

Thermal Body Temperature Monitoring System
User Manual

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Welcome

Thank you for purchasing an Amcrest Thermal Body Temperature Monitoring System.

This system helps to provide a non-contact means of applying multi-objective, fast, and effective temperature readings which help to lower the risk of illness or disease. It is recommended for areas such as, schools, factories, hospitals, subway stations, or other populated public areas. Before installation and operation, please read the below safeguards and warnings carefully.

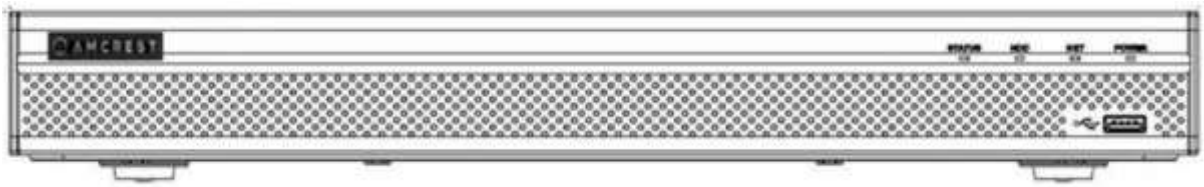
Important Safeguards and Warnings

- All installations and operations of the device should conform to your local electrical safety codes.
- We assume no liability or responsibility for any of the fires or electrical shocks caused by improper handling or installation.
- We are not liable for any problems caused by unauthorized modifications or attempted repair.
- Do not submerge the device in water or install in areas with high levels of moisture or humidity.
- Handle with care, avoid from dropping or placing the device in unsecure areas.
- The NVR does not have rack mount compatibility and should be used on flat surfaces only.

What's Included?

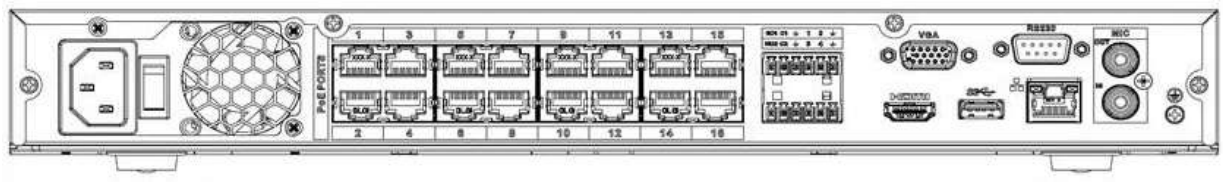
- An Amcrest AI NVR
- Thermal Camera
- Blackbody (Calibration Device)
- 2 Tripods

NVR Front Panel

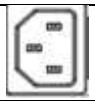


HDD	Hard Drive Detection	Displays when HDD is detected.
NET	Network Detection	Displays when network is detected.
Power	Power Indicator	Indicates the device is on.
	USB 2.0	USB 2.0 port, mouse, USB flash drive.

NVR Rear Panel

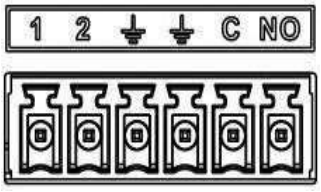


	USB 2.0 port	USB 2.0 port. Connect a mouse, USB storage device, etc.
	Network port	10M/100Mbps self-adaptive Ethernet port.
HDMI	HDMI Output	High definition audio and video signal output port.
VGA	VGA video output port	VGA video output port. Outputs analog video signal. This connects to the monitor to view analog video.
	GND	Ground end

	Power Port	DC12V, DC48V Depending on model.
MIC IN	Audio input port	Bidirectional talk input port. This is used to receive the analog audio signal from the device such as a microphone.
MIC Out	Audio output port	Audio output port. This is used to output the analog audio signal to devices such as an external RCA speaker. Bidirectional talk output. Audio output on 1-window video monitoring. Audio output on 1-window video playback.
PoE Ports	PoE ports	Built-in switch on certain compatible devices. For PoE series products, you can use this port to provide power to a PoE camera.

Alarm Connection

The alarm port is shown as below. This feature is only available in certain model NVRs and may not be applicable for your specific model.



Icon	Function
1, 2	ALARM1, ALARM2. The alarm becomes activated in the low level.
NO C	NO activation output. (On-off button).
＋12V	Rated current output. Current is 500mA.
⏚	GND

Note

★ Different models support different alarm input ports. Please refer to the specifications sheet for detailed information.

★ Slight differences may be found on the alarm port layout.

Alarm input port

Connect the positive end (+) of the alarm input device to the alarm input port (ALARM IN 1~2) of the NVR.

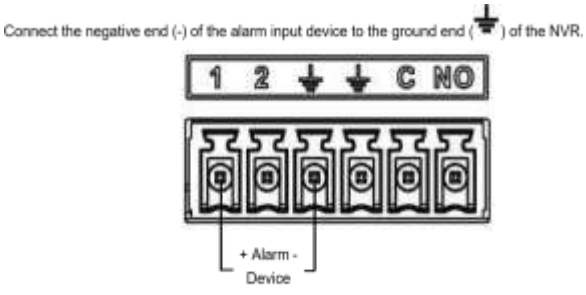


Figure 2-7

Note

★ When connecting the ground port of the alarm device to the NVR, you can use any of the GND ports

★ When there is peripheral power supplying the alarm device, ensure it is grounded on the NVR.

Alarm input and output port

★ There is peripheral power supplying to the external alarm device.

★ An overload may result in NVR damage. Please refer to the following relay specifications for detailed information.

Alarm relay specifications

Contact Material	Silver	
Rating (Resistance Load)	Rated switch capacity	30VDC 2A, 125VAC 1A
	Maximum switch power	125VA 160W
	Maximum switch voltage	250VAC, 220VDC
	Maximum switch current	1A
Insulation	Between contacts with same polarity	1000VAC 1minute
	Between contacts with different polarity	1000VAC 1minute
	Between contacts and winding	1000VAC 1minute
Surge voltage	Between contacts with same polarity	1500V (10×160us)
Length of open time	3ms max	
Length of close time	3ms max	
Longevity	Mechanical	50×106 MIN (3Hz)
	Electrical	200×103 MIN (0.5Hz)
Temperature	-40ºC ~+70ºC	

NVR Setup

The NVR included with the system comes preinstalled with a 4TB (Terabyte) hard drive, however, an additional hard drive can be installed if needed.

Installing an Additional Hard Drive

A hard drive must be installed in the NVR to record or save *any* footage. The NVR can support a total of **10TB (Terabytes).** If installing an additional hard drive, the following is needed:

- A medium sized (regular) Phillips-head screwdriver
- An additional hard drive
- Four hard drive fastening screws

Note: **Before installing the hard drive, make sure the NVR is powered off with the power cable disconnected.**



1. Loosen the screws of the upper cover and side panel.



2. Attach four screws in the HDD (Turn just three times).



3. Place the HDD in accordance with the four holes in the bottom.



4. Turn the device upside down and then turn the screws in firmly.



5. Attach the HDD firmly.



6. Connect the HDD cable and power cable.



7. Put the cover in accordance with the clip and then place the upper cover back on.



8. Secure the screws in the rear panel and the side panel.

NVR Installation

Place the NVR on a flat surface and connect an Ethernet cable from the Ethernet port on the back of the NVR to your local network. A HDMI or VGA monitor can be used to view the device, however, if you are accessing the system via a computer using a web browser a monitor is not needed. If using a monitor, plug the VGA cable or HDMI cable into their respective ports on the back of the NVR and power the device.

Insert the included power cable into the power port on the back of the NVR and plug the cord into a power strip, surge protector, or wall outlet. Ensure the power switch is flipped to the on position and allow the NVR to boot. Insert a USB mouse to a USB port on the front or back of the NVR to navigate the interface. If accessing the device locally, follow the on-screen initialization prompts on the monitor to complete the initialization of the device.

Note: The NVR does not include rack mount holes and must be placed on a flat surface while in use. Do not place the NVR in areas that can block any vents or fans on the device. Do not place objects on top of the NVR as it may cause damage to the unit.

Thermal Camera and Blackbody Installation

Included with your system is a thermal camera as well as a blackbody and 2 tripods. The thermal camera works in conjunction with the blackbody and NVR to provide accurate temperature readings.

What is a Black Body?

The black Body is a separate piece of equipment included with your device that is used as a temperature referencing source for the system. This is generally used for temperature correction and calibration for thermal imaging acquisition.

This black body must be powered on and installed in sight of the thermal camera to function. The blackbody is set to default at 95°F (35°C) to meet the thermal accuracy requirements of ±32.54°F (0.3°C).

Precautions

- Before use, the black body must be powered on and preheat for **20 minutes** or until its temperature reaches 95°F (35°C). This will be displayed on its screen.
- Do not touch the film on the front portion of the blackbody. This is a highly sensitive device; any impedance could cause damage to the unit or damage to the camera.
- Keep the device clean as any dirt or obstruction can lead to inaccurate measurements. To clean the device, use a neutral detergent to clean the body of the device. To clean the radiation surface, it is recommended to use a soft brush or cloth to clean the surface.
- To prevent overheating, keep objects at least 10cm (0.32 inches) away while in use.
- To ensure overall temperature measurement accuracy, it is recommended to calibrate the device at least once per year.

Physical Installation

Use the included tripods to install the camera and blackbody.

Installing the Camera

To begin installation, locate the camera, tripod, and included mounting adapter.



To install the camera, align the installation holes of the camera with the installation holes on the mounting plate. Insert the included screws into the camera and mounting plate to secure the camera.




Place the mounting plate on the installation screw of the tripod. Adjust the angle of the camera by loosening the unlock/lock screw. Once the angle of the camera is set, tighten the unlock/lock screw to secure the camera.




Once the camera is installed, raise the tripod at least 6.5ft (2m). Run an Ethernet cable from a PoE port on the back of the NVR to the Ethernet port on the dongle wire of the camera. The camera can also be powered using a PoE switch or injector (sold separately). Please make sure the camera and the NVR are on the same network during setup.

Note: Be sure not to run the cable in areas of high traffic or where they can be trampled on or damaged.

Installing the Blackbody

The blackbody should be within visible distance of the camera lens while in use. To begin installation, locate the blackbody, tripod, and included mounting adapter.



To begin installing the blackbody, secure the mounting plate onto the tripod. Next, attach blackbody to the mounting plate aligning the installation hole of the mounting plate to the mounting hole located on the bottom of the blackbody. Secure the blackbody to the mounting plate by using the included mounting screw. Do not overtighten the screw as it could damage the unit.





Once the blackbody is installed, raise the tripod to 6ft (1.8m) and in sight of the camera's lens. Plug the blackbody into a power source such as a surge protector or wall outlet and ensure the power switch is turned to the on position. Allow the device to preheat for 20 minutes before use.

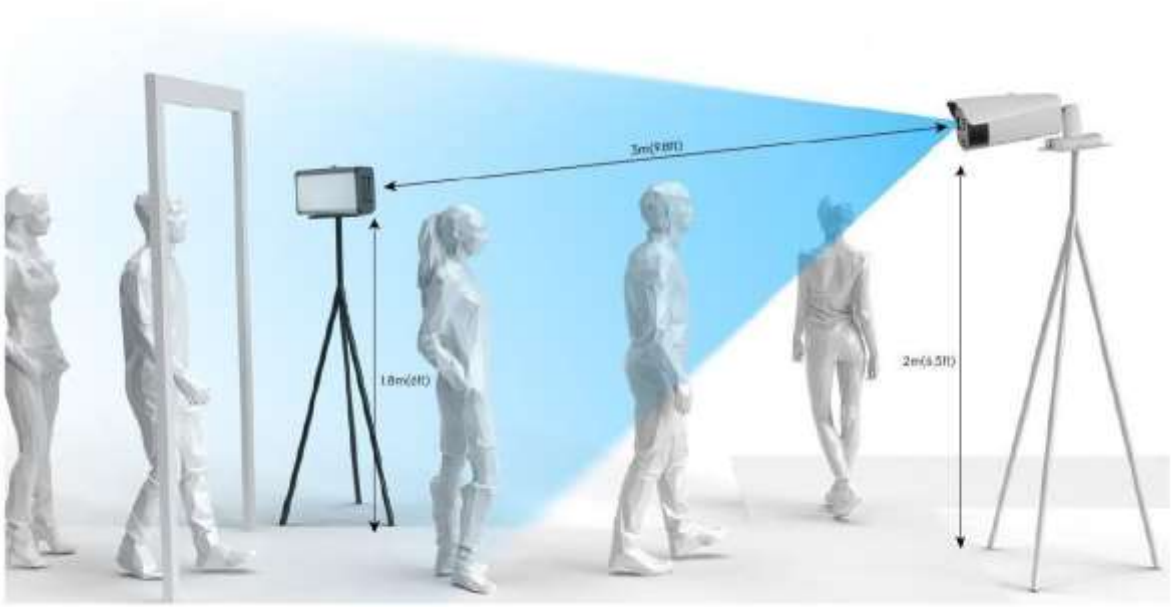
The default working temperature of the blackbody is 104°F(40°C) which needs to be manually adjusted to 95°F(35°C). To manually adjust the temperature on the unit, press and hold the "SEL" button, a red light will turn on, then press the increase/decrease keys to adjust the values. **Note:** If the display on the blackbody is an LCD screen, use the up and down arrows provided to adjust the temperature.



Be sure not to run the cable in areas of high traffic or where they can be trampled on or damaged.

The system is for indoor use only. Do not place the system against any doorways or in environments with obvious air convection, strong light radiation, strong electromagnetic interference, or vibration. For more information please refer to the chart below.

Focal Length	**Distance between blackbody and camera**	**Distance between human forehead and camera**	**Width for best distance of temperature measurement.**
13mm	3m (9.8ft)	3m(9.8ft)	1.5m (5ft)



Configuration

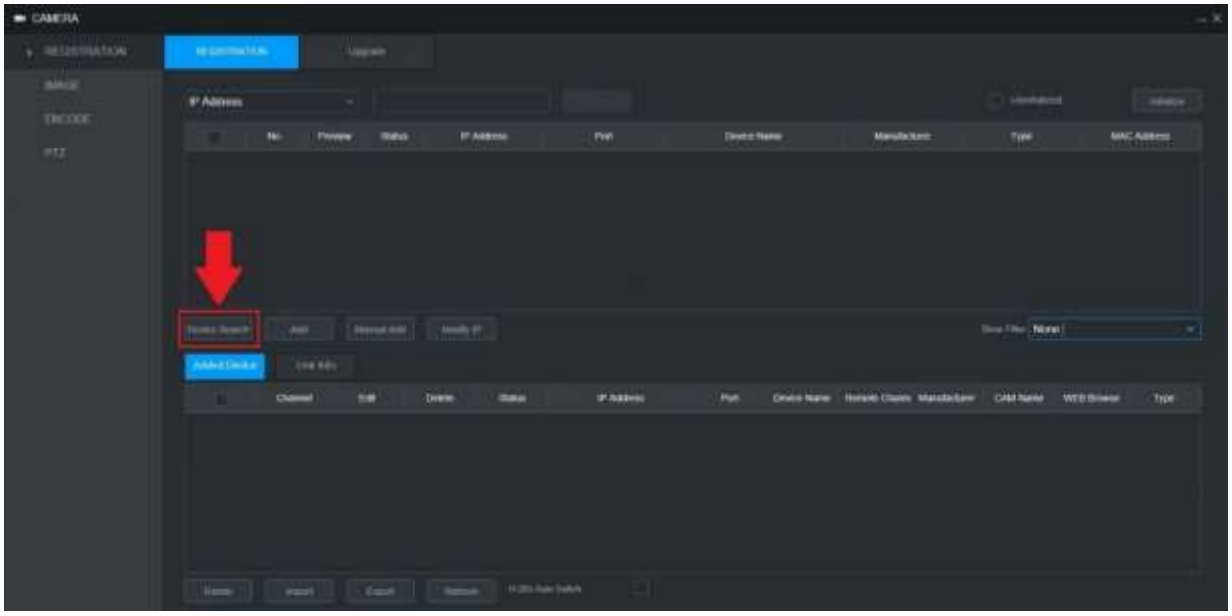
The system can be configured using the built-in web user interface via a web browser. The system must be on the same network segment as your computer during the configuration process. It is highly recommended to use the Amcrest IP Config tool during this process. To download this free software, please visit https://amcrest.com/downloads

The IP config tool will locate the system's IP address on your network. Locate your NVR and click on the "e" symbol in its field to load the web user interface. The IP address can also be entered manually into a web browser if needed. The system (NVR) can be accessed using most mainstream web browsers including Google Chrome, Firefox, or Safari. Please note, when accessing your camera's web user interface, please use Internet Explorer, FireFox (49.0.2), Safari 11, or the Amcrest Google Chrome app as the camera's UI will require the use of a plugin to operate.

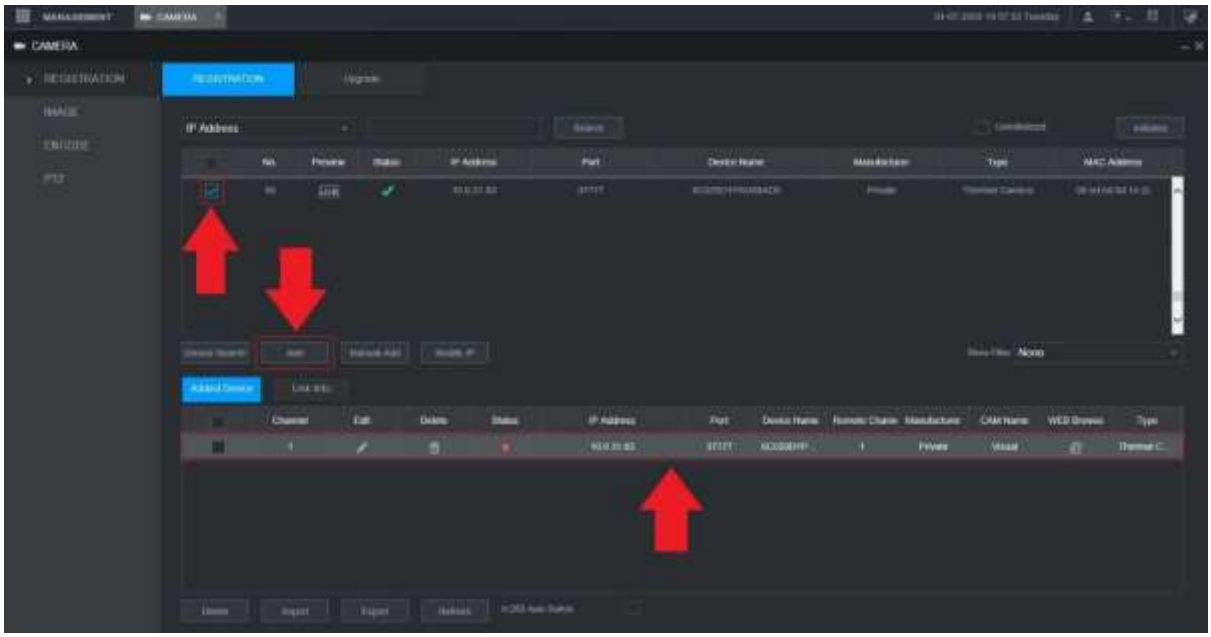
Registering a Camera

The camera must be registered in the NVR to function. The camera registration screen allows you to add the thermal camera into the NVR. To access the camera registration screen, navigate to **Management>>Camera>>Registration**. If the cameras are not directly connected to the back of the NVR, please make sure they are active and on the same network as the NVR before proceeding.

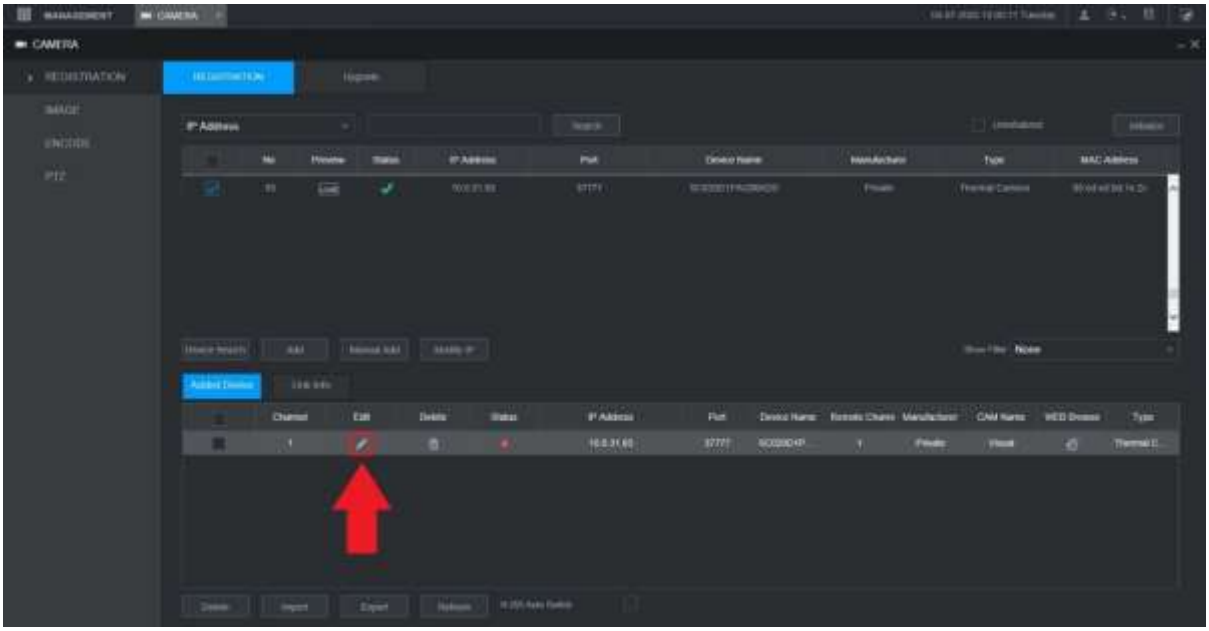
To begin adding a device, click on **Device Search** to allow the NVR to scan for connected devices on your network.



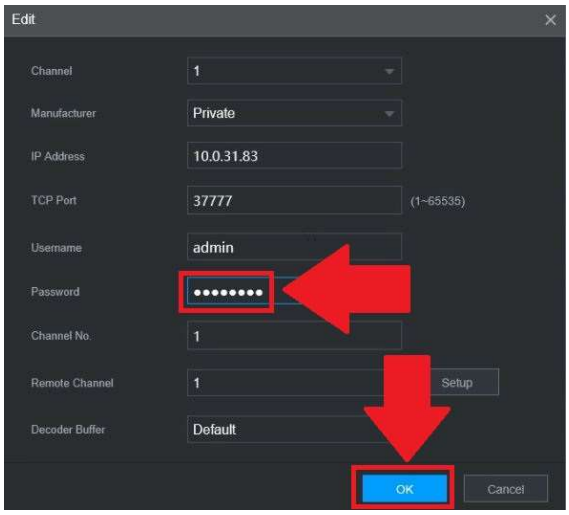
A list of applicable connected devices will show on the screen. Select your devices by click on the checkbox next to the device and click **Add** to add the device into the **Added Devices** menu.



If the status of your camera is red it indicates the camera is not properly connected to the NVR. This could be because the password for the camera is not entered properly in the system.
To modify the password for your camera, click on the edit icon (pencil) located in the **Edit** column in the **Added Device** menu.



Select the **Password** field and use the onscreen keyboard to enter the password for your camera. Once the password has been entered, click **OK** to continue.



Note: If this is a new device and a password has not been added the password will be **admin.**

Once the password has been properly set you will notice 2 separate channels: one for visual and one for thermal. The **Status** indicator will turn green on both channels indicating the camera has been properly added to the NVR.

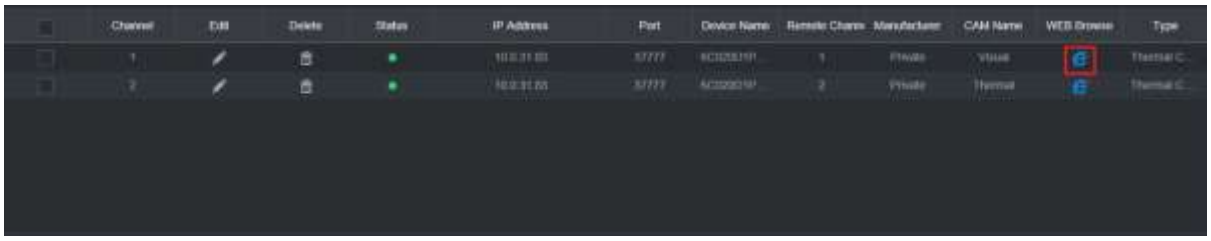


Configuring the Camera and Blackbody

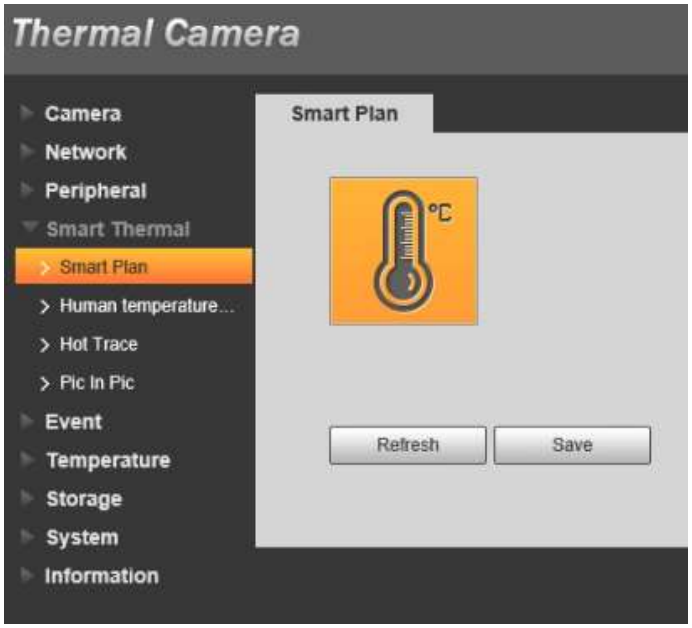
The blackbody must be configured to the camera after the camera has been added to the NVR. For more information on how to configure the camera and blackbody, please refer to the information provided below.

Note: Before configuring the camera and blackbody please ensure there is adequate lighting in the area. Any inadequate light source may cause inaccuracy with thermal readings. Please refer to the information provided in the *"Installation Precautions"* section located on page 4 of this document.

Step 1: In the **Registration** menu, click on the "e" symbol in the interface to load the camera's web UI in a web browser. Please note, it is highly recommended to use Internet Explorer, FireFox (49.0.2), Safari 11, or the Amcrest Google Chrome app as the camera's UI will require the use of a plugin to operate.
Log into the web UI for your camera using the camera's login credentials. If this is your first time logging into the web UI, the default username and password will be **admin**.



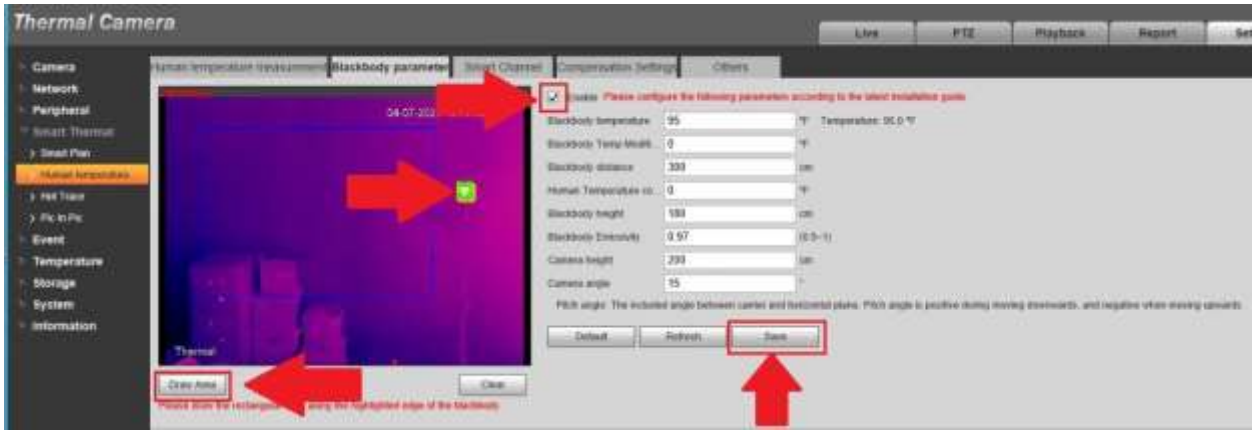
Step 2: Set a Smart Plan: In the camera's interface, navigate to **Setting>>Smart Thermal>>Smart Plan** and ensure the thermometer icon is enabled. The icon will be yellow once it is enabled. Click on **Save.**



Note: Ensure the black body is positioned on the right or left side of the image and is not being blocked. It is recommended to position the blackbody towards the top right of the screen as demonstrated in the image below.



Step 3: Set Blackbody Parameters: Click on the **Blackbody Parameter** tab then click the **Enable** checkbox. The blackbody temperature is 95°F(35°C) (the default value). Confirm that the maximum temperature, the minimum temperature and the average temperature are all within 35°F ± 0.2°C. Click on **Draw Area** and set a calibration area around the highlighted edge of the blackbody. The rule will be displayed as a green box.

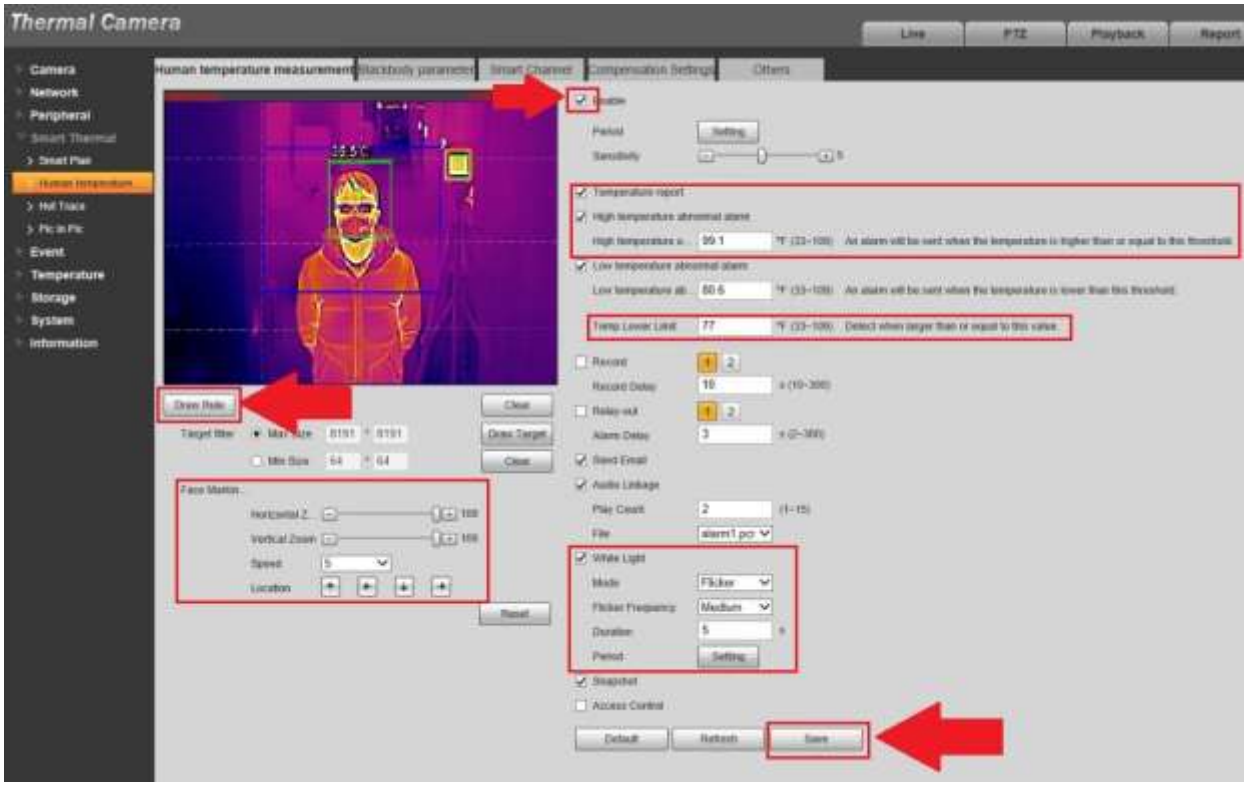


Due to environmental differences, the temperatures read by the system may experience errors. For instance, if more than 5 people in the image are at optimal distance and the measured temperature is too high or too low, compensation can be established using temperature correction.
For example, if the temperature is 0.5°C too low, fill in 0.5°C as a temperature correction. If the temperature being read is too high, fill in -0.5°C as a temperature correction. Click **Save** once all settings have been made.

Step 4: Set the Body Temperature Monitoring Rule: Click on **Human Temperature Measurement** and click on the **Enable** checkbox.

Note: A human must stand on the edge of the blackbody, roughly 10 ft from the camera, facing the camera while configuring this rule.

Click on **Draw Area** and use your mouse to draw a thermal detection area on the screen between the shoulders and above the forehead of the tester. **The detection area should not contain the blackbody in the rule**.

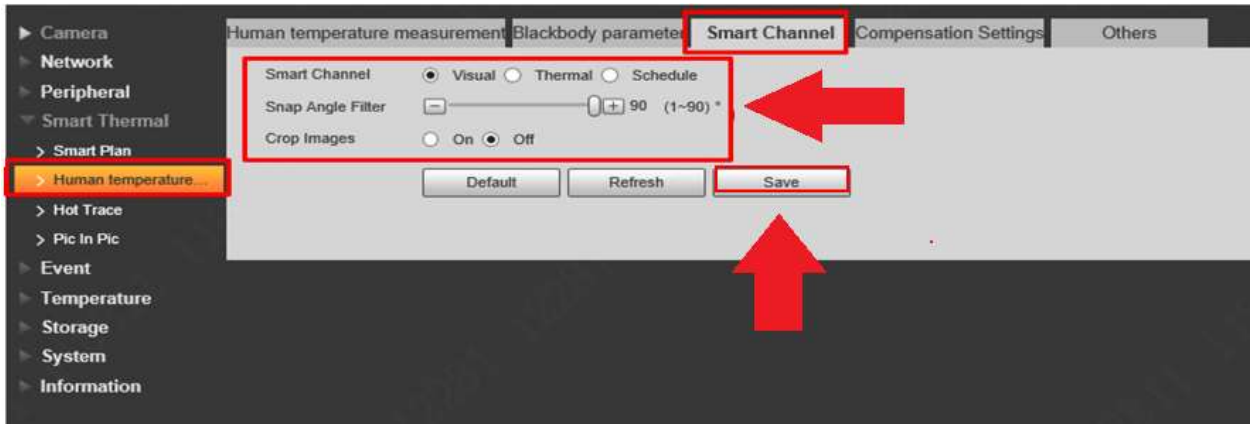


Enable the “**Temperature report**” and “**High temperature abnormal alarm**” options. Set the “High temperature abnormal alarm to 99.1°F(37.3°C). This will alert the system when a temperature reading is above the specified threshold.

Set the “**Temperature Lower Limit**” to 77°F(25°C). This will alert the system when a temperature reading is below the specified threshold.

Enable “**Audio Linkage**” and “**White Light**” and use your mouse to increase the size of the face identification frame in the Face Marking menu. Click **Save**

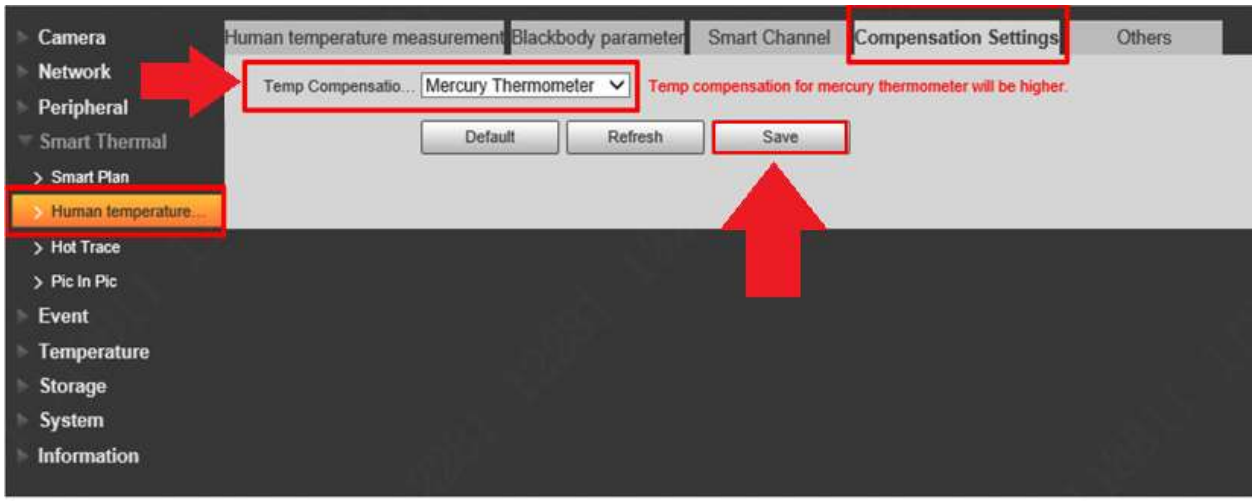
Step 5: Smart Channel Setting: Click on the **Smart Channel** tab in the Human Temperature Monitoring menu.



The visible light and thermal options in this field are optional. Visible light is used to detect faces by default. If the effect of visible light is not visible, such as backlight, or insufficient light, etc., thermal imaging detection can be used, such as the Snap Angle Filter.

Please note, the higher the value of the snap angle filter the easier it is to capture a side of a face. For example, if the value in the slider is set to “1”, it will only detect the front of the face. Click **Save**.

Step 6: Compensation Settings: Click on the **Compensation Settings** tab located in the Human Temperature Monitoring menu. Use the dropdown menu in the Temperature compensation field to select between; a mercury meter compensation (default), or a forehead temperature meter compensation. These modes should be selected on a case by case basis, otherwise it should be left as default. Click **Save**.



Step 7: Ambient Temperature Setting: Click on the Others tab located in the Human Temperature Monitoring menu. Confirm whether the “adaptive ambient temperature” is consistent with the actual ambient temperature on site. If not, input the accurate ambient temperature on site in the Ambient Temp Settings field. The temperature should be entered based on the scale of measurement (°F or °C) indicated in the field. Click **Save**.



Step 8: Binocular Target Setting: This function allows you to provide fine adjustments to your thermal settings. Navigate to the live view screen of your camera and click on the adjustment icon located in the bottom left portion of the interface. Use the up, down, left, and right arrows to adjust the detection area (face box) on the screen.



Note: If the visible light option is enabled in the Smart Channel tab, the visible light in the detection box will be prevalent. The frame should only be adjusted on a case by case basis and must be accurate based on the thermal imaging face frame.

Step 9: Test: Once all settings are confirmed it is highly recommended to test for accuracy. Return to the live view screen and make sure accurate temperatures are being recorded under normal conditions. To test high temperature alarms, place an object with a higher temperature to the forehead and remove. The temperature alarm will sound once the temperature threshold is met.

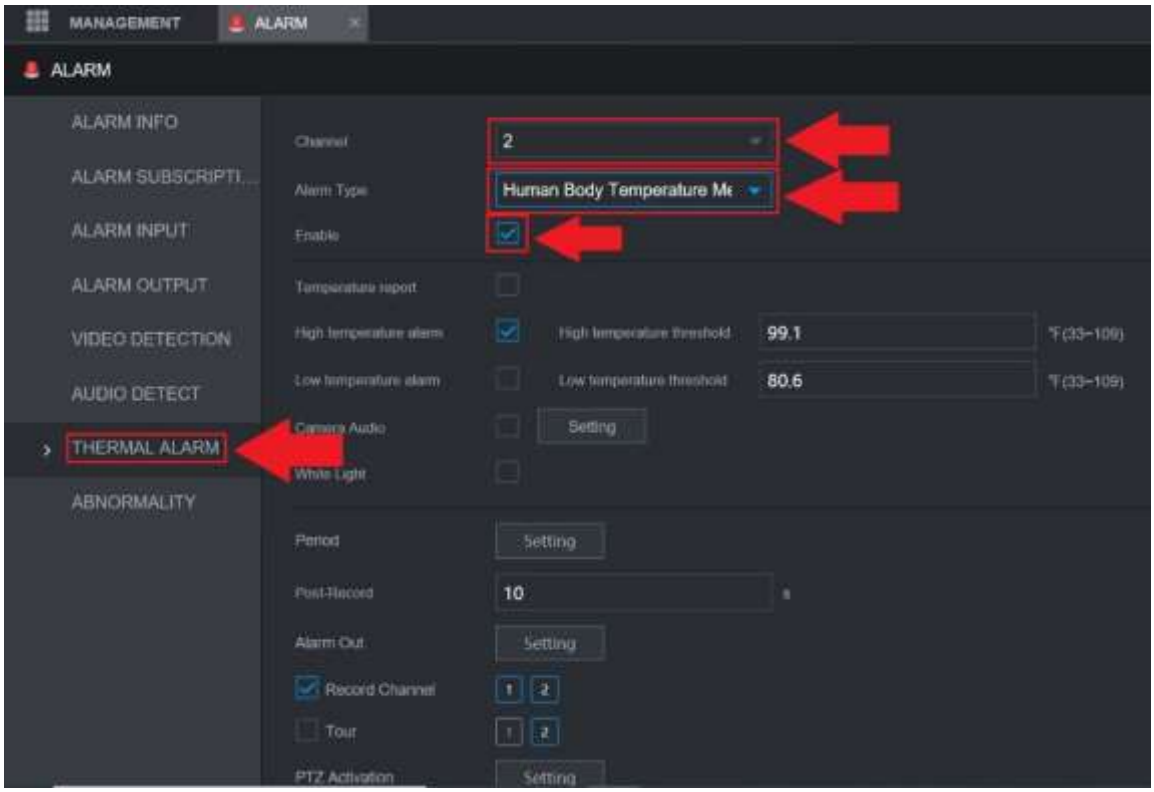


Configuring Human Body Temperature Alarms (NVR)

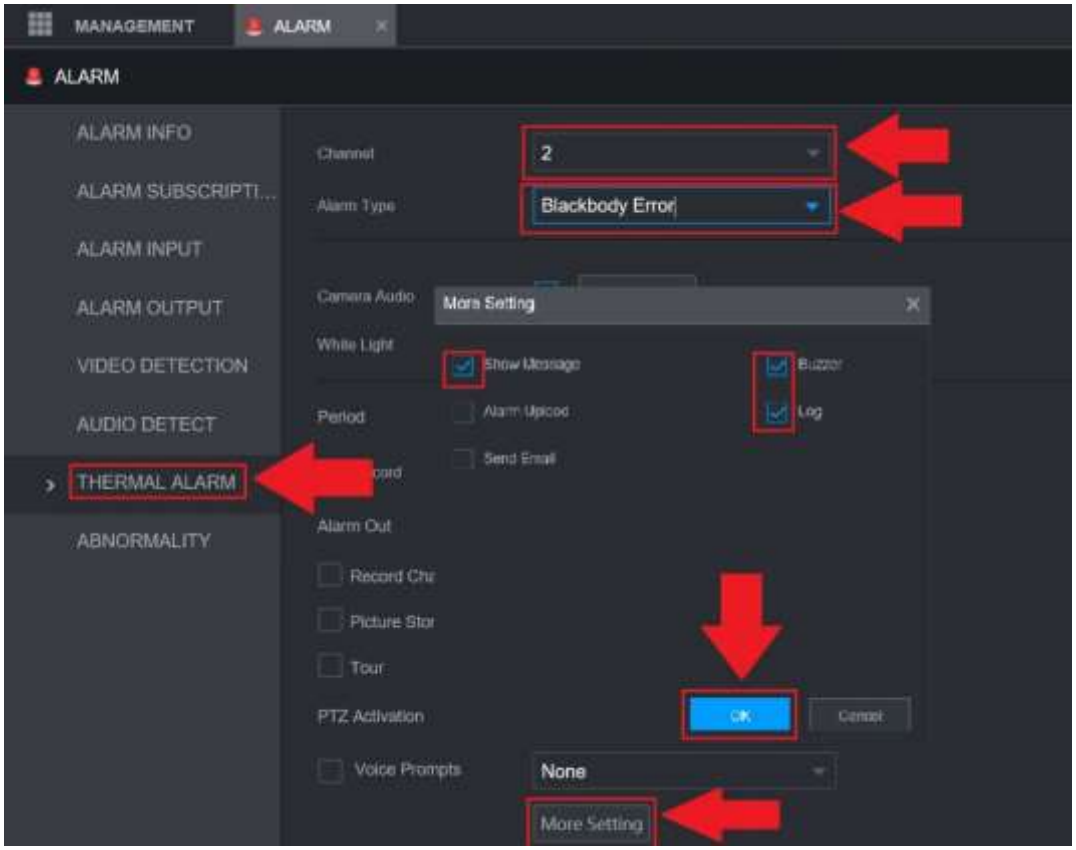
Human body temperature alarms are configured using the NVR. Please ensure the camera is properly registered to your NVR as highlighted in section, "*Registering a Camera*". Navigate to the Main Menu of the NVR to begin the process.



Step 1: Configuring Human Body Temperature: Click on the **Alarm** menu located in the Main Menu and select **Thermal Alarm**. In the Thermal Alarm menu, select Channel 2, which should be the **Thermal Channel** of the camera. Select Human Body Temperature Monitoring from the Alarm Type dropdown menu. Click **OK.**

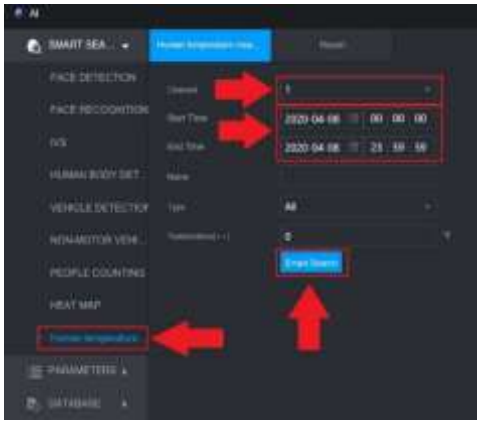


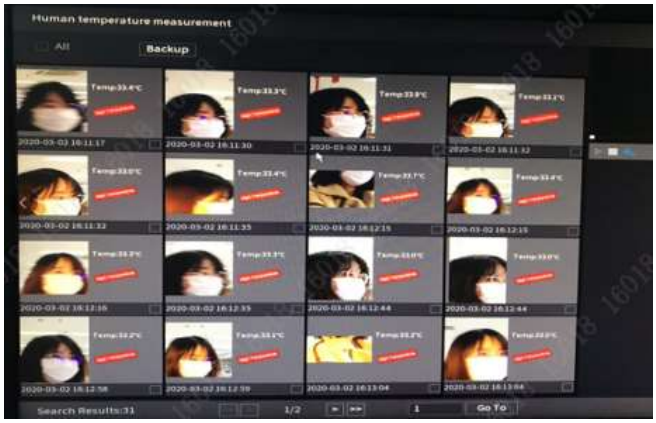
Step 2: Configuring Blackbody Abnormal Event: In the **Thermal Alarm** menu, select Channel 2, which should be the **Thermal Channel** of the camera. In the **Alarm Type** drop down menu, select **Blackbody Error**. Click **OK.**



Click on the **More Setting** option to display additional alarm options. Click on the **Show Message** checkbox to allow the device to notify you when an abnormality occurs. A buzzer as well as a log of the abnormality can be selected as well in the interface. Click **OK**. Click **OK** again in the interface to complete the process.

Step 3: Test: To test this configuration, navigate back to the live view screen and access the AI menu. In the AI menu, click on **Smart Search** and then click on the Human temperature measurement tab. Choose channel 1 (Visual Channel) and enter a start and end time of the abnormality and click **Smart Search**. A display of all Human temperature abnormalities snapshots will be displayed in the interface which can be verified for the specified start and end time.





The abnormality can also be tested by accessing the **Alarm** section in the main menu and accessing the **Alarm Info** tab. Enter a start and end time of the event in the interface and click **Search**. A list of events will appear. Click on the **Details** icon “I” to check the details of the alarm.

Main Menu

The main menu will be the primary area for all your system's features. This interface allows you to view manage and control every aspect of your device similarly to the built-in local user interface. This section provides a brief description of the items listed in this menu.



Management: This menu allows you to access device settings, register cameras, network settings, storage options, system, and account management.

Live: This menu takes you to a live view interface. In this menu you can view real-time live video from all connected devices as well as access to Pan/Tilt/Zoom functions (if applicable), and other related live view settings for your device.

Playback: This menu allows you to view playback of motion detection, IVS, or continuous recording events. For more information on the features included in the playback menu, please refer to section, *"Accessing Playback".*

AI: This menu allows you to manage and view artificial intelligence features such as, face detection, face recognition, IVS, people counting, as well as smart search and IVS playback features.

Alarm: This tab allows you to view and search live alarm information, configure alarm events and controls such as, Motion Detection, Audio Detection, Abnormality, or other related alarm features.

POS: This option is used to view point of sales information and configure related settings. This option is currently unavailable for this model.

Operation: This tab allows you to access system logs, current firmware/version information, import/export system config files, upgrade firmware, and other related system operation features.

Back Up: This tab allows you to back up information from your system onto an inserted USB flash drive. An external USB flash drive is needed to store information such as configuration files or other data related to your system.

Display: This tab allows you to configure resolution and display settings for your system. This includes tours and video output settings for your device.

Audio: This tab allows you to configure audio announcements and import audio files into your system. These audio announcements can be used as voice prompts within the system.

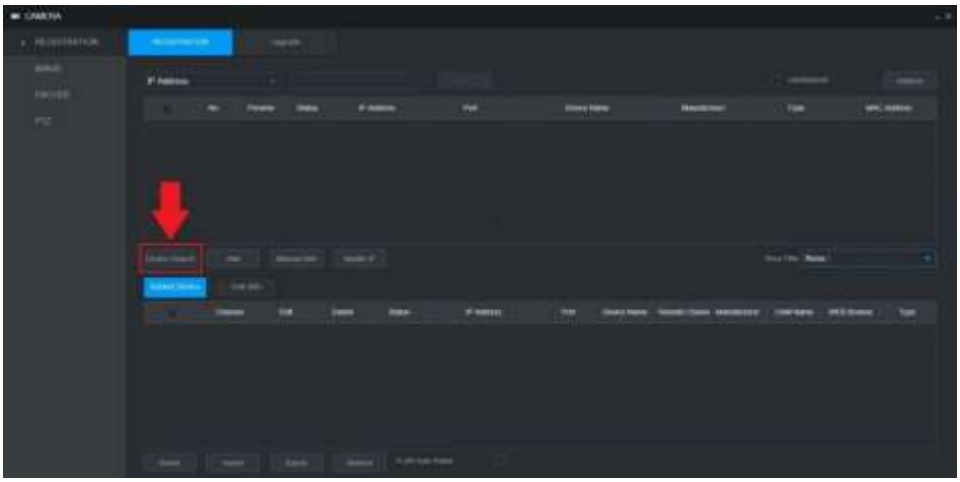
Management

The management section allows you to access camera settings and registration, network settings, storage options, system, and account management. If accessing these features in the web UI, please click on the **Management** icon to display the features.

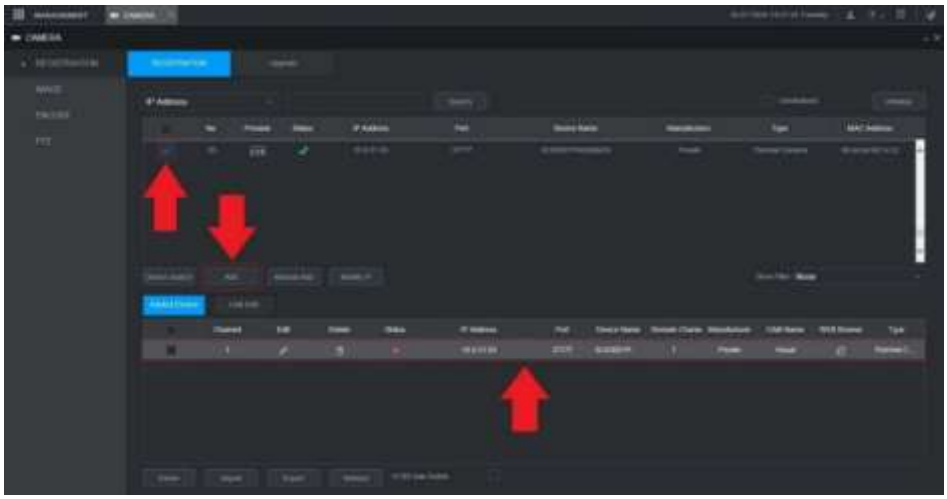
Camera

The camera registration screen allows you to add the thermal camera or additional cameras into the NVR. If the cameras are not directly connected to the back of the NVR, please make sure they are active and on the same network as the NVR before proceeding.

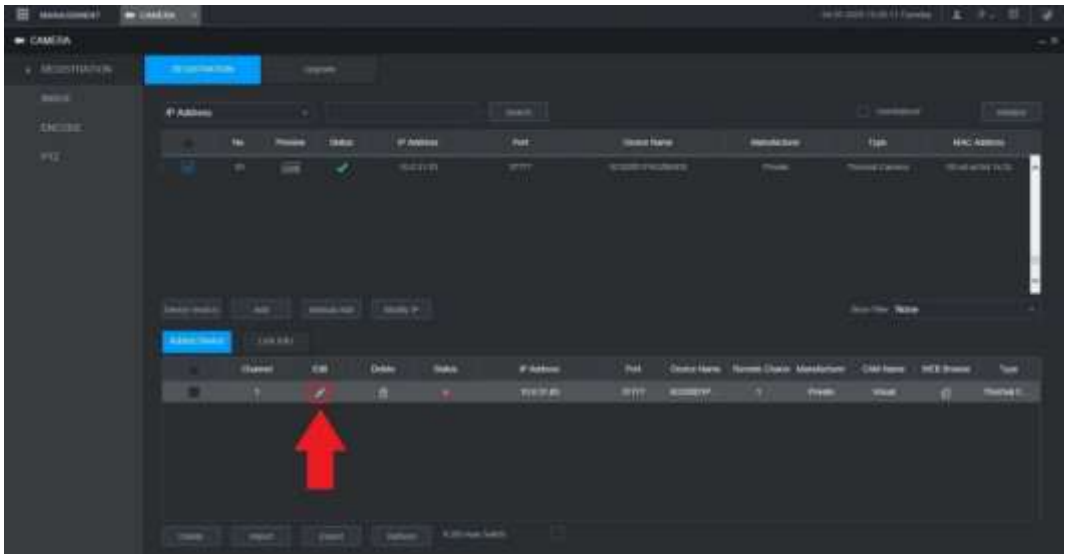
To begin adding a device, click on **Device Search** to allow the NVR to scan for connected devices on your network.



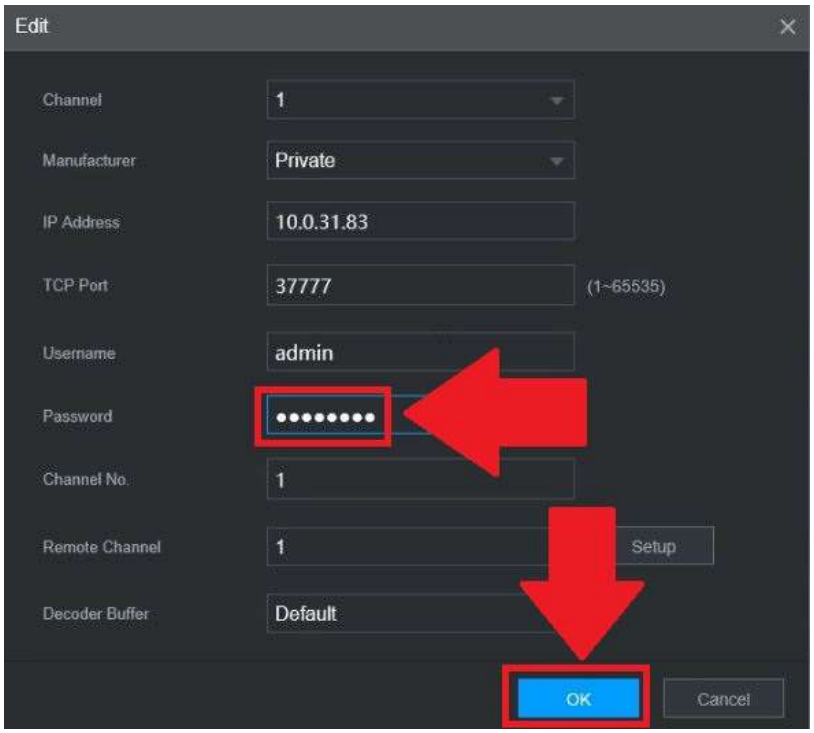
A list of applicable connected devices will show on the screen. Select your devices by click on the checkbox next to the device and click **Add** to add the device into the **Added Devices** menu.



If the status of your camera is red it indicates the camera is not properly connected to the NVR. This could be because the password for the camera is not entered properly in the system.
To modify the password for your camera, click on the edit icon (pencil) located in the **Edit** column in the **Added Device** menu.



Select the **Password** field and use the onscreen keyboard to enter the password for your camera. Once the password has been entered, click **OK** to continue.



Note: If this is a new device and a password has not been added the password will be **admin.**

Once the password has been properly set you will notice 2 separate channels: one for visual and one for thermal. The **Status** indicator will turn green on both channels indicating the camera has been properly added to the NVR.



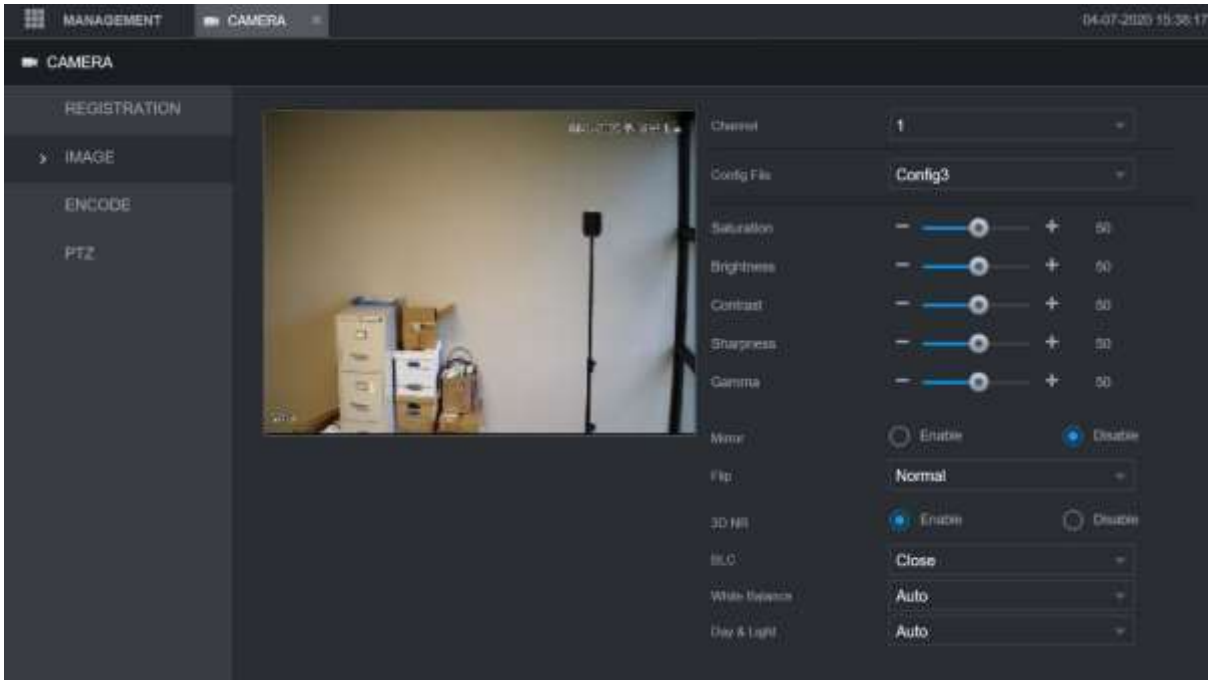
For more information on how to configure a thermal camera to the system, please refer to section, "*Configuring the Camera and Blackbody*".

Upgrade

The upgrade tab is used to upgrade firmware on a camera. For optimal use, it is highly recommended to check the status of your firmware regularly. For more information on firmware, please visit, https://amcrest.com/firmware-subscribe

Image

The image tab allows the user to adjust image settings such as, saturation, brightness, contrast, sharpness, gamma, as well as flip and mirror the image. Below is a screenshot of this menu:



The following options will vary depending on camera model and manufacturer

Channel: Allows the user to access their camera based on which channel the camera is connected.
Config File: Allows the user to save preset config files for their cameras.
Saturation: This slider adjusts the color saturation levels of the image being displayed. The value ranges from 0 to 100, 50 being default. The larger the number, the stronger the color. This value has no effect on the general brightness of the image. The video color may become too strong if the value is too high. The recommended value ranges from 40 to 60.
Brightness: This slider adjusts the brightness of the image being displayed. The value ranges from 0 to 100. The default value is 50. The larger the number, the brighter the video. You can use this function when the whole video is too dark or too bright. Please note the video may become hazy if the value is too high. The recommended value ranges from 40 to 60.

Contrast: This slider adjusts the contrast of the image being displayed The value ranges from 0 to 100. The default value is 50. The larger the number, the higher the contrast. Please note the video may become hazy if the value is too low. If this value is too high, the dark section may lack brightness while the bright section may be overexposed. The recommended value ranges from 40 to 60.
Sharpness: This slider adjusts the sharpness or detail of the image being displayed. The value ranges from 0 – 100, 50 being default. The larger the number the stronger the sharper the image. Please note, the image may become distorted if sharpness is set too high. The recommended levels should be set between 40 to 60.
Gamma: This slider is used to adjust the pixels' luminance at every brightness level, from 0 to 100 percent.
Mirror: This option flips the image horizontally. This function is off by default.
Flip: This option flips the image 180°. This function is set to normal by default and is based on the capabilities of the camera you are viewing.
3D NR: This reduces the noise in the video to enhance the quality.
BLC: This option allows the user to set either BLC (Backlight Compensation), WDR (Wide Dynamic Rage), or HLC(Highlight Compensation).

- **Close:** This is to disable backlight compensation. Please note this function is disabled by default.
- **BLC:** Used to activate backlight function which aims to reduce natural light distortions.
  HLC: This is used to help reduce distortion from headlights, spotlights, or strong light sources.
- **WDR**: Helps balance washed out video that has a large dynamic range.

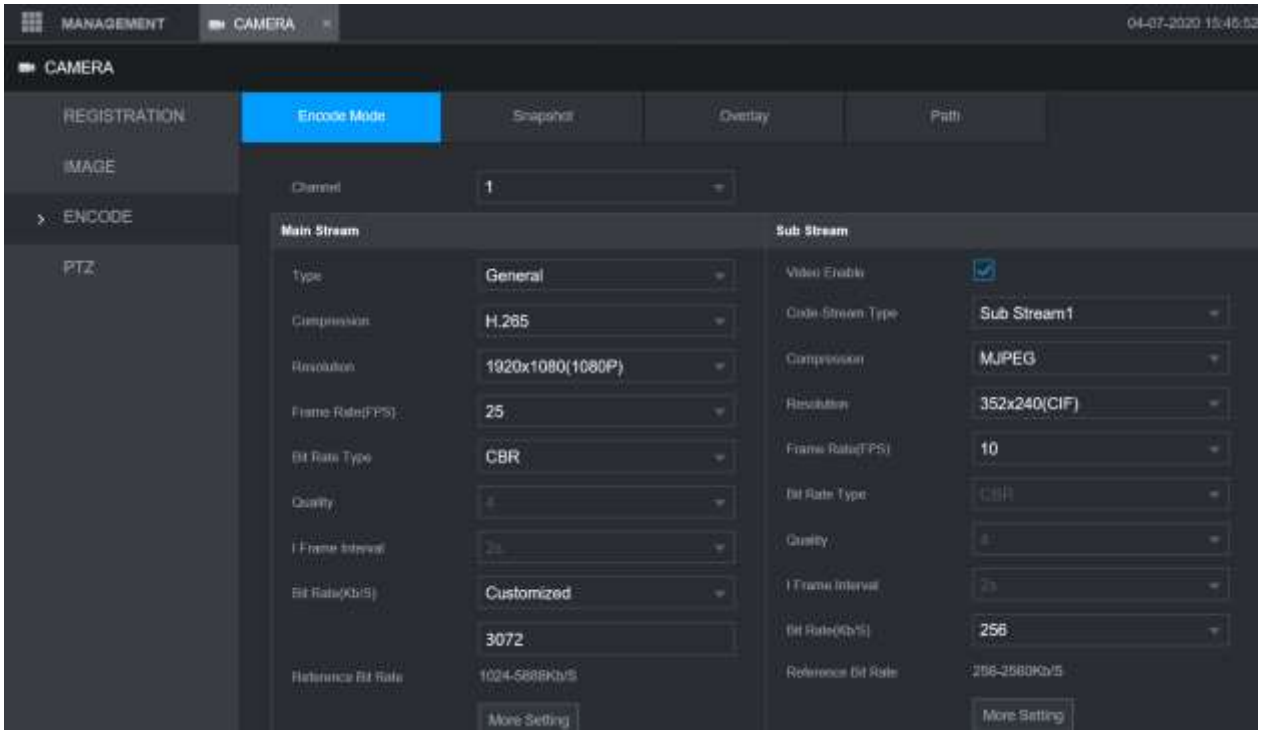
White Balance Sets the white balance mode of the camera which affects the general hue of the image. This set to Auto by default however can be set to either Outdoor, Natural, Street Lamp, Manual or Customized Zone.

- **Auto**: The system automatically compensates the white balance of the image being displayed.
- **Indoor:** White balance mode for use with indoor cameras or areas of heavy light.
- **Outdoor:** White balance mode for use with outdoor cameras or areas with heavy light.
  ATW: This option detects when your ambient lighting shifts significantly (such as moving from indoors to outdoors) and dynamically changes the auto white balance.
- **Natural:** The threshold of the white balance is in the night mode.
- **Street Lamp:** White balance mode for use in environments with less direct light.
- **Manual:** White balance mode which needs to be manually adjusted by the user.

Day/Light: This dropdown menu allows the user to select specific day and night preset modes.
Color: The device outputs color video.
Auto: This mode is on by default. It automatically selects when color or B/W modes should be activated.
B/W: The device outputs the black and white video.

Encode

The encode menu displays both the main stream and sub stream settings each connected channel. See below for a screenshot of the tab:



Main Stream

- **Channel:** This dropdown box allows the user to select a channel from the dropdown list to modify.
- **Type:** This dropdown box allows the user to select one of 3 channel types: regular, motion detect, and alarm. Various encode parameters can be for different record types.
- **Compression:** This dropdown box allows the user to select a compression protocol. The system supports H.264 and MJPEG video compression protocols.
- **Resolution:** This dropdown box allows the user to set the resolution. The system supports various resolutions and they can be selected from this dropdown list.
- **Frame Rate(FPS):** This dropdown box allows the user to select a frame rate. Frame rate settings range from 1f/s to 25f/s in NTSC mode and 1f/s to 30f/s in PAL mode.
- **Bit Rate Type:** This dropdown box allows the user to select a bit rate type. The system supports two-bit rate types: CBR and VBR. In VBR mode, video quality can be set.
- **Quality:** Set the image quality of the camera's main stream. This option may not be adjustable on some models.
- **I Frame Intervals:** This is the interval of time in between every frame on the stream. This option may not be adjustable on some models.
- **Bit Rate(Kb/S):** This dropdown menu allows the user to select bit rate settings for their camera. Bit rate values are displayed in Kb/S (kilobytes per second).
- **Reference Bit Rate:** Displays a recommended bit rate range for your camera.
- Settings: Click this menu to load audio settings (If supported).
- **More Setting:** This option allows you to access audio settings for your device.
    - Enable: Click this checkbox to enable audio on your device.
    - Audio Format: Adjust the audio format between PCM, G.711A, G.711Mu, or AAC.
    - Audio Sampling: This dropdown menu allows the user to select sampling rate values.

Sub Stream

The **sub stream** or extra stream is a second codec that runs alongside the main stream. This allows you to reduce outgoing internet bandwidth without sacrificing your direct recording quality.

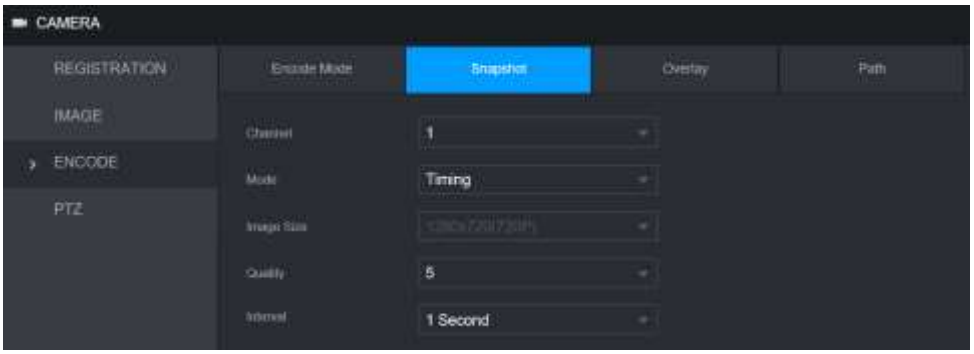
- **Video Enable:** Enables the sub stream.
- **Code-Stream Type:** Allows the device to switch between sub streams if multiple sub streams exist.
- **Compression:** This dropdown box allows the user to select a compression protocol. The system supports H.264 and MJPEG video compression protocols.
- **Resolution:** This dropdown box allows the user to set the resolution. The system supports various resolutions and they can be selected from this dropdown list.
- **Frame Rate(FPS):** This dropdown box allows the user to select a frame rate. Frame rate settings range from 1f/s to 25f/s in NTSC mode and 1f/s to 30f/s in PAL mode.
- **Bit Rate Type:** This dropdown box allows the user to select a bit rate type. The system supports two-bit rate types: CBR and VBR. In VBR mode, video quality can be set.
- **Quality:** Set the image quality of the camera's main stream. This option may not be adjustable on some models.
- **I Frame Intervals:** This is the interval of time in between every frame on the stream. This option may not be adjustable on some models.
- **Bit Rate(Kb/S):** This dropdown menu allows the user to select bit rate settings for their camera. Bit rate values are displayed in Kb/S (kilobytes per second).
- **Reference Bit Rate:** Displays a recommended bit rate range for your camera.
- Settings: Click this menu to load audio settings (If supported).
- **More Setting:** This option allows you to access audio settings for your device.
    - Enable: Click this checkbox to enable audio on your device.
    - Audio Format: Adjust the audio format between PCM, G.711A, G.711Mu, or AAC.
    - Audio Sampling: This dropdown menu allows the user to select sampling rate values.

Watermark Enable

This option is used in conjunction with both main stream and sub streams. It is used to enable or disable the watermark string located on the live view screen. The watermark string is typically default to DigitalCCTV.

Snapshot

This tab allows for the selection of snapshot settings. See below for a screenshot of the Snapshot tab:



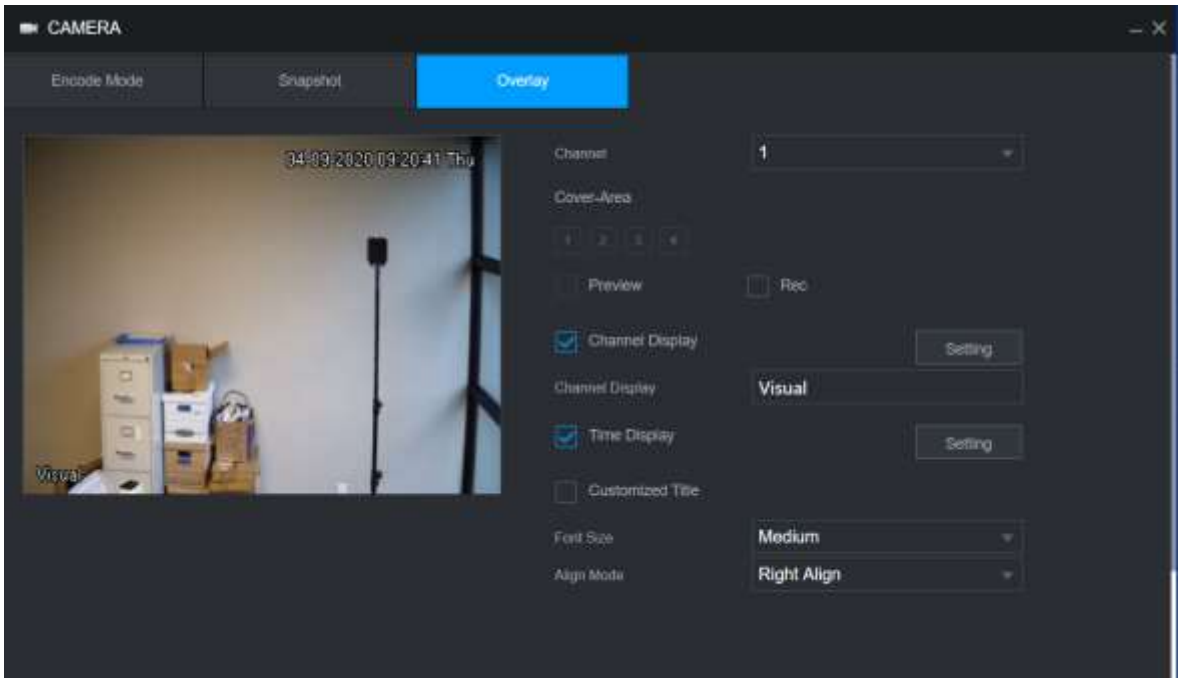
Below is a list of snapshot settings that can be modified on this screen:

- **Channel:** This dropdown menu allows the user to select a channel from the dropdown list to modify.
- **Mode:** This dropdown menu allows the user to select how snapshots will be taken.
    - **Timing:** Based on timing and happens at a set interval.
    - **Trigger:** Based on motion detection or alarm activation.
- **Image Size:** This dropdown box allows the user to select an image size.
- There are 4 settings: D1, HD1, 2CIF, and CIF.

- **Quality:** This dropdown box allows the user to select image quality. Quality is adjusted on a scale between 1, being the lowest, and 6, being the highest quality.
- **Interval:** This dropdown allows the user to select the snapshot interval. The maximum setting for a customized interval is 3600s/seconds.

Overlay

The overlay tab allows the user to change overlay settings for each channel. Below is a screenshot of the overlay menu:

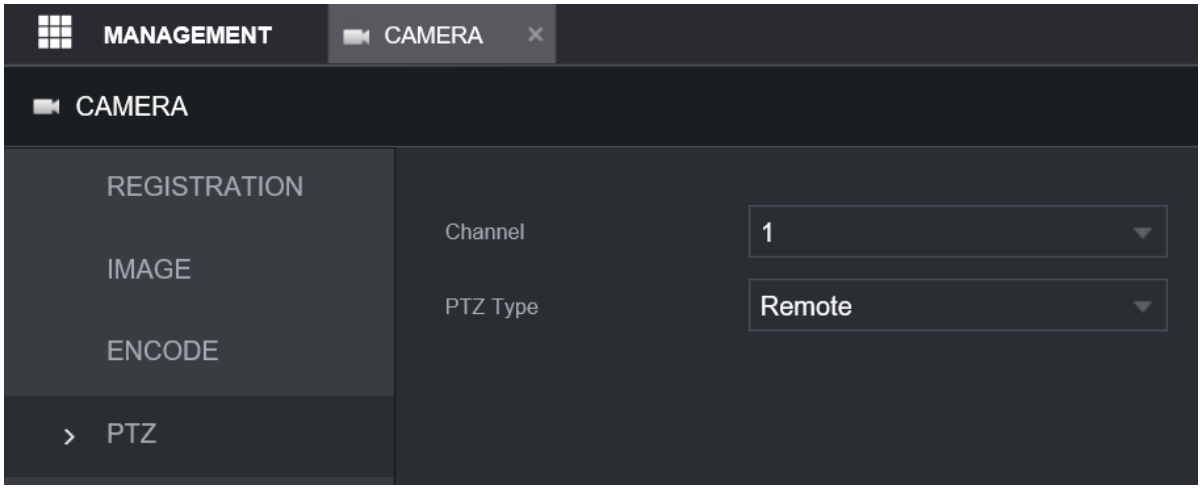


Below is a description of the items listed in this menu:

- **Channel:** This dropdown box allows the user to select a channel from the dropdown list to modify.
- **Cover Area:** This option allows the user to set up to 4 privacy mask settings for their camera. To activate, click on the **Rec** checkbox and choose up to 4 cover areas. Use the mouse to set the proper cover area size. Click OK once the privacy mask settings are complete.
- **Channel Display:** This checkbox allows the user to enable a channel name to be displayed on the screen. To customize this setting, click on the Setting option and enter a name for your channel. Click OK to set the display setting.
- **Time Display:** This checkbox allows the time and date overlay to be displayed. To adjust this overlay, click on the Setting option and use your mouse to adjust the position of the overlay.
- **Customized Title:** This option allows you to add a customized title overlay to the interface. The system can support up to 5 different custom titles.
- **Font Size:** Adjusts the font size of the overlay between small, medium, and large.
- **Align Mode:** This option is used to align the overlay in towards the left of right of the interface.
- **Copy:** Use the copy button to copy any necessary overlay options to other channels in the system. If you would like them to apply to all channels, click the All option in the menu.

PTZ

This menu is used to configure devices with Pan/Tilt/Zoom capabilities to the device. This option is only applicable for devices that are supported with PTZ. Below is a screenshot of the PTZ menu:



Below is a description of the items listed in this menu:

Channel: Select which channel to configure PTZ.
PTZ Type: Use the dropdown menu to select between a remote PTZ source or a local PTZ source. These options are not applicable for this specific system.

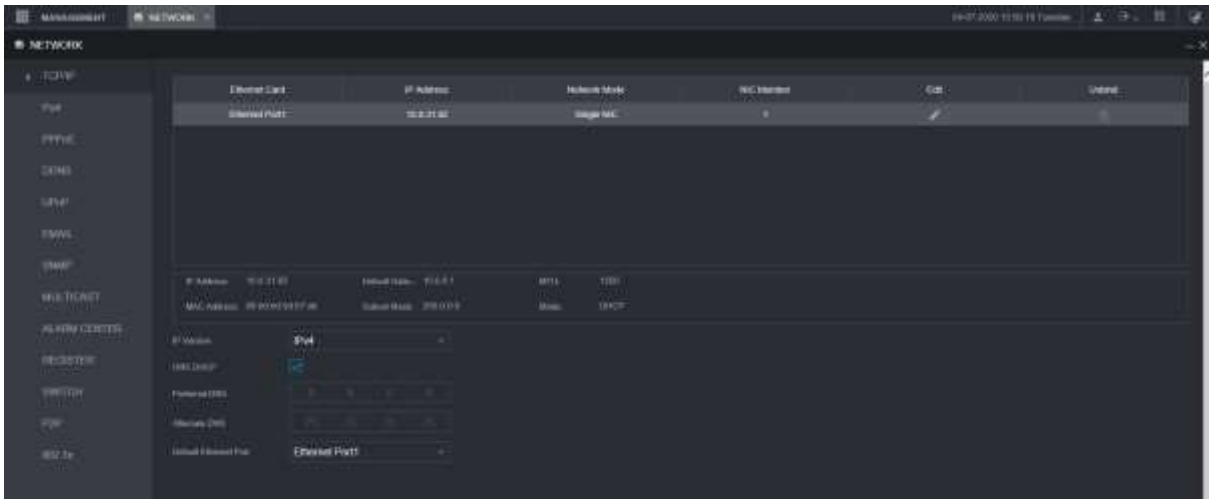
Network

This menu controls all network related functions for the NVR and governs how the NVR interacts with your network.

TCP/IP

TCP/IP stands for Transmission Control Protocol/Internet Protocol and it is the language/protocol that allows communication between internet connected devices, whether on a local network, or a on the Internet at large. This screen allows for TCP/IP settings to be modified for the NVR to establish connection to the network.

Below is a screenshot of the TCP/IP settings screen:



Below is an explanation of the fields on the TCP/IP settings screen:

Ethernet Card: Displays which Ethernet card (NIC card) is being used by the NVR.
IP Address: The IP address assigned to your NVR.
Network Mode: Displays number of NIC cards used by the NVR.

NIC Member: Number of network connections being made by the NVR.
Edit: Allows the user to view and IPv4 and IPv6 information as well as set DHCP and static IP addresses.
IP Version: This dropdown allows the user to select the IP version. The two options are IPV4 and IPV6.
MAC address: This field shows the NVR's MAC address, which is unique to this device. This number is read-only and is used to access a local area network (LAN).
Static vs DHCP: This check box allows the user to choose between a static IP address, and a dynamic IP address. DHCP stands for Dynamic Host Configuration Protocol, and this enables the NVR to automatically obtain an IP address from another network device such as a server or more commonly, a router. When the DHCP function is enabled, the user cannot modify the IP address, Subnet Mask, or Gateway, as these values are obtained from the DHCP function. To view the current IP address, DHCP needs to be disabled. Note: When PPPoE is enabled, modification of IP Address, Subnet Mask, and Gateway becomes prohibited.
MTU: MTU stands for Maximum Transmission Unit. This field allows the user to set the MTU value of the network adapter. The value ranges from 1280-7200 bytes. The default value is 1500 bytes. Please note MTU modification may result in network adapter reboot and the network turning off. MTU modification can affect the current network service. The system may pop up a dialog box to confirm setup when the MTU value is changed. Click the OK button to confirm current value and reboot or can click the Cancel button to terminate the current modification. Before the modification, you can check the MTU of the gateway; the MTU of the NVR should be the same or lower than the MTU of the gateway. This way, packets can be reduced, and the network transmission efficiency be enhanced. The following MTU values are for reference only.

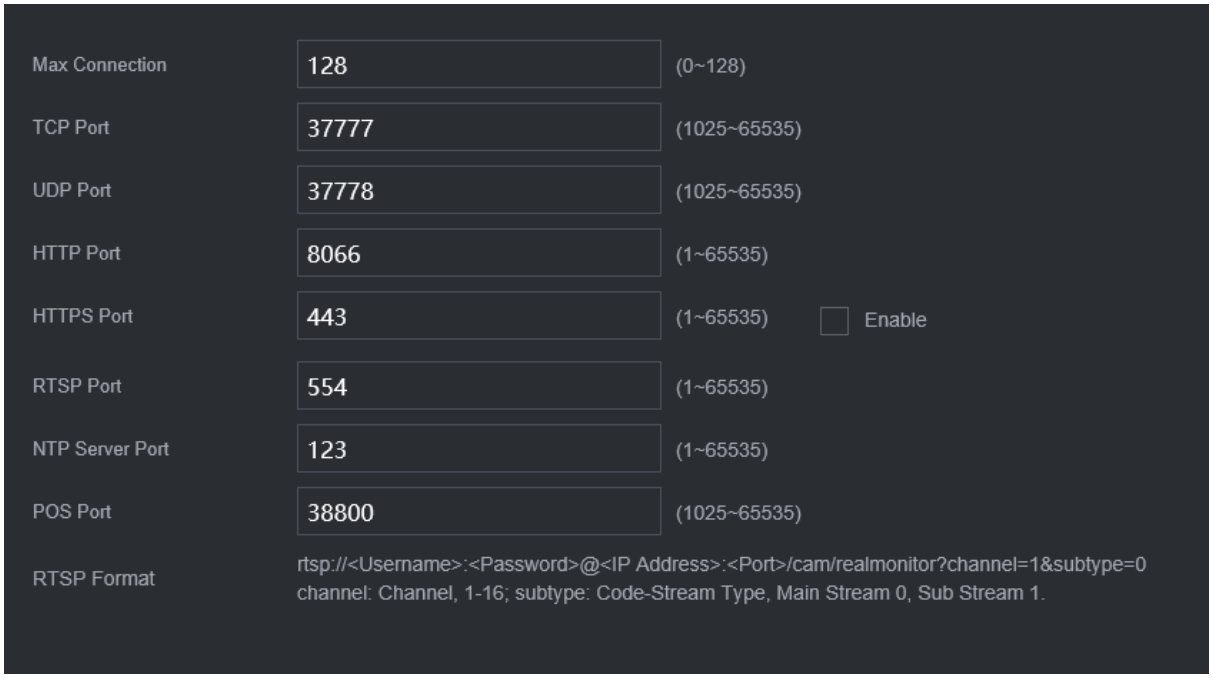
1500: Ethernet information packet maximum value and it is also the default value. It is the typical setup when there is no PPPoE or VPN. It is the default setup of some routers, switches, and network adapters.
1492: Recommend value for PPPoE
1468: Recommend value for DHCP

Default Gateway: This field allows the user to enter the default gateway for the network. The default gateway should be on the same IP subnet as the NVR's IP. The specified length of the subnet prefix should have the same string. For example, if the IP address is 192.168.0.25, the default gateway should start with 192.168.0.X. The default gateway is usually the IP address of the router.
Subnet Mask: This field allows the user to enter a custom subnet mask. The default subnet mask is 255.255.255.0. This number is used to determine which subnetwork the IP address belongs to.
Preferred DNS server: This field allows the user to enter the DNS server IP address.
Alternate DNS server: This field allows the user to enter the Alternate DNS server IP address.
LAN download: This checkbox allows the user to enable the user to process the downloaded data first. The download speed is 1.5X or 2.0X compared to the normal streaming speed.

To revert to default settings, click the **Default** button. To confirm settings, click the **Save** button. To cancel any modifications, click the **Cancel** button. To apply the settings, click the **Apply** button. After completing the setup please click the **Save** button to go back to the previous menu.

Port

This screen allows users to configure port connections. It is important that the system is rebooted if any changes are made to the settings on this screen. Also, ensure that port values do not conflict.



Below is an explanation of the fields on the Connection settings screen:

- **Maximum Connection:** This field represents the maximum number of users that can be connected to the NVR at the same time. The maximum number of users the NVR can support at one time is 128.
- **TCP Port:** This field designates the Transmission Control Protocol (TCP) port number. The default value is 37777.
- **UDP Port:** This field designates the User Datagram Protocol (UDP) port number. The default value is 37778.
- **HTTP Port:** This field designates the Hypertext Transfer Protocol (HTTP) port number. The default value is 80.
- **HTTPS Port:** This field designates the Hypertext Transfer Protocol Secure (HTTPS) port number. The default value is 443. To activate an HTTPS connection, click on the Enable checkbox and follow the on-screen prompts.
- **RTSP Port:** This field designates the Real Time Streaming Protocol (RTSP) port number. The default value is 554.
- **NTP Server Port:** This field designates the NTP server port number. The default is 123.
- **POS Server Port:** This field designates the POS server port number. This option is currently unavailable in this system; however, the default port is 38800
- **RTSP Format:** The RTSP format for your system is as follows: rtsp://<Username>:<Password>@<IPAddress>:<Port>/cam/realmonitor?channel=1&subtype=0channel: Channel, 1-16; subtype: Code-Stream Type, Main Stream 0, Sub Stream 1.

PPPoE

PPPoE stands for Point-to-Point Protocol over Ethernet. This screen allows users to configure PPPoE connections. Below is a screenshot of the PPPoE screen:



To connect using PPPoE, click on the Enable checkbox and input the PPPoE user name and password you get from your ISP (internet service provider). Save current setup and then reboot the device to activate the setting.

The system will connect to the internet via PPPoE after reboot. You can get the IP address in the WAN from the IP address column. When PPPoE is on, please disable UPnP to avoid any issues.

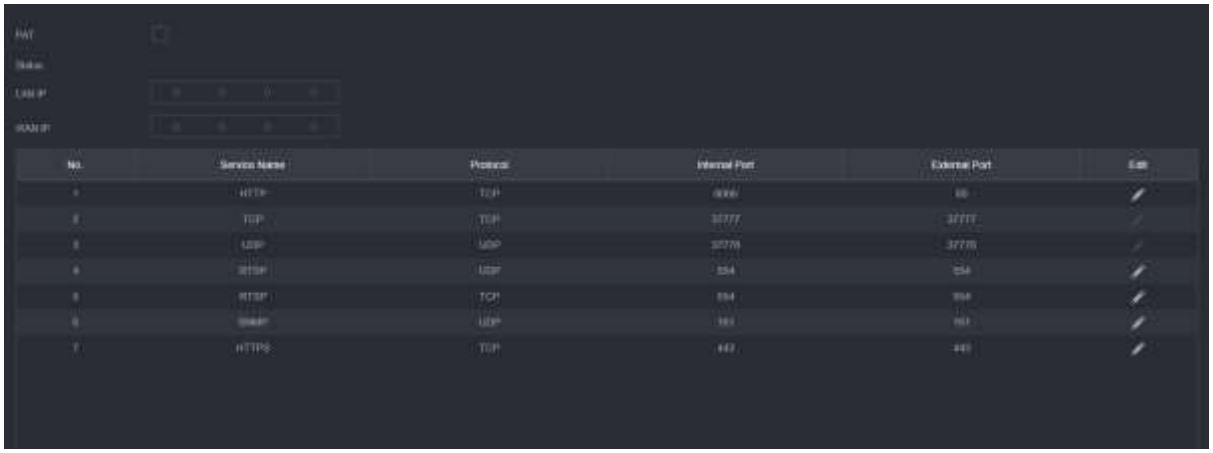
DDNS



DDNS stands for Dynamic Domain Name Server. This technology is used to automatically update name servers in real time to help the NVR maintain a persistent address despite changes in location or configuration. What this means is that even when the NVR is restarted, moved, or reconfigured, it can keep the same IP address, thus allowing remote users uninterrupted access to the NVR, rather than having to request a new IP address to use for remote access anytime a change is made.

UPnP

UPnP stands for Universal Plug and Play, and it is a protocol used to easily connect devices to the internet. In the case of this NVR, it allows the NVR to connect to the router in an easy manner to quickly allow for remote connection. Below is a screenshot of the UPnP settings screen:

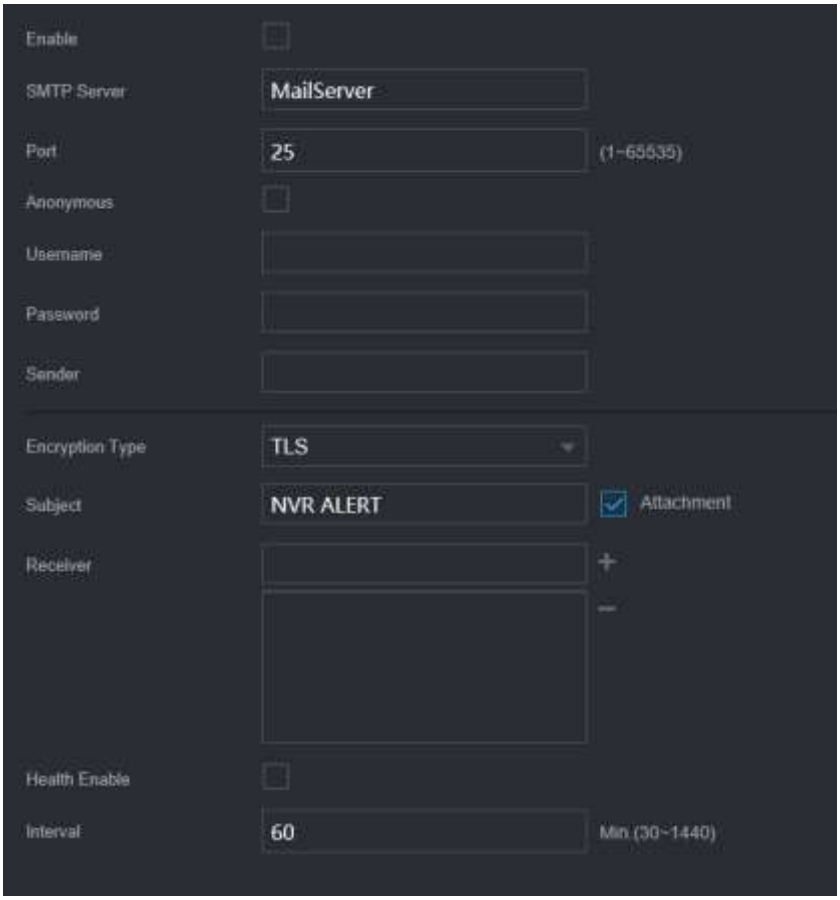


Below is an explanation of the fields in the UPnP settings screen:

- **PAT:** PAT stands for Port Address Translation, and it is something that the UPnP protocol handles. This checkbox allows the user to enable UPnP on the device.
- **Status:** This field shows the UPnP status and has two options:
  - **Unknown:** This means that UPnP is offline.
  - **Successful:** This means that UPnP is working.
- Router LAN IP: This field allows the user to enter the IP address of the router that the NVR is trying to connect to.
- **WAN IP:** This field is where the NVR Wide Area Network (WAN) IP is populated. This IP address is what is used to remotely access the NVR through web access.
  PAT Table: This table is used to show how the ports for each protocol listed below have been remapped by the UPnP protocol.
  - The first column shows the order of the services.
  - The second column shows the name of the services. To edit this, double click on the service line item.
  - The third column shows the name of the protocol used by that service. To edit this, double click on the service line item.
  - The fourth column shows the Internal Port used by that service. To edit this, double click on the service line item.
  - The fifth column shows the External Port used by that service. To edit this, double click on the service line item.

Email

This screen allows for the configuring of email settings to permit the NVR to send emails when the connected cameras or alarms are triggered. Below is a screenshot of the email settings screen:



Below is an explanation of the fields on the Email settings screen:

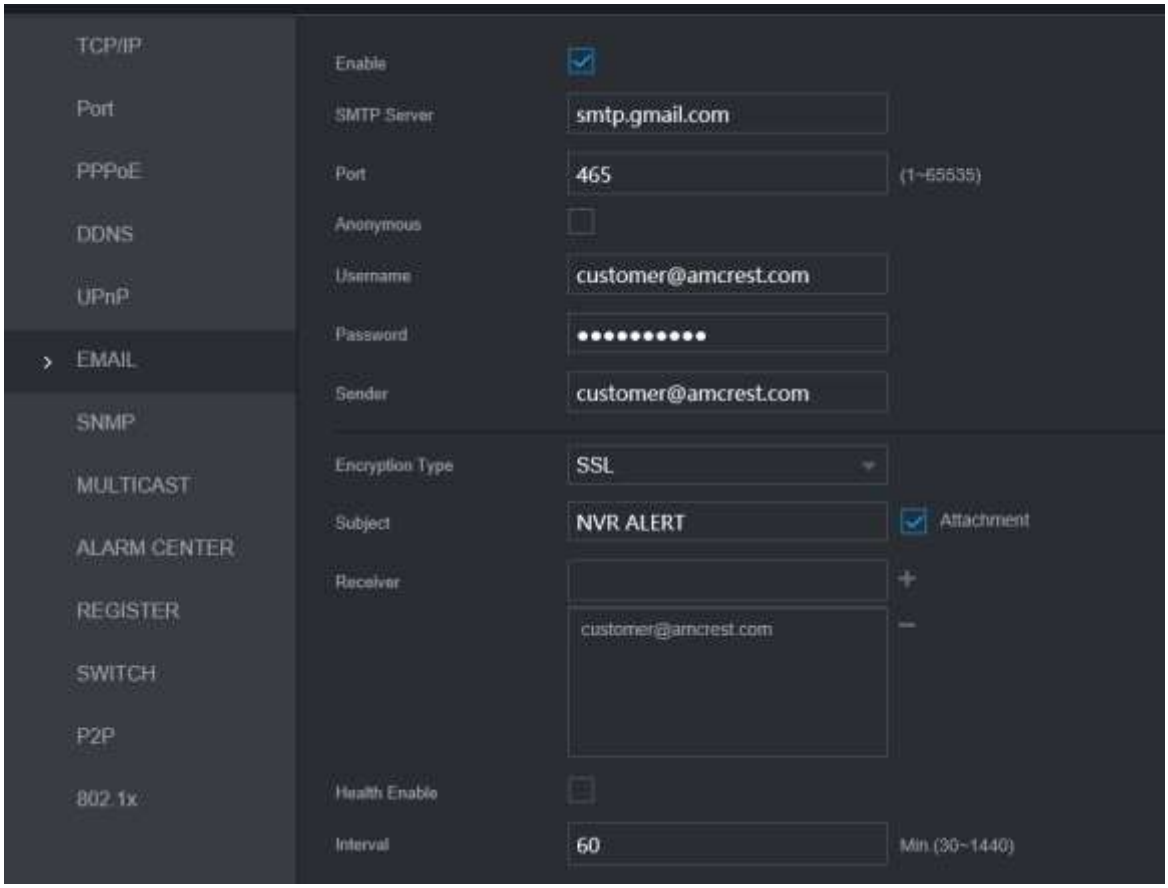
- **Enable:** This checkbox allows the user to enable the email feature.
- **SMTP Server:** SMTP stands for Simple Mail Transfer Protocol. This field allows the user to enter the SMTP server used by the email service.
- Port: This field allows the user to enter the port that corresponds to the selected SMTP server.
- **User Name:** This field allows the user to enter the username used to login to the selected SMTP server.
- **Password:** This field allows the user to enter the password associated with the SMTP username.
- **Sender:** This field allows the user to enter the sender email address. This email address will be the one that sends out all emails pertaining to the alerts and alarm emails sent by the NVR.
- **Receiver:** This field allows the user to enter the receiver email address. These email addresses are the ones that will receive any emails pertaining to alert and alarm emails sent by the NVR. Up to 3 email addresses can be entered in this field.
- **Subject:** This field allows the user to define the subject line of the email that is sent to the receivers.
- **Attachment:** This checkbox allows the user to enable the attachment of screenshots with emails.
- **Encrypt Type:** This dropdown box allows the user to select an encryption type. There are two types of email encryption that are available
- **SSL:** Secure Socket Layer
- **TLS:** Transport Layer Security
  Event Interval: This field allows the user to define, in seconds, how many events can be triggered concurrently.
- **Health Enable:** This checkbox allows the user to enable the function that causes the system to send out a test email to ensure if the connection is OK or not.

- Interval: This field allows the user to define, in minutes, how often emails can be sent by the system. This helps to curb heavy load on the email server when multiple events are occurring.

Setting Up Email Alerts

Setting up Email alerts will allow you to receive snapshots of events via your email. Each event type must have the "**Send Email**" option enabled to allow the feature to send snapshots to your email. To setup email alerts, please refer to the information provided below.

1. On the Main Menu, click on **Network** located in the **Management** section.
2. Select **Email** and click on the **Enable** checkbox.
3. Enter the SMTP information for your email. In this example we will be using Gmail, however other email services can also be used. If using Gmail, type in "**smtp.gmail.com**"
4. Enter a port number. This is based on the type of encryption used by your email service. In this example we will be using port **465**, which uses an **SSL** encryption type. If using **TLS**, the port number will be **587**.
5. Enter the email address you will be using in the **Username** field.
6. Enter the password for the email address in the **Password** field.
7. In the **Receiver** field, enter your email address. Enter that same email address in the **Sender** field.
8. Update the subject line for your alerts in the **Subject** field. The default subject line will be NVR Alert however this can be changed to anything you would like to use.
9. Make sure the **Attachment** toggle switch is enabled to enable snapshots to be sent.



10. Click **OK** and **Test** to verify connectivity.

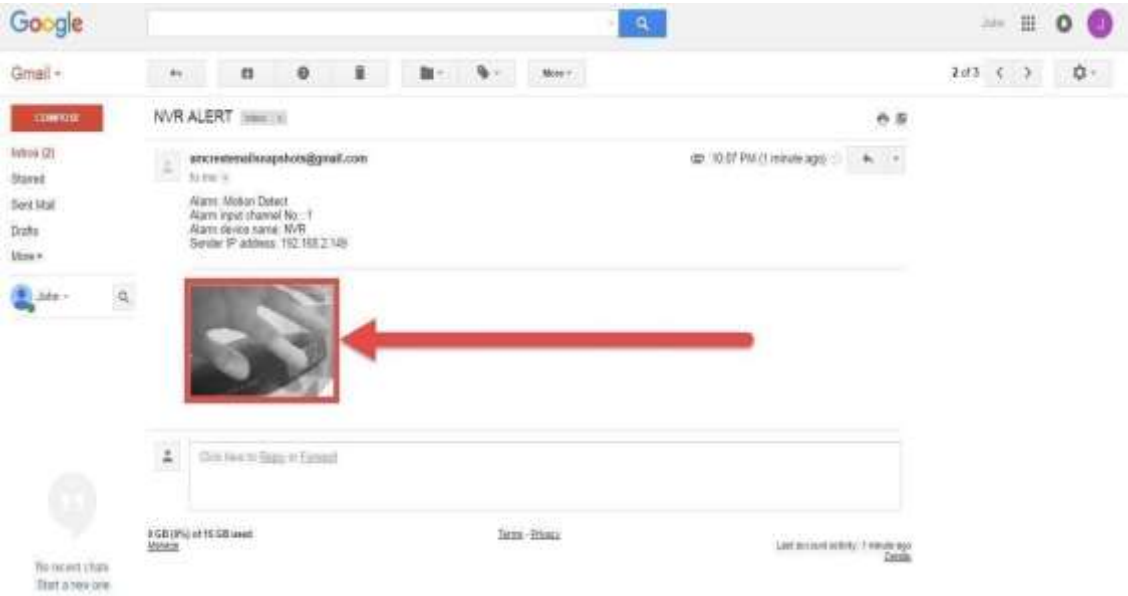
11. Check your email to see if you received the email test:



Now, whenever your camera detects motion, you will get email alerts sent to the email that was set up in the system.

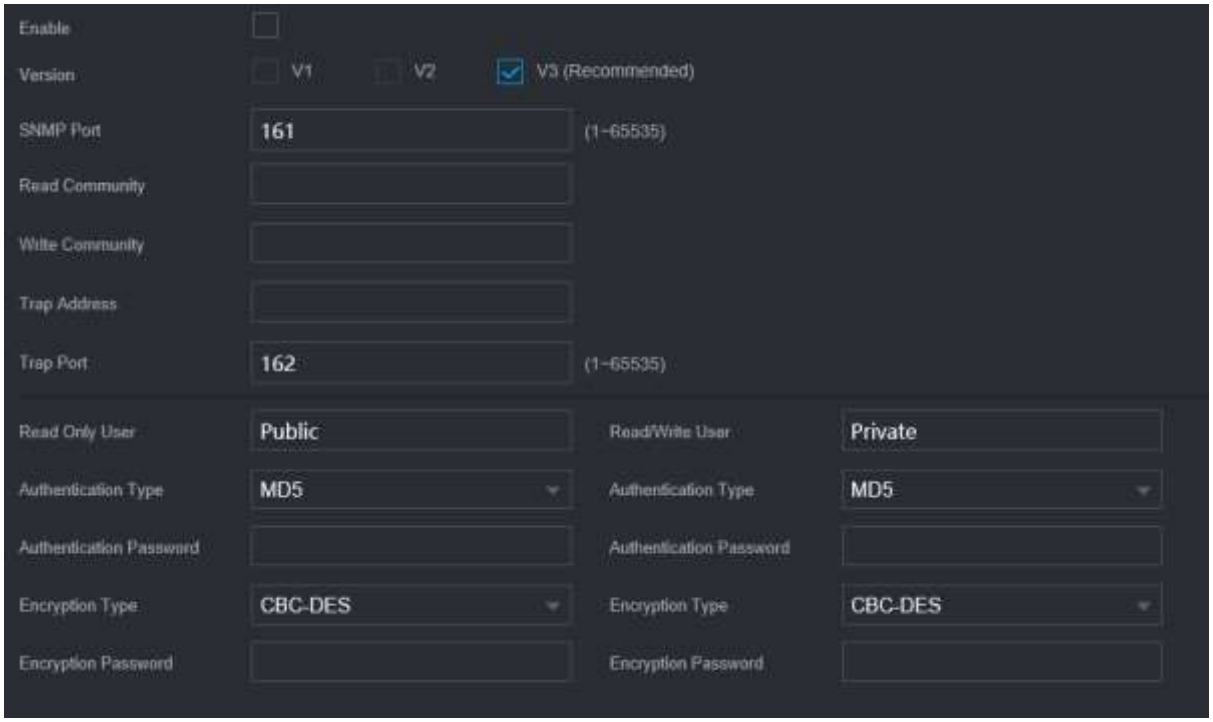


This will include an email with a snapshot of what was seen when the event was triggered:



SNMP

SNMP stands for Simple Network Management Protocol. This protocol is used to provide a basic framework to allow connection between various network devices. Below is a screenshot of the SNMP settings screen:



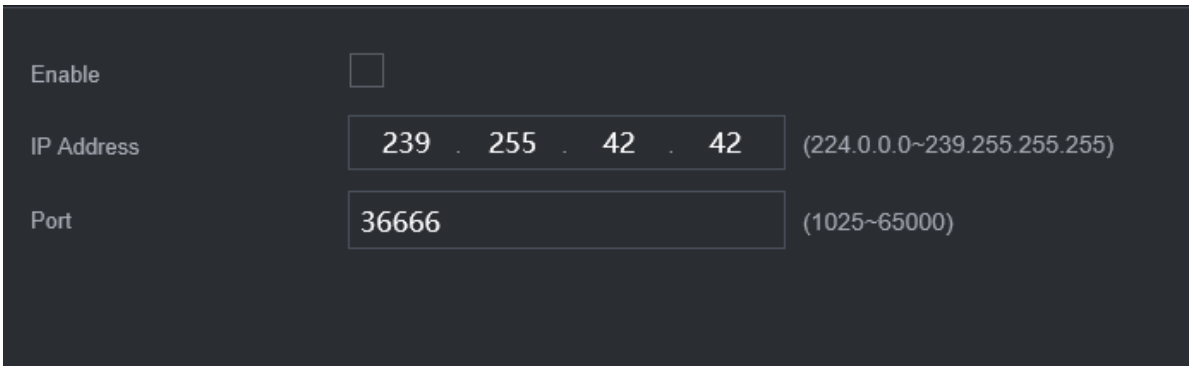
Below is an explanation of fields on the SNMP settings screen:

- **SNMP Version:** These checkboxes allow the user to select the SNMP version to use.
  SNMP Port: This field allows the user to write in a port for SNMP to use. The port can range from anywhere from 1 to 65535.
- **Read Community:** This field shows which SNMP community has read access.
- **Write Community:** This field shows which SNMP community has write access.
- **Trap Address:** This field allows the user to write in a trap address.
- **Trap Port:** This field allows the user to write in a trap port number. The trap port number should not be the same as the SNMP port.

Note: This feature may not be available on all device.

Multicast

Multicast is a feature that enables the NVR to broadcast its live view to multiple computers on the same network. Below is a screenshot of the multicast screen:



Below is an explanation of the fields in the Multicast settings screen:

- Enable: This checkbox allows the user to enable the Multicast feature for the NVR.

- IP Address: This field allows the user to enter the multicast IP address.
- Port: This field allows the user to enter the port number for the multicast IP address.

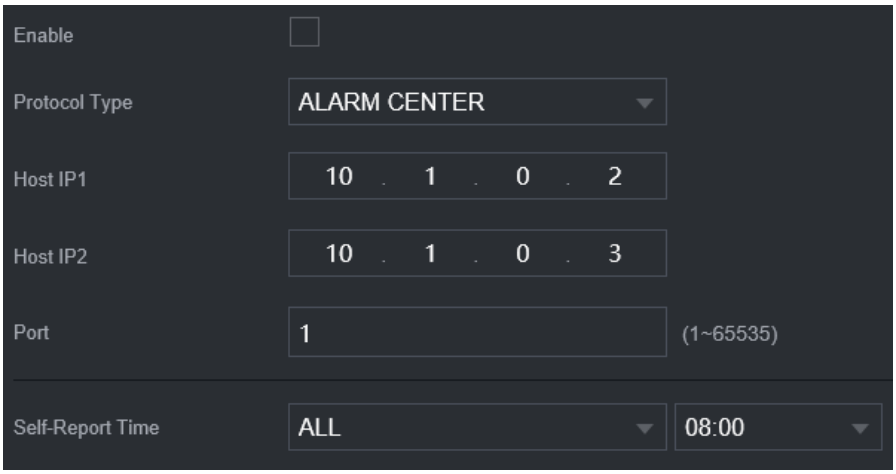
For more information on how to configure multicast, see the information below.

Multicast IP Address Range (IPV4): 224.0.0.0 through 239.255.255.255

Well-known IPv6 multicast addresses	
Address	**Description**
ff02::1	All nodes on the local network segment
ff02::2	All routers on the local network segment
ff02::5	OSPFv3 All SPF routers
ff02::6	OSPFv3 All DR routers
ff02::8	IS-IS for IPv6 routers
ff02::9	RIP routers
ff02::a	EIGRP routers
ff02::d	PIM routers
ff02::16	MLDv2 reports (defined in RFC 3810)
ff02::1:2	All DHCP servers and relay agents on the local network segment (defined in RFC 3315)
ff02::1:3	All LLMNR hosts on the local network segment (defined in RFC 4795)
ff05::1:3	All DHCP servers on the local network site (defined in RFC 3315)
ff0x::c	Simple Service Discovery Protocol
ff0x::fb	Multicast DNS
ff0x::101	Network Time Protocol
ff0x::108	Network Information Service
ff0x::181	Precision Time Protocol (PTP) version 2 messages (Sync, Announce, etc.) except peer delay measurement
ff02::6b	Precision Time Protocol (PTP) version 2 peer delay measurement messages
ff0x::114	Used for experiments

Alarm Center

The alarm center feature is used to allow users to connect the NVR to their alarm server, so the server can receive a notice when certain events happen. One common use for the alarm center is to send daily reports on the status of the NVR's connection to the network. Below is a screenshot of the Alarm Center settings screen:



Below is an explanation of the fields on the Alarm Center settings screen:

- **Enable:** This checkbox allows the user to enable the Alarm Center feature for the NVR.
- **Protocol Type:** This field allows the user to select which protocol type they want to use for the alarm. Currently, only the private protocol type is available.
- **Host IP:** This field allows the user to enter the IP address of the alarm server.
- **Port:** This field allows the user to enter the port number of the alarm server.
- **Self-Report Time:** This field allows the user to enter a time of the day when they want to receive a report about the NVR's connection to the network each day.

Register

The register menu allows the user to establish a proxy for your device. This is accomplished by using the client-end to access the NVR via set the proxy.

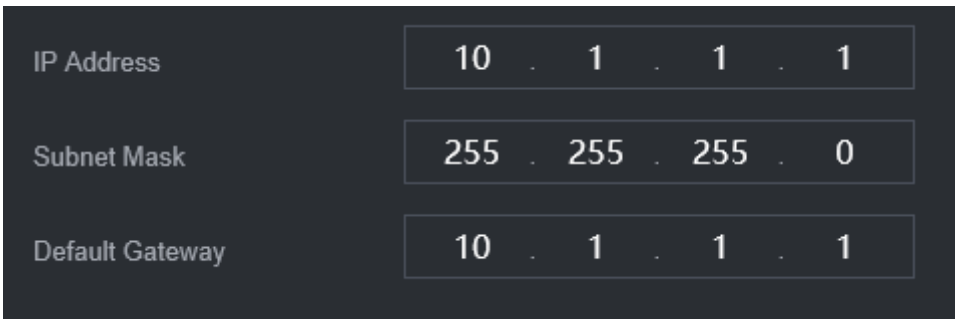
Below is a screenshot of the register menu.



Enable: This checkbox is used to enable the proxy function.
No.: Represents the channel number being used.
Server IP Address: Enter the proxy server's IP address.
Port: Enter the port number being used by the proxy server.
Sub-Device ID: Enter the device ID allocated by the server.

Switch

This is for you to set the IP address, subnet mask, gateway, etc. of the Switch. Below is a screenshot of the switch interface:



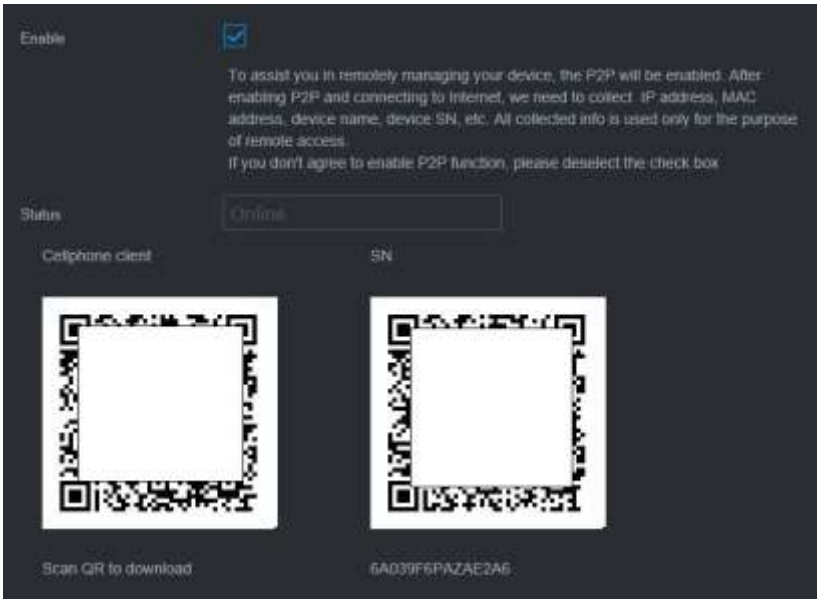
Below is an explanation of each feature in this menu:

- **IP Address:** This displays the IP address that is associated with the switch

- **Subnet Mask:** Displays information pertaining to the subnet mask associated with the switch.
- **Default Gateway:** Displays the default gateway information that is associated with the switch.

P2P

The P2P settings screen can also be labeled as simply **P2P** in some models. It is where users can use a QR code to connect their smartphone or tablet to the NVR. The NVR uses an app called EasyViewer, and it is available on both iOS and Android. Below is a screenshot of the P2P settings screen:

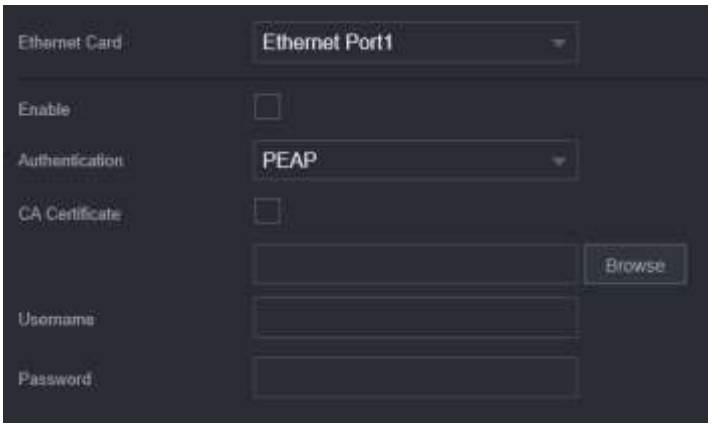


Below is an explanation of the fields on the P2P settings screen:

- **Enable:** This checkbox allows the user to enable the P2P feature for the NVR.
- **Status:** This field shows the status of the P2P connection. Once connected using the app, this field should display the word Online.
- **Cell Phone Client:** This is the unique QR code is used as a quick reference point for downloading a cellphone client onto your mobile device.
  SN: This is the unique QR Code associated with your NVR's serial number.

802.1x

802.1x is an authentication method for connecting to a network. Below is a screenshot of the 802.1x screen:



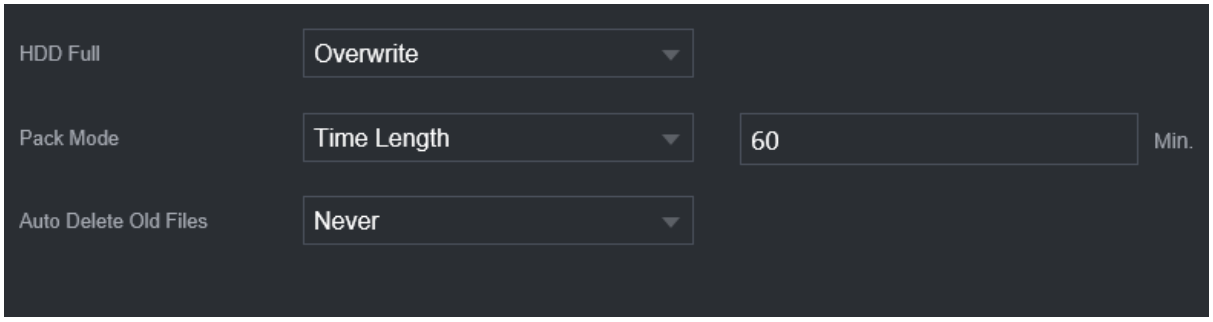
To enable 802.1x, click the checkbox next to Enable. An authentication method can be chosen from the dropdown box, and a username and password can be entered in their respective fields.

Storage

This menu allows the user to update, modify, and manage device storage settings within the NVR. For more details on this menu please refer to the sections below.

Basic

This menu allows the user to set hard drive (HDD) overwrite permissions for the system. Below is a screen shot of this menu.



Below is a description of the features listed in this menu:

- **HDD Full** – Allows the user to set a overwrite mode for their recordings. This option can be set to overwrite, which automatically overwrites old recordings once the hard drive is full, or to stop recording, which means the recordings will stop once the hard drive is full.
- **Pack Mode** – Specifies the recording duration of the overwrite. The values range from 1 to 120 minutes. Default value is 60 minutes.
- **Auto-Delete Old Files** – Allows the user to automatically delete or customize a delete schedule. The customized field will be denoted in how many days you would like to retain information on the HDD.

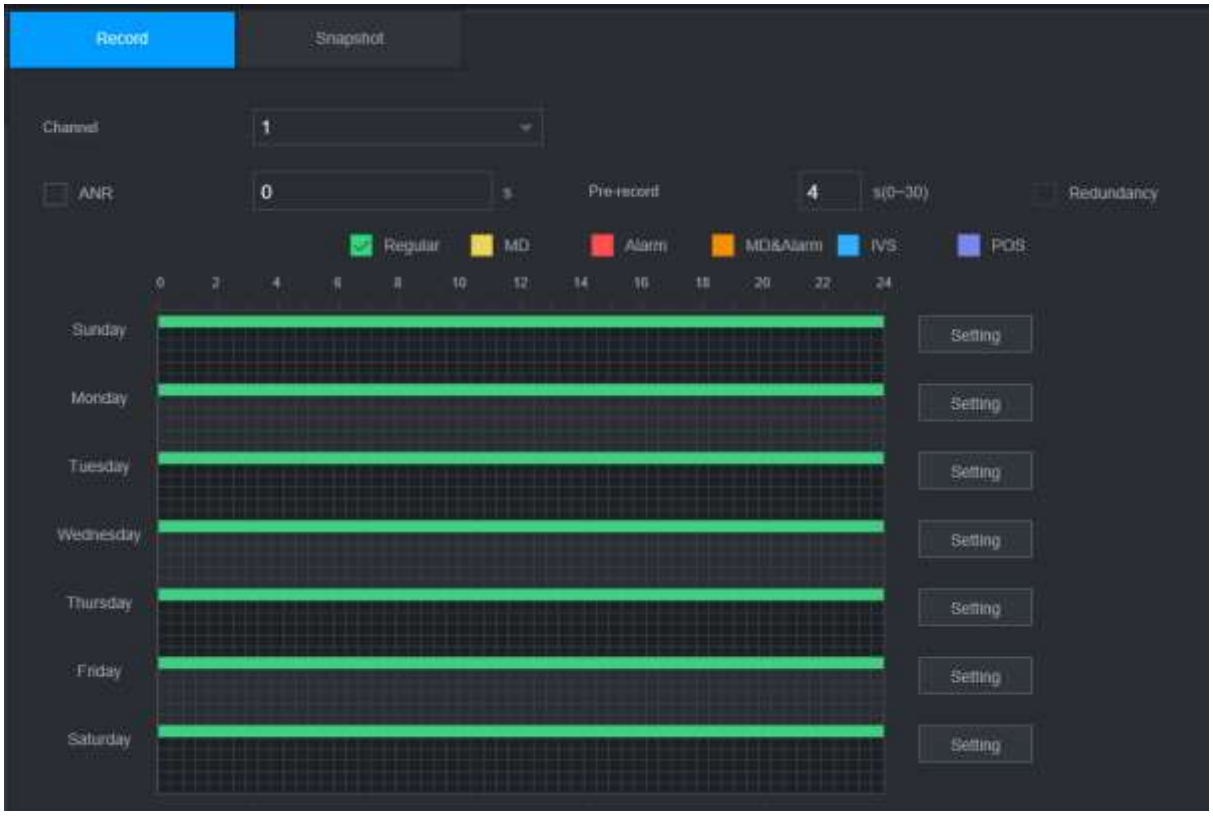
Schedule

This menu allows the user to set recording schedules for their device. For more information on this feature, refer to the sections provided below.

Record

This screen is used to specify the recording schedule for both recorded video and snapshots.

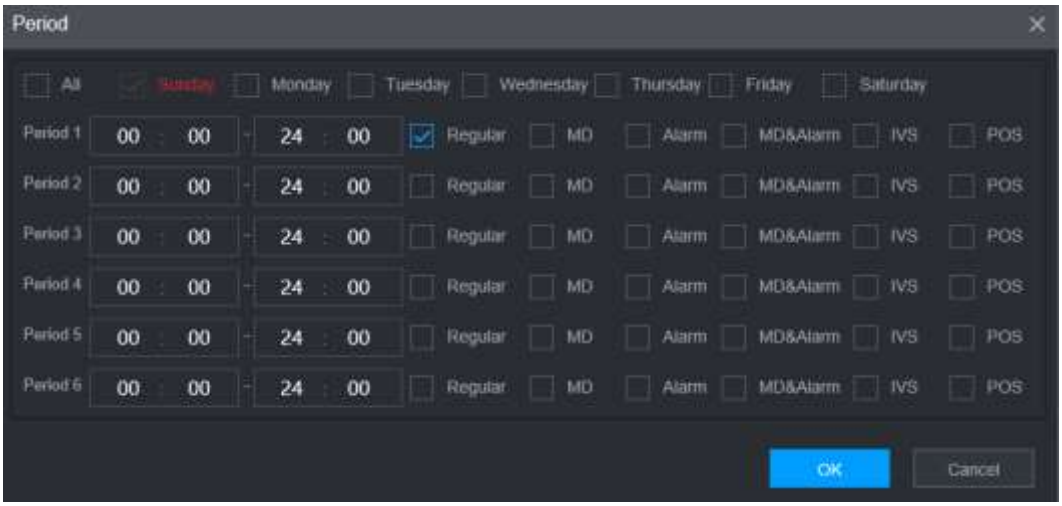
The record menu allows you to set recording schedules for regular (24/7 continuous recordings), motion detection, alarm, motion & alarm, IVS, and POS recording types. **POS recording types are not applicable for this device**.



Below is an explanation of the fields on the Record settings screen:

- **Channel:** This dropdown box allows the user to pick which channel they would like to change video recording settings for.
- **ANR** (Automatic Network Replenishment Technology): When video is recorded to an SD card and the network is reset, the video will be transferred to NVR **and** then recorded to the HDD.
- **Prerecord:** This field allows the user to capture extra video that occurs before an event. Up to 30 seconds of video prior to a recording event can be captured to provide context to a recording.
- **Redundancy:** This checkbox allows the user to enable the redundancy backup feature. This feature allows the NVR to record video to two hard drives concurrently to ensure that in the case of a hard drive failure, the recorded data may be backed up to another hard drive.
  - This function only works if the NVR has two hard drives installed.
  - One hard drive must be designated as redundant from the HDD Manager menu.
- **Record Types:** There are 6 types of recordings:
  - **Regular:** Regular recording means that the NVR captures all footage for the specified time period. Regular recording is represented by green.
  - **MD:** Motion Detection recording means that the NVR captures only footage when the motion detection alarm is activated. MD recording is represented by yellow.
  - **Alarm:** Alarm recording means that the NVR captures only footage when an alarm is activated. Alarm recording is represented by the color red.
  - **MD & Alarm**: This type of recording is a combination of motion detection and alarm footage, and records when either a motion detection alarm or general alarm is activated. MD & Alarm recording is represented by the color white.
  - **IVS:** Enables IVS (AI) recording types to be enabled in the recording schedule.
  - **POS:** Enables point of sales events to be enabled in the schedule. These features are currently unavailable in this system.

To set a recording schedule for your device, click on the **Setting** option located on the right of the day you wish to set the schedule. The system allows for the configuration of up to 6 different time periods.



Click the text next to each period to edit the time you wish to set for that specific period. Next, choose which record type you would like to set for each period. You will also need to select the days you wish to apply these settings. To select all days, select the all options to apply the settings to all days of the week.

Setting Up Recording/Motion Schedules

All video events will be saved and accessible via the playback or smart search menu, if a hard drive is installed, whereas snapshot events can be emailed. For more information on how to setup Email snapshots, please refer to section, *"Setting Up Email Alerts".*

To choose a channel (or camera) for which to configure, click the number next to **Channel**, then select either a single channel or **All** if you would like the schedule to apply to all channels currently connected to your NVR:

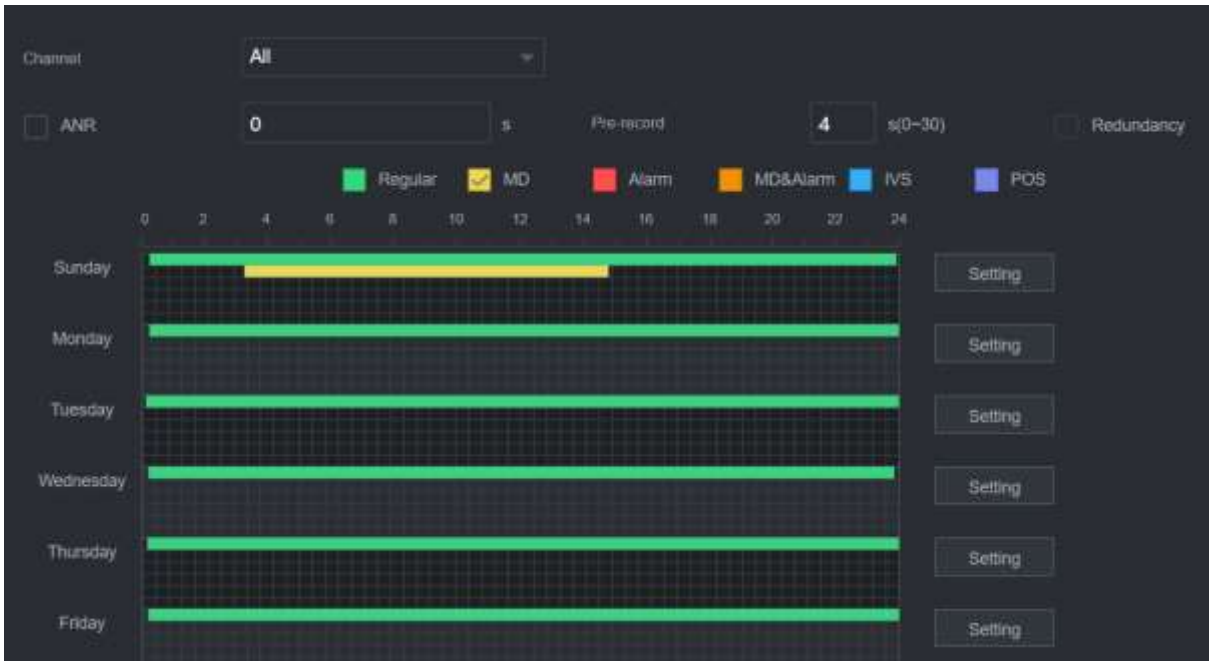


Note: The system uses military time from 00:00 to 24:00 instead of 12 a.m. to 12 a.m.

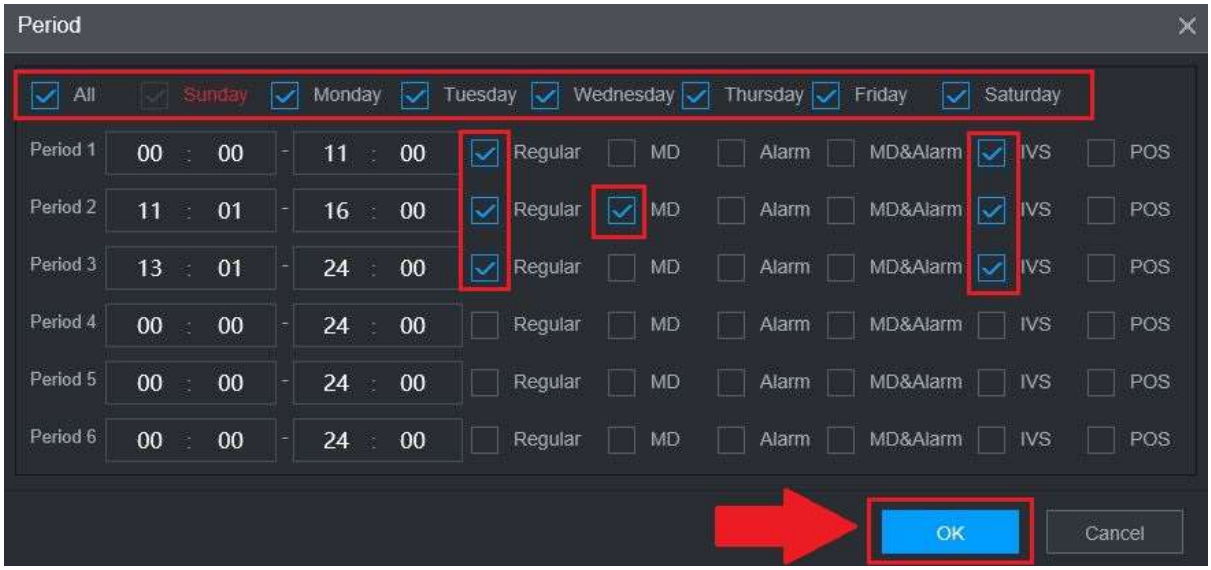
To edit a recording schedule, select a recording option from the colored boxes. Each recording option is color coded: Green: Regular (24/7 recording), Yellow: MD (Motion Detection), Red: (Alarm), Orange: MD&Alarm (a combination of motion detection and alarm recordings), IVS, and POS. Select which recording type you would like to modify, then click and drag your mouse on the interface to manually set the schedule.



To add motion detection blocks to the grid, mark the yellow checkbox next to **MD**, then click individual cells or click-and-drag for multiple blocks:

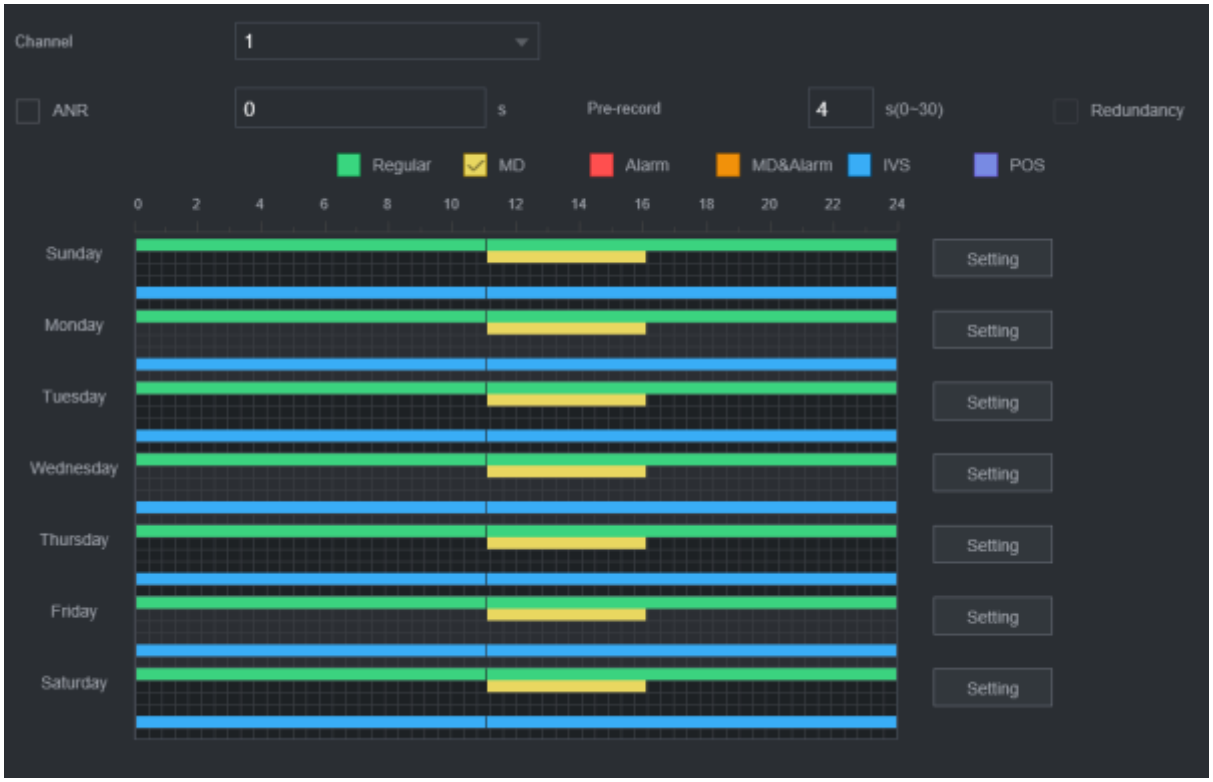


The same concept applies when configuring other recording schedule types such as IVS. Another way to configure recording schedules is by manually setting time periods. Click the “gear" icon to the far right of any day to open the **Period** page:



Here, the periods (Periods 1 - 6) will be in displayed in chronological order. You can set either **Regular**, **MD, Alarm, MD&Alarm or IVS or POS**, checkboxes. Make sure to click **OK** when finished.

Now that you have finished configuring the recording schedules, you may need to copy these settings over to other channels (or cameras). By default, channel 1 will be selected unless you immediately selected **All** in the channel window previously. Please note, you can copy these settings directly over to another channel by clicking **Copy.**



In the **Copy** window, you can select individual channels for any cameras you have added to the NVR or select **All**. Click **OK** when finished.

Snapshot

This tab is where snapshot recording settings are configured. This interface operates identically to the Record tab. The Record tab is for video and the snapshot tab is for snapshot events only.

Note: Alarm/IVS activated snapshots have higher recording priority than scheduled snapshots. If there is an overlap, alarm activated snapshots will take precedence.

HDD Manager

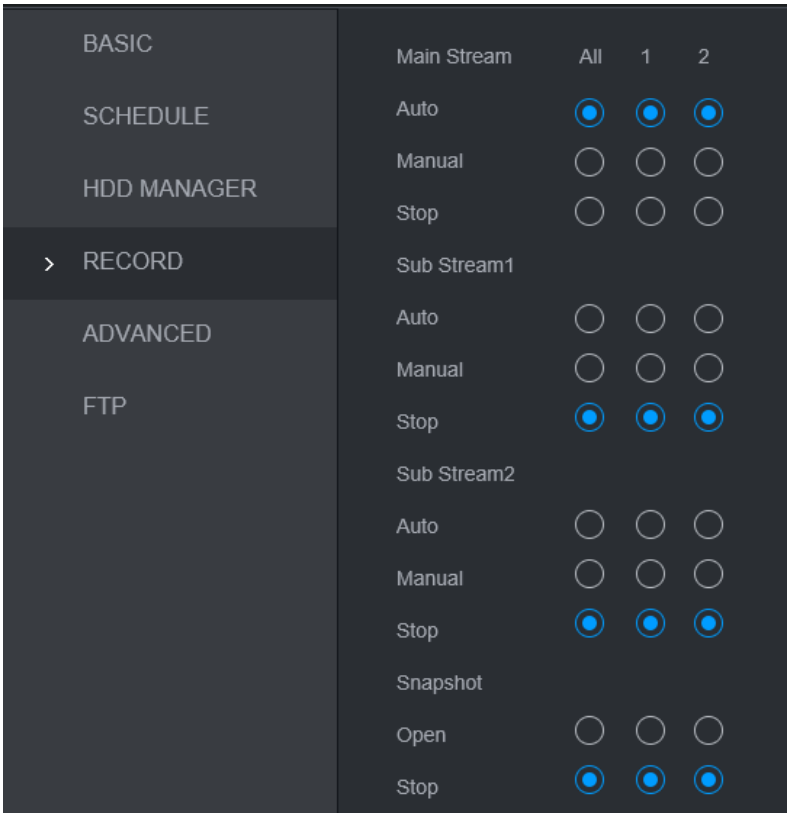
This screen is meant to help the user monitor the NVR's hard drives. Using this screen, the user can see the current HDD type, status, and capacity. The user can also use this screen to format hard drives and change hard drive properties.

Below is an explanation of the fields on the HDD Manage settings screen:

- **SATA:** This shows how many hard drives the system can support.
- 1 here means the system supports a maximum of 1 HDD.
  The symbol on the next row shows the status of the connected hard drive.
- 0 means that the current HDD is functioning normally.
- X means there is an error with the hard drive connection, or that there is no connected hard drive.
- ? means that the hard drive is damaged and should be replaced.
- **Hard Drive List:** This shows what hard drives are currently connected to the NVR and displays information about them.
- **Device Name**: This column shows the names of the connected hard disk drives (HDD).
- **Type:** This column shows the type of access the NVR has to the hard drive. To change a hard drive's type, click the downward arrow next to the HDD's type and select the desired type. There are 3 possible settings:
    - **Read-Only:** This allows the NVR to read the data, but not modify it in anyway.
    - **Write-Only:** This allows the NVR to write data to the HDD, but not read any data from it.
    - **Read/Write:** This allows the NVR to both read and write data on the HDD.
- **Status:** This column shows the status of the connected hard drive. There are 3 statuses:
    - **Normal:** This means the hard drive is operating normally.
    - **Error:** This means the NVR is experiencing an error when attempting to access the hard drive.
    - **Disconnected**: This means that the HDD has disconnected from the NVR.
- **Free Space/Total Space:** This field shows the free space on the hard drive compared to its total capacity.

Record

This screen allows the user to specify which channels can record and take snapshots. The settings on this screen supersede all others when it comes to allowing channels the ability to record information. Below is a screenshot of the Record screen:



Below is an explanation of all the fields on the Record settings page:

- Mainstream: The mainstream is the stream through which the channels transmit data by default.
- There are 3 settings that can be used for the mainstream.
    - **Schedule:** Channels will record as they have been scheduled, and not in any other capacity.
    - **Manual:** Channels will support all recording type. This includes scheduled recording.
    - **Stop:** Channels will not record in any capacity. This includes scheduled and manual recording.
- **Sub stream:** This stream allows for additional data to be transmitted.
  There are 3 settings that can be used for the mainstream.
    - Schedule: Channels will record as they have been scheduled, and not in any other capacity.
    - Manual: Channels will support all recording type. This includes scheduled recording.
    - Stop: Channels will not record in any capacity. This includes scheduled and manual recording.
- **Snapshot:** This set of options can either enable or disable the snapshot functionality for specific channels.

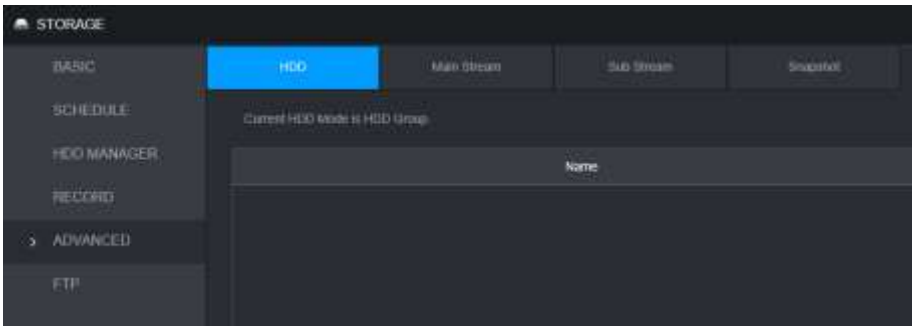
Enabling Recording Options

This menu should be verified to ensure that all recording protocols are enabled. This menu details, per channel, which streams are enabled or disabled in the NVR. To access this menu, please refer to the information provided below.

1. On the main menu, click on **Storage**.
2. Click on **Record**. The Record menu displays all active channels and streams being used for recording. If using snapshots, ensure the **Snapshot** radio button is enabled on each stream. To apply the settings to all channels, click on the **All** radio button.
3. Click on **OK** to save the settings to your device.

Advanced

This tab may be labeled as **HDD Advanced** on some model NVRs. This screen allows the user to set and group corresponding HDD and image settings. Below is a screenshot of the channel menu:

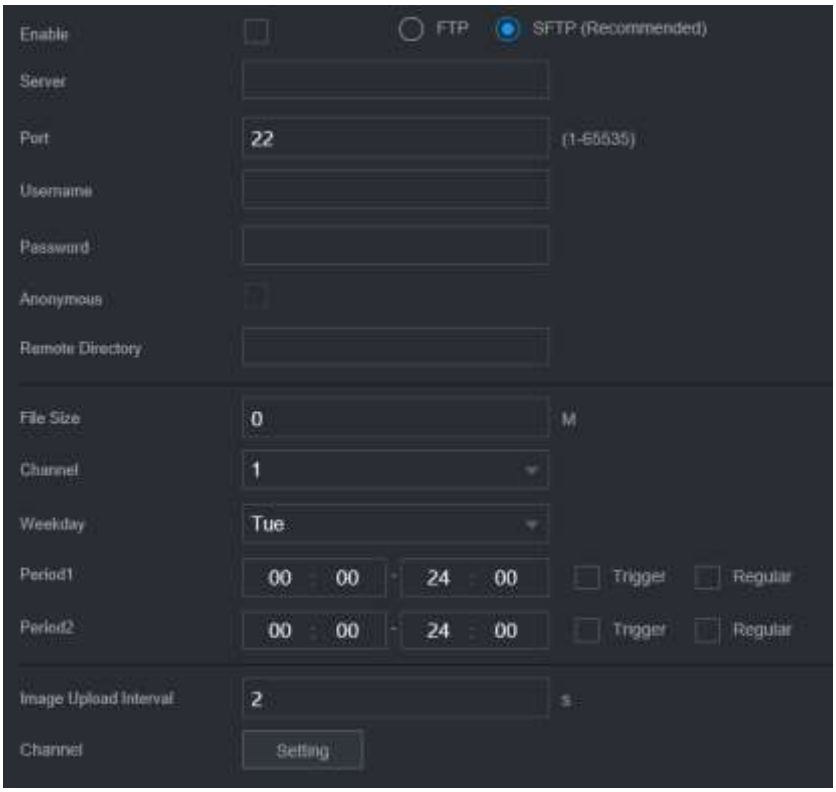


Main Stream: The mainstream interface allows the user set corresponding HDD group to save to the mainstream configuration of a connected device
Sub Stream: The sub stream interface allows the user set corresponding HDD group to save to the sub stream configuration of a connected device.
Snapshot: The snapshot storage interface allows the user set corresponding HDD group to save image settings of a connected device.

FTP

FTP stands for File Transfer Protocol. This protocol allows for remote uploading of files to a server. This feature requires the use of an FTP tool on a computer to enable the use of FTP features on the NVR.

Once an FTP tool has been acquired, installed, and configured to allow read, write, append, and delete access, then the NVR can be configured to use FTP. Below is a screenshot of the FTP menu screen:



Below is an explanation of the fields on the FTP settings screen:

- **Enable:** This checkbox allows the user to enable the FTP feature for the NVR.
- **FTP/SFTP:** Currently, SFTP functionality is not available. FTP is recommended.
- **Server:** This field allows the user to enter the FTP server IP address and port.
- **Port**: Enter the FTP port number.
- **Username:** This field allows the user to enter the FTP username.
- **Password:** This field allows the user to enter the FTP server password. The checkbox next to this field enables anonymous access to the FTP.
- **Anonymous:** This checkbox allows you to access the FTP server anonymously.
- **Remote Directory:** This field allows the user to designate which folder the NVR will upload files to.
- **File Size:** This field allows the user to dictate how large upload files can be.
- **Channel:** This field allows the user to pick a channel to set FTP settings for.
- **Weekday:** This field allows the user to pick a day of the week to set FTP settings for.
  Period 1: This field allows the user to specify a time period and what types of files to upload (Trigger (Motion) or Regular).
- **Period** 2: This field allows the user to specify a time period and what types of files to upload (Trigger (Motion) or Regular).
- **Image Upload Interval:** This field allows the user to define, in seconds, how often images can be uploaded to the FTP server.
- **Channel:** Click the Setting button to apply FTP settings to multiple channels.

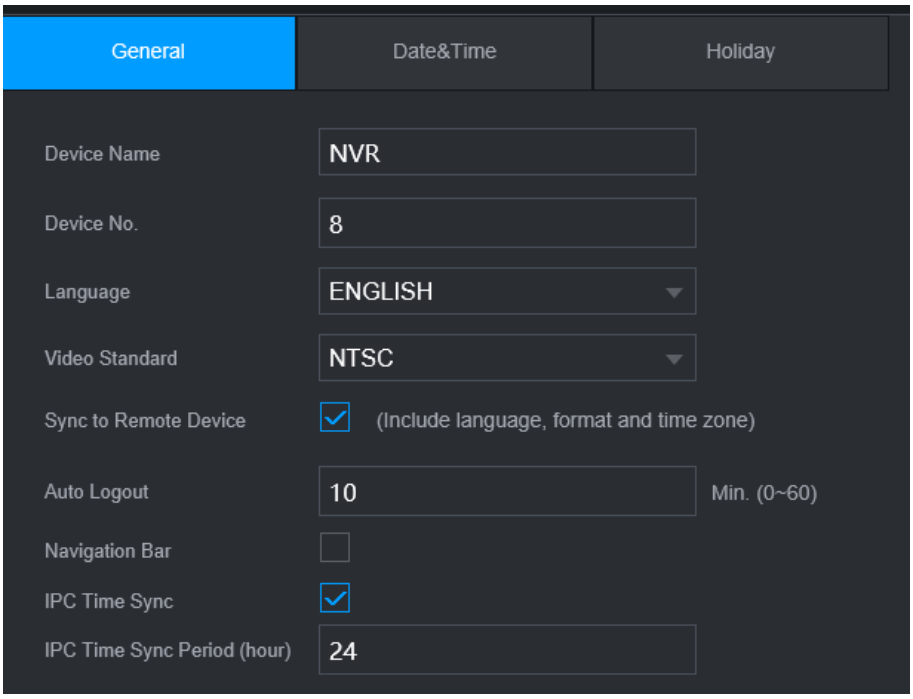
To activate the FTP, click the **OK** button once all information has been entered. Click the **Test** button to test the connection.

System

The system menu allows the user to access general information on the NVR including date and time settings, holiday settings, RS232, and general security settings.

General

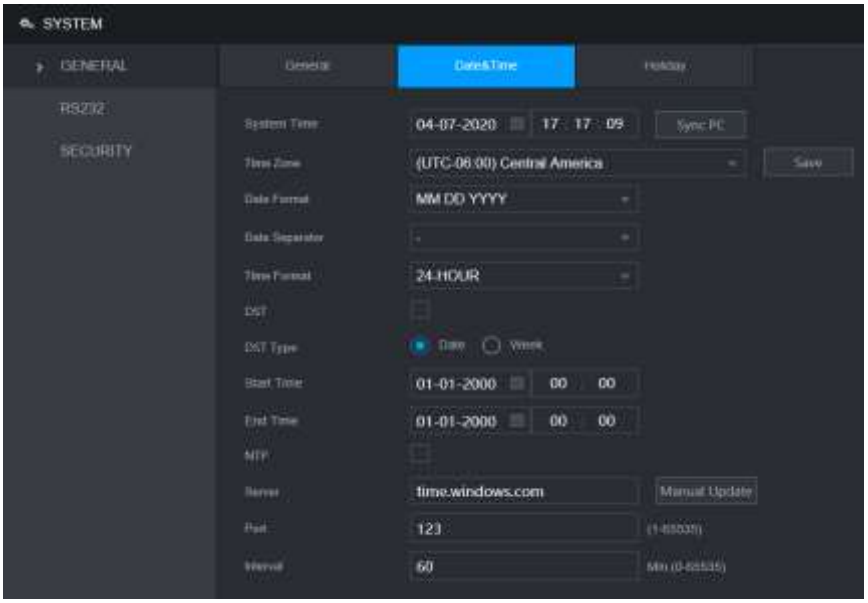
The General menu allows you to set a device name for the NVR, number of devices, languages, etc. Below is screenshot of the General menu.



- **Device Name:** This field allows the user to customize the name of the NVR.
- **Device No:** This field allows the user to customize the device's number.
- **Language:** The default language is English.
- **Video Standard:** This field allows the user to switch between NTCS and PAL encodes.
- **Sync to Remote Device:** This option allows the user to enable the device to sync to a remotely connected device.
- **Auto Logout:** This field allows the user to set idle time for the NVR. Once the device is idle for the specified amount of time, the user will be logged out of the interface.
- **Navigation Bar:** This checkbox allows the user to enable the navigation bar that shows on the main screen.
- **IPC Time Sync:** This check box allows the user to sync the current time on the computer to the camera.
- **IPC Time Sync Period (hour):** This field allows the user to adjust, in hours, the amount of sync time between a set period in the system.

Date and Time

This screen displays date and time settings for the NVR. Below is a screenshot of the Date & Time settings screen:



Below is an explanation of the fields on the Date & Time settings screen:

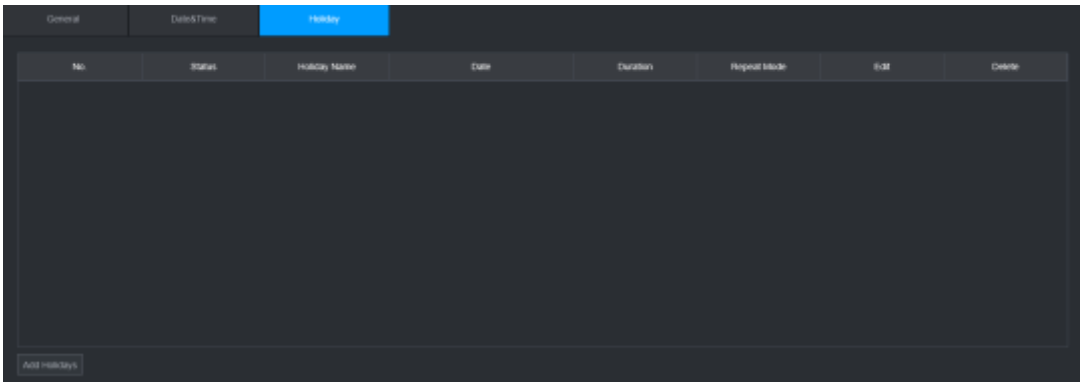
- **Time Zone:** This dropdown box allows the user to specify a time zone for the NVR to use.
- **Date Format:** This dropdown box allows the user to specify a date and time format for the NVR to use. There are 3 options.
    - YYYY MM DD: Year, Month, Day.
    - MM DD YYYY: Month, Day, Year.
    - DD MM YYYY: Day, Month, Year.
- **Date Separator:** This dropdown box allows the user to specify a date separator. There are 3 options:
    - – Dash
    - / Forward Slash
    - _ Underscore
- **Time Format:** This dropdown box allows the user to specify a time format for the NVR to use. There are two options.
    - 24 Hour
    - 12 Hour

DST: This checkbox allows the user to activate DST for the system.

- **DST Type:** This field allows the user to pick whether DST starts on a specific day of the week, or on a specified.
- **Start Time:** This field allows the user to enter a start date and time for DST to begin.
- **End Time:** This field allows the user to enter an end date and time for DST to end on.
- **NTP:** NTP stands for Network Time Protocol. This checkbox allows the user to enable the use of an NST server to synchronize the date and time settings on the NVR.
- **Server:** This field allows the user to set the NTP server IP address. Clicking the Manual Update button pulls a time update from the server.
- **Port:** This field allows the user to set the NTP server port number.
- **Interval:** This field allows the user to set the NTP synchronization interval. This number determines how often the NVR queries the NTP server to get accurate date and time information. This value can be between 0 and 60 minutes.

Holiday

This screen displays the holiday settings for the NVR. Below is a screenshot of the Holiday settings screen:

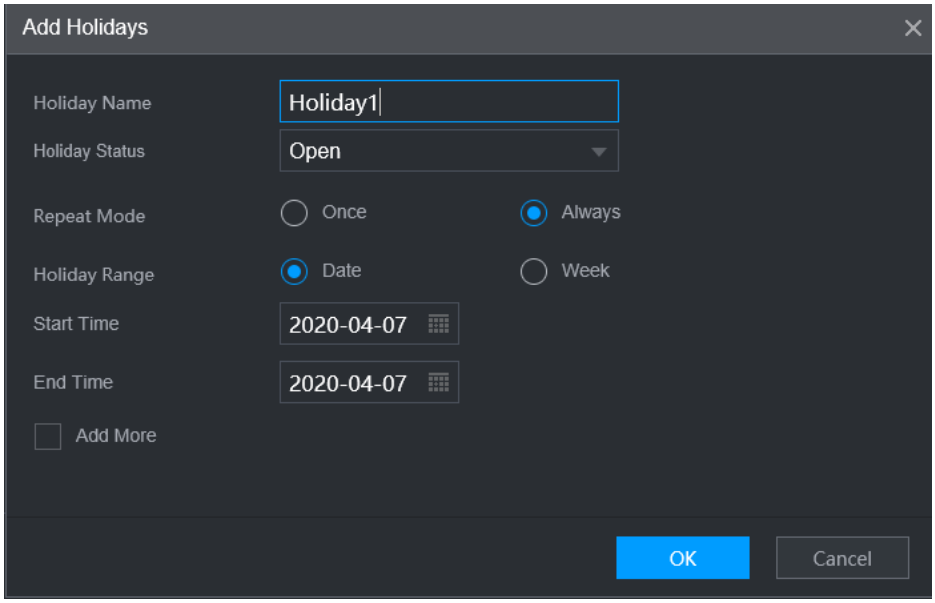


Below is an explanation of the fields on the Holiday settings screen:

- **No:** This number indicates how many holidays are in the system. Each line item has a number to signify its place in the list.
- **Status:** This dropdown box indicates the status of the holiday. There are two options:
    - **Open:** The holiday is active, and the NVR will stop recording for that holiday period.
    - **Stop:** The holiday is inactive, and the NVR will continue normal operation for that holiday period.

Holiday Name: This column is where the name of the holiday is displayed.

- **Date:** This column shows the date that the holiday occurs on.
- **Duration:** This column displays the how often the holiday will occur.
- **Repeat Mode**: This column displays the frequency of the holiday.
- **Edit:** This column has a button that allows for the editing of the holiday.
- **Delete:** This column has a button that allows for the deletion of the holiday.
- **Add New Holidays:** This button allows the user to add a holiday. Below is screenshot of the Add New Holidays screen.

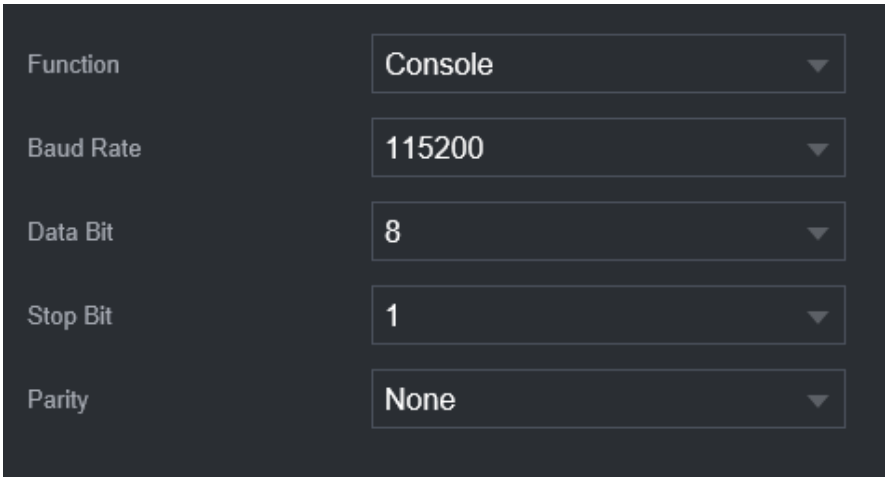


- Holidays take precedence over the scheduled setup.
- Holidays do not roll over based on their inherent date. Meaning, if a holiday is set for October 30th, then the system will treat every October 30th as a holiday.

RS232

The NVR comes with a built in RS232 port on the back of the device. This function is mainly used by the manufacturer to diagnose or troubleshoot issues and is not intended for consumer use.

Below is a screenshot of the RS232 menu:

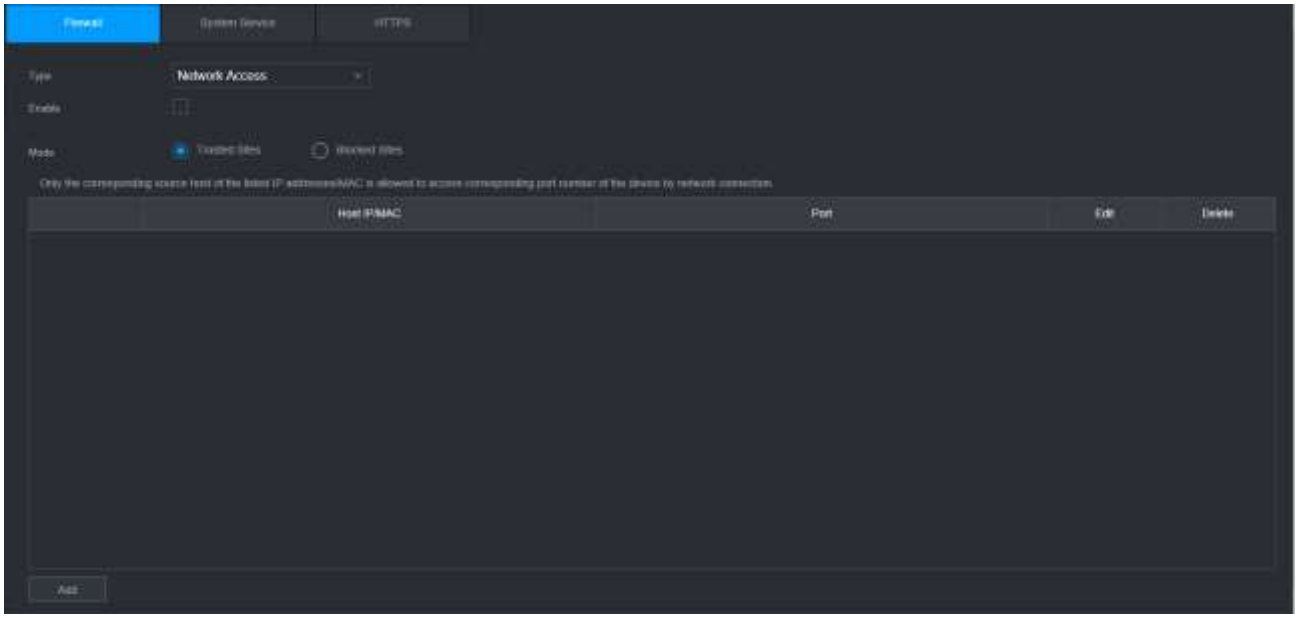


Security

This menu is provided to provide added security to your system. This menu provides IP filtering options, system service, as well as HTTPS settings.

Firewall

The firewall menu is used to block or allow trusted sites. This is applied via a built-in IP filter. Below is a screenshot of this menu:

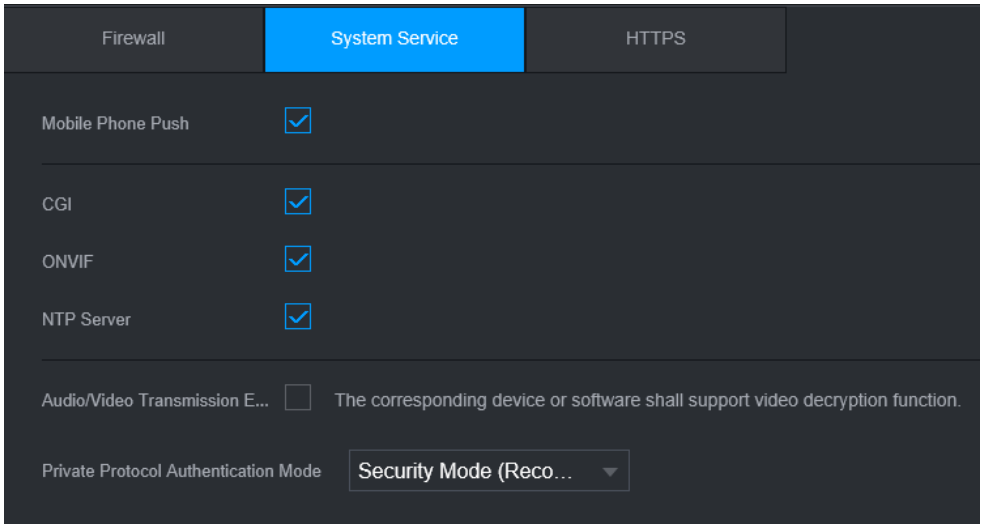


Below is a description of the fields listed in this menu:

- **Enable** – Used to enable the IP Filter.
- **Add** – Used to Add a trusted or block site into the filter.
- **Trusted sites** – Provides a list of trusted sites set by the user.
- **Block Sites** – Provides a list of blocked sites set by the user.

System Service

The system service menu allows the user to enable certain services such as mobile device pushes, CGI, ONVIF, NTP Servers, Audio/Video Transmissions, etc. Below is a screenshot of this menu:



Below is a description of the options listed.

Mobile Phone Push: Check this box to allow the device to
CGI: Check this box to allow the NVR to accept CGI based connections.
ONVIF: Check this box to allow the NVR to accept ONVIF connections.
NTP Sever: Check this box to allow the NVR to connect to an NTP server.

Audio/Video Transmission Encryption: Check this box to allow the NVR to support audio/video encryption.
Private Protocol Authentication Mode: Security Mode (Recommended): Allows the device to operate based on a default security protocol. **Compatible Mode**: Allows the device to operate based on a lower security protocol.

HTTPS

This tab allows the user to create a server certificate or download a root certificate for an HTTPS connection. These options are only available if a HTTPS connection has been previously established in the Port menu. For more information, please refer to section, "*Port"*.

Account

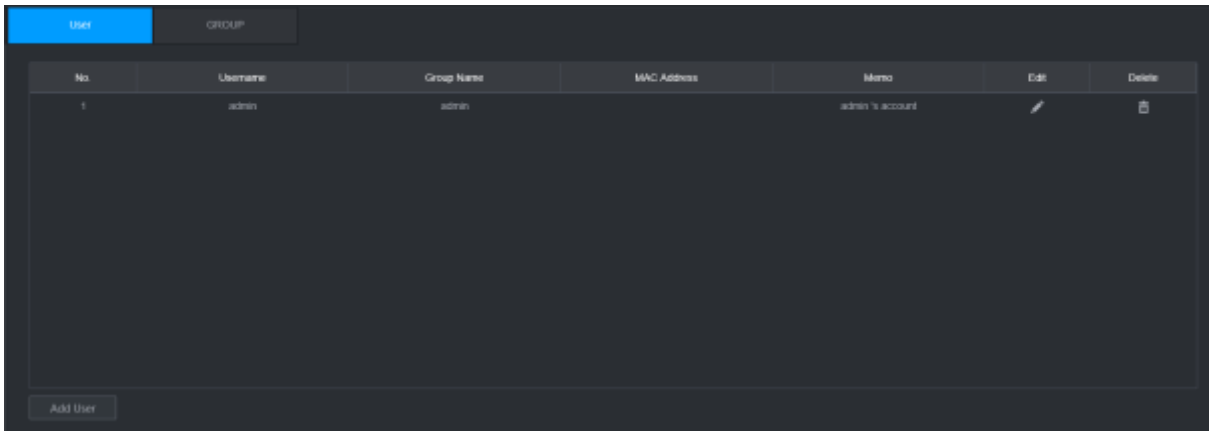
This menu is used to manage user accounts, user account passwords, and user groups. It is highly recommended to change the passwords for any accounts added or listed in this menu if being used by more than one user.

Each username and user group name can only contain letters, numbers, underline marks, dashes, or dots. No empty spaces are allowed.

The maximum number of users is 64, and the maximum number of users that can be in one group is 20. There are two levels for user management: administrator and user. Administrator has more rights than a normal user and can modify key NVR settings. Each user can belong to only one group, and user rights cannot exceed group rights.

User

This screen is used to configure or add additional, or shared users to the NVR. Below is a screenshot of the user menu:



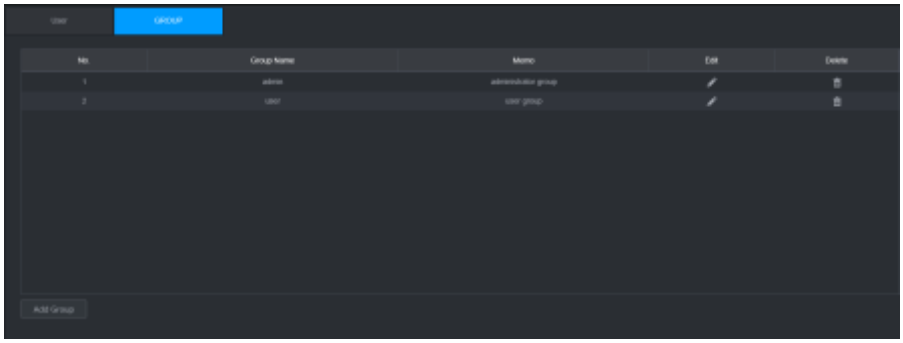
Below is an explanation of the fields on the User Account settings screen:

- **No:** This number indicates how many users are in the system. Each line item has a number to signify its place in the list.
- **Username:** This column indicates an account's username.
- **Group Name:** This column shows which group the username belongs to.
- **MAC Address:** Displays the MAC address of the connected device (if any).
- **Memo:** This column provides a brief description of the account's status in the NVR.
- **Edit:** This column has a button that allows for the account's properties to be edited.
- **Del:** This column has a button that allows for the account's properties to be deleted.
- **Add User:** This button allows the user to add another user account.

To add a user, click the Add User button and in fill the necessary information in the interface. Select all permissions from the permissions list and click **OK** to finish. Log out to allow the new user to log into the NVR.

Group

This screen is used to configure or add additional, or shared users to the NVR. Below is a screenshot of the group menu.



Below is an explanation of the fields on the Group settings screen:

- **No:** This number indicates how many groups are in the system. Each line item has a number to signify its place in the list.
- **Group Name:** This column indicates an account's username.
- **Memo:** This column indicates any notes about the user group.
- **Edit:** This column has a button that allows for the account's properties to be edited.
- **Del:** This column has a button that allows for the account's properties to be deleted.
- **Add Group:** This button allows the user to add another user group. On the next page is a screenshot of the Add Group screen.

To add a group, click the Add Group button and in fill the necessary information in the interface. Select all permissions from the permissions list and click **OK** to finish. Log out to allow the new user to log into the NVR.

ONVIF User

This screen is used to configure or modify ONVIF users that are associated with your NVR. Below is a description of the fields listed in this menu:

- **No:** This number indicates how many users are in the system. Each line item has a number to signify its place in the list.
- **Username** – The user account that is being modified.
- **Group Name** – The group name of the account that is being modified.
- **Edit** – Used to modify the settings associated with this menu.
- **Delete** – Used to delete the user from this menu.
- **Add User** – Used to add a new user into the system.

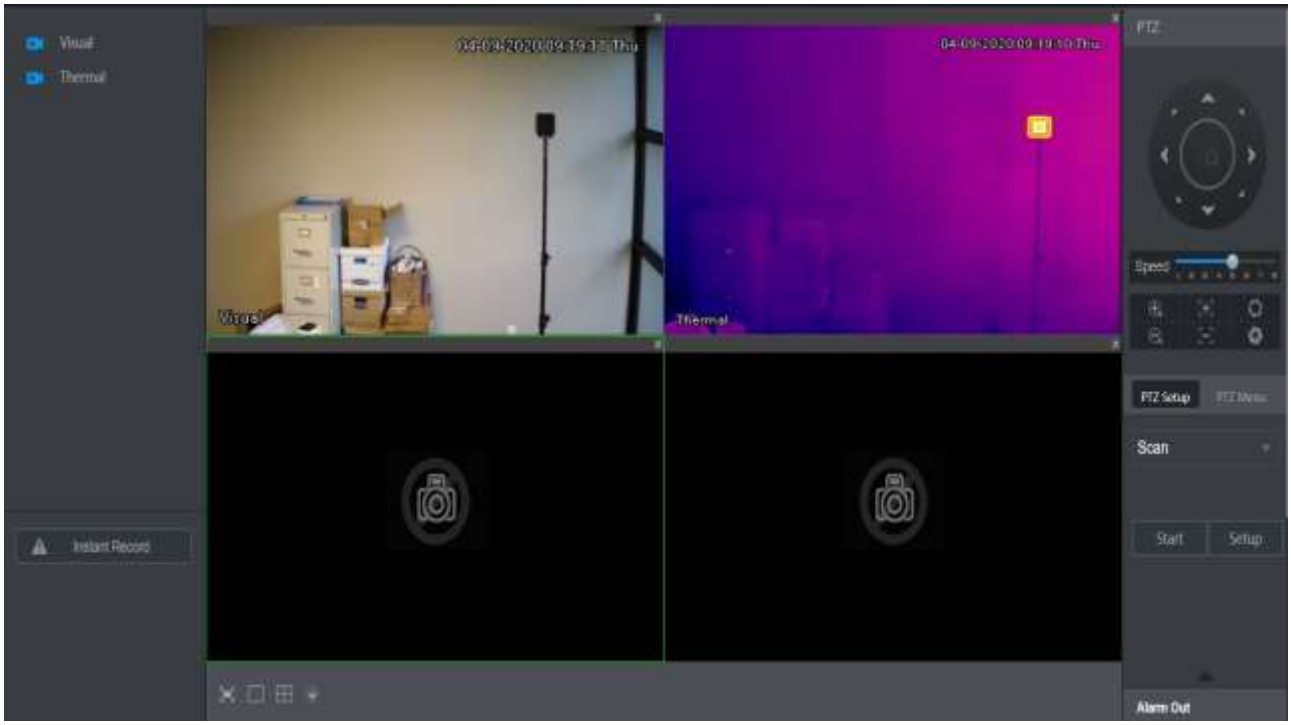
Password Reset

This menu allows you to enter an email address in case the password for your device has been misplaced or forgotten. Below is a screenshot of this interface.

- **Enable:** Click this checkbox to enable the password recovery function.
- **Email Address:** Enter a valid email address in which you would like the reset email to go.

LIVE

The live option located on the main interface allows you to view real-time video of all registered devices on the NVR. The thermal camera will display 2 channels, one for visual and one for thermal. Click on each to display each channel in the interface.



Below is a description of the items listed in this menu:

- **Instant Record:** Allows the device to instantly record what is being captured in the interface.
- **PTZ:** Arrows used to pan, tilt, or zoom a camera. The features provided in this menu are only for PTZ compatible devices connected to the NVR. Use the options to adjust the speed of the actions (1-8) as well as built-in iris control.
- **PTZ Setup**: This drop-down menu allows you to configure PTZ presets. This option is not available for current thermal camera solution.
- **PTZ Menu:** Allows you to configure PTZ presets. This option is not available for current thermal solution.

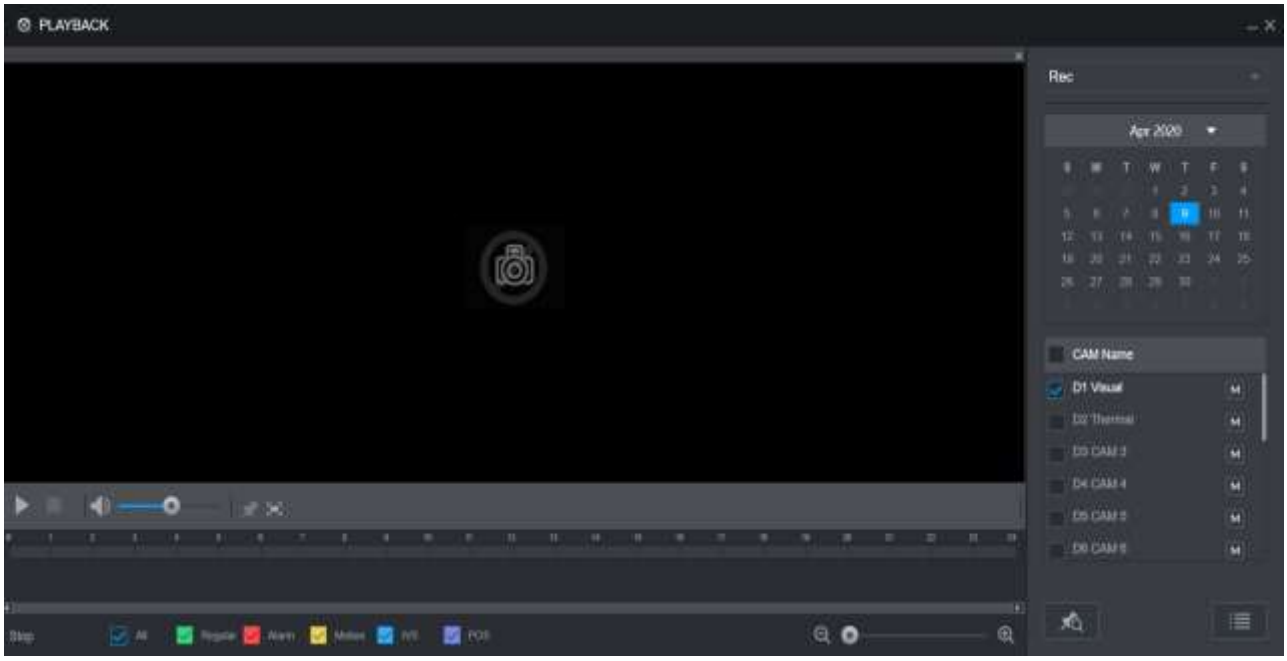
Additional Options



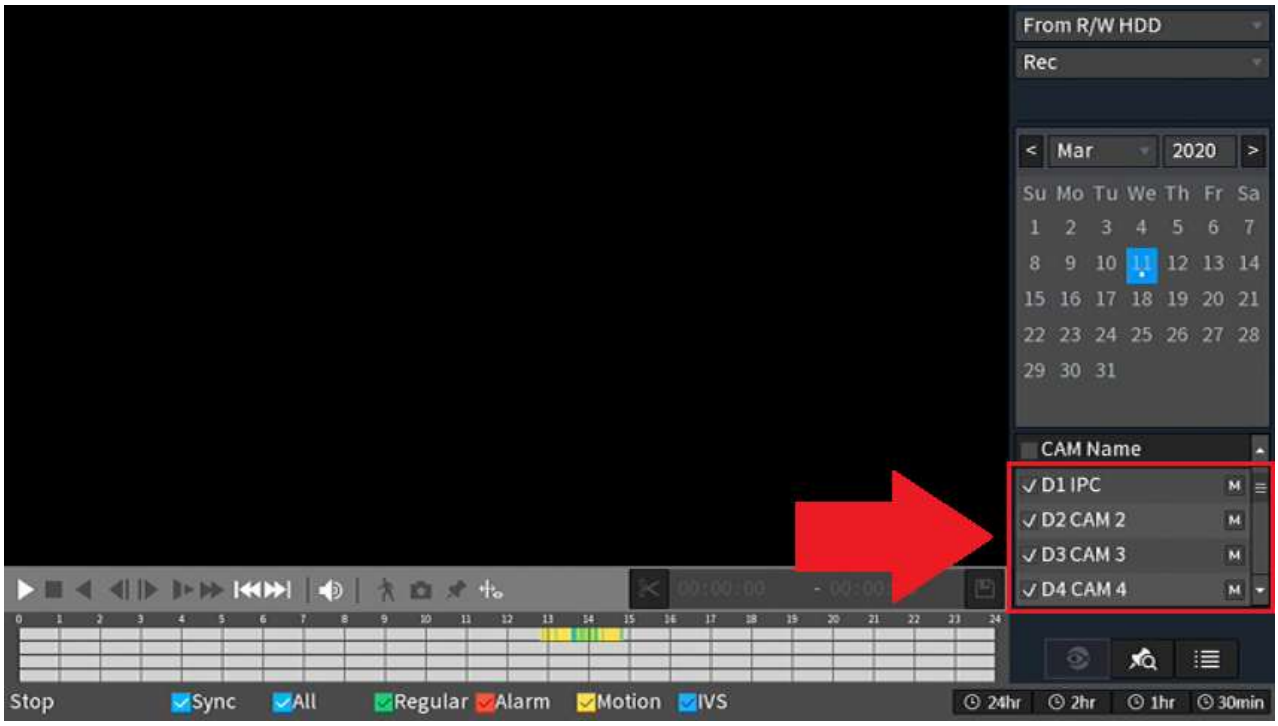
- **Full Screen:** Enables the channel to full screen mode. Press ESC to exit.
- **Video Wall Settings:** Use these options to display a single channel or up to 4 channels.
- **Illuminate:** This option is currently not available with this system.

Playback

The playback menu allows you to view, search and play recorded video. The system comes preinstalled with a 4(TB) hard drive, however, please ensure a hard drive is installed to view playback data.



To view recordings from the search menu, select the camera you wish to view from the **CAM Name** section by clicking on a checkbox next to the device.

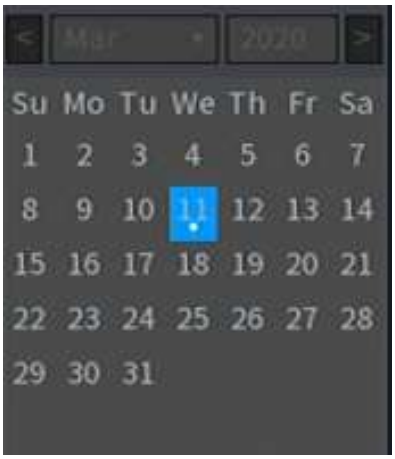


A timeline of the recordings will appear in the interface.

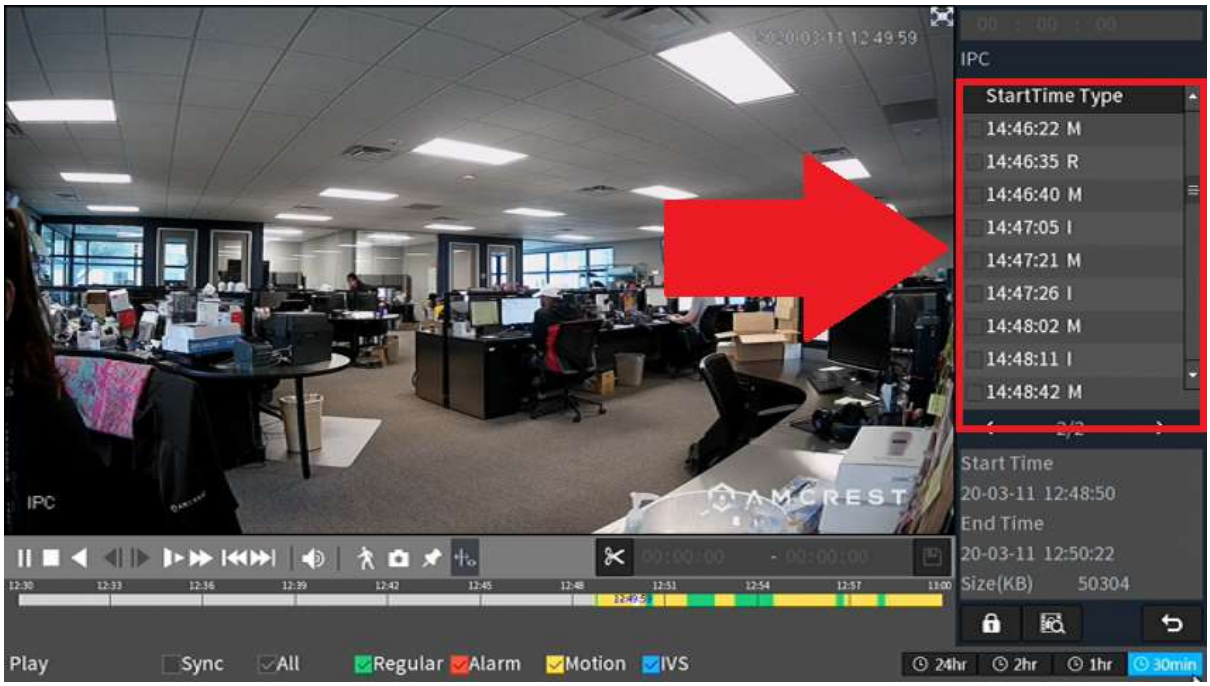


Click the **Play** button ( ) to play all recordings available on the timeline.

Additionally, all days with recordings available will be highlighted in the calendar portion of the interface with a dot.



To select specific days/months or years, use the navigation arrows provided in the calendar. A file list of recordings can also be shown by clicking on the **File List** icon ( ) located in the interface. Once clicked, a list of recordings will be shown based on the time the events were recorded.



Note: In the File List menu, "**R**" stands for regular/continuous recordings, "**M**" stands for Motion Detection recordings, and "**I**" stands for IVS recordings.

To play a recording from the File List menu, double click on the file you want to view. The recording will automatically begin to play in the interface.

AI

This menu allows you to manage and view artificial intelligence and face recognition settings. The AI options for your system are controlled by the NVR, not the camera so certain AI features may currently not be applicable to your system. To access the AI menu, click on the AI option located on the main menu.



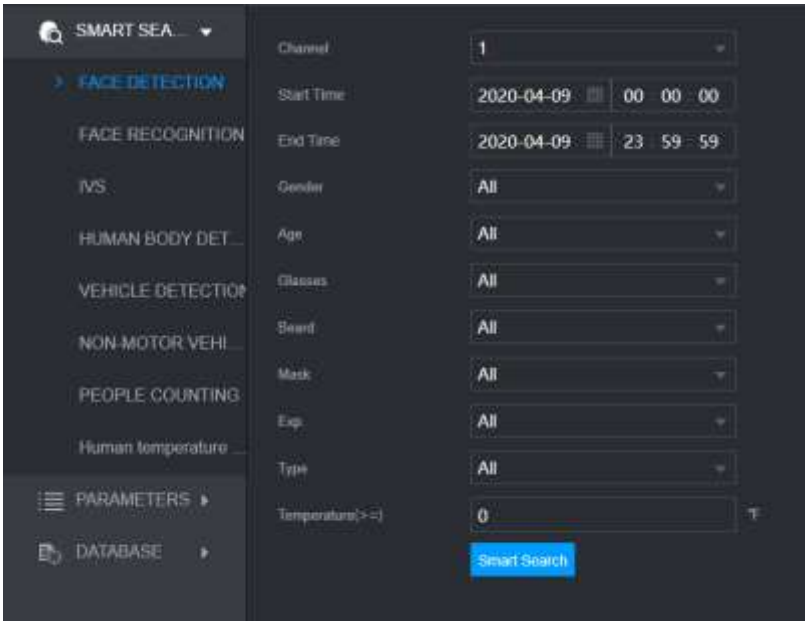
Smart Search

The Smart Search menu allows you to search and view all face detection, face recognition, IVS, Human Body Detection, Vehicle Detection (not available), Non-Motor Vehicle Detection, People Counting (not available), and Human Temperature Measurement events recorded by the system.

Viewing Face Detection Events

The face detection option located in the **Smart Search** menu allows you to search and view all face detection related events in the system. The face detection parameter must be set first to view smart search events. For more information on setting up face detection parameters, please refer to section, "*Setting up Face Detection Events*".

To view face detection events, access the face detection menu located in the Smart Search section of the interface. A screenshot of the interface is provided below:

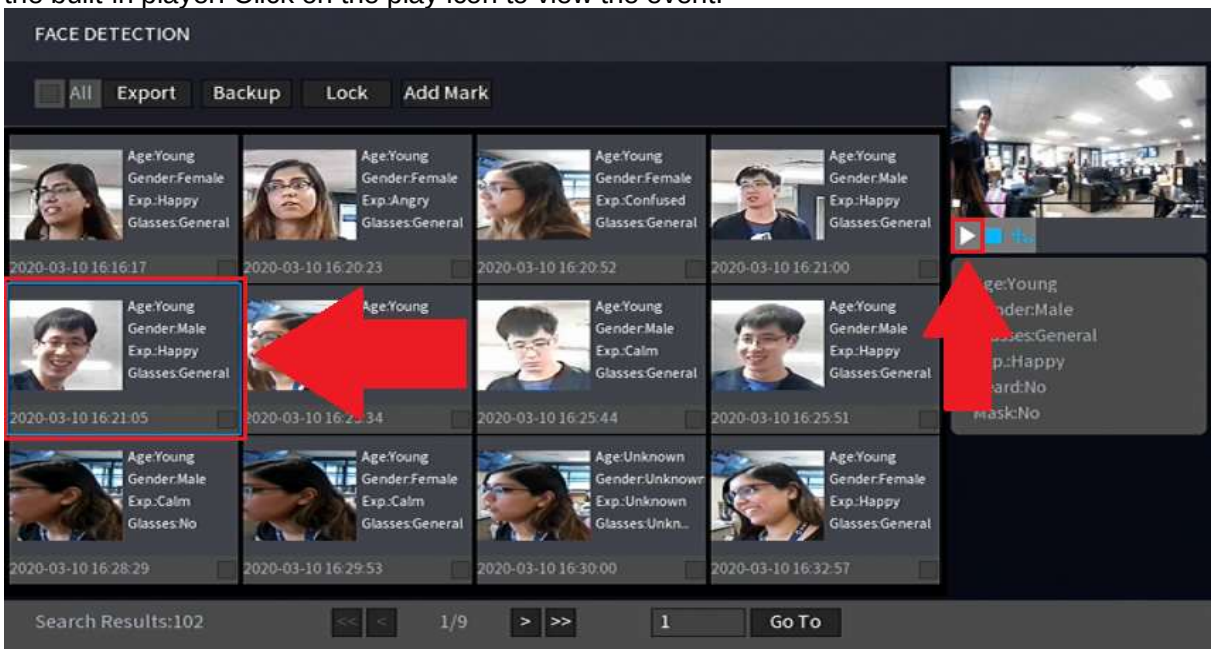


Below is a description of the features listed in this menu:

Channel: Allows the user to select a channel to search.
Start Time: A date and time range in which the event started.
End Time: A date and time range in which the event ended.
Gender: Basis search results off male and female attributes.
Glasses: Filter which enables only events of faces with glasses to show.
Beard: Filter which enables only events of faces with beards to show.
Mask: Filter which enables only events with individuals wearing masks to show.
Exp: Allows the device to only show facial events based off expressions (happy, sad, calm, etc.).
Type: Allows the device to only show events based off specific hierarchy in the system.
Temperature (<=): Allows the device to only display event where a temperature reading is greater than or equal to a set temperature, in "°F" set by the user
Smart Search: Allows the device to search for requested AI events.

Note: A smart search cannot exceed 7 days.

To view face detection events, enter a valid start and end time of the event or events and click on the **Smart Search** option. A display of all face detection data will be displayed along with facial attributes. Click on the event you would like to view, and a clip of the event will be displayed in the built-in player. Click on the play icon to view the event.

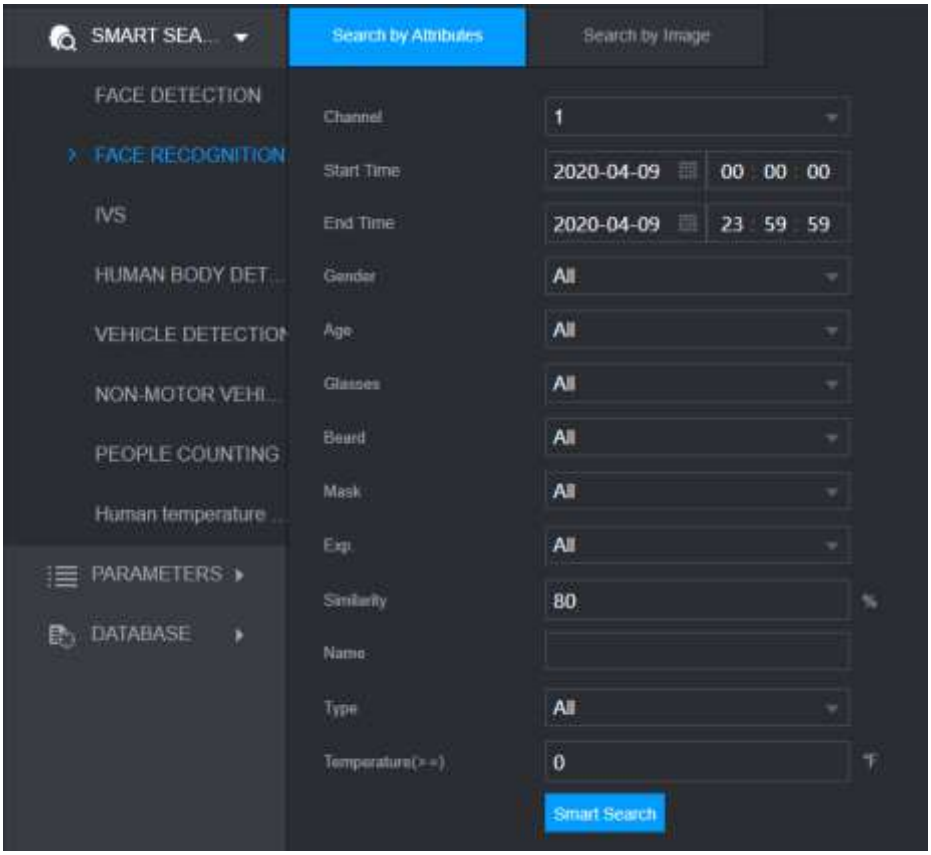


Note: The events can be backed up or stored locally via the "Backup" option listed in the interface.

Viewing Face Recognition Data

All face recognition data retained by the system can be accessed via the **Face Recognition** option located in the **Smart Search** menu.

A search by attributes or a search by image can be performed. Searching by attributes will load all face recognition data found in the system whereas searching by an image will filter and display only the faces chosen by the user. Below is a screenshot of the face recognition smart search menu:

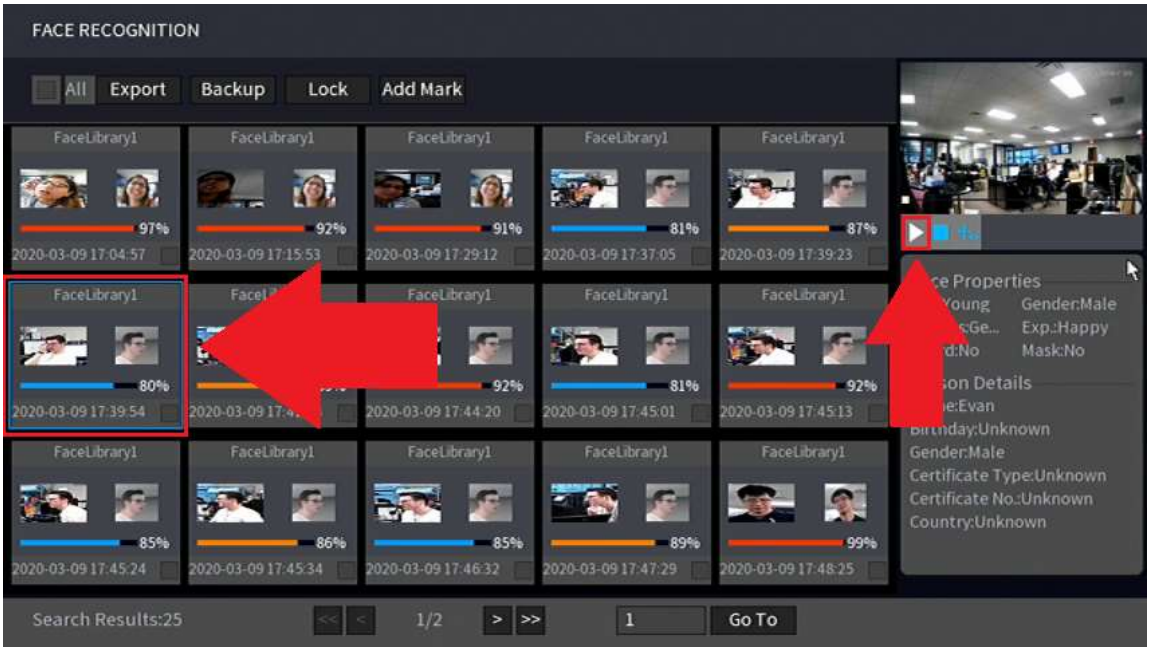


Below is a description of the features listed in this menu:

Channel: Allows the user to select a channel to search.
Start Time: A date and time range in which the event started.
End Time: A date and time range in which the event ended.
Gender: Basis search results off male and female attributes.
Glasses: Filter which enables only events of faces with glasses to show.
Beard: Filter which enables only events of faces with beards to show.
Mask: Filter which enables only events with individuals wearing masks to show.
Exp: Allows the device to only show facial events based off expressions (happy, sad, calm, etc.).
Similarity: A percentage in which the system recognizes the face being accessed.
Name: Allows the device to filter events by using a specific name. The name must be entered in the face library for the device to locate the face event.
Type: Allows the device to only show events based off specific hierarchy in the system.
Temperature (<=): Allows the device to only display event where a temperature reading is greater than or equal to a set temperature, in “°F” set by the user
Smart Search: Allows the device to search for requested AI events.

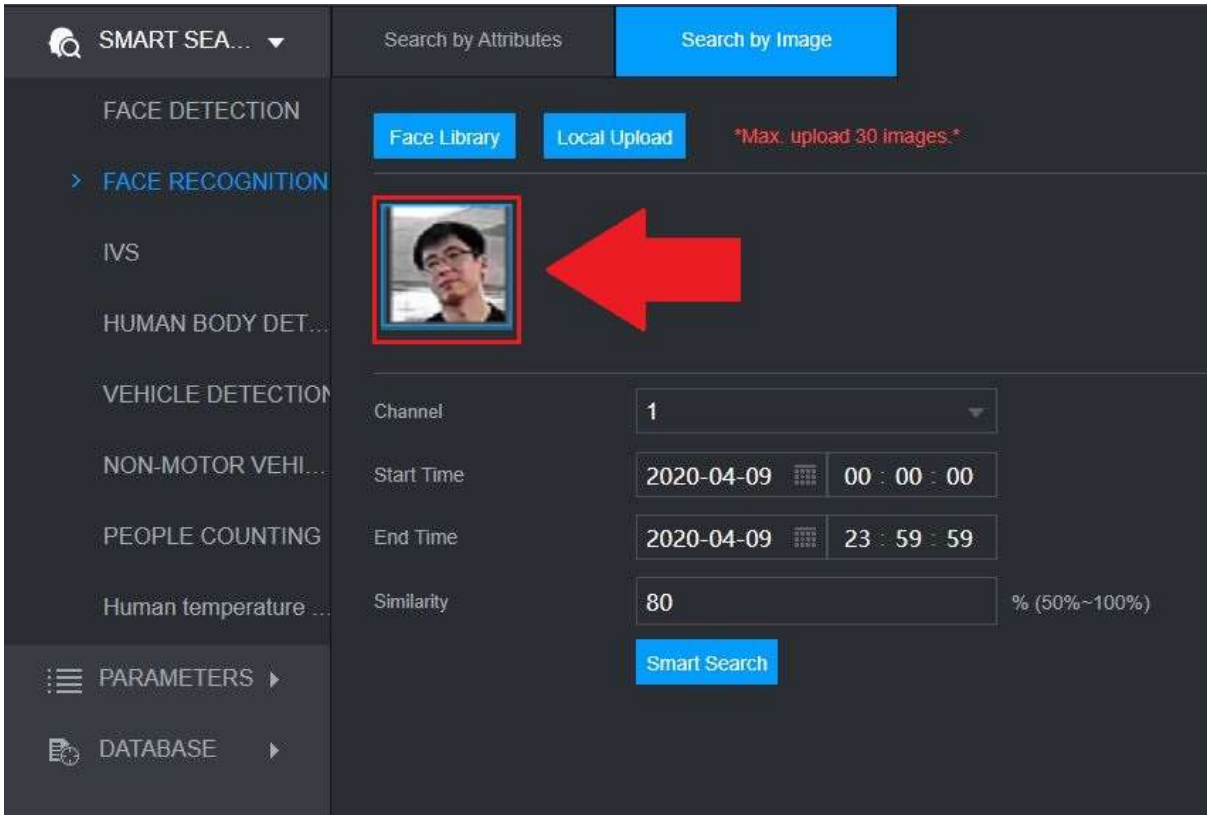
Note: A smart search cannot exceed 7 days.

To search by attributes, enter all necessary information of the event in the interface and click **Smart Search**. The interface will display all face recognition data. To view the event, click on the event you would like to view then click the play button in the interface.



To view specific face recognition data by image, click on the **Search by Image** tab located in the **Face Recognition** interface.

If searchable images are already uploaded into a face library click on **Face Library** and select an image from the interface, then click **Save** to begin a search. If you would like to add images locally click **Local Upload** and follow the on-screen prompts to upload images. Once an image has been loaded, enter a start and end time of the event and click **Smart Search.**

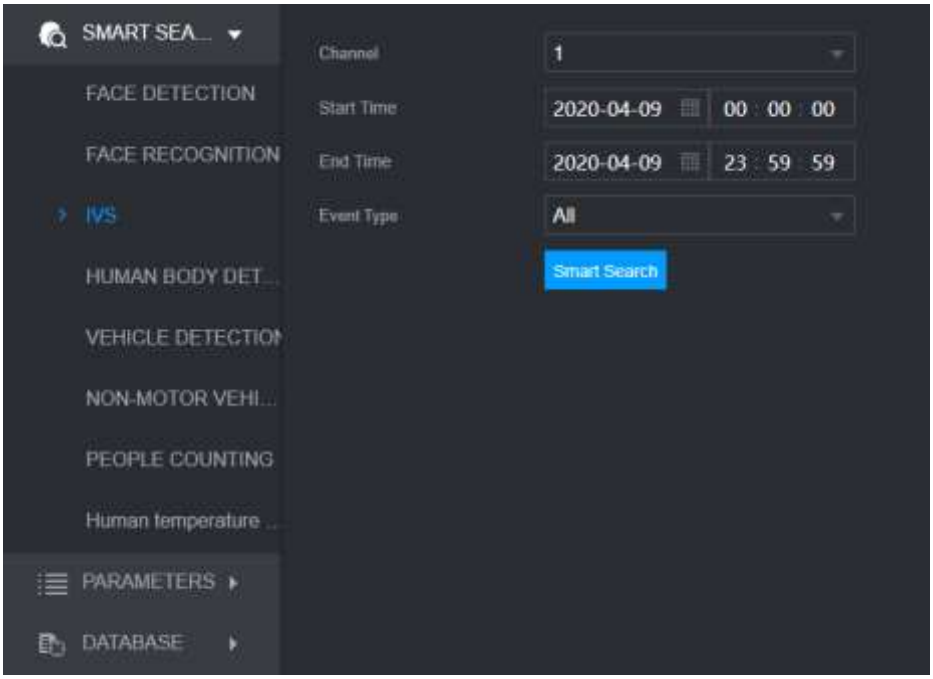


Note: The events can be backed up or stored locally via the “Backup” option listed in the interface.

Viewing IVS Data

Any IVS data retained on the system can be viewed using the IVS **Smart Search** interface or via the playback menu if an IVS schedule is set in the system. For more information on how to set recording schedules in the system, please refer to section, "*Schedule*".

Below is a screenshot of the IVS smart search menu:



Below is a description of the items listed in this menu:

Channel: Allows the user to select a channel to search.
Start Time: A date and time range in which the event started.
End Time: A date and time range in which the event ended.
Event Type: Select which IVS rules to search (The system currently only has tripwire available).
Smart Search: Allows the device to search for requested AI events.

To view IVS data using the IVS smart search interface, click on the **IVS** option located in the **Smart Search** menu. Enter a start and end time of the event and click **Smart Search**. A layout of all IVS events will be displayed. To view the event, select the event from the interface and click the play button.

Viewing Human Body Detection

Human body detection events are used in conjunction with attributes detected by the camera. It detects attributes such as, shirts, pants, hats, bags, gender, age, or umbrellas. **This option may not be applicable to all thermal systems.** To view this data, enter all applicable information into the interface and click **Smart Search** to display all human body detection data.

Viewing Vehicle Detection

Vehicle Detection events are used in conjunction with motor vehicle related attributes detected by the camera. It detects attributes such as vehicle color, types, logos, plate numbers/colors, ornaments, whether the driver is on the phone, or whether they were wearing their seat belt. **This option may not be applicable to all thermal systems.** To view this data, enter all applicable information into the interface and click Smart Search to display all vehicle detection data.

Viewing Non-Motor Vehicle Detection

Non-motor vehicle detection events are used in conjunction with non-motor vehicle related attributes such as bikes, tricycles, or other non-motor vehicles. It detects attributes such as, vehicle color, number of people, or whether they were wearing helmets. **This option may not be applicable to all thermal systems.** To view this data, enter all applicable information into the interface and click the Smart Search option to display all non-motor vehicle detection data.

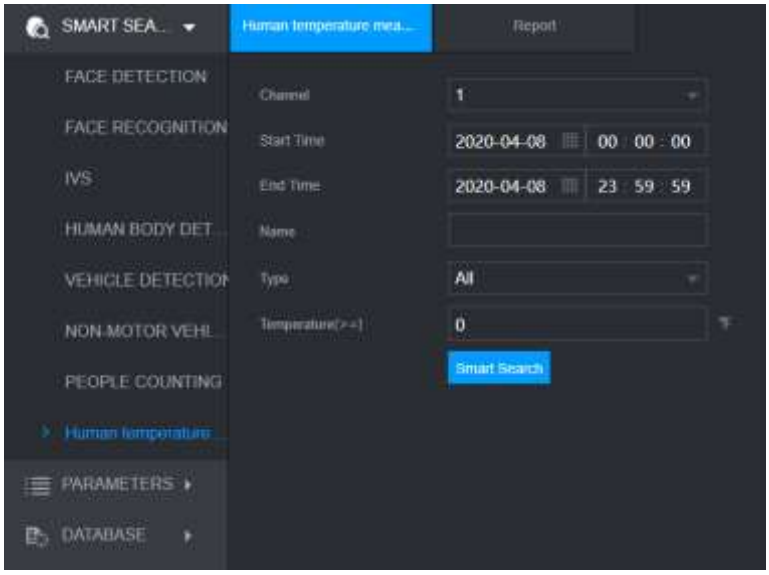
Viewing People Counting Data

The people counting smart search option allows the device to pull reports of all people that were counted by the system. These can be displayed as pictures or as CSV (excel) sheets as histogram or polygon graphs in the interface. **The people counting option may not be applicable to all thermal systems or currently unavailable.** To view this information, enter a start and end time (not to exceed 24 hours) into the smart search into the smart search interface and click Search. A histogram or polygon graph will be displayed if the system supports this function.

Viewing Human Temperature Measurement Data

Human temperature data is retained via the camera's built in thermal configuration. The system can display images of the event or display a graph (histogram or polygon) via the report tab. For more information on how to configure human temperature measurement data, refer to section, "*Configuring the Camera and Blackbody*".

Below is a screenshot of the human temperature measurement menu:



Below is a description of the items found in this menu:

Channel: Allows the user to select a channel to search.
Start Time: A date and time range in which the event started.
End Time: A date and time range in which the event ended.
Name: Filters the search results by a specific name in the system.
Type: Allows the system to filter based on high, medium, or low, temperatures.
Temperature (<=): Allows the device to only display event where a temperature reading is greater than or equal to a set temperature, in "°F" set by the user.
Smart Search: Allows the device to search for requested AI events.

To view human temperature measurement events, enter all necessary information into the interface and click on the **Smart Search** option. A list of all applicable data for the date and time

range will be displayed. To view a report of this information, navigate back to the smart search interface and click on the Report tab. Enter the applicable information into the interface and click on **Search** to display a graphical representation of the data.

Note: This data can only be viewed via the thermal channel of the camera. If the visual channel is selected, the system will not be able to pull the temperature data.

Parameters

The parameters section allows you to activate a smart plan, face detection, face recognition, IVS, Video Structurization (not available), Crowd Distribution (not available), People Counting (not available), Heat Map (not available), and ANPR (not available) settings in the system. Please note, the system may not currently support all AI functions listed in this menu.

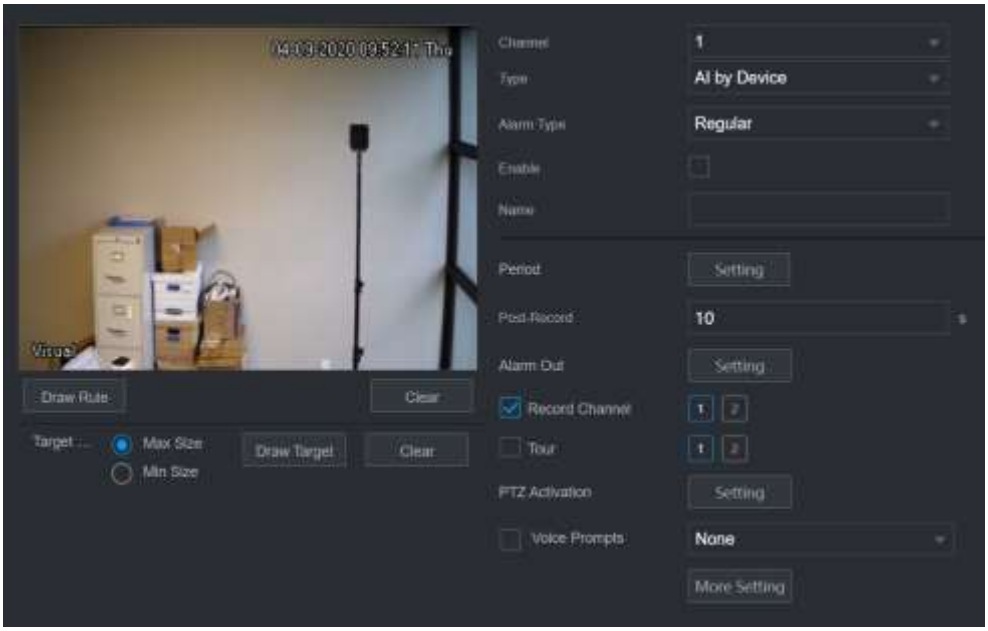
Smart Plan

A smart plan acts as the “master switch” for all AI features. A smart plan is only necessary for AI cameras that included specific IVS or AI functions that require a smart plan to be activated. For instance, since a thermal based smart plan is available for the system, the smart plan must be activated for it to function in the system.

To enable this feature, access the thermal channel for your camera in the Smart Plan menu, and ensure the thermometer icon is enabled. Click OK to save it to the system.

Face Detection

Face detection is a parameter used by the NVR to detect faces in the system. Below is a screenshot of the face detection menu:



Note: The options listed in the face detection menu are controlled by the NVR unless an AI camera is connected to the system.

Below is a description of the features listed in this menu.

Draw Rule: This option is used to draw a face detection area on the live view screen. Please note, the detection area is set to detect the entire image of the live view screen unless otherwise modified by the user. To modify the area, the rule must be enabled.

Clear: This option clears the detection area from the interface.
Target Filter: Sets a maximum and minimum pixel size in which an event will be triggered.
Draw Target: Allows the user to set a target area on the live screen.
Clear: This option is used to clear target information on the live view screen.
Channel: Allows you to select which channel to apply the feature.
Type: Allows you to switch between the AI feature being controlled by the camera or by the NVR. Since the system has a non-AI based camera, the default will be set to AI by Device.
Alarm Type: This option allows you to choose which type of faces are being detected by the system. Regular face detects faces without an obstruction, mask detect detects faces with obstructions, such as a mask.
Enable: This checkbox allows you to enable the AI feature.
Name: This option allows you to provide a name for the rule. The name will be displayed in the upper left corner of the live view screen when set.
Period: Allows the user to set a schedule in which the AI rule will be triggered. For more information on how to set a recording schedule, please refer to section "*Schedule*".
Post-Record: This is the amount of delay that will occur after the rule has been triggered.
Alarm Out: This option allows you to configure the rule with an external alarm. Latch represents the delay (in seconds) before the system begins detecting for the same alarm/event.
Record Channel: This checkbox allows the user to enable the device to record video when the rule has been triggered. Use the channel numbers listed to choose which channel to record.
Tour: Allows PTZ presets to be enabled via PTZ activation. This option is not applicable for this specific system.
PTZ Activation: This setting allows you to set PTZ presets to the device. This option is not applicable for this specific system.
Voice Prompts: This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, "Audio".
More Setting: Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, "*Setting Up Email Alerts*".

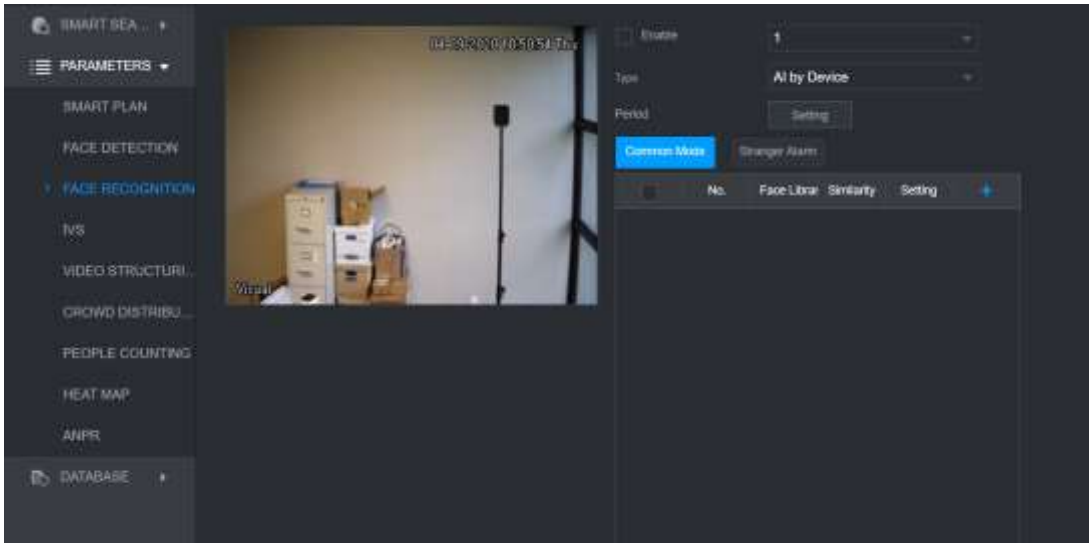
Setting up Face Detection Events

Step 1: Select a channel from the **Channel** dropdown menu.
Step 2: Click on the **Enable** checkbox in the face detection menu.
Step 3: The face detection area can be modified; however, it is set to detect the entire image by default. To modify the detection area, click on **Draw Area** and use your mouse on the live view screen to adjust the detection area.
Step 4: Choose an alarm type from the **Alarm Type** dropdown menu. If you are detecting faces with a mask on, choose the Mask Detect type option.
Step 5: Give the rule a name. The rule does not require a name, however, one can be applied if necessary.
Step 6: Click on the Setting option located in the Period field. The rule is set to record 24/7, however, can be modified to your preference. For more information on how to setup a recording schedule, please refer to section, "*Schedule*".
Step 7: The Record Channel option is on by default, however, please ensure the option remains enabled for the channel being modified.
Step 8: Enable any additional features such as voice prompts, email alerts, or log information as highlighted in the More Settings section.
Step 9: Click **OK** to save the settings.

All face detection events will be retained to the system and available in the Smart Search menu. For more information on how to access AI events via the smart search menu, please refer to section, “Smart Search”.

Face Recognition Parameters

Face recognition is used in conjunction with face detection to locate and determine facial similarities detected by the system. Images are registered in a face library, by the user, and accessed via a face recognition smart search tool that is built into the NVR. Please note, Images must be imported into the system to build a face library. Below is a screenshot of the Face Recognition menu:



Below is a description of the features listed in this menu:

Enable: This checkbox enables the AI feature. Use the dropdown menu to select a channel.
Type: Allows you to switch between the AI feature being controlled by the camera or by the NVR. Since the system has a non-AI based camera, the default will be set to AI by Device.
Period: Allows the user to set a schedule in which the AI rule will be triggered. For more information on how to set a recording schedule, please refer to section “*Schedule*”.
Common Mode: Allows the device to use the images registered in the face library as a reference. A face library must be registered in the device to function. To import a created face library, click on the “+” icon in on the interface.
Stranger Alarm: Allows the device to alert once an unrecognized face is detected.

Setting Up Face Recognition

Step 1: Ensure the face detection option is enabled in the system. For more information on enabling face detection, please refer to section, “*Setting Up Face Detection Events*”.
Step 2: Click on the Enable checkbox in the Face Recognition menu.
Step 3: Click on the Setting option located in the Period field. The rule is set to record 24/7, however, can be modified to your preference. For more information on how to setup a recording schedule, please refer to section, “*Schedule*”.
Step 4: Click on the **Database** option located in the AI menu to access the face library menu. In the face library menu, click on **Add** to begin registering images to a face library. Enter a name for your face library and click **OK.**

The library will now be saved to the database. Click on the **Details** section to begin adding images into the to the face library.



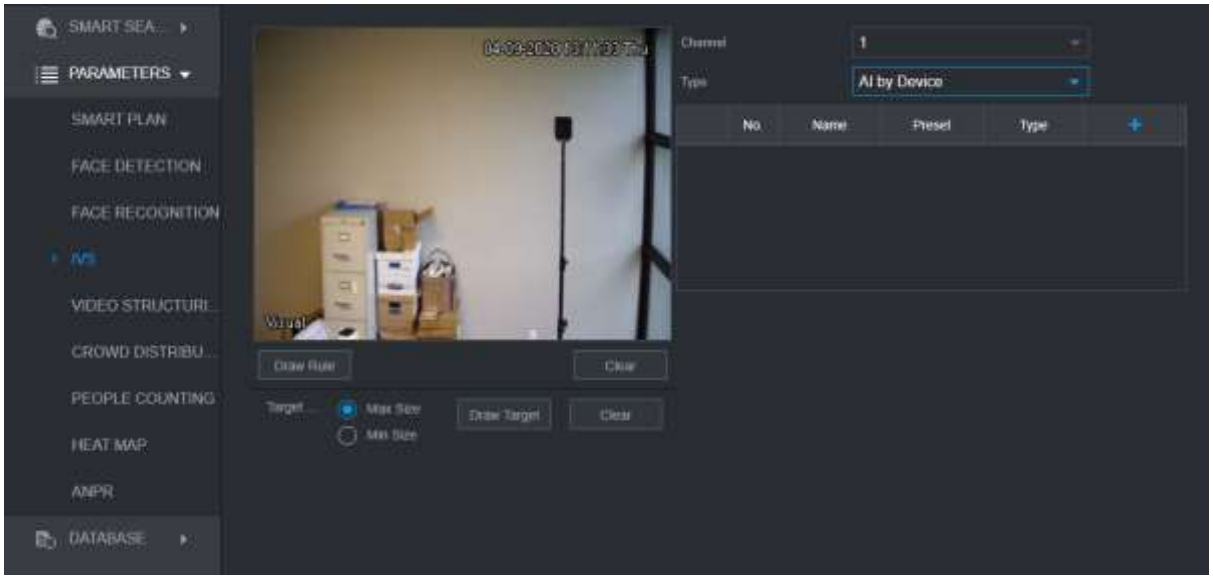
If you have a single image to add click **Register ID**, if you have multiple images to add click on **Batch register**. Follow the on-screen prompts to add the images into the library. Once the images have been successfully modeled into the database exit the interface.

Step 5: Navigate back to the **Face Recognition** menu in the **Parameters** section and click on the **Common Mode** checkbox field. Click on the (+) icon and select the face library you just created and click **OK** to insert the library of registered images into the interface.

Note: To adjust **Common Mode** settings, click on the **Settings** (gear) icon and select which additional options you would like to apply to this feature. Be sure to click **Save** to save the settings to your device.

IVS

IVS stands for stands for intelligent video system analytics and is based off the specific capabilities of both the NVR and the camera. This system features a built-in IVS feature called “tripwire” which is powered solely by the NVR. Below is a screenshot of the IVS menu.



Below is a description of the items listed in this menu:

Draw Rule: This option is used to draw a detection area or line on the live view screen.
Clear: This option clears the detection area or line from the interface.
Target Filter: Sets a maximum and minimum pixel size in which an event will be triggered.
Draw Target: Allows the user to set a target area on the live screen.
Clear: This option is used to clear target information on the live view screen.
Channel: Allows you to select which channel to apply the feature.
Type: Allows you to switch between the AI feature being controlled by the camera or by the NVR. Since the system has a non-AI based camera, the default will be set to **AI by Device.**
No: The number of IVS rules in the interface
Name: The name of the rule displayed. This can be modified by double-clicking on the item and entering a name.

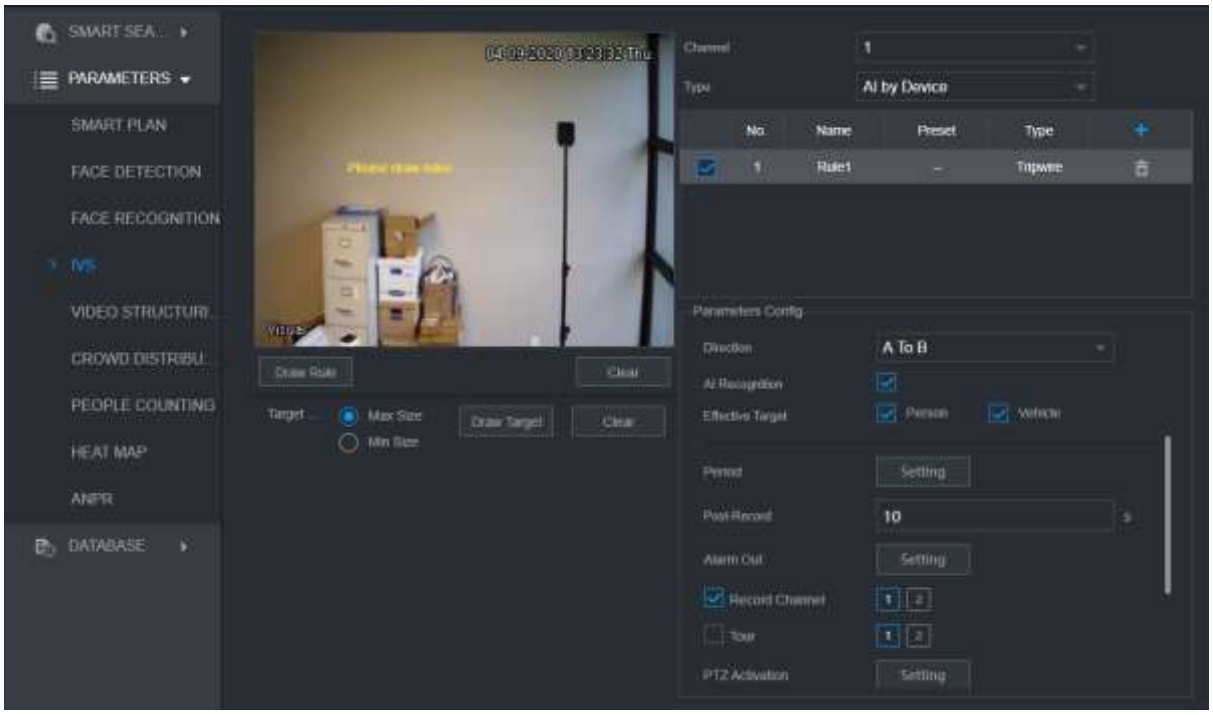
Preset: This is typically not needed, however, if a preset is involved with the rule it will be shown.
Type: The rule that is currently being used by the system. If multiple IVS rules are being used by the system, double click on the type to display a drop-down menu.
+: the "+" icon is used to add the IVS rule into the system.

Setting up IVS Events

The system offers a built-in IVS rule called "**Tripwire**" and "**Intrusion**". Tripwire allows the system to trigger an event if an object, such as a human or vehicle, crosses the set tripwire **line**. Intrusion allows the camera to trigger an event if an object, such as a human or vehicle, appears or crosses a set intrusion **area**. Please ensure all other AI features such as, face detection, face recognition, etc. are disabled in the system before activating any IVS rules. The IVS rules will not save to the system if any other AI features are activated.

Setting up Tripwire

Tripwire allows the system to trigger an event if an object, such as a human or vehicle, crosses the set tripwire **line**. Below is a screenshot of the tripwire interface.



Below is a description of the features in this menu:

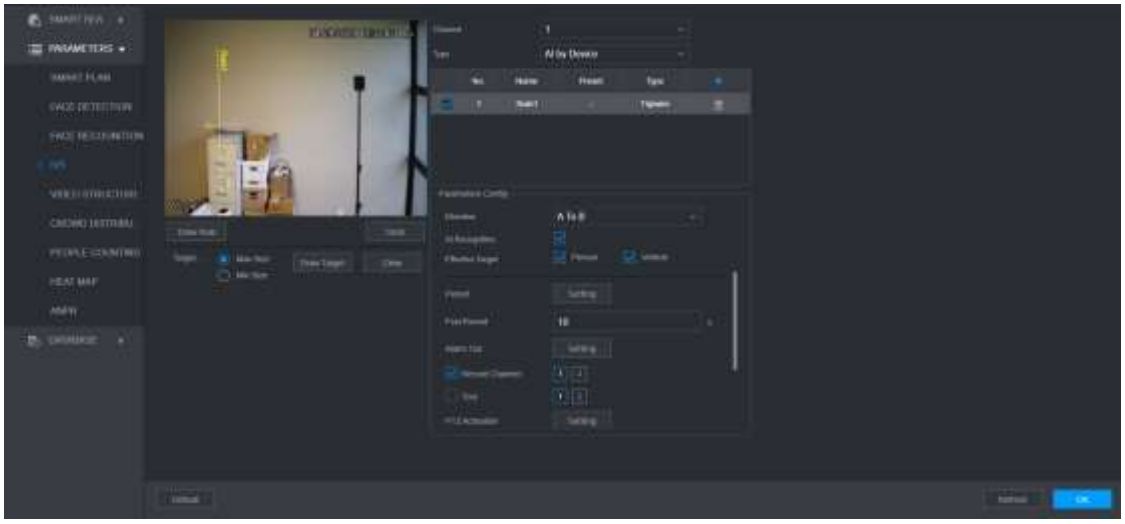
Draw Rule: This option allows the user to use their mouse to customize (draw) a rule/area on the screen. This will be the area or line in which an IVS rule will be triggered.
Clear: This option is used to clear the drawn rule set on the live monitor screen.
Target filter: Sets a maximum and minimum size in which an event will be triggered.
Draw Target: Allows the user to set a target area on the live monitor screen. **An IVS event will not occur outside the target box.**
Clear: Clears the modified target area to draw the target area on the live monitoring screen.
Direction: This dropdown menu allows the user to set which direction the object will be going for the tripwire to be triggered. It can be set left, right, or in both directions (A<->B).
AI Recognition: Enable this checkbox to allow the system to trigger the rule.
Effective Target: The object filter checkboxes allow the camera to be triggered only when a specific object, such as a human or car, is detected by the camera. Both effective object checkboxes can be activated at the same time.

- **Person:** This checkbox allows the camera to be triggered only when a human figure is detected.
- **Vehicle:** This checkbox allows the camera to be triggered only when a vehicle has been detected.

Period: Allows the user to set a schedule in which the AI rule will be triggered. For more information on how to set a recording schedule, please refer to section "*Schedule*".
Post Record: This field specifies, in seconds, how long the delay between IVS events should be. The default is 10 seconds however this can be modified between 10~300 seconds.
Alarm Out: This option allows you to configure the rule with an external alarm. Latch represents the delay (in seconds) before the system begins detecting for the same alarm/event.
Record Channel: This checkbox allows the user to enable the device to record video when the rule has been triggered. Use the channel numbers listed to choose which channel to record.
Tour: Allows PTZ presets to be enabled via PTZ activation. This option is not applicable for this specific system.
PTZ Activation: This setting allows you to set PTZ presets to the device. This option is not applicable for this specific system.
Voice Prompts: This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, "Audio".
More Setting: Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, "*Setting Up Email Alerts*".

Setting a Tripwire Line

Step 1: Click the (+) icon to add the rule and select Tripwire from the **Rule Type** menu. Set a name for the rule by double clicking the mouse over the **Name** of the rule and enter a name.
Step 2: In the **Direction** menu, choose which direction the object will be going for the tripwire to be triggered.
Step 3: An optional Effective target filter can be set for tripwire that will allow the rule only to be triggered if it detects an effective object such as a **person** or **vehicle**. You can choose both filters if needed.
Step 4: A schedule can be set for the rule that will allow the rule only to be triggered during specific times of the day. For more information on how to set a recording schedule, please refer to section, "*Schedule*".
Step 5: Click the **Draw Rule** option and use your mouse to draw the rule on the live view screen. Once the rule has been drawn, left click on the live view screen to set the rule, then right click the live view screen to apply. The tripwire line will be set in the system.
Step 6: Click **OK** to save.



Setting up an Intrusion Area

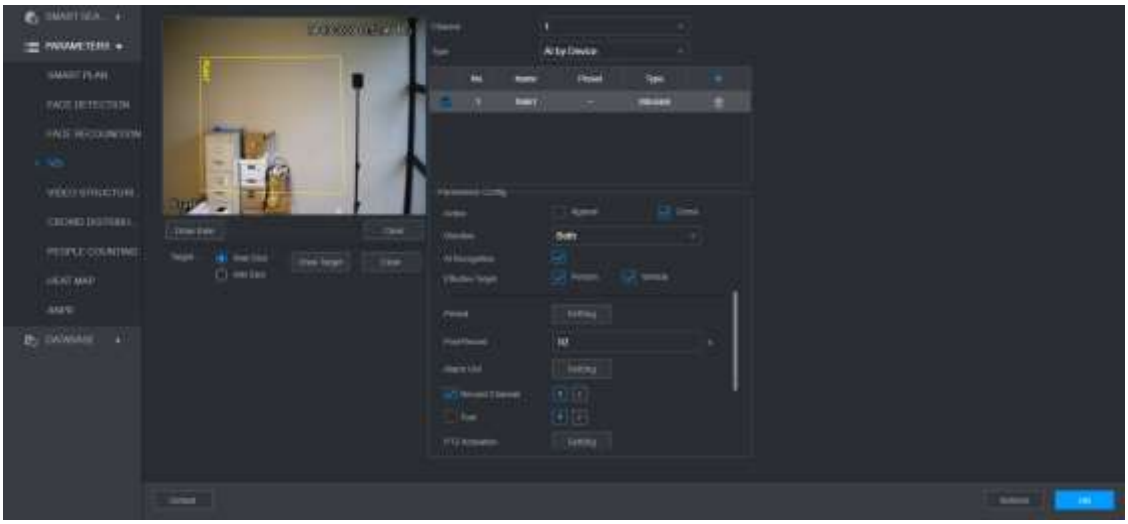
Intrusion allows the camera to trigger an event if an object, such as a human or vehicle, appears or crosses a set intrusion **area**. This rule can be used in conjunction with tripwire in the system.

Setting an Intrusion Rule

Step 1: Click the (+) icon to add the rule and select **Intrusion** from the **Rule Type** menu. Set a name for the rule by double clicking the mouse over the **Name** of the rule and enter a name.
Step 2: Enable the action checkboxes. These checkboxes allow the user to choose a parameter filter that will activate a trigger if an object were to cross or appear in the set intrusion area.

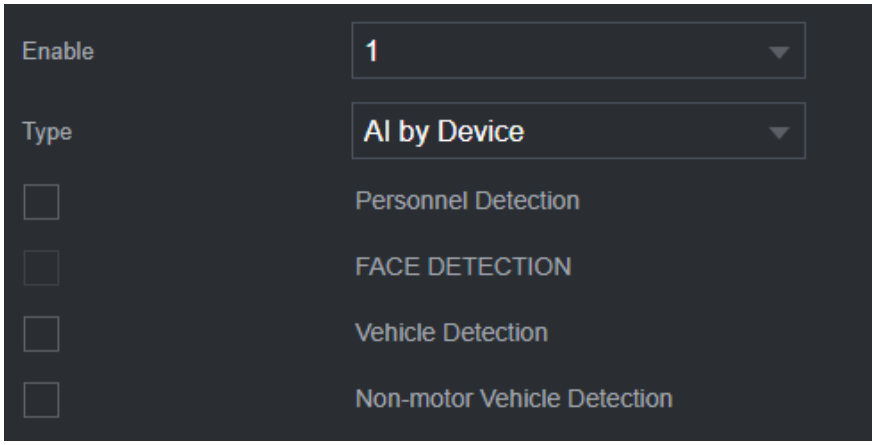
Cross: The rule will trigger when a target enters or exits the area.
Appears: The rule will trigger when a target appears inside the area.

Step 2: In the **Direction** menu, choose which direction the object will be going for the intrusion rule to be triggered. This can be based on whether it enters or exits the detection area.
Step 3: An optional effective target filter can be set that will allow the rule only to be triggered if it detects an effective object such as a **person** or **vehicle**. You can choose both filters if needed.
Step 4: A schedule can be set for the rule that will allow the rule only to be triggered during specific times of the day. For more information on how to set a recording schedule, please refer to section, "*Schedule*".
Step 5: Click the **Draw Rule** option and use your mouse to draw the rule on the live view screen. This will be a rectangular area on the live view screen. Once the rule has been drawn, left click on the live view screen to set the rule, then right click the live view screen to apply.
Step 6: Click **OK** to save.



Video Structuraliztion

The video structualization feature attribute information extracted from a target object which can be used for data retrieval. Currently, there are four main kinds of metadata in the system: personnel detection, face detection, vehicle detection, and non-motor vehicle detection. Please note, due to limitations within the system, this feature may not be available for all models. Below is a screenshot of this interface:

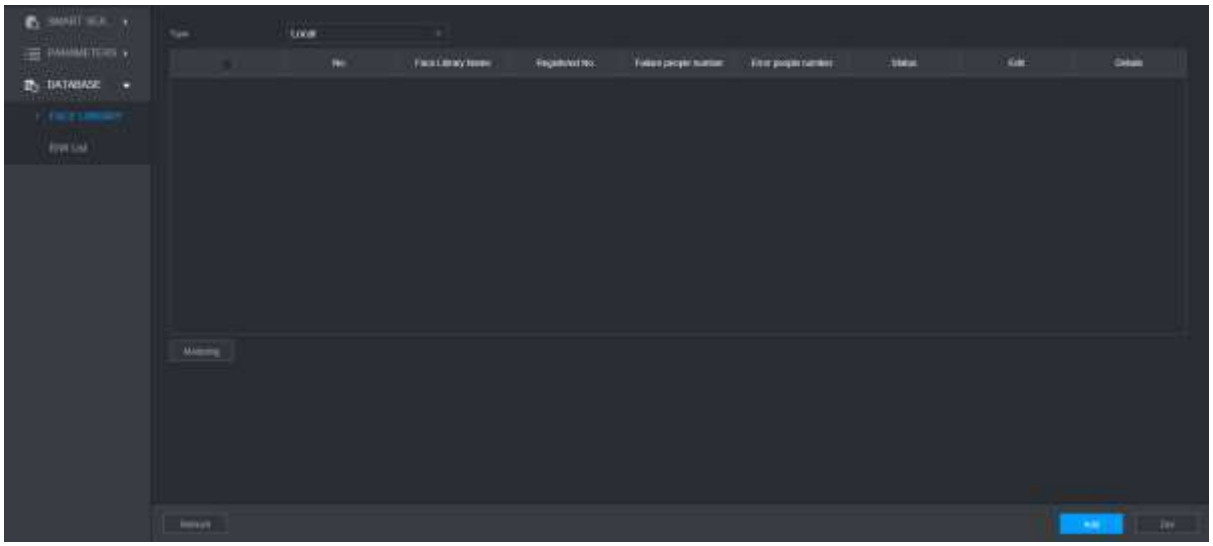


Database

The database menu allows users to set a face library as well as blacklist or white list any motor vehicle plate numbers tied to the system.

Face Library

A face library is used to import images into the system to be used for the face recognition process. An image must be imported in .jpeg format and large enough for facial features to be recognized by the system. Below is a screenshot of the face library menu:



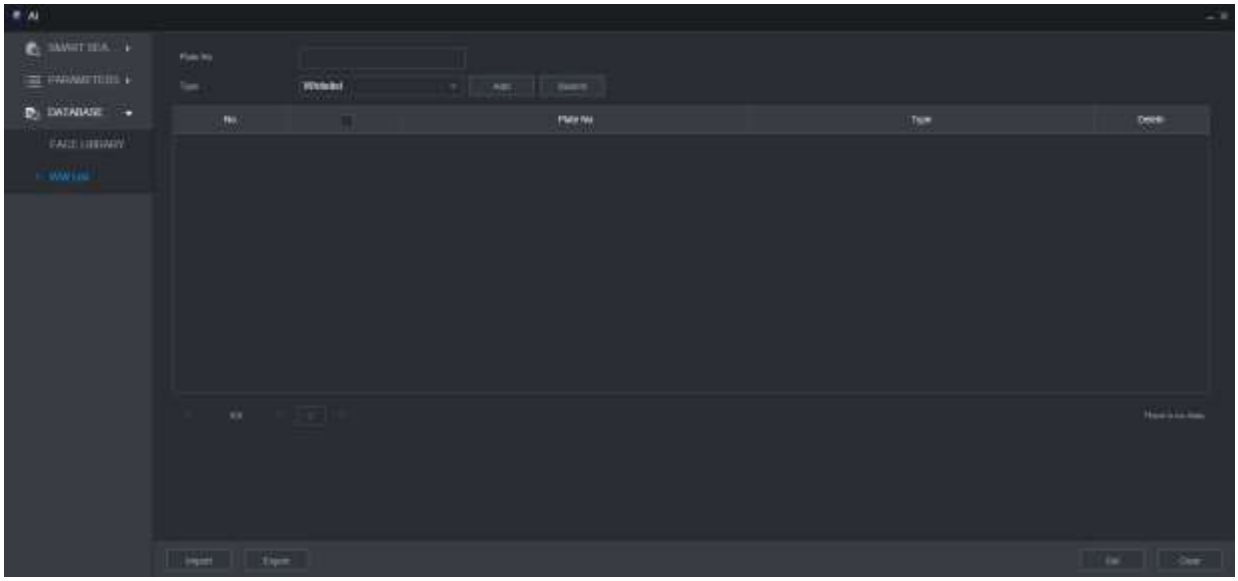
Adding a Face Library

Step 1: Click on the **Add** button located in the Face Library menu.
Step 2: Enter a name for your face library and click **OK** to continue. The face library will be imported into the library will be set to arming status in the face library interface.
Step 3: Click on the **Details** icon “I” and click on **Register ID**. If importing multiple images, click on **Batch Register**.

Step 4: Enter the metadata for the image, i.e. Name, Birthday, Address, Region, etc. then click on the (+) icon in the image box to select your image. Press **OK** to import the image. The system will begin modeling the image. Once the image has been successfully modeled to the system, the library can be imported into the face recognition interface. For more information on how to setup face recognition, please refer to section, "*Face Recognition Parameters"*.

B/W List

The B/W list menu allows you to black or white list vehicle plate numbers in the system. Plate information can be entered manually into the system or imported using a CSV (excel) spreadsheet. The information can be exported as well using the export button. Below is a screenshot of this menu.



Adding a B/W List

Step 1: Enter a license plate number into the Plate No. field.
Step 2: Select the list type from the Type menu. This can be a black list, which will prevent the system from detecting the plate number, or a white list which allows the system to activate once the plate number is detected.
Step 3: Click the **Add** button. The list will be added into the interface.
Step 4: List information can be exported via a .csv (excel) file

Note: If using the import feature, click the Import button and load the .csv file into the system. The information imported will be provided in the interface.

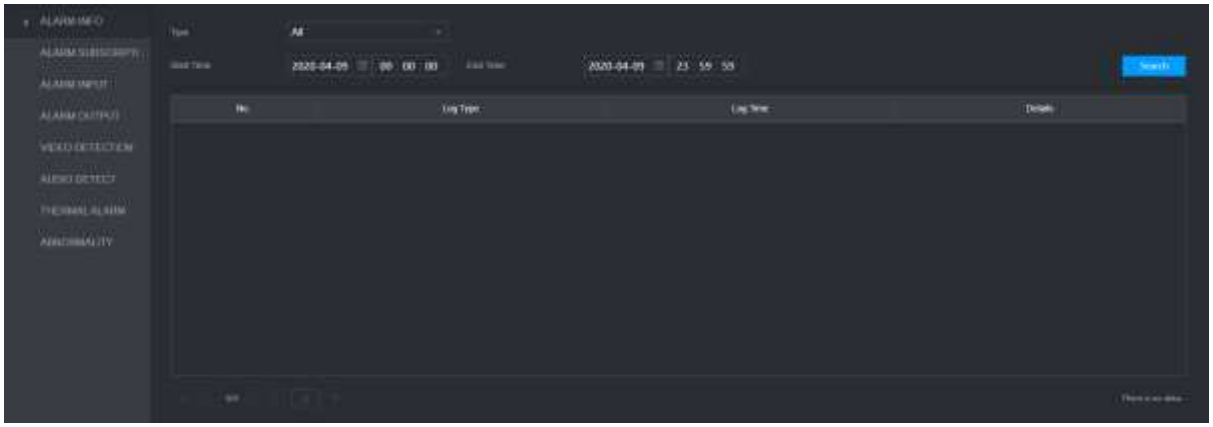
Alarm

This menu allows you to view, search, and configure live alarm events such as, motion detection and other alarm event information. To access the alarm menu, click on the Alarm option located in the main menu:



Alarm Info

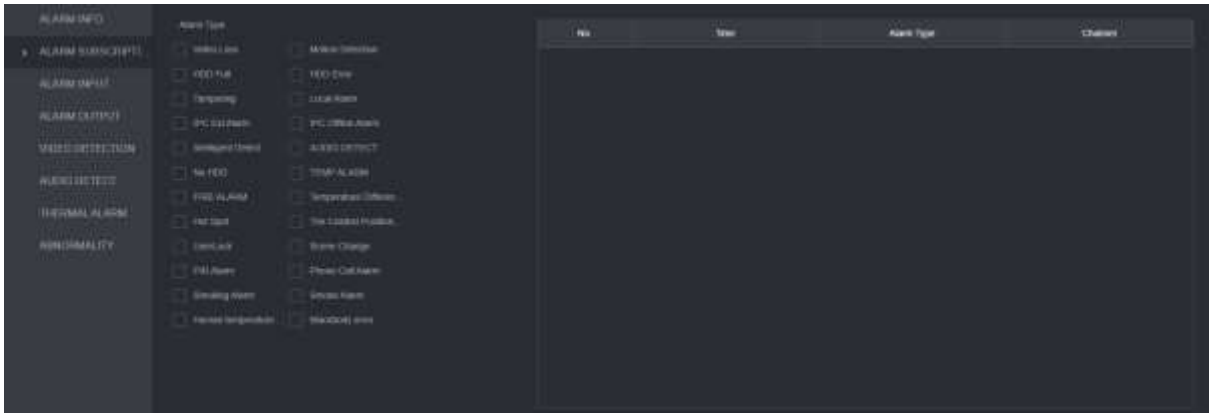
The alarm info menu allows you to view alarm data retained by the system. Below is a screenshot of the alarm info menu:



To view alarm data, choose which alarm type you would like to view and select a date and range start and end time. Click the Search button to view a list of all logged alarm data in found in the system for the date and time range entered.

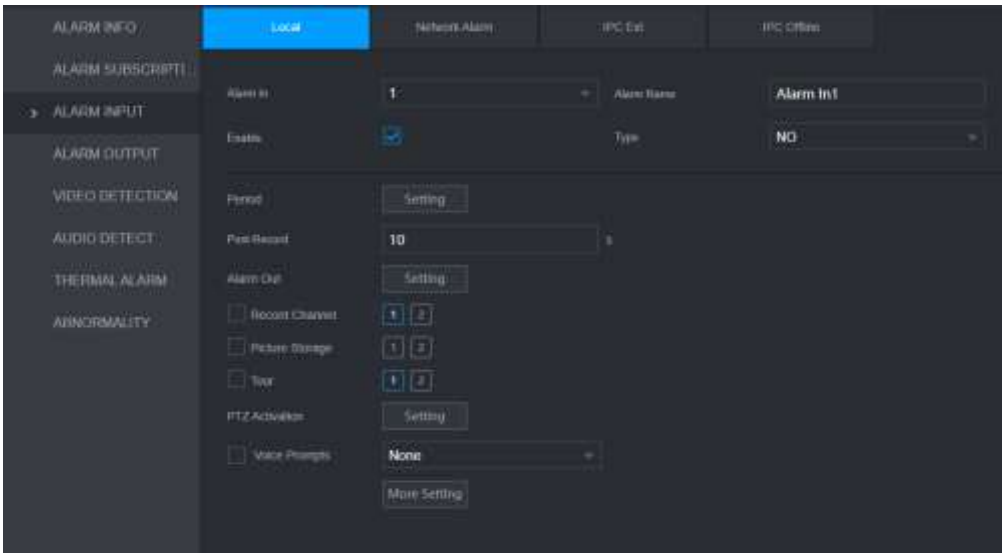
Alarm Subscription

The alarm subscription menu is used to provide a list of alarm devices used in the system. Use the checkboxes next to the attribute to subscribe an alarm to a specific system trigger. Below is screenshot of this menu:



Alarm Input

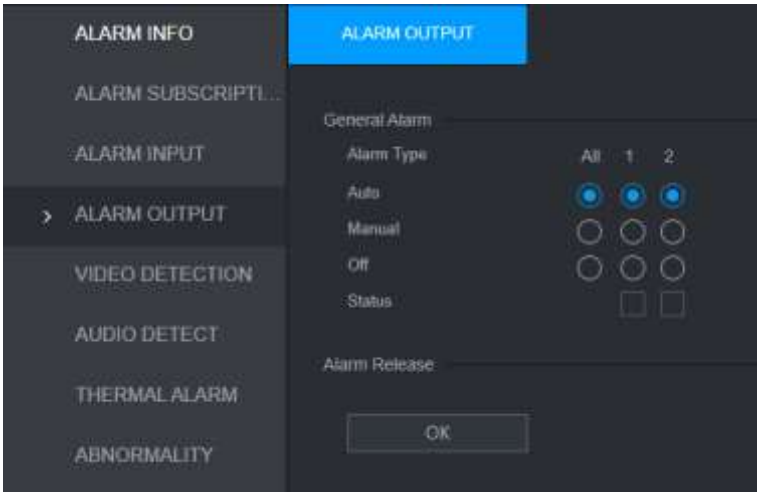
This menu is used to configure local, network, and IPC alarm information. Below is a screenshot of this menu.



Local: Provides local alarm input setup for a locally connected external alarm
Network Alarm: Provides a solution for network connected alarms in the system.
IPC Ext: A on-off alarm signal from the front-end IPC device.
IPC Office: provides an alarm if a connected IPC is offline from the network.

Alarm Output

This menu provided a general alarm output setting for the system. The system can be set to output all channels automatically, manually, or to off. The status of the alarm output can also be enabled, per channel, via the provided checkboxes in their respective channel. Below is a screenshot of the alarm output menu.



Video Detection

The detect menu allows users to set Motion Detection, Video Loss, Tampering, Scene Change, and PIR alarms to their system. Please note, PIR detection and scene change options are currently unavailable with the thermal system.

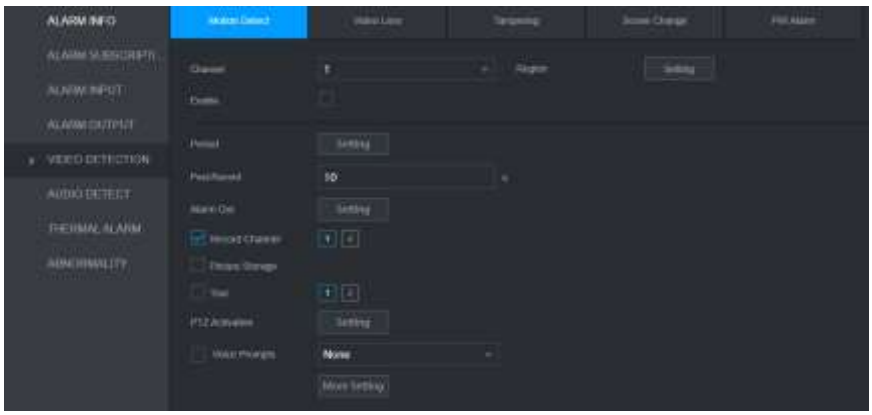
Tips:

- The motion detection icon will be present if the motion detection alarm has been triggered on the current channel.
- To set the motion detection region, click and drag the mouse over the region desired. Once the region has been set, click the OK button to save the current region setup, and right click on the mouse to exit the motion detection interface.

Motion Detect

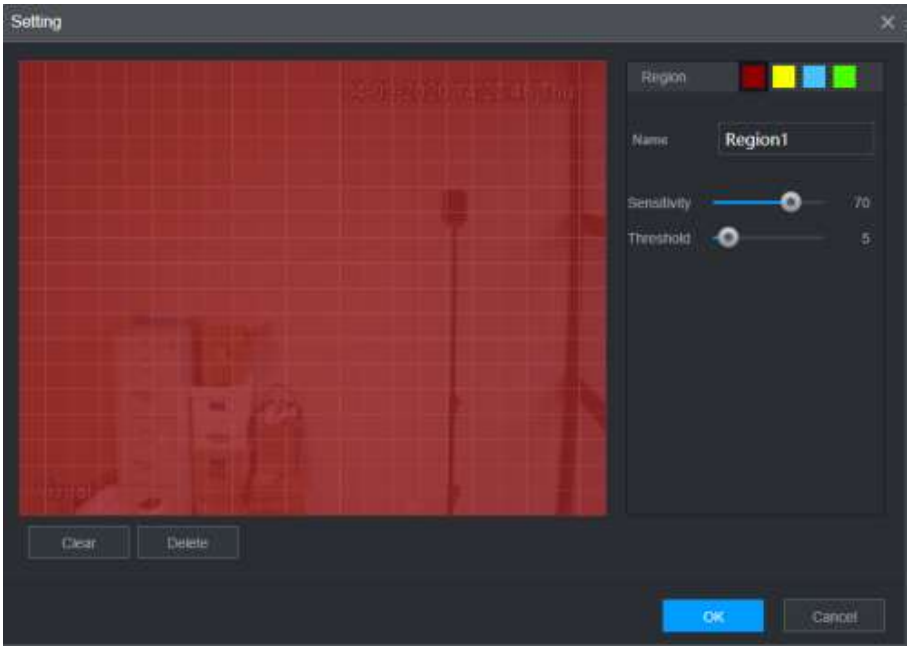
The motion detection menu is where motion detection settings can be setup for each channel. Motion detection is separate from IVS detection and can be used in conjunction with all AI features in the system. Based on the active motion detection region, the NVR can generate a motion detection alarm when a moving signal is detected in a specified area.

Below is a screenshot of the motion detection menu:



Below is a description of the fields on the Motion Detection settings page:

- **Channel:** The channel dropdown menu is used to select which channel you would like to use to set your motion detection.
- **Enable:** This checkbox allows the user to enable the motion detection function for a specific channel. To select a channel, click on the drop-down menu provided on the right.
- **Region:** The setup button takes the user to the motion detection region setup screen for that specific channel. On the next page is a screenshot of the motion detection region screen.



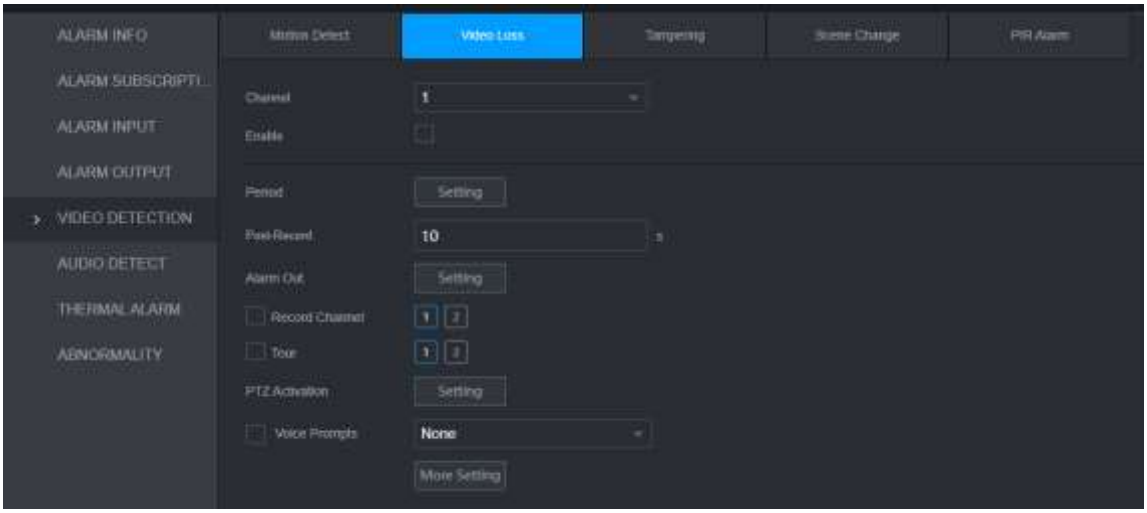
When the Setting button is clicked, the current channel's interface comes into a full screen view. The user can then set up to 4 regions, each with their own region name, sensitivity (1-100), and threshold (1-100). Each region has a specific color, and the region selector tool is displayed when the mouse is moved to the top of the screen.

- **Sensitivity** is the amount of change required to increase the motion detected by a percentage. The lower the sensitivity, the more movement is required to trigger an alarm.
- **Threshold** is the level that the motion detection needs to reach to trigger an alarm. The lower the threshold, the more likely that motion will trigger an alarm.
  - To designate a zone, click and drag the mouse over the area desired. When a colored box is displayed over the live feed, that area is now enabled for motion detection.
- After the motion detection zone is set, click the enter button to exit the motion detection screen. Remember to click the save button on the motion detection settings screen, otherwise the motion detection zones will not go into effect. Clicking the escape button to leave the motion detection zone and will not save the zone setup. **Period:** The Setting button takes the user to the motion detection period settings screen. For more information on setting up a motion schedule, please refer to section, "Schedule".
- **Post Record**: This field specifies, in seconds, how long the delay between motion events should be. The default is 10 seconds however this can be modified between 10~300 seconds.
- **Alarm Out:** This option allows you to configure the rule with an external alarm. Latch represents the delay (in seconds) before the system begins detecting for the same alarm/event.
- **Record Channel:** This checkbox allows the user to enable the device to record video when the rule has been triggered. Use the channel numbers listed to choose which channel to record.
- **Picture Storage:** Allows the system to store an image of the event to the system.
- **Tour:** Allows PTZ presets to be enabled via PTZ activation. This option is not applicable for this specific system.
- **PTZ Activation:** This setting allows you to set PTZ presets to the device. This option is not applicable for this specific system.
- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, "Audio".
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, "*Setting Up Email Alerts*".

Video Loss

The video loss screen is where the NVR can be setup to notify the user any time there is video loss on any of the channels.

Below is a screenshot of the video loss settings screen:



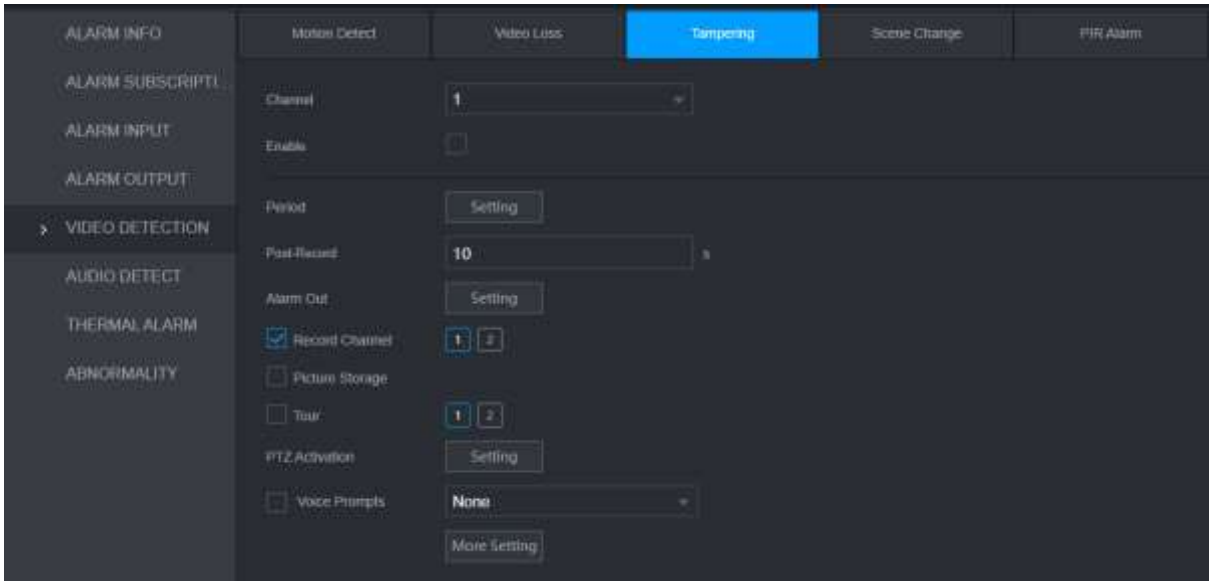
Below is a description of the fields on the Video Loss settings page:

- **Channel:** The channel dropdown menu is used to select which channel you would like to use to set your motion detection.
- **Enable:** This checkbox allows the user to enable the motion detection function for a specific channel. To select a channel, click on the drop-down menu provided on the right.
- **Period:** The Setting button takes the user to the motion detection period settings screen. For more information on setting up a motion schedule, please refer to section, “Schedule”.
- **Post Record**: This field specifies, in seconds, how long the delay between motion events should be. The default is 10 seconds however this can be modified between 10~300 seconds.
- **Alarm Out:** This option allows you to configure the rule with an external alarm. Latch represents the delay (in seconds) before the system begins detecting for the same alarm/event.
- **Record Channel:** This checkbox allows the user to enable the device to record video when the rule has been triggered. Use the channel numbers listed to choose which channel to record.
- **Tour:** Allows PTZ presets to be enabled via PTZ activation. This option is not applicable for this specific system.
- **PTZ Activation:** This setting allows you to set PTZ presets to the device. This option is not applicable for this specific system.
- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, “Audio”.
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, “*Setting Up Email Alerts*”.

Tampering

The tampering menu allows the NVR to notify the user any time there is tampering on any of the channels.

Below is a screenshot of the tampering screen:



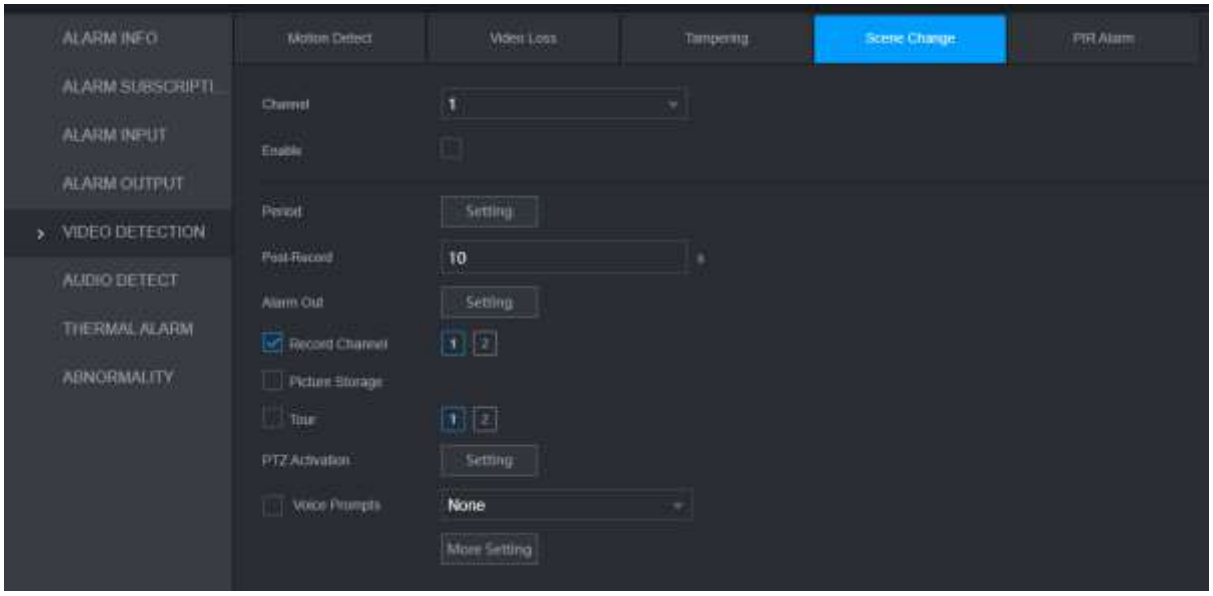
Below is a description of the fields on the tampering menu:

- **Channel:** The channel dropdown menu is used to select which channel you would like to use to set your motion detection.
- **Enable:** This checkbox allows the user to enable the motion detection function for a specific channel. To select a channel, click on the drop-down menu provided on the right.
- **Period:** The Setting button takes the user to the motion detection period settings screen. For more information on setting up a motion schedule, please refer to section, “Schedule”.
- **Post Record**: This field specifies, in seconds, how long the delay between motion events should be. The default is 10 seconds however this can be modified between 10~300 seconds.
- **Alarm Out:** This option allows you to configure the rule with an external alarm. Latch represents the delay (in seconds) before the system begins detecting for the same alarm/event.
- **Record Channel:** This checkbox allows the user to enable the device to record video when the rule has been triggered. Use the channel numbers listed to choose which channel to record.
- **Picture Storage:** Allows the system to store an image of the event to the system.
- **Tour:** Allows PTZ presets to be enabled via PTZ activation. This option is not applicable for this specific system.
- **PTZ Activation:** This setting allows you to set PTZ presets to the device. This option is not applicable for this specific system.
- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, “Audio”.
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, “*Setting Up Email Alerts*”.

Scene Change

The Scene Change menu allows the user to set an alarm when the scene what is being viewed changes. **Please note, this option may not be available on the thermal monitoring solution system.**

Below is a screenshot of the scene change menu:



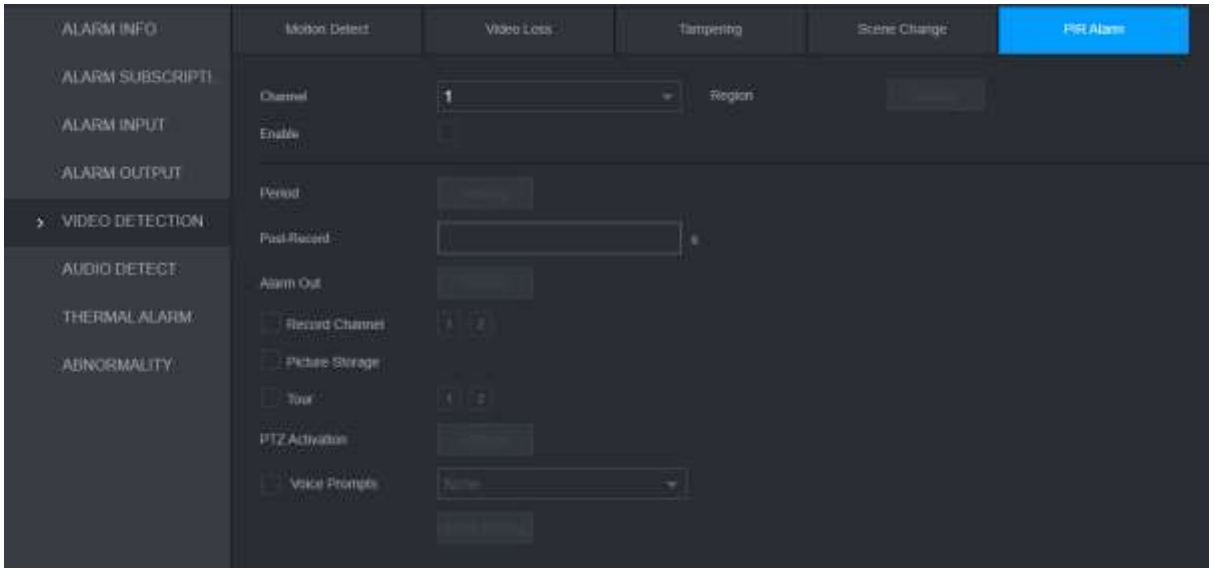
Below is a description of the options provide in this menu:

- **Channel:** The channel dropdown menu is used to select which channel you would like to use to set your motion detection.
- **Enable:** This checkbox allows the user to enable the motion detection function for a specific channel. To select a channel, click on the drop-down menu provided on the right.
- **Period:** The Setting button takes the user to the motion detection period settings screen. For more information on setting up a motion schedule, please refer to section, “Schedule”.
- **Post Record**: This field specifies, in seconds, how long the delay between motion events should be. The default is 10 seconds however this can be modified between 10~300 seconds.
- **Alarm Out:** This option allows you to configure the rule with an external alarm. Latch represents the delay (in seconds) before the system begins detecting for the same alarm/event.
- **Record Channel:** This checkbox allows the user to enable the device to record video when the rule has been triggered. Use the channel numbers listed to choose which channel to record.
- **Picture Storage:** Allows the system to store an image of the event to the system.
- **Tour:** Allows PTZ presets to be enabled via PTZ activation. This option is not applicable for this specific system.
- **PTZ Activation:** This setting allows you to set PTZ presets to the device. This option is not applicable for this specific system.
- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, “Audio”.
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, “*Setting Up Email Alerts*”.

PIR Alarm

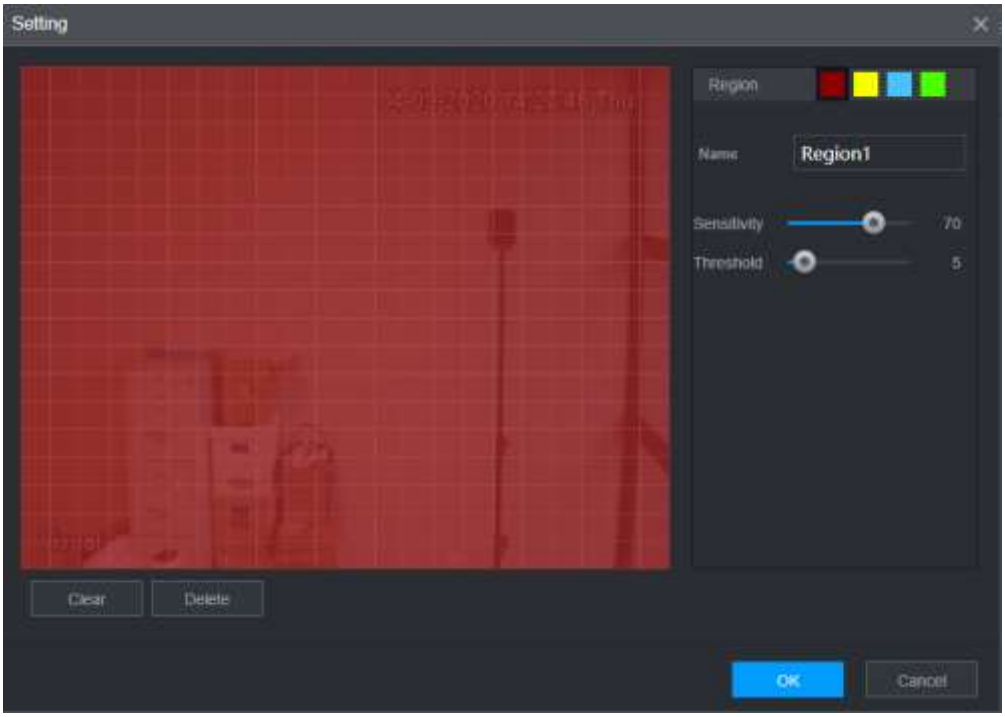
The PIR alarm menu allows the user to set a PIR based alarm to the system. **Please note, this is only applicable to devices with PIR detection capabilities and may not be applicable to the thermal monitoring solution system.**

Below is a screenshot of the PIR alarm menu:



Below is a description of the options listed in this menu

- **Channel:** The channel dropdown menu is used to select which channel you would like to use to set your motion detection.
- **Enable:** This checkbox allows the user to enable the motion detection function for a specific channel. To select a channel, click on the drop-down menu provided on the right.
- **Region:** The setup button takes the user to the motion detection region setup screen for that specific channel. On the next page is a screenshot of the motion detection region screen.

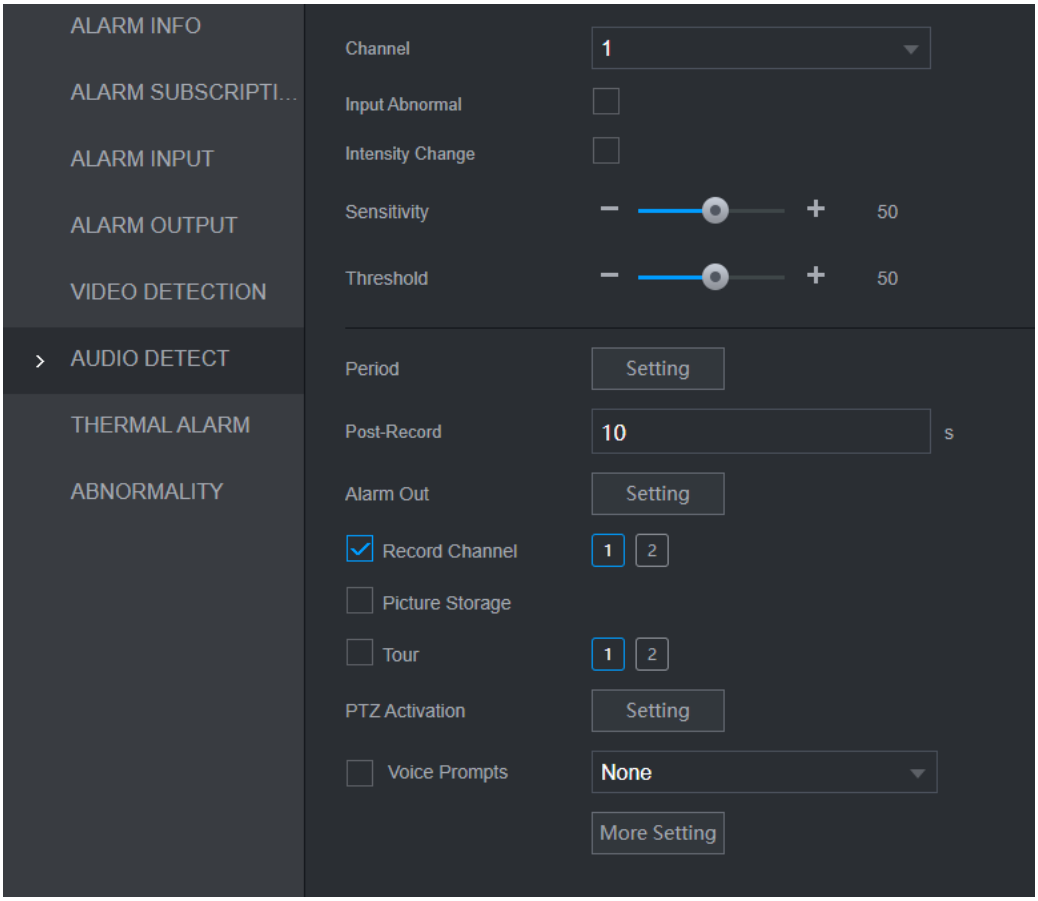


When the Setting button is clicked, the current channel's interface comes into a full screen view. The user can then set up to 4 regions, each with their own region name, sensitivity (1-100), and threshold (1-100). Each region has a specific color, and the region selector tool is displayed when the mouse is moved to the top of the screen.

- **Sensitivity** is the amount of change required to increase the motion detected by a percentage. The lower the sensitivity, the more movement is required to trigger an alarm.
- **Threshold** is the level that the motion detection needs to reach to trigger an alarm. The lower the threshold, the more likely that motion will trigger an alarm.
  - To designate a zone, click and drag the mouse over the area desired. When a colored box is displayed over the live feed, that area is now enabled for motion detection.
  - After the motion detection zone is set, click the enter button to exit the motion detection screen. Remember to click the save button on the motion detection settings screen, otherwise the motion detection zones will not go into effect. Clicking the escape button to leave the motion detection zone and will not save the zone setup.
- **Period:** The Setting button takes the user to the motion detection period settings screen. For more information on setting up a motion schedule, please refer to section, “Schedule”.
- **Post Record**: This field specifies, in seconds, how long the delay between motion events should be. The default is 10 seconds however this can be modified between 10~300 seconds.
- **Alarm Out:** This option allows you to configure the rule with an external alarm. Latch represents the delay (in seconds) before the system begins detecting for the same alarm/event.
- **Record Channel:** This checkbox allows the user to enable the device to record video when the rule has been triggered. Use the channel numbers listed to choose which channel to record.
- **Picture Storage:** Allows the system to store an image of the event to the system.
- **Tour:** Allows PTZ presets to be enabled via PTZ activation. This option is not applicable for this specific system.
- **PTZ Activation:** This setting allows you to set PTZ presets to the device. This option is not applicable for this specific system.
- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, “Audio”.
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, “*Setting Up Email Alerts*”.

Audio Detect

This menu allows the user to configure audio detection settings in the system. Please note, a camera with a built-in microphone or external microphone solution will be required for this option to function. Below is a screenshot of the audio detection menu:



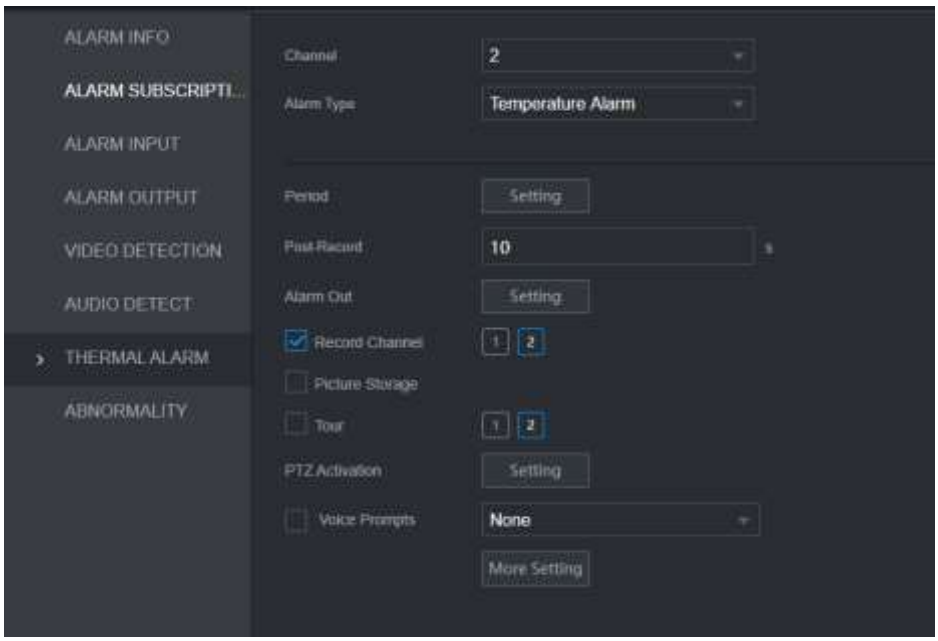
Below is a description of the options listed in this menu:

- **Channel:** The channel dropdown menu is used to select which channel you would like to use to set your motion detection.
- **Input Abnormal:** This checkbox allows the system to detect if an abnormality exists with a microphone or external audio connection.
- Intensity Change: This checkbox allows the system to compensate for any increased audio intensity captured by the system.
- Sensitivity: This slider allows the system to increase or decrease the amount of audio sensitivity (in dBs). The default is 50dB.
- Threshold: This slider allows the system to increase or decrease the amount of audio threshold (in dBs). The default is 50 db.
- **Period:** The Setting button takes the user to the motion detection period settings screen. For more information on setting up a motion schedule, please refer to section, “Schedule”.
- **Post Record**: This field specifies, in seconds, how long the delay between motion events should be. The default is 10 seconds however this can be modified between 10~300 seconds.
- **Alarm Out:** This option allows you to configure the rule with an external alarm. Latch represents the delay (in seconds) before the system begins detecting for the same alarm/event.
- **Record Channel:** This checkbox allows the user to enable the device to record video when the rule has been triggered. Use the channel numbers listed to choose which channel to record.
- **Picture Storage:** Allows the system to store an image of the event to the system.
- **Tour:** Allows PTZ presets to be enabled via PTZ activation. This option is not applicable for this specific system.
- **PTZ Activation:** This setting allows you to set PTZ presets to the device. This option is not applicable for this specific system.

- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, “Audio”.
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, “*Setting Up Email Alerts*”.

Thermal Alarms

This menu allows the user to configure human body temperature alarms as well as other thermal abnormalities detected by the system. Below is a screenshot of the thermal alarms menu:



Note: Please ensure to use the thermal channel of your camera during configuration.

Below is a description of the features listed in this menu.

- **Channel:** Choose the thermal channel for your camera.
- **Alarm Type:** Select the alarm type you wish to configure from the dropdown menu.
- **Period:** The Setting button takes the user to the motion detection period settings screen. For more information on setting up a motion schedule, please refer to section, “Schedule”.
- **Post Record**: This field specifies, in seconds, how long the delay between motion events should be. The default is 10 seconds however this can be modified between 10~300 seconds.
- **Alarm Out:** This option allows you to configure the rule with an external alarm. Latch represents the delay (in seconds) before the system begins detecting for the same alarm/event.
- **Record Channel:** This checkbox allows the user to enable the device to record video when the rule has been triggered. Use the channel numbers listed to choose which channel to record.
- **Picture Storage:** Allows the system to store an image of the event to the system.
- **Tour:** Allows PTZ presets to be enabled via PTZ activation. This option is not applicable for this specific system.
- **PTZ Activation:** This setting allows you to set PTZ presets to the device. This option is not applicable for this specific system.

- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, “Audio”.
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, “*Setting Up Email Alerts*”.

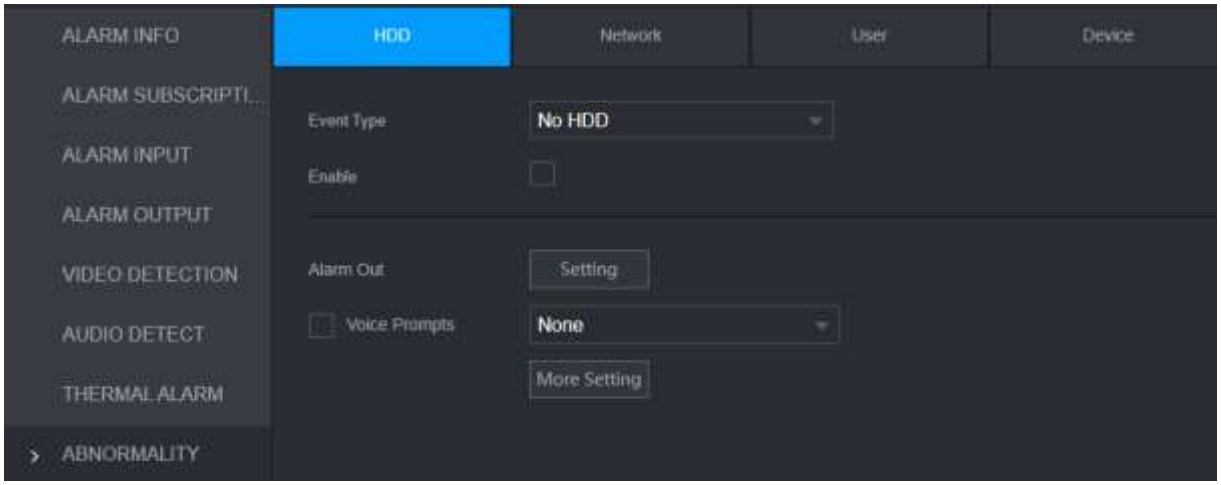
Note: For more information on how to configure human body temperatures alarms, please refer to section, “*Configuring Human Body Temperature Alarms (NVR)”*

Abnormality

This screen is used to specify system action in the case of either hard drive abnormality, or network abnormality.

HDD

This screen allows the user to specify actions that occur when there is an abnormality with the NVR’s hard disk drive (HDD). Below is a screenshot of the HDD Abnormality settings screen:

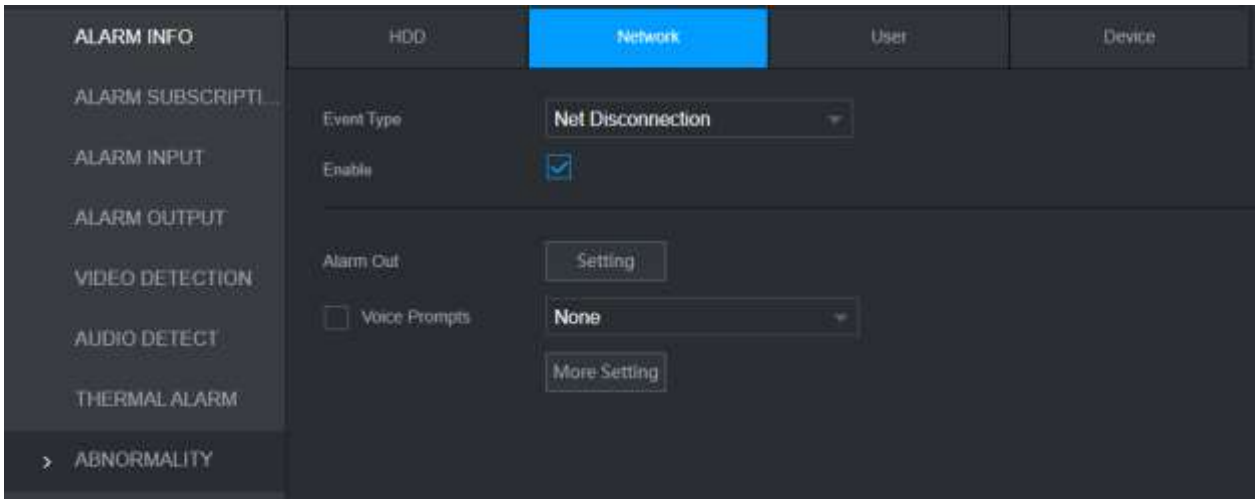


- **Event Type:** This field allows the user to specify which HDD abnormality event type they would like to configure settings for.
    - No Disk: No hard drive is detected.
    - Disk Error: The hard drive has an error.
    - Disk No Space: The hard drive is about to or has run out of space.
    - Less Than: This field allows the user to specify at what percentage of free disk space this condition should be triggered.
- **Enable:** This checkbox allows the user to enable the features below for the specified event type.
- **Alarm Out:** This checkbox allows an external, connected alarm to be triggered when an event is detected.
- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, “Audio”.
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if

the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, "*Setting Up Email Alerts*".

Network

This screen allows the user to specify actions that occur when there is an abnormality with the NVR's network connection. Below is a screenshot of the Network Abnormality settings screen:

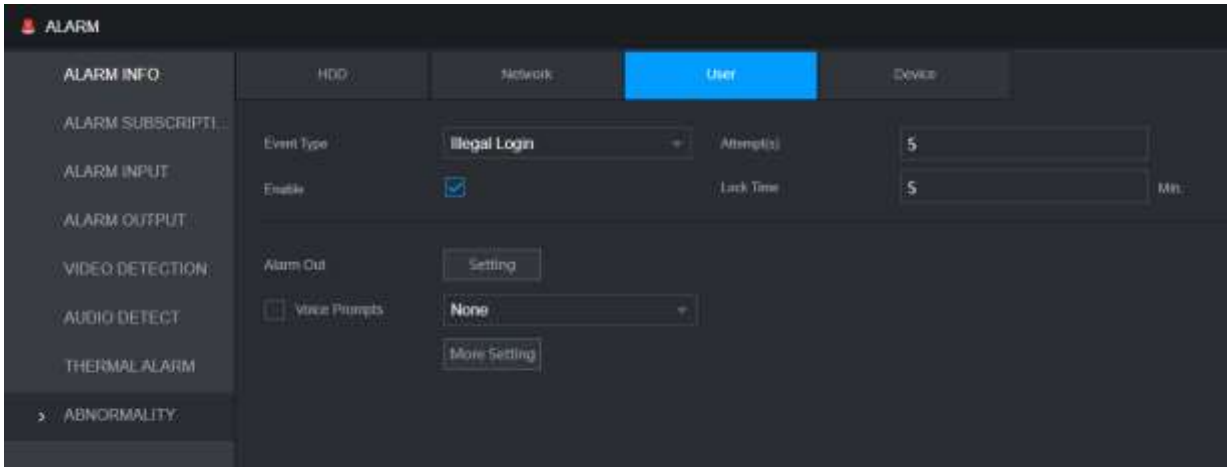


Below is an explanation of the fields on the Network Abnormality settings screen:

- **Event Type:** This field allows the user to specify which Network abnormality event type they would like to configure settings for.
  - Net Disconnection: The network connection has been disconnected.
  - IP Conflict: There is a device on the network with the same IP address.
  - MAC Conflict: There is a device on the network with the same MAC address.
- **Enable:** This checkbox allows the user to enable the features below for the specified event type.
- **Alarm Out:** This checkbox allows an external, connected alarm to be triggered when an event is detected.
- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, "Audio".
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, "*Setting Up Email Alerts*".

User

This screen allows the user to specify actions that occur when illegal login has been attempted on their device. Below is a screenshot of this menu:

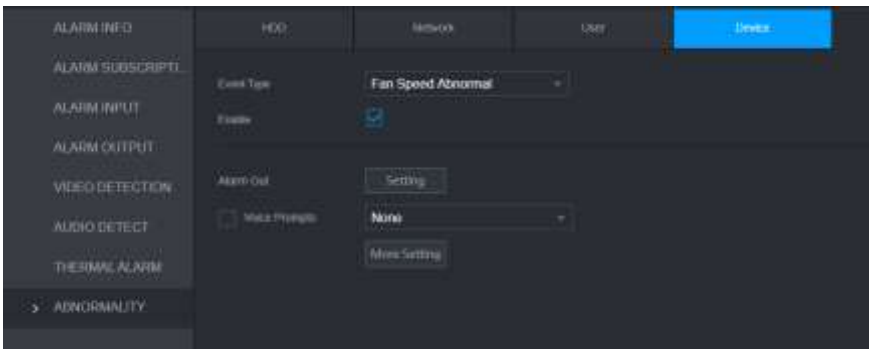


Below is a description of the features listed in this menu:

- **Event Type:** Sets the type of event that is being triggered by the abnormality.
- **Attempt(s):** Refers to the number of login attempts tried before the abnormality is triggered.
- **Enable:** Check this box to enable this feature.
- **Lock Time:** How long the device will be locked until another login attempt can be made.
- **Alarm Out:** This checkbox allows an external, connected alarm to be triggered when an event is detected.
- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, “Audio”.
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, “*Setting Up Email Alerts*”.

Device

This screen allows the user to specify actions that occur with issues related to the NVR occur such as a fan speed abnormality or network security exception. Below is a screenshot of this interface.



- **Event Type:** Sets the type of event that is being triggered by the abnormality.
- **Enable:** Check this box to enable this feature.
- **Alarm Out:** This checkbox allows an external, connected alarm to be triggered when an event is detected.

- **Voice Prompts:** This option allows you to choose specific voice prompts when the AI rules has been triggered. Voice prompts are setup in the Audio menu of the NVR. For more information, please refer to section, “Audio”.
- **More Setting:** Allows you to set buzzer, log, alarm upload, and send email options. Enabling the buzzer option will allow the device to trigger a buzzer noise once the rule is triggered. The log checkbox allows the device to retain a log of the event in the alarm menu. The alarm upload option allows the system can upload the alarm signal to the network (including alarm center) if the feature has been enabled. The send email option allows an email to be sent once the AI rule is triggered. For more information on how to setup email alerts, please refer to section, “*Setting Up Email Alerts*”.

POS

This menu allows you to view and configure POS (Point of Sales) related information. Please note, this feature is currently unavailable with the thermal monitoring system.

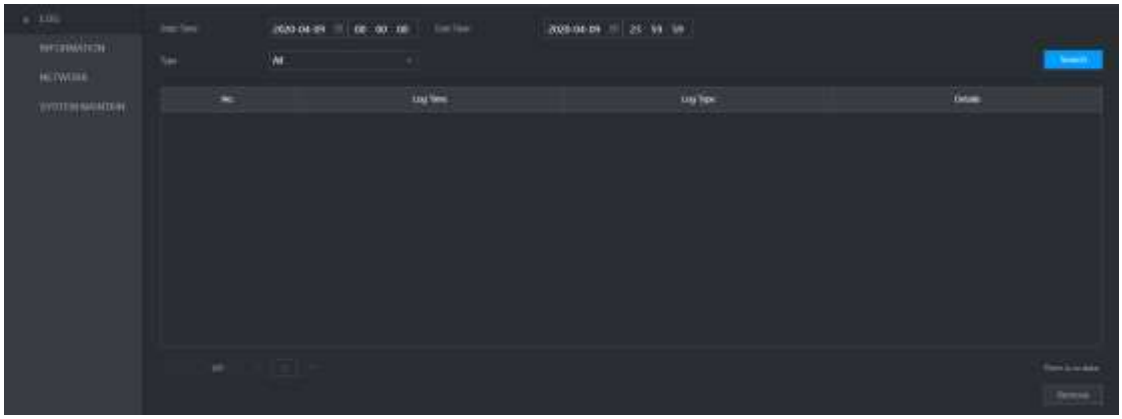
Operation

This menu allows the user to access general log information related to their system. These logs include, general logs, current system version, HDD status, BPS, network, and system maintenance. To access this menu, click on the Operation option in the main menu.

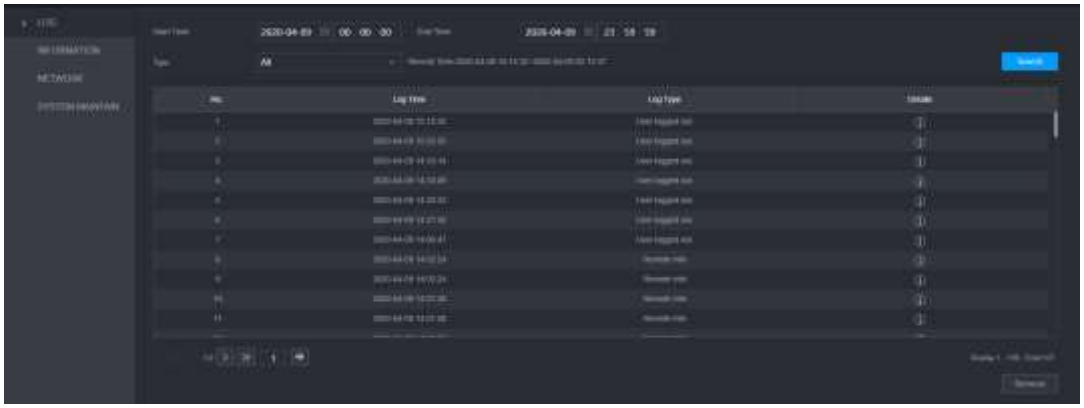


Log

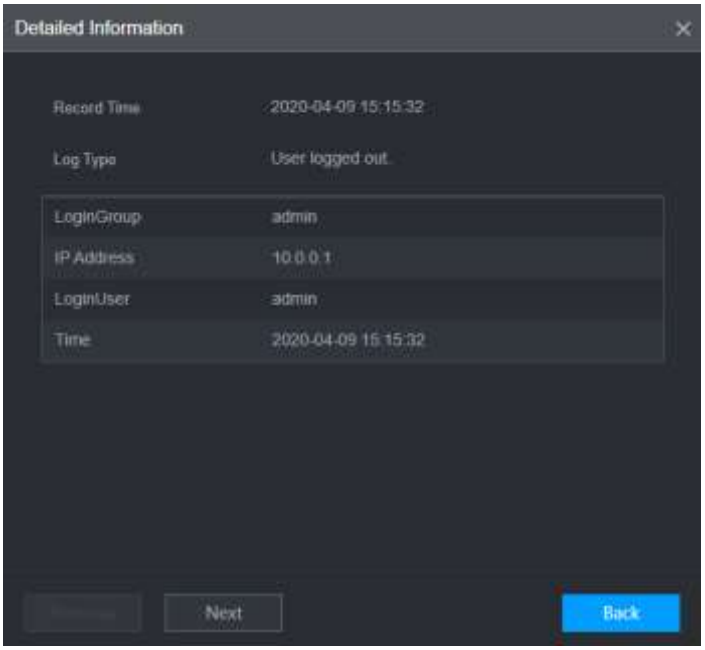
This menu allows the user to view log information retained in the system. Below is a screenshot of this menu:



To access system log information, enter a start and end date and time range and click Search. A list of log information will populate in the system.



Click on the details option to display related details to the log:



Information

This menu shows the user the current software version and other critical information related to the NVR.



HDD

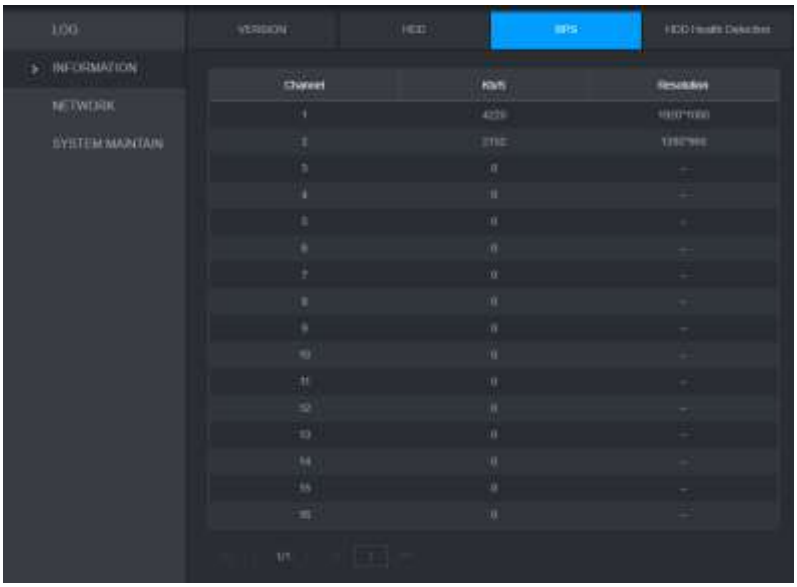
This menu displays a list of all connected hard drives as well as their names, physical positions, health status, free space, S.M.A.R.T. report, as well as current running status.



S.M.A.R.T. stands for, “Self-Monitoring, Analysis, and reporting technology. The S.M.A.R.T. report provides a detailed description of the results taken from the initial HDD detect process. This report is designed to provide insight into the health of your HDD and its interaction with your system.

BPS

The BPS menu displays the current kb/S of each connected channel. Below is a screenshot of the BPS menu.



HDD Health Detection

This menu allows the user to view the current hard drive health status of the system. Below is a screenshot of this menu.



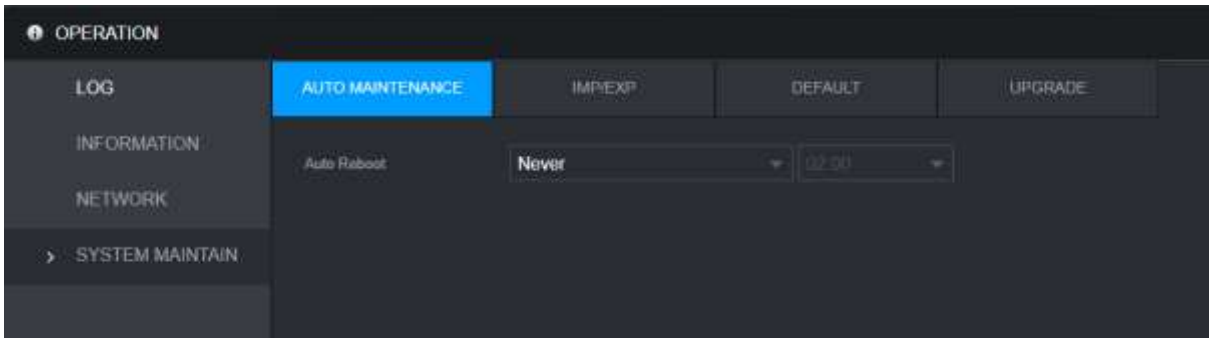
Network

This menu displays all active users in the system that are currently connected to the system. Below is a screenshot of this menu.



System Maintain

This menu allows you to access auto maintenance features, import/export options, set the NVR back to default, and options to upgrade the firmware on the NVR. Below is a screenshot of this menu.

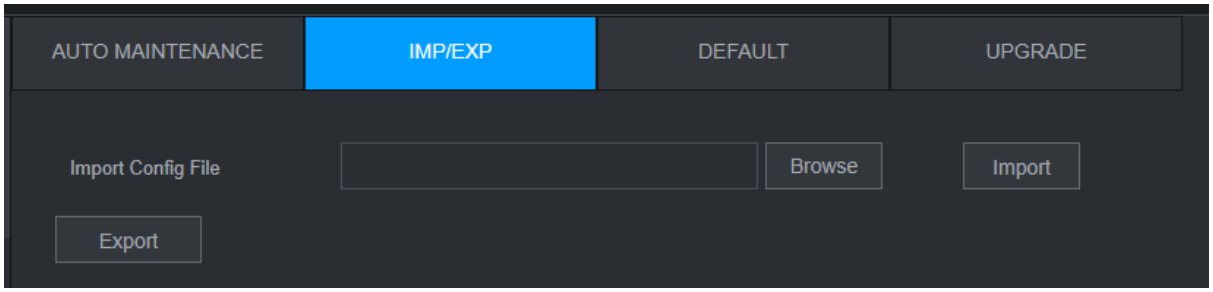


Auto Maintenance

This option allows you to set the NVR to automatically reboot. This option is set to Never by default, however, can be activated by the user if necessary.

IMP/EXP

This screen is used to manage importing and exporting of system configurations. This feature can be used to clone the settings from one NVR to another. Below is a screenshot of the IMP/EMP settings screen:

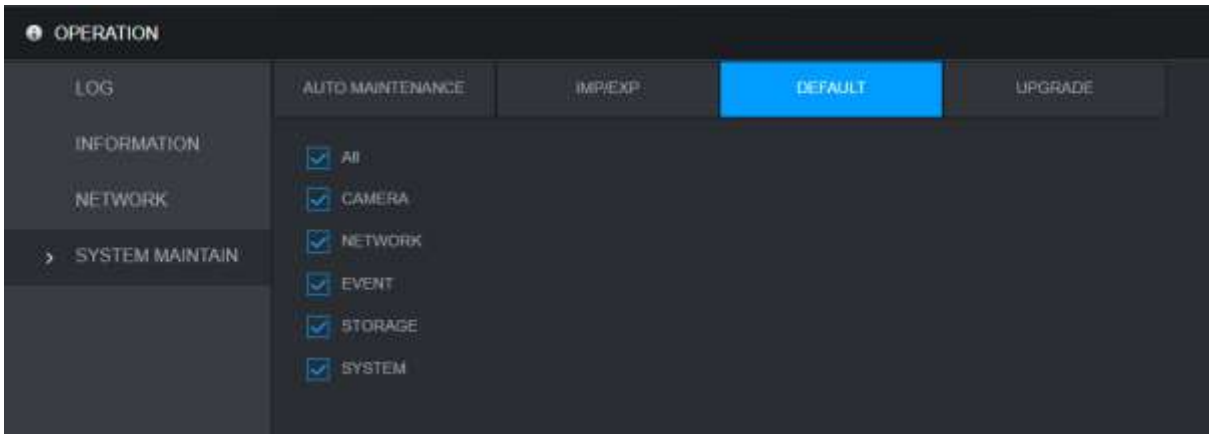


Below is an explanation of the fields on the IMP/EXP settings screen:

- **Import Config File**: This button allows the user to import configuration data to the NVR.
- **Browse:** Allows the user to search for config files on their computer to import.
- **Export:** This button allows the user to export current configuration data to another device.
- **Import:** This button allows the user to import current configuration data from another device.

Default

This screen is used to revert the NVR back to its default settings. This feature can be used to restore the NVR to its factory setup conditions. Below is a screenshot of the Default settings screen:



There are 5 different settings that can be reset to default settings: Camera, Network, Event, Storage, and System settings. All these settings can be reset using the **All** checkbox.

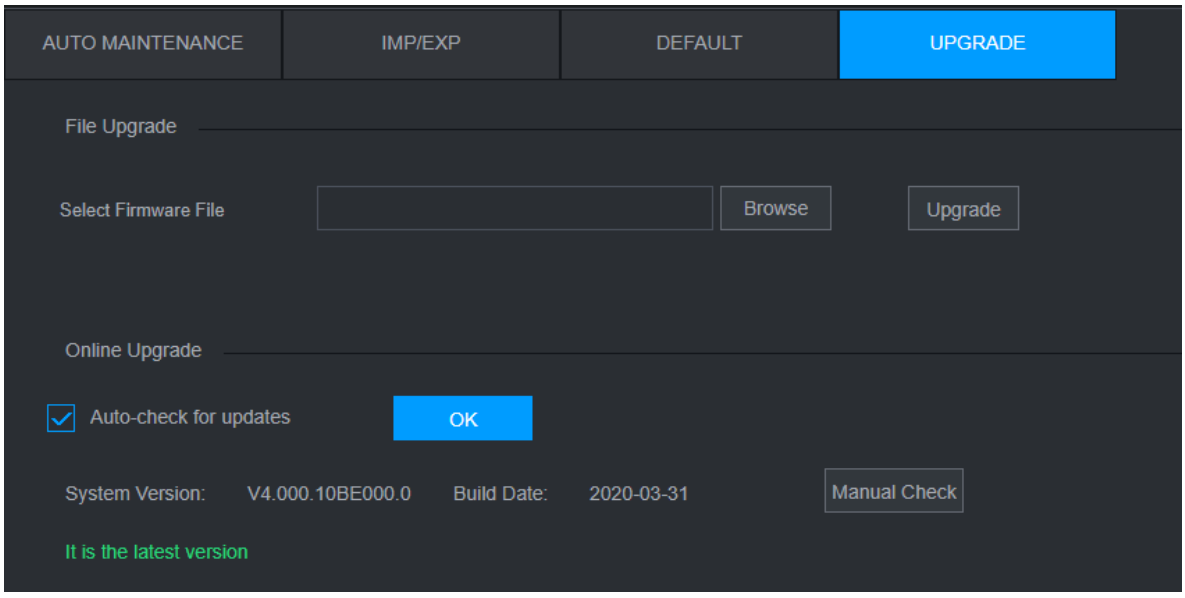
The following settings are also reset with a factory reset:

- System Menu Color
- Language
- Time Display Mode
- Video Format
- IP Address
- User Accounts

Upgrade

This screen is used to update the NVR's firmware. The latest firmware files can be found at https://amcrest.com/firmware-subscribe

Below is a screenshot of the upgrade screen:

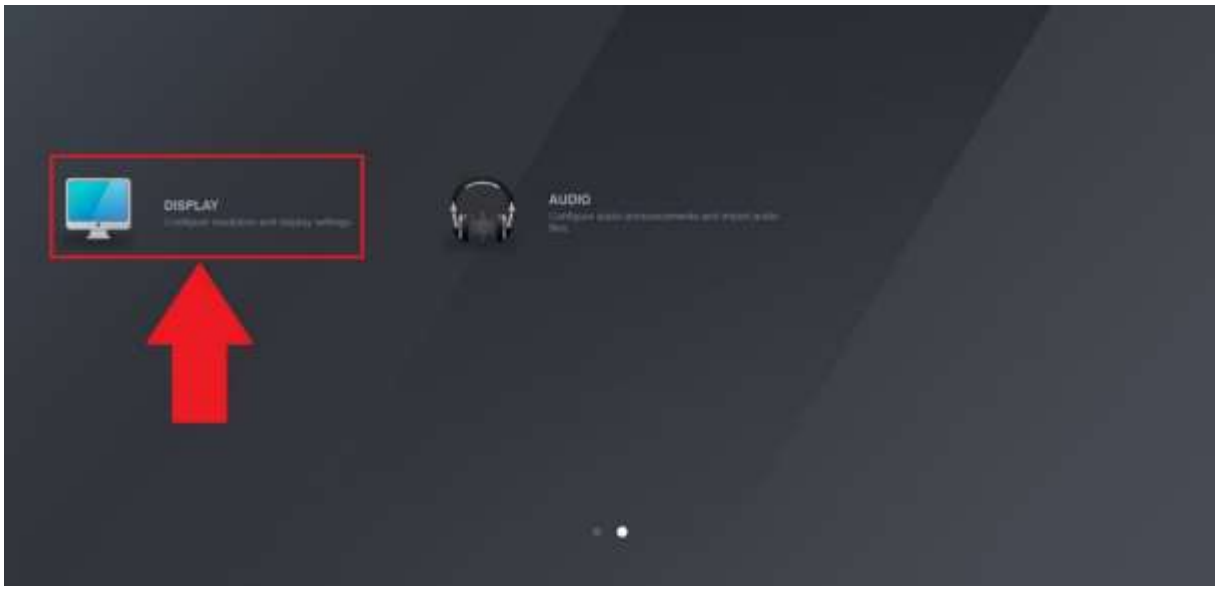


Once the firmware file has been downloaded click on the **Browse** button to locate the .bin file. Select the .bin file to import it into the system. Click on the **Upgrade** button to begin updating the system. The system will upgrade and reset when finished.

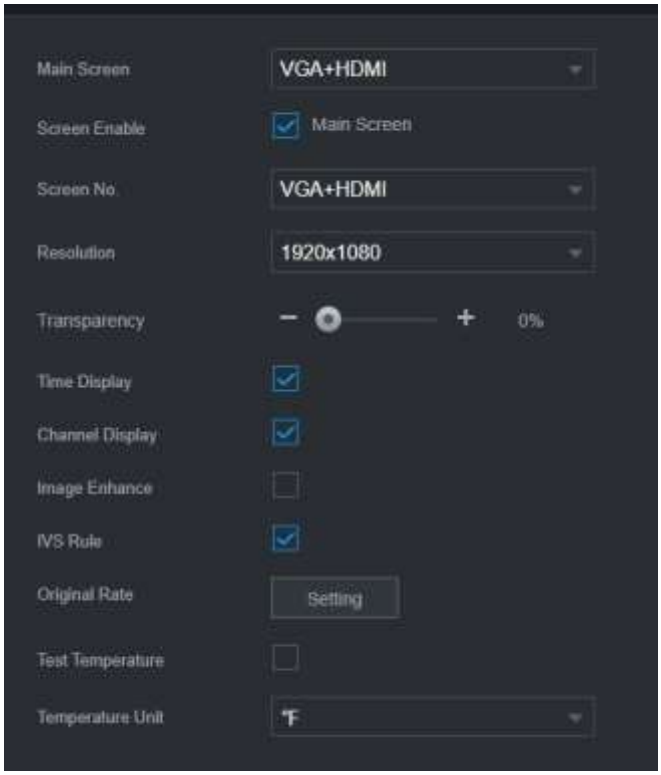
Note: The Download the latest firmware version button can also be utilized if available.

Display

This menu allows users to set menu and video preview effects. All your operations here do not affect the recorded file and playback effect. To access the display menu, click the other screen option on the main menu to display additional options. Click on Display.



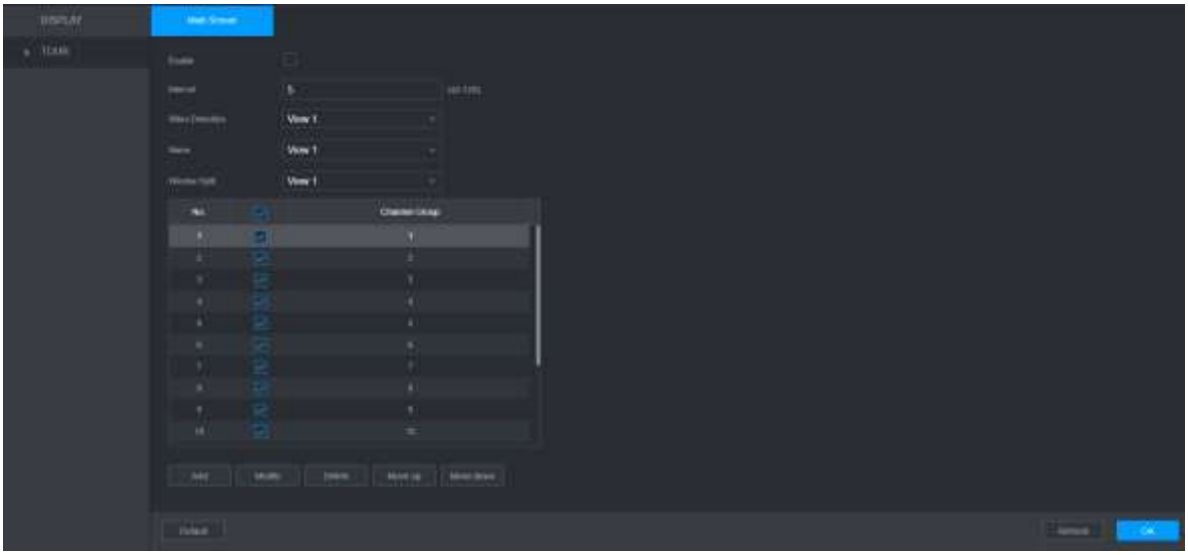
Below is a screenshot of the Display menu:



- **Main Screen:** Sets the NVR to display VGA+HDMI, HDMI, or VGA.
- **Screen Enable:** Enables the main screen.
- **Screen No:** Displays the current output settings of the device.
- **Resolution:** There are six options: 3840x2160@60fps, 3840x2160@30fps, 1920×1080 (Default), 1280×720, and 1024×768.
  Please note, the system may need to reboot to activate different resolutions.
- **Transparency:** Allows you to adjust the transparency of the menus. The value ranges from 0% to 100%.
- **Time Display:** Allows the user to choose whether to display the time while viewing.
- **Channel Display:** Allows the user to choose whether to display channel names while viewing.
- **Image Enhance:** Optimizes the output image of the device.
- **IVS Rule:** Allows the system to display IVS rule information on the screen.
- **Original Rate:** Applies original resolutions to individual or all channels.
- **Screen Mode:** Displays the screen mode used for your device. The default will be HDMI.
- **Screen Enable:** This checkbox enables the main screen image of the device.
- **Screen No.**: Displays the screen number used by the device. Default is HDMI.
- **Resolution:** There are six options: 3840x2160@60fps, 3840x2160@30fps, 1920×1080 (Default), 1280×720, and 1024×768.
  Please note, the system may need to reboot to activate different resolutions.
- **Test Temperature:** This checkbox is used to enable the device to display the test temperature of the device via the output image.
- **Temperature Unit:** Allows the user to choose between °F or °C.

Tour

This screen is used to activate tour functionality for the live preview. Below is a screenshot of the Tour Setup screen:



Below is an explanation of the fields on the Tour screen:

- **Enable:** This checkbox allows the user to enable the tour functionality.
- **Interval:** This field allows the user to set an interval in seconds for how quickly the tour cycles through channels. This value ranges from 5 to 120 seconds.
- **Video Detection:** This dropdown box allows the user to select whether they want to see 1 or 8 cameras at a time in the tour.
- **Alarm:** This is a list that allows the user to select channels and add alarms as a part of the tour.
- **Window Split:** This list allows the users to select channels add as a part of the tour. The number in the corner indicates how many channels are available.

- **No.:** Displays the screen number used by the device. Default is Main Screen.
- **Alarm:** This is a list that allows the user to select channels and add alarms as a part of the tour.
  - **Add:** This button allows the user to add a channel from the tour.
  - **Delete:** This button allows the user to remove a channel from the tour.
  - **Move Up:** This button allows the user to move a camera up in the tour queue.
  - **Move Down:** This button allows the user to move a camera down in the tour queue.

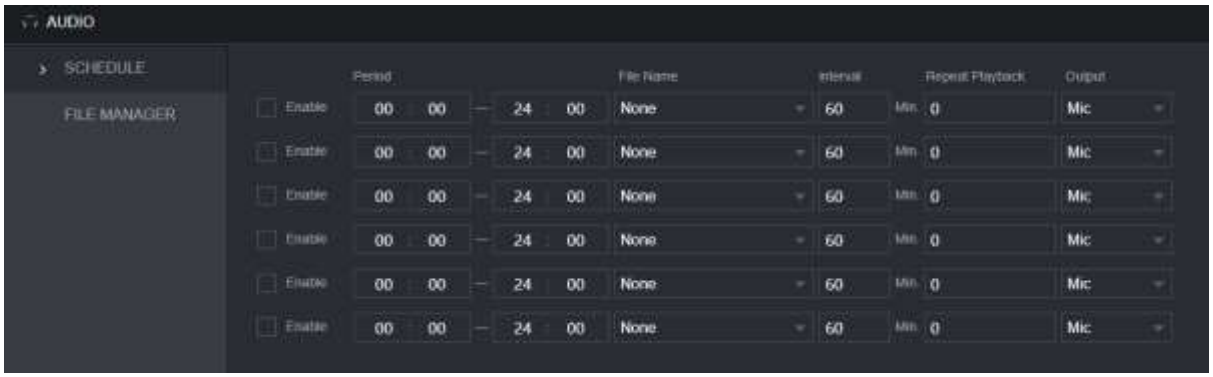
Audio

The audio menu allows you to configure and schedule voice prompts. To access the audio menu, click on the other screen option located in the main menu then click on audio



Schedule

The schedule menu allows you to schedule audio files (voice prompts) to be triggered only at specific times. Below is a screenshot of the schedule menu.



To configure a schedule, enter a start and end time into the interface and click Enable. The playback can be repeated as well in 60-minute intervals by default, however, can be adjusted by the user.

File Manager

The file manager allows you to import audio files into the NVR. These audio files are used as voice prompt options in the system. Below is a screenshot of the file manager interface:



To import a audio file, click on the Select audio file option and select an audio file from the computer or drive using the remote option. All files will be retained in the system and can be activated as voice prompts anytime in the system.

FAQ/Troubleshooting

What is a black body? What does it do?
The blackbody can be simply understood as a constant temperature reference source. When testing human body temperature, the blackbody is generally set to 35℃, which is used for thermal imaging acquisition temperature correction to achieve the accuracy requirement of ±0.3℃.

Can the system be installed in outdoor or semi-outdoor environments?
Because outdoor environments can be greatly affected by temperature, wind, humidity and other environmental factors, which are unfavorable to the thermal imaging surface temperature measurement, it is not recommended to install in an outdoor or semi-outdoor environment.

Why is it recommended to measure the temperature of the forehead?
There is usually a temperature difference between the forehead temperature of different people. In the case of wearing a mask, the area of the forehead is relatively more convenient for temperature measurement. The actual temperature of the face is different from that of the side of the face. If a person is wearing a mask, the most stable temperature point is mainly in the forehead, the ear and the neck. Therefore, it is required to face the camera and test the forehead temperature to reduce the influence caused by the temperature difference between other parts of the body.

How many people can be tested?
There is no limit on the number of heads in the detection area. However, if it is too far away or overlaps, there may be missed reports or inaccurate temperature measurement.

NVR often automatically shuts down or stops running.
Below are a few possible reasons why this may be occurring:
The input voltage is too low or is not stable.
There is an HDD malfunction, or something is wrong with the HDD cable.
The power button is damaged or malfunctioning.
Video output signal is not stable.
The insides of the NVR have accumulated too much dust.
The temperature is either too hot or too cold.
The hardware is malfunctioning.

The system does not detect a hard drive.

Below are a few possible reasons why this may be occurring:
The hard drive is broken.
The hard drive cable is damaged.
The hard drive cable connection is loose.
The NVR's main motherboard SATA port is broken.

There is no video output on any of the channels.
Below are a few possible reasons why this may be occurring:
The NVR firmware is incompatible with the attached cameras. Upgrade to the latest firmware.
The image brightness is set to 0. Change the brightness using the image settings or restore the NVR to factory default settings.
There is no video input signal, or the signal is too weak.
A privacy mask or screensaver may be enabled.
There might be a malfunction with the NVR hardware.

Local Recordings are not searchable.
Below are a few possible reasons why this may be occurring:
The hard drive cable is damaged.
The hard drive is broken.
The NVR's firmware is incompatible with the recorded video.
The recorded files have been overwritten.
The recording function has been disabled.

Local playback video is distorted.
Below are a few possible reasons why this may be occurring:
The video quality setting is too low.
The NVR software has a read error. Restart the NVR to solve this problem.
The hard drive cable is damaged.
The hard drive is malfunctioning.
The NVR's hardware is malfunctioning.

There is no audio during recorded video playback.
Below are a few possible reasons why this may be occurring:
Audio may not be enabled for that channel.
The corresponding channel may not have any audio input.

The timestamp is not displaying the correct time.
Below are a few possible reasons why this may be occurring:
The time and date settings may not be configured correctly.
The battery inside the NVR may be loose, or the battery is running low.

Motion detection does not work.
Below are a few possible reasons why this may be occurring:
The motion detection time period may be incorrectly configured.
Motion detection zone setup is not correctly configured.
Motion detection sensitivity is too low.

Network connection is not stable.
Below are a few possible reasons why this may be occurring:
The network is not stable.
There may be an IP address conflict.
There may be a MAC address conflict.
The PC or NVR network card may be defective.

The alarm signal cannot be disarmed.

Below are a few possible reasons why this may be occurring:
An alarm may be setup incorrectly.
An alarm output may have been manually opened.
The NVR may have an input device error, or the connection is not correctly configured.
There may be an error in the NVR's firmware.

Alarms are not working.
Below are a few possible reasons why this may be occurring:
The alarm is not setup correctly.
The alarm cable is not connected correctly.
The alarm input signal is not correctly configured.
There are two loops connected to one alarm device.

The camera is not recording enough video.
Below are a few possible reasons why this may be occurring:
The hard drive's capacity is not enough.
The hard drive is damaged.

Downloaded files cannot be played back.
Below are a few possible reasons why this may be occurring:
The media player software on the PC may not be able to read the file format.
The PC may not have DirectX 8.1 or higher.
The PC may not have Windows XP or higher.

Forgot local menu operation password or network password
As a security measure, your device will lock your account after so many failed attempts. This is implemented to prevent unauthorized users from continually attempting to gain access to your system without consent.

If you experience a locked account issue, there are a few troubleshooting steps you can take to help resolve the problem.

1. **Power Cycle** - To power cycle the device, please remove the device from its power source and allow the device to shut down. This should take approximately **45 seconds** to complete. Once complete, plug the camera back in with its power supply and allow the device to boot back up. When the device is ready, try to connect to the device again.
2. **Wait to Unlock** - Initially, the device will be locked for a duration of 60 minutes. After the 60 minutes have passed, you will be given another round of password attempt NVR to enter in the password correctly.
3. **Password Reset -** If the problem persists, it is highly advisable to fill out a password request form. This form can be found at https://amcrest.com/password. For more information on this issue. When completing the form, for security purposes, it will be required to provide a **proof of ownership** to help prevent unauthorized access to your device. A proof of ownership includes:
- A screenshot of the order history showing the purchase of the device.
- An image of the receipt or invoice for your purchase.
- A screenshot of the email confirmation with purchase information included.
Note: This information must be provided in common formats such as; PDF, JPG, or PNG format. Please make sure the file does not exceed **10MB**.
If the file is too large, it is advisable to either take a snip of the image, crop it, or resize it to fit these criteria. To expedite your request, please make sure the image is legible and visible enough for verification purposes.

Maintenance Tips:

Please use a brush to clean the motherboard, socket connectors, and the NVR chassis and keep it free of dust.

The device should be soundly grounded in case there is an audio/video disturbance. Keep the device away from static electricity or induced electricity.

Always shut down the device properly. Please use the shutdown function in the menu or can press the power button on the front panel for at least three seconds to shut down the NVR. Incorrect shutdown may result in a hard drive malfunction.

Keep the device is away from direct sunlight or other heat sources and keep the NVR well ventilated.

Glossary

- ★ **DHCP:** DHCP (Dynamic Host Configuration Protocol) is a network protocol. It is part of the TCP/IP protocol cluster. It is principally used to assign a temporary IP addresses to computers on a network.
- ★ **DDNS:** DDNS (Dynamic Domain Name Server) is a service that maps Internet domain names to IP addresses. This service is useful to anyone who wants to operate a server (web server, mail server, ftp server, etc.) connected to the internet with a dynamic IP or to someone who wants to connect to an office computer or server from a remote location with software.
- ★ **eSATA**: eSATA(External Serial ATA) is an interface that provides fast data transfer for external storage devices. It offers the speed of a SATA interface but connects externally.
- ★ **PPPoE:** PPPoE (Point to Point Protocol over Ethernet) is a specification for connecting multiple computer users on an Ethernet local area network to a remote site. Now the popular mode is ADSL and it adopts the PPPoE protocol.
- ★ **Dual-stream:** The dual-stream technology adopts a high-rate bit stream for local HD storage such as QCIF/CIF/2CIF/DCIF/4CIF encoding and one low-rate bit stream for network transmission such as QCIF/CIF encoding. It can balance the local storage and remote network transmission. The dual stream can meet the different band width requirements of local and remote transmissions. In this way, the local transmission using the high-bit stream can achieve HD storage and the network transmission adopting low bit stream are suitable for the fluency requirements of the 3G network such as WCDMA, EVDO, TD-SCDMA.
- ★ **On-off value:** This is the non-consecutive signal sampling and output. It includes remote sampling and remote output. It has two statuses: 1/0.

FCC Statement

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
2. The user's manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes, or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.
3. (b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual: NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. -- Consult the dealer or an experienced radio/TV technician for help.

4. RF exposure warning

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.

IC Warning Statement

This device complies with Industry Canada's license-exempt RSSs. Operation is subject to the following two conditions:

(1) This device may not cause interference; and
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and any part of your body.

Pour se conformer aux exigences de conformité CNR 102 RF exposition, une distance de séparation d'au moins 20 cm doit être maintenue entre l'antenne de cet appareil ettoutes les personnes.

Appendix A Toxic or Hazardous Materials

Component Name	Toxic or Hazardous Materials or Elements					
	Pb	Hg	Cd	Cr VI	PBB	PBDE
Sheet Metal (Case)	o	o	o	o	o	o
Plastic Parts (Panel)	o	o	o	o	o	o
Circuit Board	o	o	o	o	o	o
Fastener	o	o	o	o	o	o
Wire and Cable/AC Adapter	o	o	o	o	o	o
Packing Material	o	o	o	o	o	o
Accessories	o	o	o	o	o	o

O: Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts are below the relevant threshold of the SJ/T11363-2006 standard.
X: Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard. During the environmental-friendly use period (EFUP) period, the toxic or hazardous substance or elements contained in products will not leak or mutate so that the use of these (substances or elements) will not result in any severe environmental pollution, any bodily injury or damage to any assets. The consumer is not authorized to process such kind of substances or elements, please return to the corresponding local authorities to process according to your local government statutes.

Note:

- This quick start guide is for reference only. Slight differences may be found in the user interface. For access to a full user manual, please visit, https://amcrest.com/support
- All the designs and software here are subject to change without prior written notice.
- All trademarks and registered trademarks mentioned are the properties of their respective owners.
- If there is any uncertainty or controversy, please refer to us for the final explanation.
- Please visit our website or contact your local service engineer for more information.

References & Contact Information

To view setup videos for many of the steps outlined in this guide, go to http://amcrest.com/videos
For more supplemental information, or to view articles related to your device visit http://amcrest.com/support
For contact information please visit us at https://amcrest.com/contacts or reach out to us directly at 1-888-212-7538

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