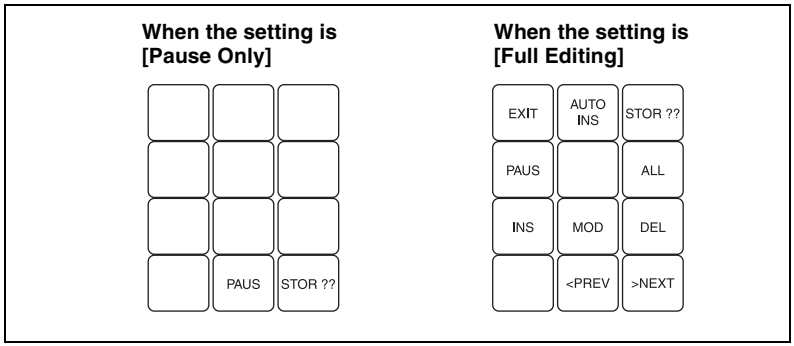
The Macro menu appears.

2 In the <Macro Execution Mode> group, select the macro execution mode.

Normal: normal execution mode
Step: step execution mode

3 In the <Flexi Pad Edit Mode> group, set the macro editing mode of the standard type Flexi Pad to [Pause Only] or [Full Editing].

This enables the standard type Flexi Pad control block to be used for macro editing. Depending on the macro editing mode setting, functions are assigned to the memory recall buttons as shown in the following figure.



Notes

This setting is disabled for the CCP-9000A.

4 When making a macro attachment setting, select whether or not to enable cross-point button operations in the <Attachment Setting Mode> group.

With Btn Function: enable cross-point button operations
W/o Btn Function: disable cross-point button operations

5 Using the <Macro 2nd Recall Mode> group, set the action to occur during macro execution or when a macro is stopped, if the cross-point button with the macro attachment set is pressed again.

Continue: Execution of a macro that has been stopped is resumed, and an executing macro continues.
Cancel: A stopped macro, or a macro during execution is terminated.

6 Using the <Macro Recall Override> group buttons, set the action to occur during macro execution or when a macro is stopped, if another macro is recalled.

Disable: Ignore the other macro recall.
Enable: Execute the other macro.

To have a cross-point button with a macro attachment set lit continuously

Press [Attchd Btn Indication], turning it on.

When the [MCRO ATTCH ENBL] button in the cross-point control block is on, the cross-point button with a macro attachment is constantly lit green.

Screen Saver and Other Settings (Maintenance Menu)

To make settings relating to the screen saver, etc., use the Panel >Maintenance menu.

- **Screen Saver:** Make the menu screen saver settings.
- **LCD Brightness:** Adjust the LCD brightness.
- **LED Brightness:** Adjust the LED brightness.
- **Switch Brightness:** Adjust the switch brightness.
- **Touch Beep:** Select whether or not to sound a beep when a menu operation is carried out.
- **Touch Panel Calibration:** Calibrate the touch panel.
- **Initial Menu Set:** Specify the menu to be displayed at menu startup.
- **Scrl Down = Clockwise/ Scrl Up = Clockwise:** Set the mouse wheel scrolling direction for parameter setting.
- **Mouse Slider Control:** Select the mouse button used for adjusting the bar positions of the knob parameters.

To display the Maintenance menu

In the Engineering Setup menu, select VF2 ‘Panel’ and HF7 ‘Maintenance.’ The status area shows a list of the items with their settings.

Screen Saver Settings

To enable the menu screen saver, use the following procedure.

1 In the Panel >Maintenance menu, press [Screen Saver], turning it on.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Sleep Time	Time until screen saver starts operation	1 to 300 (minutes)

Adjusting the Brightness

You can adjust the brightness of the following hardware parts.

LCD: Adjust the brightness of the source name displays and the LCD buttons in the Flexi Pad control block.
LED: Adjust the brightness of the LED displays in the numeric keypad control block and so forth.
Switch: Adjust the brightness of the panel switches.
The following description takes the LCD brightness as an example. Use a similar process for the other adjustments.

1 In the Panel >Maintenance menu, press [LCD Brightness].

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Brightness	Menu screen brightness	1 to 5 a)

a) The larger the value, the brighter the screen.

Adjusting the Alarms

In the Panel >Maintenance menu, make the following settings.
To give audible feedback from menu touch screen operations: Press [Touch Beep], turning it on.

Calibrating the Touch Panel

1 In the Panel >Maintenance menu, press [Touch Panel Calibration].

The following message appears.
"To Perform Calibration, please touch the center of each plus sign."

2 Press [Yes].

3 Press the center of the plus sign displayed on the screen.

When you press on the plus sign, it disappears and a diagonally opposite plus sign appears.

4 Press the center of the plus sign.

A confirmation message appears.
- Select "Yes" to restart the panel reflecting the new setting.
- Select "No" to cancel the setting and return to the Maintenance menu.

Setting the Menu to be Shown When the Menus Are Started

1 In the Panel >Maintenance menu, press [Initial Menu Set].

A popup window appears.

2 Enter the page number of the desired menu.

The next time the menus are started, the menu specified by this number appears.

Notes

To enable this setting, the initial state of the control panel when powered on must be set to one of the following.

- Set to Resume mode
- Set to Custom mode, with "User" selected in the <Setup> group.

For details of these settings, see "Selecting the State After Powering On (Start Up Menu)" (page 914).

Setting the Mouse Wheel Scrolling Direction for Parameter Setting

In the < Mouse Wheel Direction > group of the Panel >Maintenance menu, press one of the following buttons.

Scrl Down = Clockwise: Turning the mouse wheel in the direction to scroll down is the same as turning the parameter setting knob clockwise.

Scrl Up = Clockwise: Turning the mouse wheel in the direction to scroll up is the same as turning the parameter setting knob clockwise.

Selecting the Mouse Button Used for Adjusting the Knob Parameters

In the Panel >Maintenance menu, press either of the following buttons in the <Mouse Sliding Control> group.

Left Button: Dragging the bar while holding down the left mouse button adjusts the parameter assigned to the knob.

Right Button: Dragging the bar while holding down the right mouse button adjusts the parameter assigned to the knob.

Notes

When Left Button selected, even pressing one of the knob parameter buttons in the menu control block does not display a numeric keypad window.

Chapter 20 Switcher Setup (Switcher)

Settings for Switcher Configuration (Config Menu)

To make settings for the switcher processor configuration, use the Switcher >Config menu.

To display the Config menu

In the Engineering Setup menu, select VF3 'Switcher' and HF1 'Config.' The status area shows the output signal assignment for each of the M/E and PGM/PST banks.

The following functions are available here.

- **System Phase:** Adjust the switcher internal reference phase.
- **Switching Timing:** Specify the timing of video switching.
- **M/E Config:** Set the configuration for the M/E and PGM/PST outputs.
  - **Standard mode:** Fix the output configuration for the maximum of four outputs (Out1 to 4) as follows.
    Out1: Program output
    Out2: Preview output
    Out3: Clean output
    Out4: Key preview output
    The program output is: clean output + key1 to key8
    For the key preview output, you can select either video mode (background and key) or key mode (key only), and select the background and key (K-PVW Config).
  - **Multi-program mode:** Increase the number of M/E or PGM/PST programs, and assign any of the following to the maximum of six outputs (Out1 to 6). (M/E Output Assign)
    Program outputs 1 to 4, preview output, key preview outputs 1 and 2, clean output.
    Further, you can select the program background from Clean or Utility2, and change the combination of signals from which the program output is configured. (PGM Config)
  - **DSK mode:** Treat P/P as four DSKs, with no background transitions. From among backgrounds 1 to 4, select one for which to make settings for program output configuration. (PGM Config) The signals which can be selected as the background are limited to Out1 to 6 from M/E-1.
- **User 1 to 8 Config:** Assign the User regions, being color backgrounds 1 and 2, AUX1 to 48, frame memory 1 to 8, and color correctors 1 and 2, to any of User1 to User8.
- **Logical M/E Assign:** Make settings for handling PGM/PST hardware logically as an M/E.

- **DME Config:** Set the DME channel assignments used on the individual M/E and PGM/PST banks.
- **Side Flags:** Make settings relating to the side flag function (inserting a selected image on both sides of a 4:3 image).

Adjusting the Reference Phase

To adjust the switcher internal reference phase, in the Switcher >Config menu, set the following parameter.

Knob	Parameter	Adjustment	Setting values
3	Phase	Switcher internal reference phase	–32.00 to +96.00

Specifying the Video Switching Timing

1 In the Switcher >Config menu, press [Switching Timing].

The Switching Timing menu appears.

2 Select any of the following.

Any: Not specified
Field 1: Field 1 (odd fields)
Field 2: Field 2 (even fields)

Notes

When the signal format is set to 720P, 1080PsF or 1080P, this selection is not possible.

Setting the Operation Mode

In the <M/E Config> group of the Switcher >Config menu, select the operation mode for each M/E or PGM/PST bank from the following.

- Standard mode
- Multi Program mode
- DSK mode (PGM/PST only)

For details of the modes, see the explanation of the M/E Config function (page 1020).

Notes

When Multi Program mode is selected, two or more transition type indication may light. It is also possible that more than one “Transition Type” has been selected in the Misc >Transition menu for each M/E.

Assigning the output of each bank in Multi Program mode

When you selected [Multi Program] as the operation mode, use the following procedure.

1 In the Switcher >Config menu, press [M/E Output Assign].

The M/E Output Assign menu appears.

2 On the list in the status area, select the bank output to be assigned.

The selected output appears in reverse video.

3 In the <M/E Output Assign> group, select the output signal to be assigned.

Setting the output configuration for each bank

When you selected [Multi Program] or [DSK] as the operation mode, use the following procedure.

1 In the Switcher >Config menu, press [PGM Config].

The PGM Config menu appears.
The status area shows the background and key configuration assigned to the output of each bank.

2 Using either of the following methods, select the output for which you want to make the setting.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No (PGM)	Output to which setting applies	1 to 20

The selected output appears in reverse video.

3 In the <Bkgd> group, select the background.

In Multi Program mode, select [Clean] or [Utility2], then skip to step **5**.
In DSK mode, select one of [Bkgd1] to [Bkgd4].

4 In DSK mode, turn the knobs to select the background signal.

Knob	Parameter	Adjustment	Setting values
2 to 5	Bkgd1 to 4	Background signal selection	1 to 24 a)

a) 1 to 6: M/E1 OUT1 to 6
7 to 12: M/E2 OUT1 to 6
13 to 18: M/E3 OUT1 to 6
19 to 24: M/E4 OUT1 to 6

5 In each of the <Key1> to <Key8> groups, select [Enable] or [Disable].

Setting the key preview configuration

You can make this setting at any time, regardless of the operation mode.

1 In the Switcher >Config menu, press [K-PVW Config].

The K-PVW Config menu appears.
The status area shows the key preview configuration for each bank.

2 Using either of the following methods, select the key preview to which the settings apply.

- Press directly on the list in the status area to make the selection.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No (K-PVW)	Key preview to which setting applies	1 to 10

The selected key preview appears in reverse video.

3 In the <Mode> group, select [Video] mode or [Key] mode.

If you select Key mode, skip to step **6**.

4 In the <Bkgd> group, select the background.

In standard mode or Multi Program mode, select [Clean] or [Utility2], then skip to step **6**.
In DSK mode, select any of [Bkgd1] to [Bkgd4].

5 In DSK mode, turn the knobs to select the background signal.

Knob	Parameter	Adjustment	Setting values
2 to 5	Bkgd1 to 4	Background signal selection	1 to 24 a)

a) 1 to 6: M/E1 OUT1 to 6
7 to 12: M/E2 OUT1 to 6
13 to 18: M/E3 OUT1 to
19 to 24: M/E4 OUT1 to 66

6 In the <Key 1> to <Key 8> groups, select the corresponding key status from the following.

Link: Follow the key on/off setting.
On: Key is always on.
Off: Key is always off.

Setting User Regions

Notes

If you change the user region settings, the previously stored snapshot data and keyframe effect data can no longer be used.

1 In the Switcher >Config menu, press [User1-8 Config].

The User1-8 Config menu appears. The status area shows the region names and assigned user region numbers.

2 Using any of the following methods, select the region you want to set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Region	Region selection	1 and upwards

3 In the <User Region Assign> group, select the user region you want to assign. If you do not want to assign a user region, select [No Assign].

4 Repeat steps **2** and **3** as required to make the settings for other regions.

5 To confirm the setting, press [Execute]. To cancel the setting and return to the original state, press [Clear] before pressing [Execute].

When you press [Execute], a confirmation message appears.

6 Press [Yes].

This assigns a region to a user region.

Assigning PGM/PST Logically to an M/E

1 In the Switcher >Config menu, press [Logical M/E Assign].

The Logical M/E Assign menu appears. The status area shows the physical M/E and logical M/E organization.

2 Select the M/E you want to logically set to the PGM/PST from the <Logical M/E to Physical P/P> group.

P/P: Assign the physical PGM/PST as logical PGM/PST.
M/E-1: Assign the physical PGM/PST as logical M/E-1.
M/E-2: Assign the physical PGM/PST as logical M/E-2.
M/E-3: Assign the physical PGM/PST as logical M/E-3.
M/E-4: Assign the physical PGM/PST as logical M/E-4.

Setting the Assignments of DME Channels to Use on the Individual M/E Banks

The Switcher >Config >DME Config menu allows you to select the DME channels to use on the M/E and PGM/PST banks for processed keys or DME wipes.

1 In the Switcher >Config menu, press [DME Config].

The DME Config menu appears.

2 Using either of the following methods, select the M/E or PGM/PST bank for which you want to set a DME channel assignment.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

3 In the <DME Channel> group, press one of the [Ch1] to [Ch8] buttons turning it on to select the channel which you want to assign to the bank selected in step **2**.

4 Repeat steps **2** and **3** to assign DME channels to other banks.

Setting the Side Flag Video Material and Operation

Make settings relating to the video material (4:3 aspect ratio) for applying side flags.

For details of side flag operations, see "Side Flag Settings" in Chapter 10 (Volume 1).

Setting the aspect ratio (4:3/16:9)

1 In the Switcher >Config menu, press [Side Flags].

The Side Flags menu appears.
The status area lists the video/key pair numbers, video signal source names, and aspect ratio settings (16:9/4:3).

2 Using any of the following methods, select the pair number for which you want to make the setting.

- Press directly on the list in the status area.
- Use the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	V/K Pair No	Selection of a V/K pair by its number in the list	1 to 300
2	Num	Selection of number of V/K pairs in the list	1 to 300

- To select all of the pair numbers, press [ALL].

3 In the <Aspect> group, press [4:3].

If you select [16:9], no side flags are applied.

To set 4:3 video material to have side flags applied automatically

You can make a setting so that when a signal with aspect ratio set to 4:3 is selected in the cross-point control block, side flags are automatically applied.
To do so, in the Switcher >Config >Side Flags menu press [Auto Side Flags].
Pressing this button toggles the setting on and off.
This setting applies to all of the M/E and PGM/PST banks.

To set to crop to 4:3 when a DME wipe is executed

When side flags are enabled, you can automatically crop an image as set to be a 4:3 image when executing a DME wipe.

To do so, in the Switcher >Config >Side Flags menu press [Auto Crop].
Pressing this button toggles the setting on and off.
This setting applies to all of the M/E and PGM/PST banks.

Adjusting the width of the side flags

You can adjust the width of the side flags.

1 In the Switcher >Config >Side Flags menu, press [Width].

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
3	Left	Width of left side flag	–100.00 to +100.00
4	Right	Width of right side flag	–100.00 to +100.00
5	All	Width of both side flags	Left value shown

Displaying the menu for enabling/disabling the side flags

In the Switcher >Config >Side Flags menu, press [Misc >Enbl >Setup Flags].

Displaying the menu for assigning the side flags on/off function to a cross-point button

In the Switcher >Config >Side Flags menu, press [Side Flags Button Assign].

Signal Input Settings (Input Menu)

For setup relating to signal inputs, use the Switcher >Input menu.

To display the Input menu

In the Engineering Setup menu, select VF3 'Switcher' and HF2 'Input.'
The status area shows source numbers and source names and through mode on/off setting.

The following functions are available here.

- **Through Mode:** Set the through mode for input. You can set this independently for each primary input or premium input.
- **Video Process:** Switch video processing on or off for each input signal, and adjust the brightness, hue and so forth.
- **Matte Illeg. Color Limit:** Switch the illegal limiter on or off for the signal generated by the switcher internal matte generator.
- **FC Adjust:** Select the conversion (up-conversion, cross-conversion, or down-conversion) when the format converter is applied to an input.

Making Through Mode Settings

Notes

For a format converter dedicated input, it is not possible to select through mode.

1 In the Switcher >Input menu, select the input signal to which the settings apply.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Src No	Input signal selection	1 and upwards a)

a) For primary inputs: 1 to 144
For premium inputs: 145 to 164 ((PREM1) to (PREM20) indicated after the number)

The selected input signal appears in reverse video.

2 To enable through mode, press [Through Mode], turning it on.

Making Video Process Settings

1 In the Switcher >Input menu, press [Video Process].

The Video Process menu appears.
The status area shows the source number, source name, and video process adjustment settings.

2 Using any of the following methods, select the input signal to which the settings apply.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Src No	Input signal selection	1 and upwards [a)]

a) For primary inputs: 1 to 144
For premium inputs: 145 to 164 ((PREM1) to (PREM20) indicated after the number)
For format converter dedicated inputs: 165 to 180 ((FC1) to (FC16) indicated after the number)

3 Press [Video Process], turning it on.

4 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Video Gain	Video signal gain	–200.00 to +200.00
2	Y Gain	Y signal gain	–200.00 to +200.00
3	C Gain	Chrominance signal gain	–200.00 to +200.00
4	Hue Delay	Hue delay	–180.00 to +180.00
5	Black Level	Black level	–7.31 to +109.59

To set the parameter settings to their defaults, press [Unity].

Enabling the Illegal Color Limiter

To enable the illegal color limiter for the signals generated by the switcher internal matte generator, press [Matte Illeg Col Limit] in the Switcher >Input menu, turning it on.

Selecting the Format Converter Conversion

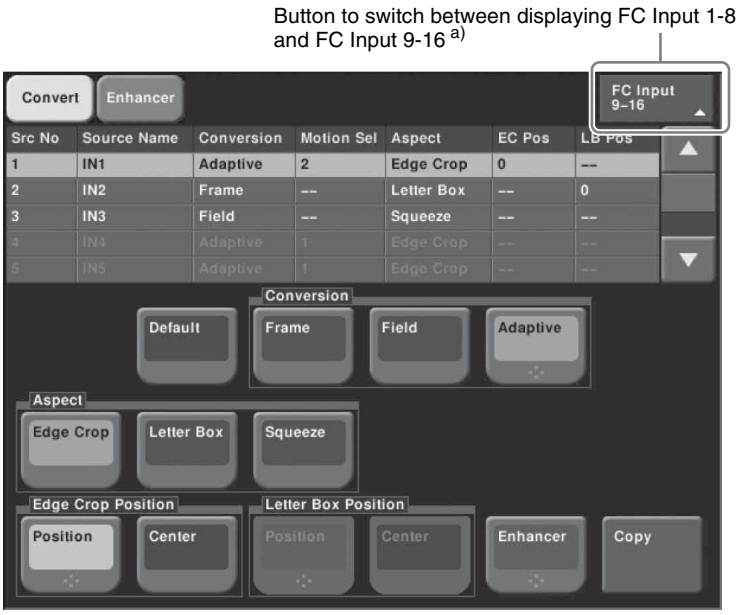
Selecting the format converter inputs to be set (inputs 1 to 8 or inputs 9 to 16)

1 Display the Switcher >Input >FC Adjust menu.

Notes

When the conversion format and system signal format are the same, this operation is not possible.

The following figure illustrates the case when FC Input 1-8 are set to up-conversion, and FC Input 9-16 are set to cross-conversion.



a) If FC Input 1-8 and FC Input 9-16 have the same format, this does not appear.

2 Press [FC Input 1-8] or [FC Input 9-16] as required.

3 Using any of the following methods, select what the setting applies to.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

• Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Source No	Input selection	1 and upwards [a]

a) If you pressed [FC Input 9-16] in step **2**, the value is from 9 to 16 inclusive.

Making detailed settings for up-conversion

1 In the Switcher >Input >FC Adjust menu, select the input to which the setting applies.

2 In the <Conversion> group, select one of the following.

Frame: Conversion in frame units
Field: Conversion in field units
Adaptive: Automatically switching between the above two modes

When Adaptive is selected, adjust the following parameter.

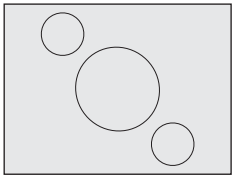
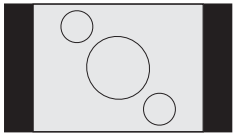
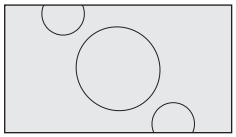
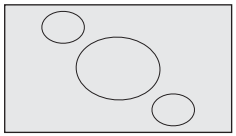
Knob	Parameter	Adjustment	Setting values
2	Motion Select	Motion detection sensitivity	1 to 3 [a]

a) 1: Still priority mode, 2: Standard mode, 3: Motion priority mode

3 In the <Aspect> group, select one of the following.

Edge Crop: Add black bars on the left and right sides of a 4:3 aspect ratio image to convert it to a 16:9 image.
Letter Box: Crop the top and bottom of a 4:3 aspect ratio image to convert it to a 16:9 image.
Squeeze: Stretch a 4:3 image horizontally to covert it to a 16:9 image.

(For details of the image transformations, see the following figure.)

Original image (4:3)	Up-converted image (16:9)
	Edge Crop 
	Letter Box 
	Squeeze 

Setting the image position in edge crop up-conversion mode

1 In the <Edge Crop Position> group of the Switcher >Input >FC Adjust menu, press [Position], turning it on.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting format	Setting values
2	EC Position	Image position [a)]	1080	–120 to +120
			720	–80 to +80

a) For down-conversion, the value is from –30 to +30 inclusive.

To return the edge crop image to the center

In the <Edge Crop Position> group, press [Center].

Setting the image position in letter box up-conversion mode

1 In the <Letter Box Position> group of the Switcher >Input >FC Adjust menu, press [Position], turning it on.

2 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting format	Setting values
2	LB Position	Image position	1080i/59.94	–31 to +32
			1080i/50	–36 to + 36
			720P/59.94, 720P/50	–30 to +30

To return the letterbox image to the center

In the <Letter Box Position> group, press [Center].

Making enhancer settings

1 In the Switcher >Input >FC Adjust menu, press [Enhancer], turning it on.

2 Set the following parameters.

Parameter group [1/2]

Knob	Parameter	Adjustment	Setting values
2	Detail Gain	Adjust the edge enhancement sharpness	0 to 127
3	Limiter	Adjust the maximum signal level to be added to the original signal	0 to 63
4	Crisp	Set the amplitude value for which a low-amplitude signal is not emphasized	0 to 15
5	Level Depend	Set the luminance range for edge enhancement	0 to 15

Parameter group [2/2]

Knob	Parameter	Adjustment	Setting values
2	Frequency	Set the central frequency for edge enhancement	0 to 3
3	H/V Ratio	Set the horizontal/ vertical ratio for edge enhancement	0 to 7

Making detailed settings for down-conversion

1 In the Switcher >Input >FC Adjust menu, select the input to which the setting applies.

2 In the <Aspect> group, select one of the following.

Edge Crop: Crop the left and right sides of a 16:9 image to convert it to a 4:3 image.

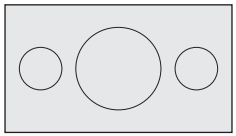
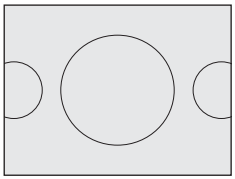
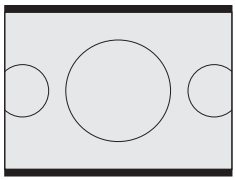
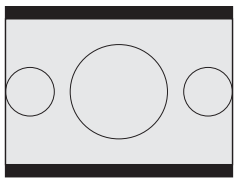
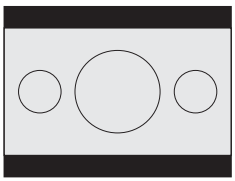
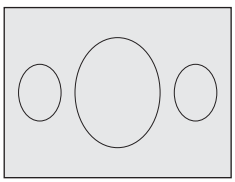
Letter Box 13:9: Crop the left and right sides of a 16:9 image to make a 13:9 image and add black bars at the top and bottom of the 13:9 image to make a 4:3 image.

Letter Box 14:9: Crop the left and right sides of a 16:9 image to make a 14:9 image and add black bars on the top and bottom of the 14:9 image to make a 4:3 image.

Letter Box 16:9: Add black bars on the top and bottom of a 16:9 image to convert it to a 4:3 image.

Squeeze: Compress a 16:9 image horizontally to convert it to a 4:3 image.

(For details of the image transformations, see the following figure.)

Original image (16:9)	Down-converted image (4:3)
	Edge Crop 
	Letter Box 13:9 
	Letter Box 14:9 
	Letter Box 16:9 
	Squeeze 

For down-conversion, the image position setting in edge crop mode is the same as for up-conversion. The value is from –30 to +30 inclusive. For more details, see "Setting the image position in edge crop up-conversion mode" (page 1032).

For down-conversion, the enhancer settings are the same as for up-conversion. For more details, see "Making enhancer settings" (page 1033).

Making cross-conversion settings

To make the cross-conversion settings, carry out steps **1** and **2** described in *"Making detailed settings for up-conversion" (page 1031)*. No other settings are required.

Copying format converter input data

1 In the Switcher >Input >FC Adjust menu, press [Copy].

The Copy/Swap >Copy >Format Converter menu appears.
The status area shows lists of the copy source on the left, and the copy destination on the right.

2 Select [Input] in the <Data Select> group.

3 Using any of the following methods, select the data.

- Press directly on the list.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Left No	Select the copy source data	1 and upwards
2	Right No	Select the copy destination data	1 and upwards
3	Num	Select the number of items	1 and upwards

4 Press [Copy].

This copies the data.

Signal Output Settings (Output Menu)

For setup relating to signal outputs, use the Switcher >Output menu.

To display the Output menu

In the Engineering Setup menu, select VF3 'Switcher' and HF3 'Output.'
The status area shows the output signal numbers and names, and output signal phase for the signals output from Output 1 to 48.

The following functions are available here.

Notes

For a format converter dedicated output, Video Clip, V Blank, Through, Safe Title, and 4:3 Crop settings are not possible.

- **Output Assign:** Assign the signals output from the Output1 to 48 ports.
- **Video Clip:** Adjust the clip levels (White Clip, Dark Clip, and Chroma Clip) for the output signals from each of the Output1 to 48 ports.
- **V Blank:** Adjust the vertical blanking width for the output signals from each of the Output1 to 48 ports. The setting is the number of scan lines from the reference blanking position of field 1 for the particular format which should be masked.
- **Through:** Enable or disable through mode. Through mode can be enabled for AUX1 to 48 outputs, M/E and PGM/PST program outputs, and clean output.
- **Safe Title:** Enable or disable safe title, and carry out settings for box 1 and 2, cross and grid.
- **4:3 Crop:** Set the actual video image to be cropped to a 4:3 aspect ratio when an HD system has a screen aspect ratio of 4:3.
- **FC Adjust:** Set the format converter outputs.

Assigning Output Signals

To assign a signal to output from an output port, use the following procedure.

1 In the Switcher >Output menu, press [Output Assign].

The Output Assign menu appears.
The status area shows the output ports and assigned signals on the left, and a list of signals that can be assigned on the right.

2 In the <Output Assign> group, select either of the following.

[Re-Entry Source]: It is possible to make duplicate assignments.

M/E-1 Output 1 to 6 [a)]
M/E-2 Output 1 to 6 [a)]
M/E-3 Output 1 to 6 [a)]
M/E-4 Output 1 to 6 [a)]
PGM/PST 1 to 6 [a)]
M/E-1 to 4 Proc Video
P/P Proc Video
M/E-1 to 4 Proc Key
P/P Proc Key
DME Monitor Video
DME Monitor Key
Color Corrector 1 and 2
Undefined
Color Bkgd 2

a) M/E output signals selected in the M/E Output Assign menu.

[Aux Bus]: It is not possible to make duplicate assignments.

Preset
Edit Preview
AUX 1 to 48

3 Using any of the following methods, select the output port number and signal to be assigned.

- Press directly on the list in the status area to make the selection.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Output No	Output port number	1 to 48
2	Source No	Selection of signal to be assigned	1 and upwards

- For output ports not to be assigned, press [Inhibit].

The selected signal appears in reverse video.

4 Press [Set] to confirm the assignment.

Setting the Output Signal

In the following adjustment/setting operations, use any of the following methods to select the output signal before making the setting.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Output No	Output port number selection	1 to 48

The selected output signal appears in reverse video.

Adjusting the video clip

To adjust the clip value for each of the output signals from the Output 1 to 48 ports, use the following procedure.

1 In the Switcher >Output menu, press [Video Clip].

The Video Clip menu appears.
The status area shows the output ports and assigned signals, and the white clip, dark clip, and chrominance clip values.

2 Adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
2	White Clip	Luminance signal white clip value	90.00 to 109.02
3	Dark Clip	Luminance signal dark clip value	–6.85 to +10.00
4	Chroma Clip	Chrominance signal clip value	90.00 to 113.17

To set the values to the default values, press [Default].

Making vertical blanking interval adjustment and through mode settings

1 In the Switcher >Output menu, press [V Blank/Through].

The V Blank/Through menu appears.
The status area shows the output ports and the assigned signals, the vertical blanking interval, and the through mode Enable/Disable status.

2 Press [V Blank Mask].

3 Adjust the parameter.

Knob	Parameter	Adjustment	Setting values
2	Mask End	Final value for vertical blanking interval	See note a) below

a) Depending on the signal format, the adjustment range varies as follows.

- **480i:** 10 to 19
- **576i:** 6 to 22
- **1080i/1080PsF:** 7 to 20
- **720P:** 7 to 25
- **1080P:** 15 to 41

To return the values to their defaults, press [Default].

4 To enable the through mode, press [Through Mode], setting it to Enable. The through mode can be applied to the following outputs.

- Aux 1 to 48 outputs
- Program outputs of the M/E and PGM/PST rows
- Clean outputs of the M/E and PGM/PST rows

Making safe title settings

1 In the Switcher >Output menu, press [Safe Title].

The Safe Title menu appears.
The status area shows the output ports and the assigned signals, with the box 1, box 2, cross, and grid states.

2 To enable the safe title on/off setting made in the Misc menu, press [Safe Title], turning it on.

3 Carry out either of the following operations.

To display a box: Press [Box1] or [Box2], turning it on.
In this case, carry out the following steps **4** and **5**.
To display a cross: Press [Cross], turning it on.
To display a grid: Press [Grid], turning it on.
In this case, carry out the following steps **4** and **5**.

4 When you selected [Box1] or [Box2] in step **3**, adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
2	Box Size	Box size	50.00 to 100.00
3	Luminance	Display brightness	0.00 to 100.00 a)

a) Adjustable for Box2

When in step **3** you selected [Grid], in the <Grid Size> group, select one of the following.
80.00%: Set the grid size to 80% of the screen frame
85.00%: Set the grid size to 85% of the screen frame
90.00%: Set the grid size to 90% of the screen frame

100.00%: Set the grid size to the full-screen size (100% of the screen frame)

5 When in step **3** you selected [Box1] or [Box2], in the <Box1 Adjust> or <Box2 Adjust> group, select the screen aspect ratio (16:9/14:9/4:3).

When in step **3** you selected [Grid], in the <Grid Adjust> group, select the screen aspect ratio (16:9/4:3).

Cropping the image to a 4:3 aspect ratio in an HD system

In an HD system, to crop an image having a screen aspect ratio of 4:3 to an aspect ratio of 4:3, use the following procedure.

1 In the Switcher >Output menu, press [4:3 Crop].

The 4:3 Crop menu appears.
The status area shows the output ports and respective 4:3 Crop mode settings.

2 Press [4:3 Crop], turning it on.

This enables the crop setting, and this is reflected in the status area.

Notes

When the screen aspect ratio of 16:9 is selected for all M/E banks in the System >Format >Active Line/Aspect menu, the setting of 4:3 Crop is disabled.

Setting the format converter outputs

To set the format converter

Display the Switcher >Output >FC Adjust menu. The subsequent operations are the same as for the format converter input settings.

For details of the operations, see "Selecting the Format Converter Conversion" (page 1030).

To copy format converter output data

1 In the Switcher >Output >FC Adjust menu, press [Copy].

The Copy/Swap >Copy >Format Converter menu appears.

2 In the <Data Select> group, press [Output].

3 Use the same operations as in steps **3** and **4** of *"Copying format converter input data" (page 1036)* to copy the data.

Settings Relating to Video Switching (Transition Menu)

For settings relating to video switching, use the Switcher >Transition menu.

To display the Transition menu

In the Engineering Setup menu, select VF3 ‘Switcher’ and HF4 ‘Transition.’ The status area shows the transition preview, key transition, bus toggle, and split fader settings for each M/E and PGM/PST bank.

The following functions are available here.

- **Transition Preview:** Specify the operation mode for transition preview for each of the M/E and PGM/PST banks.
- **Key Transition:** Specify the operation mode for independent key transitions.
- **Bus Toggle:** Switch the bus toggle for each of the M/E and PGM/PST banks on or off.
- **Split Fader:** When the bus toggle is off, the split fader settings are enabled. For each of the M/E and PGM/PST banks, select enable or disable.
- **Fade To Black:** Enable or disable fade-to-black for each final program output.
- **Preset Color Mix:** Set the stroke mode for a preset color mix, the key status for a transition including a key, and the mode in which the transition type after a transition ends returns to the previous setting.
- **Transition Curve:** Set the relationship when carrying out a transition, between the fader lever position and the advancement state of the transition.

Selecting the Bank to Make the Settings

In the Transition menu, using any of the following methods, select the bank to which the settings apply, then make the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Bank	M/E or P/P selection to which settings apply	1 to 5

The selected bank appears in reverse video.

Setting the transition preview mode

To select the transition preview mode, in the <Transition Preview> group of the Transition menu, select either of the following.

One Time: The transition preview ends after a single transition.

Normal: Switching the [TRANS PVW] button on or off switches between the transition preview mode and the normal mode.

Selecting the transition mode of the independent key transition control block

To select the key transition mode, select either of the following in the <Key Transition> group of the Transition menu.

Same: The transition settings for the On and Off directions are the same.

Independ: The transition settings for the On and Off directions can be set separately.

Selecting the background transition flip-flop mode

In the Transition menu, press [Bus Toggle], to switch between on and off.

On: Flip-flop mode

Off: Bus fixed mode

For more details, see "Fader Lever Operation in Bus Fixed Mode" in Chapter 3 (Volume 1).

Setting the split fader to be enabled or disabled

In the Transition menu, press [Split Fader] to switch between Enable and Disable. This setting is only valid when using a simple transition module with Bus Toggle set to Off.

Notes

This setting is disabled for the CCP-9000A.

Enable: When the fader lever is split, the split fader effect is enabled.

Disable: Even when the fader lever is split, the normal fader lever effect is obtained.

Enabling or disabling the fade-to-black function

In the <FTB> group of the Transition menu, press the program output name to toggle between On and Off.

Notes

This setting is disabled for the CCP-9000A.

On: When the [FTB] button is pressed, a fade-to-black is carried out.
Off: Even when the [FTB] button is pressed, no fade-to-black is carried out.

Notes

The PGM2 to PGM4 settings are only valid in Multi Program mode or DSK mode.

Setting a preset color mix

1 In the Switcher >Transition menu, press [Preset Color Mix].

The Preset Color Mix menu appears.
The status area shows the stroke mode setting for each M/E bank, the setting for whether or not the key status is maintained, and the one-time mode setting.

2 In the <Stroke Mode> group, select whether to carry out a transition in one stroke or two strokes.

Normal: Carry out a preset color mix with two transition operations.
Single: Carry out a preset color mix with a single transition operation.

Notes

In bus fixed mode *(see page 1043)*, the setting is fixed to "Single."

3 In the <Non Drop Key> group, select the key setting for a transition including a key.

To carry out the transition with the key state maintained, press [Key1] to [Key8], turning them on. *(See "Transitions" in Chapter 1 (Volume 1).)*

4 If each time a transition ends the transition type is to return to the previous setting, press [One Time Enable].

Settings relating to fader lever operations

To select the way in which the fader lever position and the transition progress are related, use the following procedure.

1 In the Switcher >Transition menu, press [Transition Curve].

The Transition Curve menu appears.

2 In the <Fader Curve> group, select the fader lever operation mode.

Normal: The transition progress is linear, according to the fader lever position. (Factory default setting)

Adv Tally Mode: When the fader lever is moved from the end of its travel, the tally is output slightly before the transition starts.

Settings Relating to Keys, Wipes, Frame Memory and Color Correction (Key/Wipe/FM/CCR Menu)

For settings relating to keys, wipes, frame memory and Color Correction, use the Switcher >Key/Wipe/FM/CCR menu.

To display the Key/Wipe/FM/CCR menu

In the Engineering Setup menu, select VF3 'Switcher' and HF5 'Key/Wipe/FM/CCR.'

The status area shows the key memory settings, mask and border processing order, key priority, cross-point hold, pattern limit transition, and wipe edge settings for each of the M/E and PGM/PST banks.

The following functions are available here.

- **Key Memory:** Set the key memory operation mode for each of the M/E and PGM/PST banks.
- **Video Proc Memory:** Enable or disable video process memory.
- **Show Key:** Enable or disable show key for edit preview, M/E and Pvw/K-Pvw of P/P.
- **Key Auto Drop:** For each M/E or PGM/PST bank, specify a key to be turned off automatically when you press a cross-point button for the bus to be output as the background.
- **Mask/Border Process:** Set the processing order of masks and borders for each M/E or PGM/PST bank.
- **Key Priority:** Set the key priority operation mode for each of the M/E and PGM/PST banks. In DSK mode, the key priority is fixed.
- **Xpt Hold mode:** Set the operation mode for the cross-point hold button provided on the key bus for each of the M/E and PGM/PST banks.
- **Pattern Limit Transition:** Set the operation mode when the pattern limit is released for each of the M/E and PGM/PST banks.
- **Wipe Edge Default:** Adjust the wipe edge softness for each of the M/E and PGM/PST banks.
- **CCR Internal Signal Enable:** Select whether signals generated internally to the switcher can be selected as input material to the color corrector.
- **FM Auto Store:** Switch on or off the function to automatically attach a name and save in frame memory.

Switching Video Process Memory On or Off

In the Switcher >Key/Wipe/FM/CCR menu, press [Video Proc Memory], turning it on.

Settings for the Show Key Function

1 In the Switcher >Key/Wipe/FM/CCR menu, press [Show Key].

The Show Key menu appears.

2 In the <Show Key Enable> group, press the signal for which "show key" is enabled, turning it on.

3 To set the time for which "show key" is held, press [Hold Time].

4 Adjust the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Hold Time	Show key hold time	0 to 999 (frames)

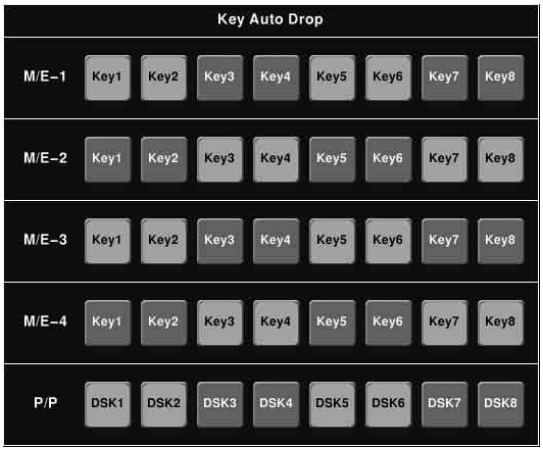
Settings for Key Auto Drop Function

The "key auto drop" function automatically switches off a particular key when you press a cross-point button in a bus that outputs the background on the particular switcher bank (PGM/PST, or M/E-1 to M/E-4).
When the background output bus is in flip-flop mode, this is always the A bus. In bus-fixed mode, it is either the A bus or the B bus depending on the fader lever position.

For details of bus-fixed mode, see "Executing a Transition" in Chapter 3 (Volume 1).

1 In the Switcher >Key/Wipe/FM/CCR menu, press [Key Auto Drop].

The Key Auto Drop menu appears.



2 In the <Key Auto Drop> group, press the name of the keyer for which you want the key to be deleted automatically, turning it on.

Automatically Naming and Saving to Frame Memory

In the Switcher >Key/Wipe/FM/CCR menu, press [FM Auto Store], turning it on.

Selecting the Bank to Make the Settings

In the following procedures, select the bank to which the settings apply using any of the following methods, then make the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Bank	M/E or P/P selection to which settings apply	1 to 5

The selected bank appears in reverse video.

Selecting the key memory mode

In the <Key Memory> group of the Switcher >Key/Wipe/FM/CCR menu, select one from Full (full mode)/Simple (simple mode)/Off.

For more details, see "Key Memory" in Chapter 4 (Volume 1).

Selecting the processing order of masks and borders

In the <Mask/Border Process> group of the Switcher >Key/Wipe/FM/CCR menu, select one of the following.

Mask >Border: Apply the Mask effect, then apply the Border effect.

Border >Mask: Apply the Border effect, then apply the Mask effect.

Selecting the key priority operation mode

In the <Key Priority> group of the Switcher >Key/Wipe/FM/CCR menu, select one of the following.

Normal: The key priority sequence can be varied freely.

Fix: Fixed at currently set priority sequence.

Setting the operation mode of the key bus [XPT HOLD] button

In the <Xpt Hold Mode> group of the Switcher >Key/Wipe/FM/CCR menu, select any of the following. This setting is applied for the attributes of snapshots as well as the operation mode of [XPT HOLD] button.

Key Disable: The [XPT HOLD] button of the key bus functions not only as a cross-point hold button but also as a key disable button. When the [XPT HOLD] button is on, recalling a snapshot or keyframe effect does not reflect the key settings, including the cross-point selection information.

Key Disable with Status: Same as [Key Disable], and further disables the reflection of the key on/off status.

Xpt Hold: The [XPT HOLD] button of the key bus functions as a cross-point hold button. When the [XPT HOLD] is on, recalling a snapshot or keyframe effect does not reflect the cross-point selection information.

To change the cross-point hold attribute of a snapshot

If you select “Key Disable” above, this also applies key disable to the cross-point hold attribute.

If you select “Key Disable With Status,” the key disable function is applied, including the key on/off status.

Notes

This setting is only reflected in the operation of the [XPT HOLD] button when the [XPT HOLD] button operating mode is set to “All Bus.” *(See page 1009.)*

Note that the snapshot cross-point hold attribute is also valid for settings other than “All Bus.”

Setting the operation mode when the pattern limit is released

In the <Pattern Limit Transition> group of the Switcher >Key/Wipe/FM/CCR menu, select either of the following operation modes.

Auto: When the pattern limit is released, the remainder of the transition is carried out automatically at a special-purpose transition rate.

Manual: After the pattern limit is released, the transition waits for the next operation, then executes. Until you move the fader lever or press [AUTO TRANS], the transition is not executed.

Setting the default wipe edge softness

1 In the Switcher >Key/Wipe/FM/CCR menu, press [Wipe Edge Default], turning it on.

2 Set the following parameter.

Knob	Parameter	Adjustment	Setting values
3	Soft	Default value of wipe edge softness	–50.00 to +50.00

Setting the mode in which all signals can be selected for input to the color corrector

Press [CCR Intrnl Signl Enbl] in the Switcher > Key/Wipe/FM/CCR menu, turning it on.

You can select signals generated internally to the switcher as material for input to the color corrector.

Notes

When you select an M/E reentry signal as material for input to the color corrector, 1H delay occurs to the output signal of M/E.

Settings Relating to Function Links (Link Menu)

Carry out setup relating to links by displaying the Switcher >Link menu.

To display the Link menu

In the Engineering Setup menu, select VF3 ‘Switcher’ and HF6 ‘Link.’
The status area shows the current link information.

The following functions are available here.

- **Internal Bus Link:** Make a setting of the bus link function that links together two buses internal to the switcher.
- **GPI Link:** Make settings for linking any cross-point buttons or [CUT] and [AUTO TRANS] buttons in the cross-point control block and GPI output ports.
- **M/E Link:** Make settings to link together two M/E banks.
- **Key Trans Link:** Make settings to link key transitions.

Setting a Cross-Point Button Link

To link together two buses internal to the switcher, use the following procedure.

1 In the Switcher >Link menu, press [Internal Bus Link].

The Internal Bus Link menu appears.
The status area shows the link source and link destination buses, and link table information.

2 Using any of the following methods, select what setting applies to.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Link No	Link number	1 to 64

3 Press [Link Bus Select].

The Link Bus Select menu appears.

The status area lists the current setting status of the selected link and the buses that can be selected.

4 In the <Bus Select> group, select [Master Bus] (link source bus).

5 Using any of the following methods, select the bus to be the link source, and press [Bus Set].

- Press directly on the list appearing in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	No	Bus selection	1 and upwards a)

a) Only when [Master Bus] is selected, M/E-1 to M/E-4 Trans PGM, and P/P Trans PGM are available.
Only when [Linked Bus] is selected, AUX 1 to AUX 48 as Key are available.

Notes

With one of M/E-1 to M/E-4 Trans PGM and P/P Trans PGM selected for [Master Bus], the link setting become effective as soon as you start moving the fader lever.

6 In the <Bus Select> group, select [Linked Bus] (link destination bus).

7 Referring to step **5**, select the bus to be the link destination, and press [Bus Set].

8 Turn the knob to select the link table, and press [Link Table Set].

Knob	Parameter	Adjustment	Setting values
3	Link Table No	Link table selection	1 to 8

For more information about link tables, see the following item.

The selected link table number is confirmed, and this is reflected in the status area.

To delete a link

Select the link you want to delete, then press [Clear] in the Switcher >Link >Internal Bus Link menu.

Making Link Table Settings

1 In the Switcher >Link >Internal Bus Link menu, press [Link Table Select].

The Link Table Select menu appears.

2 Using any of the following methods, select the link source and link destination signals.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
4	Main No	Video/key signal for link source	1 to 300
5	No	Video/key signal for link destination	1 to 300

3 To confirm the selection, press [Link Src Set].

This links the link destination signal to the signal selected as Main No.

To initialize the set source address

In the Switcher >Link >Link Table Select menu, press [Init Link Table].
A confirmation message appears; press [Yes].
The source addresses are reassigned, and this is reflected in the status area.

To change the link number and link table number

In this menu too, you can change the link number and link table number. To do this, turn the knobs as follows to make the setting, then press [Link Table Set].

Knob	Parameter	Adjustment	Setting values
1	Link No	Link to which setting applies	1 to 64
3	Link Table No	Link table selection	1 to 8

Linking Cross-Point Buttons and GPI Output Ports

To link cross-point buttons or the [CUT] and [AUTO TRANS] buttons in the cross-point control block, and GPI output ports, use the following procedure.

1 In the Switcher >Link menu, press [GPI Link], to display the Switcher >Link >GPI Link menu.

The status area shows the output ports and the link status, and delay value information.

2 Using any of the following methods, select the GPI output port.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	GPI Port	GPI output port selection	1 to 8

3 Press [GPI Link Adjust].

The GPI Link Adjust menu appears.
The status area shows the current setting state of the selected link, and a list of the selectable video names or button names, together with the GPI link Enable/Disable setting for each bus.

4 Using any of the following methods, select what the setting applies to. For each GPI port there can be up to eight links.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	GPI Port	GPI output port selection	1 to 8
2	Link No	Link number selection	1 to 8
3	Video/Button No	Selection of video or button name to be linked	1 and upwards [a)]

a) These include main pair numbers 1 to 300, and “Cut” and “Auto Trans” on each bank.

5 In the <Video/Button> group, press [Select].

The selected video or button name is reflected in the status area.

To clear a video/button name link
Make the selection to which the setting applies, then in the <Video/Button> group press [Clear].

6 To select for each bus whether the GPI link setting is enabled or disabled, use any of the following methods to select the bus to which the setting applies.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
4	Bus	Bus selection	1 and upwards

7 In the <Bus> group, select any of the following.

Enable: Enable the GPI link setting for the selected bus.
Disable: Disable the GPI link setting for the selected bus.
All Enable: Enable the GPI link setting for all buses.

Setting the delay value

1 In the Switcher >Link >GPI Link Adjust menu, turn the knobs to select the output port for which you want to set the delay value, and the corresponding delay value.

Knob	Parameter	Adjustment	Setting values
1	GPI Port	GPI output port for the setting	1 to 8
5	Delay	Delay value for the output port	0 to 300 (fields)

2 Press [Delay Set].

This confirms the delay value, which is reflected in the status area.

Setting the Re-entry Button Operation Mode

When you select a re-entry button in the cross-point control block of an M/E block (downstream M/E block), the output of the upstream M/E block is read in. You can set the system so that when a GPI link is set for the cross-point selected on the A [a)] bus of the upstream M/E block this triggers the GPI output. In the Switcher >Link >GPI Link menu, set [Re-Entry Enable] to On or Off. When this is On, the GPI is executed upstream.

a) When the bus toggle is set to Off, the applicable bus depends on the position of the fader lever.

Notes

- For re-entry, “upstream” applies to a single stage only.
- This setting is common to all GPI output ports.
- GPI output execution on the upstream M/E block is only possible on buses for which GPI Link is set to “Enable” in the GPI Link Adjust menu.
- GPI output occurs when you press a re-entry button, the re-entry button is selected by a macro execution, or you press the re-entry button on the AUX bus remote panel.

Making a Setting for Linking Two M/E Banks

You can link any two M/E banks for some operations by using the Switcher >Link >M/E Link menu.
The operations for which you can link two M/E banks are as follows.

- Transition execution (auto transition, cut, and fader lever operation)
- Next transition selection
- Transition type selection

1 In the Switcher >Link menu, press [M/E Link].

The M/E Link menu appears.
The status area displays a link list showing link source banks (M/E and PGM/PST) and link destination banks, and a selection list.

2 Using any of the following methods, select the link number you want to set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Link No	Link number selection	1 to 8

3 In the <M/E Select> group, select [Master M/E] (link source).

4 Using any of the following methods, select the M/E or PGM/PST bank you want to be the link source, then press [M/E Set].

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	No	Bank selection	1 to 5 a)

a) 1: M/E-1
2: M/E-2
3: M/E-3
4: M/E-4
5: PGM/PST

5 In the <M/E Select> group, select [Linked M/E] (link destination).

6 In the same way as in step **4**, select the M/E or PGM/PST bank you want to be the link destination, then press [M/E Set].

To link the banks not only for transition execution but also for the other operations

Press [Transition Only] and turn it off.

To release the link setting

Use the same operation as in step **2** to select the link number for which you want to release the link setting, then press [Clear].

Making a Link Setting for Key Transition

You can make a link setting for key transition by using the Switcher >Link >Key Transition Link menu.
The operations for which you can link two banks are the following independent key transition operations.

- Auto transition
- Turning the key on or off
- Fader lever operation (on the downstream key control block)

1 In the Switcher >Link menu, press [Key Trans Link].

The Key Transition Link menu appears.
The status area displays a link list showing link sources and link destinations, and a key selection list.

2 Using any of the following methods, select the link number you want to set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Link No	Link number selection	1 to 32

3 In the <Key Select> group, select [Master Key] (link source).

4 Using any of the following, select the key you want to be the link source, then press [Key Set].

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	No	Key number selection	1 to 40 [a)]

a) The keys and their numbers selectable as link source/link destination are as follows.
M/E-x Keyx?DSKx
(In M/E-x, the x is the M/E bank number (1 to 4); in DSKx the x is the DSK number (1 to 8); in Keyx the x is the key number (1 to 8)).

5 In the <Key Select> group, select [Linked Key] (link destination).

6 In the same way as in step **4**, select the key you want to be the link destination, then press [Key Set].

To release the link setting

Use the same operation as in step **2** to select the link number for which you want to release the link setting, then press [Clear].

Interfacing With External Devices (Device Interface Menu)

To carry out setup relating to connections with external devices, display the Switcher >Device Interface menu.

To display the Device Interface menu

In the Engineering Setup menu, select VF3 'Switcher' and HF7 'Device Interface.'

The following functions are available here.

- **Remote Assign:** Set the use of the four 9-pin ports.
- **GPI Input:** Set the GPI input ports and trigger polarities, and make the action settings.
- **GPI Output:** Set the GPI output ports and trigger polarities, and make the action settings.
- **Aux Control:** Set whether operations on the AUX buses from the four 9-pin ports are inhibited.
- **DME SDI Interface:** Make AUX bus output and re-entry input settings.
- **Editor I/F:** Set the key off mode for control from an editor.

Making 9-Pin Port Device Interface Settings

The description in this section takes the REMOTE1 port as an example. For other REMOTE ports, carry out the same process as required.

1 In the Switcher >Device Interface menu, press [Remote Assign].

The Remote Assign menu appears.

2 Select the device interface you want to set for the REMOTE1 port from the <Remote1> group.

Editor A: assign Editor A to the REMOTE1 port.
Editor B: assign Editor B to the REMOTE1 port.
AUX: assign AUX to the REMOTE1 port.

The device interfaces which can be selected for REMOTE2 are the same as for REMOTE1. For REMOTE3 you can also select DME1, and for REMOTE4 you can also select DME2.

Notes

When REMOTE3 and REMOTE4 are respectively assigned to DME1 and DME2, you can switch the AUX bus from the DME (DME-3000/7000) connected to these ports.

At this time, connect the DME input video signals and key signals as follows.

- DME1 video input: AUX1 output
- DME1 key input: AUX2 output
- DME2 video input: AUX4 output
- DME2 key input: AUX5 output

Note that for a DME external video signal, you can select any of AUX1 to AUX14 on the DME. Connect to the selected AUX bus.

Making Switcher Processor GPI Input Settings

1 In the Switcher >Device Interface menu, press [GPI Input].

The GPI Input menu appears.

2 Using any of the following methods, select the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Port	Port selection	1 to 8
2	No	Selection of number for action to be assigned	1 to 8

3 In the <Trigger Type> group, select the trigger type.

 **(Rising Edge):** Apply the trigger on a rising edge of an input pulse.

 **(Falling Edge):** Apply the trigger on a falling edge of an input pulse.

 **(Any Edge):** Apply the trigger on a change in the polarity of the input signal.

 **(Level):** Carry out the specified operation when the input is low or high.

No Operation: Apply no trigger on an input pulse.

4 In the <Target> group, select the action block.

M/E-1, M/E-2, M/E-3, M/E-4, P/P: Set the action for one of the banks.

Common/Setup: Set an action for something other than the above, or a setup action.

5 Using any of the following methods, select the action to be set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
3	Action	Action selection	1 and upwards [a]
4	Reg No	Register number	1 to 4 [b] 1 to 99 [c]

a) As for the setting values, see "Selectable actions for various trigger types" *(page 1061)*.
b) When knob 3 selection is "Key Snapshot"
c) When knob 3 selection is "Snapshot" or "Effect"

6 Press [Action Set] to confirm the action selection.

The selected setting appears in the status area.

Selectable actions for various trigger types

- **When the trigger type is other than "Level"**
  (In M/E-x, the x is the M/E bank number (1 to 4); in DSKx the x is the DSK number (1 to 8); in Keyx the x is the key number (1 to 8)).
  When Target is M/E-x: Cut, Auto Trans, Keyx Cut, Keyx Auto Trans, SS ? Recall, Keyx SS ? Recall, Effect ? Recall, Effct ? Recall & Run, KF Run, KF Stop, KF Rewind, KF Rev Run, No Action
  When Target is P/P: Cut, Auto Trans, DSKx Cut, DSKx Auto Trans, FTB Cut, FTB Auto Trans, SS ? Recall, DSKx SS ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, KF Rev Run, No Action
  When Target is Common/Setup: FM Src1 Field Freeze, FM Src1 Frame Freeze, FM Src2 Field Freeze, FM Src2 Frame Freeze
  FM Src1 Freeze Off, FM Src2 Freeze Off, FM Src1 Clip Record, FM Src1 Clip Stop, FM Src2 Clip Record, FM Src2 Clip Stop, FM1 to FM8 Clip Cueup, FM1 to FM8 Clip Play, FM1 to FM8 Clip Stop, User1 to 8 SS ? Recall, User1 to 8 EFF ? Recall, User1 to 8 EFF ? Recall & Run, User1 to 8 KF Run, User1 to 8 KF Stop, User1 to 8 KF Rewind, User1 to 8 KF Reverse Run, No Action
- **When the trigger type is "Level"**
  (In M/E-x, the x is the M/E bank number (1 to 4)).
  When Target is M/E-x or P/P: Aspect, Bkgd A Side Flags, Bkgd B Side Flags, No Action
  When Target is Common/Setup: Format, Aspect, Level Enable, No Action

Notes

- "Level Enable" is a function that determines whether GPI inputs are enabled ("Enable") or disabled ("Disable") for the "Aspect" and "Format" actions that can be used when the trigger type is Level. When Level Enable is used, if the input is "Disable" then it is not possible to switch "Aspect" or "Format" by GPI input.
  If a GPI to switch "Aspect" or "Format" occurs when powering the system off, the action triggered by the GPI may start immediately before the power goes off and the power may go off before the action is completed. This may corrupt the setup settings. It is therefore recommended to use Level Enable to avoid such a situation.
- If "Format" is selected for "Action" when the format converter is used on the switcher, you can set the conversion formats of the format converter for "FC Input 1-8", "FC Input 9-16", "FC Output 1-2" and "FC Output 3-4".

Carrying out level settings

To set the low level and high level, first set the trigger type to "Level," then use the following procedure.

1 In the Switcher >Device Interface menu, select the action to be set, and press [H/L Set].

The H/L Set menu appears.

2 Using any of the following methods, select the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Selection of setting for action	1 and upwards

3 To apply the selection made in step **2** when the input is high, press [H Set]. To apply the selection made in step **2** when the input is low, press [L Set].

This confirms the setting, which appears in the status area.

Notes

- When the action is "Format," these settings conflict with the current settings, but after making the settings, agreement is restored after a pulse change or power off/on.
- When the Action is "Bkgd A Side Flags" or "Bkgd B Side Flags," the levels are fixed, as follows.
  High level: Off
  Low level: On

Making Switcher Processor GPI Output Settings

1 In the Switcher >Device Interface menu, press [GPI Output].

The GPI Output menu appears.

2 Using any of the following methods, select the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port	Port selection	1 to 8

3 In the <Trigger Type> group, select the trigger polarity.

 **(Rising Edge):** The trigger causes the relay contacts to be open-circuit or drives the output high, and holds this state for the specified pulse width.

 **(Falling Edge):** The trigger causes the relay contacts to be shorted or drives the output low, and holds this state for the specified pulse width.

 **(Any Edge):** Each time the trigger occurs, the relay contacts are alternately closed or opened, or the output is switched between high and low.

Status: Depending on the status, the relay contacts are closed or opened, or the output is switched between high and low.

No Operation: The trigger has no effect on the output.

4 Turn the knobs to select the pulse width and timing to be set.

Knob	Parameter	Adjustment	Setting values
3	Pulse Width	Pulse width	1 to 60 (fields)
4	Timing	Output timing	1 to 3 a)

a) 1: Field 1, 2: Field 2, 3: Any

When "⤫" is selected as the trigger polarity, there is no Pulse Width setting. When "Status" is selected, there is no Pulse Width or Timing setting.

5 In the <Source> group, select the action block.

M/E-1 to M/E-4 and P/P: Set an action for the M/E or PGM/PST bank.
Common: Set an action for error status.

6 Using any of the following methods, select the action to be set.

- Press directly on the list appearing in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
2	Action	Action selection	1 and upwards [a]
5	Reg No	Register number	1 to 4 [b] 1 to 99 [c]

a) **• Action list when the trigger type is other than "Status"**
(In M/E-x, the x is the M/E bank number (1 to 4); in DSKx the x is the DSK number (1 to 8); in Keyx the x is the key number (1 to 8)).
When Source is M/E-x: Cut, Auto Trans, Keyx Cut, Keyx Auto Trans, Keyx SS ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, No Action
When Source is P/P: Cut, Auto Trans, DSKx Cut, DSKx Auto Trans, FTB Cut, FTB Auto Trans, DSKx SS ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, No Action
When Source is Common: No Action
• Action list when the trigger type is "Status"
(In M/E-x, the x is the M/E bank number (1 to 4); in DSKx the x is the DSK number (1 to 8); in Keyx the x is the key number (1 to 8)).
When Source is M/E-x: Keyx On, No Action
When Source is P/P: DSKx On, No Action
When Source is Common: Error Make, Error Break, No Action

b) When knob 2 selection is "Key Snapshot"

c) When knob 2 selection is "Snapshot" or "Effect"

7 Press [Action Set] to confirm the action selection.

The selected setting appears in the status area.

Test firing the trigger

To test fire the trigger, press [Test Fire].
This outputs a trigger from the selected output port. This is not output when the trigger type is "Status."

Enabling or Disabling AUX Bus Control

1 In the Switcher >Device Interface menu, press [Aux Control].

The Aux Control menu appears.

2 Select the 9-pin port for the setting, from the <Control> group.

Remote1: Make the settings for the REMOTE1 port.

Remote2: Make the settings for the REMOTE2 port.
Remote3: Make the settings for the REMOTE3 port.
Remote4: Make the settings for the REMOTE4 port.

3 Using any of the following methods, select the AUX bus.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	AUX bus selection	0 to 48 a)

a) 0: EDIT PVW
1 to 48: AUX1 to AUX48

4 Select whether to enable or disable AUX bus control from the <Control Mode> group.

Enable: enable control of the port selected in step **2**.
Disable: disable control of the port selected in step **2**.
Manual: make whether control of the port selected in step **2** is possible or not depend on the setting in the Misc menu.

5 Repeat steps **2** to **4** as required to make the settings for other ports.

Setting DME and Switcher Interfaces

Select the signals (AUX bus output signals) input to the DME as follows.

Notes

When using the MVE-8000A, it is not necessary to make this setting.

1 Press [DME SDI Interface] in the Switcher >Device interface menu.

The DME SDI Interface menu appears.

2 Using any of the following methods, select the DME channel to which operations apply.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	DME Ch No	DME channel selection	1 to 24

3 Depending on the selection in step **3**, use any of the following methods to make the setting.

- Press directly on the list on the right of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	Src No	AUX bus number	0 to 48

4 Press [Set].

In the list on the right of the status area, the selected content is reflected in the specified DME channel.

Repeat steps **3** to **6** as required.

Selecting the Mode for Turning Off Keys Upon Receiving the Editor Command

Selects the mode for turning off keys when an "All Stop" command is received from the editor.

1 In the Switcher >Device Interface menu, press [Editor I/F].

The Editor I/F menu appears.

2 Select one of the following modes.

All: When an "All Stop" command is received, all keys for the selected regions are turned off.

Specified: When an "All Stop" command is received, among all the keys for the selected regions, only the keys specified by the editor are turned off.

Notes

When an "All Stop" command is received in the process of a transition, the keys selected for the next transition are also turned off.

Chapter 21 DME Setup (DME)

Settings Relating to Signal Inputs (Input Menu)

To make settings relating to DME input signals, display the DME >Input menu.

To display the Input menu

In the Engineering Setup menu, select VF4 'DME' and HF1 'Input.'
The status area shows the initial crop information and the DME system phase.

The following functions are available here.

- **Initial Crop:** Make the initial crop setting.
- **Matte Illeg. Color Limit:** Switch the illegal limiter for the signal generated by the DME internal matte generator on or off.
- **System Phase:** Adjust the operation timing of the whole system with respect to the reference signal.

When the signal format is 1080P, up to four DMEs can be operated (DME1 to DME4).

In the following description, the settings for DME1 are given by way of example, but the settings for DME2 to DME4 are carried out in a similar way.

Setting the Initial Crop

1 In the DME1 <Aspect> group of the DME >Input menu, select the screen aspect ratio (16:9 or 4:3).

2 In the DME1 <Crop> group, press [Initial Crop] and adjust the following parameters.

- **If you selected 4:3 in step 1**

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top side	–3.00 to +3.00
2	Left	Position of left side	–4.00 to +4.00
3	Right	Position of right side	–4.00 to +4.00
4	Bottom	Position of bottom side	–3.00 to +3.00

• **If you selected 16:9 in step 1**

Knob	Parameter	Adjustment	Setting values
1	Top	Position of top side	–9.00 to +9.00
2	Left	Position of left side	–16.00 to +16.00
3	Right	Position of right side	–16.00 to +16.00
4	Bottom	Position of bottom side	–9.00 to +9.00

To return the parameter values to their default values
Press [Unity] in the <Crop> group.

Setting an Illegal Color Limit for Matte Signals

To enable the illegal color limiter for the signals generated by the DME internal matte generator, press [Matte Illeg Col Limit] for DME1 in the DME >Input menu, turning it on.

Making DME System Phase Adjustment

To adjust the DME reference phase, use the following procedure.

1 In the DME >Input menu, press [System Phase].

2 Set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	DME1 Phase	DME1 system phase adjustment	–32.00 to +96.00
2	DME2 Phase	DME2 system phase adjustment	–32.00 to +96.00

Settings Relating to Signal Outputs (Output Menu)

To make settings relating to DME output signals, display the DME >Output menu.
You can select the signals output from the four monitor output connectors.

To display the Output menu
In the Engineering Setup menu, select VF4 'DME' and HF3 'Output.'

Setting the Monitor Output

To set the signals output from the four monitor output connectors, use the following procedure.

1 In the DME >Output menu, press [Monitor Output].

The Monitor Output menu appears.

2 In the <Select> group, select the DME to which the setting applies.

DME1: Select DME1.
DME2: Select DME2.
When the signal format is 1080P, you can also select DME3 or DME4 similarly.

3 In the list on the left of the status area, press directly on the monitor output for which you want to make setting.

Notes
When the signal format is 1080P, you cannot select MONI OUT#2 and MONI OUT#4.

4 In the list on the right of the status area, press directly on the signal you want to output.

5 Press [Set].

The selection is reflected in the monitor output.

Interfacing With External Devices (Device Interface Menu)

To carry out setup relating to DME connections with external devices, display the DME >Device Interface menu.

To display the Device Interface menu

In the Engineering Setup menu, select VF4 'DME' and HF4 'Device Interface.'

The following functions are available here.

- **Editor Protocol:** Set the protocol to be used on the Editor port.
- **Editor Port Setting:** Make settings relating to the control of the four editor ports installed in the DME.
- **GPI Input:** Set the GPI input ports and trigger polarities, and make the action settings.
- **GPI Output:** Set the GPI output ports and trigger polarities, and make the action settings.

When the signal format is 1080P, up to four DMEs can be operated (DME1 to DME4).

In the following description, the settings for DME1 are given by way of example, but the settings for DME2 to DME4 are carried out in a similar way.

Notes

For the GPI Input and GPI Output settings, the settings apply to Ch1/Ch2 for DME1/DME3, and Ch3/Ch4 for DME2/DME4.

Setting the editor protocol

In the <DME1 Editor Protocol> group of the DME >Device Interface menu, press the following buttons to make the setting.

DME: Control by DME protocol through the editor port.

VTR: Control by VTR protocol through the editor port.

Making editor port settings

In the <DME1 Editor Port Setting> group of the DME >Device Interface menu, press either of the following to select the way in which the editor ports are used.

Common: Control all of channels 1 to 4 through Editor ports 1 to 4.

Independ: Control channels 1 to 4 individually through Editor ports 1 to 4.

Making DME GPI Input Settings

1 In the DME >Device Interface menu, press [DME1 GPI Input].

The DME1 GPI Input menu appears.

2 Using any of the following methods, select the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Port	Input port selection	1 to 8
2	No	Selection of number for action to be assigned	1 to 8

3 In the <Trigger Type> group, select the trigger polarity.

 **(Rising Edge):** Apply the trigger on a rising edge of an input pulse.

 **(Falling Edge):** Apply the trigger on a falling edge of an input pulse.

 **(Any Edge):** Apply the trigger on a change in the polarity of the input signal.

 **(Level):** Carry out the specified operation when the input is low or high.

No Operation: Apply no trigger on an input pulse.

4 In the <Target> group, select what this applies to (channels 1 to 4, or Proc).

5 Using any of the following methods, select the action to be set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
3	Action	Action selection	1 and upwards a)
4	Reg No	Register number	1 to 99 b) 1 to 399 c)

a) As for the setting values, see "Selectable actions for various trigger types" *(page 1073)*.
b) When knob 3 selection is "Snapshot"
c) When knob 3 selection is "Effect"

6 Press [Action Set] to confirm the action selection.

The selected setting appears in the status area.

Selectable actions for various trigger types

- **When the trigger type is other than "Level"**
  When Target is Ch1, Ch2, Ch3, or Ch4: Freeze, SS ? Recall
  Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, KF Reverse Run, No Action
  When Target is Proc: No Action
- **When the trigger type is "Level"**
  When Target is Ch1, Ch2, Ch3, or Ch4: Aspect, No Action
  When Target is Proc: Format Aspect, Level Enable, No Action

Notes

"Level Enable" is a function that determines whether GPI inputs are enabled ("Enable") or disabled ("Disable") for the "Aspect" and "Format" actions that can be used when the trigger type is Level. When Level Enable is used, if the input is "Disable" then it is not possible to switch "Aspect" or "Format" by GPI input.

If a GPI to switch "Aspect" or "Format" occurs when powering the system off, the action triggered by the GPI may start immediately before the power goes off and the power may go off before the action is completed. This may corrupt the setup settings. It is therefore recommended to use Level Enable to avoid such a situation.

Carrying out level settings

To set the low level and high level, first set the trigger type to "Level," then use the following procedure.

1 In the DME >Device Interface menu, select the action to be set, and press [H/L Set].

The H/L Set menu appears.

2 Using any of the following methods, select the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Signal format/screen aspect ratio selection	1 and upwards

3 To apply the selection made in step **2** when the input is high, press [H Set].
To apply the selection made in step **2** when the input is low, press [L Set].

This confirms the setting, which appears in the status area.

Making DME GPI Output Settings

1 In the DME >Device Interface menu, press [DME1 GPI Output].

The DME1 GPI Output menu appears.
The output port selection is fixed at 1.

2 In the <Trigger Type> group, select the trigger polarity.

Status: Depending on the status, the relay contacts are closed or opened, or the output is switched between high and low.
No Operation: The trigger has no effect on the relay state or output level.

3 Using any of the following methods, select the action you want to set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	Action	Action selection	1 to 3 [a)]

a) Error Make, Error Break, No Action

4 Press [Action Set] to confirm the action selection.

The selected setting appears in the status area.

Chapter 22 DCU Setup (DCU)

Setup Relating to DCU

In DCU setup, carry out settings particular to the DCU.
You can make the following settings.

- **Input Config:** Assign GPI inputs to Parallel input ports.
- **GPI Input Assign:** Make GPI input settings.
- **Output Config:** Assign GPI outputs to parallel output ports inserted in an option slot.
- **GPI Output Assign:** Make GPI output settings.
- **Serial Port Assign:** Set the protocol to match the devices connected to a 9-pin serial port. You can also select the control panel used to control each device.

Notes

For setup relating to DCU, it is necessary to make the same settings on multiple control panels (maximum three units) that are sharing the DCU. After carrying out the DCU setup on one control panel, make the same settings on the other control panels.

Settings Relating to Parallel Inputs (Input Config Menu)

To assign GPI inputs to DCU parallel input ports, display the DCU >Input Config menu.

The DCU parallel input ports are assigned with the following priority sequence.

1. When external boxes are set in the Router/Tally >Router >External Box Assign menu, the parallel inputs are assigned to the external box inputs in order.
2. When tally settings are carried out in the Router/Tally >Tally Enable menu, tally inputs are assigned automatically.

In this menu, you set only the input ports which are unused after making the above assignments.

To display the Input Config menu

In the Engineering Setup menu, select VF5 'DCU' and HF1 'Input Config.' The status area shows input port information.

Assigning a GPI Input Port

1 In the DCU >Input Config menu, select what the setting applies to (DCU1 or DCU2) from the <DCU Select> group.

2 In the <Parallel Input Assign> group, press [GPI Input].

3 Using any of the following methods, assign the number of the GPI input to the input port.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Parallel Input	Input port	1 to 102 a)
3	GPI Input	GPI input	1 to 50

a) When the MKS-2700 is connected, select a value in the range 1 to 34.

4 To confirm the assignment in step **3**, press [GPI Input Set].

This assigns the GPI input, and this is reflected in the status area.

Releasing the Assignment of a GPI Input Port

1 In the DCU >Input Config menu, select what the setting applies to (DCU1 or DCU2) from the <DCU Select> group.

2 In the <Parallel Input Assign> group, if [GPI Input] is on, press it to turn it off.

3 Turn the knobs to adjust the following parameters.

Knob	Parameter	Adjustment	Setting values
1	From No	First port number	1 to To No
2	To No	Last port number	From No to 102

4 In the <Parallel Input Assign> group, press [No Assign].

GPI Input Setting (GPI Input Assign Menu)

To set the trigger type and so on for each GPI input, display the DCU >GPI Input Assign menu.

To display the GPI Input Assign menu

In the Engineering Setup menu, select VF5 'DCU' and HF2 'GPI Input Assign.'
The GPI input port setting status appears in the status area.

Making DCU GPI Input Settings

1 In the DCU >GPI Input Assign menu, using any of the following methods select what the setting applies to.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	GPI input	1 to 50

2 In the <Trigger Type> group, select the trigger polarity.

(Rising Edge): Apply the trigger on a rising edge of an input pulse.

(Falling Edge): Apply the trigger on a falling edge of an input pulse.

(Any Edge): Apply the trigger on a change in the polarity of the input signal.

(Level): Carry out the specified operation when the input is low or high.

No Operation: Apply no trigger on an input pulse.

3 In the <Target Device> group, select the control panel to handle the GPI input.

SCU1: ID1 control panel (PNL1)
SCU2: ID2 control panel (PNL2)
SCU3: ID3 control panel (PNL3)

The action set in the following step **4** is executed for the switcher and DME controlled by the selected control panel.

4 Using any of the following methods, select the action you want to set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
2	Action	Action selection	1 and upwards a)
4	Aux Bus No	AUX bus selection	1 to 48 b)
5	Reg No	Register number	1 to 4 c) 1 to 99 d) 1 to 250 e) 1 to 399 f)
5	Src No	Source signal selection	1 and upwards b)

a) As for the setting values, see "Selectable actions for various trigger types" *(page 1080)*
b) When knob 2 selection is "Aux ? O'ride Src ??"
c) When knob 2 selection is "Key Snapshot"
d) When knob 2 selection is "Snapshot" or "Shotbox"
e) When knob 2 selection is "Macro"
f) When knob 2 selection is "Effect"
g) For primary inputs: 1 to 144
For premium inputs: 145 to 164 ((PREM1) to (PREM20) indicated after the number)
For format converter dedicated inputs: 165 to 180 ((FC1) to (FC16) indicated after the number)

5 To confirm the setting in step **4**, press [Action Set].

This confirms the setting, which appears in the status area.

Selectable actions for various trigger types

- **When the trigger type is other than "Level"**
(In M/E-x, the x is the M/E bank number (1 to 4); in DSKx the x is the DSK number (1 to 8); in Keyx the x is the key number (1 to 8)).
M/E-x Cut, M/E-x Auto Trans, P/P Cut, PP Auto Trans, M/E-x Keyx Cut, M/E-x Keyx Auto Trans, P/P DSKx Cut, P/P DSKx Auto Trans, FTB Auto Trans, FTB Cut, Master SS ? Recall, SS ? Recall, M/E-x Keyx SS ? Recall, P/P DSKx SS ? Recall, Master Effect ? Recall, Effect ? Recall, Effect ? Recall & Run, KF Run, KF Stop, KF Rewind, FM Src1 Field Freeze, FM Src1 Frame Freeze, FM Src1 Freeze Off, FM Src2 Field Freeze, FM Src2 Frame Freeze, FM Src2 Freeze Off, FM Src1 Clip Record, FM Src1 Clip Stop, FM Src2 Clip Record, FM Src2 Clip Stop, FM1 to FM8 Clip Cueup, FM1 to FM8 Clip Play, FM1 to FM8 Clip Stop, Shotbox ? Recall, Macro Take, Macro ? Recall, No Action
- **When the trigger type is only "Rising Edge" or "Falling Edge"**

Aux? O'ride Src??

- **When the trigger type is "Level"**
  (In M/E-x, the x is the M/E bank number (1 to 4)).
  System Format, System Aspect, M/E-x Aspect, P/P Aspect, DME Ch1 Aspect, DME Ch2 Aspect, DME Ch3 Aspect, DME Ch4 Aspect, DME Ch5 Aspect, DME Ch6 Aspect, DME Ch7 Aspect, DME Ch8 Aspect, Level Enable, No Action

Notes

- "Level Enable" is a function that determines whether GPI inputs are enabled ("Enable") or disabled ("Disable") for the Aspect and Format actions that can be used when the trigger type is Level. When Level Enable is used, if the input is "Disable" then it is not possible to switch Aspect or Format by GPI input.
  If a GPI to switch Aspect or Format occurs when powering the system off, the action triggered by the GPI may start immediately before the power goes off and the power may go off before the action is completed. This may corrupt the setup settings. It is therefore recommended to use Level Enable to avoid such a situation.
- As for "Aux ? O'ride Src ??," when "Rising Edge" is selected, on a rising edge the set AUX bus input is used. On a falling edge, the original state of the cross-point is restored. If the GPI trigger is applied repeatedly at short intervals (0.5 second or less), the cross-point switching may not be carried out correctly. In this case, apply the GPI trigger again.
- If "SWR Format" or "System Format" is selected for "Action" when the format converter is used, you can set the conversion formats of the format converter for "FC Input 1-8" and "FC Input 9-16" "FC Output 1-2" and "FC Output 3-4".

Carrying out level settings

To set the low level and high level, first set the trigger type to "Level," then use the following procedure.

1 In the DCU >GPI Input Assign menu, select the action to be set, and press [H/L Set].

The H/L Set menu appears.

2 Using any of the following methods, select the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	Signal format/screen aspect ratio selection	1 and upwards

3 To apply the selection made in step **2** when the input is the GPI high level, press [H Set]. To apply the selection made in step **2** when the input is low, press [L Set].

This confirms the setting, which appears in the status area.

Parallel Output Settings (Output Config Menu)

For the DCU parallel output ports, after carrying out tally settings in the Router/Tally >Tally Enable menu, you can assign GPI outputs to output ports that are still unused.
To assign DCU outputs to DCU parallel output ports, display the DCU >Output Config menu.

To display the Output Config menu

In the Engineering Setup menu, select VF5 'DCU' and HF3 'Output Config.' The status area shows output port information.

Assigning a GPI Output Port

1 In the DCU >Output Config menu, select what the setting applies to (DCU1 or DCU2) from the <DCU Select> group.

2 In the <Parallel Output Assign> group, press [GPI Output].

3 Using any of the following methods, select the output port and GPI output number.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Parallel Output Slot	Output port slot	2 to 6 a)
2	Parallel Output Port	Output port	1 to 54 b)
5	GPI Output	GPI output	1 to 50

a) When the MKS-2700 is connected, select 2.
b) When the MKS-2700 is connected, select a value in the range 1 to 36.

4 To confirm the selected setting, press [GPI Output Set].

This confirms the selection, which is reflected in the status area.

Releasing the Assignment of a GPI Output Port

1 In the DCU >Output Config menu, select what the setting applies to (DCU1 or DCU2) from the <DCU Select> group.

2 In the <Parallel Output Assign> group, if [GPI Output] is on, press it to turn it off.

3 Turn the knobs to select the slot and port to which the setting applies.

Knob	Parameter	Adjustment	Setting values
1	From Slot	First port slot	2 to 6
2	From Port	First port number	1 to 54
3	To Slot	Last port slot	2 to 6
4	To Port	Last port number	1 to 54

4 In the <Parallel Output Assign> group, press [No Assign].

GPI Output Setting (GPI Output Assign Menu)

To set the trigger type and so on for each GPI output, display the DCU >GPI Output Assign menu.

To display the GPI Output Assign menu

In the Engineering Setup menu, select VF5 'DCU' and HF4 'GPI Output Assign.'
The GPI output port setting status appears in the status area.

Making DCU GPI Output Settings

1 In the DCU >GPI Output Assign menu, using any of the following methods select what the setting applies to.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	No	GPI output	1 to 50

2 In the <Trigger Type> group, select the trigger polarity.


(Rising Edge): The trigger causes the relay contacts to be open-circuit or drives the output high, and holds this state for the specified pulse width.


(Falling Edge): The trigger causes the relay contacts to be shorted or drives the output low, and holds this state for the specified pulse width.


(Any Edge): Each time the trigger occurs, the relay contacts are alternately closed or opened, or the output is switched between high and low.

Status: Depending on the status, the relay contacts are closed or opened, or the output is switched between high and low.

No Operation: The trigger has no effect on the relay state or output level.

3 Turning the knobs, select the pulse width and timing to be set.

Knob	Parameter	Adjustment	Setting values
3	Pulse Width	Pulse width	1 to 60 (fields)
4	Timing	Output timing	1 to 3 a)

a) 1: Field 1, 2: Field 2, 3: Any

When "⤫" is selected as the trigger polarity, there is no Pulse Width setting. When "Status" is selected, there is no Pulse Width or Timing setting.

4 In the <Source Device> group, select the control panel or DCU to handle the GPI output.

SCU1: ID1 control panel (PNL1)
SCU2: ID2 control panel (PNL2)
SCU3: ID3 control panel (PNL3)
DCU1: ID1 DCU
DCU2: ID2 DCU

When the action set in the following step **5** is carried out on the control panel selected here, this causes a GPI output. It is also possible to output error information. When the DCU is selected, you can output error information by means of the action set in step **5**.

5 Using any of the following methods, select the action you want to set.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
2	Action	Action selection	1 and upwards a)
5	Reg No	Snapshot register number	1 to 4 b)
5	GPI No	GPI number selection	1 to 32 c)

a) **• Action list when the trigger type is other than "Status"**
(In M/E-x, the x is the M/E bank number (1 to 4); in Keyx the x is the key number (1 to 8); in DSKx the x is the DSK number (1 to 8)).
When Source Device is SCU: M/E-x Keyx SS ? Recall, P/P DSKx SS ? Recall, Editor GPI-?? (only when BZS-8050 license is valid), No Action
When Source Device is DCU: No Action
• Action list when the trigger type is "Status"
(In M/E-x, the x is the M/E bank number (1 to 4); in Keyx the x is the key number (1 to 8); in DSKx the x is the DSK number (1 to 8)).
When Source Device is SCU: M/E-x Keyx SS ? Recall, P/P DSKx SS ? Recall, M/E-x Keyx On, P/P DSKx On, Error Make, Error Break, Keep Make, Keep Break, Device Recording, No Action
When Source Device is DCU: Error Make, Error Break, No Action
b) When knob 2 selection is "Key Snapshot"

c) When knob 2 selection is “GPI”

6 To confirm the selection, press [Action Set].

This confirms the selection, which appears in the status area.

Test firing the trigger

To test fire the trigger, in the DCU >GPI Output menu press [Test Fire]. This outputs a trigger from the selected output port. This is not output when the trigger type is “Status.”

Serial Port Settings (Serial Port Assign Menu)

To set the protocol to match a device connected to a 9-pin serial port, display the DCU >Serial Port Assign menu.

To display the Serial Port Assign menu

In the Engineering Setup menu, select VF5 'DCU' and HF5 'Serial Port Assign.'
The serial port setting status appears in the status area.

Making Serial Port Settings

1 In the DCU >Serial Port Assign menu, select the target for the setting (DCU1 or DCU2) from the <DCU Select> group.

2 Using any of the following methods, select the serial port.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port No	Serial port	1 and upwards a)

a) The setting value range depends on the DCU port setting. (When the MKS-2700 is connected, select 2 for the slot and a value in the range 1 to 6 for the port.)

3 Using any of the following methods, select the protocol for the connected device.

- Press directly on the list on the right of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	Device Type	Protocol selection	1 to 9 a)

a) 1. No Assign: nothing is connected to the serial port.
2. P-Bus: P-Bus device.
3. VTR: VTR
4. DDR SD9P: disk recorder (Sony disk 9-pin protocol)
5. DDR VDCP: disk recorder (video disk communication protocol)

6. Simple VDCP: disk recorder with low-performance communications (video disk communications protocol)
7. Extended VTR (Abekas A53 protocol)
8. Mixer ESAM-II
9. AS ES-BUS: device supporting the AS ES bus protocol

Notes

Mixer ESAM-II cannot be operated from this system. It can only be operated from an editing keyboard.

4 Press [Device Type Set].

The selected protocol is reflected on the left of the status area.

5 To enter the name of the serial port, press [Set] in the <Name> group.

A keyboard window appears. You can enter a name of not more than 16 characters.
If no name is set for the serial port, it is displayed as "DCUd_PORTs-p."
d: 1 or 2 (DCU No.)
s: 2 to 6 (Slot No.)
p: 1 to 6 (Port No.)

6 Press [Enter].

To return the set name to the default name
Press [Clear] in the <Name> group.

7 From the <SCU Select> group, select the control panel (SCU1, SCU2 or SCU3) assigned to operations on the external device connected to the serial port.

Deleting the serial port assignment

1 In the DCU >Serial Port Assign menu, select the target for the setting (DCU1 or DCU2) from the <DCU Select> group.

2 Using any of the following methods, specify the serial port.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port No	Serial port	1 and upwards a)

a) The range of setting values depends on the DCU port setting. (When the MKS-2700 is connected, select 2 for the slot and a value in the range 1 to 6 for the port.)

3 Press [Clear].

Making Detailed Settings on the External Device Connected to the Serial Port

After setting the external device for each serial port, it is necessary to make further detailed settings for operation of the external device.

Making detailed settings for a P-Bus device

1 In the DCU >Serial Port Assign menu, select the setting target (DCU1 or DCU2) from the <DCU Select> group.

2 Using any of the following methods, select the serial port connected to the P-Bus device for which you want to make the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port No	Serial port number	1 and upwards a)

a) The range of setting values depends on the DCU port setting. (When the MKS-2700 is connected, select 2 for the slot and a value in the range 1 to 6 for the port.)

3 Press [Port Setting].

The DCU >Serial Port Assign >P-Bus Setting menu appears.
At the top of the status area, the relevant serial port, slot number, protocol, serial port name, and SCU number appear. In the lower part of the status area, the device name and response speed settings appear.

4 Using any of the following methods, select the ID for which you want to make a device name setting.

- Press directly on the device name list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	ID	ID selection	0 to 23

5 In the <Name> group, press [Set] to display a numeric keypad window.

6 Input the desired name, and press [Enter].

The input device name appears in the device name list.

To return the device name for the selected ID to the default name
Press [Clear] in the <Name> group.

7 Using any of the following methods, specify the command to which the response speed setting applies.

- Press directly on the delay list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
2	No	Command number selection	1 to 18

8 Turn the knob to set the response speed (in field units) of the device.

Knob	Parameter	Adjustment	Setting values
3	Delay	Response speed setting	0 to 60

9 Press [Delay Set].

This confirms the setting.

10 Repeat steps **4** to **9** as required to make the settings for other commands.

Making detailed settings for a VTR

1 In the <DCU Select> group of the DCU >Serial Port Assign menu, select the target for the setting (DCU1 or DCU2).

2 Using any of the following methods, select the serial port connected to the VTR for which you want to make the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port No	Serial port	1 and upwards [a)]

a) The range of setting values depends on the DCU port setting. (When the MKS-2700 is connected, select 2 for the slot and a value in the range 1 to 6 for the port.)

3 Press [Port Setting].

The DCU >Serial Port Assign >VTR Setting menu appears.
At the top of the status area, the relevant serial port, slot number, protocol, serial port name, SCU number, and timecode source appear. In the lower part of the status area, the VTR constants appear.

4 In the <TC Source> group, select the timecode source (reference signal for determining the tape position) from the following.

LTC (Longitudinal Time Code): Use LTC. When interpolation data is returned from a VTR, use that interpolation data.
LTC: VITC (Vertical Interval Time Code): Normally use LTC, but when the tape is moving at speeds at which LTC cannot be read, use VITC.
When interpolation data is returned from a VTR, use that interpolation data.
VITC: Use VITC.
CTL (Control): CTL pulses or timer counter pulses are used. Use this only for a tape on which no timecode is recorded.

The displayed tape position is based on the reference signal specified here.

5 Using any of the following methods, specify the VTR constants.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Item	Item selection	1 to 16

6 Press [Set].

A numeric keypad window for hexadecimal input appears.

7 Set the VTR constants using values in the range 00 to FF.

Block	Byte	Setting item
BLOCK 1	1	HI-BYTE (DEVICE TYPE)
	2	LO-BYTE (DEVICE TYPE)
	3	HI-BYTE (FRAME) (PREROLL TIME)
	4	LO-BYTE (FRAME) (PREROLL TIME)
	5	EDIT DELAY (FRAME)
	6	EE DELAY (FRAME)
	7	OVER RUN (FRAME)
	8	TRAJECTORY

Block	Byte	Setting item
BLOCK 2	1	TC READ DELAY (FRAME)
	2	START DELAY (FRAME)
	3	AFTER SYNC DELAY–
	4	AFTER SYNC DELAY+
	5	MODE1
	6	MODE2
	7	MAX PRRL SPEED
	8	QUICK PVW PRRL TIME (FRAME)

8 Press [Enter].

This confirms the settings.

9 Repeat steps **5** to **8** as required to set the constants for other VTRs.

Making detailed settings for a disk recorder (Sony disk 9-pin protocol)

1 In the <DCU Select> group of the DCU >Serial Port Assign menu, select the target for the setting (DCU1 or DCU2).

2 Using any of the following methods, select the serial port connected to the disk recorder for which you want to make the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port No	Serial port	1 and upwards a)

a) The range of setting values depends on the DCU port setting. (When the MKS-2700 is connected, select 2 for the slot and a value in the range 1 to 6 for the port.)

3 Press [Port Setting].

The DCU >Serial Port Assign >DDR SD9P Setting menu appears.
At the top of the status area, the relevant serial port, slot number, protocol, serial port name, SCU number, and disk recorder type appear. In the lower part of the status area, the response speed settings appear.

4 Using any of the following methods, specify the item to which the response speed setting applies.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Item No	Item selection	1 to 4 a)

a) 1. Maximum Open Delay: maximum time required to open a file
2. Maximum Cueup Delay: maximum time required to cue up a file
3. Play After Cueup Delay: delay time from the cued-up state to begin playback
4. Play After Open Next Delay: delay time from the Open Next state to begin playback

5 Turn the knob to set the disk recorder response speed.

Knob	Parameter	Adjustment	Setting values
2	Setting	Response speed setting	0 to 255

6 Press [Set].

This confirms the setting.

7 Repeat steps **4** to **6** as required to make the settings for other items.

Making detailed settings for a disk recorder (video disk communications protocol)

1 In the <DCU Select> group of the DCU >Serial Port Assign menu, select the target for the setting (DCU1 or DCU2).

2 Using any of the following methods, select the serial port connected to the disk recorder for which you want to make settings.

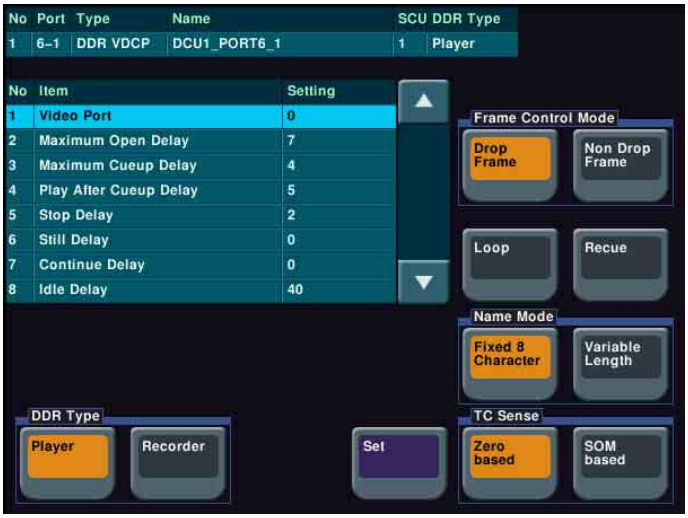
- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port No	Serial port	1 and upwards a)

a) The range of setting values depends on the DCU port setting. (When the MKS-2700 is connected, select 2 for the slot and a value in the range 1 to 6 for the port.)

3 Press [Port Setting].

When “DDR VDCP” is selected as the protocol, the DCU >Serial Port Assign >DDR VDCP Setting menu appears.



When “Simple VDCP” is selected as the protocol, the Simple VDCP Setting menu appears.



4 In the <DDR Type> group, select the type of disk recorder.

Player: Functioning as a player.
Recorder: Functioning as a recorder.

5 In the <Name Mode> group, select the file name character count mode.

Fixed 8 Character: Use 8-character file names.

Variable Length: Use variable-length file names. (The file name is limited to 23 characters.)

6 In the <TC Sense> group, select the type of timecode sensing.

Zero based: Mode in which timecode is detected taking the first frame of the recalled file as 00:00:00:00
SOM based: Mode in which timecode saved in the recalled file is detected

Notes
The details of the above operation modes depend on the connected device. For more information, consult the documentation for the connected device.

7 When using a disk recorder that does not support the timecode drop frame bit, in the <Frame Control Mode> group, select the drop frame mode or non-drop frame mode.

Drop Frame: Drop frame mode.
Non Drop Frame: Non-drop frame mode.

Notes
This setting is only valid when the system field frequency is one of the following values.
29.97, 30, 59.94, 60

8 Using any of the following methods, specify the item to which the video port number or response speed setting applies.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Item No	Item selection	**DDR VDCP Setting menu:**1 to 8[a)] **Simple VDCP Setting menu**:1 to 9[a)]

a) 1. Video Port: Number of the video port associated with the serial port to which the setting applies
For a player, the output port setting
For a recorder, the input port setting
2. Maximum Open Delay: maximum time required to open a file
3. Maximum Cueup Delay: maximum time required to cue up a file
4. Play After Cueup Delay: delay time from the cued-up state to begin playback
5. Stop Delay: delay time from issuing the stop command until actually stopping
6. Still Delay: delay time from issuing the still command until actually stopping
7. Continue Delay: delay time from issuing the continue command until actually stopping
8. Idle Delay: delay time from unloading a file until entering the idle state
(The idle state is a state wherein a file has been unloaded but a new file has not been loaded yet, that is, a state wherein no file is loaded.)

9. Status Sense Interval: time until the next Status Sense command is issued (Simple VDCP Setting menu only)

9 Turn the knob to set the disk recorder video port number or response speed.

When setting the video port number

Knob	Parameter	Adjustment	Setting values
2	Setting	Video port number	0 to 127 a)

a) 0: No assignment

When setting the response speed

Knob	Parameter	Adjustment	Setting values
2	Setting	Response speed	0 to 255

10 Press [Set].

This confirms the setting.

11 If required, repeat steps **4** to **10**, to set other items.

To enable or disable the loop and recue functions

Press the [Loop] and [Recue] buttons, respectively.
Loop: Replay the recalled file in a continuous loop.
Recue: After playing the recalled file, recue to the beginning and then stop.

Making detailed settings for an Extended VTR

1 In the DCU >Serial Port Assign menu, select the setting target (DCU1 or DCU2) from the <DCU Select> group.

2 Using any of the following methods, select the serial port connected to the Extended VTR for which you want to make the settings.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Port No	Serial port number	1 and upwards a)

a) The range of setting values depends on the DCU port setting. (When the MKS-2700 is connected, select 2 for the slot and a value in the range 1 to 6 for the port.)

3 Press [Port Setting].

The DCU >Serial Port Assign >Extended VTR Setting menu appears.

At the top of the status area, the relevant serial port, slot number, protocol, serial port name, and SCU number appear. In the lower part of the status area, the response speed settings appear.

4 Using any of the following methods, specify the command to which the response speed setting applies.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Item No	Item selection	1 to 4 a)

a) 1.Maximum Open Delay: maximum time required to open a file
2. Maximum Cueup Delay: maximum time required to cue up a file
3. Play After Cueup Delay: maximum delay time from the cued-up state to begin playback
4. Stop Delay: delay time from issuing the stop command until actually stopping

5 Turn the knob to set the response speed of the Extended VTR.

Knob	Parameter	Adjustment	Setting values
2	Setting	Response speed setting	0 to 255

6 Press [Set].

This confirms the setting.

7 Repeat steps **4** to **6** as required to make the settings for other items.

Chapter 23 Setup Relating to Router Interface and Tally (Router/Tally)

Router Interface Settings (Router Menu)

In this system, the interface with a router (routing switcher) uses the S-Bus protocol. It is therefore necessary to assign inputs and outputs of the switcher and so on to an S-Bus space.
To carry out this assignment, use the Router/Tally >Router menu. The assignment is common to the parallel and serial tallies.

To display the Router menu

In the Engineering Setup menu, select VF6 'Router/Tally' and HF1 'Router.' The status area shows the device names to be assigned to the S-Bus space, the matrix size, source address, destination address, and level.

The following functions are available here.

- **Matrix Size:** Assign the switcher matrix of each switcher processor to S-Bus space, and select the matrix size and positioning level, source address settings, and so on.
- **External Box:** To obtain the signal selection status of external devices with a parallel input, assign a matrix as an external selector in the S-Bus space. Make the matrix size, assignment level, source address, and other settings.
- **Alias Name Gp:** Set the group number for an S-Bus description name to be displayed in the source name displays for a cross-point operation.

Assigning Switcher Inputs and Outputs to S-Bus Space

1 In the <Device> group of the Router/Tally >Router menu, select the device to which the settings apply.

SWR1: Settings apply to switcher 1.
SWR2: Settings apply to switcher 2.

Notes

When there are two switchers on the same network, the SWR2 (second switcher) settings are required. If there is only one switcher, the settings are not required.

2 In the <Matrix Size> group, select the matrix size.

320 × 348 (Standard): Assign to S-Bus space with the switcher input/output at 320×348 size.

272 × 274: Assign to S-Bus space with the switcher input/output at 272×274 size.
136 × 138: Assign to S-Bus space with the switcher input/output at 136×138 size.
128 × 128: Assign to S-Bus space with the switcher input/output at 128×128 size.

3 Turn the knobs to set the parameters for the following items.

Source: Specify the start address of the matrix source.
Destination: Specify the start address of the matrix destination.
Level: Specify the level in the S-Bus space.

Knob	Parameter	Adjustment	Setting values
1	Source	Source start address	1 and upwards a)
2	Destination	Destination start address	1 and upwards b)
3	Level	Level	1 to 8

a) When the matrix size is Standard, the maximum value is 889. For the Compact size, the maximum value is 897.
b) When the matrix size is Standard, the maximum value is 887. For the Compact size, the maximum value is 897.

Making an External Box Setting

1 In the Router/Tally >Router menu, press [External Box Assign].

The External Box Assign menu appears.
The status area shows the external box size, address, and other settings.

2 In the <Device> group, select what the setting applies to (one of External Box 1 to 4).

3 In the <Matrix Size> group, select the number of inputs.

No Assign: Do not use.
8×1: Select an external box with 8 inputs and 1 output.
16×1: Select an external box with 16 inputs and 1 output.
32×1: Select an external box with 32 inputs and 1 output.

4 Turn the knobs to make adjustments.

Knob	Parameter	Adjustment	Setting values
1	Source	Source start address	1 to 1017 a) 1 to 1009 b) 1 to 993 c)
2	Destination	Destination start address	1 to 1024
3	Level	Level	1 to 8

a) When Matrix Size is 8×1
b) When Matrix Size is 16×1
c) When Matrix Size is 32×1

Coupling external boxes

By coupling a number of external boxes, the number of inputs can be increased. Here the example of coupling External Box1 and External Box2 is described.

1 In the Router/Tally >Router >External Box Assign menu, select [External box1] from the <Device> group.

2 In the <Matrix Size> group, select [8×1].

3 Turn the knobs to make adjustments.

Knob	Parameter	Adjustment	Setting values
1	Source	Source start address	1 to 1017
2	Destination	Destination start address	1 to 1024
3	Level	Level	1 to 8

4 In the <Device> group, select [External box2].

5 In the <Matrix Size> group, select [32×1].

6 Turn the knobs to make adjustments.
At this point make the settings of Destination and Level the same as in step **3**.

This automatically couples External Box1 and External Box2, forming an external box with 40 (8+32) inputs.

Setting the group number of an S-Bus description name

1 In the <Alias Name Gp> group of the Router/Tally >Router menu, press [Gp No].

2 Turn the knob to set the following parameter.

Knob	Parameter	Adjustment	Setting values
1	Gp No	Group number of S-Bus description name	0 to 7 a)

a) When setting values 1 to 7 are selected: If the name is not set, the description name for "0" appears.
If the description name for "0" is not registered either, the Type and No values appear.

3 In the <Alias Name Gp> group, press [Set].

This confirms the setting, which is reflected in the status area.

Notes

Transmit the description name selected here from the router.

Tally Group Settings (Group Tally Menu)

With the S-Bus protocol, tally control is possible for groups 1 to 8, but in this system you can use either groups 1 to 4 or groups 5 to 8.
You can also select whether or not to transfer the tally information over the S-Bus.
To select the tally groups, use the Router/Tally >Group Tally menu.

To display the Group Tally menu

In the Engineering Setup menu, select VF6 'Router/Tally' and HF2 'Group Tally.'

The following functions are available here.

- **Tally Group:** Select the group tally (Gp1 to 4 or Gp5 to 8) which can be used. (For the parallel tally, all groups can be used regardless of this setting.)
- **SBus Tally Enable:** Specify S-Bus tally enabled or disabled.

Setting the tally groups

1 To select a consecutive sequence of groups from each of groups 1 to 4 and groups 5 to 8, set [All Group Enable] to On in the Group Tally menu.

2 In the <Tally Group> group, select the desired groups.

Wiring Settings (Wiring Menu)

When configuring a system in which the switcher inputs and outputs are connected to a router, setting this connection configuration (referred to as "wiring") in the S-Bus space, or inputting the information which specifies the physical wiring, is necessary.
To make the wiring settings, use the Router/Tally >Wiring menu. The settings are common to the parallel and serial tallies.

To display the Wiring menu

In the Engineering Setup menu, select VF6 'Router/Tally' and HF3 'Wiring.' The status area shows the wiring settings.

Making New Wiring Settings

1 In the Router/Tally >Wiring menu, press [New].

The New menu appears.

2 With a knob or menu operation, set the destination.

When switcher inputs and outputs are connected to the router in a group, you can specify the start and end destination addresses.

Destination From: Specify the start destination address for the wiring configuration.

Destination To: When the wiring configuration is multiple, specify the end destination address. For a single wiring connection, this setting is not required.

Destination Level: Specify the destination level of the wiring configuration.

Knob	Parameter	Adjustment	Setting values
1	Destination (From)	Destination start address	1 to 1024
2	Destination (To)	Destination end address	From start address to 1024
3	Destination (Level)	Destination level	1 to 8

3 Set the source.

Source From: Specify the source start address for the wiring configuration.

Source Level: Specify the source level for the wiring configuration.

Knob	Parameter	Adjustment	Setting values
4	Source (From)	Source start address	1 to 1024
5	Source (Level)	Source level	1 to 8

4 Press [Execute].

This makes the wiring setting according to the specifications in steps **2** and **3**.

Changing the Wiring Settings

1 In the Router/Tally >Wiring menu, press [Modify].

The Modify menu appears.

2 Referring to steps **2** and **3** in the preceding section "Making new wiring settings," change the parameters as required. In this case, however, it is not possible to specify multiple destinations in a single operation, and a single "Destination Address" must be specified.

3 Press [Execute].

This updates the wiring settings.

Deleting Wiring Settings

1 In the Router/Tally >Wiring menu, using either of the following methods, select the wiring whose settings you want to delete.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

2 Press [Delete].

This deletes the selected wiring entry.

Sorting Wiring Settings

In the Router/Tally >Wiring menu, press [Sort].
The sorting of wiring settings are executed in the following order.

Destination level order (ascending)→Destination address order (ascending)→Source level order (ascending)

Tally Generation Settings (Tally Enable Menu)

For settings relating to tally generation, use the Router/Tally >Tally Enable menu.
Specify the destination to be the reference for tally generation, and make various settings.
The settings are common to the parallel and serial tallies.

To display the Tally Enable menu

In the Engineering Setup menu, select VF6 'Router/Tally' and HF4 'Tally Enable.'
The status area shows the tally generation settings.

The following functions are available here.

- **Tally Type:** Specify the tally type.
- **Destination:** Specify the address and level.
- **Tally Enable:** Specify the timing at which a tally is enabled.
  - **Enable:** Always enabled.
  - **Disable:** Always disabled.
  - **Tally Input:** Follow the tally input status.

Making New Tally Generation Settings

1 In the Router/Tally >Tally Enable menu, press [New].

The New menu appears.

2 Turn the knobs to set the following parameters.

Knob	Parameter	Adjustment	Setting values
1	Destination Address	Destination address	1 to 1024
2	Destination Level	Destination level	1 to 8
3	Tally Type	Tally type	1 to 16 a)

a) 1:R1, 2:G1, 3:R2, 4:G2, 5:R3, 6:G3, 7:R4, 8:G4, 9:R5, 10:G5, 11:R6, 12:G6, 13:R7, 14:G7, 15:R8, and 16:G8. (R is an abbreviation of "Red Tally," and G of "Green Tally.")

3 In the <Tally Enable> group, specify the tally generation mode.

Enable: Always generate a tally.

Disable: Never generate a tally.
Tally Input: Generate a tally from the tally input state.

4 When you selected Tally Input as the tally generation mode in step **3**, select either of the following in the <Tally Input> group.

DCU1: Generate tally with reference to signal input to DCU1 port. Set the port number with the knob.
DCU2: Generate tally with reference to signal input to DCU2 port. Set the port number with the knob.

5 Turn the knob to select the tally input port number.

Knob	Parameter	Adjustment	Setting values
5	Input No	Tally input port number	1 to 102

6 Press [Execute].

This sets the settings made in steps **2** to **5** as the settings for tally generation.

Modifying Tally Generation

1 In the Router/Tally >Tally Enable menu, press [Modify].

The Modify menu appears.

2 With reference to steps **2** to **5** in the preceding section "Making new tally generation settings," change the parameters as required.

3 Press [Execute].

This modifies the tally generation settings.

Deleting Tally Generation Settings

1 Using either of the following methods in the Router/Tally >Tally Enable menu, select the tally generation entry you want to delete.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.

2 Press [Delete].

This deletes the selected tally generation entry.

Tally Copy Settings (Tally Copy Menu)

You can copy the tally information pertaining to a particular source to a different source.
For settings relating to the tally copy function, use the Router/Tally >Tally Copy menu. The settings are common to the parallel and serial tallies.

To display the Tally Copy menu

In the Engineering Setup menu, select VF6 'Router/Tally' and HF5 'Tally Copy.'
The status area shows the tally copy status.

Making New Tally Copy Settings

1 In the Router/Tally >Tally Copy menu, select [New].

The New menu appears.

2 Turn the knob to select the copy-from source.
When setting more than one tally copy, you can specify the copy-from source start and end addresses.

Knob	Parameter	Adjustment	Setting values
1	Copy From (From)	Copy-from source start address	1 to 1024
2	Copy From (To)	Copy-from source end address	1 to 1024

3 Specify the copy-to source address.

Knob	Parameter	Adjustment	Setting values
3	Copy To (From)	Copy-to source (start) address	1 to 1024
4	Copy To (To)	Copy-to source (end) address	1 to 1024

4 Press [Execute].

This makes the tally copy setting according to the specifications in steps **2** and **3**.

Modifying Tally Copy Settings

1 In the Router/Tally >Tally Copy menu, press [Modify].

The Modify menu appears.

2 Use the knobs to select the copy source and copy destination.

Knob	Parameter	Adjustment	Setting values
1	Copy From	Copy-from source	1 to 1024
2	Copy To	Copy-to source	1 to 1024

3 Press [Execute].

This updates the tally copy settings.

Deleting Tally Copy Settings

1 In the Router/Tally >Tally Copy menu, using any of the following methods, select the tally copy whose settings you want to delete.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Copy No	Tally copy setting selection for deletion	1 and upwards

2 Press [Delete].

This deletes the selected tally copy entry.

Parallel Tally Settings (Parallel Tally Menu)

For settings relating to parallel tally, use the Router/Tally >Parallel Tally menu.
Make the parallel port settings for output of tally information pertaining to sources and destinations.
For each of the tally output terminal numbers, specify the tally type, and source address or destination level and address.

To display the Parallel Tally menu

In the Engineering Setup menu, select VF6 'Router/Tally' and HF6 'Parallel Tally.'
The status area shows the parallel tally settings.

Making or Modifying Parallel Tally Settings

1 In the <Device> group of the Router/Tally >Parallel Tally menu, select DCU1 or DCU2.

2 Using any of the following methods, select the slot number and port number.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Slot No	Parallel tally slot number	2 to 6 a)
2	Port No	Parallel tally port number	1 to 54 b)

a) When the MKS-2700 is connected, select 2 for the slot and a value in the range 1 to 36 for the port.
b) When the MKS-2700 is connected, select a value in the range 1 to 36.

3 Press [Set].

The Set menu appears.

4 In the <Source/Destination> group, select the tally type.

Src: Return a tally to all sources output to the destination.

Dest: Return a tally to the destination outputting the source to which a source tally is returned.

5 Set the destination address and level.

The level setting is only required when in step **4** you selected Destination.

Knob	Parameter	Adjustment	Setting values
1	Address	Destination address	1 to 1024
2	Level	Destination level	1 to 8

6 When setting the tally type, set the following parameter.

Knob	Parameter	Adjustment	Setting values
3	Type	Tally type	1 to 16 a)

a) 1:R1, 2:G1, 3:R2, 4:G2, 5:R3, 6:G3, 7:R4, 8:G4, 9:R5, 10:G5, 11:R6, 12:G6, 13:R7, 14:G7, 15:R8, and 16:G8. (R is an abbreviation of "Red Tally," and G of "Green Tally.")

7 Press [Execute].

This makes the parallel tally settings, in accordance with the settings in steps **1** to **6**.

Deleting Parallel Tally Settings

1 In the Router/Tally >Parallel Tally menu, using any of the following methods, select the parallel tally whose settings you want to delete.

- Press directly on the list in the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knobs.

Knob	Parameter	Adjustment	Setting values
1	Slot No	Parallel tally slot number	2 to 6
2	Port No	Parallel tally port number	1 to 54

2 Press [Clear].

This deletes the selected parallel tally entry.

Serial Tally Settings (Serial Tally Menu)

To make serial tally settings, display the Router/Tally >Serial Tally menu. Make the serial tally settings, including tally type and source address for each serial tally port.

To display the Serial Tally menu

In the Engineering Setup menu, select VF6 'Router/Tally' and HF7 'Serial Tally.'
The serial tally settings appear in the status area.

Setting or Changing the Serial Tally Settings

1 In the <Serial Tally Port> group of the Router/Tally >Serial Tally menu, select the port to which the setting applies.

2 In the <Tally Group> group, select the tally group.

3 In the <Tally Type> group, press the tally types to select. (You can select up to four.)

Notes

The selectable tally types depend on the settings in step **2**.

4 In the <Tally Data Size> group, press one of the following to select the data size.

128 Bit: 128 bits
256 Bit: 256 bits

Making the Serial Tally Source Address Settings

To set the serial tally source address for each port, use the following procedure.

1 In the Router/Tally >Serial Tally menu, press [Source Assign].

The Source Assign menu appears.
In the status area, the tally types and source address set for the serial tally port appear.

2 In the <Serial Tally Port> group, select the port to which the setting applies.

3 Using any of the following methods, select the port bit number.

- Press directly on the list on the left of the status area.
- Press the arrow keys to scroll the reverse video cursor.
- Turn the knob.

Knob	Parameter	Adjustment	Setting values
1	Bit No	Bit selection	1 and upwards

4 Turn the knob to select the source address.

Knob	Parameter	Adjustment	Setting values
2	Source Addr	Source address selection	1 to 1024

5 Press [Source Address Set].

This confirms the setting.

Clearing a Source Address Setting

To clear a source address setting for a particular bit

In the Router/Tally >Serial Tally >Source Assign menu, select the serial tally port and bit number *(see steps **2** and **3** in the previous item),* then press [Clear]. This clears the source address setting for the selected bit.

To clear all source address settings

In the Router/Tally >Serial Tally >Source Assign menu, select the serial tally port, then press [All Clear].

A confirmation message appears.

- If you select “Yes,” this clears all source address settings for the selected serial tally port.
- If you select “No,” the clear operation is canceled.

Chapter 24 Simple Connection of the MKS-8080/8082 AUX Bus Remote Panel

Procedure for Simple Connection

To connect the MKS-8080/8082 AUX Bus Remote Panel to the center control panel using an S-Bus data link requires a BKPF-R70A Routing Switcher Controller Board or similar primary station and various settings for connection. However, using a simple connection, the need for an S-Bus data link primary station is avoided, and direct connection to the MKS-8080/8082 is possible.
A simple connection is possible if the following conditions are met:

- There are no devices other than the center control panel and MKS-8080/8082 connected on the S-Bus data link.
- There are no more than 16 MKS-8080/8082 units connected on the S-Bus data link.

To carry out simple connection of the MKS-8080/8082 AUX Bus Remote Panel, use the following procedure.
For settings on the MKS-8080/8082, see the section “Making the Setting With Buttons (Setup Function)” in the Operation Manual for the MKS-8080/8082.

1 Carry out initialization of the MKS-8080/8082 settings.
This can be done on the MKS-8080/8082 separately.

2 Set the MKS-8080/8082 station number in the range 2 to 17.
This can be done on the MKS-8080/8082 separately.

3 Set the S-Bus data link primary station to the center control panel by setting the STATION ID switches on the front of the board in the SCU SLOT 1 to 001 (switch 1 only to the OPEN position).

System control unit	Board	STATION ID switches
MKS-9011A/9012A	FP-141	S108

4 In the Engineering Setup >System >Initialize menu, select PNL, and carry out a reset.

This carries out a restart, and when the restart is completed connection to the MKS-8080/8082 is possible.

5 In the Engineering Setup >Router/Tally >Router menu, set the position of the MVS-8000X system in S-Bus space.

Select the setting from SWR1 and SWR2, and set each of Source, Destination, and Level to 1.

Setting Status of the MKS-8080/8082 in Simple Connection

As a result of making the simple connection, the MKS-8080/8082 operates in AUX bus mode, and the settings are the following factory defaults.
With regard to the meaning of the following settings, see the section “Menu Operations” in the Operation Manual for the MKS-8080/8082.

C: SET SWITCHER ID (for AUX mode)
This is set to 001, which is the station number of the center control panel.

D: SET AUX DESTINATION/SOURCE (for AUX mode)
The source is set to IN001 and following, and destination is set to OUT001 and following.

H: SET PHANTOM TABLE (for Router mode)
This is unset, since the unit does not operate in router mode.

N: SET PANEL TABLE (for Router mode)
The source is set to IN001 and following, and destination is set to OUT001 and following. However, since the unit does not operate in router mode, these settings are not used.

R: SET ROUTE
Since when using the simple connection the switcher and router cannot be connected in cascade, no route setting is required, and this is unset.

O: SET AVAILABLE SOURCE/DESTINATION
Set the source and destination ranges so that the MVS-8000X inputs and outputs can be selected.

Y: SET DISPLAY MODES
The DISPLAY MODES/PANEL FUNCTION setting is set to NORMAL.
The TALLY GROUP setting is set to be the same as the setting in Engineering Setup >Router/Tally >Tally Group on the MVS-8000X.

Z: SET PANEL STATUS
The various settings are the same as the factory default settings.

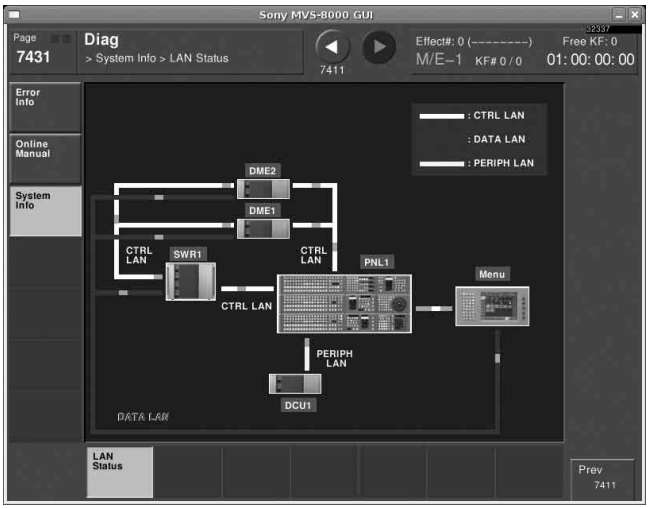
Chapter 25 DIAGNOSIS

Checking the Communications Status

In the Diagnosis menu, you can check the communications status of the control LAN and data LAN within the system.

Communications Status Display

To display the communications status, in the Diagnosis menu select VF3 ‘System Info’ and HF1 ‘LAN Status’.
The following communications status screen appears.



Devices constituting the system only appear if they are connected.
You can check connection information in the Engineering Setup >System >System Config menu (See *“System Settings (System Config Menu)” (page 905)*).
Even if a DCU is connected, if there is a communications error, it does not appear.

The LAN communications status is shown as follows.

- Control LAN (CTRL LAN)
  When connected: White
  When not connected: Red and white flashing
- Data LAN (DATA LAN)
  When connected: Blue

When not connected: Red and blue flashing

- Peripheral LAN (PERIPH LAN)
  When connected: Amber
  When not connected: Not shown

If the connection between the menu panel and another panel is broken, it does not appear.

Appendix (Volume 3)

Data Saved by [Setup Define] and [Initial Status Define]

This section lists the data saved in the Engineering Setup >System >Start Up menu, by each of [Setup Define] and [Initial Status Define].

Data Saved by [Setup Define]

Type	Menu number	Menu path	Saved data
Included in Panel Setup	0022	Home >Favorites >Group Edit	All data relating to Group Edit menu
	0023	Home >Favorites >Button Edit	All data relating to Button Edit menu
	7321	Engineering Setup >Panel >Config	All data relating to Config menu
	7321.1	Engineering Setup >Panel >Config >DSK Fader Assign	All data relating to DSK Fader Assign menu
	7321.2	Engineering Setup >Panel >Config >Link/Program Button >Key Trans Link	All data relating to Key Trans Link menu
	7321.3	Engineering Setup >Panel >Config >Link/Program Button >External Bus Link	All data relating to External Bus Link menu
	7321.7	Engineering Setup >Panel >Config >10 Key Region Assign	All data relating to 10 Key Region Assign menu
	7321.8	Engineering Setup >Panel >Config >Link/Program Button	All data relating to Link/Program Button menu
	7321.11	Engineering Setup >Panel >Config >MP2 Main/Sub Assign	All data relating to MP2 Main/Sub Assign menu
	7321.15	Engineering Setup >Panel >Config >Compact Key Module Assign	All data relating to Compact Key Module Assign menu
	7321.26	Engineering Setup >Panel >Config >M/E Operation Inhibit	All data relating to M/E Operation Inhibit menu
	7321.31	Engineering Setup >Panel >Config >JS/TB User Setting	All data relating to JS/TB User Setting menu
	7322	Engineering Setup >Panel >Xpt Assign	Data relating to Table assignments for each bus [Audio Follow] setting

Type	Menu number	Menu path	Saved data
Included in Panel Setup	7322.1	Engineering Setup >Panel >Xpt Assign >Table Button Assign	All data relating to Table Button Assign menu
	7322.5	Engineering Setup >Panel >Xpt Assign >Main,V/K Pair Assign	<Xpt Shift Mode> And <Display Shift Mode> Group Data
	7322.10	Engineering Setup >Panel >Side Flags Button Assign	All data relating to Side Flags Button Assign menu
	7322.11	Engineering Setup >Panel >Xpt Assign >Mixer Xpt Assign	All data relating to Mixer Xpt Assign menu
	7323	Engineering Setup >Panel >Aux Assign	Data relating to bus assignment to AUX delegation buttons
	7323.1	Engineering Setup >Panel >Aux Assign >RTR Mode Setting	All data relating to RTR Mode Setting menu
	7324	Engineering Setup >Panel >Prefs/ Utility	All data relating to function assignment to user preference buttons
	7324.1	Engineering Setup >Panel >Prefs/ Utility >Utility Module Assign	All data relating to function assignment to utility/shotbox control block
	7324.2	Engineering Setup >Panel >Prefs/ Utility >Key 2/4 Bus Button Assign	All data relating to utility/shotbox assignment to cross-point buttons in the key 2 row
	7325	Engineering Setup >Panel >Device Interface	All data relating to Device Interface menu
	7325.1	Engineering Setup >Panel >Device Interface >GPI Input	All data relating to GPI Input menu
	7325.3	Engineering Setup >Panel >Device Interface >GPI Output	All data relating to GPI Output menu
	7325.4	Engineering Setup >Panel >Device Interface >DCU Serial Port/MPE Assign	All data relating to DCU Serial Port/MPE Assign menu
	7326	Engineering Setup >Panel >Operation	All data relating to Operation menu
	7326.2	Engineering Setup >Panel >Operation >Effect Mode	All data relating to Effect Mode menu (excluding [Default KF Duration] setting values)
	7326.3	Engineering Setup >Panel >Operation >Flexi Pad Mode	All data relating to Flexi Pad Mode menu
	7326.4	Engineering Setup >Panel >Operation >Custom Button	All data relating to Custom Button menu
	7326.5	Engineering Setup >Panel >Operation >Sensitivity	All data relating to Sensitivity menu
	7326.6	Engineering Setup >Panel >Operation >Macro	All data relating to Macro menu

Type	Menu number	Menu path	Saved data
Included in Panel Setup	7326.8	Engineering Setup >Panel >Operation >Custom Button >CCP-9000 Button	All data relating to CCP-9000 Button menu
	7326.9	Engineering Setup >Panel >Operation >ButtonTally	All data relating to ButtonTally menu
	7327	Engineering Setup >Panel >Maintenance	• Setting data for the following buttons: - [Screen Saver] - [LCD Brightness] - [LED Brightness] - [Switch Brightness] - [Touch Beep] • Setting data for Initial Menu
	7351 to 7355	Engineering Setup >DCU	All data relating to DCU
	7361 to 7367	Engineering Setup >Router/Tally	All data relating to router interface and tally interface
	7371 to 7373	Engineering Setup >MPE	All data relating to MPE
	—	—	Data of Color Palette window
Included in Switcher Setup	7331 7331.1 7331.2 7331.3	• Engineering Setup >Switcher >Config • Engineering Setup >Switcher >Config >M/E Output Assign • Engineering Setup >Switcher >Config >PGM Config • Engineering Setup >Switcher >Config >K-PVW Config	• All data relating to Config menu • All data relating to M/E Output Assign menu • All data relating to PGM Config menu • All data relating to K-PVW Config menu
	7331.4	Engineering Setup >Switcher >Config >User1-8 Config	All data relating to User1-8 Config menu
	7331.5	Engineering Setup >Switcher >Config >Logical M/E Assign	All data relating to Logical M/E Assign menu
	7331.6	Engineering Setup >Switcher >Config >DME Config	All data relating to DME Config menu
	7331.7	Engineering Setup >Switcher >Config >Side Flags	All data relating to Side Flags menu
	7331.8	Engineering Setup >Switcher >Config >Switch Timing	All data relating to Switch Timing menu
	7332	Engineering Setup >Switcher >Input	All data relating to Input menu
	7332.1	Engineering Setup >Switcher >Input >Video Process	All data relating to Video Process menu
	7333.1	Engineering Setup >Switcher > Output >Output Assign	All data relating to Output Assign menu
	7333.2	Engineering Setup >Switcher >Output >Video Clip	All data relating to Video Clip menu
	7333.3	Engineering Setup >Switcher >Output >V Blank/Through	Setting of [V Blank Mask], and [Through Mode] setting data for each output

Type	Menu number	Menu path	Saved data
Included in Switcher Setup	7333.4	Engineering Setup >Switcher >Output >Safe Title	All data relating to Safe Title menu
	7333.5	Engineering Setup >Switcher >Output >4:3 Crop	All data relating to 4:3 Crop menu
	7333.6	Engineering Setup >Switcher >Output >FC Adjust	All data relating to FC Adjust menu
	7334	Engineering Setup >Switcher >Transition	All data relating to Transition menu
	7334.1	Engineering Setup >Switcher >Transition >Preset Color Mix	All data relating to Preset Color Mix menu
	7334.2	Engineering Setup >Switcher > Transition >Transition Curve	Setting data for <Fader Curve> group
	7335	Engineering Setup >Switcher >Key/Wipe/FM/CCR	All data relating to Key/Wipe/FM/ CCR menu
	7335.1	Engineering Setup >Switcher >Key/Wipe/FM/CCR >Show Key	All data relating to Show Key menu
	7335.2	Engineering Setup >Switcher >Key/Wipe/FM/CCR >Key Auto Drop	All data relating to Key Auto Drop menu
	7336.1	Engineering Setup >Switcher >Link >Internal Bus Link	All data relating to Internal Bus Link menu
	7336.4	Engineering Setup >Switcher >Link >GPI Link	All data relating to GPI Link menu
	7336.6	Engineering Setup >Switcher >Link >M/E Link	All data relating to M/E Link menu
	7336.7	Engineering Setup >Switcher >Link >Key Transition Link	All data relating to Key Transition Link menu
	7337.1	Engineering Setup >Switcher >Device Interface >Remote Assign	All data relating to Remote Assign menu
	7337.2	Engineering Setup >Switcher >Device Interface >GPI Input	All data relating to GPI Input menu
	7337.4	Engineering Setup >Switcher >Device Interface >GPI Output	All data relating to GPI Output menu
	7337.5	Engineering Setup >Switcher >Device Interface >AUX Control	All data relating to AUX Control menu
	7337.7	Engineering Setup >Switcher >Device Interface >DME Type Setting >DME SDI Interface menu	All data relating to DME SDI Interface menu [a)]
	7337.8	Engineering Setup >Switcher >Device Interface >Editor I/F	All data relating to Editor I/F menu
	7322.5	Engineering Setup >Panel >Xpt Assign >Main,V/K Pair Assign	Cross-point assignment settings (excluding <Xpt Shift Mode> and <Display Shift Mode> groups)

Type	Menu number	Menu path	Saved data
Included in Switcher Setup	7322.6	Engineering Setup >Panel >Xpt Assign >Src Name/LCD Color	• Names of source signals • Color of source name display for each source signal
	7326.2	Engineering Setup >Panel >Operation >Effect Mode	Setting of [Default KF Duration] for switcher keyframes
	3221	Misc >Safe Title	All data relating to Safe Title menu
Included in DME Setup	7341	Engineering Setup >DME >Input	All data relating to Input menu
	7343.1	Engineering Setup >DME >Output >Monitor Output	All data relating to Monitor Output menu [a)]
	7344	Engineering Setup >DME >Device Interface	All data relating to Device Interface menu
	7344.1	Engineering Setup >DME >Device Interface >DME1 GPI Input	All data relating to DME1 GPI Input menu
	7344.3	Engineering Setup >DME >Device Interface >DME1 GPI Output	All settings relating to DME1 GPI Output menu
	7344.4	Engineering Setup >DME >Device Interface >DME2 GPI Input	All settings relating to DME2 GPI Input menu
	7344.6	Engineering Setup >DME >Device Interface >DME2 GPI Output	All settings relating to DME2 GPI Output menu
	7326.2	Engineering Setup >Panel >Operation >Effect Mode	• Settings relating to [Default KF Duration] for DME keyframes • Setting data for [Effect Auto Save] button

a) Only when using the MVE-9000

Data Saved by [Initial Status Define]

Type	Menu number	Menu path	Saved data
Included in Panel	—	—	• Key Control Block: Delegation buttons, [AUTO DELEG] • Numeric Keypad Control Block: Mode selection buttons, [TC], [RCALL], [STORE] • Menu Control Block: User preference buttons assigned for Plug-in Editor Enbl and System Manager Enbl functions • [SUB MENU SITE] • Utility/Shotbox Control Block: [BANK1] to [BANK4], memory recall button • Downstream Key Control Block: [DSK1] to [DSK4], [K-SS], key source name display/key snapshot buttons • CCP-9000A: AUX delegation buttons, bank selection buttons, mode selection buttons, [EDIT ENBL], key row delegation buttons
	3211	Misc >Enable >Port Enable >System Manager	All data relating to System Manager menu
	3212	Misc >Enable >Plug-In Editor	All data relating to Plug-In Editor menu
	6351	Snapshot >Key Snapshot >Attribute	Settings of <Recall Mode> group
Included in Switcher (Same as data saved in Snapshots) [b)]	—	—	• For each M/E, setting data relating to the following: cross-points, transitions, Key1 to Key8 (including settings in the independent key transition control block), wipes, DME wipes, video processing • Color backgrounds 1/2 • Frame memory • AUX bus (including video processing settings)
	3213	Misc >Enable >Side Flags	All data relating to Side Flags menu
	3211	Misc >Enable >Port Enable	Setting data for <Switcher> group
Included in DME	4100	DME >Status	Three-dimensional transformation data
	4111	DME >Edge >Border/ Crop	All data relating to Border/Crop menu
	4112	DME >Edge >Beveled Edge	All data relating to Beveled Edge menu

Type	Menu number	Menu path	Saved data
Included in DME	4121 to 4124	DME >Video Modify	All data relating to Video Modify menu
	4131	DME >Freeze >Freeze	All data relating to Freeze menu
	4141 (4141.1 to 4141.28)	DME >Non Linear	All data relating to Non Linear menu
	4151	DME >Light/Trail >Lighting	All data relating to Lighting menu
	4152	DME >Light/Trail >Trail	All data relating to Trail menu
	4153	DME >Light/Trail >Motion Decay	All data relating to Motion Decay menu
	4154	DME >Light/Trail >KF Strobe	All data relating to KF Strobe menu
	4161	DME >Input/Output >Bkgd	All data relating to Bkgd menu
	4162	DME >Input/Output >Video/Key	All data relating to Video/Key menu
	4163	DME >Input/Output >Process	All data relating to Process menu
	4164	DME >Input/Output >Graphic	All data relating to Graphic menu
	4211, 4221	Global Effect >Ch1-Ch4 >Combine Priority Global Effect >Ch5-Ch8 >Combine Priority	All data relating to Combine Priority menu
	4212, 4222	Global Effect >Ch1-Ch4 >Brick Global Effect >Ch5-Ch8 >Brick	All data relating to Brick menu
	4213, 4223	Global Effect >Ch1-Ch4 >Shadow Global Effect >Ch5-Ch8 >Shadow	All data relating to Shadow menu
	4113	DME >Edge >Key Border	All data relating to Key Border menu a)
	4114	DME > Edge> Art Edge	All data relating to Art Edge menu a)
	4115	DME >Edge >Flex Shadow	All data relating to Flex Shadow menu a)
	4116	DME >Edge >Wipe Crop	All data relating to Wipe Crop menu a)
	4117	DME >Edge >Color Mix	All data relating to Color Mix menu a)
	4127	DME >Video Modify >Mask	All data relating to Mask menu
	4155	DME >Light/Trail >Wind	All data relating to Wind menu a)
	4156	DME >Light/Trail >Spot Lighting	All data relating to Spot Lighting menu a)

Type	Menu number	Menu path	Saved data
Included in DME	4171	DME >Enhanced Video Modify >Sketch	All data relating to Sketch menu
	4172	DME >Enhanced Video Modify >Metal	All data relating to Metal menu
	4173	DME >Enhanced Video Modify >Dim & Fade	All data relating to Dim & Fade menu a)
	4174	DME >Enhanced Video Modify >Glow	All data relating to Glow menu
	3211	Misc >Enable >Port Enable	<DME1> and <DME2> group data

a) For MVE-9000 only

b) In Multi Program 2 mode, M/E Config settings are saved in a snapshot when [Recall M/E Config] is set to ON, but are not saved by [Initial Status Define].

Error Messages

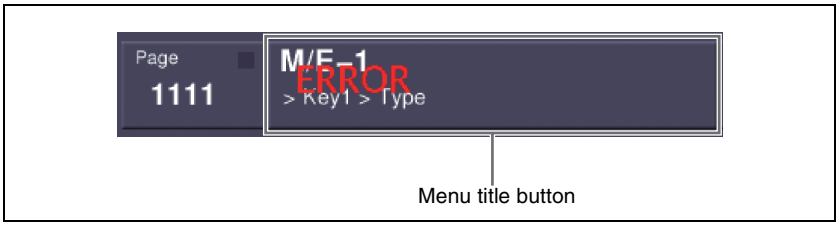
Error messages appear in the following three formats.
- A list display in the Error Status menu (7411)/Error Log menu (7412)
- Message boxes
- List based on the Error Information menu (9900)

Error Messages Displayed in the Error Status/Error Log Menu

When an error occurs, the word “ERROR” appears in red on the menu title button.
When “ERROR” is displayed, pressing the menu title button displays the Error Status menu or Error Log menu.

When an error is current effective: the Error Status menu appears *(see page 1135)*.

When an error has already been cleared: the Error Log menu appears *(see page 1136)*.



You can select whether or not to indicate the occurrence of an error by the word “ERROR” shown on the menu title button, by setting [Error Popup] in the Error Status menu or Error Log menu. For details, see “Error Status menu” (page 1135) or “Error Log menu” (page 1136).

To display the error status or error log regardless of whether there is currently an error

1 Carry out either of the following.

- Press the [DIAG] button of the top menu selection buttons.
- Press the menu page number button at the upper left of the menu screen, to display the top menu window, then enter 7411 or 7412, and press [Enter].

The Diagnostic menu appears.

2 Press VF1 ‘Error Info.’

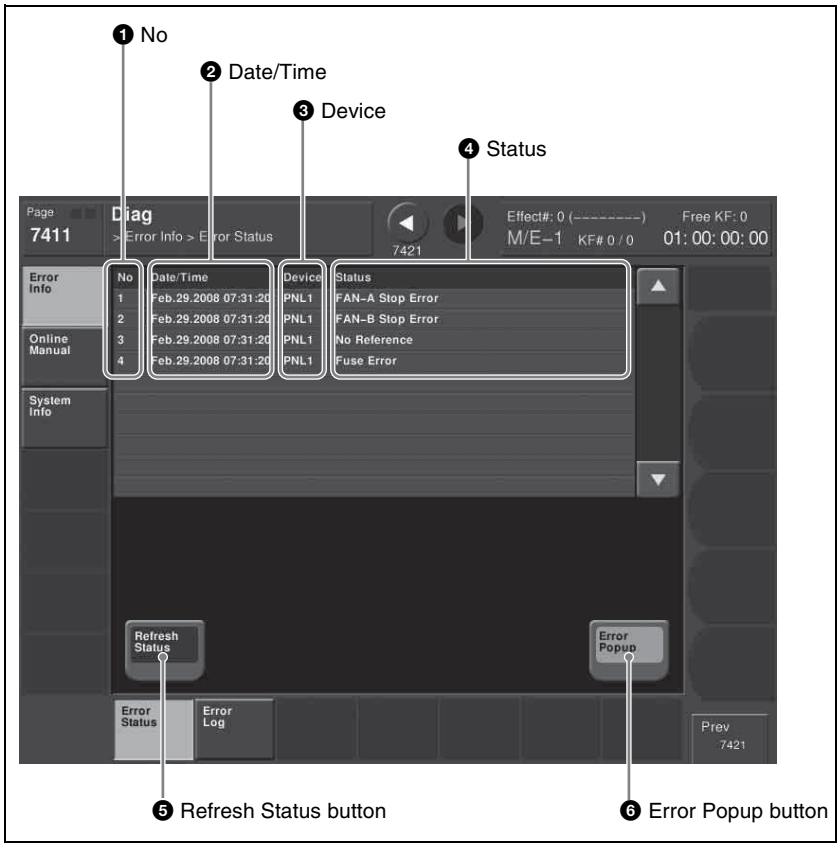
The error information menu appears.

3 Press either of the following buttons.

HF1 ‘Error Status’: display the Error Status menu
HF2 ‘Error Log’: display the Error Log menu

Error Status menu

The Error Status menu lists currently occurring error information, listed with the most recent information at the top.
When an error has been cleared, the error disappears from the list.



❶ No
This is a sequential number assigned to the error status.

❷ Date/Time
This shows the date and time the error occurred.

❸ Device
This shows the device on which the error occurred.

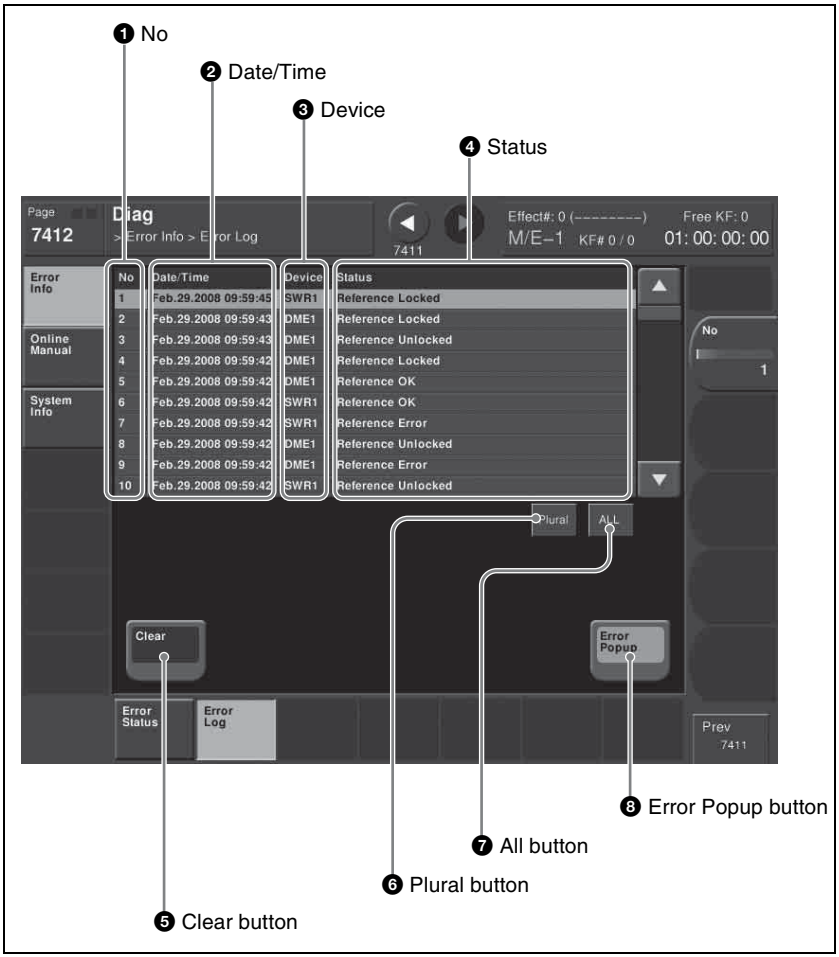
❹ Status
This shows the details of the error.

❺ Refresh Status button
This refreshes the list display.

❻ Error Popup button
This selects whether or not to display “ERROR” on the menu title button when an error occurs. This button is linked to the Error Popup button in the error log menu.
On: if a device error occurs, display “ERROR” on the menu title button.
Off: if a device error occurs, do not display “ERROR” on the menu title button.

Error Log menu

The Error Log menu lists changes in the error status from the time that the menu display in the menu operating section is started up, listed with the most recent information at the top.
A maximum of 1024 error status changes appear, and when the number exceeds 1024, the oldest items disappear from the list.



❶ No
This is a sequential number assigned to the items in the error log.

❷ Date/Time
This shows the date and time the status change occurred.

❸ Device
This shows the device on which the status change occurred.

❹ Status
This shows the details of the status change.
If you press on the list, this switches the display to reverse video, and selects the item. You can also select items in the error log by turning the knob.

❺ Clear button
This deletes the selected error log item from the list.

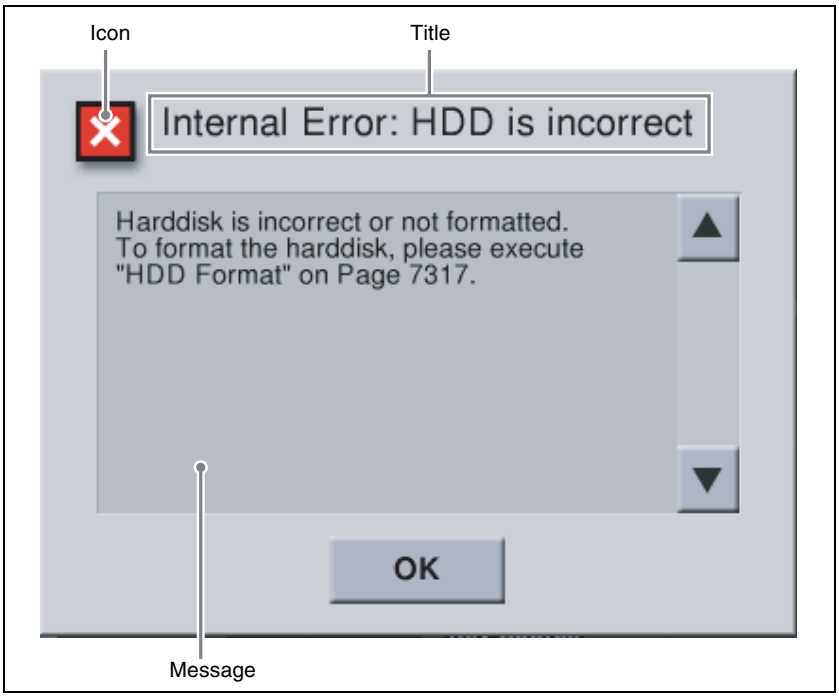
❻ Plural button
When this is on, you can select more than one error log. To cancel the selection, press once again to return to the normal display.

❼ All button
When this is on, all error log items are selected. To cancel the selection, press once again to return to the normal display.

❽ Error Popup button
This selects whether or not to display “ERROR” on the menu title button when an error occurs. This button is linked to the Error Popup button in the error status menu.
On: if a device error occurs, display “ERROR” on the menu title button.
Off: if a device error occurs, do not display “ERROR” on the menu title button.

Error Messages Appearing in a Message Box

Corresponding to the content of the message, an icon appears.



Icon	Title	Message	Description
	Activate License	The license key you entered is invalid. Please check and enter again.	7316.7: Engineering Setup >System >Install/ Unit Config >License >License Management In the above menu, since the entered information was incorrect, the Activate License procedure failed. Check the license key, and enter again.
	Activate License	License key was successfully entered. The license will be activated after rebooting your system.	7316.7: Engineering Setup >System >Install/ Unit Config >License >License Management In the above menu, the Activate License procedure completed successfully.
	Append Key Frame	[Append Key Frame] cannot be executed. FMx is not assigned to a user region.	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Append Key Frame], but it failed because the frame memory output (FMx) is not assigned to a user region. 7331.4: Make the assignment in the Engineering Setup >Switcher >Config >User1-8 Config menu, and try again.
		[Append Key Frame] cannot be executed. Key Frame Register is locked. (UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Append Key Frame] using a locked register (UserX region). Unlock the register.
		[Append Key Frame] cannot be executed. Key Frame Register is busy. (UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Append Key Frame] using a register (UserX region) into which files are being loaded. Try again after file loading has finished.
		[Append Key Frame] cannot be executed. Key Frame Register is being edited. (UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Append Key Frame] using a register (UserX region) with which a keyframe creating or editing operation is proceeding. Try again after the keyframe operation has finished.
		[Append Key Frame] cannot be executed. Key Frame Register is full. (UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Append Key Frame] using a register (UserX region) in which no keyframe remains.
		[Append Key Frame] cannot be executed. Key Frame Register is not active.(UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Append Key Frame] using a register for which the appropriate region selection button in the numeric keypad control block is not selected. Try again after you select the region selection button [UserX] in the numeric keypad control block.
	Backup	FM file auto extraction is running (–3).	2564:Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed in the above menu, extraction of frame memory file data onto the VTR was being executed.

Icon	Title	Message	Description
	Backup	Clip is recording (–4).	2564:Frame Memory >External Device >Backup to DDR/VTR In the above menu, an external device is recording clips.
		FM DDR/VTR Backup/Restore is running (–5).	2564:Frame Memory >External Device >Backup to DDR/VTR When [Backup Start] was pressed in the above menu, a backup/restore operation was being executed with the VTR/DDR.
	Backup	Invalid FM OutCh (–6).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if the specified frame memory output channel cannot be used.
		Specified FM OutCh was locked (–7).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if the specified frame memory output channel is locked.
		Not enough free register area for Backup or Restore process (–10).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if there is not enough space to carry out the backup.
		Prepare failed, not any file was found on this board (–11).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if no image is present.
		Backup failed, not prepared yet (–12).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if not yet ready.
		Backup failed, Clip recall failed (–13).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if All One Clip ID Recall failed (internal processing error).
		Prepare failed, Clip create failed (–14).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if All One Clip creation failed (internal processing error).
		Prepare failed, insufficient Clip id (–15).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if there are not enough Clip IDs (internal processing error).

Icon	Title	Message	Description
	Backup	Prepare failed, symbol files create failed (–16).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if marker frame file creation failed (internal processing error).
		Prepare failed, all one Clip recall failed (–17).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if All One Clip Recall failed (internal processing error).
		ERROR (–19). Bad register number.	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if Register Number is invalid (internal processing error).
		Prepare failed, because there is clip playing (–22).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Backup] is pressed, this message appears if processing failed during clip playback.
	Change Password	The password has been successfully changed.	7317.1: Engineering Setup >System >Maintenance >Setup Operation Lock In the above menu, the password was successfully changed.
	Change Password	Failed. The password was not changed.	7317.1: Engineering Setup >System >Maintenance >Setup Operation Lock In the above menu, the password was not changed.
	Create Key Frame	[Create Key Frame] cannot be executed. FMx is not assigned to a user region.	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Create Key Frame], but it failed because the frame memory output (FMx) is not assigned to a user region. 7331.4: Make the assignment in the Engineering Setup >Switcher >Config >User1-8 Config menu, and try again.
		[Create Key Frame] cannot be executed. Key Frame Register is locked. (UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Create Key Frame] using a locked register (UserX region). Unlock the register.
		[Create Key Frame] cannot be executed. Key Frame Register is busy. (UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to [Create Key Frame] using a register (UserX region) into which files are being loaded. Try again after file loading has finished.
		[Create Key Frame] cannot be executed. Key Frame Register is being edited. (UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Create Key Frame] using a register (UserX region) with which a keyframe creating or editing operation is proceeding. Try again after the keyframe operation has finished.

Icon	Title	Message	Description
	Create Key Frame	[Create Key Frame] cannot be executed. There is no free Key Frame. (UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Create Key Frame] for a UserX region with insufficient usable keyframes.
		[Create Key Frame] cannot be executed. Key Frame Register is not active. (UserX)	2515: Frame Memory >Still >Create Key Frame In the above menu, an attempt was made to execute [Create Key Frame] using a register for which the appropriate region selection button in the numeric keypad control block is not selected. Try again after you select the region selection button [UserX] in the numeric keypad control block.
	Deactivate License	The license will be deactivated after rebooting your system.	7316.7: Engineering Setup >System >Install/ Unit Config >License >License Management In the above menu, the Deactivate License procedure completed successfully.
	Disk Format	Success!!	7317: Engineering Setup >System >Maintenance In the above menu, removable disk formatting procedure completed successfully.
		Failure. Make sure of the memory card.	7317: Engineering Setup >System >Maintenance In the above menu, removable disk formatting procedure failed. Check that the memory card is correctly inserted.
	Error	This operation is cancelled, because the register is locked. Please change the register status to be unlocked first.	6211.1: Effect >Master Timeline >Store >Edit 6311.1: Snapshot >Master Snapshot >Store >Edit 6411.1: Shotbox >Register >Store/Recall >Edit In the above menu, an attempt was made to assign to a register that is locked. Unlock the register before carrying out the assignment.
		The file was not able to be read.	7142.1: File >Shotbox, Macro >File Edit In the above menu, [Off Line Edit] was pressed but the selected file could not be read. Select the file again, and press [Off Line Edit] once more.
		It was not possible to make a file.	7142.3: File >Shotbox, Macro >File Edit >Off Line Edit In the above menu, when storing, the file could not be written. Try the store once more.
		Failed...	7162: File >All, External File >Import/Export In the above menu, importing a file failed. Check the format of the original file, and try again.
		The Source and the target are the same directory. Please change the source or the target directory.	7172: File >Configure >Unit ID Copy In the above menu, the same directory and ID were selected for source and target. Select a different directory and ID.

Icon	Title	Message	Description
	Extraction	FM file auto extraction is running (–9).	2542:Frame Memory >File >Auto Extraction In the above menu, when the [Extraction Start] button is pressed, this message appears if the CG wipe extraction function is already being executed.
		FM DDR/VTR Backup/Restore is running (–16).	2542:Frame Memory >File >Auto Extraction In the above menu, when the [Extraction Start] button is pressed, this message appears if a backup/restore operation using the VTR/DDR is in progress.
	Extraction	ERROR (–1).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if an internal processing error occurs.
		Create thumbnail failed (–2).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if thumbnail creation failed (internal processing error).
		Red Symbol file not match (–3).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if a red marker frame file is invalid.
		Blue Symbol file not match (–4).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if a blue marker frame file is invalid.
		No data between two symbol files (–5).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if there is no data between two marker frames.
		Cannot find symbol file (–8).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if a marker frame file was not found.
		Clip frame error (–10).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if a clip frame count is invalid (internal processing error).
		Clip not found (–12).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if the specified clip does not exist.
		Clip is playing or being edited (–13).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if the specified clip is being played back or edited.

Icon	Title	Message	Description
	Extraction	Clip register error (–14).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if the specified register number data cannot be processed (internal processing error).
		Can't extract pair clip (–15).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if an attempt is made to extract a pair clip.
		Clip id not enough (–50).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if there are 100 clips or more.
		Still frame on FM 2nd board (–51).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if a still image was extracted from an external clip.
		Clip frame number can't be ODD in 720P format (–9).	2542:Frame Memory >File >Auto Extraction In the above menu, when [Extraction Start] is pressed, this message appears if an odd number of clips are extracted (720P format only).
	File Frame Memory	Some requests are skipped. Following operation is not permitted. — Loading that will cause duplicate register name.	7151: File >Frame Memory 7162: File >All, External File >Import/Export In the above menu, an attempt was made to load a file of a name already existing in the register.
	File Open Status	ERROR (01)	533X: Device >DDR/VTR When an error is returned from the DDR/VTR, one of these messages appears, depending on the error number. Use Menu 7355: Engineering Setup >DCU >Serial Port/MPE Assign or Menu 7325.4: Engineering Setup >Panel >Device Interface >Serial Port Assign to check the device settings.
		ERROR (02)	
		ERROR (FF): No target device has been assigned	
	GPI Input	Please set Target.	7325.1/2: Engineering Setup >Panel >Device Interface >GPI Input 7344.1/2: Engineering Setup >DME >Device Interface >DME1 GPI Input 7344.5/6: Engineering Setup >DME >Device Interface >DME2 GPI Input 7352/7352.1: Engineering Setup >DCU >GPI Input Assign In the above menus, when making a setting, a parameter setting value was incorrect. Check the settings, and try again.
		Please set Trigger Type.	
		Please set Reg No.	
		Please set Aux Bus No.	
		Please set Src No.	
		Please set Pulse Width.	
		Please set Pulse Timing.	

Icon	Title	Message	Description
	GPI Output	Please set Target.	7325.3/4: Engineering Setup >Panel >Device Interface >GPI Output 7337.2/3: Engineering Setup >Switcher >Device Interface >GPI Output 7337.4/5: Engineering Setup >Switcher >Device Interface >GPI Output 7344.3/4: Engineering Setup >DME >Device Interface >DME1 GPI Output 7344.7/8: Engineering Setup >DME >Device Interface >DME2 GPI Output 7354/7354.1: Engineering Setup >DCU >GPI Output Assign In the above menus, when making a setting, a parameter setting value was incorrect. Check the settings, and try again.
		Please set Trigger Type.	
		Please set Reg No.	
		Please set Aux Bus No.	
		Please set Src No.	
		Please set Pulse Width.	
		Please set Pulse Timing.	
	HDD Format	Failure. HDD device is busy. In order to complete HDD format, System needs to be restarted and formatted again. System will be restarted, then please execute HDD format again.	7317: Engineering Setup >System >Maintenance In the above menu, the hard disk formatting procedure failed. If the hard disk is functioning correctly, or in some cases when there is damage to the disk, it may not be possible to format the disk correctly in a single attempt. In such cases, it is necessary to restart the system, and then carry out formatting again. Press [OK] to restart the system.
	HDD Format	Success!! System will be restarted.	7317: Engineering Setup >System >Maintenance In the above menu, the hard disk formatting procedure completed successfully. Press [OK] to restart the system.
		Success!! But some partitions cannot be created because the capacity of the HDD is not enough.	7317: Engineering Setup >System >Maintenance In the above menu, hard disk formatting was completed normally, but because of insufficient hard disk capacity, only the possible number of partitions were created.
	Import	Cannot create the clip file, because the number of selected files is insufficient.	7162:File >All, External File >Import/Export In the above menu, when importing a clip file, this message appears if insufficient files are selected to make up the clip.
	Initial Read	Initializing now...	This popup message appears during menu startup, while system information is being read in.
	Install	No Task. Select a package on the list.	7316.10: Engineering Setup >System >Install/Unit Config >Install In the above menu, the package for installation was not selected. Select a package to be installed.

Icon	Title	Message	Description
	Install	An error occurred during the install process. For more details, see Page 9900.	7316.10: Engineering Setup >System >Install/ Unit Config >Install In the above menu, the menu software installation package does not match the model on which it is to be installed.
		Not Found. The software package does not exist on the removable disk.	7316.10: Engineering Setup >System >Install/ Unit Config >Install In the above menu, the software package to be installed was not found. Check that the memory card is correctly inserted, and try the installation once more.
	Install	All processes have succeeded.	7316.10: Engineering Setup >System >Install/ Unit Config >Install In the above menu, the installation procedure completed successfully.
	Internal Error: Data HDD	The user data partition of hard disk drive is damaged, and all data is lost. The hard disk drive needs to be reformatted. Please execute HDD format on Page 7317.	When starting up the menu system, an error was found on the hard disk. In Menu 7317: Engineering Setup >System >Maintenance, execute [HDD Format].
	Internal Error: HDD is incorrect	Hard disk is incorrect or not formatted. To format the hard disk, please execute “HDD Format” on Page 7317.	
	Internal Error: Temporary HDD	The system data partition of hard disk drive is damaged. The hard disk drive needs to be reformatted. Please execute HDD format on Page 7317. Please make sure to save all data in the user data partition of hard disk drive to any other device or media, before reformatted.	When starting up the menu system, an error was found on the hard disk. In Menu 7317: Engineering Setup >System >Maintenance, execute [HDD Format].
	Invalid Name	Empty...	2512: Frame Memory >Still >Freeze/Store In the above menu, a Store was carried out without specifying a name. Alternatively: 71XX: File Menu 7171: File >Configure >Directory In the above menu, when renaming a file or creating a directory, the name was not entered. Enter the name correctly.
		The file exists already...	2512: Frame Memory >Still >Freeze/Store In the above menu, the file name specified for a store operation already exists in the switcher. Specify a different name.

Icon	Title	Message	Description
	Loading Texture Pattern	Target File: XXXXX Failed to load target bmp file./ Illegal Name. This operation is canceled.	7316.9: Engineering Setup >System >Install/ Unit Config >Texture Package In the above menu, an error occurred when loading a texture file. Delete texture files with an illegal size or illegal file name, then try again.
		Target File: XXXXX Failed to load target bmp file./ Illegal Size. This operation is canceled.	
	Make Package	Texture file: XXXXX Not Found. This texture file does not exist on the removable disk.	7316.9: Engineering Setup >System >Install/ Unit Config >Texture Package In the above menu, when loading an already created texture package, a texture file within the texture package was not found.
		This operation is cancelled, because capacity is full. Please clear texture pattern.	7316.9: Engineering Setup >System >Install/ Unit Config >Texture Package In the above menu, when making a texture package, there was insufficient space on a memory card.
	Password	Password Incorrect	7317.1: Engineering Setup >System >Maintenance >Setup Operation Lock In the above menu, the wrong password was entered. Enter the correct password.
	Record	Cannot be executed.Maximum number of clips are created.	2523: Frame Memory >Clip >Record In the above menu, an attempt was made to execute [Rec Start] but the number of recorded clips had already reached its upper limit.
	Rename	Files currently used for playback cannot be renamed.	2546: Frame Memory >File >Rename In the above menu, an attempt was made to execute [Rename], but a movie (clip) currently being played back is included in the selected files.

Icon	Title	Message	Description
	Restore	Success!! But the number of folder exceeds the max limit (12) and the files expected for the folders were restored in the default folder (–50)!	2565: Frame Memory >External Device >Restore from DDR/VTR In the above menu, restoring of files from the external device was completed, but the limit on the number of folders was reached, and therefore files were restored to the default folder.
		Success!! But some still files had been renamed because the same file name already existed (–51)!	2565: Frame Memory >External Device >Restore from DDR/VTR In the above menu, restoring of files from the external device was completed, but some files were renamed because of still image file name conflicts.
		Success!! But some Clip files had been renamed because the same Clip name already existed (–52)!	2565: Frame Memory >External Device >Restore from DDR/VTR In the above menu, restoring of files from the external device was completed, but some clips were renamed because of clip name conflicts.
		External HDD Backup/Restore is running (–2).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when the [Restore Start] button is pressed, this message appears if the external hard disk is already active in a frame memory file data backup/restore operation.
		FM file auto extraction is running (–3).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when the [Restore Start] button is pressed, this message appears if the function for frame memory file extraction to VTR function is running.
		Clip is recording (–4).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, this message appears if an external device is recording a clip.
		FM DDR/VTR Backup/Restore is running (–5).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when the [Restore Start] button is pressed, this message appears if a backup/restore operation using the VTR/DDR is in progress.
	Restore	Invalid FM OutCh (–6).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if the specified frame memory output channel cannot be used.
		Specified FM OutCh was locked (–7).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if the specified frame memory output channel is locked.

Icon	Title	Message	Description
	Restore	Restore failed, some Clip files cannot be deleted on this board (–8).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if the restore failed because a clip file cannot be deleted.
		FM 2nd board not exist (–9).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if there is no second board.
		Not enough free register area for Backup or Restore process (–10).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if there is not enough space to carry out the backup.
		Prepare failed, not any file was found on this board (–11).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if no image is present.
		Prepare failed, insufficient Clip id (–15).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if there are not enough Clip IDs (internal processing error).
		Restore failed, Cannot find symbol files on this tape (–18).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if a marker frame file was not found.
		ERROR (–19). Bad register number.	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if Register Number is invalid (internal processing error)
		Restore failed, file name already exist, try to rename but unsuccessful (–20).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if renaming failed.
		Cannot find the File Name Data, please load the File Name Data first (–21).	2565:Frame Memory >External Device >Restore from DDR/VTR In the above menu, when [Restore] is pressed, this message appears if the file list was not loaded.
	Set Time/ Date	Error: Wrong Format.	7317: Engineering Setup >System >Maintenance In the above menu, an incorrect date and time was specified. Specify the date and time correctly.

Icon	Title	Message	Description
	Trim	The Start TC or Stop TC is not properly set.	2522:Frame Memory >Clip >Play In the above menu, when [Trim] is pressed, this message appears if neither Start TC not Stop TC is set.
			2522:Frame Memory >Clip >Play In the above menu, when [Trim] is pressed, this message appears if the interval between Start TC (or Clip Begin) and Stop TC (or Clip End) is the entire clip.
			2522:Frame Memory >Clip >Play In the above menu, when [Trim] is pressed, this message appears if the Start TC (or Clip Begin) value is greater than the Stop TC (or Clip End) value.
		This file is locked.	2522:Frame Memory >Clip >Play In the above menu, when [Trim] is pressed, this message appears if the file is locked.
		This file is using for playback.	2522:Frame Memory >Clip >Play In the above menu, when [Trim] is pressed, this message appears if the file is being played back.
	Warning	No Switcher information available. Please confirm “Network Configuration” on Page 7311.	When starting up the menu system, the switcher is not present in the system information. Check the Data LAN connections, and in Menu 7311: Engineering Setup >System >Network Config, retry [Auto Config].
	Warning	This operation will be cancelled, because the register is locked. Please change the register status to be unlocked first.	6211.1: Effect >Master Timeline >Store >Edit 6311.1: Snapshot >Master Snapshot >Store >Edit 6411.1: Shotbox >Register >Store >Edit In the above menus, an attempt was made to store in a locked register. Unlock the register before carrying out the store.
	Warning (System Config)	Illegal Network Config Information (Page 7311)	When starting up the menu system, if the system information read from the control panel is not correct, one of these messages, that corresponds to the situation appears. Following the message, use Menu 7311: Engineering Setup >System >Network Config or 7312: Engineering Setup >System >System Config to retry the operation.
		Illegal Panel Assign Information for Dual Simul Operation (Page 7312)	
		No Panel Assign Information (Page 7312)	
		No Switcher Assign Information (Page 7312)	
		No System Operation Mode Information (Page 7312)	
		No DME Channel Information	

a) MKS-8010A only

Error Messages Shown in the Error Information Menu

If a file transfer related error occurs, the Error Information menu appears to the following error messages.

Error message	Error description/measures
[Error] Packet Format	Load/save the data again. Still then the message is displayed, contact a Sony service representative.
[Error] No Request	
[Error] No Request File	
[Error] Illegal Host	
[Error] Not Supported	
[Error] USB Access	
[Error] Get File System Info	
[Error] Copy Result	
[Error] Remove Result	
[Error] Move Result	
[Error] Make Dir Result	
[Error] Path Info	
[Error] Dir Operation	
[Error] Command Result	
[Error] Transfer Result	
[Error] Source File Name	
[Error] Source File Open	
[Error] Source File Read	
[Error] Destination File Name	

Error message	Error description/measures
[Error] Destination File Open	Load/save the data again. Still then the message is displayed, contact a Sony service representative.
[Error] Destination File Read	
[Error] Destination File Write	
[Error] Illegal Format	
[Error] Edit Header	
[Error] Local File Access	
[Error] FTP Connect	
[Error] FTP Busy	
[Error] FTP Access	
[Error] FTP No Result	
[Error] FTP Put Command	
[Error] FTP Delete	
[Error] FTP Delete Command	
[Error] FTP Delete Result	
[Error] Control Table No Space	
[Error] Control Table Same Name	
[Error] No Queue	
[Error] Resize BMP	
[Error] Make Vector	
[Error] Uncompress	
[Error] Compress	
[Error] Server Not Respond	No reactions are returned from the processor. Check your Data-LAN connections and the power source of the processor.
[Error] No Space	There is not sufficient space in the memory card or hard disk.

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