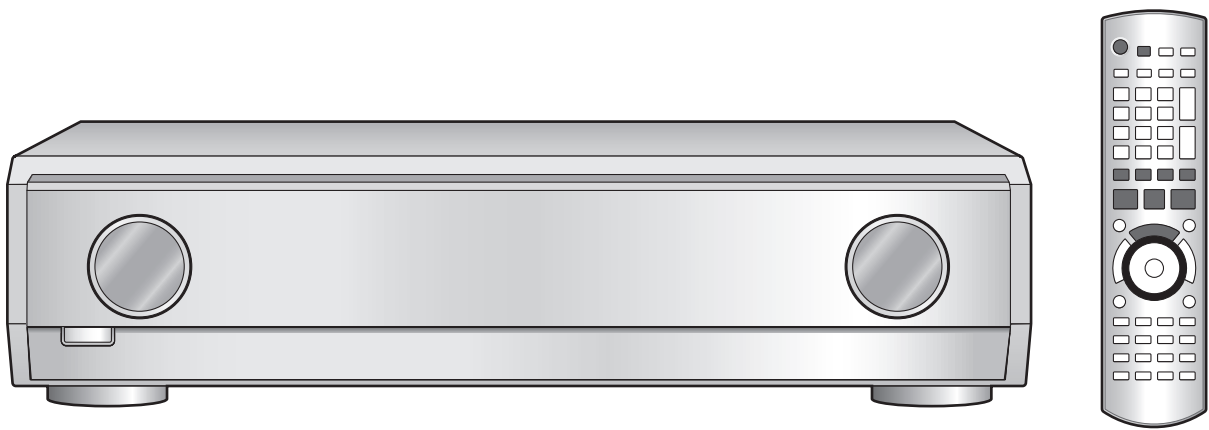


Panasonic[®]

Operating Instructions

AV Control Receiver

Model No. **SA-XR700**



Dear customer

Thank you for purchasing this product.
Before connecting, operating or adjusting this product, please read
the instructions completely.
Please keep this manual for future reference.

HDMI[™]
HIGH-DEFINITION MULTIMEDIA INTERFACE

Caution for AC Mains Lead

(For the United Kingdom and Republic of Ireland)

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 5-ampere fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5-ampere and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark  or the BSI mark  on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local dealer.

CAUTION!

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY.

THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13-AMPERE SOCKET.

If a new plug is to be fitted please observe the wiring code as stated below.

If in any doubt please consult a qualified electrician.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral, Brown: Live.

As these colours may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured Blue must be connected to the terminal which is marked with the letter N or coloured Black or Blue.

The wire which is coloured Brown must be connected to the terminal which is marked with the letter L or coloured Brown or Red.

WARNING: DO NOT CONNECT EITHER WIRE TO THE EARTH TERMINAL WHICH IS MARKED WITH THE LETTER E, BY THE EARTH SYMBOL  OR COLOURED GREEN OR GREEN/YELLOW.

THIS PLUG IS NOT WATERPROOF—KEEP DRY.

Before use

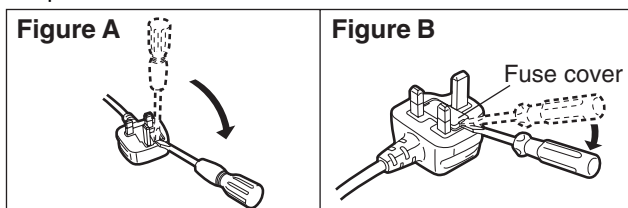
Remove the connector cover.

How to replace the fuse

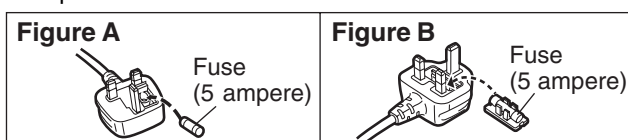
The location of the fuse differ according to the type of AC mains plug (figures A and B). Confirm the AC mains plug fitted and follow the instructions below.

Illustrations may differ from actual AC mains plug.

1. Open the fuse cover with a screwdriver.



2. Replace the fuse and close or attach the fuse cover.



Safety precautions

Placement

Set the unit up on an even surface away from direct sunlight, high temperatures, high humidity, and excessive vibration. These conditions can damage the cabinet and other components, thereby shortening the unit's service life.

Do not place heavy items on the unit.

Voltage

Do not use high voltage power sources. This can overload the unit and cause a fire.

Do not use a DC power source. Check the source carefully when setting the unit up on a ship or other place where DC is used.

AC mains lead protection

Ensure the AC mains lead is connected correctly and not damaged. Poor connection and lead damage can cause fire or electric shock. Do not pull, bend, or place heavy items on the lead. Grasp the plug firmly when unplugging the lead. Pulling the AC mains lead can cause electric shock.

Do not handle the plug with wet hands. This can cause electric shock.

Foreign matter

Do not let metal objects fall inside the unit. This can cause electric shock or malfunction.

Do not let liquids get into the unit. This can cause electric shock or malfunction. If this occurs, immediately disconnect the unit from the power supply and contact your dealer.

Do not spray insecticides onto or into the unit. They contain flammable gases which can ignite if sprayed into the unit.

Service

Do not attempt to repair this unit by yourself. If sound is interrupted, indicators fail to light, smoke appears, or any other problem that is not covered in these operating instructions occurs, disconnect the AC mains lead and contact your dealer or an authorized service center. Electric shock or damage to the unit can occur if the unit is repaired, disassembled or reconstructed by unqualified persons.

Extend operating life by disconnecting the unit from the power source if it is not to be used for a long time.

Sales and Support Information

(For the United Kingdom and Republic of Ireland)

Customer Care Centre

- For customers within the UK: 08705 357357
- For customers within the Republic of Ireland: 01 289 8333
- Visit our website for product information
- E-mail: customer.care@panasonic.co.uk

Direct Sales at Panasonic UK

- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Care Centre Monday-Thursday 9:00am-5:30pm, Friday 9:30am-5:30pm. (Excluding public holidays)
- Or go on line through our Internet Accessory ordering application at www.panasonic.co.uk.
- Most major credit and debit cards accepted.
- All enquiries transactions and distribution facilities are provided directly by Panasonic UK Ltd.
- It couldn't be simpler!
- Also available through our Internet is direct shopping for a wide range of finished products, take a browse on our website for further details.

Interested in purchasing an extended guarantee?

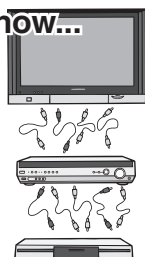
Please call 0870 240 6284 or visit our website

www.panasonic.co.uk/guarantee

Enjoying the Home Theater has become easy!

Connections

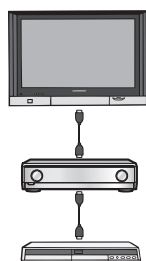
Until now...



Many different cables were necessary



With SA-XR700!

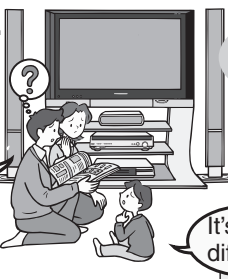


Simple connections using HDMI cables. (→ page 7)

*Other connections are also possible.

Settings

Until now...

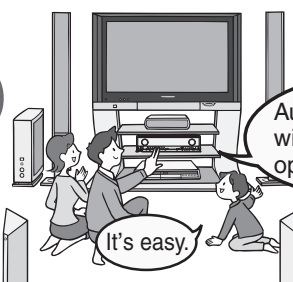


Manual setting for each speaker

We must make speaker settings...

It's difficult.

With SA-XR700!



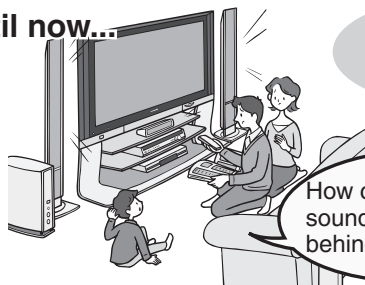
Speakers are set with just one press. (→ page 10)

Automatic setting with simple operations!

It's easy.

Playback

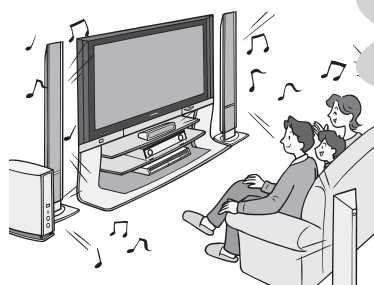
Until now...



Remote control operations for surround playback

How can we get sound from speakers behind us?

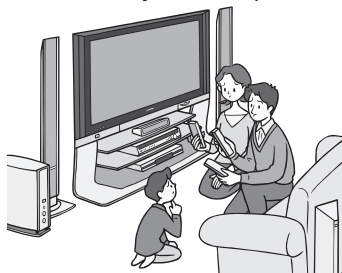
With SA-XR700!



Speakers provide surround sound when you just play DVDs or receive TV broadcast. (→ page 12)

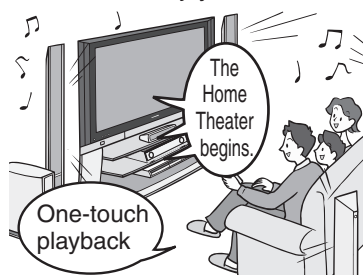
HDAVI Control™

Previous Home Theater systems required multiple operations.



When you connect the unit to your TV (VIERA) and DVD recorder (DIGA) compatible with HDAVI Control

Press just one button and enjoy the Home Theater. (→ page 13)



The Home Theater begins.

One-touch playback

Supplied accessories



Please check and identify the supplied accessories.



AC mains lead

For continental Europe, the United Kingdom and Republic of Ireland



For continental Europe (K2CQ2CA00002)

For the United Kingdom and Republic of Ireland (K2CT3CA00004)



1 FM indoor antenna (RSA0007-L)



1 AM loop antenna (RSA0037)



1 Antenna plug adapter

For Australia and New Zealand



(K2CJ2DA00010)



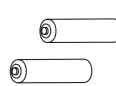
For the United Kingdom and Republic of Ireland (K1YZ02000013)



1 Setup microphone (LOCBA000123)



2 Batteries



1 Remote control (EUR7662YS0)



Use numbers indicated in parentheses when asking for replacement parts. (Product numbers correct as of August 2006. These may be subject to change.)

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Control guide

This unit

For selecting input sources
(⇒ pages 12 and 24)

Standby indicator (⏻)

When the unit is connected to the AC mains supply, this indicator lights up in standby mode and goes out when the unit is turned on.

Standby/on switch (⏻/⏻)

Press to switch the unit from on to standby mode or vice versa. In standby mode, the unit is still consuming a small amount of power.

For MENU operations

(⇒ pages 30, 31, 38, 39 and 40)

For SETUP operations

(⇒ pages 20, 32 to 36 and 44)

For switching the surround function on and off (⇒ pages 12 and 24)

Lights on when ADVANCED DUAL AMP is on (⇒ page 25)

Lights on when BI-AMP is on (⇒ page 25)

Lights on during surround playback (⇒ pages 12 and 24)

Lights on during the auto speaker setup (⇒ page 22)

Lights on while communicating through HDMI connections (⇒ page 12)

For adjusting volumes (⇒ pages 12 and 24)

For connecting headphones (⇒ page 36)

For connecting the setup microphone (⇒ page 22)

For connecting a video camera etc. (⇒ page 19)

For tuning the radio and selecting preset stations (⇒ pages 38 and 39)

For selecting front speakers (⇒ pages 11, 12, 22, 24 and 25)

For detecting speakers automatically (⇒ page 10)

Display

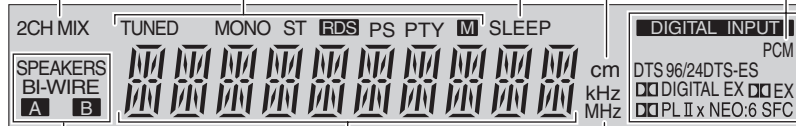
Lights on when 2-channel mix is functioning

Radio display

Sleep timer indicator

Unit display

Lights on when PCM FIX is selected



Displays front speakers in use

General display

Frequency unit indicators

Input signals (digital audio)
(⇒ page 37)

Remote control

Power button

For selecting tuner/
For switching FM or AM
(⇒ page 38)

For inputting channels
TV (⇒ page 41)
VCR (⇒ page 41)
DVD recorder (⇒ page 42)

For selecting a track or chapter
DVD recorder (⇒ page 42)
DVD player (⇒ page 43)

For selecting a track
CD player (⇒ page 43)

For inputting the station frequency/
For selecting a channel
TUNER (⇒ pages 38 and 39)

For dimming the display light (⇒ page 29)

For adjusting the subwoofer level (⇒ page 29)

For listening to surround sounds (⇒ pages 26 to 28)

For switching an input source on and off/
Source switching/
Switching remote control modes (⇒ pages 41 to 44)

For playing DVD-Audio sources on 6 channels (⇒ page 25)

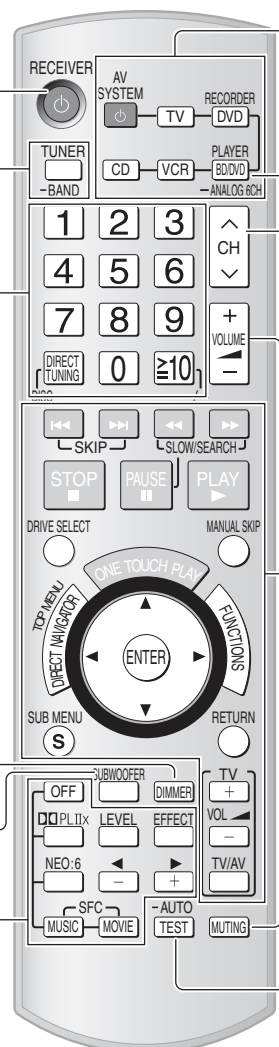
For selecting a channel
TUNER (⇒ page 39)
TV (⇒ page 41)
VCR (⇒ page 41)
DVD recorder (⇒ page 42)

For adjusting volumes (⇒ pages 13 and 29)

For operating other equipment (⇒ pages 13 and 41 to 43)

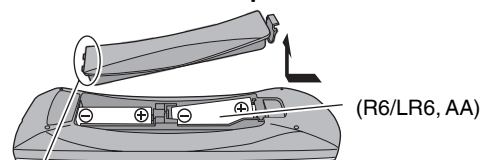
For silencing speakers temporarily (⇒ page 29)

For confirming speaker output (⇒ page 11)/
For auto speaker setup using the setup microphone (⇒ page 22)/
For adjusting speaker volumes (⇒ page 29)



Batteries

Press on the tab to open.

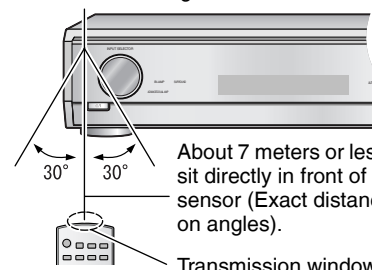


Place this side in before the other side when you close.

- Insert so the poles (⊕ and ⊖) match those in the remote control.
- Do not use rechargeable type batteries.
- Do not heat or expose to flame.

Use

Remote control signal sensor



Caution

- Do not place an object between the signal sensor and the remote control.
- Do not place the signal sensor under direct sunlight or the strong light of an inverter fluorescent lamp.
- Keep the transmission window and the unit's sensor free from dust.

When you set the unit in a cabinet

The remote controlling range may decrease depending on the thickness or colours of glass cabinet doors.

Quick guide

This section introduces basic connection, setting and playback methods for enjoying the Home Theater.

- Turn off all equipment before making any connections.
- Peripheral equipment sold separately unless otherwise indicated.
- To connect equipment, refer to the appropriate operating instructions.

Step 1

Connect a TV and a DVD recorder/DVD player using HDMI cables (⇒ page 7)

Using HDMI connections, you can easily enjoy high-quality pictures and sounds.

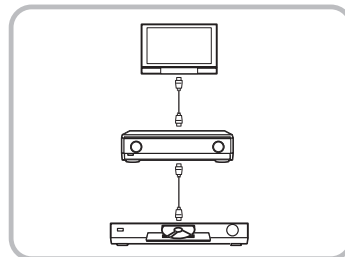
To make HDMI connections, you need an HDMI terminal on both your TV and DVD recorder (DVD player).

When one of the two or both equipment lacks an HDMI terminal:

You can connect cables to S video terminals (⇒ page 15).

You can connect cables to component terminals (⇒ page 16).

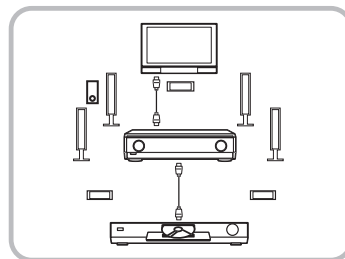
You can connect cables to video terminals (in the absence of component or S video terminals) (⇒ page 14).



Step 2

Connect speakers (⇒ page 8)

You install and connect speakers in this step.

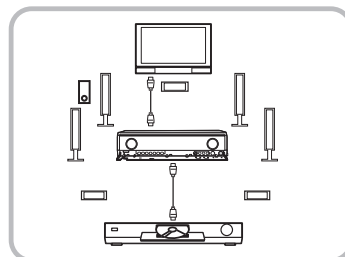


Step 3

Set speakers and test speaker output (⇒ page 10)

Using automatic speaker detection, you can easily set speakers.

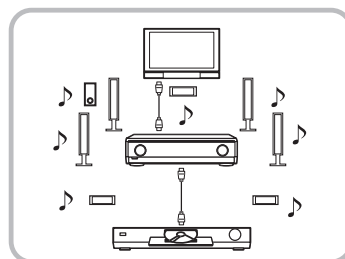
After speakers are set, you can confirm audio output using the test signal.



Step 4

Watch DVDs or TV (⇒ page 12)

You can enjoy DVDs with surround sound.

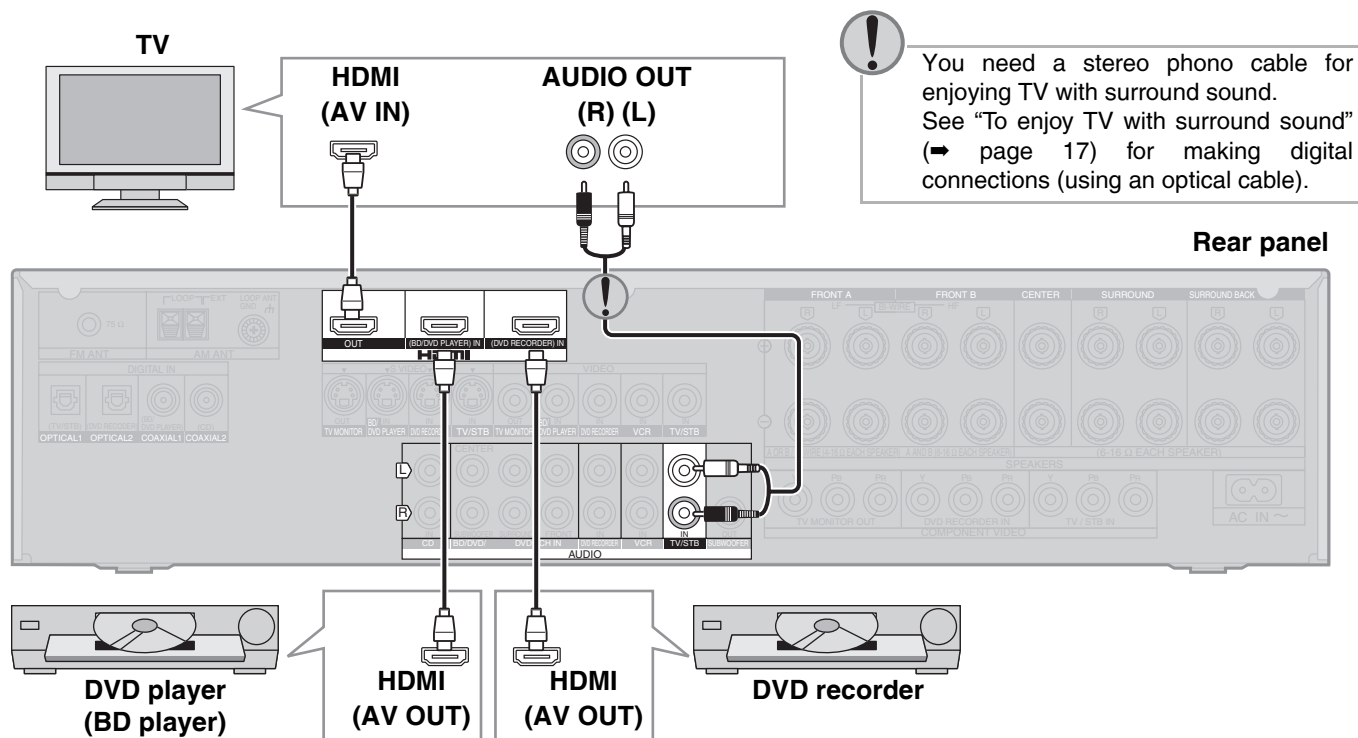


Step 1

Connect a TV and a DVD recorder/DVD player using HDMI cables

Connection cable (All cables are sold separately)

Video and Audio cable	Audio cable
HDMI Cable (It is recommended that you use Panasonic's HDMI cable.) [Recommended part number: RP-CDHG15 (1.5 m), RP-CDHG30 (3.0 m), RP-CDHG50 (5.0 m) etc.] 	Stereo phono cable  White (L) Red (R)



HDMI connection

The HDMI input terminal on the unit's rear is made to specifications that presume connection of a DVD recorder/DVD player. When other equipment is connected, sounds may not come out of the unit, or pictures shown on the equipment (TV) connected to the HDMI output terminal may be disrupted.

In such cases, see page 19 and make connections other than HDMI.

You can hear DVD sounds from speakers on the TV when you turn off the unit connected in the way shown above (standby through function). This convenient function enables you to enjoy DVDs late at night.

Note

HDMI stands for High-Definition Multimedia Interface.

- The HDMI cable enables you to transmit digital audio and video signals using a single cable. You can also transmit control signals using HDMI connections.
- The unit complies with CPPM^{*1}. It can digitally transmit surround sound in DVD-Audio sources.
 - ^{*1} Content Protection for Prerecorded Media (CPPM): This copyright protection technology prevents copying of DVD-Audio files.
- We recommend using Panasonic cables 5.0 meters long or shorter for enjoying 1125p^{*2} (1080p) pictures. They prevent picture degradation.
 - ^{*2} 1125p (1080p): a progressive (non-interlace) scanning system that sends 1,125 scan lines every 1/60 second.
- The audio signal transmitted through HDMI takes priority when you use both HDMI and digital terminals (➡ pages 14 to 17) for connection.

When the HDMI terminal does not exist on your TV, DVD recorder (DVD player) or both

You can connect cables to S video terminals.

You can connect cables to component terminals.

You can connect cables to video terminals.

➡ See page 15.

➡ See page 16.

➡ See page 14.

➡ Move on to "Connect speakers" (➡ page 8) in the Quick guide.

Step 2

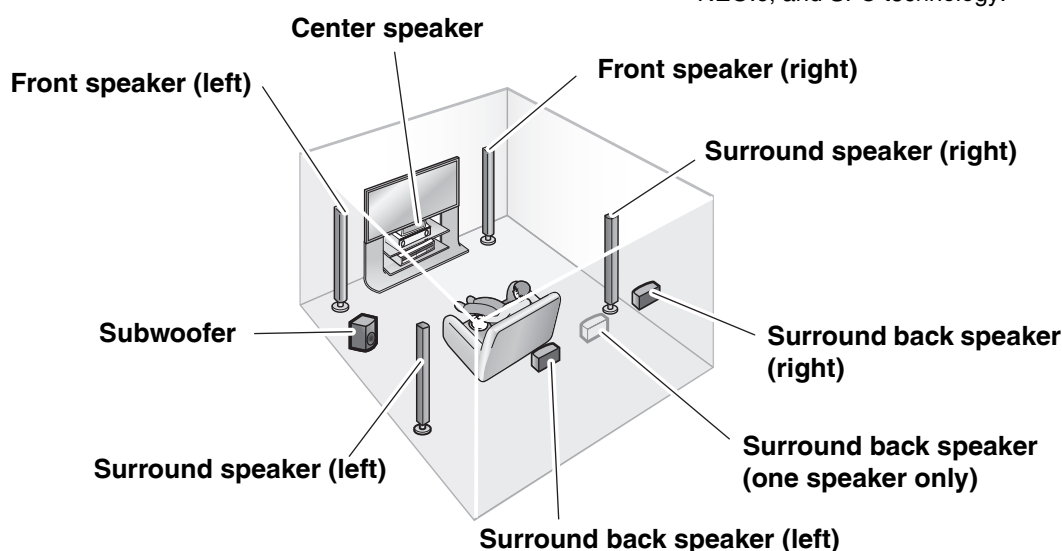
Connect speakers

The ideal placement is to set each speaker (excluding the subwoofer) the same distance away from the listening-viewing position. Measure the actual distance from each of the connected speakers to the listening-viewing position and perform steps instructed in "Setting distances" (⇒ page 33) or perform steps instructed in "Auto speaker setup using the setup microphone" (⇒ page 22) when you cannot install speakers the same distance away.

Example: Front speakers (2), center speaker (1), surround speakers (2), surround back speaker(s) (1 or 2) and subwoofer

This is a placement suited for playing 6.1-channel sources (Dolby Digital Surround EX and DTS-ES materials).

This placement offers 7.1/6.1-channel playback of 2-channel and 5.1-channel sources with the aid of Dolby Pro Logic IIx, NEO:6, and SFC technology.



Front speakers (left, right)

Place on the left and right of the TV at seated ear height so that there is good coherency between the picture and sound.

Center speaker

Place underneath or above the center of the TV. Aim the speaker at the seating area.

When you do not install the center speaker, sound assigned to it is distributed to front speakers and output from them.

Surround speakers (left, right)

Place on the side of or slightly behind the seating area.

When you do not install surround speakers, sound assigned to them is distributed to front speakers and output from them.

Surround back speakers (left, right)

Place behind the seating area, about 1 meter higher than ear level.

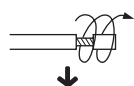
When you do not install any surround back speaker, sound assigned to them is distributed to surround speakers or front speakers and output from them.

Subwoofer

The subwoofer can be placed in any position as long as it is at a reasonable distance from the TV.

How to connect speaker cables

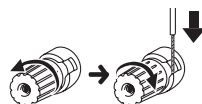
1



Remove the vinyl covering the tips of speaker cords by twisting it off.

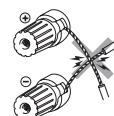
2

Speaker terminals



Note

- Connect speaker cords properly to terminals after making sure left and right, and ⊕ and ⊖. Improper connections may cause the unit to develop problems.
- Do not short-circuit speaker cords. The action may damage circuits.

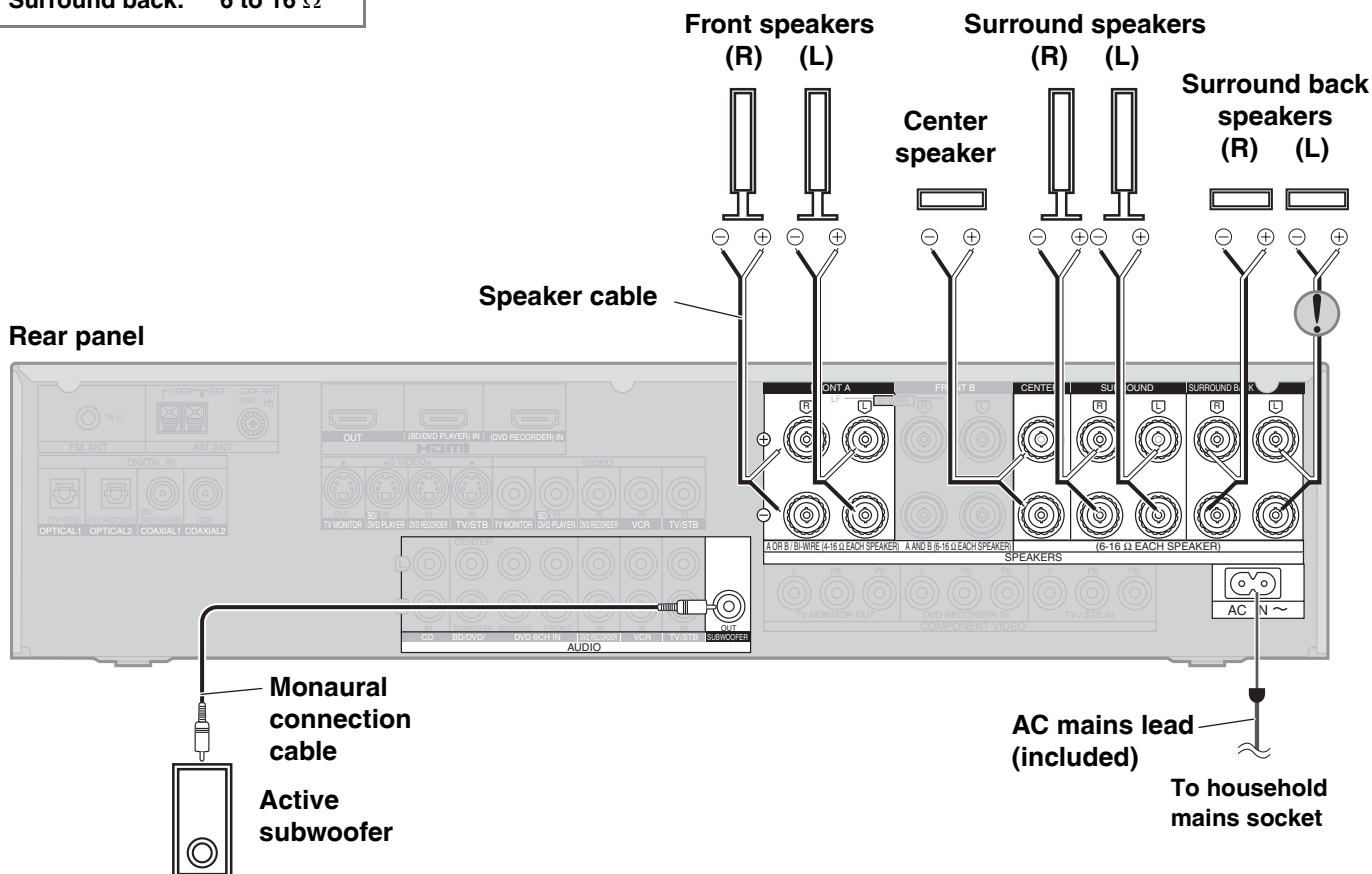


Speaker impedance

Front A: 4 to 16 Ω
 Center: 6 to 16 Ω
 Surround: 6 to 16 Ω
 Surround back: 6 to 16 Ω



Use the terminal for the left speaker when you connect one surround back speaker only.



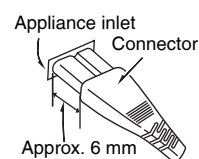
FOR THE UNITED KINGDOM AND REPUBLIC OF IRELAND ONLY
READ THE CAUTION FOR THE AC MAINS LEAD ON PAGE 2 BEFORE CONNECTION.

Insertion of connector

(Except the United Kingdom and Republic of Ireland)

Even when the connector is perfectly inserted, depending on the type of inlet used, the front part of the connector may jut out as shown in the drawing.

However there is no problem using the unit.

**Connect AC mains lead after all other cables and cords are connected.**

- The included AC mains lead is for use with this unit only. Do not use it with other equipment.
- Do not use an AC mains lead from any other type of equipment with this unit.
- The unit's settings remain effective after the AC mains lead is removed from the household mains socket.

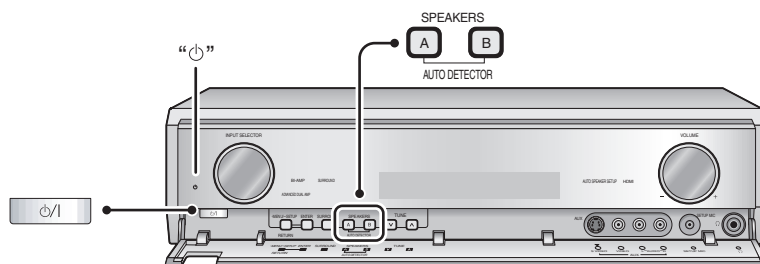
**Note**

Do not forget to take steps instructed in "Set speakers and test speaker output" (➔ page 10) or "Auto speaker setup using the setup microphone" (➔ page 22) after connecting a new speaker.

Step 3

Set speakers and test speaker output

The unit checks each speaker's connection status and make speaker settings automatically.



Detecting speakers automatically

1 To turn the unit on

Press

- The standby indicator “” goes off when you turn the unit on.

2 To check the speaker presence

Press simultaneously.

Automatic speaker detection starts.

The unit checks the center speaker, surround speakers, surround back speakers and the subwoofer in that order.
(The connection status for front speakers is always present.)



The display shows the number of detected speakers (excluding the subwoofer).



The display shows connected speakers.

(e.g.)



When automatic detection is finished, the display returns to the original.

How speakers are displayed

L : Front left **C** : Center **R** : Front right **S** : Surround
SB : Surround back **W** : Subwoofer

“**WARNING**” messages may appear on the display depending on detection results.

	The right surround back speaker was detected, but the unit did not detect the left surround back speaker. Use the terminal for the left speaker when you connect one surround back speaker only (➡ page 9).
	The unit did not detect left and right surround speakers. Connect surround speakers as well when you connect surround back speakers to the unit.
	The unit did not detect one of the two surround speakers. Check speaker connections.

Note

- Automatic detection does not work well depending on speakers and cables. Make speaker settings manually in such cases (➡ page 33).
- These settings remain effective after the unit goes off.
- The unit considers seven speakers and one subwoofer are connected to the unit (keeps factory settings) unless you perform these steps.
- Perform the above steps when you connect a new speaker.

Testing speaker output

Confirm audio output using the test signal after speakers are set.

1 To select "SPEAKERS A"

Press  to switch "A" on.

When only the SPEAKERS A setting is selected



When SPEAKERS A and SPEAKERS B settings are selected



- If you select SPEAKERS B only, the test signal will not be output.

2 To test speaker output

Press 

- Adjust the volume of front speakers to the normal listening level.
- The test signal is output from one speaker at a time for two seconds in the order shown below.

$L \rightarrow C \rightarrow R \rightarrow RS \rightarrow SBR \rightarrow SBL \rightarrow LS \rightarrow SW$

or

$L \rightarrow C \rightarrow R \rightarrow RS \rightarrow SB \rightarrow LS \rightarrow SW$

(When you connect one surround back speaker)



Speaker

How speakers are displayed

L :	Front left	C :	Center	R :	Front right
RS :	Surround right	LS :	Surround left		
SBR :	Surround back right	SBL :	Surround back left		
SB :	Surround back				
	(When you connect one surround back speaker)				
SW :	Subwoofer				

3 To stop the test signal

Press 

Note

- Unconnected speakers do not output the test signal.
- Check connections and perform automatic speaker detection once again when a connected speaker does not output the test signal. (➡ pages 9 and 10)
- When bi-wire speakers are connected (➡ page 20), press [SPEAKERS A] or [SPEAKERS B] to switch "A B" on.



To make detailed settings

To make various settings automatically

To set speakers the way you like

With the supplied setup microphone, the unit sets speaker distances, polarity, size, lowpass filter, frequency and levels automatically (➡ page 22).

"Adjusting speaker volumes" (➡ page 29)

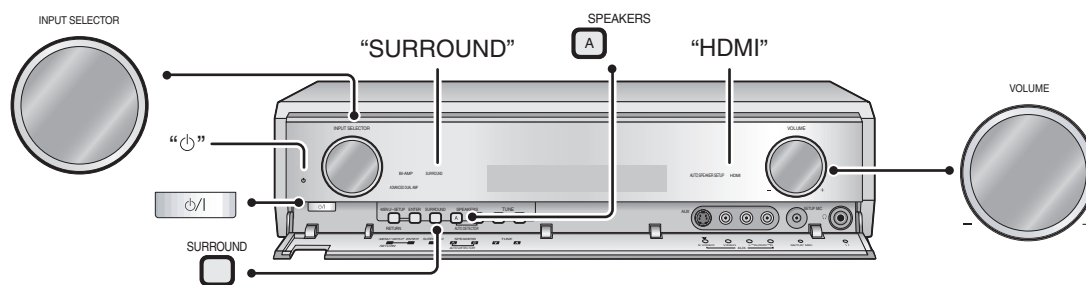
"Setting speakers and their sizes" (➡ page 33)

"Setting distances" (➡ page 33)

"Setting the lowpass filter" (➡ page 33)

Step
4

Watch DVDs or TV



Preparation Turn the TV on and switch the TV's input mode (to "HDMI" and others).

1 To turn the unit on

Press 

The "SURROUND" indicator lights on (factory setting).

- The standby indicator "⏻" goes off when you turn the unit on.

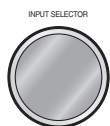
2 To select "SPEAKERS A"

Press  to switch "A" on.

SPEAKERS
A

3 To select "DVR", "BD/DVD" or "TV/STB"

Turn



DVR

- Select the connected terminal when the names of the terminal and equipment you wish to use for playback do not match.

 **Note** 

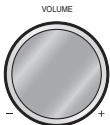
You can also select the input source using the remote control (➔ page 5).

4 Watch DVDs or TV

- The "HDMI" indicator lights on while communicating through HDMI connections.

5 To adjust the volume

Turn



VOL -50dB

Volume range:

- - dB (minimum),
- 79dB to 0dB (maximum)

To finish watching

Be sure to reduce the volume and press  to turn the unit to standby.

 **Note** 

Playback modes switch between 2-channel stereo and surround each time you press [SURROUND]. The "SURROUND" indicator is off during 2-channel stereo playback.

When you play back sources using a CD player and other equipment

See page 24.

Control with HDMI (HDAVI Control™)

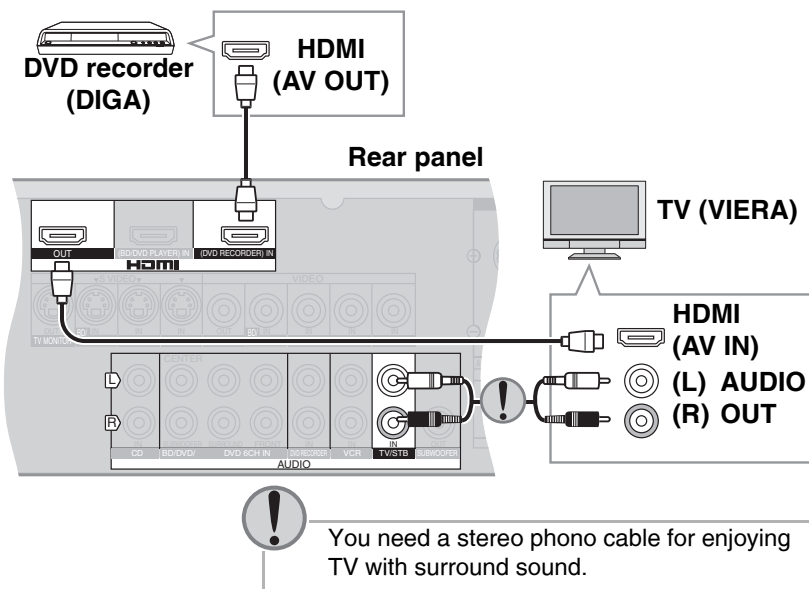
What is HDAVI Control?

HDAVI Control is a convenient function that offers linked operations of this unit, and a Panasonic TV (VIERA) or DVD recorder (DIGA) under HDAVI Control. You can use this function by connecting the equipment with the HDMI cable. See the operating instructions for connected equipment for operational details.

Preparation

- 1 Connect the unit to a Panasonic TV (VIERA) and DVD recorder (DIGA) under HDAVI Control using the HDMI cable. (It is recommended that you use Panasonic's HDMI cable. Non-HDMI-compliant cables cannot be utilized.)
- 2 Make settings in the menu for the TV (VIERA) to activate linked HDAVI Control operations.
- 3 Perform the following steps to make sure the unit accurately identifies connected equipment.
 - 1) Turn all equipment on.
 - 2) Switch the TV (VIERA) off and then put it back on.
 - 3) Switch the unit's input to "DVR" and make sure the TV (VIERA) correctly shows pictures.

(Take these steps after changing connections or settings.)



Enjoying the Home Theater through one-touch operations

Aim the remote control at the DVD recorder (DIGA) and press



The following operations are automatically performed when you just press [ONE TOUCH PLAY].

- 1 The DVD recorder goes on and starts playing back the recorded media in the selected drive (e.g. HDD, DVD).
- 2 The TV goes on and the TV input changes.
- 3 Surround playback starts after the unit is turned on and the input source for the unit switches to "DVR".

To adjust the volume: Press



You can also adjust the volume on your TV (VIERA)'s remote control.

(A message informing the action appears on your TV while you adjust the volume.)

- Press [SKIP] to start playing a DVD disc or a recorded TV program again when playback does not start from the beginning.



Note

- Only this unit turns off when you shut it down. Other connected equipment compatible with HDAVI Control stay on.
- Audio output automatically switches to speakers on your TV (VIERA) when you turn the unit off. Audio output from the DVD recorder (DIGA) switches from speakers on the TV (VIERA) to speakers connected to the unit when you turn the unit on.
- This unit goes from off to on, and speakers connected to this unit start making audio output when you set the TV (VIERA) to output sounds from the unit.
- This unit automatically goes off when you switch your TV (VIERA) off. (This operation is unavailable when you set the input source as "TUNER" or "CD" on this unit.)
- (For Australia and New Zealand) Only this unit turns off when you shut it down. Other connected equipment compatible with HDAVI Control stay on.
- The input for the unit switches automatically to "DVR" when a source is played back on the DVD recorder.
- When pictures arrive after sounds, select "ON" in "Adjusting audio timing to video timing" (➡ page 36).
- To set the unit against HDAVI Control, see page 35.

Enjoying sounds from the TV

The input source for the unit switches to "TV/STB" when you select a TV channel or operate the TV in other ways (➡ page 41).

Connections

Connecting cables to video and audio terminals (to use the TV, DVD recorder, DVD player, VCR)

Connection cable (All cables are sold separately)

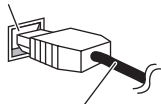
Video cable		Scart cable	
Video connection cable		21-pin scart cable	
		 Use when connecting equipment with a 21-pin scart terminal.	
Audio cable			
Optical fiber cable		Coaxial cable	
			
		Stereo phono cable	
		 White (L) Red (R)	

Changing the digital input settings

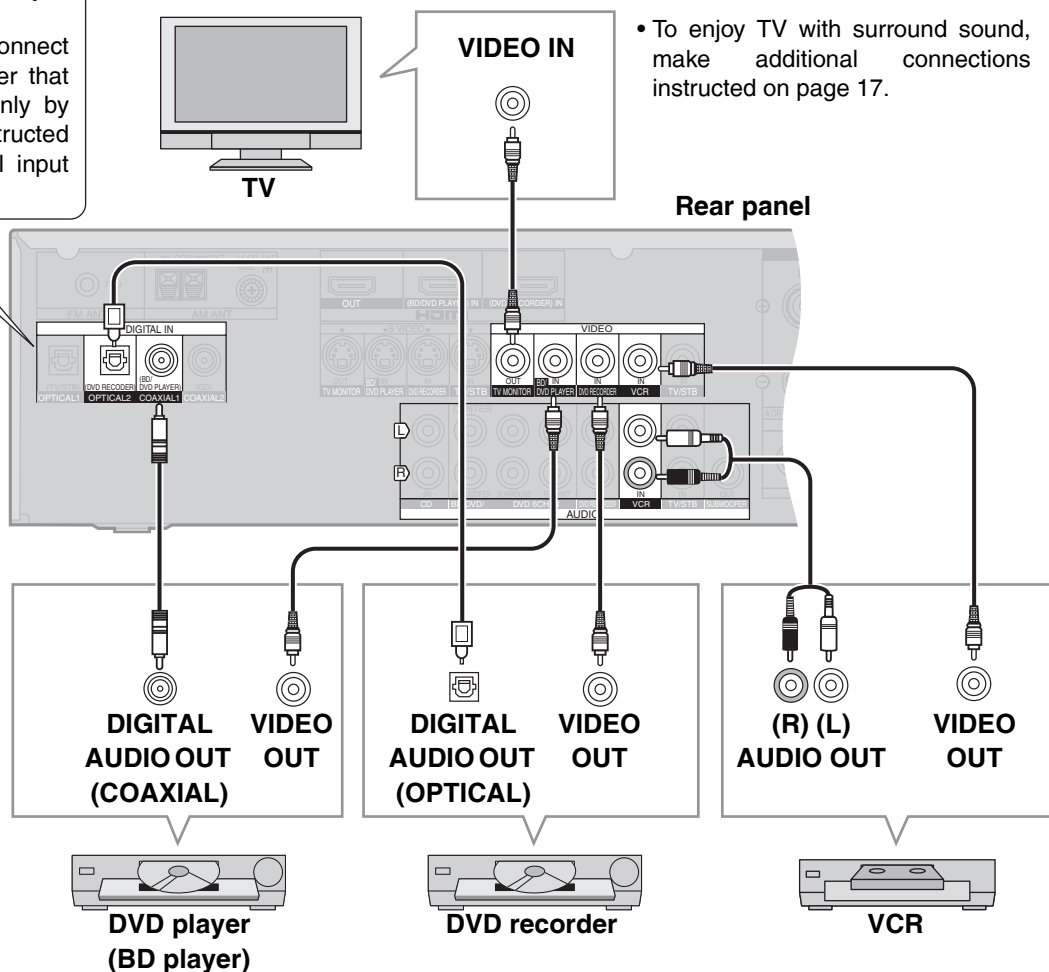
For example, you can connect the unit to a DVD player that makes optical output only by performing the steps instructed in "Changing the digital input settings" (→ page 35).

How to connect the optical fiber cable

Insert the cable after making sure shapes match.



Do not sharply bend the optical fiber cable.

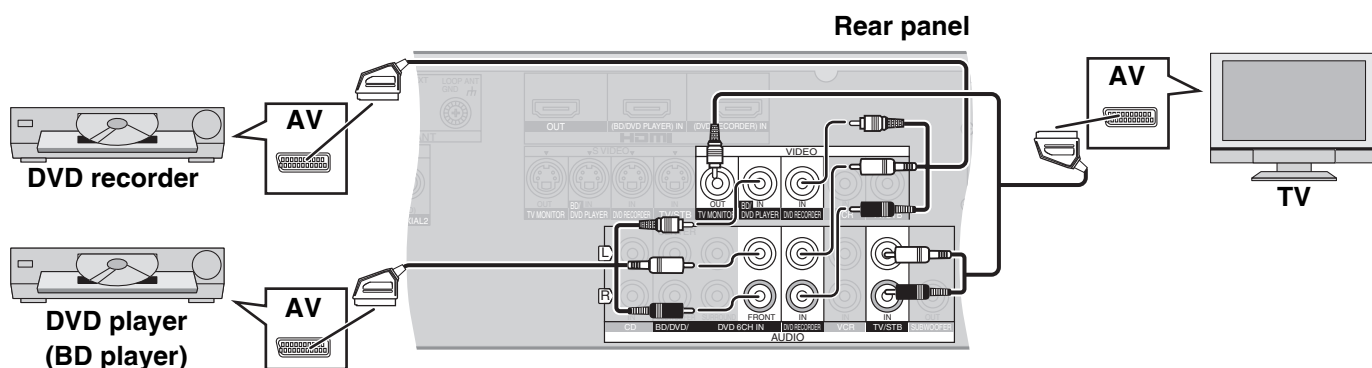


• To enjoy TV with surround sound, make additional connections instructed on page 17.

Note

- The input video signal can be sent out through an output terminal of the same type only.
- See page 19 for connecting the unit to a cable box or satellite receiver.

Connection with 21-pin scart cable (For continental Europe, the United Kingdom and Republic of Ireland)



Connecting cables to S video and audio terminals (to use the TV, DVD recorder, DVD player)

- Turn off all equipment before making any connections.
- Peripheral equipment sold separately unless otherwise indicated.
- To connect equipment, refer to the appropriate operating instructions.

Connection cable (All cables are sold separately)

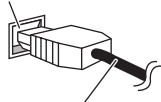
Video cable	
S VIDEO connection cable	
	
Audio cable	
Optical fiber cable	Coaxial cable
	

Changing the digital input settings

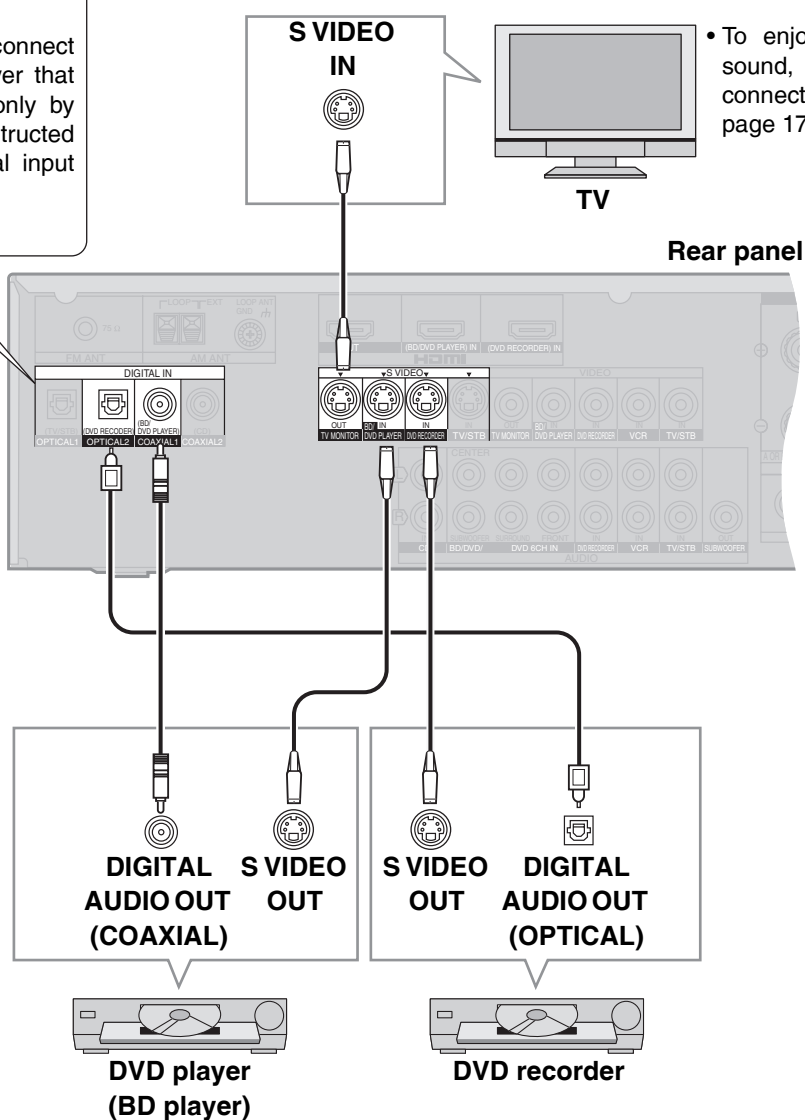
For example, you can connect the unit to a DVD player that makes optical output only by performing the steps instructed in "Changing the digital input settings" (→ page 35).

How to connect the optical fiber cable

Insert the cable after making sure shapes match.



Do not sharply bend the optical fiber cable.



- To enjoy TV with surround sound, make additional connections instructed on page 17.

Note

- The input video signal can be sent out through an output terminal of the same type only.
- See page 19 for connecting the unit to a cable box or satellite receiver.

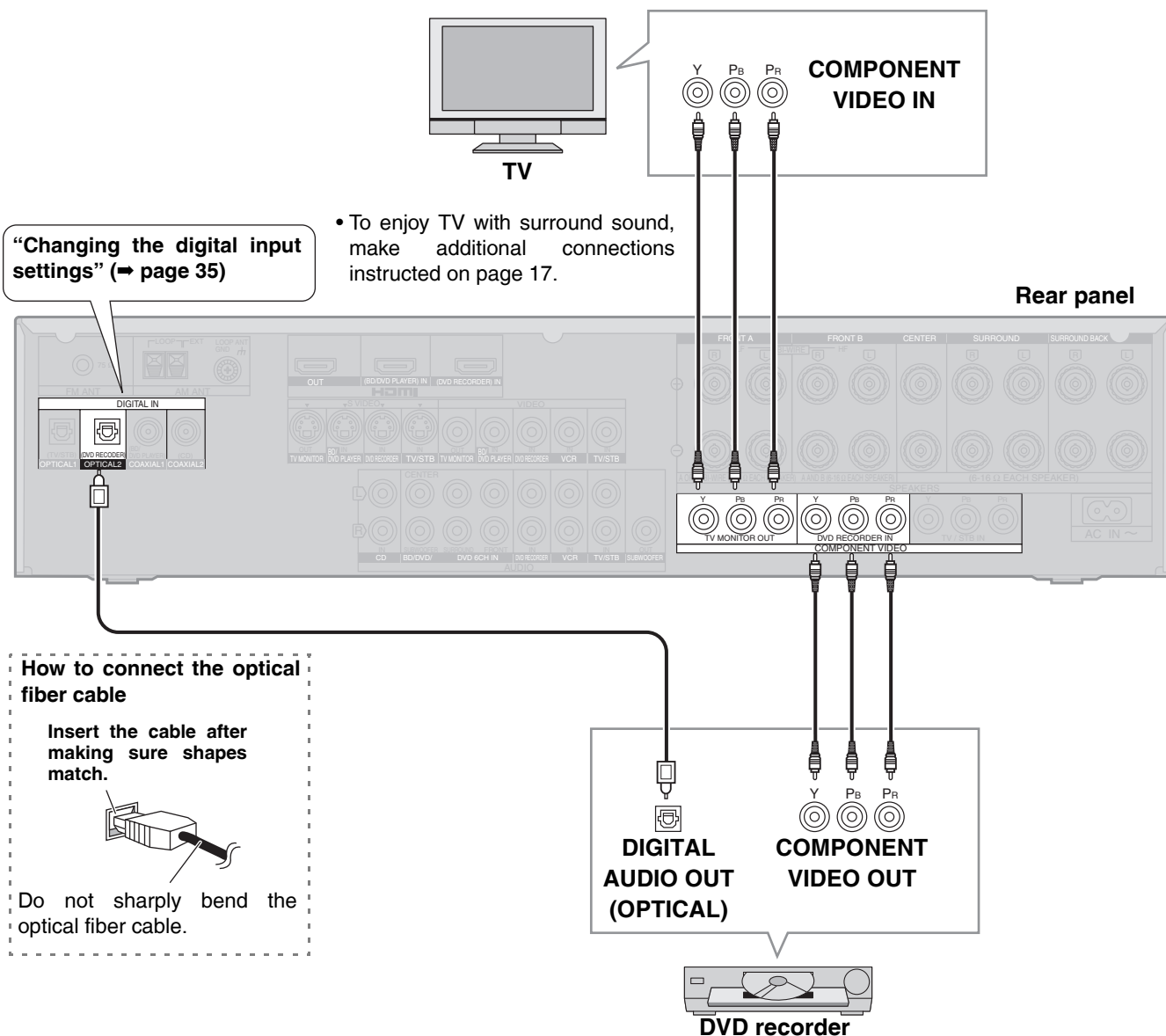
Connections

Connecting cables to component and audio terminals (to use the TV and DVD recorder)

The component video terminals can produce more accurate colours than the S video terminals (➔ page 15).

Connection cable (All cables are sold separately)

Video cable	Audio cable
Video connection cable 	Optical fiber cable 



Component video terminals

The component video terminals (colour-difference video terminals) output red (P_R), blue (P_B), and luminance (Y) signals separately. The terminals reproduce colours with greater accuracy for this reason.

Note

- The input video signal can be sent out through an output terminal of the same type only.
- See page 19 for connecting the unit to a cable box or satellite receiver.

- Turn off all equipment before making any connections.
- Peripheral equipment sold separately unless otherwise indicated.
- To connect equipment, refer to the appropriate operating instructions.

Other connections

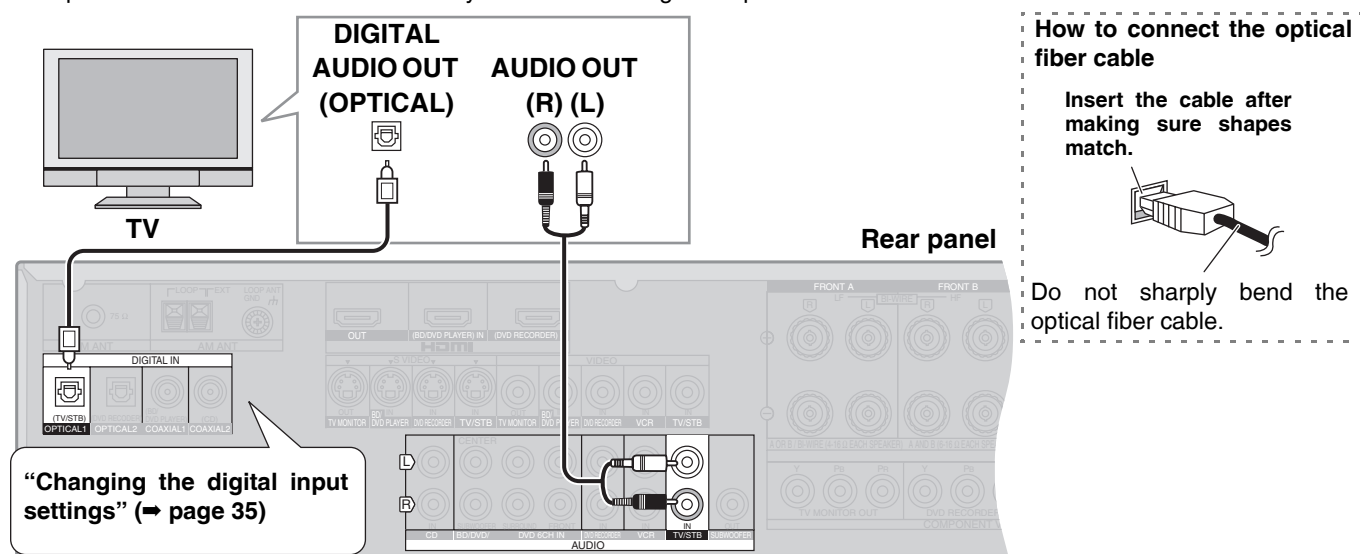
Connection cable (All cables are sold separately)

Video cable	
Video connection cable	
	
Audio cable	
Optical fiber cable	Stereo phono cable
	

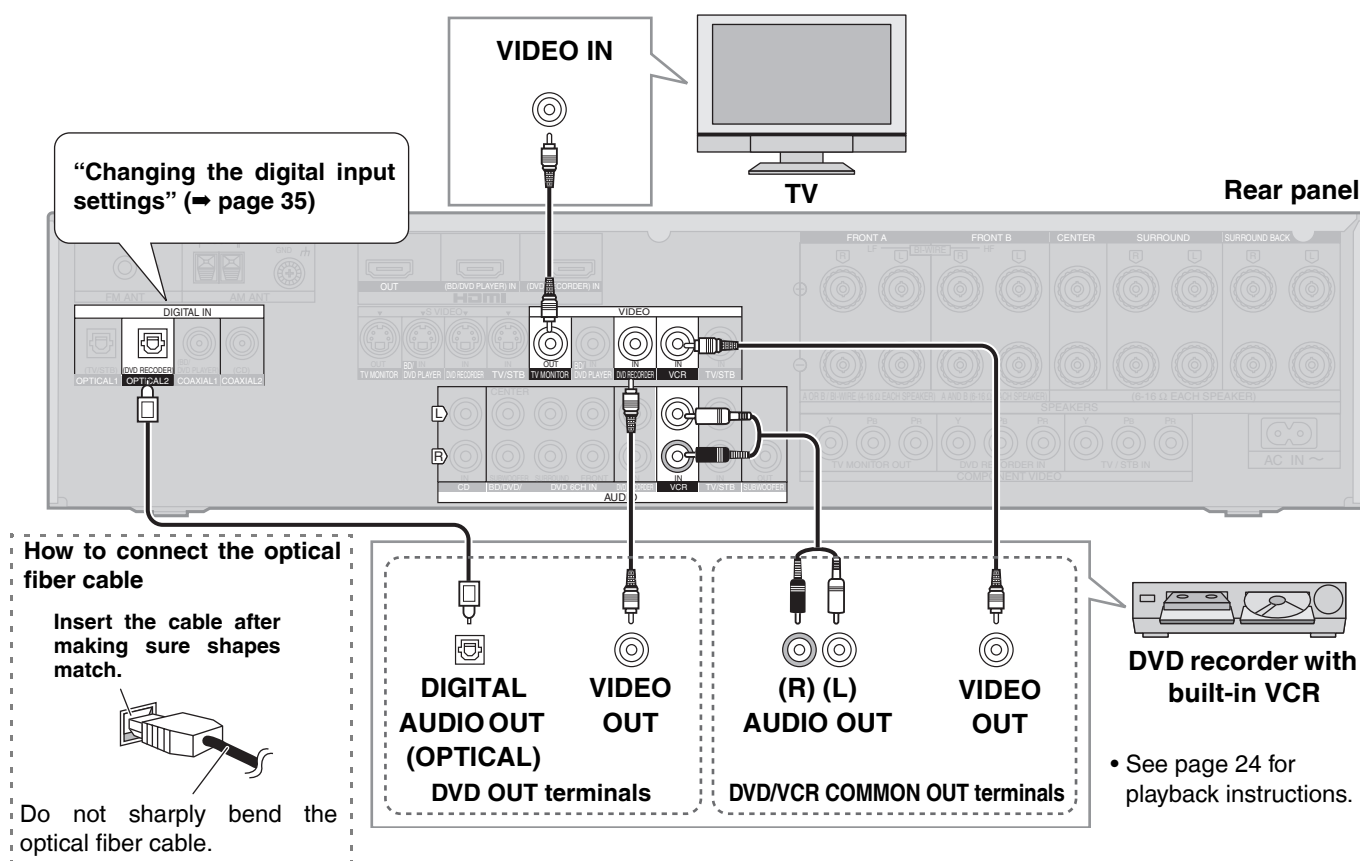
To enjoy TV with surround sound

Make the following connections in addition to those instructed on pages 14 to 16.

- Speakers produce sounds when you make connections for either digital audio (OPTICAL) output or analogue audio output. Make connections according to your equipment and preference.
- Use the optical fiber cable for connection when your TV has the digital output terminal.



To connect a DVD recorder with built-in VCR



Connections

Other connections

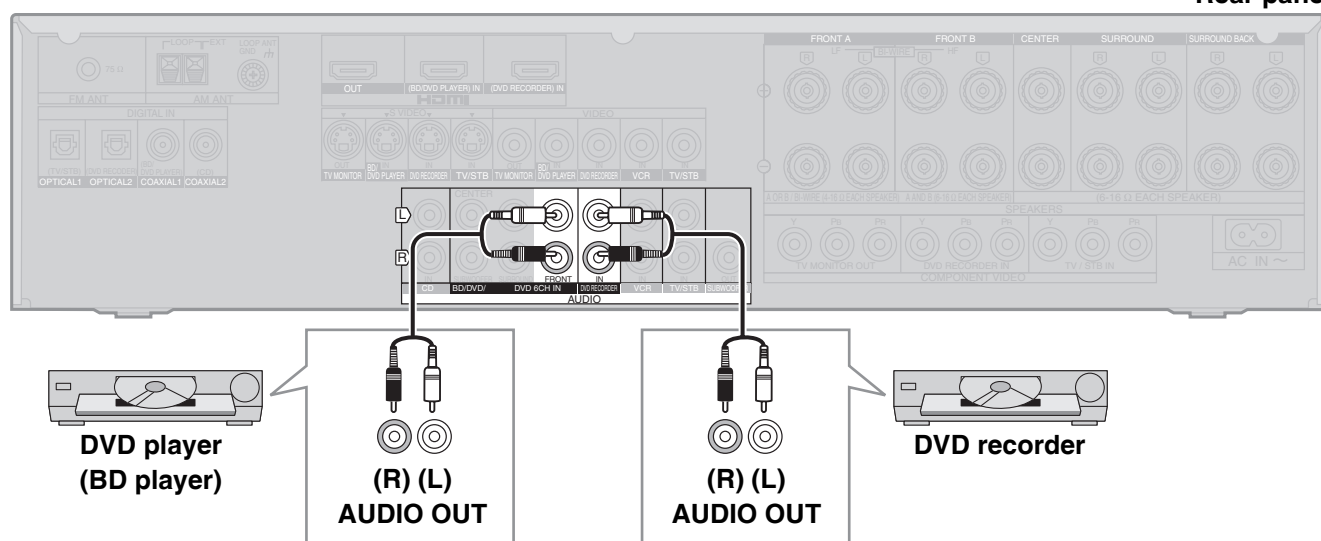
Connection cable (All cables are sold separately)

Video cable		
Video connection cable	S VIDEO connection cable	
		
Audio cable		
Optical fiber cable	Coaxial cable	Stereo phono cable
		 White (L) Red (R)

To enjoy analogue sounds

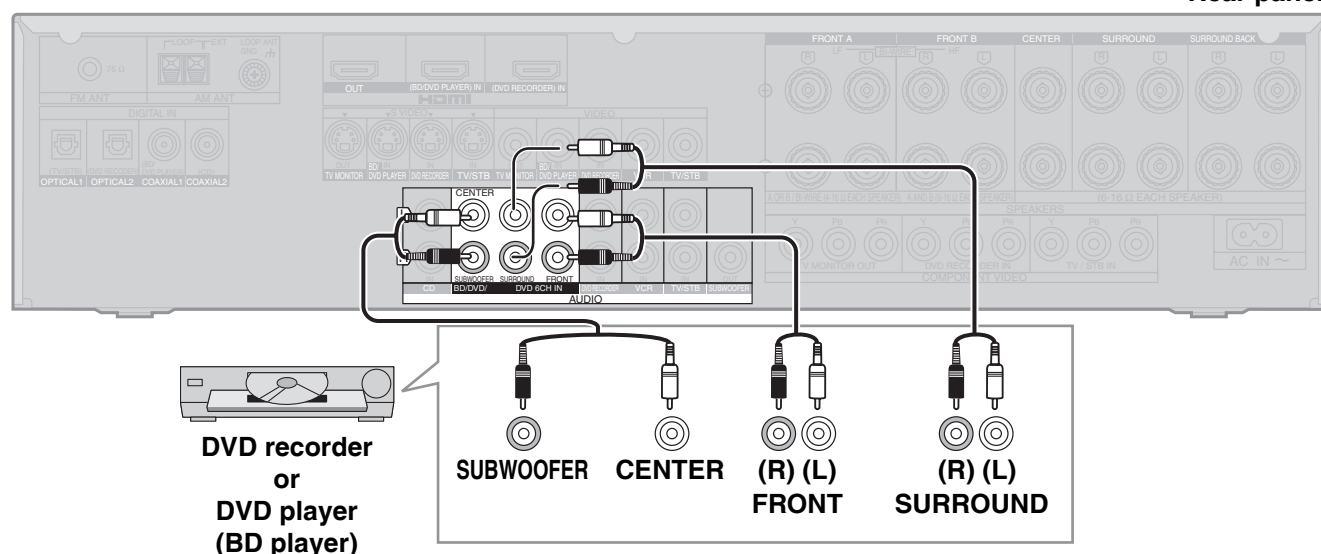
Make analogue connections according to your equipment and preference. See pages 14 to 16 for video connections.

Rear panel



To enjoy high-quality analogue sounds using DVD-Audio discs (DVD analogue 6-channel connections)

Rear panel

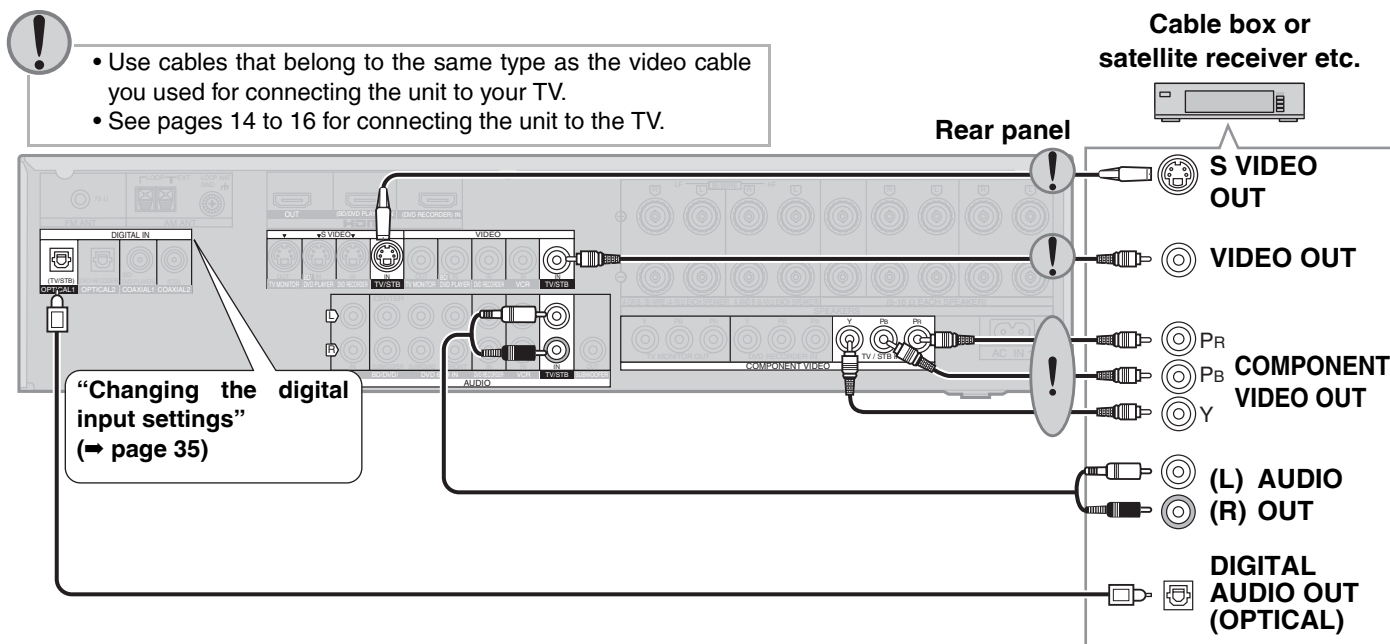


• See page 25 for playback instructions.

- Turn off all equipment before making any connections.
- Peripheral equipment sold separately unless otherwise indicated.
- To connect equipment, refer to the appropriate operating instructions.

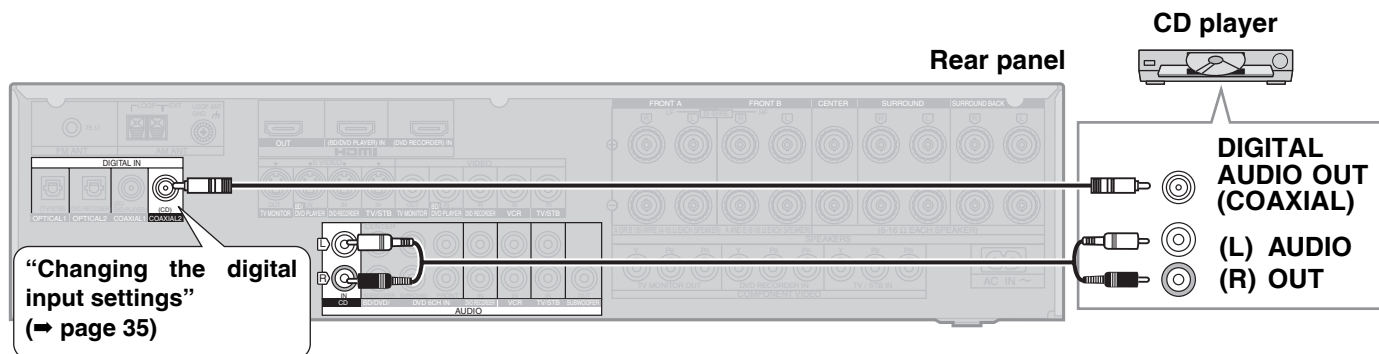
To connect the unit to a cable box or satellite receiver etc.

Make either digital audio (OPTICAL) output connections or analogue audio output connections according to your equipment and preference.



To connect the unit to a CD player

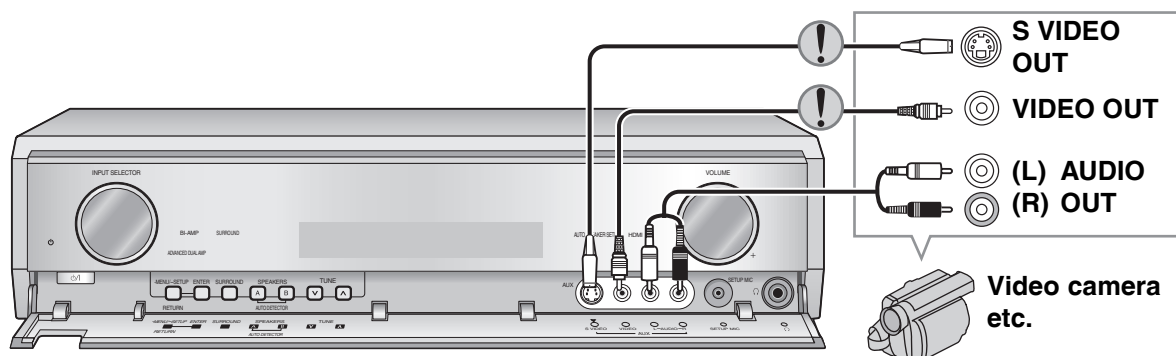
Make either digital audio (COAXIAL) output connections or analogue audio output connections according to your equipment and preference.



To connect the unit to a video camera or game player etc.

These terminals are convenient for equipment you want to connect only temporarily.

- ! Use a cable that belongs to the same type as the video cable you used for connecting the unit to your TV.**
See pages 14 to 16 for connecting the unit to the TV.



Connections

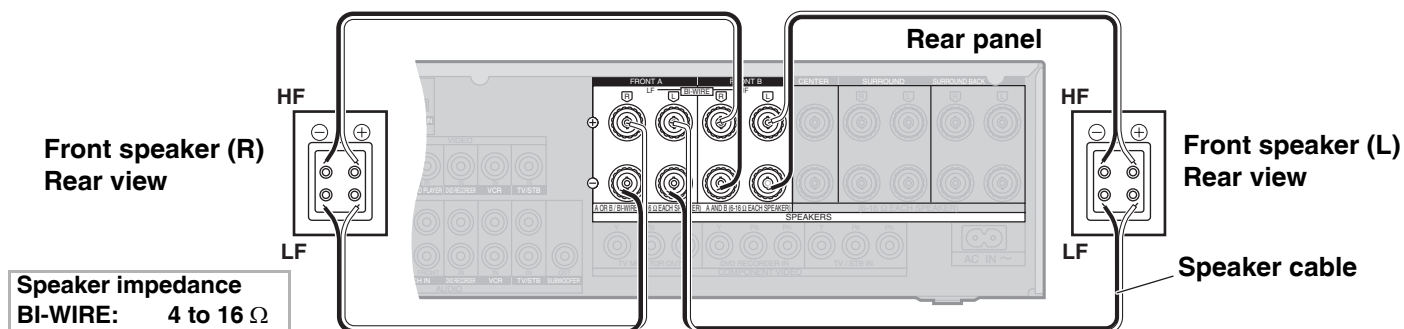
Connecting speakers

See pages 8 and 9 for placing and connecting your speakers according to their number.

To connect bi-wire speakers

Bi-wire speakers have separate connection terminals for high frequency and low frequency signals.

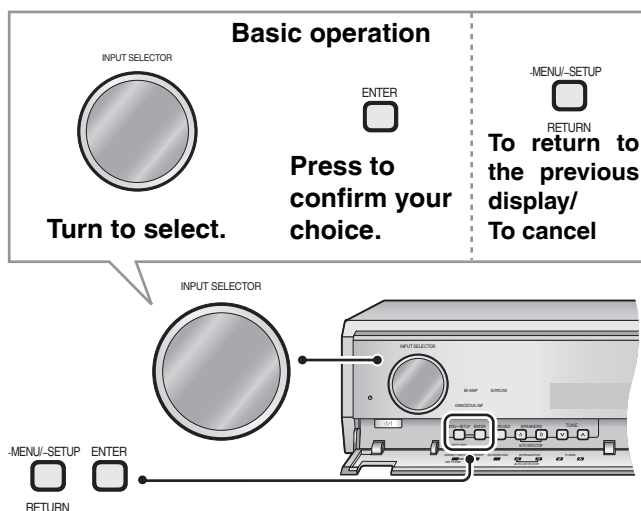
- Bi-wiring prevents high frequency and low frequency signals from interfering with each other. It offers playback in high audio quality.
- HF and LF stand for high frequency and low frequency, respectively.
- Make sure to select “**YES**” in “Making bi-wire setting” (below) when you connect the unit to bi-wire speakers. The speakers do not produce adequate sounds unless you make this setting.



Note

- Make sure to connect speakers' HF terminals with the unit's FRONT B terminals, and speakers' LF terminals with the unit's FRONT A terminals.
- Different amps for high frequency and low frequency signals produce BI-AMP stereo sounds that are clearer and higher in audio quality when you play on 2 channels sources containing analogue audio and 2-channel PCM signals (→ page 25).

Making bi-wire setting



1 Press and hold [-MENU/-SETUP, RETURN] for about 2 seconds to enter the SETUP.

2 Select and confirm the choice.

LP BI-WIRE

3 Select and confirm the choice.

YES

YES : When bi-wire speakers are connected
NO : When bi-wire speakers are not connected
Factory setting: **NO**

4 Select and finish the setting.

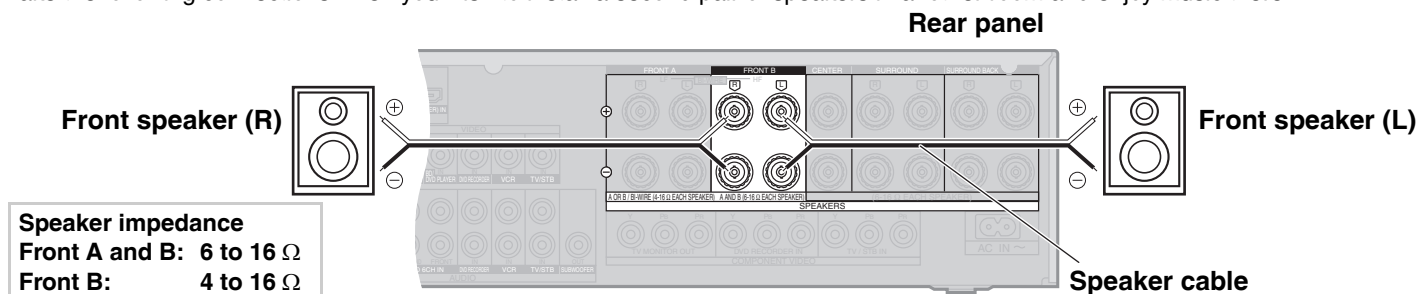
EXIT

Note

See “Making BI-AMP settings” (→ page 34) for detailed settings.

To connect a second pair of front speakers

Make the following connections when you wish to install a second pair of speakers in another room and enjoy music there.

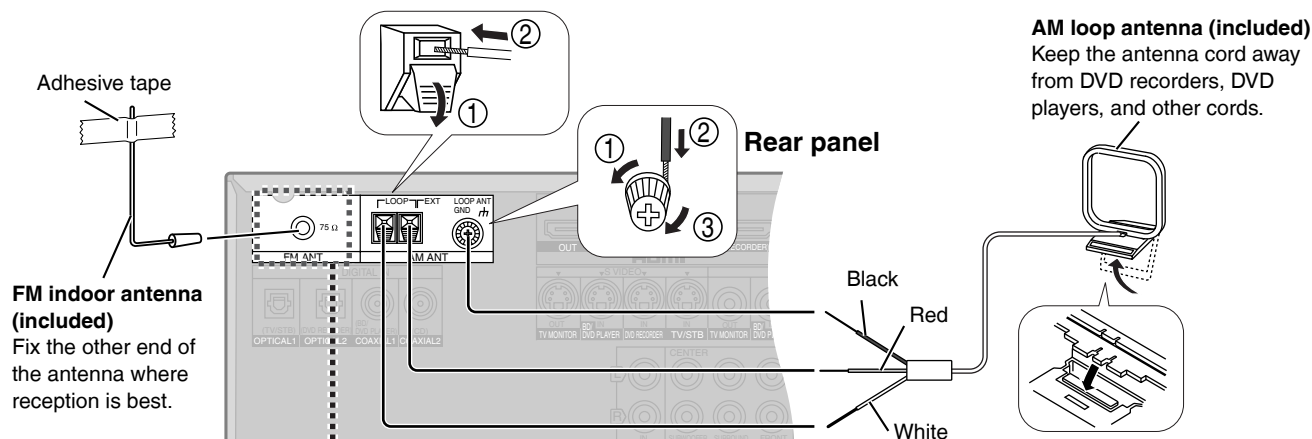


Note

- “Auto speaker setup using the setup microphone” (→ page 22) is unavailable for speakers connected to the FRONT B terminals.
- Select “**SPEAKERS B**” when you wish to enjoy sounds from speakers connected to the FRONT B terminals (→ page 25).
- If you select “**SPEAKERS B**” only, playback is 2-channel stereo. When a surround source is played, the sounds intended for all the speakers are played through the front left and front right speakers (**2CH MIX**).

Connecting antennas

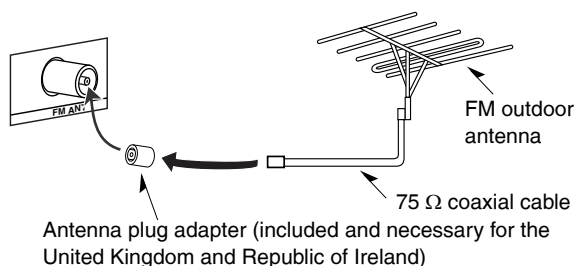
- Turn off all equipment before making any connections.
- Peripheral equipment sold separately unless otherwise indicated.
- To connect equipment, refer to the appropriate operating instructions.



FM outdoor antenna (not included)

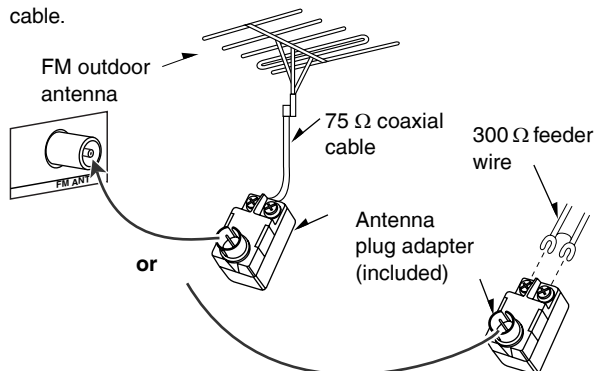
- Disconnect the FM indoor antenna.
- The antenna should be installed by a competent technician.

(For continental Europe, the United Kingdom and Republic of Ireland)



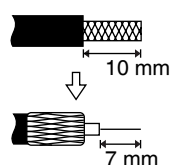
(For Australia and New Zealand)

Two types of wire commonly used for connection from the antenna are 300 Ω parallel feeder wire and 75 Ω coaxial cable. For best resistance to interference, use 75 Ω coaxial cable.

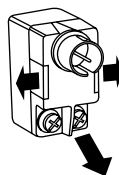


To connect a 75 Ω coaxial cable

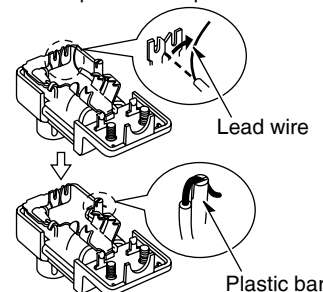
- ① Remove a piece of the outer vinyl insulator.
- ② Carefully pull the tabs apart to remove the cover.
- ③ Remove the lead wire and clamp it with the plastic bar.



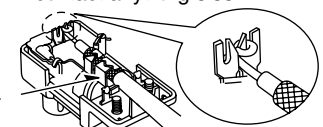
- ④ Install the coaxial cable. Clamp the cable conductor, and wind it on so that it does not contact anything else.



Clamp with pliers.

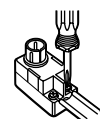


- ⑤ Attach the cover.



To connect a 300 Ω feeder wire

Loosen the screws, connect the wires, and tighten the screws to secure the connection.



Auto speaker setup using the setup microphone

Using the supplied setup microphone, you can measure such items as distance from the seating area, polarity and size and make adjustment for connected speakers.

Keep quiet during the auto speaker setup. Conversational voice, air-conditioning noise and small sounds made by winds may cause an error or produce an incorrect setting. Speakers output loud test signals during the auto speaker setup. Make sure to keep little children out of the room.

Preparation

- Mute the TV volume before starting the auto speaker setup.
- When the subwoofer is connected, make sure it is turned on. (There are subwoofer models that turn off automatically.) Set the subwoofer volume to the normal listening level.
- Select “Yes” in “Making bi-wire setting” (➡ page 20) when you connect the unit to bi-wire speakers.



➡ To cancel the setup halfway
Press [TEST, -AUTO].

1

To turn the unit on

Press

- The standby indicator “⏻” goes off when you turn the unit on.

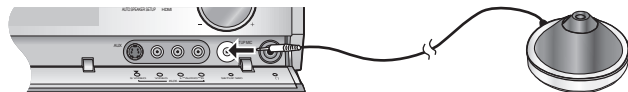
2

To select “SPEAKERS A”

Press (on the unit) to switch “A” on.

3

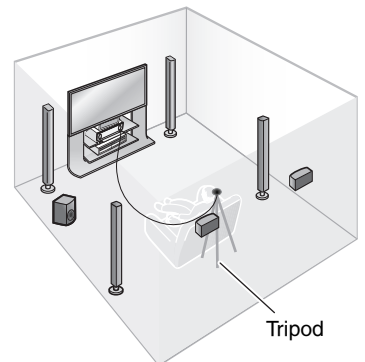
Connect the setup microphone.



4

Place the setup microphone.

- Place the setup microphone on a flat surface to stabilize it.
Examples: a level bench sharing the height with the seating area, a top section of a sofa etc.
- Set the microphone at seated ear height.
- Use a tripod (for camera and other products) for best results.



5

To start the setup

Press and hold (on the remote control) for 2 seconds.

- The “AUTO SPEAKER SETUP” indicator flashes.
- When all auto settings are made, “COMPLETE” appears and the “AUTO SPEAKER SETUP” indicator lights on.
- The auto speaker setup takes about 3 minutes to finish in the case of a 5.1-channel system.
- The unit cancels the auto speaker setup halfway through when you give a different operational instruction before the setup finishes.
- You can perform other operations after “COMPLETE” is displayed. The unit keeps the settings even if you move straight on to another operation.

6

To finish the setup

Press (on the remote control).

- The unit turns off and on in quick succession for completing the setup.
- Unplug the setup microphone when the setup is finished.

○○○ Note ○○○

- The setup microphone is sensitive to heat. Keep it away from direct sunlight and avoid placing it on top of the unit.
- These settings remain effective after the unit goes off.
- The setup microphone jack is for use with the setup microphone only. Do not connect other microphones.
- The volume may reach an extremely high level when you repeat the auto speaker setup.
When the auto speaker setup is finished, check the volume before starting playback.

Such factors as speaker types, room conditions and speaker placement may cause the unit to set speaker size, lowpass filter frequency and other items differently for the same type of speakers or produce settings that differ from the actual characteristics of respective speakers.

When sound from speakers seems odd, check the following settings. When you find undesirable settings, correct them manually.

- See “Setting speakers and their sizes”, “Setting distances” and “Setting the lowpass filter” (➡ page 33).

With the setup microphone, the unit automatically sets the following.

- STEP1** **DISTANCE** : The unit measures the distance between each speaker and the seating area and corrects the sound delay in the seating area. The maximum speaker distance for correcting the delay is 15 meters.
POLARITY : The unit checks the polarity of each speaker and, when the polarity is wrong, corrects it.
 Select “**CHECK NO**” in “Setting the unit against automatic polarity adjustment” (⇒ page 34) before starting the auto speaker setup when you do not want the unit to adjust polarity automatically.
- STEP2** **SIZE / FREQUENCY** : The unit measures acoustic characteristics of the room including speaker characteristics (size and lowpass filter settings) and adjusts them.
- STEP3** **LEVEL** : The unit checks the output level of each speaker and makes adjustment.

Error messages

When one of the following error messages appears, press [TEST, –AUTO] to cancel and perform the auto speaker setup again.

Message	Cause	Countermeasure
CONNECT MIC	• The setup microphone is not connected.	• Connect the setup microphone properly.
NO SIGNAL	• The setup microphone does not catch test signals.	• Check if the microphone is placed properly.
NOISY	• Loud noise is preventing measurement.	• Perform the auto speaker setup again when the room is quiet. • Turn off an air-conditioner and other equipment that are producing noise.
MEASURING ERROR	• A speaker is too far. • An error occurred from an unknown cause.	• Check speaker locations. • Perform the setup again.
CHECK CONNECTION TO SBL SPEAKER	• The right surround back speaker was detected, but the left surround back speaker was not detected.	• Connect to the left surround back speaker terminal when you connect only one surround back speaker. • Check the left surround back speaker's connections.
NEED TO CONNECT LS/RS SPEAKERS	• Surround back speakers were detected, but left and right surround speakers were not detected.	• Connect surround speakers as well when you connect surround back speakers.
CHECK CONNECTIONS TO LS/RS SPEAKERS	• Unable to detect one or both of the two surround speakers	• Check connections.
CHECK CONNECTIONS TO L/R SPEAKERS	• Unable to detect one or both of the two front speakers	• Check connections.
LOW SIGNAL	• Test signals from the speakers are too weak to allow accurate measurement with the microphone.	• Change the microphone location (height, direction etc.). • Check if there is any obstacle near a speaker that is blocking the test signals. • Set the subwoofer volume to the normal listening level.



Note

- You can also perform automatic speaker detection only (⇒ page 10).
- Speaker placement, speaker directions and other conditions may prevent correct setting.
- The unit sets the lowpass filter frequency at the value of the speaker capable of reproducing the lowest frequency signal among speakers judged as “SMALL”.
- When left and right speakers differ in size, they are set as “SMALL”.
- When surround speakers and surround back speakers differ in size, they are set as “SMALL”.
- Left and right front speakers are set as “**LARGE**” even if their size is “SMALL” when you perform the auto speaker setup without connecting the subwoofer.
- The connection status is set and the level is adjusted for the subwoofer.
- The unit does not detect or correct polarity of left and right front speakers when you select “**YES**” in “Making bi-wire setting” (⇒ page 20).
- HDAVI Control (⇒ page 13) does not work during the auto speaker setup.
- The auto speaker setup is unavailable while muting (⇒ page 29) is on.
- The unit sets at 15 meters the distance of speakers located more than 15 meters away from the seating area. The set distance is displayed as “**OVER**” (⇒ page 33).

- Speakers whose polarity was automatically adjusted are displayed with “–” such as “**L 3.0 –**” (⇒ page 33).
- Speaker settings made with the setup microphone are cancelled when you perform automatic speaker detection (⇒ page 10).



When the “**AUTO SPEAKER SETUP**” indicator is off after the auto speaker setup:

Auto speaker settings have been cancelled as a result of various setting changes.

Speaker size

- **LARGE**: Speakers that can sufficiently reproduce the bass range down to 20 Hz.
- **SMALL**: Speakers that do not satisfy the requirements for **LARGE** speakers.

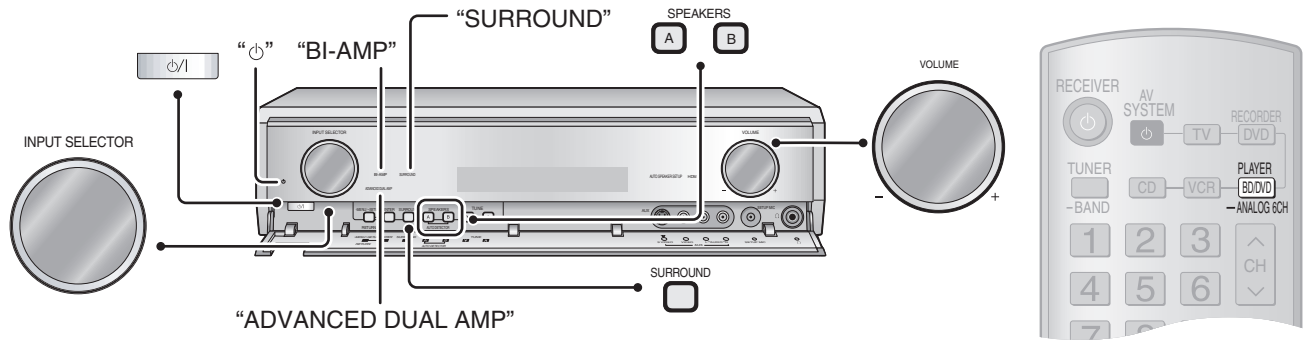
You can perform steps instructed in “Setting speakers and their sizes” (⇒ page 33) to change speaker sizes set automatically.

Lowpass filter

When the speaker size is “SMALL”, the unit cannot sufficiently reproduce the bass range.

You can set the lowpass filter frequency according to the playback frequency range and arrange the unit to output the missing bass range from the subwoofer.

Enjoying the Home Theater



1 To turn the unit on

Press

The "SURROUND" indicator lights on (factory setting).

- The standby indicator "⏻" goes off when you turn the unit on.

Note

Do not forget to perform speaker detection when you play a source with the unit for the first time or when you change the number of connected speakers (⇒ pages 10 and 22).

2 To select "SPEAKERS A"

Press to switch "A" on.



To select "SPEAKERS B"
Press [SPEAKERS B].
(⇒ page 25)

To use bi-wire speakers (⇒ page 20)

Press [SPEAKERS A] or [SPEAKERS B] to switch "A B" on.



To enjoy BI-AMP stereo sounds
See page 25.

3 To switch input sources

- Select the connected terminal when the names of the terminal and equipment you wish to use for playback do not match.

(e.g.)



TUNER FM → TUNER AM → CD → TV/STB

AUX ← VCR ← DVR ← BD/DVD

- When you select "DVR", "DVD RECORDER" scrolls across the display once.
- You can also select an input source using the remote control (⇒ page 5).



Turn

To use a DVD recorder with built-in VCR (⇒ page 17)

- To play a DVD: select "DVR"
- To play a video cassette: select "VCR"

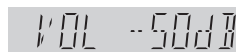
4 Play the selected input source.

To switch between 2-channel stereo playback and surround playback
Press [SURROUND].

5 To adjust the volume



Turn



Volume range:
-- dB (minimum),
-79dB to 0dB (maximum)

To finish the Home Theater

Be sure to reduce the volume and press to turn the unit to standby.

Digital signals this unit can play:

Dolby Digital (including Dolby Digital Surround EX), DTS (including DTS-ES and DTS 96/24) and PCM (⇒ page 37)

Note

- The unit memorizes whether [SURROUND] has been pressed on or off for each input source.
- The setting always switches from off to on when the input comes from a surround source in Dolby Digital, DTS or other formats.
- When you press [SURROUND] off while playing a surround source (excluding a DVD-Audio source that does not allow down-mixing), 2-channel mix (2CH MIX) activates. 2-channel mix is cancelled when you turn the unit off or when you switch input sources.
- The "SURROUND" indicator goes off when the sampling frequency for the input signal is higher than 96 kHz.

- The number of source channels appears on the display when a digital signal is input or input sources are switched. (Their number may not appear depending on the selected source.)



Subwoofer

Number of surround and surround back channels

Number of front and center channels

- The unit is compatible with linear PCM 8-channel surround signals decoded by the BD player and other equipment (up to 96 kHz/24 bit). See the operating instructions for equipment used for playback.

Using SPEAKERS B	Sound is output from the speakers connected to the FRONT B terminals on this unit. Press  to switch "B" on.  To turn off speakers connected to the FRONT A terminals Switch "A" on the display off by pressing [SPEAKERS A].
ADVANCED DUAL AMP	ADVANCED DUAL AMP activates automatically when you use 2-channel stereo playback or 5.1-channel playback. The "ADVANCED DUAL AMP" indicator stays on while this function is on. You can also set the ADVANCED DUAL AMP off (⇒ page 34).
BI-AMP	This function activates automatically when you play analogue audio sources or 2-channel PCM signals through bi-wire connections. Preparation - Connect bi-wire speakers (⇒ page 20). - Select "YES" in "Making bi-wire setting" (⇒ page 20). - Press [SURROUND] off (⇒ pages 12 and 24). - The "BI-AMP" indicator stays on while BI-AMP is at work. - Refer to "Making BI-AMP settings" (⇒ page 34) for detailed settings.
Playing DVD-Audio	Enjoying DVD-Audio sources through digital connections Connect the unit to a DVD recorder or DVD player using the HDMI cable (⇒ page 7) or a digital cable (COAXIAL1) (⇒ pages 14 and 15).
	Playing DVD ANALOG 6CH Preparation - Make analogue 6-channel connections (⇒ page 18). - Select "SPEAKERS A" or turn bi-wire speakers on (⇒ page 24). - Switch the input source to "BD/DVD" (⇒ page 24).  Press and hold until "DVD 6CH" is displayed.  When the unit is connected to a DVD recorder Playback is unavailable while the input source is "DVR". Make analogue 6-channel connections and switch the mode to "BD/DVD". - To cancel, press and hold until "BD/DVD" is displayed.
	Enjoying high quality 2-channel analogue sounds You can enjoy high quality stereo sound with 192 kHz 2-channel DVD-Audio. - Cancel the "DVD 6CH" setting. (above) - Set the input signal to "ANALOG" in "Setting input signals". (⇒ page 35)

Note **SPEAKERS B**

- Playback is in 2-channel stereo when you select "SPEAKERS B" only.
- When only "SPEAKERS B" is selected and the input source is surround, "**2CH MIX**" appears on the display.
- Selected speakers output sounds assigned to front 2 channels when you make DVD ANALOG 6CH connections.
- If you select "SPEAKERS B" only, the following are set automatically irrespective of settings selected in "Setting speakers and their sizes" (⇒ page 33).
Speaker size: "**LARGE**"
Subwoofer: "**NO**" (Bass is output from the front speakers.)
- Settings made through the auto speaker setup (⇒ pages 22 and 23) are cancelled.

ADVANCED DUAL AMP (⇒ page 37)

- The unit takes advantage of unused amps, and runs one speaker with 2 amps when this function is on. ADVANCED DUAL AMP offers you sounds that are clearer and higher in audio quality than those available in normal playback. In 2-channel stereo playback, 3 speaker amps drive front speakers. The operation is called the triple amp mode.
2-channel stereo playback: Front, surround and surround back speaker amps are used for driving front speakers (triple amp mode).
5.1-channel playback: Front and surround back speaker amps are used for driving front speakers (dual amp mode).

BI-AMP (⇒ page 37)

- The unit takes advantage of the front speaker and the surround speaker amps, and drives the speakers' high-frequency and low-frequency ranges separately when this function is on.
- ADVANCED DUAL AMP is available with BI-AMP. When combined, the two functions enhance clarity and audio quality of stereo sounds.
- When you make bi-wire setting (⇒ page 20), both BI-AMP and ADVANCED DUAL AMP take effect as long as overlap is possible. In such case, ADVANCED DUAL AMP activates in the dual amp mode.
Select "**OFF**" in "Cancelling BI-AMP (using the triple amp mode)" (⇒ page 34) when you wish to use the triple amp mode.
- You cannot use BI-AMP with analogue 6-channel connections for DVD-Audio sources.

Playing DVD-Audio

Make the following speaker settings on the DVD recorder or the DVD player. (They are normal factory settings for the DVD recorder and the DVD player.)

- Speaker size: "**LARGE**" for all speakers
- Speaker presence: present for all speakers
- Distance setting: 0 or an equal distance for all speakers

Listening to surround sound

You can add surround effects or create surround sound from 2-channel stereo sources.



Note

- Speaker output levels set with the setup microphone (➔ pages 22 and 23) apply to Dolby Pro Logic IIx, NEO:6 and SFC.
- Surround effects may be unavailable depending on sources.
- These settings remain effective after the unit goes off.
- The unit makes output through speakers according to the number of channels recorded in sources when you switch Dolby Pro Logic IIx, NEO:6, or SFC off.

Example: The unit makes output through front speakers, the center speaker, surround speakers, and the subwoofer when you play 5.1-channel sources. Surround back speakers go silent.

Dolby Pro Logic IIx

- Dolby Pro Logic IIx offers you surround playback of 2-channel stereo sources.
- The technology enables you to play 5.1-channel Dolby Digital and DTS sources on 7.1 channels (when two surround back speakers are connected to the unit) and on 6.1 channels (when only one surround back speaker is connected).
- The technology makes surround back channels available for the playback of Dolby Digital Surround EX sources.

Press to select one of the following modes.

(The modes switch each time you press the button.)

To cancel
Press



NEO:6

- NEO:6 offers you surround playback of 2-channel stereo sources.
- The technology enables you to play 5.1-channel Dolby Digital and DTS sources on 6.1 channels.

Press to select one of the following modes.

(The modes switch each time you press the button.)

To cancel
Press



SFC (Sound Field Control)

You can add presence and spread to surround sound according to your choice when you use SFC with Dolby Digital, DTS, PCM or analogue sources.

Use this mode when playing music.

(Music)

To cancel
Press

Press to select one of the following modes.

(The modes switch each time you press the button.)

You can also select each of the following modes by

pressing , and in succession.



Use this mode when playing movies.

(Movie)

To cancel
Press

Press to select one of the following modes.

(The modes switch each time you press the button.)

You can also select each of the following modes by

pressing , and in succession.



Dolby Pro Logic IIx	
MOVIE	This mode produces good effects when you play commercial film titles in the Dolby Surround format. Sounds assigned to surround back channels become stereo in playback when you connect two surround back speakers to the unit. Dolby Pro Logic IIx is in this mode in the factory setting.
MUSIC	Use this mode when playing music.
EX (Dolby Digital EX)	This mode produces good effects when you play commercial film titles recorded in the Dolby Digital Surround EX format. This mode is effective on sources containing surround channels only. Sounds assigned to surround back channels become monaural in playback when you connect two surround back speakers to the unit. • “ DIGITAL EX ” or “ EX ” replaces “ PL IIx ” on the display when you connect one surround back speaker.
GAME	You can play games with dynamic sounds in this mode. This mode is effective on 2-channel stereo sources. This mode is unavailable when surround and surround back speakers are unconnected (➡ pages 9, 10, 22 and 23) or when you set them as absent in “Setting speakers and their sizes” (➡ page 33).
NEO:6	
CINEMA	Use this mode when playing movies.
MUSIC	Use this mode when playing music.
SFC (Sound Field Control)	
LIVE	Imparts the reflection and spread of a large concert hall.
POP/ROCK	Best suited for dynamic sound such as pop and rock music.
VOCAL	Best suited to enhance vocals.
JAZZ	Recreates natural sound ambience and direction.
DANCE	Enjoy a dance hall like audio effect.
PARTY	This mode gives you a stereo impression wherever your listening position may be. Music played in the mode sounds like background music at parties.
DRAMA	Best suited for dialogues in drama movies.
ACTION	Best suited for action movies with impact.
SPORTS	Enjoy a feeling like being at a live sporting event.
MUSICAL	Enjoy a feeling like being at a live musical performance.
GAME	Enjoy games with greater audio impact.



Dolby Pro Logic IIx

Choices become “**EX**” or “**MUSIC**” when you connect one surround back speaker only.

NEO:6

- The “**CINEMA**” mode is available for 2-channel stereo Dolby Digital and DTS sources containing surround data. The “**MUSIC**” mode is available for the same sources containing no surround data.
- The subwoofer goes silent when you use NEO:6 on 2-channel stereo sources as long as all speakers have been set as “**LARGE**” in “Setting speakers and their sizes” (➡ page 33).

SFC (Sound Field Control)

- In the “**PARTY**” mode, when only one surround back speaker is connected and the center speaker is unused, the surround back speaker goes off.
The center speaker goes silent when you connect no surround back speaker to the unit.
- Sound may be distorted when the selected input source and SFC mode do not match.
In such cases, lower the effect level in “Adjusting the effect level” (➡ page 28) or select another mode through procedures instructed on page 26.

Remote controlling sound effects/convenient functions

See pages 26 and 27 for information about each mode.



Note

These settings remain effective after the unit goes off.

Adjusting Dolby Pro Logic IIx's "MUSIC" mode

You can use the following modes when the input source is 2-channel stereo.

DIMEN
(Dimension Control)

You can make up for differences in the output level of the front and surround speakers.

Press **EFFECT** to select "**DIMEN**", and press **-** **+** for adjustment.

Adjustment range: **-3** (More surround sound) to **+3** (More front sound)

Factory setting: **0**

C-WIDTH
(Center Width Control)

In this mode, you can play music more naturally by adjusting sounds assigned to front and center speakers as a whole.

Press **EFFECT** to select "**C-WIDTH**", and press **-** **+** for adjustment.

Adjustment range: **0** (Center becomes clearer) to **7** (Center becomes wider)

Factory setting: **3**

PANORAMA
(Panorama)

You feel like you are surrounded by music thanks to greater spread created by surround speakers.

Press **EFFECT** to select "**PANORAMA**", and press **-** **+** for selecting "**ON**" or "**OFF**".

Factory setting: **OFF**

Adjusting NEO:6's "MUSIC" mode

You can use the following modes when the input source is 2-channel stereo.

C-IMAGE
(Center Image Control)

In this mode, you can play music more naturally by adjusting sounds assigned to front and center speakers as a whole.

Press **EFFECT** to select "**C-IMAGE**", and press **-** **+** for adjustment.

Adjustment range: **0** (Center becomes clearer) to **5** (Center becomes wider)

Factory setting: **2**

Adjusting SFC (Sound Field Control)

Adjusting the output level

Press **LEVEL** to select a speaker, and press **-** **+** for adjustment.

C (Center), **RS** (Surround right), **SBR** (Surround back right), **SBL** (Surround back left) (**SB** when only one surround back speaker is connected), **LS** (Surround left):

Adjustment range: **-20dB** to **+10dB**

Factory setting: **0dB**

SUBW (Subwoofer):

Adjustment range: **---** (off), **MIN** (minimum), **1** to **29**, **MAX** (maximum)

Factory setting: **20**

Note

- You cannot adjust the output levels of speakers other than the subwoofer in the "**PARTY**" mode (⇒ pages 26 and 27).
- You cannot adjust speakers not connected (⇒ pages 9, 10, 22 and 23) and others set as absent in "Setting speakers and their sizes" (⇒ page 33).

Adjusting the effect level

Press **EFFECT**, and press **-** **+** for adjustment.

Adjustment range: **EFFECT 1** (minimum) to **EFFECT 10** (maximum)

Factory setting: **EFFECT 5**

Note

You cannot adjust the effect level in the "**PARTY**" mode (⇒ pages 26 and 27).

Adjusting speaker volumes

How speakers are displayed

- L** : Front left
C : Center
R : Front right
RS : Surround right
LS : Surround left
SBR : Surround back right
SBL : Surround back left
SB : Surround back
 (If you connect one surround back speaker)
SW (SUBW) : Subwoofer

Adjust speaker output to balance front speaker sounds with those from each of the other speakers in the seating area.

Make adjustment after detecting speakers automatically (⇒ page 10).

Preparation

Press [SPEAKERS A] on the unit to switch “**A**” on.
 (Press [SPEAKERS A] or [SPEAKERS B] to switch “**A** **B**” on when bi-wire speakers are connected.)



If you select “SPEAKERS B” only, the test signal will not be output.

1 Press

- A test signal is output from one speaker at a time for two seconds in the following order.

L → **C** → **R** → **RS** → **SBR** → **SBL** → **LS** → **SW**

L → **C** → **R** → **RS** → **SB** → **LS** → **SW**

(When you connect one surround back speaker)

- Speakers not connected (⇒ pages 9, 10, 22 and 23) or set as unconnected in “Setting speakers and their sizes” (⇒ page 33) do not output test signals.



2 Press to adjust the volumes of front speakers to the normal listening level.

3 Press to select a speaker for adjustment.

- Speakers switch in the following order each time you press the button.

C → **RS** → **SBR** → **SBL** → **LS** → **SUBW**

C → **RS** → **SB** → **LS** → **SUBW**

(When you connect one surround back speaker)

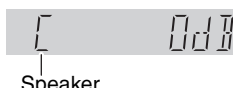
4 Press to adjust the volume of the selected speaker.

Repeat steps 3 and 4 to adjust the level of each speaker.

- Only the adjusted speaker produces the test signal in steps 3 and 4.
- Connected speakers start producing the test signal again in the above order 2 seconds after both steps.
- Press [TEST, -AUTO] to stop the test signal.



Volume range:
 -- dB (minimum),
 -79dB to 0dB (maximum)



Adjustment range:
 -20dB to +10dB

Factory setting: 0dB

SUBW only:
MIN (minimum) ↔ 1 to 29 ↔
MAX (maximum)

Factory setting: 20

Adjusting the subwoofer level

You can adjust the output level while playing sources. You can adjust the level according to your preference by thickening or thinning the ultra bass, for example.

Press to select a level.

- Select “---” to stop output.



Adjustment range:
 --- (off), **MIN** (minimum), 5, 10, 15,
 20, 25, **MAX** (maximum)

Factory setting: **SUBW 20**



- Sound can be distorted if you raise the volume while the subwoofer level is high. Reduce the subwoofer level if this occurs.
- Adjust the output level by taking steps described in “Adjusting speaker volumes” (above) when you wish to make detailed settings.

Silencing speakers temporarily

Press

- “**MUTING IS ON**” scrolls across the display while the volume is muted.
- Press the button again to cancel the operation.



Muting is cancelled when you turn the unit off or adjust the volume.

Dimming the display light (Dimmer)

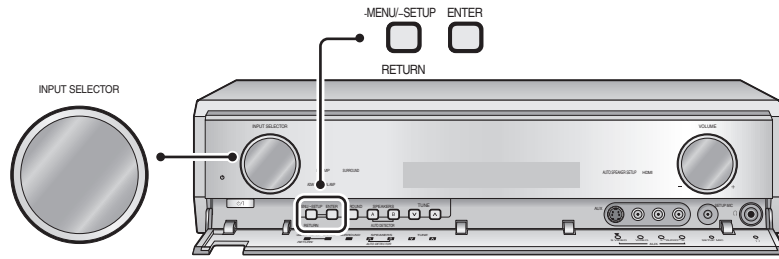
Press

- Press the button to dim the display. The light above [INPUT SELECTOR] and [VOLUME] goes off.
- Press the button again to cancel the operation.



Refer to page 31 for adjusting the brightness on the unit.

Sound effects/Convenient functions



How to set up

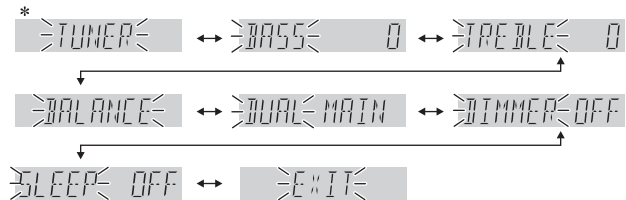
1 To enter the MENU

Press 
 RETURN

2 To select the item you wish to change

Turn  to select an item.

Press  for confirming the choice.



* "TUNER" appears only when "TUNER FM" or "TUNER AM" has been selected as the input source.

3 To change the setting

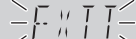
Turn  to change the setting.

Press  for confirming the choice.

4 To finish the setting

Press  several times to select "EXIT".

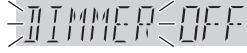
Press  for confirming the choice.



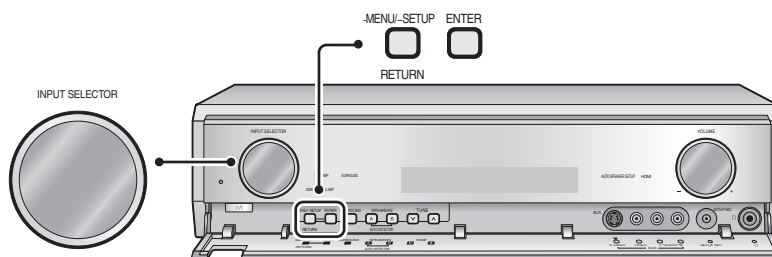
- The display returns to the original one.
- You can also select "EXIT" by turning [INPUT SELECTOR].

 To return to the previous display/To cancel

Press 
 RETURN

Adjusting the bass You can adjust the bass through this operation.	1 Select and confirm the choice.  2 Make adjustment and confirm the choice.  Adjustment range: -10 dB to +10 dB Factory setting: 0 dB
Adjusting the treble You can adjust the treble through this operation.	1 Select and confirm the choice.  2 Make adjustment and confirm the choice.  Adjustment range: -10 dB to +10 dB Factory setting: 0 dB
Balancing front speaker volumes You can adjust the balance of the front speakers.	1 Select and confirm the choice.  2 Make adjustment and confirm the choice.  L : Front left R : Front right The bar shows the standard balance. ○○○ Note ○○○ You cannot adjust volume balance when you use SFC's "PARTY" mode (→ pages 26 and 27).
Changing the audio output (Dual program) The unit allows you to switch dual audio signals in Dolby Digital and DTS formats.	"DUAL PRG" appears on the display when the unit receives dual audio signals. 1 Select and confirm the choice.  2 Select audio and confirm the choice.  MAIN : Main audio output SAP : Sub channel audio output M+S : Main and sub channel audio output Factory setting: MAIN
Adjusting the brightness of the display Dim the display for better viewing in a darkened room.	1 Select and confirm the choice.  2 Select a setting and confirm the choice.  Adjustment range: DIMMER 1 (bright) to DIMMER 3 (dim) Factory setting: OFF - The light above [INPUT SELECTOR] and [VOLUME] goes off when you make this adjustment. - Select "DIMMER OFF" to cancel.
Sleep timer The sleep timer can turn the unit off after a set time.	1 Select and confirm the choice.  2 Select the time and confirm the choice.  Times available for setting: 30, 60, 90, 120 (minutes) Factory setting: OFF - When this is set, "SLEEP" appears on the display. To check the setting: After setting the time, you can check the remaining time using step 1. To change a setting: Repeat the procedure from the beginning. ○○○ Note ○○○ Sleep timer is for this unit only.

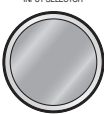
Settings



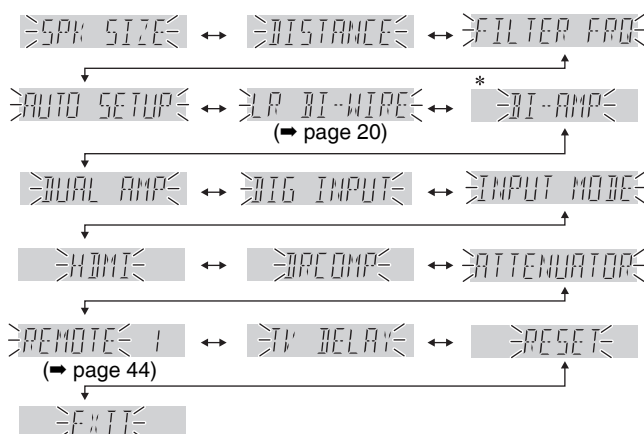
How to set up

1 To enter the SETUP
Press and hold  for about 2 seconds.

2 To select the item you wish to change

Turn  to select an item.

Press  for confirming the choice.



*BI-AMP settings appear on the display and become selectable only when you set bi-wire speakers (➡ page 20).

3 To change the setting
Turn  to select an item.

Press  for confirming the choice.

- You must repeat these steps several times depending on settings.

4 To finish the setting
Press  several times to select “EXIT”.

Press  for confirming the choice.

EXIT

- The display returns to the original one.
- You can also select “EXIT” by turning [INPUT SELECTOR].

 To return to the previous display/To cancel

Press 
RETURN

Setting speakers and their sizes

- You can set connected speakers and their sizes manually.
- Different ranges are played by different speakers. Size setting is necessary for reproducing sources, particularly their bass section, completely.

1 Select and confirm the choice.

SPK SIZE

2 Select a speaker for setting and confirm the choice.

SUBW YES

3 Change a setting and confirm the choice.

SUBW NO



To go back to step 1

Select and confirm the choice.

RETURN



When you set the front speakers (LR) as "LARGE"

- The subwoofer also makes audio output in the bass range when you perform stereo playback of analogue and PCM sources.
- The subwoofer sends out only the LFE (low frequency effect channel) signal contained in 2-channel Dolby Digital or DTS sources when you play them in stereo.

SUBW: Subwoofer
LR: Front speakers
C: Center speaker
S: Surround speakers
SB: Surround back speakers

SUBW: **NO**; unconnected **YES**; connected

LR, C, S:

NONE;

For speakers you haven't connected (center or surround only).

SMALL;

For speakers that cannot adequately reproduce the bass range. This setting is sufficient for most speakers if you are using a subwoofer.

LARGE;

For speakers that can sufficiently reproduce the bass range down to 20 Hz.

SB:

NONE;

For speakers you haven't connected.

1-SPK;

If you connect one surround back speaker.

2-SPK;

If you connect two surround back speakers.

Factory settings:

LR, C, S; **SMALL**
SUBW; **YES**
SB; **2-SPK**

Note

- Set the lowpass filter frequency according to frequencies available for playback when speakers are set as "SMALL". The factory setting is 80 Hz. (below)
- The following are set automatically.
 When you set "LR" to "SMALL", "SUBW" is set to "YES".
 When you set "SUBW" to "NO", "LR" is set to "LARGE".
- "SB" does not appear when "S" is set to "NONE".
- The "SB" size becomes the "S" size because the unit does not offer "SB" size setting.
- When you change the number of connected speakers, settings made with the setup microphone are cancelled. (→ pages 22 and 23)

Setting distances

- By adjusting the distance from each speaker (except the subwoofer) to the seating area, the sound delay time is automatically adjusted so that sound reaches the listener at the same time.

1 Select and confirm the choice.

DISTANCE

2 Select a speaker for setting and confirm the choice.

L 3.0 m

3 Select a distance and confirm the choice.

L 3.0 m

L: Front left **R**: Front right
C: Center **LS**: Surround left
RS: Surround right
SBL: Surround back left
SBR: Surround back right

Adjustment range: **0.5 to 15.0 m**

This unit is adjusted at 0.1 meter intervals.

Factory settings: **L, R**; **3.0 m**
C; **3.0 m**
LS, RS; **1.5 m**
SBL, SBR; **1.5 m**

Note

- Speakers whose polarity was automatically adjusted through the auto speaker setup using the setup microphone are displayed with "-" such as "L 3.0 -".
- When the speaker distance measured through the auto speaker setup (→ pages 22 and 23) exceeds 15 meters, the distance is displayed as "OVER".

Setting the lowpass filter

- If the speaker sizes (above) are set to "SMALL", make this setting.
- The unit cannot reproduce the entire bass range when speakers are set as "SMALL". You can arrange the unit to provide missing bass sounds through the subwoofer by setting the lowpass filter frequency according to frequencies available for playback.

1 Select and confirm the choice.

FILTER FREQ

2 Select the lowpass filter frequency and confirm the choice.

100

Lowpass filter frequency for sending the bass range to the subwoofer:

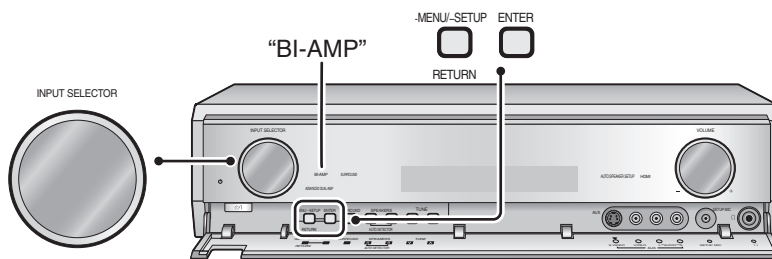
80, 100, 120, 140, 160, 180, 200 (Hz)

Factory setting: **80 (Hz)**

Note

The setting made through these steps applies to all speakers set as "SMALL".

Settings



See page 32 for receiver operations.

Changing auto speaker settings

- 1) Among speaker settings made with the setup microphone, you can return polarity and frequency to factory settings. (The "AUTO SPEAKER SETUP" indicator goes off when you perform this operation.)
- 2) The unit judges polarity of certain properly connected speakers as opposite. When this happens, set the unit against automatic polarity adjustment and prevent polarity reversal.

1) To return speakers to factory settings

1 Select and confirm the choice.

AUTO SETUP

2 Select and confirm the choice.

DEFAULT

3 Select and confirm the choice.

YES

- To cancel, press "NO".

YES :
For returning to factory settings
NO :
For keeping auto settings

2) Setting the unit against automatic polarity adjustment

1 Select and confirm the choice.

AUTO SETUP

2 Select and confirm the choice.

POLARITY

3 Select and confirm the choice.

CHECK NO

CHECK YES :
Normal auto speaker setup
CHECK NO :
No automatic polarity adjustment

Making BI-AMP settings

- BI-AMP settings appear on the display and become selectable only when you set bi-wire speakers (→ page 20).
- 1) You can drive speakers with front, surround and surround back speaker amps instead of using BI-AMP (triple amp mode).
 - 2) You can adjust HF (high frequency) and LF (low frequency) output balance of the bi-wired speakers.
 - 3) You can reduce the delay time due to the difference in size of the HF and LF units.

1) Cancelling BI-AMP (using the triple amp mode)

1 Select and confirm the choice.

BI-AMP

2 Select and confirm the choice.

FUNCTION

3 Select and confirm the choice.

OFF

- The "BI-AMP" indicator goes off when the unit enters the triple amp mode.

AUTO :
When using BI-AMP
OFF :
When not using BI-AMP (when using the triple amp mode)
Factory setting : **AUTO**

2) Adjusting the balance

1 Select and confirm the choice.

BI-AMP

2 Select and confirm the choice.

BALANCE

3 Make adjustment and confirm the choice.

LF HF

The bar shows the standard balance.

LF : Low frequency
HF : High frequency

3) Correcting the HF and LF difference

(Side view of a speaker in cross section)



Difference

1 Select and confirm the choice.

BI-AMP

2 Select and confirm the choice.

HF DELAY

3 Make adjustment and confirm the choice.

DELAY 0cm

Adjustment range:
0 to 30 cm
You can select differences at 1 cm intervals.
Factory setting: **0 cm**

Setting ADVANCED DUAL AMP off

1 Select and confirm the choice.

DUAL AMP

2 Select and confirm the choice.

OFF

AUTO :
Advanced dual amp is on
OFF :
Advanced dual amp is off
Factory setting: **AUTO**

See page 32 for receiver operations.

Changing the digital input settings

- Change these settings to suit the connections you have made to the digital input terminals.
- You can only allocate one piece of equipment per terminal.
Example: “**OPT 1**” becomes the only digital terminal you can use for connecting the DVD player to the unit when you change the DVD setting to the terminal.

1 Select and confirm the choice.

DIG INPUT

2 Select the equipment connected to the digital input terminal and confirm the choice.

TV OPT1

3 Change the digital input setting and confirm the choice.

TV OPT1

Repeat steps 2 and 3 to change settings.

TV: TV
DVR: DVD recorder
DVD: DVD player
CD: CD player

Factory setting:

TV; **OPT1** (OPTICAL1)
DVR; **OPT2** (OPTICAL2)
DVD; **COAX1** (COAXIAL1)
CD; **COAX2** (COAXIAL2)

Setting input signals

- You can fix the signal type (digital, analogue or PCM) supplied by such equipment as the DVD recorder and the DVD player or make the unit identify the input signal type.
- Select “**AUTO**” when it is not necessary to fix the signal.

1 Select and confirm the choice.

INPUT MODE

2 Select the equipment connected to the digital input terminal and confirm the choice.

TV AUTO

3 Select the method for identifying input signals and confirm the choice.

TV AUTO

Repeat steps 2 and 3 to change settings.

PCM FIX mode

- In rare cases, the unit may have trouble recognizing the digital signals on discs.
- Use this mode when, for example, the beginning of a playing CD track is cut off.
- You do not need to set the mode when playback is normal.
- When PCM FIX mode is on, the unit cannot process other signals. Cancel the mode when noise occurs.

TV: TV
DVR: DVD recorder
DVD: DVD player
CD: CD player

AUTO:

Automatic identification of digital and analogue signals (HDMI takes priority when the input signal is digital.)

ANALOG:

Fixes the input signal to analogue.

DIG:

Fixes the input signal to digital.

PCMFIX:

Fixes the input signal to PCM.

Factory setting:

TV, DVR, DVD, CD; **AUTO**

Note

- “**DIGITAL INPUT**” stays on the display when you fix the input signal as digital.
- “**PCM**” appears on the display when you set the input signal as “**PCMFIX**”.
- “**PCM FIX**” flashes on the display when the unit is in the PCM FIX mode and a non-PCM source is input through digital (OPTICAL or COAXIAL) connections.

Reducing standby power consumption (power saving standby mode)

1 Select and confirm the choice.

HDMI

2 Select and confirm the choice.

STANBY ON

3 Select and confirm the choice.

STANBY OFF

OFF:

When you wish to reduce standby power consumption

ON:

When you activate the standby through function (standby power consumption becomes 0.9 W in this setting)

Factory setting: **ON**

Note

When you select “**OFF**”, the following becomes applicable.

- Standby power consumption becomes 0.45 W.
- Standby through with HDMI connections (➡ page 7) does not work.
- HDAVI Control (➡ page 13) is cancelled (when the unit is off).

Setting the unit against HDAVI Control

- You can set the unit against HDAVI Control when compatible TV (VIERA) and DVD recorder (DIGA) are connected.

1 Select and confirm the choice.

HDMI

2 Select and confirm the choice.

CTAL ON

3 Select and confirm the choice.

CTAL OFF

OFF:

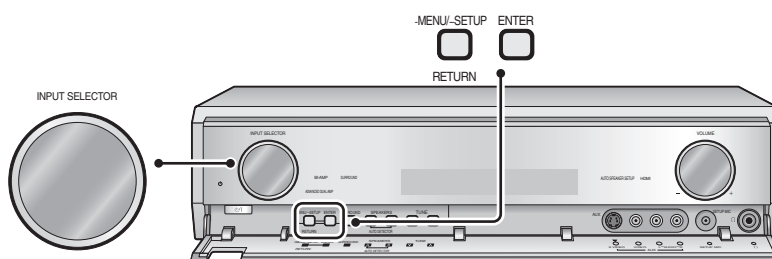
When not using HDAVI Control

ON:

When using HDAVI Control

Factory setting: **ON**

Settings



See page 32 for receiver operations.

Listening clearly at low volume

- This function compresses the dynamic range of Dolby Digital contents.
- Without affecting the sound field, the function makes spoken lines easier to catch at low volume by reducing the difference between the maximum and minimum sounds created by audio signals. This convenient function allows you to enjoy commercial sources late at night when you cannot produce big sounds.

1 Select and confirm the choice.

▷ DRCOMP ◁

2 Select a setting and confirm the choice.

▷ STANDARD ◁

○○ Note ○○

This function does not work when disc data does not support it.

OFF :

The software is played with the original dynamic range

STANDARD :

The level recommended by the producer of the software for household viewing

MAX :

The maximum allowable compression (recommended for night viewing)

Factory setting: **OFF**

Switching the attenuator

- Switch the attenuator on when sounds become distorted while playing an analogue input source and the sign “OVERFLOW” appears on the display.

1 Select and confirm the choice.

▷ ATTENUATOR ◁

2 Select and confirm the choice.

▷ ON ◁

- To cancel, select “OFF”.

OFF :

For switching the attenuator off

ON :

For switching the attenuator on

Factory setting: **OFF**

Adjusting audio timing to video timing

- Adjust audio timing to video timing by delaying audio output by 40 msec or so when pictures arrive after sounds.

1 Select and confirm the choice.

▷ TV DELAY ◁

2 Select and confirm the choice.

▷ ON ◁

OFF : Normal setting

ON : Setting for delaying audio output

Factory setting: **OFF**

RESET (factory settings)

- Re-enter settings to your liking when necessary.

1 Select and confirm the choice.

▷ RESET ◁

2 Select and confirm the choice.

▷ RESET YES ◁

- To cancel, select “NO”.

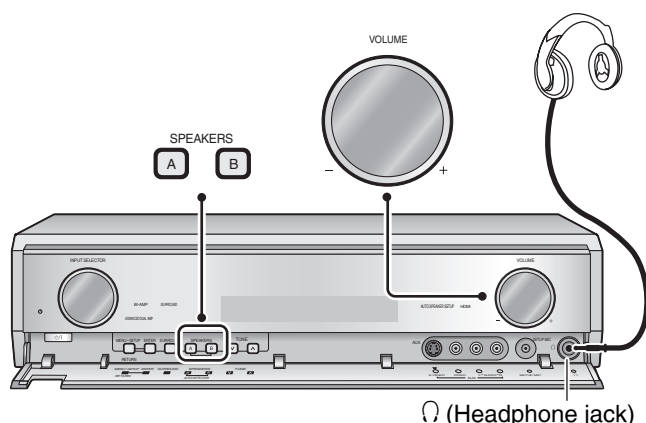
YES : Choice for resetting

NO : Choice against resetting

○○ Note ○○

When you select “YES”, the input source becomes TUNER (preset channel 1). Preset radio stations will not be erased.

Using headphones



1 Press [SPEAKERS A] and [SPEAKERS B] to switch all speakers off.

2 Lower the volume by turning [VOLUME, -, +] and connect headphones to the unit.

Plug type: ø 6.3 mm stereo standard plug

3 Adjust the volume by turning [VOLUME, -, +].

○○ Note ○○

- Avoid listening for prolonged periods of time to prevent hearing damage.
- Playback channels become two when you switch all speakers off. The 2-channel mix (2CH MIX) function activates automatically when you play a surround source. (Excluding DVD-Audio sources that do not allow down-mixing.)
- The DVD ANALOG 6CH (⇒ page 25) goes off and front two channels make audio output when you play sources through analogue 6-channel connections (⇒ page 18).

Audio signals and amp mechanism

Digital signals this unit can play

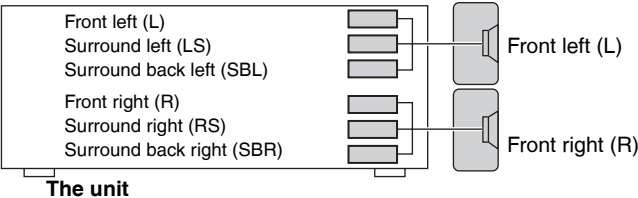
Dolby Digital (including Dolby Digital Surround EX)	This is the digital surround system developed by Dolby Laboratories. Dolby Digital Surround EX adds a surround back channel to the traditional 5.1-channel format of Dolby Digital. This creates a sound with greater presence.		DVD etc.
DTS (including DTS-ES and DTS 96/24)	This is the digital surround system developed by DTS (Digital Theater Systems, Inc.). DTS-ES adds a surround back channel to the traditional 5.1-channel format of DTS. This creates a sound with greater presence. DTS 96/24 provides 96 kHz sound at up to 24 bits. The 96 kHz/24 bit high frequency sounds are played through multiple channels.		DVD etc.
PCM	This unit's DIGITAL IN COAXIAL1 terminal can play up to 192 kHz and the other DIGITAL IN terminals can play up to 96 kHz. Frequencies appear on the display when the unit receives input signals transmitted at the frequencies of 88.2 kHz, 96 kHz, 176.4 kHz, and 192 kHz.		CD, DVD-Audio etc.

Audio signal displays

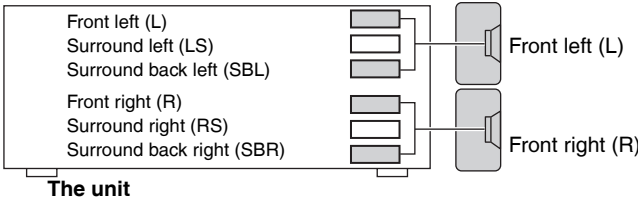
			
DIGITAL:	Dolby Digital decoder is being used.	PL II :	The display informs Dolby Pro Logic IIx (the Dolby Pro Logic II decoder) is used on 2-channel stereo sources when surround back speakers are absent.
DIGITAL EX:	Dolby Digital Surround EX decoder (Dolby Pro Logic IIx decoder) is being used when the input signal is Dolby Digital 5.1-channel or Dolby Digital Surround EX. (Displayed only when you connect one surround back speaker.)	DTS:	DTS decoder is being used.
EX:	Dolby Digital Surround EX decoder (Dolby Pro Logic IIx decoder) is being used when the input signal is DTS 5.1-channel. (Displayed only when you connect one surround back speaker.)	DTS 96/24:	DTS 96/24 decoder is being used.
PL IIx:	Dolby Pro Logic IIx decoder is being used.	DTS-ES:	DTS-ES discrete or matrix decoder is being used.
		NEO:6:	DTS NEO:6 matrix decoder is being used.
		SFC:	SFC matrix function is being used.

ADVANCED DUAL AMP (⇒ page 25)

■ Stereo playback

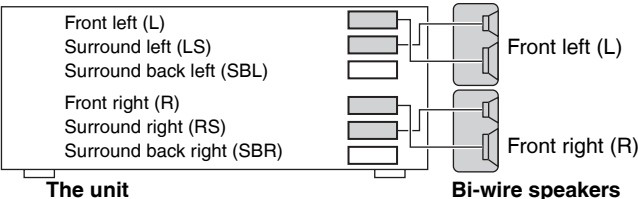


■ 5.1-channel surround playback

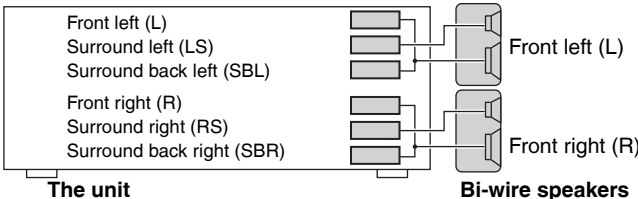


BI-AMP (⇒ page 25)

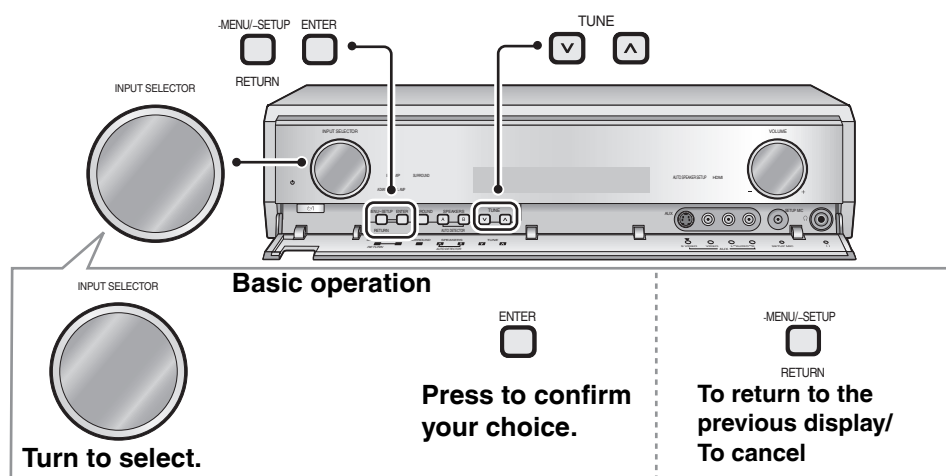
■ BI-AMP



■ BI-AMP and ADVANCED DUAL AMP



The radio



Manual tuning

(Using the remote control)

- 1 To use the radio tuner
Press -BAND
- 2 To select "TUNER FM" or "TUNER AM"
Press and hold for 2 seconds.
FM ↔ AM
- 3 To enter the station frequency (direct tuning)
Press

e.g. FM 107.90 MHz, Press [DIRECT TUNING, DISC] → [1] → [0] → [7] → [9] → [0]

- If you do not press a button while the cursor is flashing, the display returns to the frequency being received.
- If the frequency has not been input correctly, "ERROR" will be displayed.

(Using the unit)

- 1 To select "TUNER FM" or "TUNER AM"
Turn
- 2 To tune to the station
Press

Automatic tuning

Hold down [TUNE ∨ or ∧] until the frequency begins to scroll. Tuning stops when a station is found. (Tuning may stop if there is interference.)

- "TUNED" is displayed when a station is tuned.
- "ST" is displayed when a stereo FM broadcast is tuned.



Note

Improving reception

DVD recorders and DVD players can interfere with radio reception. Turn the DVD recorder and the DVD player off or move them further away from the AM loop antenna if this occurs.

AM allocation

If the correct AM frequency cannot be tuned in, change the frequency step to suit your area.

Preparation Press [-MENU/-SETUP, RETURN] to enter the MENU.

- 1 Select "TUNER" and confirm the setting.
- 2 Select "AM STEP" and confirm the setting.
- 3 Select "9" or "10" and confirm the setting.
Factory setting: AM STEP 9
- 4 Press [-MENU/-SETUP, RETURN] twice to select "EXIT" and press [ENTER].

Preset tuning

Presetting stations

■ Auto presetting

1 Tune to the frequency where you want to begin presetting. (⇒ page 38)

Set the channel reception to FM 87.50 MHz or AM 522 kHz (9 kHz steps), AM 530 kHz (10 kHz steps) if you want automatic presetting to start from the lowest frequency.

Preset channels that are automatically assigned by this unit are:

FM: 1 to 30

AM: 21 to 30

Preset the FM stations first. If the AM stations are preset before the FM stations, they will be erased when the FM stations are preset.

2 Press to enter the MENU.

3 Select “*TUNER*” and confirm the setting.

4 Select “*AUTO MEMO*” and confirm the setting.

5 Select “*START*” and press [ENTER].

Select “*CANCEL*” to cancel.

- During automatic presetting, the memory indicator () flashes and the frequency scrolls. The memory indicator and channel number are displayed for a second when a station is preset.
- The last station to be preset is displayed when presetting finishes.
- Frequencies may not be preset correctly when broadcast waves are too strong or too weak. In such cases, carry out presetting manually.

■ Manual presetting

1 Tune to the station you want to preset. (⇒ page 38)

2 Press to enter the MENU.

3 Select “*TUNER*” and confirm the setting.

4 Select “*MEMORY*” and confirm the setting.

5 Select a channel number and press [ENTER].

“*STORED*” is displayed.

- To continue presetting, press [TUNE ∨ or ∧] to tune another station from step 1.

6 Press [-MENU/-SETUP, RETURN] twice to select “*EXIT*” and press [ENTER].

- FM stations can also be preset in the MONO mode (below).

Listening to preset stations

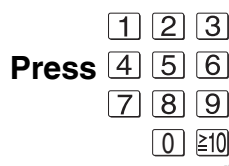
(Using the remote control)

■ Select the channel.



- Hold down the button to change channels faster.

■ Press the numbered buttons to select the channel.



To select a two digit number
e.g. 21: [≥10, -/--] → [2] → [1]

(Using the unit)

1 Press to enter the MENU.

2 Select “*TUNER*” and confirm the setting.

3 Select “*TUNE MODE*” and confirm the setting.

4 Select “*PRESET*” and confirm the setting.

5 Press [-MENU/-SETUP, RETURN] twice to select “*EXIT*” and press [ENTER].

6 Press to select the channel.

- Hold down the button to change channels faster.

- Select “*MANUAL*” in step 4 when you wish to perform manual tuning (⇒ page 38).

Reducing excessive noise

Select if noise is excessive during radio reception.

Preparation Press [-MENU/-SETUP, RETURN] to enter the MENU.

■ During FM stereo reception

You can improve FM reception by switching reception to monaural.

1 Select “*TUNER*” and confirm the setting.

2 Select “*FM MODE*” and confirm the setting.

3 Select “*MONO*” and confirm the setting.

- When this is set, “*MONO*” appears on the display.
- Select “*AUTO*” to cancel.

4 Press [-MENU/-SETUP, RETURN] twice to select “*EXIT*” and press [ENTER].

■ During AM reception

When there is a lot of noise interference with an AM broadcast, try switching to this mode.

1 Select “*TUNER*” and confirm the setting.

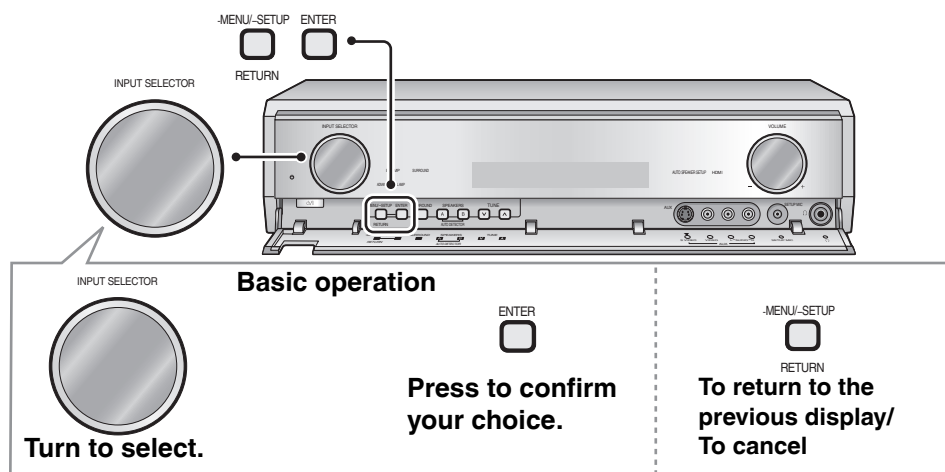
2 Select “*BEAT PROOF*” and confirm the setting.

3 Select “*MODE 1*” or “*MODE 2*” and confirm the setting.

Factory setting: *MODE 1*

4 Press [-MENU/-SETUP, RETURN] twice to select “*EXIT*” and press [ENTER].

RDS broadcasts



PTY displays	
NEWS	News
AFFAIRS	Current affairs
INFO	Information
SPORT	Sport
EDUCATE	Education
DRAMA	Drama
CULTURE	Culture
SCIENCE	Science
VARIED	Varied
POP M	Pop music
ROCK M	Rock music
M. O. R. M	Middle-of-the-road Music
LIGHT M	Light classical
CLASSICS	Serious classical
OTHER M	Other music
WEATHER	Weather information
FINANCE	Finance
CHILDREN	Children
SOCIAL A	Social affairs
RELIGION	Religion
PHONE IN	Phone in
TRAVEL	Travel
LEISURE	Leisure
JAZZ	Jazz music
COUNTRY	Country music
NATIONAL	National music
OLDIES	Oldies
FOLK M	Folk music
DOCUMENT	Documentary
TEST	Test broadcast
ALARM	Emergency announcement

Changing the display

This unit can display the text data transmitted by the radio data system (RDS) available in some areas.

“RDS” lights while RDS signals are being received.

- RDS displays may not be available if reception is poor.

- 1 Press [-MENU/-SETUP, RETURN] to enter the MENU.
- 2 Select “TUNER” and confirm the setting.
- 3 Select “RDS DISP” and confirm the setting.
- 4 Select the display mode and confirm the setting.

FREQUENCY : Frequency display

PS DISP : Program service, the station name

PTY DISP : Program type

Factory setting: **PS DISP**

- “PS” appears on the display when you select “PS DISP”.
“PTY” appears when you select “PTY DISP”.

- 5 Press [-MENU/-SETUP, RETURN] twice to select “EXIT” and press [ENTER].

Remote controlling a TV or DVD recorder etc.

Besides this unit, you can operate a Panasonic TV, DVD recorder, DVD player, VCR or CD player (excluding certain models) using the supplied remote control. See respective equipment's operating instructions for detailed operations. You may need to enter a code to operate some equipment (➡ page 44).

Aim the remote control at the equipment you wish to operate.



Remote controlling a TV	
To switch the unit's input to "TV/STB"/ To switch the remote control to the TV operation mode	TV Do not forget to press this before operating a TV.
To turn the TV on or off	AV SYSTEM
To switch the TV's input mode (TV/video)	TV/AV
To adjust the TV volume	TV
To select a channel (When you make a selection in rising or falling order)	CH
To select a channel (When you select a channel directly)	1 2 3 4 5 6 7 8 9 0 ≥ 10

Remote controlling a VCR	
To switch the unit's input to "VCR"/ To switch the remote control to the VCR operation mode	VCR Do not forget to press this before operating a VCR.
To turn the VCR on or off	AV SYSTEM
To start playback	PLAY
To fast forward/rewind a tape	SLOW/SEARCH
To pause	PAUSE
To select a channel (When you make a selection in rising or falling order)	CH
To select a channel (When you select a channel directly)	1 2 3 4 5 6 7 8 9 0 ≥ 10
To stop playback	STOP

○○○ **Note** ○○○

When you operate a DVD recorder with built-in VCR, press [DRIVE SELECT] to select VCR.

Remote controlling a TV or DVD recorder etc.

Aim the remote control at the equipment you wish to operate.



Remote controlling a DVD recorder

To switch the unit's input to "DVR"/ To switch the remote control to the DVD recorder operation mode	RECORDER DVD Do not forget to press this before operating a DVD recorder.
To turn the DVD recorder on or off	AV SYSTEM
To start playback	PLAY
To skip a track or chapter	SKIP
To search through the disc	SLOW/SEARCH
To play in slow-motion	PAUSE SLOW/SEARCH
To show the direct navigator (or the top menu)	TOP MENU DIRECT NAVIGATOR
To show a sub menu	SUB MENU S
To show the FUNCTIONS window (while stopped)	FUNCTIONS
To return to the previous screen	RETURN
To select an item Press to select after pressing [DIRECT NAVIGATOR, TOP MENU], [S, SUB MENU], or [FUNCTIONS].	
To confirm the selected item	ENTER
To select a track or chapter directly • Some of the models require you to press [ENTER] to confirm after pressing number buttons.	1 2 3 4 5 6 7 8 9 0 ≥10
To pause	PAUSE
To move forward or backward frame by frame	PAUSE
To skip 30 seconds forward	MANUAL SKIP
To switch DVD recorder drives (HDD, DVD drive, and SD drive etc.)	DRIVE SELECT
To select a channel (When you make a selection in rising or falling order)	↑ CH ↓
To select a channel (When you select a channel directly)	1 2 3 4 5 6 7 8 9 0 ≥10
To stop playback	STOP

✎ When operating a Panasonic DVD recorder using the supplied remote control

Change the control setting on the supplied remote control to match the DVD recorder's remote control mode.

Preparation Confirm the DVD recorder's remote control mode in its operating instructions.

- 1 Press [DVD RECORDER].
- 2 Press and hold [ENTER] together with [1], [2], or [3] for 2 seconds or longer.
 - [Mode 1], [Mode 2], or [Mode 3] is set on the remote control according to the pressed button.
 - The factory setting is [Mode 1].

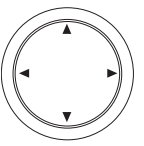
✎ When DVD recorder drives do not switch
The condition may mean the DVD recorder does not recognize the signal this unit's remote control transmits. Switch the drives again after changing the signal in the following procedure.

- 1 Press [DVD RECORDER].
- 2 Press and hold [ENTER] together with [8] for 2 seconds or longer.
 - To return: In step 2 above, press and hold [ENTER] together with [9] for 2 seconds or longer.

○○○ **Note** ○○○

When you operate a DVD recorder with built-in VCR, press [DRIVE SELECT] to select a choice other than VCR.

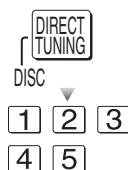
Remote controlling a DVD player

To switch the unit's input to "BD/DVD"/ To switch the remote control to the DVD player operation mode	 Do not forget to press this before operating a DVD player.
To turn the DVD player on or off	
To start playback	
To skip a track or chapter	
To search through the disc	
To play in slow-motion	 
To show the direct navigator (or the top menu)	
To show a sub menu	
To show the FUNCTIONS window (while stopped)	
To return to the previous screen	
To select an item Press to select after pressing [DIRECT NAVIGATOR, TOP MENU], [S, SUB MENU], or [FUNCTIONS].	

To confirm the selected item

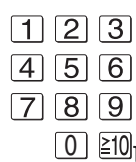


To specify a disc (5-disc changer only)



To select a track or chapter directly

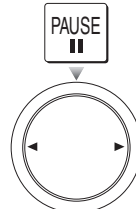
• Some of the models require you to press [ENTER] to confirm after pressing number buttons.



To pause



To move forward or backward frame by frame

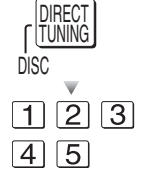
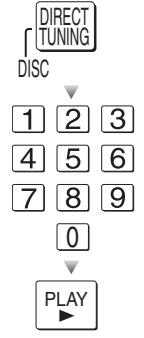
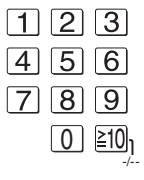


To stop playback



Note
[FUNCTIONS] activates display functions on some of the Panasonic DVD players.

Remote controlling a CD player

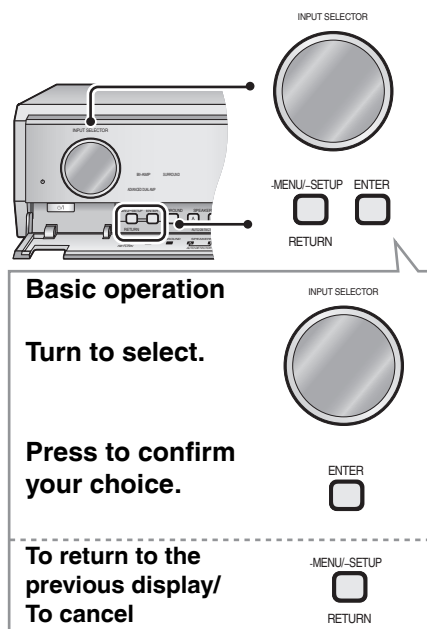
To switch the unit's input to "CD"/ To switch the remote control to the CD player operation mode	 Do not forget to press this before operating a CD player.
To turn the CD player on or off	
To start playback	
To skip a track	
To search through the disc	
To pause	
To specify a disc (3-or 5-disc changer)	
To start play from a specified disc [MEGA CD changer] (holds more than 50 discs)	
To select a track directly	
To stop playback	

Remote controlling a TV or DVD recorder etc.

Using two or more Panasonic equipment (a mini component system, an AV amp etc.)

Two or more Panasonic audio equipment may start functioning when you operate the unit using the supplied remote control. Set the unit's remote control mode to "**REMOTE 2**" in such cases.

Do the following to set the same number (2) as the remote control code.



Operation on the unit

- 1 Press and hold [-MENU/-SETUP, RETURN] for about 2 seconds to enter the SETUP.

- 2 Select and confirm the choice.

REMOTE 1

- 3 Select and confirm the choice.

REMOTE 2

- 4 Select and finish the setting.

EXIT

Operation on the remote control

- 5 Press TUNER BAND

- 6 Press and simultaneously and hold them in the position for about 2 seconds.

☞ When you return the remote control code to "1"

- Operation on the unit: select "1" in step 3.
- Operation on the remote control: in step 6, press [ENTER] and [1] simultaneously and hold them in the position for about 2 seconds.

Entering a code to operate other

This remote control can operate Panasonic and Technics audio-visual equipment that has remote control sensors. You may need to change the remote control code.

It can also operate some other brands of TVs, VCRs, and DVD players. Check the table for the brand and enter the code as follows.

Changing the codes

TV VCR DVD player
TV VCR PLAYER
BD/DVD
-ANALOG 6CH

Press and hold the button corresponding to the equipment.

1 2 3
4 5 6
7 8 9
0

Enter the first digit.

1 2 3
4 5 6
7 8 9
0

Enter the second digit.

The remote control outputs the on/off signal. If the code is correct, the equipment turns on or off.

If it doesn't, try entering another code.

- Note that this remote control cannot operate some equipment and that it may not be able to perform some operations.
- Re-enter the codes after you change the batteries.

Code table

	TV	VCR	DVD player
PANASONIC	01/29/30/31	01/29/30	01
AKAI	07/11/28/36/37	06/08/16/17/19/37	—
ALBA	05/11/12	02/06/23	—
BAIRD	—	08/10/37	—
BAUR	32	—	—
BLAUPUNKT	28/36	01/26/29/30/33	—
BRANDT	26/41	—	—
BUSH	02/05/10/11/12/32/38	02/09/23	—
DAEWOO	11/12/32	15	—
DENON	—	—	01/17
DUAL	32	—	—
FERGUSON	11/12	31	02
FINLUX	11/12/22/23/24/25/40	—	—
FISHER	37	05/07/10/11/12	—
FUNAI	02/38	—	—
GOLDSTAR	11/12	—	—
GOLDSTAR/LG	—	03/04/36/37	—
GOODMANS	11/12/25/32	02/03/18/23/27/33	—
GO-VIDEO	—	—	12
GRUNDIG	28/36	02/23/26/28/32/33	—
HCM	—	02/23	—
HITACHI	01/09/26/41	13/14	11
ICE	21/39	—	—
INNO HIT	34	—	—
ITT	—	08/10/11/37	—
ITT/NOKIA	05/07/37	18/27/37	—
JVC	18	20/21	09
KENDO	40	08/09/37	—
KENWOOD	—	—	15
LOEWE	14/33	03/32	—
LOEWE OPTA	32	—	—
LUXOR	37	08/10/11/17/19/37	—
MATSUI	02/05/06/07/10/11/12/25/37/38	03/05/09	—
METZ	—	01	—
MITSUBISHI	14/19/28/36	17/19/21/32	06
NEC	—	04/21/36/37	—
NOKIA	05/07/37	08/10/11/18/22/27/37	—
NORDMENDE	26/41	20/21	02
OCEANIC	27/35	—	—
OKANO	—	06	—
ORION	02/03/05/10/11/12/38	05/09	—
PHILIPS	11/12/13/15	22/32/33/34/35	04/16
PHONOLA	11/12	32	—
PIONEER	—	—	03
POLKAUDIO	—	—	16
RADIOLA	11/12	—	—
RAITE	—	—	13
RCA	—	—	02
RFT	—	33	—
ROADSTAR	39	02/03/18/23/27	—
SABA	26/41	21	02
SALORA	07/37	08/11/17/19/37	—
SAMPO	—	—	14
SAMSUNG	11/12/15/21/25/34/39	15/16/18/27	10
SANYO	07/17/25/37	07/10/11	—
SCHAUB LORENZ	—	10	—
SCHNEIDER	11/12	02/03/18/23/27/32	—
SEG	39/40	02/18/23/27	—
SELECO	11/24	—	—
SHARP	17/20	22	08
SIEMENS	11/12/17/28/36	03/10/11/32	—
SINUDYNE	02/05/11/12/22/24/38/40	—	—
SONY	16	24/25/26	05
TECHNICS	—	—	01
THOMSON	05/26/41	21	02
THORN	06/08/11/12/14/16/25/32	10	—
TOSHIBA	03/04/06/08	15/17/19/32	04
UNIVERSUM	39	03/08/32/37	—
WHITE WESTIN HOUSE	11/12/22/40	—	—
YAMAHA	—	—	01
ZENITH	—	—	07/12

Troubleshooting guide

Before requesting service, make the following checks. If you are in doubt about some of the check points, or if the remedies indicated in the chart do not solve the problem, consult your dealer for instructions.

		Pages
No power.	Ensure the AC mains lead is connected.	9
No sound. Sound is distorted.	- Turn the volume up. - Check connections to speakers and other equipment. - Turn on the speakers. - Select the correct source. - Change DIG INPUT setting to suit the type of connection you have made. - Check that the digital signals can be decoded by this unit. - Turn the muting off. - Turn PCM FIX off. - Recording of some DVD-Audio may not be possible due to copyright protection.	12, 24 7 to 9, 14 to 21 12, 24, 25 12, 24 35 37 29 35 –
Sound stops. “OVERLOAD” appears on the display for about a second, and the unit turns off.	- Determine and correct the cause, then turn the unit on. Causes include: - Shorting (bare wires touching) of positive and negative speaker wires. - Using speakers with an impedance lower than that rated for this unit. - Straining of the speakers through excessive volume or power. - Using the unit in a hot environment without proper ventilation. - Consult your dealer if the problem occurs again after switching the unit on.	8 9, 20 – –
Analogue input becomes distorted and the message “OVERFLOW” appears on the display during playback.	Switch the attenuator on.	36
“F76” appears on the display and the unit turns off.	Turn the unit off, disconnect the AC mains lead, and consult your dealer.	–
“F70” appears on the display.	Turn the unit off, disconnect the AC mains lead, and consult your dealer.	–
“REMOTE 2” or “REMOTE 1” appears on the display.	Match the codes on the main unit and the remote control.	44
Display is dim.	Cancel “DIMMER”.	29, 31
Clicking sound is heard during play.	- Depending on the input signal when playing DVD etc., the ADVANCED DUAL AMP function changes automatically. A clicking sound is heard when it changes. This does not mean a problem with the unit. - You can also set the unit against automatic ADVANCED DUAL AMP operations.	– 34
“MEASURING ERROR” appears on the display.	- A speaker is too far. Check speaker locations. - An error occurred from a cause that cannot be identified. Perform the auto speaker setup again.	22, 23 –
When speaker distances are set (⇒ page 33), “–” appears on the display with the speaker name such as “L 3.0 –”.	- It appears when polarity of a speaker is automatically adjusted. - You can set speakers against automatic polarity adjustment.	34
When speaker distances are set (⇒ page 33), “OVER” appears on the display.	It appears when the measured distance exceeds 15 meters. Check the speaker location.	–
Sound is not heard from the center, surround or subwoofer speakers.	- Ensure the speaker settings for your speakers are correct. - Confirm Dolby Pro Logic IIx, NEO:6, or SFC settings, and select an adequate mode. - Press [SURROUND] on when you play 2-channel stereo sources.	10, 22, 23, 33 26 to 28 12, 24
Sound is not heard from the surround back speaker.	- Ensure the speaker settings for your speakers are correct. - Press [SURROUND] on.	10, 22, 23, 33 12, 24
Dolby Pro Logic IIx, NEO:6, and SFC are unavailable.	- Check if the center speaker, surround speakers, and surround back speakers are connected properly. - Press [SPEAKERS A] on. - You cannot use Dolby Pro Logic IIx, NEO:6 or SFC on sources containing PCM signals with the sampling frequency of 192 kHz. - Cancel DVD ANALOG 6CH playback. - You cannot use the effect when the input source contains dual audio signals in Dolby Digital or DTS formats.	9 12, 24 – 25 –
There is no DTS audio output. There is audio output, but the DTS decoder indicator is not lit.	Set the DTS Digital Audio Output setting on the DVD player or DVD recorder to “Bitstream”.	–
Sound is distorted when using the Sound Field Control (SFC).	Depending on the input source, sound may be distorted if you increase the SFC effect level. If this happens, decrease the SFC effect level.	28
The radio cannot be tuned in or there is a lot of noise and interference.	- Connect the appropriate antenna. (You may need an outdoor antenna or one with more elements.) - Adjust the position of the FM or AM antenna. - Reduce the treble. - Turn off nearby televisions, video decks, DVD recorders, DVD players, and satellite receivers. - Separate the antenna from other cables, cords, and appliances.	21 21 31 – –
There is a lot of noise when listening to AM.	Try changing the BEAT PROOF mode.	39
The correct AM frequency cannot be tuned in.	Change the frequency step to suit your area when AM is selected.	38
When using an HDMI connection, the first few seconds of sound is cut off.	- Should you be playing a chapter on a DVD: - Change the audio output setting on the DVD player or DVD recorder from “Bitstream” to “PCM”. (6.1-channel sources will however be played as 5.1-channel.) - Select “PCM FIX” as instructed in “Setting input signals” when you play 2-channel stereo sources.	– 35
“U70-1-1” appears on the display.	The equipment connected by the HDMI cable is not compatible with the unit's copyright protection technology.	–
“U70-1-2” appears on the display.	The unit has received a signal for a picture format that is incompatible with the HDMI connection. Check the settings of the connected equipment.	–
“U70- 3” appears on the display.	- Should anything unusual happen using an HDMI connection: Consult your dealer if the sign remains on the display after these steps. - Turn the connected equipment off and on again. - Pull out the HDMI cable then reinsert it. - Reduce the number of equipment connected in series to the HDMI terminal if exceeding 2 units.	– 7, 13 –
The unit does not work properly.	The unit does not work properly when wrong cords are in HDMI input and output terminals. Turn the unit off, unplug the AC mains lead, and make connections again.	7, 13
HDAVI Control does not function properly.	Connect the unit to your TV (VIERA) using the HDMI cable, switch the TV on, unplug the unit's AC mains lead, and insert it into a household mains socket again.	–
The equipment connected to the unit's “HDMI (BD/DVD PLAYER) IN” terminal turns on and off by itself.	Some of the linked operations apply to the connected equipment that is HDAVI Control compatible. To prevent this, set the connected equipment (DVD recorder (DIGA) and others) against HDAVI Control.	–
The remote control doesn't work.	Replace the batteries if they are worn.	5
Other products respond to the remote control.	Change this unit's remote control code to “REMOTE 2”.	44

Help message

Message	Cause/countermeasure
1 CANCEL MUTING FUNCTION	Muting is on. Press [MUTING] on the remote control to cancel the function (➡ page 29).
2 MUSIC MODE ONLY	The selected mode is not "MUSIC". Change the mode to "MUSIC" (➡ pages 26 and 27).
3 NO CENTER AND SURROUND SPEAKERS	Center and surround speakers are not connected, or they are set as absent. Connect the speakers (➡ page 9) or change their setting to present (➡ page 33).
4 NO SURROUND AND SURROUND BACK SPEAKERS	Surround and surround back speakers are not connected, or they are set as absent. Connect the speakers (➡ page 9) or change their setting to present (➡ page 33).
5 NO SURROUND BACK SPEAKER	Surround back speakers are not connected, or they are set as absent. Connect the speakers (➡ page 9) or change their setting to present (➡ page 33).

Message	Cause/countermeasure
6 NOT POSSIBLE FOR DTS-ES SOURCE	You are trying to use the effect unavailable for DTS-ES sources.
7 NOT POSSIBLE FOR DVD AUDIO SOURCE	You are trying to use the effect unavailable for DVD-Audio sources.
8 NOT POSSIBLE FOR DVD 6CH INPUT	You are trying to use the effect unavailable for DVD analogue 6-channel playback.
9 NOT POSSIBLE FOR THIS INPUT SOURCE	You are trying to use the effect unavailable for the current input source.
10 PCM FIX (flashing)	The unit is in the "PCM FIX" mode. Cancel this mode (➡ page 35).
11 SELECT SPEAKER A	"SPEAKERS A" is off. Select "SPEAKERS A" (➡ pages 12 and 24).
12 SPEAKERS ARE OFF	"SPEAKERS A" and "SPEAKERS B" are off. Select "SPEAKERS A" or "SPEAKERS B" (➡ pages 12, 24 and 25).

Specifications (DIN 45 500)

■ AMPLIFIER SECTION

Power output (at AC 230-240 V)	
DIN 1 kHz (T.H.D. 1 %)	2 x 145 W (4 Ω)
20 Hz-20 kHz continuous power output both channels driven	2 x 80 W (6 Ω)
Total harmonic distortion	
rated power at 20 Hz-20 kHz	0.09 % (6 Ω)
Power bandwidth	
both channels driven, -3 dB	4 Hz to 88 kHz (6 Ω, 0.9 %)
Power output each channel driven (at AC 230-240 V)	
DIN 1 kHz (T.H.D. 1 %)	
Front (L/R)	100 W (6 Ω)
Center	100 W (6 Ω)
Surround (L/R)	100 W (6 Ω)
Surround Back (L/R)	100 W (6 Ω)
Load impedance	
Front (L/R)	
A or B	4 to 16 Ω
A and B	6 to 16 Ω
BI-WIRE	4 to 16 Ω
Center	6 to 16 Ω
Surround (L/R)	6 to 16 Ω
Surround Back (L/R)	6 to 16 Ω
Frequency response	
CD, AUX, TV/STB, VCR, DVD RECORDER, BD/DVD	4 Hz to 88 kHz, ±3 dB
DVD 6CH	4 Hz to 44 kHz, ±3 dB
Input sensitivity and impedance	
CD, AUX, TV/STB, VCR, DVD RECORDER, BD/DVD/DVD 6CH	200 mV/22 kΩ
S/N at rated power (6 Ω)	
CD, TV/STB, BD/DVD PLAYER, DVD RECORDER (Digital Input)	90 dB (IHF, A: 103 dB)
Tone controls	
BASS	50 Hz, +10 to -10 dB
TREBLE	20 kHz, +10 to -10 dB
Channel balance (250 Hz-6.3 kHz)	±1 dB
Channel separation	55 dB
Subwoofer frequency response (-6 dB)	7 Hz to 200 Hz

Digital input (OPTICAL)	2
(COAXIAL)	2
HDMI (Version 1.2a) Input	2
Output	1

■ FM TUNER SECTION

Frequency range	87.50 to 108.00 MHz
Sensitivity	
S/N 30 dB	1.5 μV/75 Ω
S/N 26 dB	1.3 μV/75 Ω
S/N 20 dB	1.2 μV/75 Ω
IHF usable sensitivity (IHF '58)	1.5 μV/75 Ω
IHF 46 dB stereo quieting sensitivity	22 μV/75 Ω
Total harmonic distortion	
MONO	0.2 %
STEREO	0.3 %

S/N

MONO	60 dB
STEREO	58 dB
Frequency response	20 Hz to 15 kHz, +1 dB, -2 dB
Alternate channel selectivity	±400 kHz, 65 dB
Capture ratio	1.5 dB
Image rejection at 98 MHz	40 dB
IF rejection at 98 MHz	70 dB
Spurious response rejection at 98 MHz	70 dB
AM suppression	50 dB
Stereo separation	1 kHz, 40 dB
Carrier leak	19 kHz, -30 dB
	38 kHz, -50 dB
Channel balance (250 Hz-6.3 kHz)	±1.5 dB
Limiting point	1.2 μV
Bandwidth	
IF amplifier	180 kHz
FM demodulator	1000 kHz
Antenna terminal	75 Ω (unbalanced)

■ AM TUNER SECTION

Frequency range	522 to 1611 kHz (9 kHz steps)
	530 to 1620 kHz (10 kHz steps)
Sensitivity	20 μV, 330 μV/m
Selectivity (at 999 kHz)	55 dB
IF rejection (at 999 kHz)	50 dB

■ VIDEO SECTION

Output voltage at 1 V input (unbalanced)	1±0.1 Vp-p
Maximum input voltage	1.5 Vp-p
Input/output impedance	75 Ω (unbalanced)
S-Video	Input TV/STB, BD/DVD PLAYER, DVD RECORDER, AUX
	Output TV MONITOR
Component Video	Input TV/STB, DVD RECORDER
	Output TV MONITOR

■ GENERAL

Power supply	AC 230 to 240 V, 50 Hz
Power consumption	140 W
Dimensions (W x H x D)	430 mm x 107.5 mm x 390 mm
Mass	Approx. 5.3 kg

Power consumption in standby mode	0.9 W
(HDMI Off Mode)	0.45 W

Notes:

- Specifications are subject to change without notice.
- Total harmonic distortion is measured by the digital spectrum analyzer.

-If you see this symbol-**Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)**

This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product. Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point. Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union

This symbol is only valid in the European Union. If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Maintenance

If the surfaces are dirty

To clean this unit, wipe with a soft, dry cloth.

- Never use alcohol, paint thinner or benzine to clean this unit.
- Before using chemically treated cloth, read the instructions that came with the cloth carefully.

Manufactured under license from Dolby Laboratories. Dolby, "Pro Logic" and the double-D symbol are trademarks of Dolby Laboratories.

"DTS", "DTS-ES", "Neo:6" and "DTS 96/24" are trademarks of Digital Theater Systems, Inc.

CAUTION!

Do not place anything on top of this unit or block the heat radiation vents in any way. In particular, do not place DVD recorder or CD/DVD players on this unit as heat radiated from it can damage your software.

HDMI, the HDMI logo and High-Definition Multimedia Interface are trademarks or registered trademarks of HDMI Licensing LLC.

HDAVI Control™ is a trademark of Matsushita Electric Industrial Co., Ltd.

THIS UNIT IS INTENDED FOR USE IN MODERATE CLIMATES.

WARNING:

TO REDUCE THE RISK OF FIRE, ELECTRIC SHOCK OR PRODUCT DAMAGE, DO NOT EXPOSE THIS APPARATUS TO RAIN, MOISTURE, DRIPPING OR SPLASHING AND THAT NO OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHALL BE PLACED ON THE APPARATUS.

CAUTION!

- DO NOT INSTALL OR PLACE THIS UNIT IN A BOOKCASE, BUILT-IN CABINET OR IN ANOTHER CONFINED SPACE. ENSURE THE UNIT IS WELL VENTILATED. TO PREVENT RISK OF ELECTRIC SHOCK OR FIRE HAZARD DUE TO OVERHEATING, ENSURE THAT CURTAINS AND ANY OTHER MATERIALS DO NOT OBSTRUCT THE VENTILATION VENTS.
- DO NOT OBSTRUCT THE UNIT'S VENTILATION OPENINGS WITH NEWSPAPERS, TABLECLOTHS, CURTAINS, AND SIMILAR ITEMS.
- DO NOT PLACE SOURCES OF NAKED FLAMES, SUCH AS LIGHTED CANDLES, ON THE UNIT.
- DISPOSE OF BATTERIES IN AN ENVIRONMENTALLY FRIENDLY MANNER.

This product may receive radio interference caused by mobile telephones during use. If such interference is apparent, please increase separation between the product and the mobile telephone.

The socket outlet shall be installed near the equipment and easily accessible.
The mains plug of the power supply cord shall remain readily operable.
To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from AC receptacle.

NORSK

DETTE APPARATET ER BEREGNET TIL BRUK UNDER MODERATE KLIMAFORHOLD.

ADVARSEL:

FOR Å REDUSERE FAREN FOR BRANN, ELEKTRISK STØT ELLER SKADER PÅ PRODUKTET, MÅ DETTE APPARATET IKKE UTSETTES FOR REGN, FUKTIGHET, VANNDRÅPER ELLER VANNSPRUT. DET MÅ HELLER IKKE PLOSSERES GJENSTANDER FYLT MED VANN, SLIK SOM BLOMSTERVASER, OPPÅ APPARATET.

ADVARSEL!

- APPARATET MÅ IKKE PLOSSERES I EN BOKHYLLE, ET INNEBYGGET KABINETT ELLER ET ANNET LUKKET STED HVOR VENTILASJONSFORHOLDENE ER UTILSTREKKELIGE. SØRG FOR AT GARDINER ELLER LIGNENDE IKKE FORVERRER VENTILASJONSFORHOLDENE, SÅ RISIKO FOR ELEKTRISK SJOKK ELLER BRANN FORÅRSAKET AV OVERHETING UNNGÅS.
- APPARATETS VENTILASJONSÅPNINGER MÅ IKKE DEKKES TIL MED AVISER, BORDDUKER, GARDINER OG LIGNENDE.
- PLOSSER IKKE ÅPEN ILD, SLIK SOM LEVENDE LYS, OPPÅ APPARATET.
- BRUKTE BATTERIER MÅ KASSERES UTEN FARE FOR MILJØET.

Strømuttaket må befinne seg i nærheten av utstyret og være lett tilgjengelig.

Støpslet på strømkabelen må være klart til bruk.

Når dette apparatet skal kobles helt fra strømmettet (AC), må støpslet på strømkabelen trekkes ut av stikkontakten.

SUOMI

TÄMÄ LAITE ON TARKOITETTU KÄYTETTÄVÄKSI LEUDOSSA ILMASTOSSA.

VAROITUS:

TULIPALO-, SÄHKÖISKUVAARAN TAI TUOTETTA KOHTAAVAN MUUN VAHINGON VÄHENTÄMISEKSI EI LAITETTA SAA ALTISTAA SATEELLE, KOSTEUELLE, VESIPISAROILLE TAI ROISKEELLE, EIKÄ NESTETTÄ SISÄLTÄVIÄ ESINEITÄ, KUTEN ESIMERKIKSI MALJAKOITA, SAA ASETTAA LAITTEEN PÄÄLLE.

VAROITUS!

- ÄLÄ ASENNATA TAI LAITTA TÄTÄ LAITETTA KABINETTITYYPPISEEN KIRJAKAAPPIIN TAI MUUHUN SULJETTUUN TILAAN, JOTTA TUULETUS ONNISTUISI. VARMISTA, ETTÄ VERHO TAI MIKÄÄN MUU MATERIAALI EI HUONONNA TUULETUSTA, JOTTA VÄLTETTÄISIIN YLIKUUMENEMISESTÄ JOHTUVA SÄHKÖISKU- TAI TULIPALOVAARA.
- ÄLÄ PEITÄ LAITTEEN TUULETUSAUKKOJA SANOMALEHDELLÄ, PÖYTÄLIINALLA, VERHOLLA TAI MUULLA VASTAAVALLA ESINEELLÄ.
- ÄLÄ ASETA PALAVAA KYNTTILÄÄ TAI MUUTA AVOTULEN LÄHDETTÄ LAITTEEN PÄÄLLE.
- HÄVITÄ PARISTOT LUONTOA VAHINGOITTAMATTOMALLA TAVALLA.

Pistorasia tulee asentaa laitteen lähelle helppopääsyiseen paikkaan. Verkkojohdon pistokkeen on oltava aina helposti käytettävissä. Tämä laite voidaan kytkeä kokonaan irti verkkovirrasta irrottamalla verkkojohdon pistoke pistorasiasta.