User Manual

# 4CH, 8CH, 16CH UHD NVR

**Copyright**

This manual without the manufacturer's approved copy and reprinted partially or in full, or translated into another language is prohibited.

**Limitation of Liability**

This product is designed to prevent fire and theft is not the main means. We shall not be liable for accidents or damage by using this product can result in liability for accidents or damage

In order to improve the performance of the product without prior notice to the product may be a firmware upgrade.

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# Overview

## Safety Instruction

This product was tested with a UPS to satisfy EN 61000-4-11 test conditions (voltage dips and short interruptions test) under the EN 50130-4: 2011 standard.

The Company shall not have any responsibility for any accident or damage that may incur during the use of the product. For your safety, we provide a few instructions about installation, manipulation, cleaning, assembly/disassembly of the product as below. So please read carefully and comply with the instructions.

### Before installation

**Comply with the following instructions to prevent a fire, explosion, system failure or electric shock.**

- Remove the power supply module before proceeding.
- Check the input voltage (AC100V–AC240V) to the power supply module before connecting it.
- Keep the product away from humidity.
- Ensure that all devices connected to the product should be properly earth-grounded.

### In operation mode

**Comply with the following instructions to prevent a fire, explosion, system failure or electric shock.**

- If you need to open the cover, consult with a service person who could help you do what you want to do.
- Do not connect multiple devices to a single power socket.
- Keep the product away from dust or too much combustible substances (ex: propane gas).
- Do not touch it with wet hand.
- Do not insert a conductor in the vent of the ventilation system.
- Do not apply excessive force to unplug the power cord.

### Disassembly & Cleaning

- When cleaning on the surface, use a dry cloth.
- Do not wipe the product using water, paint thinner or organic solvents.
- Do never dismantle, repair or modify the product by your own.

### During installation

**To prevent an accident or physical injury and to operate NVR properly, please comply with the followings:**

- Secure at least 18 centimeter of distance between cooling fan and wall for a proper ventilation.
- Install the product on a flat surface.
- Keep it away from direct sunlight or excessive temperature.

### While in use

- Do not apply force to or shake it while using it.
- Do not move, throw away or put excessive force to it.
- Using any unrecommended HDD may cause a system failure. Check the compatibility list and use only compatible HDDs.
  {A system failure or data loss caused by an incompatible HDD will void your warranty.}

## Key Features

This product allows you to receive audio and video signals from a max of 4/8/16 CH 8MP H.264, H.265 network camera before saving them to the internal HDD. Besides, you can also transfer them to an external device that can be monitored on your PC or mobile phone remotely.

- Display the video from up to 4/8/16 CH 8Mp network camera in real time (Max. 120/240/480 fps)
- Records 4/8/16 CH 8Mp network cameras with high transfer rate (Max. 8Mbps, up to 120/240/480 fps per channel).
- Play up to 4/8/16 CH 8Mp video in real time (Max. 60/120 fps)
- H.264 BP/MP/HP, H.265 network camera supported
  (BP: Baseline profile, MP: Main profile, HP: High profile)
- All channels support PoE hub (provides power to the camera).
- 'Plug & Display' camera connection
- Protect the IP camera via secured closed circuit LAN environment
- Auto notification with self diagnosis (HDD S.M.A.R.T, temperature, network connection status, fan error, etc.)
- Dual streaming supported for a remote display
- Auto resolution & FPS adjustment for a remote service
- Mass storage backup via USB port or FTP server
- Dedicated smart phone applications that can be used with iPhone and iPad or on Android OS
- UHD GUI

# Overview

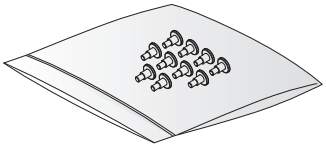
## What's included

Mouse

Remote Control x1 & Batteries (AAA x2)

Power Cable

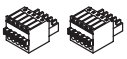
DC 48V Adaptor



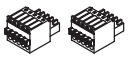
Screws (For fixing HDD)

Cable Clamp (For fixing Power Cable)

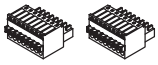
Screws (For fixing Cable Clamp)



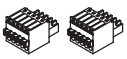
IPX-M4A-4CH
5Pin (2ea)



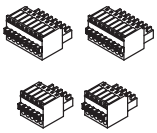
IPX-M4B-4CH
5Pin (2ea)



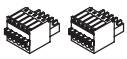
IPX-M4A-8CH
8pin (2ea)



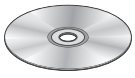
IPX-M4B-8CH
5pin (2ea)



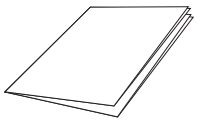
IPX-M4A-16CH
8pin (2ea), 5pin (2ea)



IPX-M4B-16CH
5pin (2ea)



CD Manual



Quick Guide

**Optional Components (only for 16-channel NVR)**

8-channel Extension Hub

Power Cable

DC 48V Adaptor

✔ This component is only for 16CH NVR and is not included in the basic package.

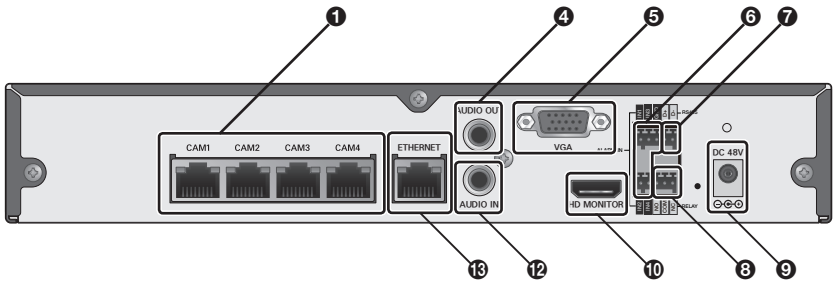
# Overview

## Front Panel

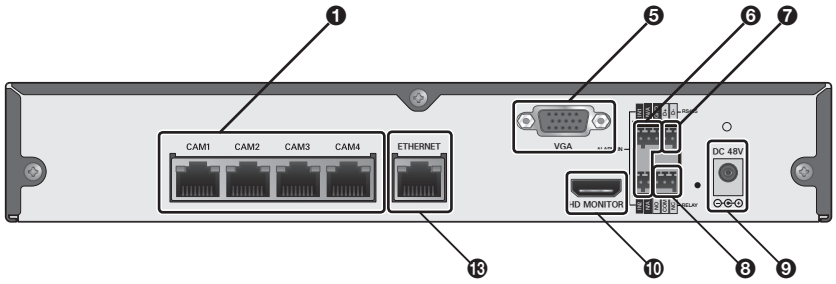
| Name | | Description |
|---|---|---|
| IR Remote Control Receiver | | Receive the signal from the remote control. |
| USB | | Used for connecting USB storage or mouse. |
| Status LED | | Show the status of power, recording or network connection together with the corresponding alarm. |

## Rear Panel

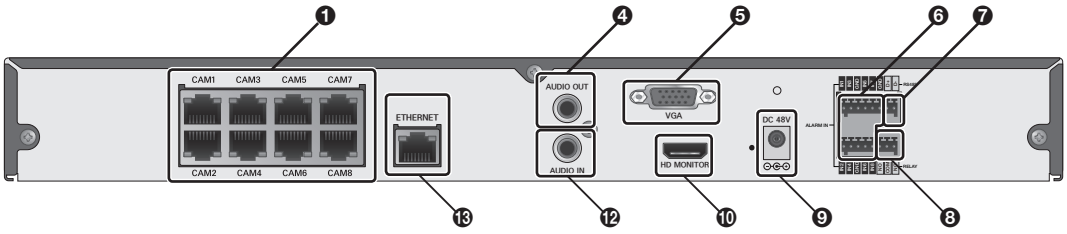
### 4 CH A



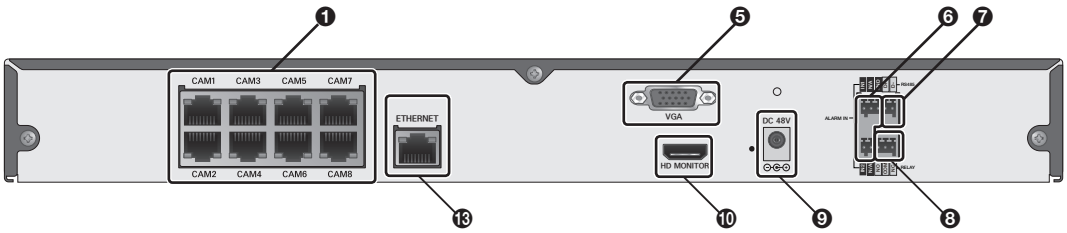

### 4 CH B




### 8 CH A

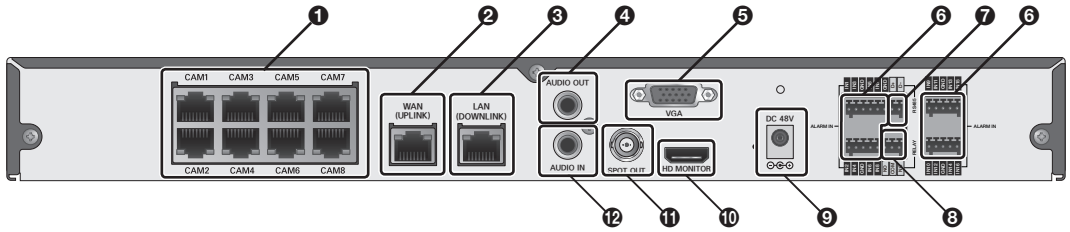



### 8 CH B

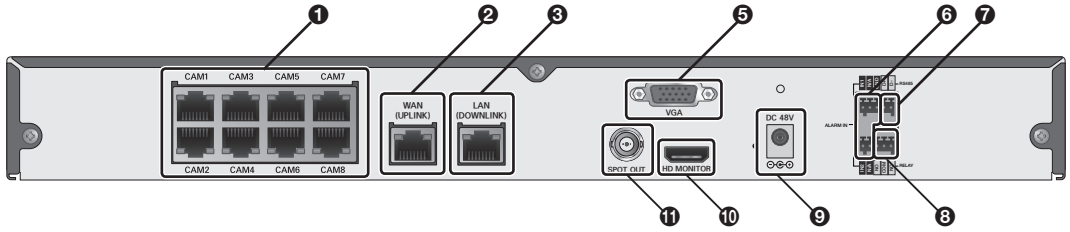


# Overview

## 16 CH A

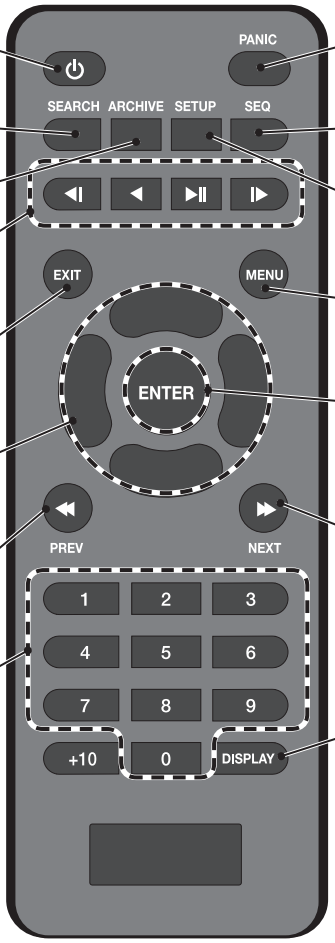



## 16 CH B




| No. | Name | Description |
|---|---|---|
| ❶ | CAM1~CAM8 | Ethernet ports used for connecting the network camera video and power.<br>✔ It allows supplying power to camera with PoE. |
| ❷ | WAN(UPLINK) | Network port for connection to the Internet, router or hub. |
| ❸ | LAN(DOWNLINK) | Port dedicated to linking to the NVR network device. (Do not share with other device.) |
| ❹ | AUDIO OUT | Port for speaker connection. |
| ❺ | VGA | VGA video output terminal. |
| ❻ | ALARM IN | Alarm input signal port. |
| ❼ | RS-485 | Communications port for connecting peripherals such as system keyboard. |
| ❽ | RELAY | Relay Terminal output port. |
| ❾ | DC 48V | NVR power input port.<br>Connect to a 48V adaptor. |
| ❿ | HD MONITOR | Port for connecting a UHD(4K/30Hz) supported monitor.<br>Use the HDMI cable to connect with a 4K 30Hz Monitor. |
| ⓫ | SPOT OUT | Exclusive port for SPOT output only. (Connect to a TV monitor.) |
| ⓬ | AUDIO IN | Microphone connection port. |
| ⓭ | ETHERNET | Network port for connection to the Internet, router or hub. |

## Remote Control At a Glance




**POWER**
Turn on or off the power.

**SEARCH**
Display the search window.

**ARCHIVE**
Display the backup window.

**◄I, ◄, ►II, I►**
Used to change the direction or adjust the play speed in playback mode.

**EXIT**

**▲, ▼, ◄, ►**
Use to move through the menus.

**PREV**

**Channel**
Function as channel selection button in live or playback mode. Or used for entering the password.

**PANIC**
Start the emergency recording.

**SEQ**
Switch to sequence mode.

**SETUP**
Display the system setup menu.

**MENU**
Display the tool bar on the live screen.

**ENTER**
Select a menu item or apply your settings.

**NEXT**

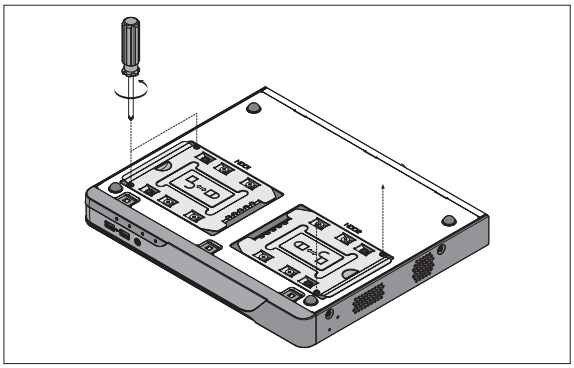
**DISPALY**
Switch the split mode.

# Installation

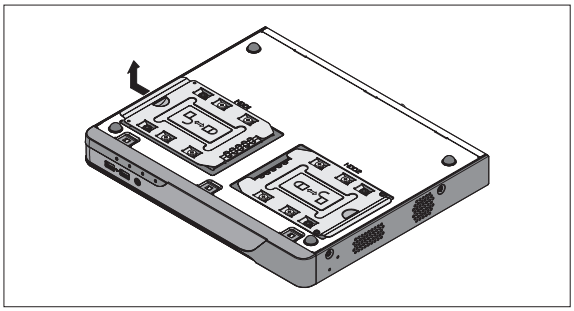
## HDD Replacement

User can replace hard disk if existing one reaches its full capacity or becomes problematic.

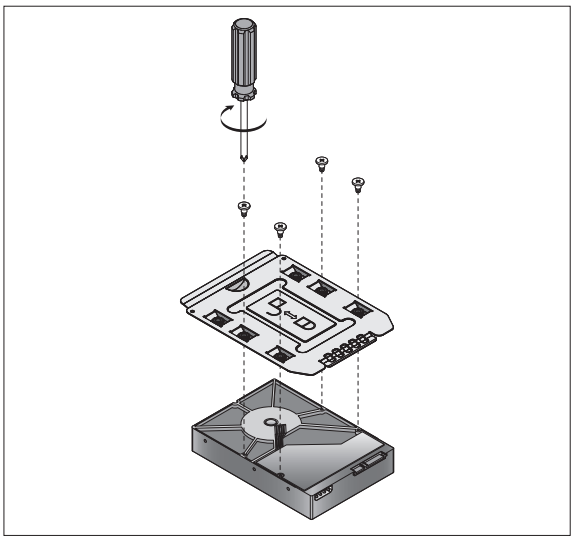
1. Remove the bracket screw on the bottom of the NVR.



2. Hold the bracket handle in the middle and pull it out to separate the bracket from the main unit.

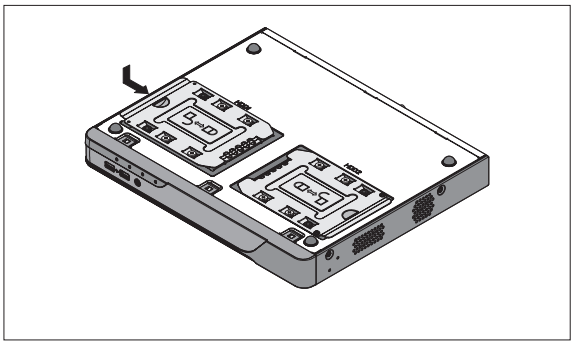


3. Install the HDD on the separated bracket and fasten 4 screws on both sides to secure the HDD.

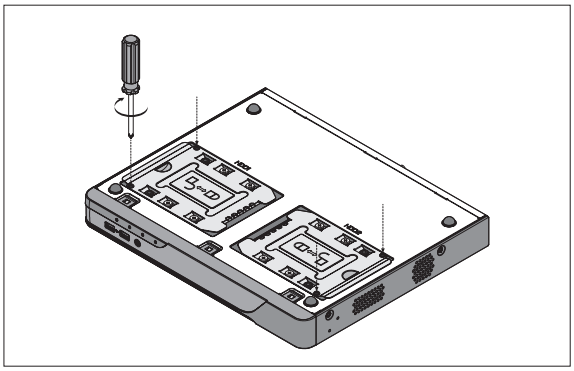


✔ When installing HDD, make sure to install in the correct direction.

4. Insert the bracket installed with HDD back into the main unit.

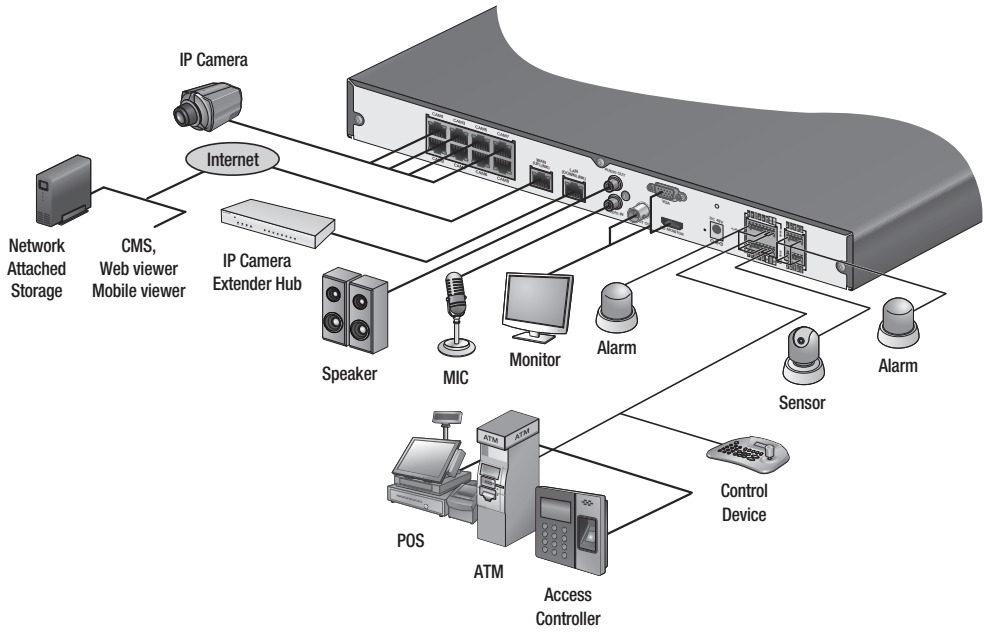


5. Fasten the bracket screw removed earlier.



# Installation

## Basic Layout




## Precautions

To secure recording stability from an overloaded network traffic , hacking attempt or DoS (Denial of Service) attack, only the direct cable connection between camera and NVR is allowed.

✔ Using a hub is allowed only for extending single channel for extended transfer range to 100m each.

Any access from an outside PC to the IP camera will be strictly prohibited for the purpose of secure operation.

✔ If using the product in 16CH CCTV mode, you need to purchase the Extender Hub to connect individually.

# Connecting to an external device

## Connecting to the monitor

The product supports 4k Monitor with HDMI connection and 1920x1080 resolution VGA monitors only.
Connect the HDMI cable between HDMI output port in the bottom rear panel and HDMI port of the monitor, or use the VGA cable to connect to the VGA port of the monitor.

✔ This Product Supports Full HD that can connect to HDMI UHD(4K/30Hz) Monitors Only.

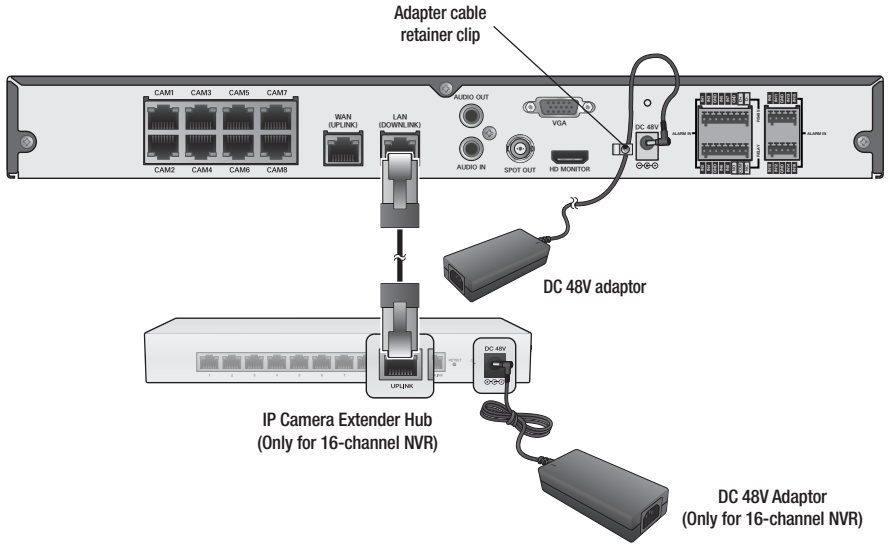
## Power Connection

### NVR power connection

Plug the provided DC 48V adaptor in the rear power port of the NVR.

### PoE Switching hub power connection

Plug the provided DC 48V adaptor in the rear power port of the NVR.




✔ If using the product in 16CH CCTV mode, you need to purchase the Extender Hub to connect individually.

❗ Make connection when the power is not applied yet.

❗ Arrange up the cables and be careful not to peel off the cable coating.

❗ Do not place the power cord under the carpet or rug. The power cord is usually earth-grounded. However, even if it's not earth-grounded, do never modify it on your own for earth-grounding.

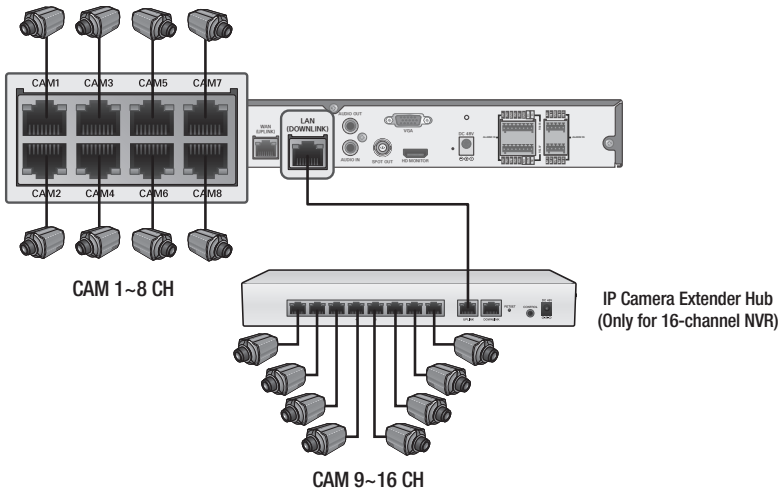
❗ Do not insert multiple devices in a single power socket. Otherwise, it may cause a power overload.

❗ For stable power supply, this product provides two separate adaptors and two corresponding AC cords by factory default. Make sure all cables are connected properly.

# Installation

## Connecting the camera

You can connect a PoE-featuring IP camera to the rear [**CAM1**]~[**CAM8**], RJ45 port using the CAT5 10/100Mb Ethernet cable without a separate power source.
Connect IP cameras to the [**CAM1**] ~ [**CAM8**] ports of the hub, and connect [**LAN (DOWNLINK)**] port and the hub's [**NVR**] port with an Ethernet cable to establish connections for channel 9~16 cameras.




✔ If using the product in 16CH CCTV mode, you need to purchase the Extender Hub to connect individually.

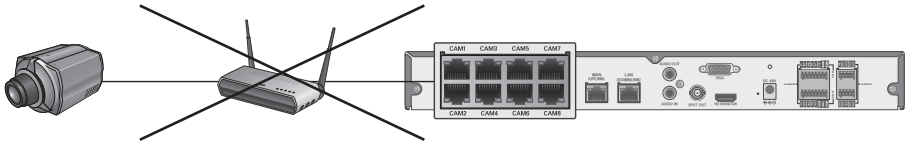
✔ If the IP camera provides the alarm I/O port or Audio I/O port, you can make alarm or audio connection. For more details, refer to the user manual of the IP camera.

! The Ethernet connection is effective within 100 meter in distance. Beyond that, you may encounter a data loss or failure to connect to the camera. If you need to make cable connection of longer than 100 meters, use a separate PoE extender for cable extension.

! The total power consumption of the IP cameras should not exceed the rated power capacity of the 48V PoE adaptor. Beyond that, the video may not be played properly or no video will be displayed at all. If this is the case, use a separate (additional) power source for supplying power to the cameras.

! Even if total power requirement meets PoE device's power capacity, a camera of more than 15W power requirement per a port cannot be used.

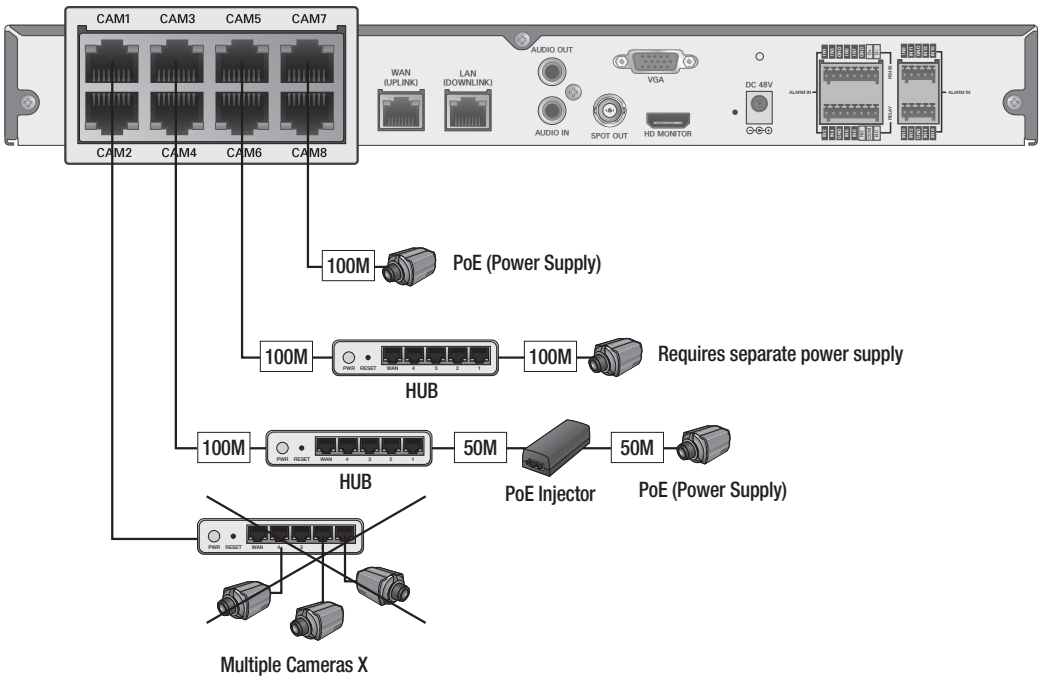
! Each camera's power consumption can be checked on the network map screen, and total power consumption should consider camera's maximum possible consumption with optional accessories (such as IR / heater device).




! For stable operation, a dedicated communication line is established for IP cameras in the same network. This is why network router or hub connection is not allowed.

## If the distance between the NVR and IP camera is more than 100m

You may extend the transfer range by connecting a switching hub or PoE device between the Ethernet port and IP camera if desired distance is longer than 100m.

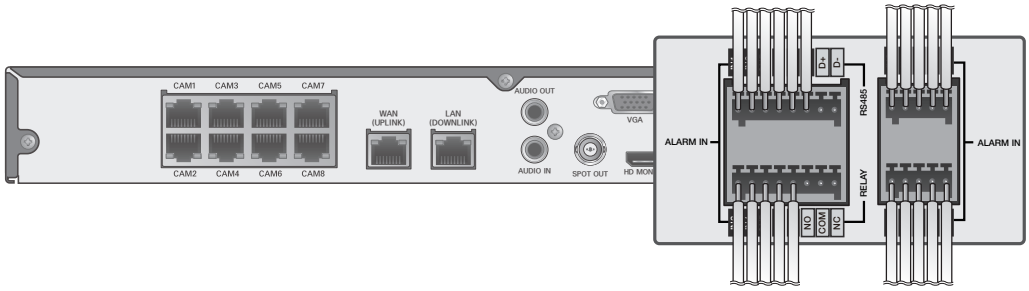



✔ Connecting cameras directly to a general switching hub requires camera connected to a separate power supply.

✔ A switching hub connected for extending transfer range of a single channel should be connected to one camera only.

# Installation

## Alarm I/O Connection




### To connect the alarm input signal

Connect the signal line of an alarm input device such as sensor to the rear [**ALARM IN**] port.

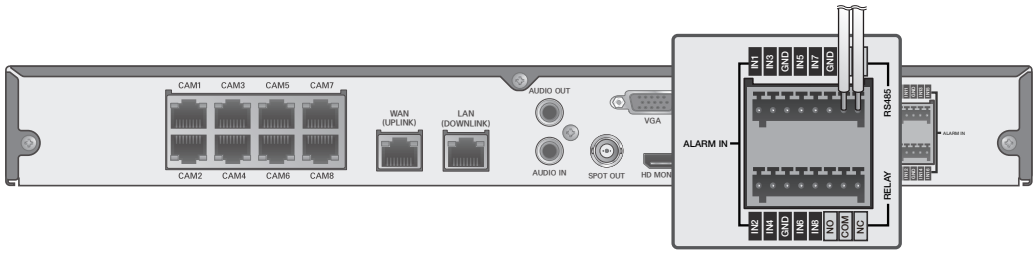
1. Insert one end of alarm signal cable through the [**IN1**] ~ [**IN16**] terminal hole below the screw hole, and then fasten the screw.
   - IPX-M4B(16CH) model differ in Alarm OUT / IN channel.
2. Insert the grounding wire in the [**GND**] port.
3. To ensure secure connection, release the button and pull out the wire to check if it's not pulled out.
4. To remove the wire, pull it out while holding the upper button.

### To connect the alarm output signal

Connect the signal line of an alarm output device to the rear [**ALARM OUT**] port.

1. Check the relay output type of Normal Open or Normal Close before selecting a proper type (NO or NC).
   While holding the [**NO**] or [**NC**] button, arrange the alarm signal cable through the hole under the button.
   - NO(Normal Open) : normally Open but switching to Close if an alarm out occurs.
   - COM : Insert the Relay Common wire.
   - NC(Normal Close) : normally Close but switching to Open if an alarm out occurs.
2. Insert the Relay Common Wire in the [**COM**] Port.
3. To ensure secure connection, release the button and pull out the wire to check if it's not pulled out.
4. To remove the wire, pull it out while holding the upper button.

## Communication Port




### RS-485 Connection

Connect the keyboard controller.
You can connect a text-in device such as POS or ATM. After connecting the control device, be sure to match the connection settings between NVR and device. Make communication settings in <**Control Device**>. (page 67)

1. Use the signal line to make connection between [**D+**] of the rear NVR and [**D+**] of the keyboard controller.
2. Make connection between [**D-**] of the rear NVR and [**D-**] of the keyboard controller.
3. Connect [**GND**] on the rear of the NVR to [**GND**] of the keyboard controller.

✔ For RS-485 connection, refer to the user manual of the keyboard controller.

## Audio Device Connection

You can connect an audio output device such as speaker amplifier.
Connect the audio input device such as microphone to the rear Audio In port, connect the audio output device such as speaker amplifier to the Audio Out port.

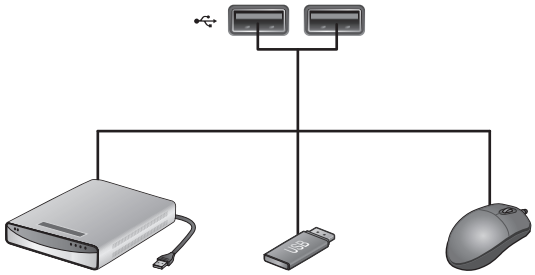
✔ IPX-M4B(16CH) model does not support AUDIO OUT / IN Port.

# Installation

## USB Device

You can connect a USB storage device for backup recorded footages, saving snapshots, firmware update, and exporting/ importing user configurations. You can also connect the USB mouse to control all operations of the NVR.

If you need to connect a USB HDD with a high power consumption, it is recommended to use a separate power source for that HDD.

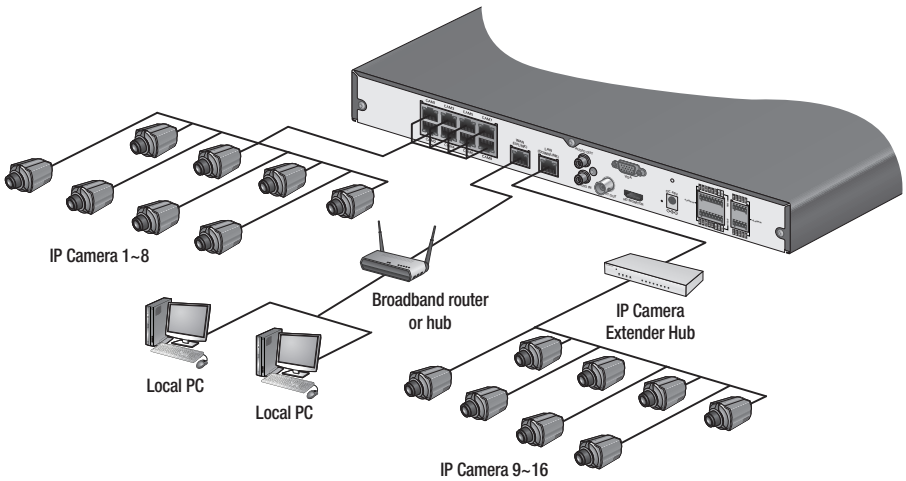


External HDD (for backup only) | USB storage | Mouse

## Network Connection

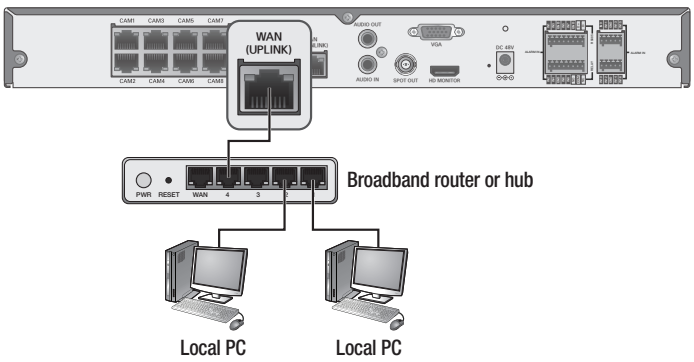
### PC connection in the local network

You can connect NVR to a PC in the same network and control or manipulate it on the PC monitor.




1. Connect the [**WAN(UPLINK)**] port in the rear panel to the router or hub.
2. Connect the local PC to the router or hub.

✔ If using the product in 16CH CCTV mode, you need to purchase the Extender Hub to connect individually.



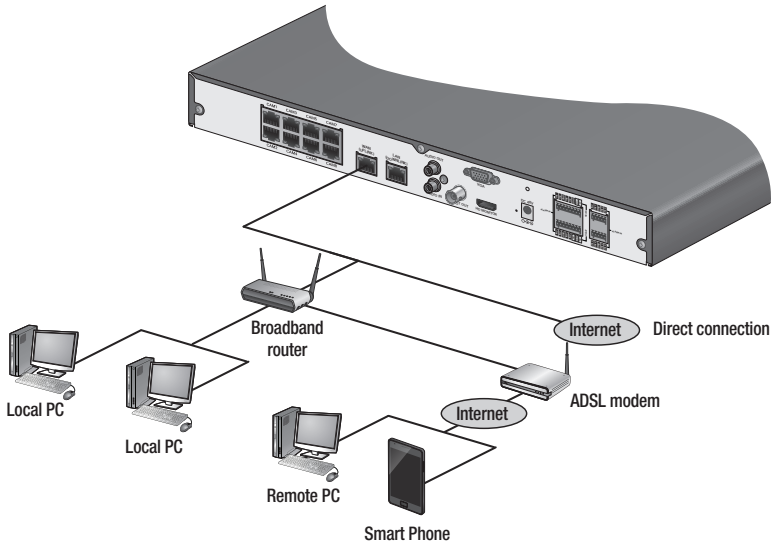

3. Enter the address in the address bar (web browser) of the local PC or of the dedicated software program in the format of "**http:// IP address:web service port** ".
(Ex : http://192.168.0.23:8080) The web service port is set to 8080 by default. From the Network Setup screen, you can change the port number.
4. Provide the ID and password before logging in. Then, you can view the monitoring screen.
Access ID (factory default) : ADMIN, P/W : 1234.

! For security purpose, change the password before you use the product for the first time after purchasing it.

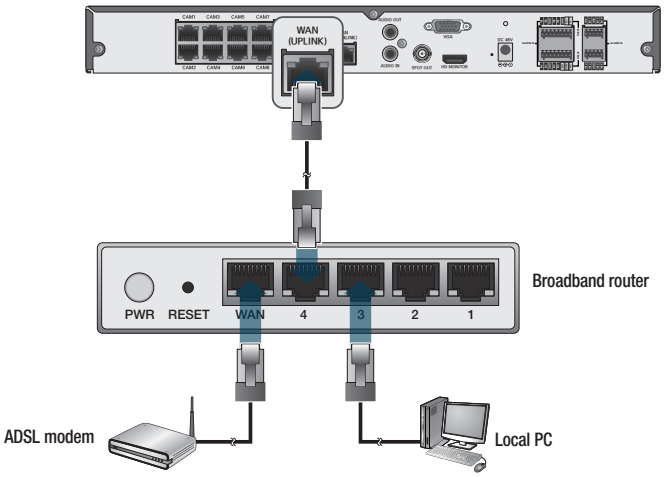
# Installation

## PC connection from a remote network

You can connect NVR to a PC or mobile device in the same remote network and control or manipulate it on the monitor of the PC or mobile device.




1. Connect the [**WAN(UPLINK)**] port in the rear panel to the router.




2. Connect the [**WAN(UPLINK)**] port of the router directly to the fixed IP LAN cable, or connect it to the ADSL modem.
3. If using the router, set the port forwarding and enter the DDNS address in the address bar (web browser) of the remote PC, or of the dedicated software program or mobile phone.
   For the IP and DDNS address settings, refer to "**Network Setup**". (page 55)
4. If the MAC address of the NVR is 00-11-5F-12-34-56 and the web port number is 8080, enter "http://00115f123456.dvrlink.net:8080" in the address bar of the web browser.
   If you have renamed DDNS as "mydvr", you can make network connection at http://mydvr.dvrlink.net:8080.

# Monitoring

## START

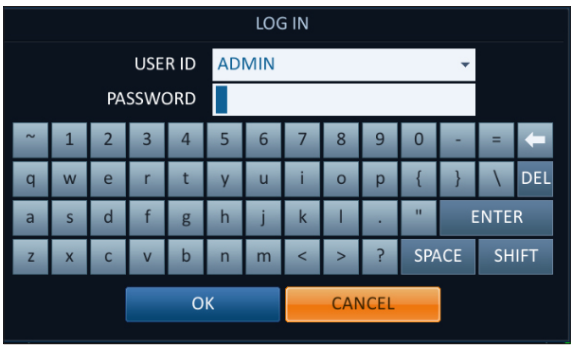
1. Connect the adaptor to the 48V power input port in the rear panel of NVR.
2. With a beep, the logo screen appears several seconds after the front LED turns on.
3. When the booting process is completed, the live screen then the login screen appears.

## Log In

To manipulate or access the menus of NVR, you should have logged in.

1. When the system starts, the login screen appears.
2. Select a user and provide the password.
   The default password of the "**ADMIN**" account is "**1234**".
3. Click <**OK**>.
   If the login information is correct and valid, you will see the live screen.

   ! For security purpose, change the password before you use the product for the first time after purchasing it.

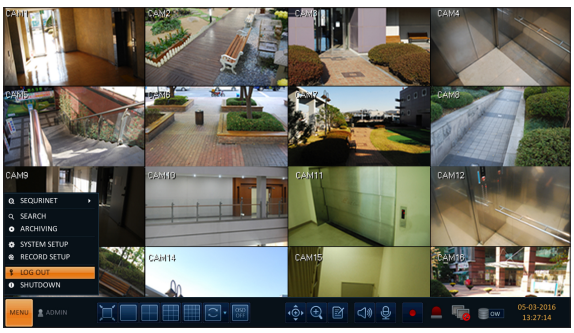



## Log Out

To prevent unauthorized access, it is recommended to log out when you leave the screen.

✔ Hover the cursor near the bottom of the screen to display the menu.

1. In the monitoring screen, click <**MENU**> in the bottom left corner of the screen to <**LOG OUT**>, or press the [**LOGOUT**] button on the remote control.
2. Access to SEARCH / ARCHIVING / SYSTEM SETUP / RECORD SETUP / SHUTDOWN will be restricted.

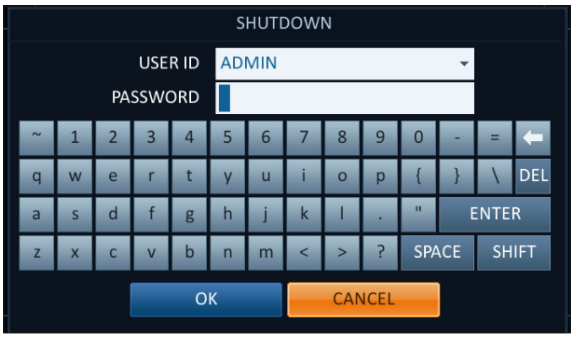


# Monitoring

## System Shutdown

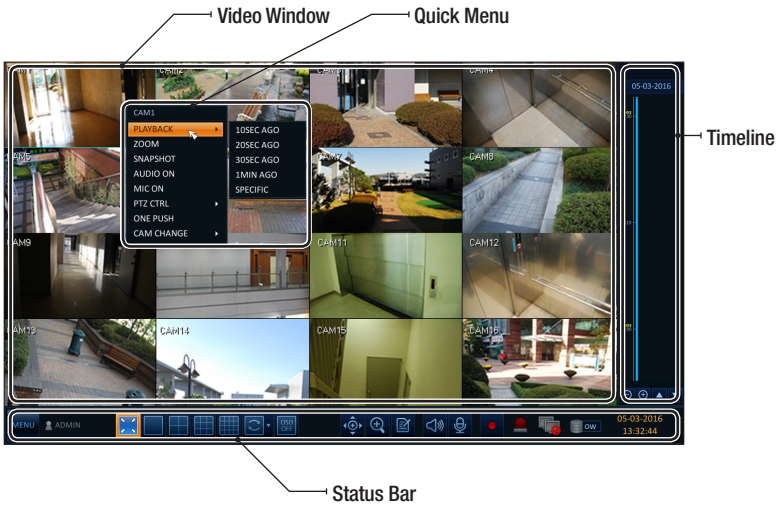
1. In the monitoring screen, click <**MENU**> in the bottom left corner of the screen to <**SHUTDOWN**> the system, or press the [**POWER**] button on the remote control.
2. Use the virtual keyboard to enter the password.
3. Be sure to turn off the power switch in the rear panel.

> If you turn off the system in an abnormal manner such as removing the power cord while the system is in operation, the disk will have or increase the bad sectors, causing data loss and shortened life cycle of the disk.



## Live Screen At a Glance

The live screen largely consists of three components: video window, status bar and timeline zone.




## Video Window

Icons used in the video window.

| Item | | Description |
|---|---|---|
| Camera ID | CAM1 | Show the camera ID. |
| Record Mode Icons | | Displayed if an event recording is reserved. |
| | C | Display the status of the continuous recording. |
| | A | Display the recording status when an alarm occurs. |
| | M | Display the recording status when a motion event occurs. |
| | P | Display the status of the emergency recording. |
| Audio I/O Icons | | The audio signal of the connected camera is outputting. |
| | | The audio signal is transferring to the connected camera via the microphone. |
| Motion Detection Icon | | A motion is detected by the connected camera. |

# Monitoring

## Status Bar

Press the ▼ button on the remote control, or place the mouse in the lower area of the screen to display the status bar.

| Item | | Description |
|---|---|---|
| Menu Button | | Select one of the system setup, search and backup menu items before accessing it. |
| User ID | | Show the ID of the user who has currently logged in. |
| Screen Control Buttons | | Edit the screen layout to show the status bar and timeline at all times or only when the mouse cursor hovers on the status bar/timeline. |
| | | Select a split mode. |
| | | Select Auto Sequence or Special Split Mode. |
| | | Display or hide the OSD menu on the screen. |
| PTZ | | Move to the PTZ screen. You can control the PTZ operations of a PTZ-compliant camera on the PTZ screen. |
| Zoom | | Move to the Digital Zoom. |
| Quick Log | | Display the log list of the recent recording events. |
| Audio Channel Selection Button | | You can use the camera supporting the audio input to listen to the audio. |
| Microphone Channel Selection Button | | Select a camera to which the audio signal will be transferred from the connected microphone. |
| Panic Record | | Start the panic recording. |
| Alarm Indicator | | Turns on if an event occurs.<br>It does not turn on if no reaction to the event is yet defined.<br>Click this to check the information of the event that occurred. |
| Network Connection Status | | Check if network connection is made via an external PC or mobile device. Click this to view the details of the concurrent users and to check the network connection status. For more information, refer to "**Network Setup**". (page 55) |
| Disk Space | | Show the disk space information. If you have set the disk overwrite mode, it will be displayed "OW" (Over Write) from the start point of the overwriting. Click this to view the details of the disk status. For more information, refer to "**Record Setup**". (page 83) |
| Date & Time | 01-01-2015<br>03:24:48 | Display the current time and date. |

## Timeline

Press the [▶] button on the remote control or move the cursor to the right of the screen to display the timeline.
Double-click the timeline to move to the video screen. Drag and drop it to make backup or event search for the specified area.

| Item | | Description |
|---|---|---|
| Timeline Date | | Display the date of the current timeline.<br>Click this to select a desired date of the timeline. |
| Expand/Collapse the timeline | | Expand or collapse the timeline. |
| Navigation through Timeline | | Navigate through the timeline.<br>You can also use the mouse wheel to do the navigation. |
| Timeline Bar | | Display the recording data with time. The color of each bar indicates the following:<br>• Green : Continuous Recording<br>• Red : Alarm Recording<br>• Blue : Motion Recording<br>• Yellow: Panic Recording |

## Quick Menu

| Item | Description |
|---|---|
| Channel No | Display the number of the current channel. |
| PLAYBACK | Start playing the video of the selected channel from the specified time. |
| ZOOM | Zoom the video of the selected channel. |
| SNAPSHOT | Capture the current live video and save it in the .jpeg format.<br>✔ Then, you can save the captured video in the HDD or export it to an external USB memory device. |
| AUDIO ON/OFF | Turn on or off the audio signal of the selected channel. |
| MIC ON/OFF | Turn on or off the microphone signal of the selected channel. |
| ONE PUSH | Automatically adjusts the focus, within the camera's focus range.<br>It is available only if supported by the connected camera. |
| CAM CHANGE | You can assign the selected screen to another channel. |

# Monitoring

## Using the status bar in the live mode

### Changing Channel

You can change channel in LIVE/PLAYBACK screen. Right-click your mouse at the selected channel, and then click the [**CAMCHANGE**] to select your desired [**CAMXX**]. Or you can drag & drop your desired channel into the screen to assign.(ex: Changing the channels of CAM1 and CAM2)

## Selecting a split mode

Click a desired split mode from 1, 4, 9, 16, 6 and 8 split screen. Or press the [**DISPLAY**] button on the remote control until a desired split mode is displayed.

- ✔ 4CH NVR model support only 1- and 4-split screen modes.
- ✔ 8CH NVR model support only 1-, 4-, 9-, 6- and 8-split screen modes.

## Allocating Live Screen Channel

Move a channel to your desired location by dragging & dropping with your mouse.This enables you to modify the allocation of your views depending on your taste.However, you cannot change the recording channel.
These settings are not saved and initialized when restarting your system.

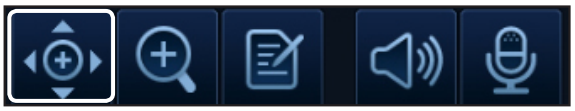
## Auto sequence

Click the Sequence button in the status bar, or press the [**SEQ**] button on the remote control to perform the specified sequence mode.
You can configure the sequence settings in <**SEQUENCE**>. For details, refer to "**Sequence**". (page 47)

# Monitoring

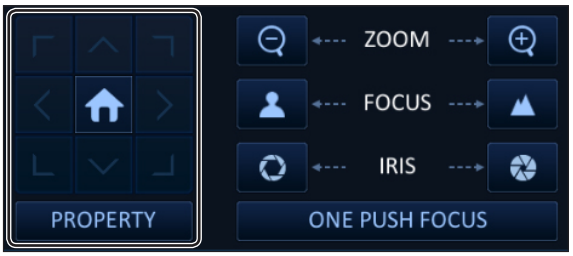
## Controlling PTZ

You can control PTZ cameras connected to each channel. Use the mouse to click PTZ button on the status bar, or press the [**PTZ**] button of the remote control to initiate the predefined sequence.
In PTZ mode, use buttons on the screen to control PTZ or use [**ZOOM**], [**FOCUS**] and [**PRESET**] buttons of the remote control.



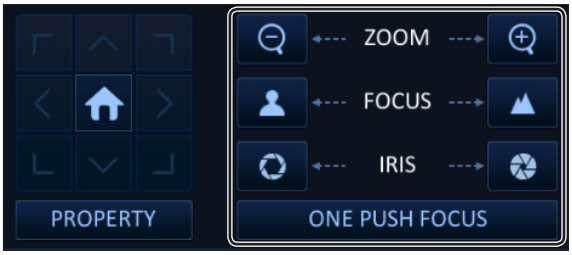
## Pan/Tilt Control

Use mouse to rotate the PTZ camera in the direction of up/down/left/right and diagonal directions.
You can control Pan/Tilt with [▲▼◄►] buttons of the remote control.

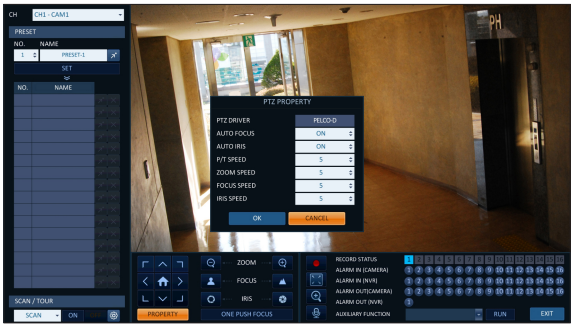


## Zoom / Focus Control

You can control the PTZ camera for zooming and focus adjustment.
Click <**ONE PUSH FOCUS**> button to adjust the camera's focus automatically.
If the connected camera supports manual iris adjustment, you can adjust the iris setting.
You can control by using [**ZOOM**] and [**FOCUS**] buttons of the remote control.




1. Click <**PROPERTY**> and change to a desired setting of the PTZ camera (for auto focus, auto IRIS, pan/tilt speed, zoom speed, focusing speed, iris speed).




✔ Depending on the PTZ camera manufacturer and model, some of the PTZ properties may not be applicable.

- › CH : Selects the PTZ camera connected to the NVR.
- › PRESET (No. / Name) : You can select the preset number and name.

✔ Up to 255 presets can be selected for a PTZ camera, while up to 16 presets can be registered to one NVR.

2. Control the Camera's PTZ while watching the video. Press the <**SET**> button to append the preset.

- › : Click the shortcut icon to move to the corresponding PTZ (preset) position.
- › : Click Delete icon to delete the corresponding preset.

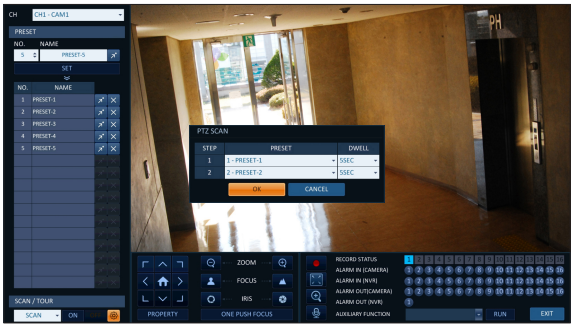
✔ PRESET: Memorizes the PTZ camera's framing for direct access at a later time.

# Monitoring

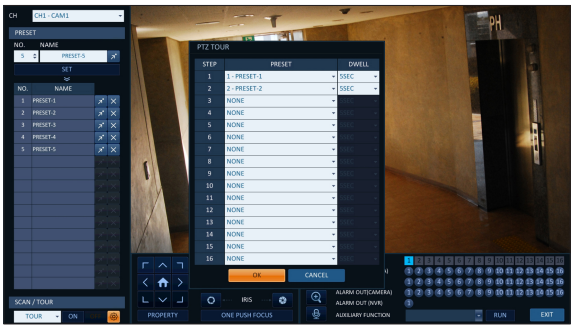
## SCAN/TOUR

1. Select <**SCAN**> and click the <**ON**> button.
2. Click the < ⚙ > icon.

3. Select a user-defined preset and register it.
   - › DWELL : Sets the dwell time of 00 seconds before moving to the next preset location.
   - ✔ <**SCAN**> function patrols two preset positions at the specified speed and interval for back-and-forth monitoring.




4. Select <**TOUR**> and click the <**ON**> button.
5. Click the < ⚙ > icon.
6. Select a user-defined preset and register it.
   - › DWELL : Sets the dwell time of 00 seconds before moving to the next preset location.
   - ✔ <**TOUR**> function patrols multiple presets in order (PRESET 1 ➞ PRESET 2 ➞ PRESET 3 ➞…) for automated patrolling monitoring.



## Digital Zooming

You can enlarge the monitoring screen for better view.

Zooming will enlarge the video of the selected channel. If no channel is selected, channel 1 will be zoomed.

1. Click Zoom in the status bar or move the cursor to a desired channel and right-click it to display the context menu. Select <**ZOOM**>. You can also press the [**ZOOM**] button on the remote control.
2. Move to the zoom control screen. When the menu bar appears in the right bottom, use the buttons to control the zooming.

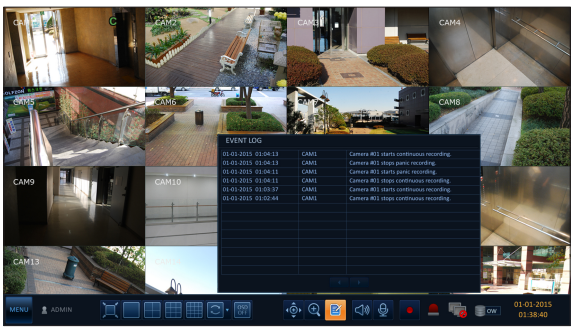
- CH1 - CAM1 : Select a channel to zoom in/out.
- : Zoom out the current (enlarged) image step by step.
- : Enlarge the current image step by step.
- Zoom Box : Use the yellow box to move to or select a desired zooming area.
- EXIT : Exit the zooming screen and return to the live screen.

✔ By its nature, digital zooming which interpolates original image to have it enlarged, it may produce less clear image compared to the original. For clearer zooming, it is recommended to use a camera that supports optical zooming.

## To check the event log

You can check the log of the events that occurred.

1. Click Log to display the "**EVENT LOG**" window. The log list is sorted with the latest one on top.
2. Double-click a desired log to display the event video. You will move to the play screen of the selected log.

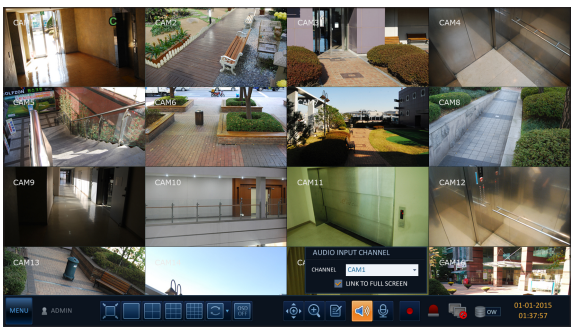



## To select an audio input channel

Select a channel from which the audio signal will be received.

- CHANNEL : Produces the selected channel's audio, regardless of the split screen mode.
- LINK TO FULL SCREEN : When switching the NVR display mode to view one channel (Single Split), it produces the selected channel's audio.

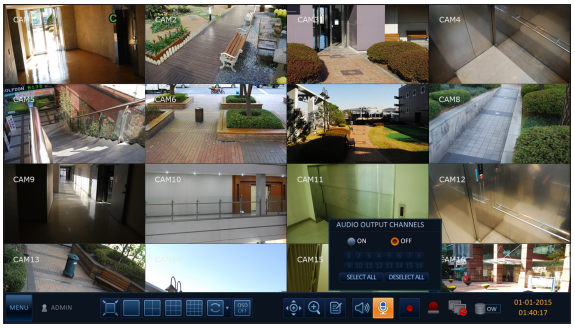
✔ A camera supports audio input should be used, and the NVR is connected to a speaker.



# Monitoring

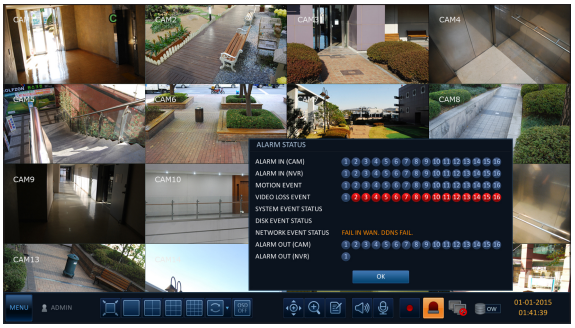
## To select an audio output channel

You can select a camera outputting the voice signal from the microphone that is connected to NVR.




## To check the alarm status

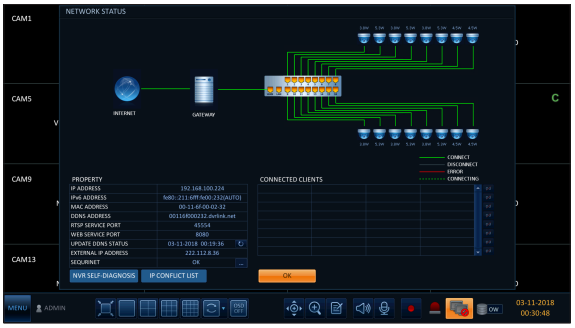
You can check the alarm status of each camera.
Click <**OK**> to close the window.




## To check the network status

You can check the network connection status.
Click <**OK**> to close the window.

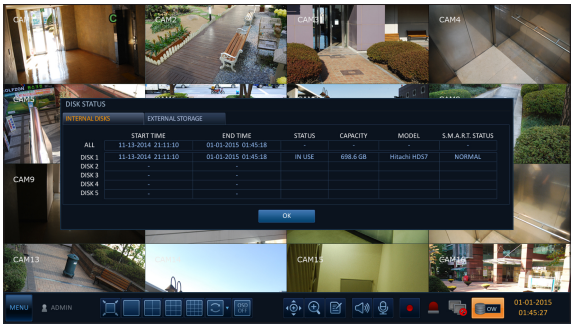
✔ For more information, refer to "**Network Status**". (page 57).



## To check the disk status

You can check the storage space of the current disk and check also if there is any problem with the disk.
Click <**OK**> to close the window.

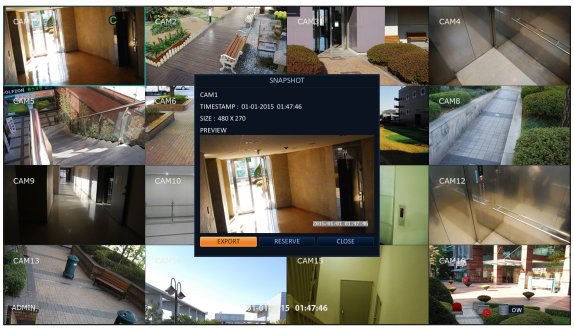
✔ For more information, refer to "**Disk Information**". (page 70)




## Saving captured snapshots

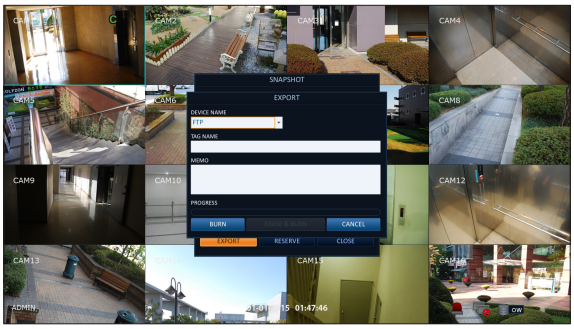
You can capture the current video screen and save or export to a connected storage device.

1. Select a channel fi rst, and right click to open popup menu, and select <**SNAPSHOT**> menu item, or press the [**SNAPSHOT**] button of the remote control.




2. Connect a storage device, and click <**EXPORT**> button. To save the captured image onto the built-in HDD, press the <**RESERVE**> button.

✔ Saved image can be found in the "**Archiving** > **Reserved data management**" and can be backed up. (Page 98)




3. Enter the <**TAG NAME**> and <**MEMO**> and press <**BURN**> or <**ERASE & BURN**> button.

› A progress bar appears and indicates the progress of exporting to storage device.

› BURN : Snapshot is stored in the connected USB storage device.

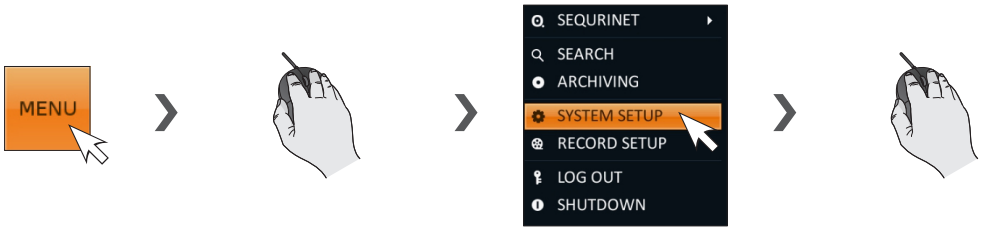
› ERASE & BURN : Deletes all fi les in the connected USB storage and then saves the snapshot.

Note that <**ERASE & BURN**> option erases all data in the USB storage device and will not be restored once deleted..

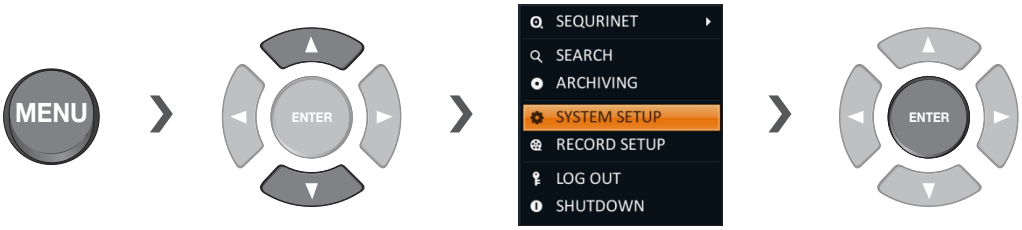
# System Setting

## To move to the System Setup menu

### How to use the mouse




### How to use the remote control 1




### How to use the remote control 2

SETUP

# Camera Setting

You can configure the camera settings on the NVR screen regarding the camera title, image, hide/show, motion and PTZ.

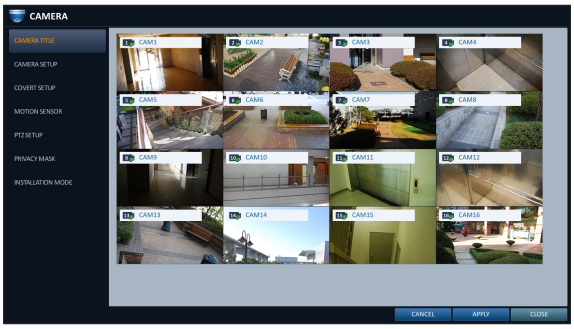
## Camera Title

You can change the camera ID that is displayed on the screen.

1. From <**SYSTEM SETUP**> - <**CAMERA**>, select <**CAMERA TITLE**>.

2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select a channel that you want to rename.
   Alternatively, simply double-click the camera to rename from the top left corner.

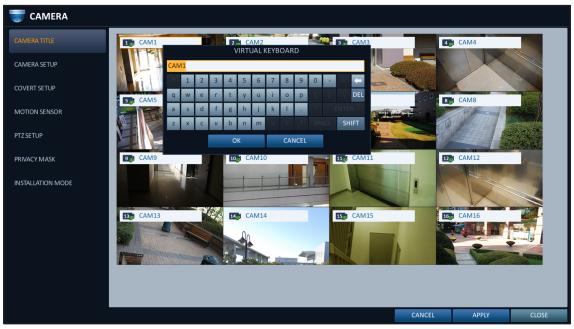
   ✔ Up to 12 alphanumeric letters can be entered.




3. With the virtual keyboard that appears, enter a camera title and click <**OK**>.

4. To apply the change, click <**APPLY**> in the bottom of the screen.

5. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.



# System Setting

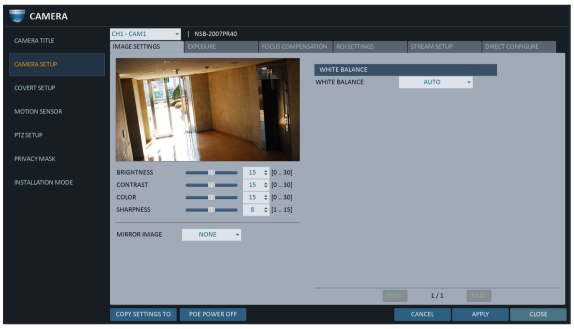
## Camera Setup

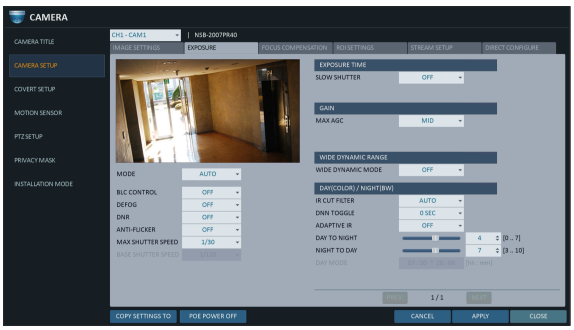
Adjust the brightness, contrast, color and quality for each channel to your preference.

1. From <**SYSTEM SETUP**> - <**CAMERA**>, select <**CAMERA SETUP**>.

2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to set each option of the camera setup menu.

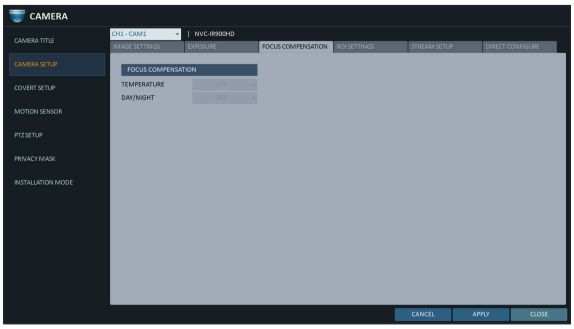
   - IMAGE SETTINGS : Configures detailed image capturing setup for the camera.
   - EXPOSURE : Controls the camera's exposure adaptively to ambient lighting condition of installed location.
   - FOCUS COMPENSATION : Compensates for the focus distortion caused by temperature change or day/night shift.
   - ROI SETTINGS : Camera video can be set to INTEREST REGION / NO-INTEREST REGION.
   - STREAM SETUP : You can specify the camera's codec, resolution and other properties.
   - DIRECT CONFIGURE : Connects to the IP camera via web to manipulate directly.
   - COPY SETTING TO : You can equally apply the settings to the camera(s) in different channel(s).
   - POE POWER OFF : You can cut the POE power for the corresponding channel.

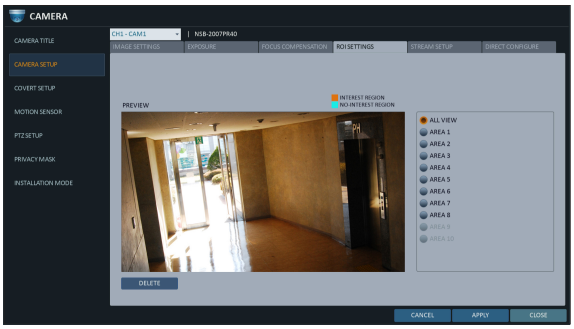


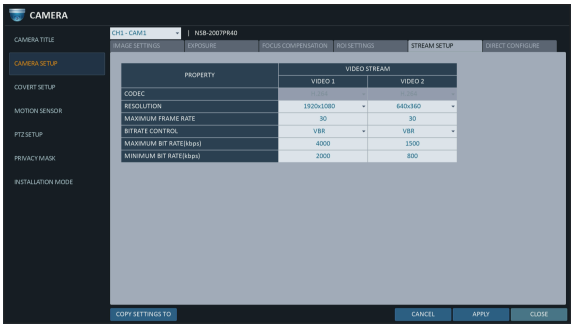



3. To apply the change, click <**APPLY**> in the bottom of the screen.

4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.



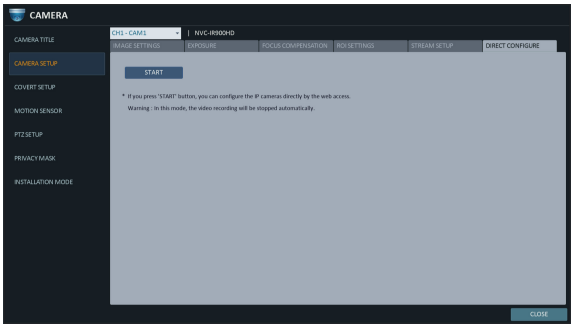
# System Setting

## Direct Configuration

Direct configuration support may differ from camera manufacturers.
If supported by the camera, you can access the camera via web to directly manipulate the camera, for updating the camera's firmware for example.
For cameras not supporting direct configuration over web, use the computer connected to the camera for configuring it.

1. Select <**DIRECT CONFIGURE**> from the <**CAMERA SETUP**>.
2. Press the <**START**> button to display a popup message.

   ✔ Recording stops for the corresponding channel during manipulating the camera.



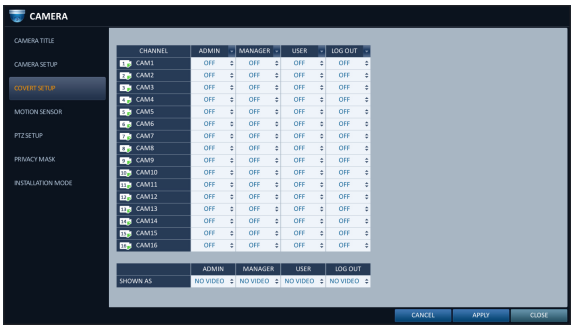

## Covert Setup

You can set to hide the camera video so that a specific user or user group can not view. Set a channel(s) that you want to hide from a specific user or user group.

1. From <**SYSTEM SETUP**> - <**CAMERA**>, select <**COVERT SETUP**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select a covert channel(s) from a specific user group.
   - › ADMIN, MANAGER, USER : Set them to <**ON**>. The selected channel will be covert from the applicable user account.
   - › LOG OUT : Set it to <**ON**>. When the user logs out, the current channel will be set to a covert channel.
   - › SHOW AS : Sets how to display video of the <**COVERT CHANNEL**> channel.
     - NO VIDEO : Appears to have no video for the channel.
     - COVERT : Shows nothing for the Live screen only.

   ✔ If <**NO VIDEO**> or <**COVERT**> is specified, the camera title is reset to the default value.(ex:CAM##)
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

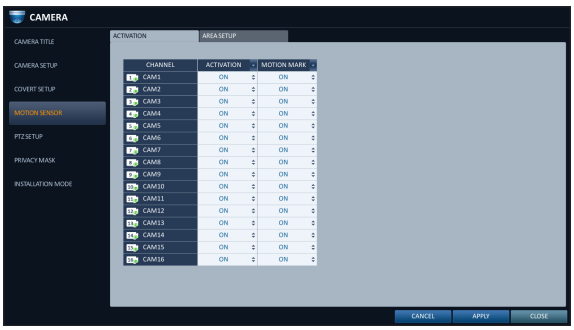
   ✔ To change the covert settings from user group to user, move to the <**USER**> menu and make necessary changes. (page 53)



## Motion Sensor

Set the motion sensor of the camera so that it can detect a motion event.

1. From <**SYSTEM SETUP**> - <**CAMERA**>, select <**MOTION SENSOR**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to specify the use of each option item.
   - ACTIVATION : Set whether to activate motion sensor of the camera channel.
   - MOTION MARK : Set to <**ON**> to display motion detection indicator on the corresponding channel's video.
3. To apply the change, click <**APPLY**> in the bottom of the screen.



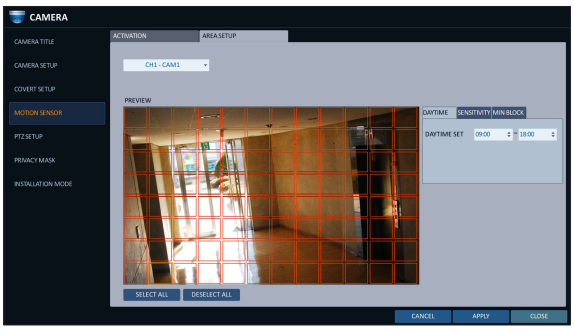

4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

### Motion Area Setup

Setting the motion area may differ depending on the camera model. Below is a typical setting of the motion area.

1. Click <**AREA SETUP**> to move to the motion area setup screen.
2. Select a channel to define a motion detection area.
3. Use the arrow buttons to move to a desired block and press [**ENTER**]. The area setup will begin.
   Then, use the arrow buttons to specify the area.

   ✔ Alternatively, you can use the drag-and-drop method to specify or release the area as using mouse.




4. If you select the specified area again, it will be released.
5. You can set the channel's detection period for day and night, sensitivity, minimum number of blocks and interval.
   - DAYTIME : specify the time period that will be considered as daytime.
   - SENSITIVITY : Sets the sensitivity level for detection during the day time or night time.
     The higher the level, the higher the detection sensitivity.
   - MIN BLOCK : 1(High) ~ 10(Low) - The lower the number is, the higher the sensitivity level becomes.
   - SELECT ALL : Select all area as motion detect area.
   - DESELECT ALL : Deselect all selected area.

   ✔ Images recorded in a low contrast scene such as at night cause severe noise, triggering the motion event too often.

   ✔ If this is the case, reduce the nighttime sensitivity to a degree.

   ! The above options such as <**SENSITIVITY**> and <**MINIMUM BLOCKS**> and how to set the motion area may be restricted depending on the specification of the connected camera.

# System Setting

## PTZ Settings

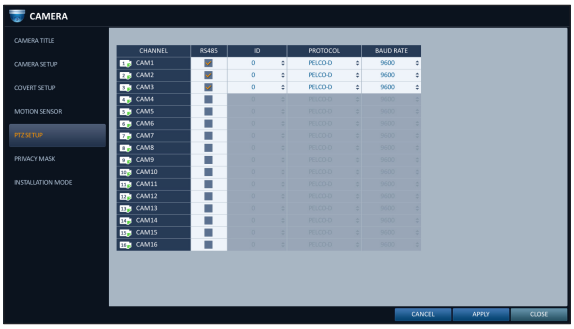
You can set the camera ID, protocol, baud rate and data transmission speed for each channel.

1. From <**SYSTEM SETUP**> - <**CAMERA**>, select <**PTZ SETUP**>.

2. Use [▲▼◄►/**ENTER**] buttons of the remote control or mouse to set the address (ID), protocol and data transmission speed for each channel.

   › RS-485 : You can manually configure RS-485 communication connection to the pan/tilt base (PT driver) of IP Box type camera or motorized zoom lens. Check to enable editing <**ID**>, <**PROTOCOL**> and <**BAUD RATE**> submenu items.

   ✔ IP PTZ cameras and others that transfers PTZ control signal over IP network require no separate settings.




3. To apply the change, click <**APPLY**> in the bottom of the screen.
   Once clicked <**APPLY**> button after changing settings, a restarting message pops up. Click <**Yes**> to restart the system automatically.

4. Once the setup is complete, press the [**EXIT**] button of the remote control or click <**CLOSE**> button on the bottom to display a confirmation dialog. Click <**CANCEL**> to return to the previous menu.

## Enabling Privacy Mask

For privacy purposes, you can specify masking area for a selected camera's video.

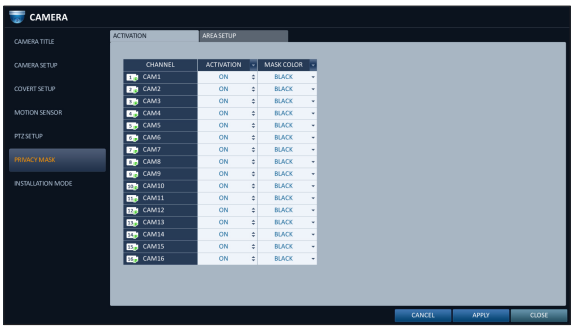
1. From <**SYSTEM SETUP**> - <**CAMERA**>, select <**PRIVACY MASK**>.

2. Use [▲▼◄►/**ENTER**] buttons of the remote or the mouse to set channels enabled, mask color and its area.

   › ACTIVATION : Turns on or off the motion detection sensor in the specified privacy area.

   › MASK COLOR : Select the color of the masked area, which will be displayed on the monitor.

3. To apply the change, click <**APPLY**> in the bottom of the screen.

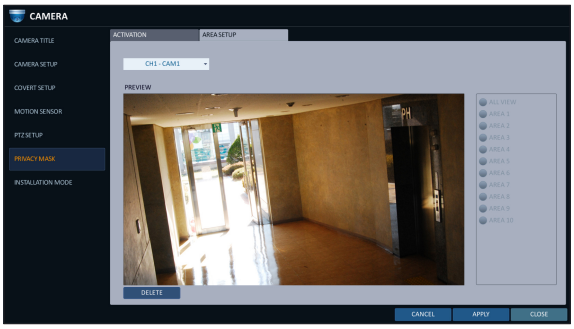



4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## Setting the Privacy Masking Area

You can specify the privacy masking area.

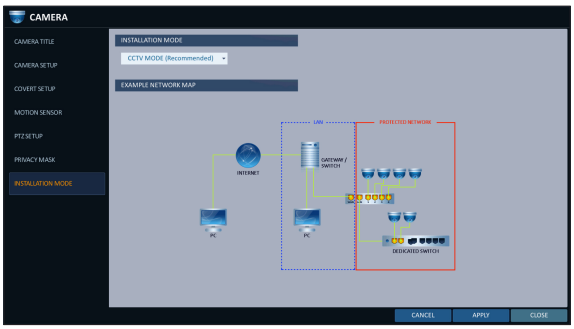
1. Click on the <**AREA SEPUP**> tab on the right side to display the area setup page.
2. When using the remote, press the [**Select**] button to show the selector first.
3. Use direction keys to move to the desired channel, and press the [**Select**] button to begin area setup. Use direction keys to set the masking area. When using the mouse, hold the mouse left button and drag to set or cancel the masking area.
4. Selecting masked area again will exclude the corresponding block from the masking area.




## Installation Mode

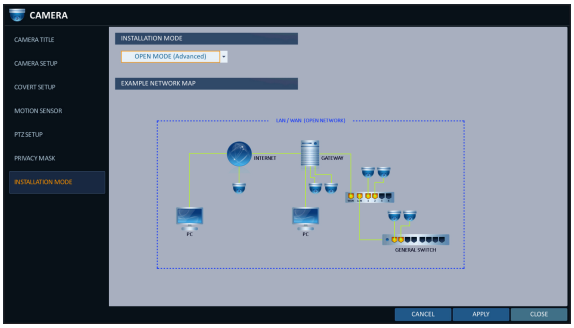
The network accessibility to the camera is defined by the camera's operation mode.

1. From <**SYSTEM SETUP**> - <**CAMERA**>, select <**INSTALLATION MODE**>.
2. Use [▲▼◄►/**ENTER**] buttons of the remote or the mouse to select one from CCTV Mode (Recommended) and OPEN Mode (Advanced).




- ✔ Setting to the "**Open Mode**" allows access to all ports including the camera's connection port from the external network. Accordingly, the camera's network transfer and transferred video's quality will be affected by the relevant communication devices and environment.
- ✔ CCTV mode is set for camera installation mode by default and both main body and hub (optional, 16CH) support the PLUG & PLAY function. (You cannot use the CCTV mode mixed with the OPEN mode.)
- ✔ In case 16CH model is set to OPEN mode, only the electrical power is supplied to the 8 cameras connected to main body and the Plug & Play function is not supported.

3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

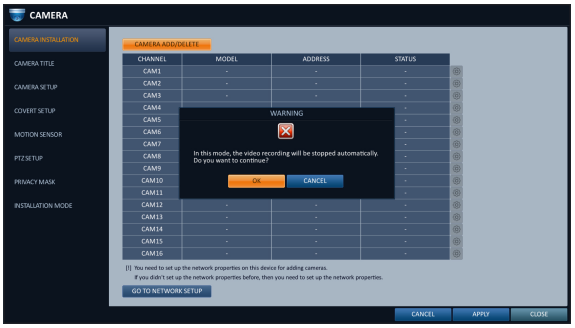


# System Setting

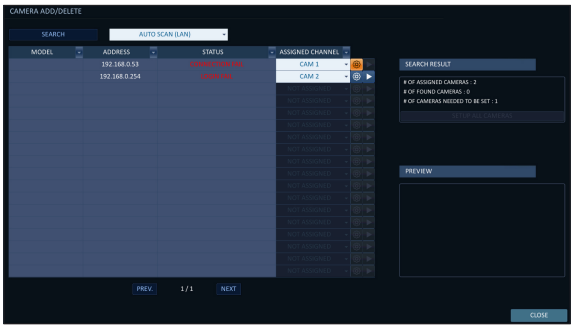
## Configuring the OPEN Mode Cameras

1. Setting to the <**OPEN MODE**> will restart the system as it switches the network configuration.

2. From the <**INSTALLATION MODE**> menu in <**CAMERA**>, press the <**ADD CAMERA**> button.

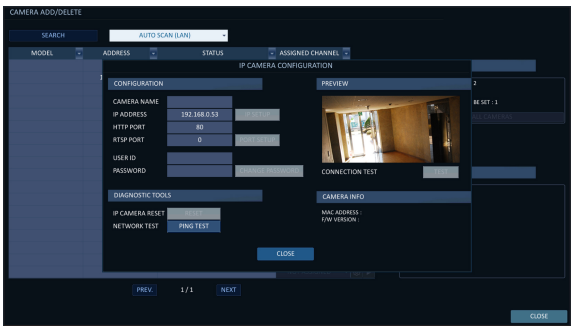



3. You can automatically search with <**AUTO SCAN**> for cameras available on the network, or provide IP address or the hostname with <**SPECIFIC IP / HOST NAME**> to manually search a camera.




4. Assign a channel number to the camera searched, and press < ⚙ > to add the camera.

5. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.



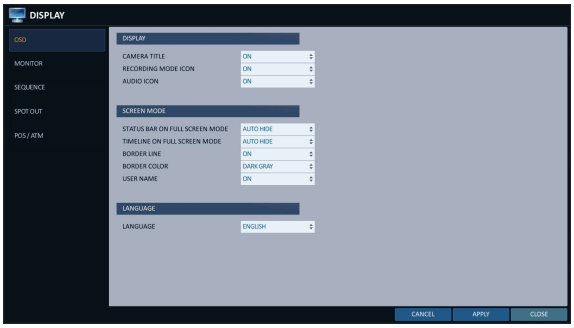
# Display Setting

You can configure the display settings regarding the OSD menus, monitor, sequence and POS/ATM.

## OSD

Configure the settings for the time, title, boundary, icon and language that will be displayed on the screen.

1. From <**SYSTEM SETUP**> - <**DISPLAY**>, select <**OSD**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to set each option of the OSD item.




- › CAMERA TITLE : specify the display of the camera title on the screen.
- › RECORDING MODE ICON : specify the display of the record mode icon on the screen.
- › AUDIO ICON : specify the display of the audio icon on the screen.
- › STATUS BAR ON FULL SCREEN MODE : select to show or hide the status bar in full screen mode.
  - AUTO HIDE : place the cursor in the lower area of the screen to display the status bar. If moving the cursor up, the status bar will disappear.
  - ALWAYS ON : The status bar will be displayed at all times.
  - 5 SEC ~1 MIN : If no mouse movement is detected for from 5 seconds to 1 minute, the status bar will disappear.
- › TIMELINE ON FULL SCREEN MODE : select to show or hide the timeline in full screen mode.
  - AUTO HIDE : place the cursor in the right corner to display the timeline. If moving the cursor to the left, the timeline will disappear.
  - ALWAYS ON : The timeline will be displayed at all times.
  - ALWAYS OFF : The timeline will not be displayed.
- › BORDER LINE : specify the display of the cross-border between channels in a split mode.
- › BORDER COLOR : select a color for the border.
- › USER NAME : specify the display of the currently logged-in users on the status bar.
- › LANGUAGE : select a menu display language.

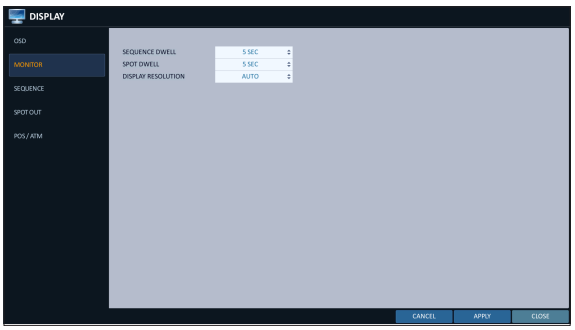
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

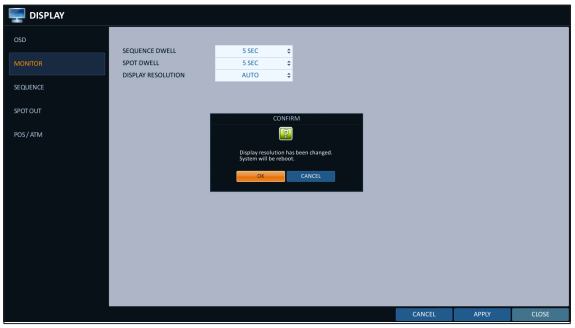
# System Setting

## Monitor

If you change from monitoring mode to sequence, you will have to set the interval of the sequence.

1. From <**SYSTEM SETUP**> - <**DISPLAY**>, select <**MONITOR**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to set a sequence interval for auto mode to 1 through 60 seconds.
3. The resolution of the display screen is set by setting the monitor resolution.
   - › AUTO : Automatically selects the maximum resolution supported by the connected monitor.
4. To apply the change, click <**APPLY** > in the bottom of the screen.
   Once clicked <**APPLY** > button after changing settings, a restarting message pops up. Click <**OK**> to restart the system automatically.
5. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

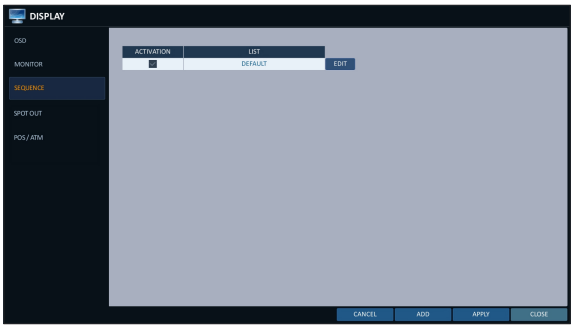


## Sequence

Select a split mode for the sequence, and also select a list of active items when the sequence is performed.

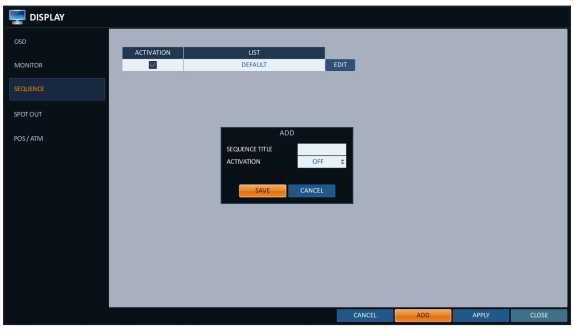
1. From <**SYSTEM SETUP**> - <**DISPLAY**>, select <**SEQUENCE**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to add a sequence or change the settings of the existing sequence.
   - › ACTIVATION : select a list that you want to activate the sequence for. Only one list will become active.
   - › ADD : add a sequence.
3. To apply the change, click <**APPLY**> in the bottom of the screen.




4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

### To add a sequence

1. Click <**ADD**> in the bottom of the screen.
2. When the "**ADD**" dialog appears, enter a title using the virtual keyboard.
3. Enter the name of the sequence and click <**SAVE**>.



# System Setting

4. When the "**ADD VIEW TYPE**" dialog appears, click <**ADD VIEW TYPE**>.

5. When the "**SEQUENCE SETUP**" dialog appears, select a split mode that you want to add from <**VIEW TYPE**>.

6. If the selected split mode is displayed on "**VIEW CONFIGURE**", select a channel you want to display in each split screen.

7. Click <**CONFIRM**>.
The set sequence mode is confirmed and will be added to the Add Sequence list in order.

8. When done, click <**CLOSE**> in the bottom of the screen.
After the sequence type is saved, you will return to the previous screen.

9. Right-click on the new sequence, or press the [**ENTER**] button on the remote control to edit or delete it.

✔ 4CH NVR model support only 1- and 4-split screen modes.

✔ 8CH NVR model support only 1-, 4-, 9-, 6- and 8-split screen modes.

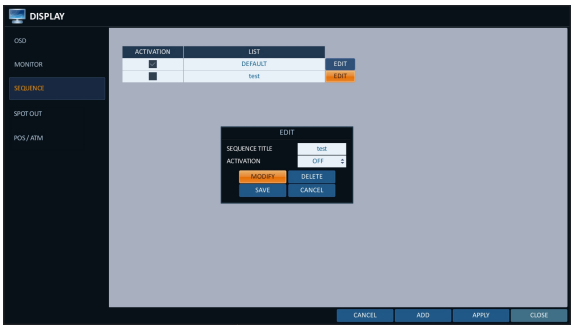
## To edit a sequence

1. Click the <**EDIT**> button on the right side of listed Sequence to be edited.

2. The "**EDIT**" dialog appears.

3. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to edit the selected sequence.

- SEQUENCE TITLE : enter a new sequence name.
- ACTIVATION : specify the use of the sequence.
- MODIFY : change the settings of the sequence mode.
- DELETE : delete the selected sequence list.
- CANCEL : cancel the changes.




4. Pressing the <**MODIFY**> button will display the Edit Sequence window.

5. To change the existing settings, select a screen mode that you want to edit and right-click to display the context menu. Then, select <**MODIFY**>.

6. When done, click <**CLOSE**> to close the window.

7. To apply your changes, click <**APPLY**>.

## SPOT OUT

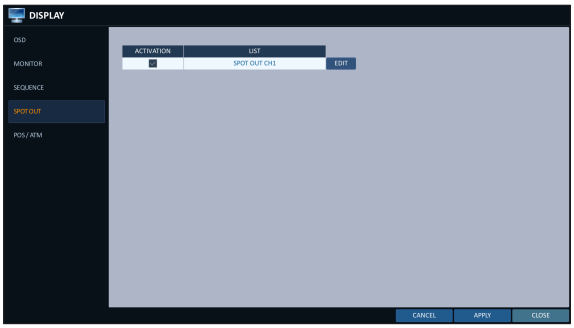
Apart from the main screen display, you can configure the Spot Out to display a Live channel as needed in various live view types. You can set the live view type of display output through the [**SPOT**] terminal and activate / deactivate it.

1. From <**SYSTEM SETUP**> - <**DISPLAY**>, select <**SPOT OUT**>.

   ✔ Only for 16-channel NVR

2. Use the [▲▼◄►/**ENTER**] button of the remote control or mouse to edit Spot Out properties.

   - SPOT TITLE : Name the Spot Out setup.
   - ACTIVATION : Set whether to activate / deactivate the spot out setup.
   - MODIFY : Edit the view type of the spot output.
   - SAVE : Save the changes of spot output settings.




3. To apply your changes, click <**APPLY**> button.

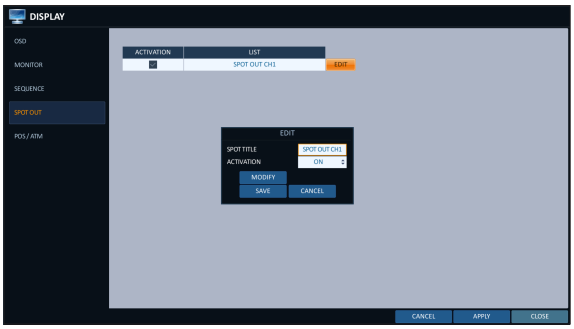
4. Once completed with setup, press [**EXIT**] button of the remote control or click <**CLOSE**> button on the bottom of the screen. A confirmation dialog appears and returns to the previous menu.

### To add a View Type to a Spot Out

1. Select an item from the SPOT Output list to be changed.

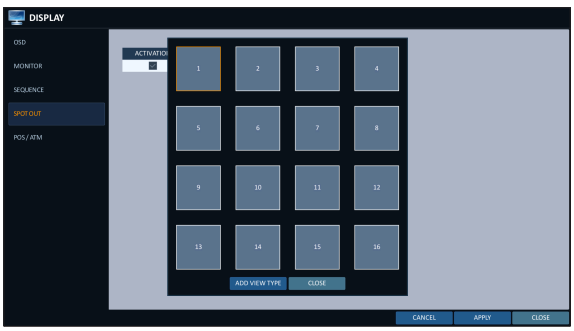
2. The "**MODIFY**" window appears, click <**MODIFY**> button.

3. When the View Type selection window appears, click <**ADD VIEW TYPE**> button.




4. Select the desired View Type and configuration, and click <**CONFIRM**> button.

5. Complete adding and click <**CLOSE**> to close the edit window



# System Setting

## To edit or delete View Type of the SPOT Output

1. Select an item from the SPOT Output list to be changed.
2. The "**MODIFY**" window appears, click <**MODIFY**> button.
3. When the View Type selection window appears, select the desired View Type to be edited or deleted, and press [**ENTER**] button of the remote control or right click on it.
   - MODIFY : Displays "**SPOT SETUP**" window for editing View Type and other properties.
   - DELETE : Deletes the selected View Type.
4. Complete editing and click <**CLOSE**> to close the edit window.

## POS/ATM

You can change the settings required to interlock the POS/ATM device connected to NVR.

1. From <**SYSTEM SETUP**> - <**DISPLAY**>, select <**POS/ATM**>.

2. Use the [▲▼◄►/**ENTER**] on your remote control or use the mouse to change the POS/ATM settings.

   - › DISPLAY MODE : You can select the screen where the data entered from POS/ATM are displayed.
     - OFF : Nothing is displayed on screen.
     - BOTH : Both LIVE and PLAYBACK screens are displayed.
     - LIVE : The POS/ATM data are displayed on the LIVE screen.
     - PLAYBACK : The POS/ATM data are displayed on the PLAYBACK screen.
   - › POSITION : Select LEFT or RIGHT for the screen position.
   - › FONT SIZE : Select SMALL, MEDIUM or LARGE for your desired font size.

   ✔ The font size is applied to a single split screen only.

   - › FONT COLOR : Select WHITE, GRAY, YELLOW, BLUE, GREEN or RED for your desired font color.
   - › DWELL TIME : You can set how long the data is displayed on screen.
     - UNTIL NEXT : Keep the data displayed on screen until the next data are input.
     - 1~60SEC : The data are displayed for the specified time.
   - › SCROLL TYPE : Set the scroll type for screen.
     - CLEAR : Display the screen without scrolling.
     - ROLL UP : Display the screen with roll-up type scrolling.
   - › HIGHLIGHT TEXT : Select whether to activate the highlighted text or not before entering the text and specifying its color.
   - › EXCLUDE TEXT : Select whether to activate the excluded text or not before entering the text.

   ✔ The POS data are displayed only in 1-, 4-, 6-, and 8- split screen.

3. To apply the change, click <**APPLY**> in the bottom of the screen.

4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

# System Setting

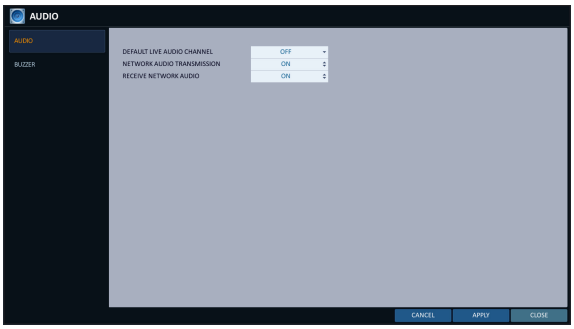
## Audio Setup

You can configure audio and signal beeps.

### Audio

You can select the default audio channel and configure network audio transmission.

1. From <**SYSTEM SETUP**> - <**AUDIO**>, select <**AUDIO**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select an item that you want to edit.
   - › DEFAULT LIVE AUDIO CHANNEL : select an audio channel to monitor on the live screen.
   - › NETWORK AUDIO TRANSMISSION : decide if NVR transfers the audio signal to the remote client.
   - › RECEIVE NETWORK AUDIO : decide if NVR receives the audio signal from the remote client.
3. To apply the change, click <**APPLY**> in the bottom of the screen.

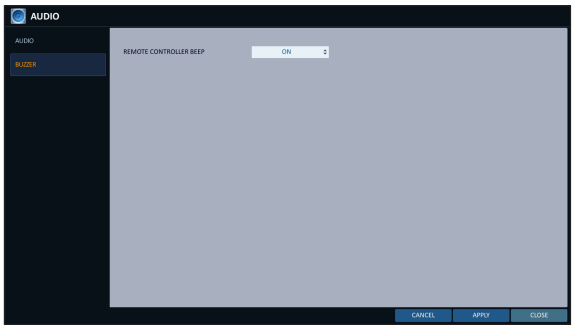



4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

### Buzzer output

You can set to output the buzzer if you manipulate the remote control.

1. From <**SYSTEM SETUP**> - <**AUDIO**>, select <**BUZZER**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select an item that you want to edit.
   - › REMOTE CONTROL : specify the output of a beep when you press a button on the remote control.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.



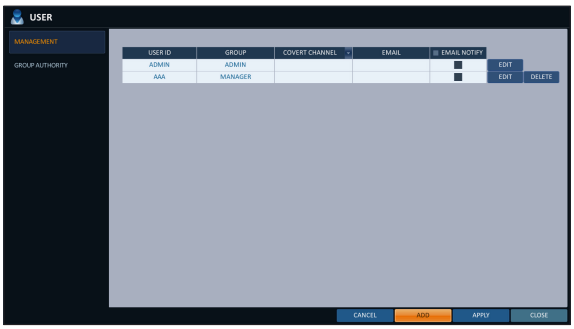
# User Setting

You can configure the settings regarding user management and user and group permissions.

## Management

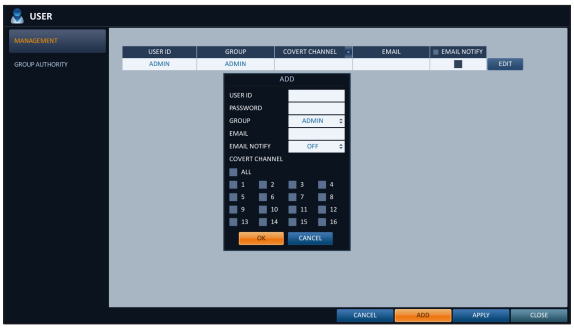
You can add a user account(s) that can be edited at a later time.

1. From <**SYSTEM SETUP**> - <**USER**>, select <**MANAGEMENT**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to add a user account or select an item that you want to edit.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.




### To add a user account

1. Click <**ADD**> in the bottom of the screen.
2. Use the [▲▼◄►] buttons on the remote control and move to a desired item. Then, press [**ENTER**] to select the item.
   - › USER ID : enter the user ID using the virtual keyboard.
   - › PASSWORD : With the virtual keyboard, enter the password.
   - › GROUP : From <**ADMIN**>, <**MANAGER**> and <**USER**>, select a group that the user belongs to.
   - › EMAIL : Type in the e-mail address to which you will receive notification of an event if it occurs.
   - › EMAIL NOTIFY : Choose whether you will receive notification of an event if it occurs.
   - › COVERT CHANNEL : You can set the channel to hide from a specific user.
3. When done, click <**OK**>.
   The added user account will be listed.

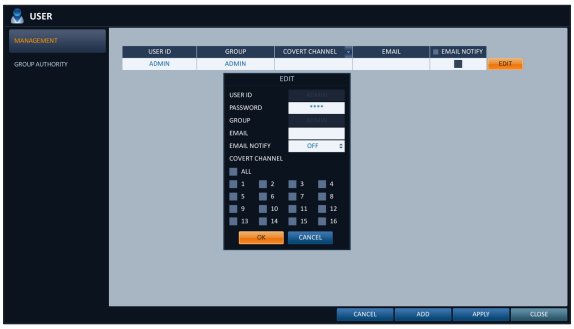


# System Setting

### To edit the user account information

1. From the list of users, select a user account to edit and click <**EDIT**> next to it.
2. From the Edit window, make necessary changes and click <**OK**>.
3. To delete the user account, click <**DELETE**>.

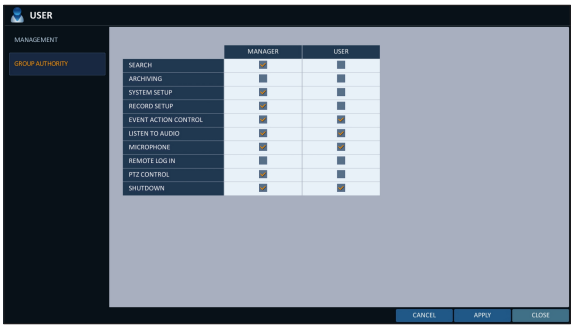
   ✔ The <**ADMIN**> account can not be changed or edited.




## Group Authority

You can grant different user groups different permissions to a specific menu.

1. From <**SYSTEM SETUP**> - <**USER**>, select <**GROUP AUTHORITY**>.
2. Use the [▲▼◄►/**ENTER**] buttons or use the mouse to set the permissions for both <**MANAGER**> and <**USER**> groups.




   - SEARCH : Set the permissions for the Search menu.
   - ARCHIVING : Set the permissions for the Backup menu.
   - SYSTEM SETUP : Set the permissions for the System Setup menu.
   - RECORD SETUP : Set the Access Permissions for the Record Setup menu.
   - EVENT ACTION CONTROL : Set the permissions to output the alarm or control the buzzer if an event such as alarm occurs.
   - LISTEN TO AUDIO : Set the permission to listen to the audio.
   - MICROPHONE : Set the permission to speak through the microphone.
   - REMOTE LOG IN : Set the permission to access remotely.
   - PTZ CONTROL : Set the permissions for the PTZ Control.
   - SHUTDOWN : Set the permission to shut down NVR from the System menu.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

# Network Setup

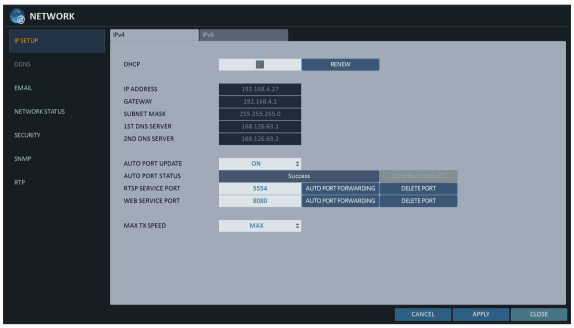
Specify the IP address, DDNS, e-mail, network status, network security, SNMP and Cable test.

## IP Setup

Specify the IP address as well as the remote service port.

1. From <**SYSTEM SETUP**> - <**NETWORK**>, select <**IP SETUP**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select one between <**IPv4**> and <**IPv6**>.
3. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

### IPv4




› DHCP : If it is checked, set the IP address of the NVR to Dynamic IP.
  - If the <**DHCP**> item is checked, the sub items of IP address, gateway, subnet mask, primary DNS server, secondary DNS server will be filled in automatically.

**!** If you select to obtain an IP address from the <**DHCP**> server, when the lease time of the DHCP server expires, you will lose connection to the IP camera momentarily while the network settings will be updated. However, the network connection will be restored soon. It is recommended to use a fixed IP for stable network connection.

› RENEW : The network server restarts and re-allocates dynamic IP address.

› IP ADDRESS : Provide the IP address.

› GATEWAY : provide the gateway address.

› SUBNET MASK : provide the subnet mask address.

› 1ST DNS SERVER : enter the address of the primary DNS server.

› 2ND DNS SERVER : enter the address of the primary DNS server.

› AUTO PORT UPDATE : Regularly updates the selected WEB and RTSP ports of the router through UPNP function.

› AUTO PORT STATUS : You can check AUTO PORT FORWARDING setup is properly configured.

› RTSP SERVICE PORT : port number that the remote client receives the NVR video from.

› WEB SERVICE PORT : port number used for connecting to the NVR with the web browser.

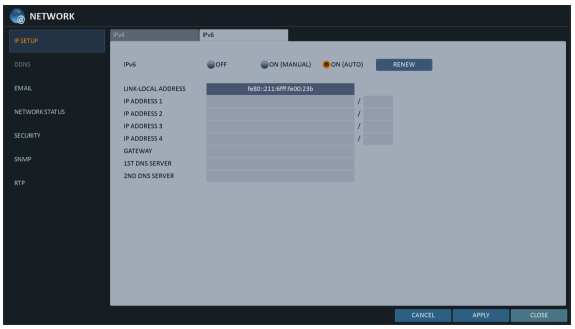
› AUTO PORT FORWARDING : If you are using a router, you can set the port forwarding so that external access to the NVR is enabled.
If the router does not support the uPnP protocol, you must set the port forwarding manually.
For more information, contact your network administrator.

› DELETE PORT : release the port forwarding settings for the router.

› MAX TX SPEED : limit the network transfer rate to access a remote client.
The video signal may be transferred at a less rate than specified, which depends on the status of your network connection.

# System Setting

### IPv6

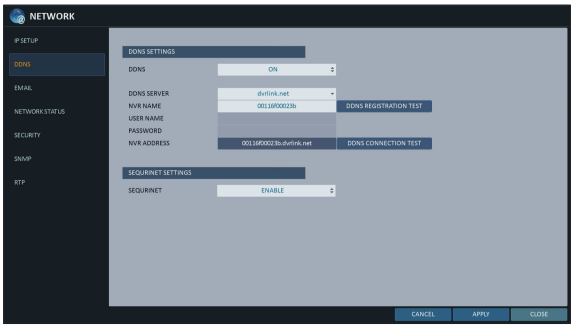



- IPv6 : You can select OFF or ON for IPv6.
  - OFF
  - ON (MANUAL)
  - ON (AUTO)
- RENEW : The network server restarts and re-allocates IPv6 IP address.
- IP ADDRESS : Provide the IP address.
- GATEWAY : provide the gateway address.
- 1ST DNS SERVER : enter the address of the primary DNS server.
- 2ND DNS SERVER : enter the address of the primary DNS server.

## DDNS

You can configure the DDNS settings so that remote users who are connected to the network can access remotely.

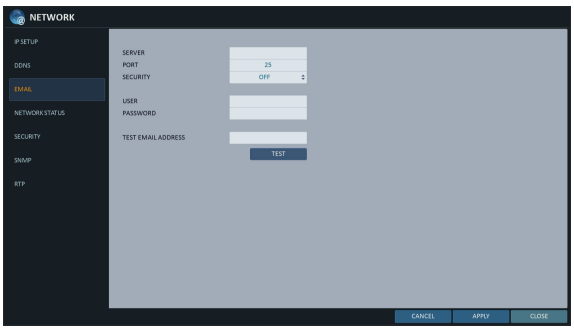
✔ DDNS is an IP redirection service in a dynamic IP environment that redirects (maps) the new IP address to a registered domain name each time the IP address is changed.




1. From <**SYSTEM SETUP**> - <**NETWORK**>, select <**DDNS**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to specify the use of DDNS and select a server.
   - DDNS : Specify the use of DDNS connection.
   - DDNS SERVER : Select a server to connect to.
   - NVR NAME : Enter the name of the NVR that you want to use as DDNS.
   - DDNS REGISTRATION TEST : Check if the <**NVR NAME**> can be set as DDNS. If there is a duplicate name in the server, the registration will fail. If this is the case, rename the <**NVR NAME**> and press Test to check if it works properly.
   - USER NAME : Use this field only if you set DDNS server to dyndns.org.
   - PASSWORD : Use this field only if you set DDNS server to dyndns.org.
   - NVR ADDRESS : Provide the <**NVR NAME**> and press the <**DDNS REGISTRATION TEST**> button. The name will be added automatically.
   - DDNS CONNECTION TEST : Perform the connection test to check if DDNS is normally registered.
   - SEQURINET : Set whether to enable SEQURINET or not.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## Email

You can register and test an email address so that an email notification is delivered at a specific interval or if an event occurs.




1. From <**SYSTEM SETUP**> - <**NETWORK**>, select <**EMAIL**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to specify the use of email and select a server.
   - SERVER : Set up the mail server.
     Set the mail server that will be used for notification to the NVR.
     Use the virtual keyboard to enter your mail server.
   - PORT : Enter the mail server port.
   - SECURITY : If it is set to <**On**>, the email will be transferred in secure mode.
     If it is set to <**Off**>, the email will be transferred to a server that does not support SSL.
   - USER : Provide the email account (ID) of the sender.
   - PASSWORD : Provide the password of the sender.
   - TEST EMAIL ADDRESS : Enter an email address for the test purpose.
   - TEST : Send a test email and check if the test email is delivered normally.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

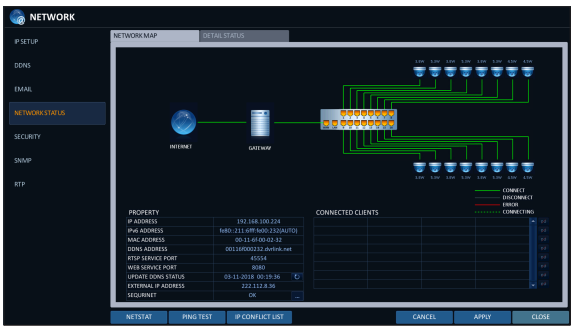
## Network Status

From the network map screen, you can check the internet connection status and IP camera connection status, and check also the details of the connection status for each camera.

1. From <**SYSTEM SETUP**> - <**NETWORK**>, select <**NETWORK STATUS**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select one between <**NETWORK MAP**> and <**DETAIL STATUS**>.
3. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

# System Setting

## Network Map




- IP ADDRESS : Indicates the internal IP address of the NVR.
- IPv6 ADDRESS : Indicates theIPv6 IP address of the NVR.
- MAC ADDRESS : Indicates the internal MAC address of the NVR.
- DDNS ADDRESS : Indicates the internal DDNS address of the NVR.
- RTSP SERVICE PORT : Indicates the network port of the video service.
  For remote service, the router must have set up the port forwarding.
- WEB SERVICE PORT : Indicates the web service network port.
  For the remote service to be enabled, the corresponding port of the router should have set up the port forwarding.
- UPDATE DDNS STATUS : Shows if the DDNS address was registered to the DDNS server normally. Press < > to try to register the DDNS address forcibly.
- EXTERNAL IP ADDRESS : Indicate the IP address for the Internet, accessible from the NVR.
  The NVR can be granted access with the web browser at "**http://<External IP Address>:<Web Service Port>**". The IP address can vary in a dynamic IP environment.
- CONNECTED CLIENTS : Shows the list of clients that are currently connected.
  Press < > to terminate the connection of an unwanted client forcibly.

✔ Termination is limited to only users in a lower group than the current user.

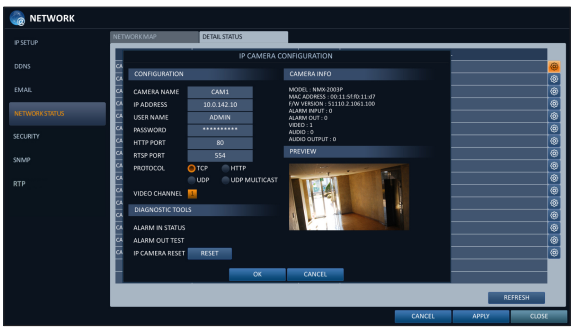
❗ The current PoE power consumption is updated sequentially in the order of channel.

❗ Alarm is generated if power consumption reaches 90% of rated supply capacity, for both NVR main unit and external PoE Hub.
This alarm threshold setting can be edited in "**EVENT** > **SYSTEM EVENT** > **POE FAIL EVENT**". (page 81)

❗ In OPEN mode, the POE power consumption is not displayed by camera.

## Detail Status

You can check the details of the cameras that are connected to each channel.
Click < > in the right area of the list to show the details.
Click <**RESET**> in the "**IP CAMERA CONFIGURATION**" window to reset the IP camera.
When the IP camera settings are complete, click <**OK**>.



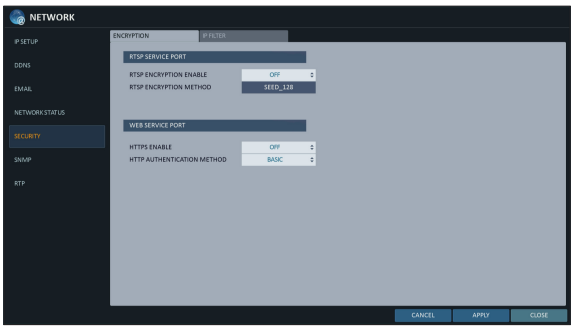
## Security

For security purpose, you can set whether to use encryption and its method, and configure IP filtering.

1. From <**SYSTEM SETUP**> - <**NETWORK**>, select <**SECURITY**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select one between <**ENCRYPTION**> and <**IP FILTER**>.
3. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

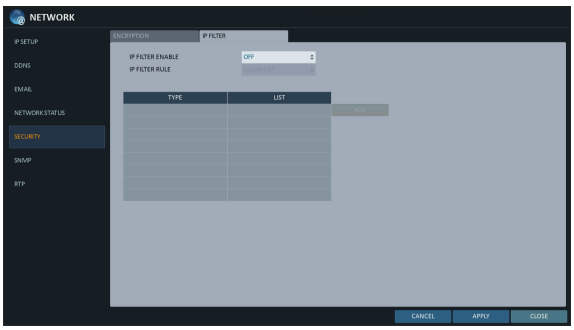
### ENCRYPTION

- RTSP ENCRYPTION ENABLE : Set whether to apply RTSP encryption or not.
- RTSP ENCRYPTION METHOD : Select the encryption method.
- HTTPS ENABLE : Set whether to use HTTPS encryption or not.
- HTTP AUTHENTICATION METHOD : Select the authentication method for encrypted communication.




### IP FILTER

- IP FILTER ENABLE : Set whether to apply IP filter or not.
- IP FILTER RULE : You can set to allow or deny IP addresses listed in the IP filter.
- ADD : Click the button to add an IP address to be filtered, if IP filtering is enabled.

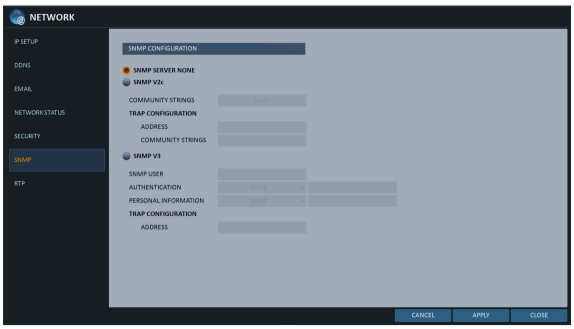


# System Setting

## SNMP

You can monitor the operation of the recording device. If installing the SNMP MANAGER program in your PC, you can check various pieces of information about your device.

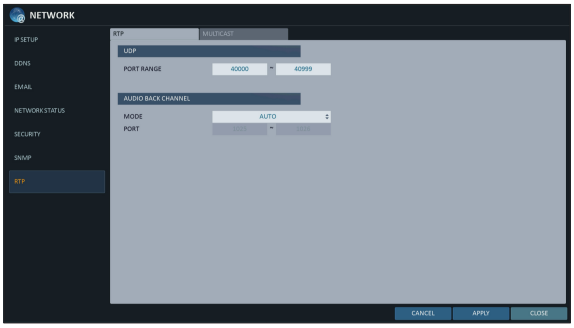
1. From <**SYSTEM SETUP**> - <**NETWORK**>, select <**SNMP**>.




2. Use the [▲▼◀▶/**ENTER**] buttons on the remote control or use the mouse to specify the use of SNMP and select a server.
   - › SNMP SERVER NONE : Do not use SNMP server.
   - › SNMP V2c : Use SNMP V2c server.
     - COMMUNITY STRINGS : Enter the community name to access SNMP information. <public> is designated by default.
     - TRAP CONFIGURATION : Enter the IP address and community name to send a message.
   - › SNMP V3 : Use SNMP V3 server.
     - SNMP USER : Enter SNMP user name.
     - TRAP CONFIGURATION : Enter the IP address to send a message.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

# RTP

1. From <**SYSTEM SETUP**> - <**NETWORK**>, select <**RTP**>.
2. Use the [▲▼◀ ▶/**ENTER**] buttons on the remote control or use the mouse to select one between <**RTP**> and <**MULTICAST**>.
3. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen. The confirmation message appears and you will return to the previous menu.




## RTP

- PORT RANGE : Set the range of port number for RTP UDP transfer, which will be dynamically allocated.
- MODE : Set the port allocation method for "**RTP Audio back channel**".
  Set to <**Auto**> for automatic allocation or to <**Manual**> to use specified port in the PORT attribute.

✔ RTP (Real-time Transport Protocol) is a protocol designed to transport real-time data such as sound, video, etc. under unicast or multicast condition.

## MULTICAST

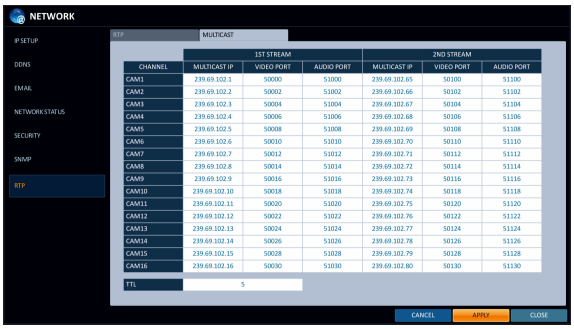
Multicast allows efficient network bandwidth utilization if multiple clients are receiving monitoring video on a local area network.

- Set the Multicast Address, Video/Audio Ports and TTL for each channel's Main/Second Stream.

✔ Note that the network must support multicast communication.

✔ In general, multicast in WAN environment is not supported.

✔ Multicast is a method to send the same data to multiple specific receivers simultaneously in a network. This method cuts down on network waste, gets rid of unnecessary burden, and is generally used in unrestricted network (intranet).



# System Setting

## System Setting

You can configure the settings of date/time, system management, system information, control device, POS/ATM and security.

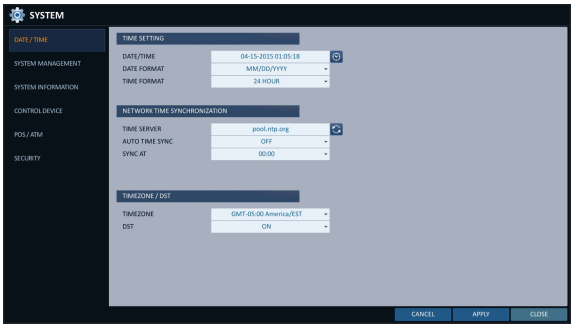
### Date/Time

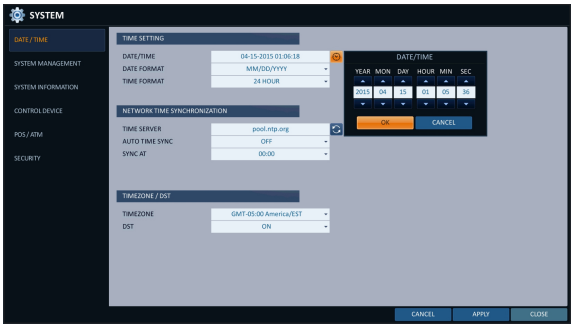
Specify the current date and time.

1. From <**SYSTEM SETUP**> - <**SYSTEM**>, select <**DATE/TIME**>.

2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to change the time or set the options as necessary.

   - DATE/TIME : Set the current time and date. Click< > to adjust the time manually.
   - DATE FORMAT : specify the date format.
   - TIME FORMAT : specify the time format.
   - TIME SERVER : obtain the current time from the time server. Click < > to get the current time.
   - AUTO TIME SYNC : automatically synchronize the time with the time server at a specific time.
   - SYNC AT : Set the time to sync with the time server.
   - TIMEZONE : specify the GMT standard time for your local area.
   - DST : You can set up or release the DST (Daylight Saving Time).




3. To apply the change, click <**APPLY**> in the bottom of the screen.

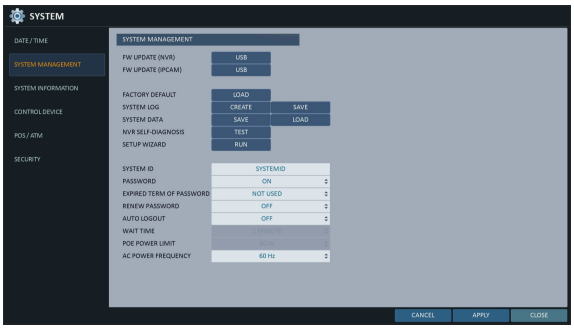
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## System Management

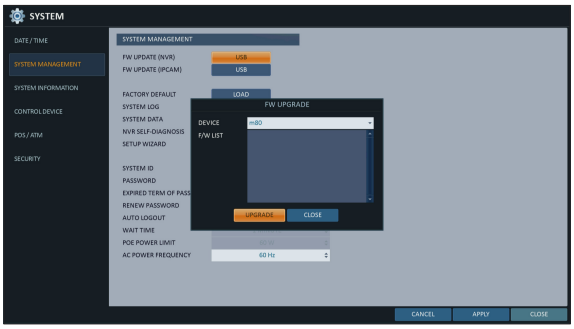
You can check, update or reset the system information.

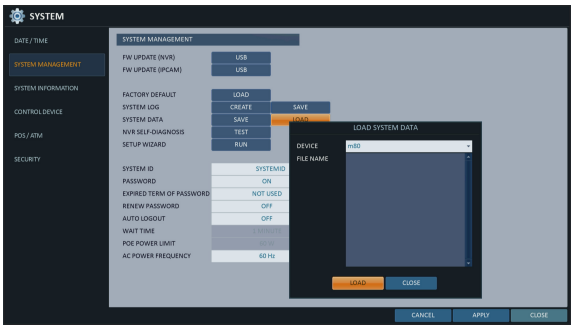
1. From <**SYSTEM SETUP**> - <**SYSTEM**>, select <**SYSTEM MANAGEMENT**>.

2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to set each option of the system management.



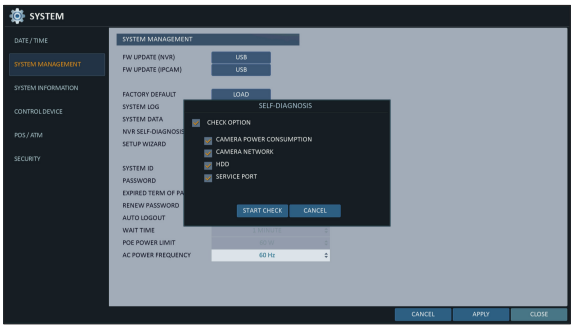

- › FW UPDATE(NVR) : You can upgrade the current NVR software version.
- › FW UPDATE(IPCAM) : You can upgrade the current IP CAM software version.
- › FACTORY DEFAULT : Return the NVR settings to the factory default.
- › SYSTEM LOG : You can create a system log to save system operation(s) generated when running your system.
  - CREATE : Creates system log.
  - SAVE : Saves the system log.
- › SYSTEM DATA : Save the system settings or get the system information from other device.
  - SAVE : Store the NVR settings to a storage device. Connect the storage device to the USB port of NVR.
  - LOAD : Apply the settings of the storage device to the NVR. Connect the storage device to the USB port of NVR.

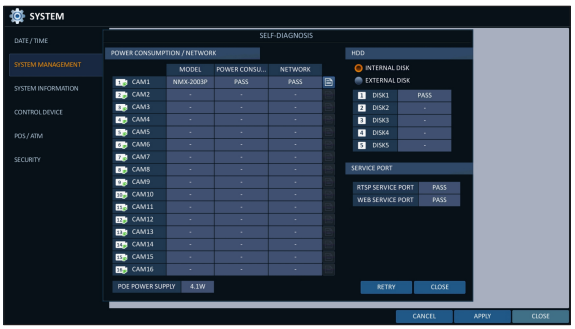


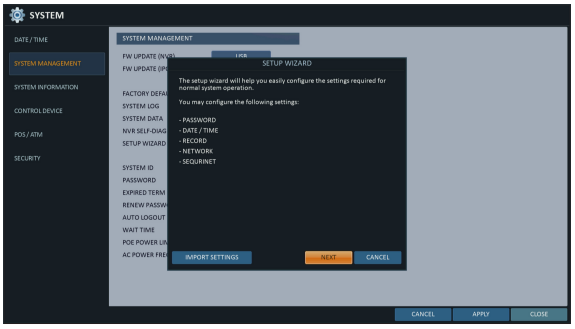
# System Setting

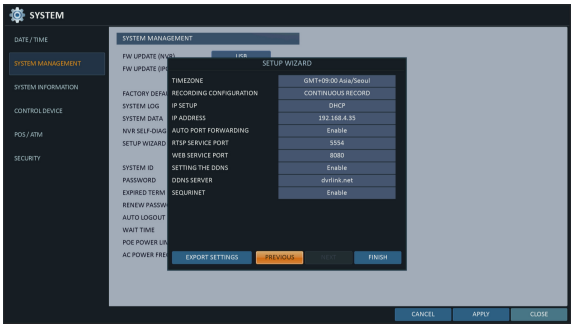
› NVR SELF-DIAGNOSIS : Checks out camera power, camera network, HDD and network port forwarding setup of the NVR. (CCTV only)




› SETUP WIZARD : Triggered when the corresponding button is pressed or upon factory initialization. The wizard guides through network configuration such as setting the DHCP or static IP address, WEB and RTSP service ports.



- SYSTEM ID : Assign an ID to the NVR to distinguish it out from others when there are multiple NVR used.
- PASSWORD : Open or close the dialog box for settings of the menus: quit, system settings, record settings, backup, and search.

! If it is set to <**OFF**>, note that the ADMIN account is only effective and access to all menus will be restricted.

- EXPIRED TERM OF PASSWORD : You will be prompted to change the current password after a certain period of time.
- RENEW PASSWORD : You can turn On/Off the RENEW PASSWORD function. When this is enabled and if you want to use an account generated by administrator, you can modify the password of your desired account before using.
- AUTO LOGOUT : If there is no user input for a certain period of time, you can set to log out automatically.
- WAIT TIME : Specify the waiting time for Auto Logout.
- PoE POWER LIMIT : Set the rated input power for PoE adaptor.
- AC POWER FREQUENCY : Set to the actual AC power's frequency (50Hz / 60Hz) applied to NVR to avoid flickering.

3. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

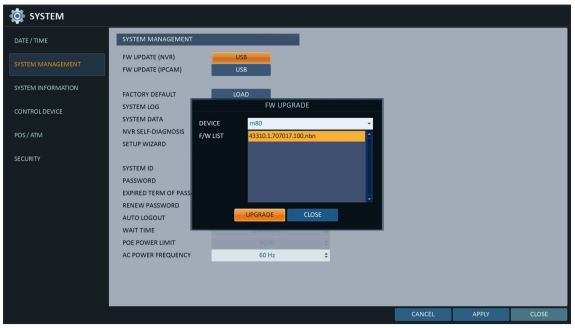
# System Setting

## To perform the upgrade

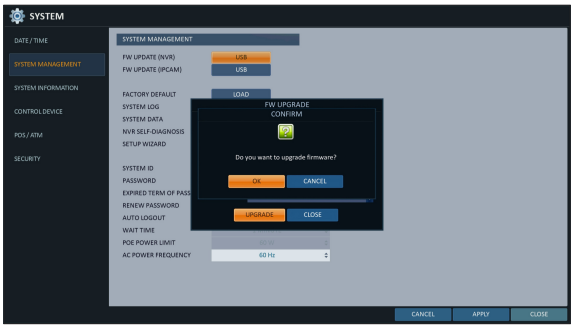
1. Connect the USB storage device that contains the updatable files.
2. Click <**USB**>.
3. Select one(s) from the updatable files listed in <**F/W LIST**>.

   ✔ Firmware should be located in the <**root**> directory of the USB storage device.
   Do not place it under a certain folder.

   ✔ To upgrade the connected IP CAM, select the channel connected to the camera to upgrade.

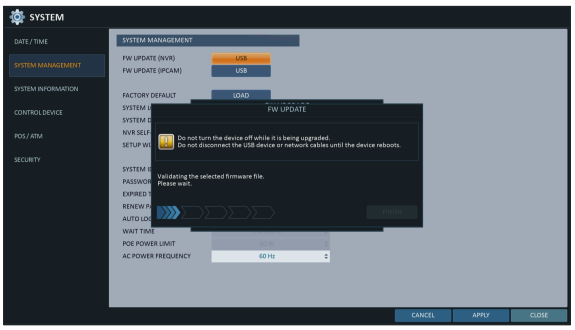



4. Click <**UPGRADE**>.
5. When the confirmation message appears, click <**OK**>.




6. The progress bar displays the progress of the firmware upgrade process.
7. When the upgrade is complete, reboot the system.

   ❗ During the updating, never turn off the NVR forcibly or disconnect the USB storage device to avoid serious damage to the product or data. If required, consult your nearest service center for professional assistance.



## System Information

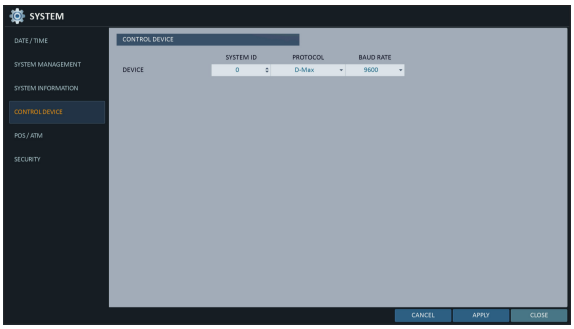
You can check the current system version and system-related settings.

1. From <**SYSTEM SETUP**> - <**SYSTEM**>, select <**SYSTEM INFORMATION**>.
2. Check the status of the current system.
3. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## Control Device

Configure the settings of the remote control and keyboard controller.

1. From <**SYSTEM SETUP**> - <**SYSTEM**>, select <**CONTROL DEVICE**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to set the connection options for the control device.
   - › SYSTEM ID : Set the ID of the NVR so that the keyboard controller can identify.
   - › PROTOCOL : Set up the protocol of the keyboard controller.
   - › BAUD RATE : Set the data transmission speed.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.



# System Setting

## POS/ATM

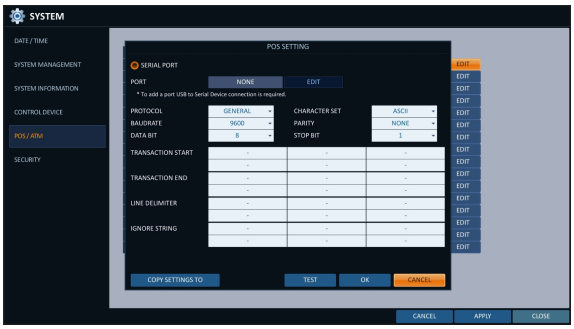
You can check the configuration of the POS/ATM device connected to NVR.

1. From <**SYSTEM SETUP**> - <**SYSTEM**>, select <**POS/ATM**>.
2. Use the [**▲▼◄►/ENTER**] on your remote control or use the mouse to check the POS/ATM settings.
   - ACTION : Specify whether to activate the POS/ATM device or not.
   - TYPE : Display the type for each channel.
   - PORT : Display the port for each channel.
3. Change the data for each required item, and then press the <**OK**> button.

4. To apply the change, click <**APPLY**> in the bottom of the screen.
5. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

### To set the POS

1. Press the <**EDIT**> button to change in each channel.
   - PORT : You can change the linked port by pressing the <**EDIT**> button on the right.
     ✔ The USB to serial device is required to add a port.
   - PROTOCOL : GENERAL is designated for PROTOCOL by default.
   - BAUDRATE : Select the BAUD RATE between 2400~115200.
   - DATA BIT : You can select between 5 and 8 for DATA BIT.
   - CHARACTER SET : The ASCII CHARACTER SET is designated by default.
   - PARITY : You can select NONE, ODD or EVEN for PARITY BIT.
   - STOP BIT : You can select 1 or 2 for STOP BIT.
   - TRANSACTION START : Enter the value for TRANSACTION START by using the virtual keyboard.
   - TRANSACTION END : Enter the value for TRANSACTION END by using the virtual keyboard.
   - LINE DELIMITER : Enter the value for LINE DELIMITER by using the virtual keyboard.
   - IGNORE STRING : Enter the string to ignore by using the virtual keyboard.
   - COPY SETTINGS TO : You can copy the settings to each channel.
   - TEST : You can test the settings through the POS.
2. Complete editing and click <**OK**> to close the edit window.

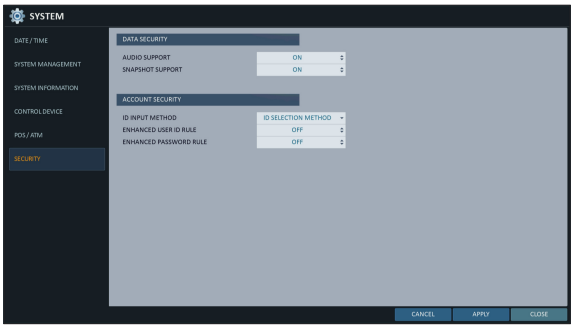


## Security

For security, you can set to apply reinforced password policy (to system, search/backup) and control accessing audio and snapshot.

1. From <**SYSTEM SETUP**> - <**SYSTEM**>, select <**SECURITY**>.

2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to set each option of security.




- AUDIO SUPPORT : Allows audio function.
  If set to <**OFF**>, all audio functions are disabled. Live and playback screen do not produce audio, and no audio recording is allowed.

  Note that changing the setting from <**OFF**> to <**ON**> initializes audio related settings. Hence, reconfiguration is required after enabling.

- SNAPSHOT SUPPORT : Allows snapshot function.
  If set to <**OFF**>, all capturing functions are disabled. User cannot take a snapshot on the Live screen, playback screen, and backup player screen.
  Event notification with e-mail will not include event snapshot too.

  Note that changing the setting from <**OFF**> to <**ON**> initializes snapshot related settings. Hence, reconfiguration is required after enabling.

- ID INPUT METHOD : Set an ID input method upon log-in. By selecting "SELECTION METHOD", you can select an ID by clicking the arrow button on the input screen. By selecting "DIRECT INPUT METHOD", you can log in by typing in your ID directly.

- ENHANCED USER ID RULE : Set whether to use Enhanced User ID Policy or not. When this is set to <**ON**>, the following rules will be applied.

  ID must be between 5 and 10 characters.
  IDs created with only one character (e.g. aaaaa, 11111, etc.) cannot be used.

- ENHANCED PASSWORD RULE : Sets whether to apply strong password policy, which prevents using too easy password. When this is set to <**ON**>, the following rules will be applied.

  Password must be between 8 and 16 characters. It must contain uppercase / lowercase letters, special characters, and numbers. The same character cannot be used 3 consecutive times. Sequential strings (e.g. abcde, 12345) are not allowed. The password cannot contain the same string as the ID.

3. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

# System Setting

## Storage

You can configure the settings of and view information of the disk and external storage device.

### Disk Information

It will show information about the connected disk.

1. From <**SYSTEM SETUP**> - <**STORAGE**>, select <**DISK INFORMATION**>.

2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select either <**INTERNAL DISKS**> or <**EXTERNAL STORAGE**>.
   Please check the status for each connected device.

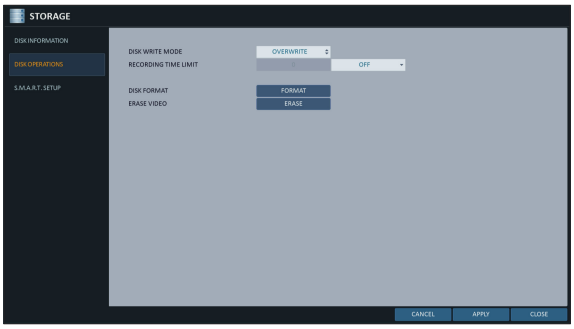
   - › START / END TIME : show the start time and end time of data stored in each disk.
   - › STATUS : check if the connected disk is being used by the NVR. If you encounter a problem with the disk, the NVR will terminate the connection to the disk and mark it as 'Not In Use'.
   - › CAPACITY : show the capacity of the disk.
   - › MODEL : indicate the disk model.
   - › S.M.A.R.T STATUS : Read the S.M.A.R.T information of the disk and check to display if the current disk is in normal operation.
     - NORMAL : The disk is in a normal state.
     - CHECK : The disk has an error so that you need to check the disk or the connection cables of the disk. If you leave the problem unresolved, no recording may be enabled. So it is recommended that you replace the disk immediately.
     - ERROR : The disk fails or is unable to use due to an error of the disk or the cable.The disk should be replaced immediately. Contact the retailer or the customer service to replace the disk.

3. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## Disk Operations

You can set to delete the recording automatically and set the overwrite options, and you can also format the HDD recording data.

1. From <**SYSTEM SETUP**> - <**STORAGE**>, select <**DISK OPERATIONS**>.




2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to set the operation conditions of the disk.

› DISK WRITE MODE

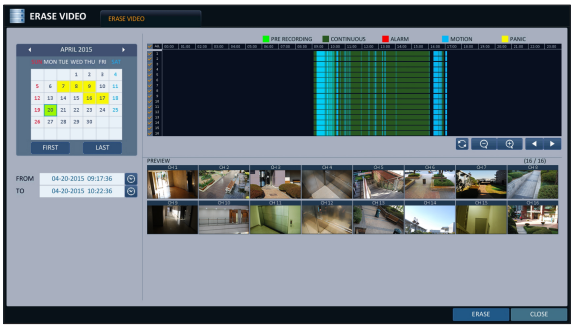
- If it is set to <**OVERWRITE**>, the existing data will be overwritten by new recording data if the recording data size exceeds the free space of the HDD.
- If the option is set to <**ONCE**> and the HDD is full, the NVR will stop recording and output the beep or alarm that is pre-defined at <**EVENT**>.

› RECORDING TIME LIMIT : The recording data will be deleted after a specific time of reservation. Choose from <**OFF**>, <**HOUR**>, <**DAY** >, <**WEEK**>, you can limit the recording time. If it is set to <**OFF**>, this function will be disabled.

› DISK FORMAT : format the hard disk.

Note that formatting the HDD will delete all video data and logs.

› ERASE VIDEO : You can delete all or part of stored video.
Click <**ERASE**> to move to "**ERASE VIDEO**" menu. Set the beginning and ending time and click <**ERASE**> button to delete video of selected time range.




3. To apply the change, click <**APPLY**> in the bottom of the screen.

4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

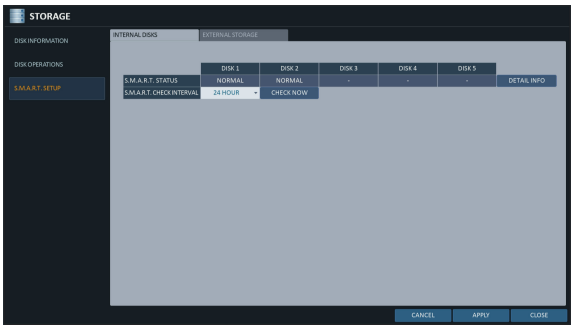
# System Setting

## S.M.A.R.T settings

You can check the S.M.A.R.T information of the disk and specify the check frequency.

✔ What is S.M.A.R.T information?
S.M.A.R.T (Self-Monitoring, Analysis and Report Technology) is to detect a HDD that is likely to cause a problem in the future with a warning message.

1. From <**SYSTEM SETUP**> - <**STORAGE**>, select <**S.M.A.R.T. SETUP**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to check the S.M.A.R.T operation and specify the check interval.
   - › S.M.A.R.T STATUS : Read the S.M.A.R.T information of the disk and check to display if the current disk is in normal operation.
     Click <**DETAIL INFO**> to view the details.
     - NORMAL : The disk is in a normal state.
     - CHECK : The disk has an error so that you need to check the disk or the connection cables of the disk. If you leave the problem unresolved, no recording may be enabled. So it is recommended that you replace the disk immediately.
     - ERROR : The disk fails or is unable to use due to an error of the disk or the cable. The disk should be replaced immediately.
       Contact the retailer or the customer service to replace the disk.
   - › S.M.A.R.T CHECK INTERVAL : Specify the S.M.A.R.T check interval.
     Click <**CHECK NOW**> to start checking.
3. To apply the change, click <**APPLY**> in the bottom of the screen.



4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

# Event Setup

Define various events, and specify the conditions to notify the user in various ways.

## Alarm Out

Specify the alarm output conditions with the work schedule.

### Alarm Out

1. From <**SYSTEM SETUP**> - <**EVENT**>, select <**ALARM OUT**>.

2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select <**ALARM OUT**> and configure the related settings.

   - NAME : You can rename the alarm.
   - OPERATION : Set the alarm output mode.
     - N/O (Normal Open) : It normally stays Open. However, if an event occurs, it will switch to Close.
     - N/C (Normal Close) : It normally stays Close. However, if an event occurs, it will switch to Open.
   - DURATION : Specify the duration of the alarm output.
     - TRANSPARENT : Keep the alarm out for as much time as the event lasts.
     - UNTIL KEY : Keep the alarm out until a mouse or remote control button is pressed.
     - 5 ~ 300 SEC : Keep the alarm out for as long as specified.
   - TEST : Forcibly output the alarm for the test purpose.

3. To apply the change, click <**APPLY**> in the bottom of the screen.

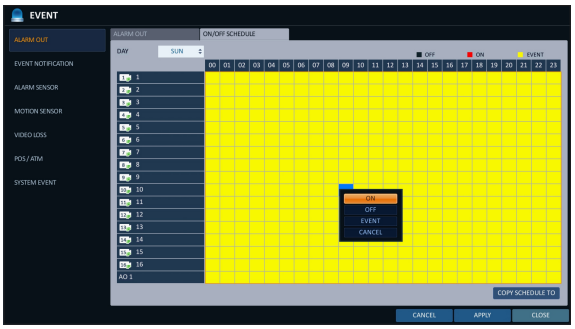
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

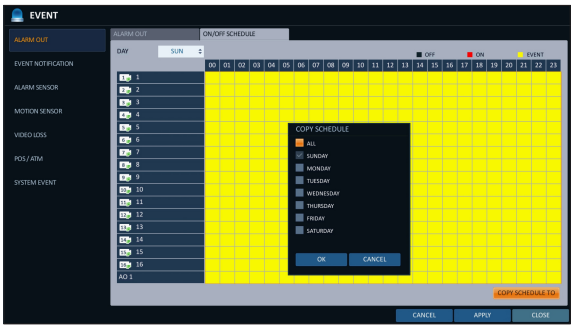
# System Setting

## ON/OFF Schedule

You can activate or turn off the alarm output as scheduled.

1. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select a <**DATE**> for the schedule.
2. Drag the mouse to resize the cell or use the on the [▲▼◄►] buttons to move to the cell, then press [**ENTER**].
3. Select a desired alarm output mode.
   - ON : The alarm output is always turned on.
   - OFF : The alarm output is always turned off.
   - EVENT : Trigger the alarm output in sync with the event.
4. Click <**COPY SCHEDULE TO**> to check the checkbox of the date that you want to copy the schedule at.
5. When done, click <**OK**> to apply the settings.
6. To apply the change, click <**APPLY**> in the bottom of the screen.
7. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.




## Event Notification

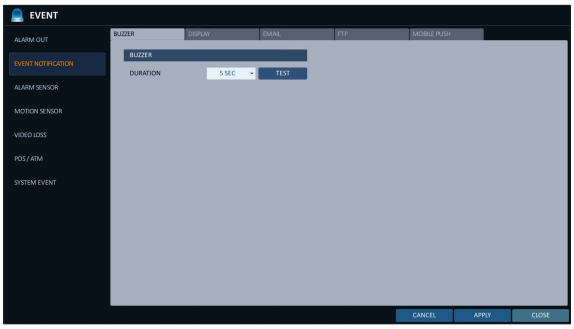
Specify the methods of notification such as buzzer, video popup, email or FTP if an event occurs.

1. From <**SYSTEM SETUP**> - <**EVENT**>, select <**EVENT NOTIFICATION**>.
2. Use the [▲▼◄►] buttons on the remote control or use the mouse to select one from <**BUZZER**>, <**DISPLAY**>, <**EMAIL**>, <**FTP**> and <**MOBILE PUSH**>.
3. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to set the output method and duration.
4. To apply the change, click <**APPLY**> in the bottom of the screen.
5. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## Buzzer output

You can notify the user of the event using the buzzer.

› DURATION
- TRANSPARENT : Keep the buzzer out for as much time as the event lasts.
- UNTIL KEY : Keep the buzzer out until a mouse or remote control button is pressed.
- 5 ~ 300 SEC : Keep the buzzer out for as long as specified.

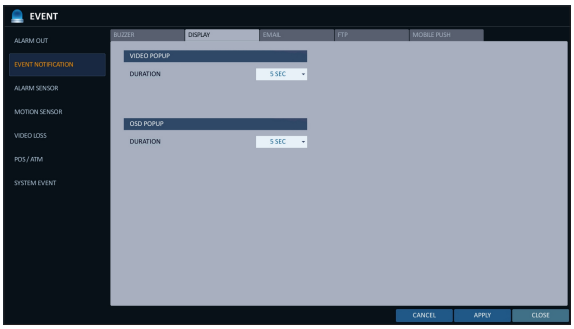



## Display

If an event occurs, you can display the video screen or a popup message to notify the user of the event.

› VIDEO POPUP : Display the video channel that is synchronized with the event on a single split screen. Set the DURATION of the single split screen.
- UNTIL KEY : Keep the video popup displayed until a mouse or remote control button is pressed.
- 5 ~ 300 SEC : Keep the video popup displayed for as long as specified.

✔ If multiple events occur at the same time, or if multiple event-related video channels exist, the video popup will be displayed in the maximum split screen mode rather than the single split screen mode.

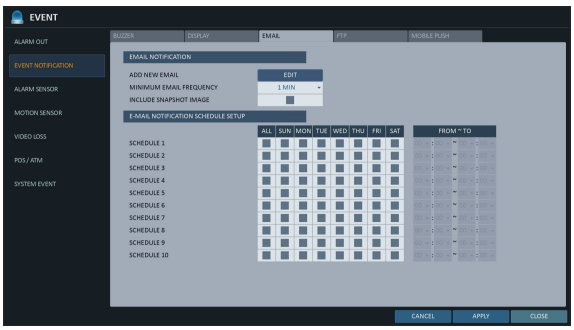



› OSD POPUP : This will notify the user of the event with a popup message if an OSD popup event occurs. You can adjust the duration of the popup message.
- UNTIL KEY : Keep the OSD popup displayed until a mouse or remote control button is pressed.
- 5 ~ 300 SEC : Keep the OSD popup displayed for as long as specified.

# System Setting

## Email

If an event occurs, this will notify registered users of the event by email. If you do not want to receive the email, uncheck the <**EMAIL NOTIFY**> option in <**MANAGEMENT**>. (Page 53)



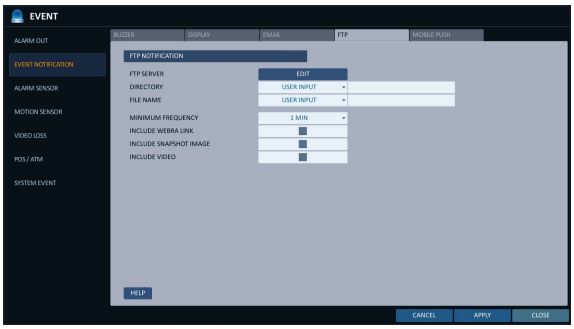

- ADD NEW EMAIL : If you want to add a new mail recipient beside the existing ones, click <**EDIT**> to add the recipient.
- MINIMUM EMAIL FREQUENCY : Adjust the minimum frequency of sending the email.
  For example, even if you have set the minimum frequency to one minute and another event occurs in less than one minute after the last email sending, the email for the new event will be sent one minute after.

✔ Some email servers can block the email sending if the email delivery cycle is too short, and classify it as spam.
Contact your email service provider to adjust the minimum delivery cycle so that the server does not classify the email as spam.

- INCLUDE SNAPSHOT IMAGE : Set whether to include snapshot image of the event with the notification.
- RECEIVING EMAIL SETUP : You can set your email to be sent at a specified time. You can select a specific time and day.

## FTP

Upon events, uploads event notification onto the added FTP server.




- FTP SERVER : Enter the FTP server address for event transfer.
- DIRECTORY : Select or manually enter the destination folder of the FTP for event transfer.
- FILE NAME : Select the uploading event file's format or manually set the file name.
- MINIMUM FREQUENCY : Sets the minimum recurrence delay for uploading event notification onto the FTP server.
  For example, when the minimum recurrence is set to 1 minute, the next FTP event notification will be uploaded after 1 minute from the last event, even if another event is detected within 1 minute from the last one.
- INCLUDE WEBRA LINK : Select whether to include WEBRA link address of the event generating NVR, which can be accessed with web browser (Internet Explorer).

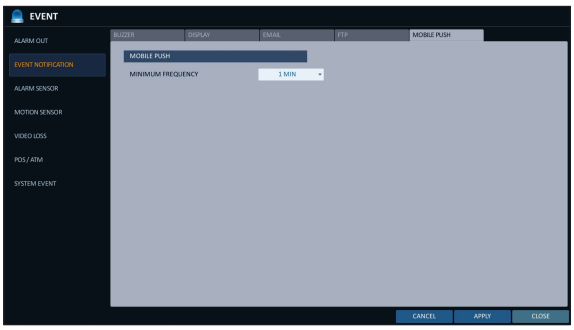
✔ Check to play back the event footage.

- INCLUDE SNAPSHOT IMAGE : Set whether to include snapshot (still image) or not.
- INCLUDE VIDEO : Set whether to include Video or not.

## MOBILE PUSH

When an event occurs, a corresponding push message is sent to registered user to notify it.

› MINIMUM FREQUENCY : Sets the minimum recurrence delay for uploading event notification onto the Mobile push.
For example, when the minimum recurrence is set to 1 minute, the next Mobile push event notification will be uploaded after 1 minute from the last event, even if another event is detected within 1 minute from the last one.




## Alarm Sensor

You can configure the settings of the alarm sensor and specify the operation of the sensor if an event occurs.

1. From <**SYSTEM SETUP**> - <**EVENT**>, select <**ALARM SENSOR**>.

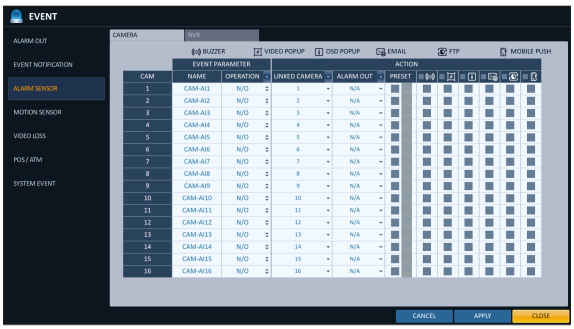
2. Use the [▲▼◄►] buttons on the remote control or use the mouse to select one from <**CAMERA**> and <**NVR**>.

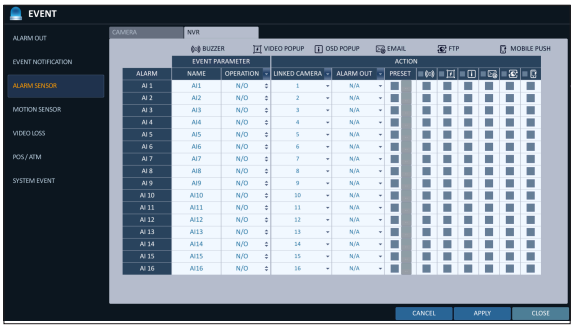
3. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to specify the sensor input method and operation.

› NAME : You can specify the name of the alarm sensor.

› OPERATION : You can specify the type of the alarm sensor.

- N/O (Normal Open) : Normally the sensor is left Open. If the sensor switches to Close, an event will be triggered.
- N/C (Normal Close) : Normally the sensor is left Close. If the sensor switches to Open, an event will be triggered.



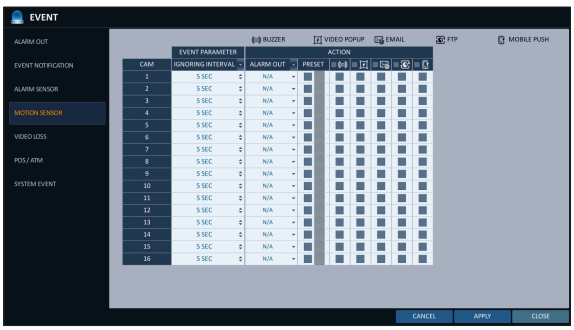
- LINKED CAMERA : Set the camera to sync with the alarm sensor if it is triggered.
  If you have set the alarm recording and the sensor detects the recording, all synchronized cameras will start alarm recording.
- ALARM OUTPUT : Specify the alarm output channel if it is detected by the alarm sensor. The alarm will be output to the specified channel.
- PRESET : On alarm sensor's detections, the camera moves as defined by the selected preset.
- BUZZER : Specify the output of the buzzer if an alarm is detected by the alarm sensor.
- VIDEO POPUP : Select to display the video popup if an alarm is detected by the alarm sensor.
  If there exist multiple <**LINKED CAMERA**>, the video popup will be displayed in the maximum split mode.
- OSD POPUP : Select to display the OSD popup message if it is detected by the alarm sensor.
- EMAIL : Select to send an email if detected by the alarm sensor.
- FTP : Select whether to upload event notification onto the FTP upon detected alarm event.
- MOBILE PUSH : Select whether to send mobile push messages to your mobile phone when detecting alarm sensor.

4. To apply the change, click <**APPLY**> in the bottom of the screen.
5. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## Motion Sensor

You can set an action to execute when a motion is detected.
For the settings of the motion sensor, move to <**CAMERA SETUP**>.

1. From <**SYSTEM SETUP**> - <**EVENT**>, select <**MOTION SENSOR**>.
2. Use the [▲▼◄►] buttons on the remote control or use the mouse to specify the ignorance interval and operation.




- IGNORING INTERVAL : Specify the minimum interval of the motion event occurrence.
  For example, even if you have set the minimum frequency to 5 seconds and another motion event occurs in less than 5 seconds after the last motion event occurred, the new event will be ignored. If too many motion events occur, adjust to shorten the interval.

✔ Motion recording will be triggered immediately after the motion occurred regardless of the above settings.

- ALARM OUTPUT : Specify the alarm output channel if a motion is detected by the motion sensor.
- PRESET : On motion sensor's detections, the camera moves as defined by the selected preset.
- BUZZER : Specify the output of the buzzer if a motion is detected by the motion sensor.
- VIDEO POPUP : Select to display the video popup if a motion is detected by the motion sensor.
- EMAIL : Select to send an email if a motion is detected by the motion sensor.
- FTP : Select whether to upload event notification onto the FTP upon detected motion event.
- MOBILE PUSH : Select whether to send mobile push messages to your mobile phone when detecting motion.

3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## Video Loss

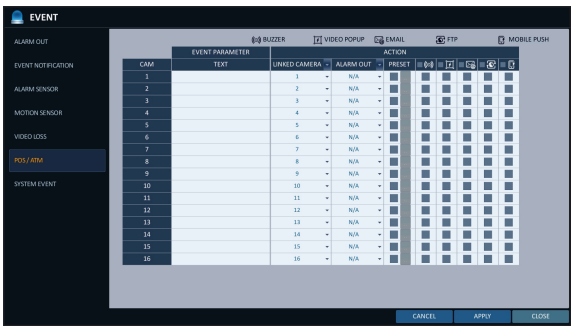
You can specify a reaction to the case where no video is received from the camera.

1. From <**SYSTEM SETUP**> - <**EVENT**>, select <**VIDEO LOSS**>.

2. Use the [▲▼◄►] buttons on the remote control or use the mouse to specify the reaction to a video loss.
   - ALARM OUTPUT : Specify the alarm output channel if a video loss occurs.
   - PRESET : On video loss's detections, the camera moves as defined by the selected preset.
   - BUZZER : Specify the output of the buzzer if a video loss occurs.
   - EMAIL : Select to send an email if a video loss occurs.
   - FTP : Select whether to upload event notification onto the FTP upon detected video loss event.
   - MOBILE PUSH : Select whether to send mobile push messages to your mobile phone when detecting video loss.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## POS / ATM

1. From <**SYSTEM SETUP**> - <**EVENT**>, select <**POS / ATM**>.




2. Use the [▲▼◄►] buttons on the remote control or use the mouse to specify the sensor input method and operation.
   - TEXT : Specify the text to detect POS / ATM event.
   - LINKED CAMERA : Select which camera(s) to interlock when detecting POS / ATM events.
   - ALARM OUTPUT : Specify in which channel to output the alarm when detecting POS / ATM events. Corresponding output is displayed on the specified alarm output channel when detecting an event.
   - PRESET : Move camera based on the preset criteria when detecting POS / ATM events.
   - BUZZER : Select whether to sound the buzzer when detecting POS / ATM events.
   - VIDEO POPUP : Select whether to pop up corresponding video when detecting POS / ATM events. If there are multiple <interlocked cameras>, the video screen pops up with maximum split views.
   - EMAIL : Select whether to send an email when detecting POS / ATM events.
   - FTP : Select whether to send the event to FTP server when detecting POS / ATM events.
   - MOBILE PUSH : Select whether to send a mobile push to your mobile phone when detecting POS / ATM events.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

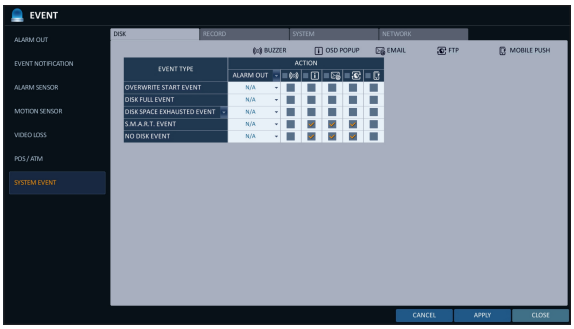
# System Setting

## System Event

You can set event actions for disk, recording, network and system events. As same to setting event actions for normal events, you can set to trigger alarm output, buzzer, display on-screen pop-up, or send event notification via email and FTP.

1. From <**SYSTEM SETUP**> - <**EVENT**>, select <**SYSTEM EVENT**>.
2. Use the [▲▼◄►] buttons on the remote control or use the mouse to specify the reaction to each event.
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

### Disk

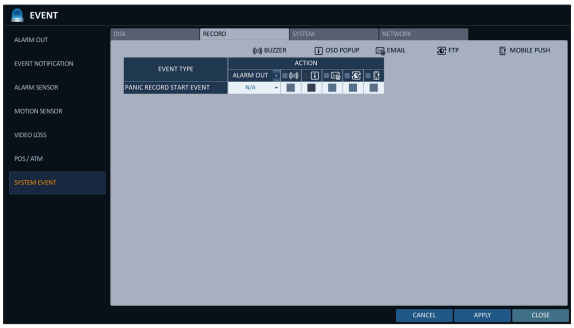



- OVERWRITE START EVENT : if you set the disk write mode to <**OVERWRITE**>, this event occurs when the disk is full and the overwriting begins accordingly.
- DISK FULL EVENT : if you set the disk write mode to <**ONCE**>, this event occurs when the disk is full (100%).
- DISK SPACE EXHAUSTED EVENT : Event that is triggered if the disk is almost full.
  Click to specify the threshold percentage of usage to trigger the event.
- S.M.A.R.T EVENT : Occurs if the disk causes the S.M.A.R.T error.
- NO DISK EVENT : Occurs if no disk is recognized after the booting due to a disk failure or cable problem.

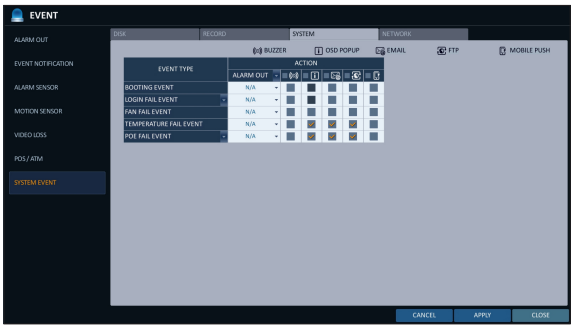
! To detect the disk error, it is recommended not to change the settings of the S.M.A.R.T event, no disk event and buzzer output.

### Record

- PANIC RECORD START EVENT : Specify the action to perform when the panic recording begins.



## System




› BOOTING EVENT: This event occurs when the NVR is booting.

› LOGIN FAIL EVENT: This event occurs when the NVR fails to log in.
You can specify the times of clicking < > to trigger the event.

› FAN FAIL EVENT : This event occurs if the CPU cooling fan or unit's cooling fan does not work at all.

✔ If the fan fails, no recording will proceed by the NVR. If you encounter a fan failure, contact the retailer or the service center for technical assistance.

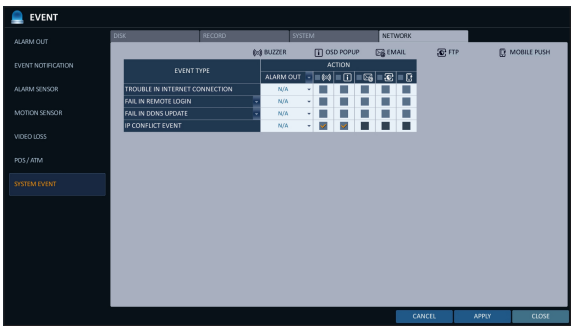
› TEMPERATURE FAIL EVENT : This event occurs if the internal temperature of the NVR exceeds the effective range. Then, the NVR will not operate normally. If this is the case, check the followings and take a necessary measure.

- Check if the ventilation of the NVR is clogged with foreign substances. If so, remove them.
- Keep the NVR away from a heat source such as heater. Install it in a flat, lower area with good ventilation.
- If the problem persists, contact the retailer or service center.

› POE FAIL EVENT : This event occurs if power consumption reaches specified level of power supply capacity of NVR and external PoE Hub.

! To monitor the normal operation of the NVR, it is recommended not to change the buzzer output settings of the fan failure event and the temperature fail event.

## Network




› TROUBLE IN INTERNET CONNECTION : Occurs if the Internet connection to the NVR fails.
If you do not want to connect the NVR to the network, leave the <**ACTION**> item blank.

› FAIL IN REMOTE LOGIN : This event occurs if a remote client fails to log in due to an invalid ID or password.
You can specify the times of clicking < > to trigger the event.

› FAIL IN DDNS UPDATE : This event occurs if the NVR tried to update the DDNS address but failed.

✔ If the DDNS address fails to be updated, the NVR may not connect to a remote client. If this is the case, enter the IP address from the client side to allow access from the NVR. This is just a temporary measure.
For the IP address, move to and check <**EXTERNAL IP ADDRESS**> from the <**NETWORK**> window. Note that the <**EXTERNAL IP ADDRESS**> is subject to change if the NVR does not use the static IP. (page 57)

› IP CONFICT EVENT : An event occurs when network IP conflicts.

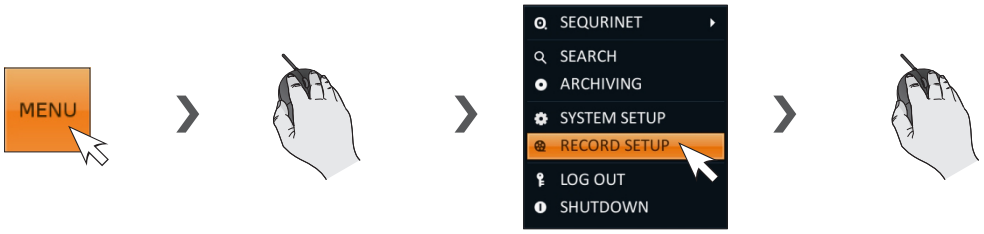
! Note that the <**EXTERNAL IP ADDRESS**> can change at any time in a dynamic IP environment.

# Record Setting

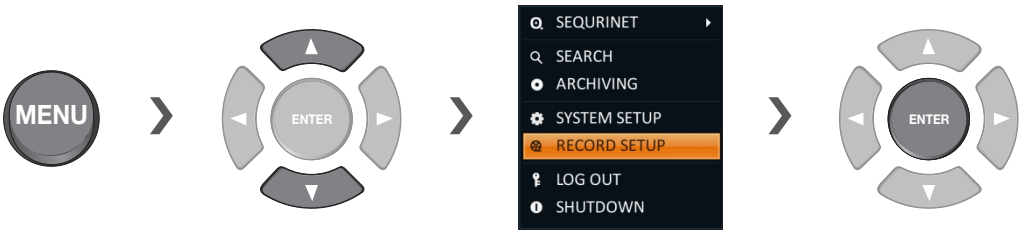
You can configure the record settings for the NVR. Only authorized users can access the Record Setup menu.

## To start the Record Setup menu

### How to use the mouse




### How to use the remote control



# Record Setup

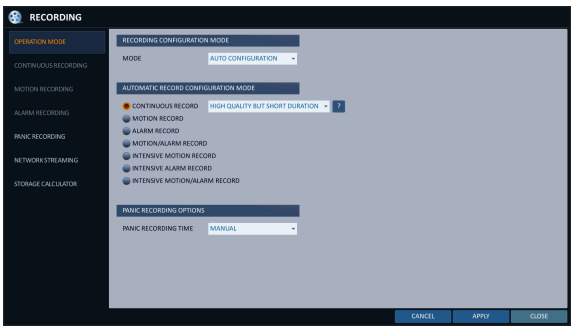
## Operation Mode

You can set the recording options for Auto or Manual mode.

1. From <**RECORD SETUP**> menu, select <**OPERATION MODE**>.
2. Use the [▲▼◄►] buttons or use the mouse to set <**RECORDING CONFIGURATION MODE**> to <**AUTO CONFIGURATION**> or <**MANUAL CONFIGURATION**>.
3. Set the recording options for each selected Record mode.
4. To apply the change, click <**APPLY**> in the bottom of the screen.
5. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

### Auto Configuration

If you choose your preferred record mode, the NVR will recommend you the optimized settings for the selected record mode.

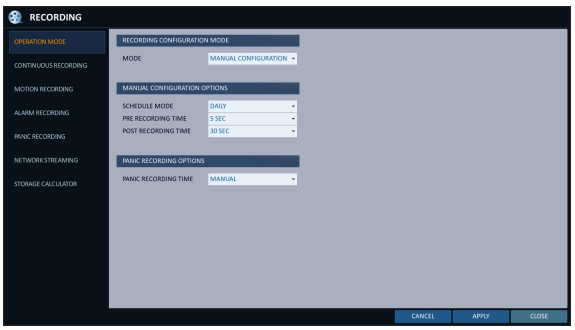



- CONTINUOUS RECORD : Records always regardless of events.
  - LONG DURATION BUT LOW QUAILTY : Recording will proceed in the low quality at all times. As this option will always make recording in the low quality, the recording period is the longest compared to the other record modes.
  - HIGH QUAILITY BUT SHORT DURATION : Recording will proceed in the best quality at all times. As this option will always make recording in the best quality, the recording period is the shortest compared to the other record modes.
- MOTION RECORD : Recording will proceed only if a motion is detected.
- ALARM RECORD : Recording will proceed only if an alarm event occurs.
- MOTION/ALARM RECORD : Recording will proceed only if a motion is detected or an alarm event occurs.
- INTENSIVE MOTION RECORD : Normally recording will be performed in a low quality. However, the quality will switch to high if a motion is detected.
- INTENSIVE ALARM RECORD : Normally recording will be performed in a low quality. However, the quality will switch to high if an alarm event occurs.
- INTENSIVE MOTION/ALARM RECORD : Normally recording will be performed in a low quality. However, the quality will switch to high if an alarm event occurs or a motion is detected.

# Record Setting

## Manual Configuration

If you set the record mode to <**MANUAL CONFIGURATION**>, the manual configuration window will appear where you can set the manual recording and panic recording options.




- › MANUAL CONFIGURATION OPTIONS : You can configure the recording settings by the time, date, and channel.
  - SCHEDULE MODE : You can schedule your recording with time range or combining time with selected week days.
  - PRE RECORDING TIME : Set the pre-recording time.
  - POST RECORDING TIME : Set the post-recording time.
- › PANIC RECORDING OPTIONS : Set the panic recording duration. If it is set to <**MANUAL**>, recording will continue until you turn it off manually.

## Continuous Recording

You can configure the settings of: continuous recording time, recording size, frame rate per second and quality.

1. From the <**RECORD SETUP**> menu, select <**CONTINUOUS RECORDING**>.

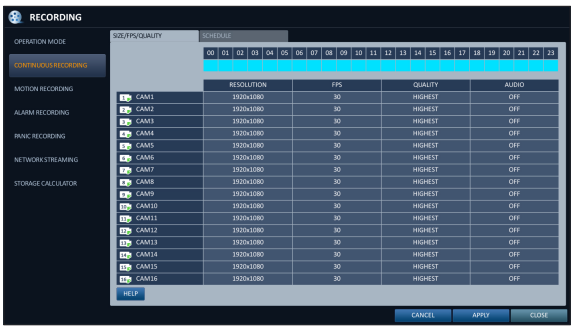
   ✔ From <**OPERATION MODE**>, you must set <**RECORDING CONFIGURATION MODE**> to <**MANUAL CONFIGURATION**> before you can set the <**CONTINUOUS RECORDING**>.

2. Use the [▲▼◄►] buttons on the remote control or use the mouse to select either <**SIZE/FPS/QUALITY**> or <**SCHEDULE**>.

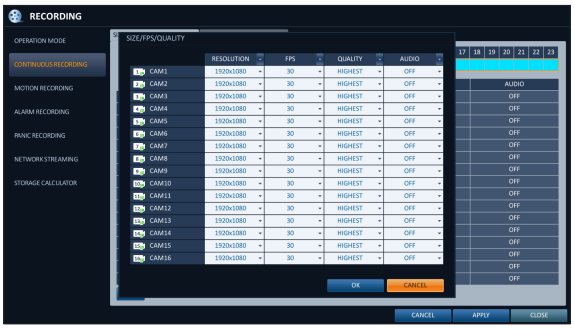
### Size/FPS/Quality Setting

1. Please select the day of the week to perform the continuous recording.
   To select <**DAY**>, set the <**SCHEDULED MODE**> to <**WEEKLY**> in <**MANUAL CONFIGURATION OPTIONS**> of <**OPERATION MODE**>.

2. Click a time cell from which you want to edit the SIZE/FPS/Quality and drag it to a desired cell.
   Or use the [▲▼◄►] buttons on the remote control to move to the cell and press [**ENTER**]. Then, use the [▲▼◄►] buttons to move to a desired cell and press [**ENTER**] again.



3. When the cell selection is complete, the "**SIZE/FPS/QUALITY**" table appears.




> **!** Specify the <**RESOLUTION**>, <**FPS**>, <**QUALITY**> and use of the <**AUDIO**> recording for each channel.

- RESOLUTION : set the size of the video recording.
- FPS : set the frame rate per second.
- QUALITY : set the recording quality.
- AUDIO : specify the use of the audio recording.
- HELP : You can view help text regarding the recording configuration.

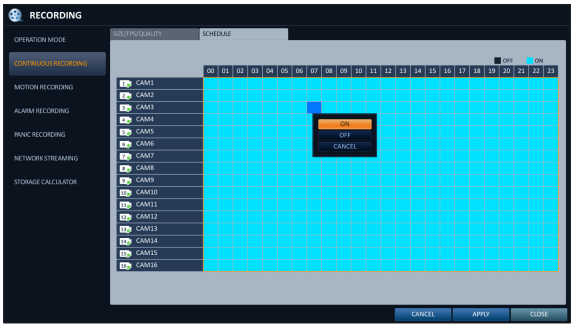
4. When done, click <**OK**>.
You can check the recording size in the size table under the time selection bar.

> **!** The video size, FPS, quality and audio recording options may differ depending on the specification of the IP camera. For some IP cameras, the video transfer may be interrupted if some of the options are changed.

## Schedule Setting

1. Select a start day of the week on the schedule.

2. Click a time cell from which you want to make the schedule and drag it to a desired cell.
Or use the [▲▼◄►] buttons on the remote control to move to the cell and press [**ENTER**]. Then, use the [▲▼◄►] buttons to move to a desired cell and press [**ENTER**] again.




3. When the time selection is complete, you will be prompted to specify the use of recording in the Record Setup window.

4. Click <**COPY SCHEDULE TO**> to check the checkbox of the date that you want to copy the schedule at.

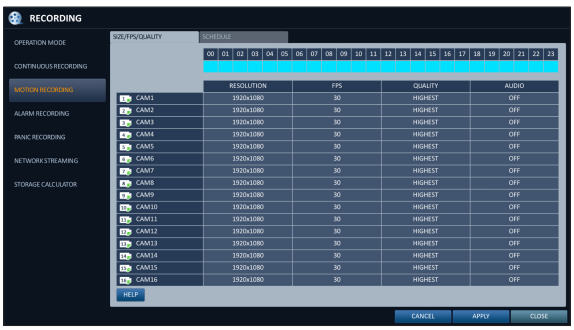
5. To apply the change, click <**APPLY**> in the bottom of the screen.

6. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

# Record Setting

## Motion Recording

Specify the recording size of the motion event if it occurs and make schedule for that recording.




1. From the <**RECORD SETUP**> menu, select <**MOTION RECORDING**>.

   ✔ From <**OPERATION MODE**>, you must set <**RECORDING CONFIGURATION MODE**> to <**MANUAL CONFIGURATION**> before you can set the <**MOTION RECORDING**>.

2. Use the [▲▼◄►] buttons on the remote control or use the mouse to select either <**SIZE/FPS/QUALITY**> or <**SCHEDULE**>.

3. Set each item for the motion recording.

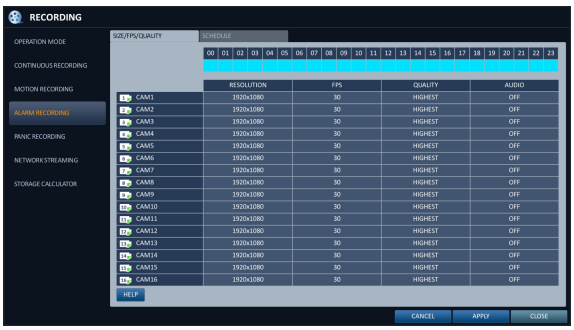
   ✔ For more information, see the "**Continuous Recording**". (page 84)

4. To apply the change, click <**APPLY**> in the bottom of the screen.

5. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## Alarm Recording

Specify the recording size of the alarm event if it occurs and make schedule for that recording.




1. From the <**RECORD SETUP**> menu, select <**ALARM RECORDING**>.

   ✔ From <**OPERATION MODE**>, you must set <**RECORDING CONFIGURATION MODE**> to <**MANUAL CONFIGURATION**> before you can set the <**ALARM RECORDING**>.

2. Use the [▲▼◄►] buttons on the remote control or use the mouse to select either <**SIZE/FPS/QUALITY**> or <**SCHEDULE**>.

3. Set each item for the alarm recording.

   ✔ For more information, see the "**Continuous Recording**". (page 84)

4. To apply the change, click <**APPLY**> in the bottom of the screen.

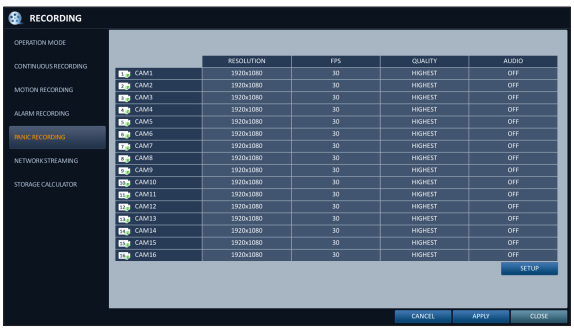
5. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

## Panic Recording

In panic recording mode, you can specify the recording size and quality of the video.

1. From the <**RECORD SETUP**> menu, select <**PANIC RECORDING**>.
2. Set each item of <**RESOLUTION**>, <**FPS**>, <**QUALITY**> and use of the <**AUDIO**> for the panic recording.

   ✔ For more information, see the "**Continuous Recording**". (page 84)
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.




## Network Streaming

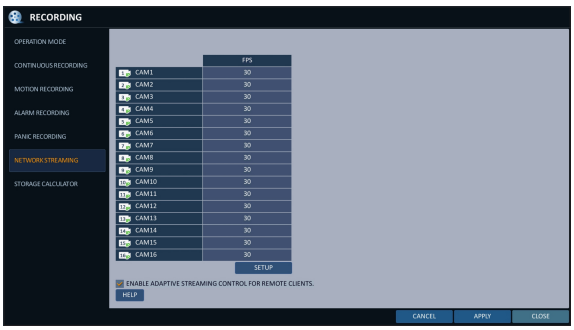
You can specify the maximum size of network streaming for remote users and set the FPS.

✔ Even if you set the resolution and FPS to high for the network streaming, the NVR will reduce the size or FPS according to the network status (speed) before transferring the recording video.

1. From the <**RECORD SETUP**> menu, select <**NETWORK STREAMING**>.
2. Use the [▲▼◄►/**ENTER**] buttons on the remote control or use the mouse to select an item that you want to edit.
3. Set the <**FPS**> for each channel.

   › ENABLE ADAPTIVE STREAMING CONTROL FOR REMOTE CLIENTS. : Optimizes the transfer rate for client PC and mobile accesses, in case the network connection (through the Internet) is low speed. (Default : Selected / Enabled)

   ✔ Frame rate of recorded video playback may drop to 15 fps for recordings of 5 or more split screens.
4. When done, click <**OK**>.
5. To apply the change, click <**APPLY**> in the bottom of the screen.
6. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.



# Record Setting

## Storage Calclulator

You can calculate and estimate the available recording time based on the installed HDD capacity and designated recording method.

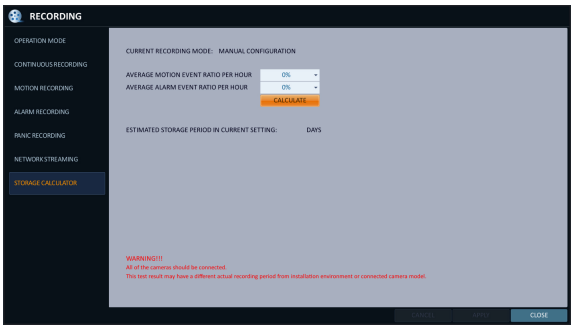
1. From the <**RECORD SETUP**> menu, select <**STORAGE CALCULATOR**>.

2. Current saving mode is displayed according to the settings in OPRERATION MODE.

   › AVERAGE MOTION EVENT RATIO PER HOUR : Set a value for average motion event ratio per hour between 0~100%.

   › AVERAGE ALARM EVENT RATIO PER HOUR : Set a value for average alarm event ratio per hour between 0~100%.

3. Click the <**CALCULATE**> to calculate the estimated time period that you can record based on current settings.




All of the camras should be connected.
This test result may have a different actual recordig period from installation environment or connected camera model.

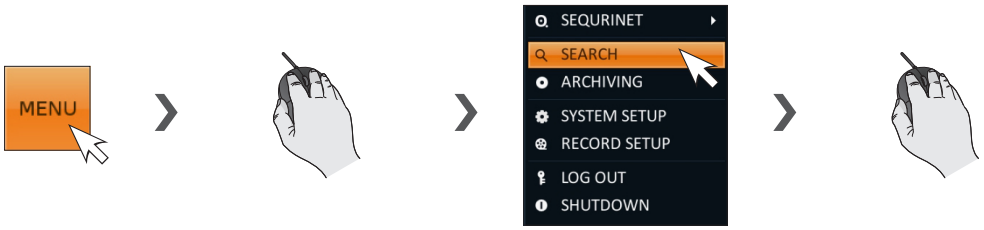
# Search

You can search for the recording data in the HDD by the criteria of time, thumbnail, event, text-in, etc.

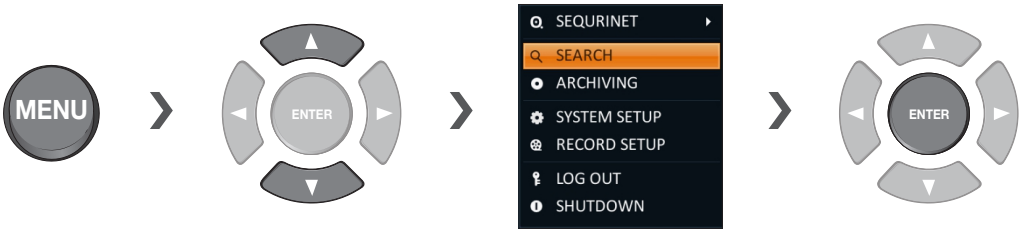


## To move to the Search menu while in monitoring

### How to use the mouse




### How to use the remote control 1

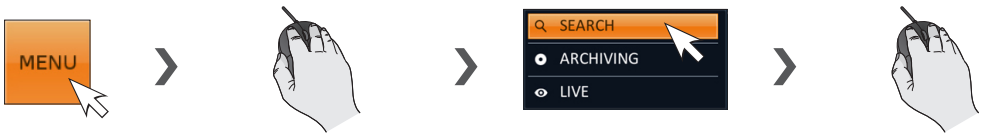



### How to use the remote control 2

SEARCH

## To move to the Search menu while in playback mode

### How to use the mouse




### How to use the remote control

SEARCH

# Search

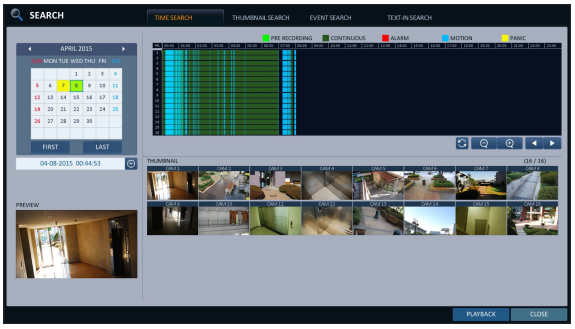
## Search Settings

### Time Search

With the calendar, you can search for the recording data by the recorded date.

1. From the <**SEARCH**> menu, select <**TIME SEARCH**>.

2. Use the [▲▼◄►] buttons or use the mouse to specify the search date and time from the calendar in the left corner of the screen.

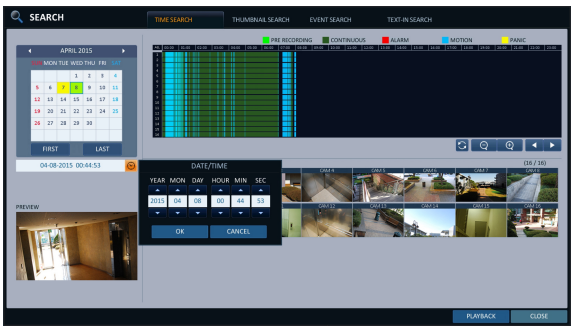



- FIRST : The first date of recording is automatically selected.
- LAST : The last date of recording is automatically selected.
- : Press this to display the time selection menu where you can specify the time and date.

3. You can identify the type of the recording data by the color in the bar.

- Yellow Green (Pre recording) : The pre-recording is performed on the recording data after you set the <**PRE RECORDING TIME**> from <**OPERATION MODE**>.
- Green (Continuous) : The continuous recording is performed on the recording data.
- Red (Alarm) : The alarm event recording is performed on the recording data.
- Blue (Motion) : The motion event recording is performed on the recording data.
- Yellow (Panic) : The panic manual recording is performed on the recording data.

4. Click to move to a desired start time in the time bar, or use the buttons at the bottom of the status bar to make search.




- : Recall the recording data.
- : Expand the timeline of the time bar to a greater unit of time.
- : Collapse the timeline of the time bar to a smaller unit of time.
- : Use this to move to a previous time that is hidden in the time bar as it is expanded to a greater time unit.
- : Use this to move to a next time that is hidden in the time bar as it is expanded to a greater time unit.

5. Click a thumbnail channel or use the [▲▼◄►] buttons on the remote control to move to a desired channel and press [**ENTER**]. You can check the video in <**PREVIEW**>.

Click to move to a desired time, or simply double-click a desired time in the time bar to play the video data on that time.

6. Press the [**ENTER**] button again on the remote control with the mouse, or simply double-click on the channel. You will move to the playback screen.

7. If you want to stop playing and return to the search screen, press [**EXIT**] or [**SEARCH**] on the remote control. You can also click <**MENU**> in the lower left corner and select a desired menu.

## Thumbnail Search

To improve your search, you will be provided with a list of thumbnails.
Select Day, Hour or Minute to narrow down the search results.

1. From the <**SEARCH**> menu, select <**THUMBNAIL SEARCH**>.

2. Use the [▲▼◄►] buttons or use the mouse to specify the search date and time from the calendar in the left corner of the thumbnail search screen.

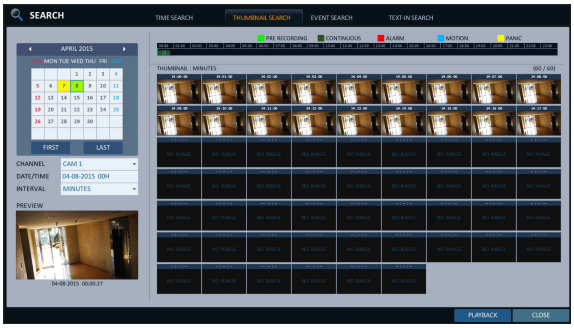
   - FIRST : The first date of recording is automatically selected.
   - LAST : The last date of recording is automatically selected.
   - CHANNEL : Select a channel to search for.
   - DATE/TIME : Specify the search date and time.

   ✔ The menus available differ depending on the selected interval mode.

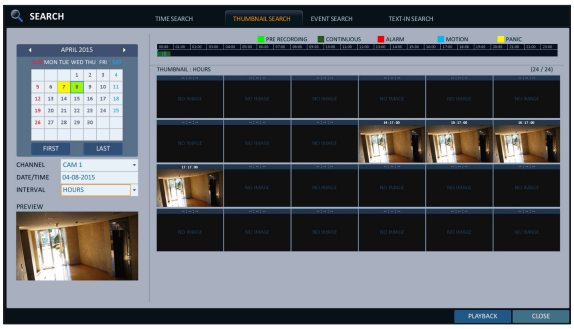
   - INTERVAL: Select a time interval of the thumbnail view.

3. Double-click a desired play time in the recording data bar, or double-click a desired time image from the thumbnail list. You will move to the playback screen.

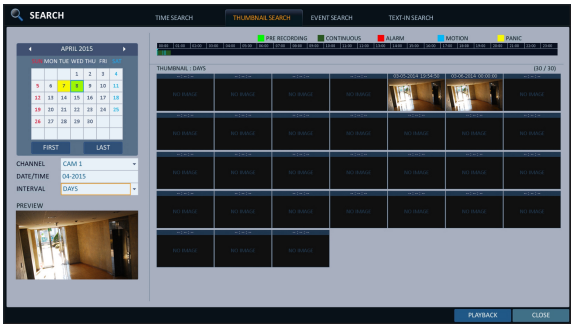
4. If you want to stop playing and return to the search screen, press [**EXIT**] or [**SEARCH**] on the remote control. You can also click <**MENU**> in the lower left corner and select a desired menu.




< "MINUTES" selection screen >




< "HOURS" selection screen >




< "DAYS" selection screen >

# Search

## Event Search

Search for events that occurred at the specified time and select an event to play from the list.

1. From the <**SEARCH**> menu, select <**EVENT SEARCH**>.
2. Use the [▲▼◄►] buttons or use the mouse to specify the <**START**> and <**END**> times in the left of the event search list.
3. Select a channel to search.
4. Mark the checkbox of the event to search from the <**EVENT**> list.
5. Press the <**SEARCH**> button.
   The search results will be listed as shown.

- › TYPE : displays the event type.
- › TIME : displays the recording start time.
- › CONTENTS : shows the details of the event found.
- › ORDER BY : If you select <**OLDEST**>, the list will be sorted with the earliest one on top.

6. Double-click a desired event or click <**PLAYBACK**> in the lower right corner to move to the play screen.
7. If you want to stop playing and return to the search screen, press [**EXIT**] or [**SEARCH**] on the remote control.
   You can also click <**MENU**> in the lower left corner and select a desired menu.

## Text-in Search

You can search for the text generated at a predefined time and select the text from the list to playback.

1. From the <**SEARCH**> menu, select <**TEXT-IN SEARCH**>.
2. Use the [▲▼◄►] buttons or use the mouse to specify the <**FROM**> and <**TO**> times in the left of the event search list.
3. Select the check box(es) for the channel(s) to search.
4. Enter the keyword in <**ITEM KEYWORD**> to search for.
   - › MATCH CASE : Perform a case-sensitive search for the keyword entered.
   - › MATCH WHOLE WORD ONLY : Perform an exact word search for the keyword entered.
5. Press the <**SEARCH**> button.
   The searched keywords are displayed in the list.
   - › TIME : Recording Start Time is displayed.
   - › CHANNEL : Selected channel is displayed.
   - › ITEM : Detail keywords are displayed.
   - › ODER BY : Select the <**LATEST**> to display the keywords in sequence from the beginning in the list.
6. Double-click a desired event or click <**PLAYBACK**> in the lower right corner to move to the play screen.
7. If you want to stop playing and return to the search screen, press [**EXIT**] or [**SEARCH**] on the remote control.
   You can also click <**MENU**> in the lower left corner and select a desired menu.

# Playback

## If you want to play

1. To play the searched data
   You can search for and play a searched data.

2. To play with the live viewer

   - Simply double-click a desired time point in the right corner of the play screen.

   ✔ If you move the cursor to the rightmost, the "Timeline" bar will be displayed.

   - Select a desired channel in the live screen and right-click to select <**Playback**> in the context menu. Then, select a desire play time.

## Playback screen configuration

### Video Window

Display the current video.

### Timeline

Display the type of recording data.
The vertical bar in the timeline indicates the current point of playback. Double-click a desired point in the timeline to start playing the video from that point.
Once you drag to specify an area, you can perform the backup or event search for that area.

### Menu/split-screen selection menu

For more information about how to use each button, refer to "**Using the status bar in the live mode**". (page 28)

### Play Bar

You can start playing, stop playing or change the play speed of the current video.

## Playback channel selection menu

| Item | Description |
|---|---|
| CAM1 | Display the title of the selected channel. |
| ZOOM | Zoom the video of the selected channel. (The zooming function is active only in '1' split screen.) |
| START BOOKMARK | The "**BOOKMARK SETUP**" popup appears, and you can bookmark a play point for the backup purpose. |
| SNAPSHOT | Capture the current live video and save it in the .jpeg format. |
| CAM CHANGE | You can assign the selected screen to another channel. |

## Using the play bar

| Item | | Description |
|---|---|---|
| Jump | | Move forward or backward. |
| Reverse Fast Play | | The video will be reversely played at the speed of x64 > 32> 16 > 8 > 4 > 2 in this order. |
| Reverse Play | | Play the video in the reverse direction. |
| Pause | | Stop playing forward or playback temporarily. |
| Play | | Play the video forward. |
| Fast Forward | | The video will be played forward at the speed of x2 < 4 < 8 < 16 < 32 < 64 in this order. |
| Zoom In | | Move to the zoom in/out screen of the selected channel. |
| Snapshot | | Capture the current live video and save it in the .jpeg format.<br>Then, you can save the captured video in the HDD or export it to an external USB memory device.<br>While you perform the snapshot, the current video will be stopped playing. |
| Start/end bookmark | | Add a bookmark for the current playback screen.<br>Press this to display the "**BOOKMARK SETUP**" window. Provide each entry and click Start. The arrow in the bookmark button blinks to indicates that the bookmarking is in process. If you press the Bookmark button again, the bookmarking stops and the current settings will be reserved.<br>Then, the reserved data can be backed up in Archive menu or can be played in the "**RESERVED DATA MANAGEMENT**" menu. |

# Playback

## Bookmarking

During playback, you can add a bookmark for reserving the video data.
You can view the bookmarked data in the Archive menu, which can be saved to a connected device for the backup purpose.

1. Provide a tag in the <**TAG**> item for data reservation.
2. Provide the details of the reserved data in the <**MEMO**> input box.
3. Click <**START**>.
   You will return to the play screen with the backup progress.
4. To stop the bookmarking, click <**BOOKMARK(** )>.
5. To quit the bookmarking, click <**STOP**>.
   To continue with bookmarking, just click <**CONTINUE**>.
6. Click <**RESERVE**>.
   You can export the reserved data to a connected storage device using the <**ARCHIVING**> menu.

✔ What is the <**RESERVE**> function?
With the <**RESERVE**> function, you can reserve data even in overwrite mode.
This is useful if you want to backup data but you have no backup device available such as USB memory.
If you use "Reserve", the recording days will be compromised.
When you have backed up the reserved data to an external device, it is recommended to delete the internal reserved data.

## To start the Archive menu

### Using the Archive menu during playback

1. During the playback, click <**NEW ARCHIVE(** )>.
2. The "**ARCHIVING SETUP**" window appears where you can reserve the data.
3. Click <**MENU(** )> in the lower left corner and select the <**ARCHIVING**> menu.
4. Press the [**ARCHIVE**] button on the remote control.

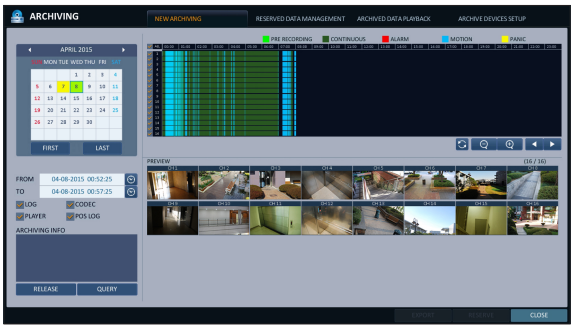
### Using the Archive menu during monitoring

1. Click <**MENU(** )> in the lower left corner and select the <**ARCHIVING**> menu.
2. Press the [**ARCHIVE**] button on the remote control.

## Archive

You can archive the searched data or reserve it.

1. From the <**ARCHIVING**> menu, select <**NEW ARCHIVING**>.
2. Select a date for the archive from the calendar in the left.

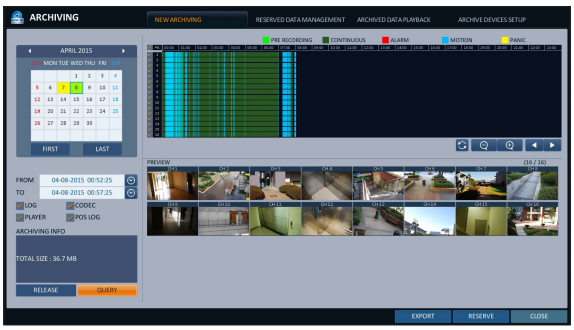



   ✔ The date containing recording data will be marked in a colored box.
   - FIRST : The first date of recording is automatically selected.
   - LAST : The last date of recording is automatically selected.

3. Check the <**FROM**> and <**TO**> times.

   ✔ Drag the timeline to specify the start and end time.

4. Mark the <**LOG**>, <**CODEC**>, <**PLAYER**> and <**POS LOG**> checkboxes and select to include the archiving.
5. Click <**QUERY**>.
   The results will be listed in <**ARCHIVING INFO**>.




   ✔ The maximum backup capacity for one time is 20GB.

   ✔ If the archiving request exceeds 20GB, the end time will be adjusted to within 20GB.

6. If you want to import to a storage device, connect it to the NVR and click <**EXPORT**>.
7. If you just want to reserve the data, click <**RESERVE**>.
   If the <**TAG NAME**> dialog appears, enter the name and click <**OK**>.
   Click <**RESERVE**> to save it to the HDD.

   ✔ Using <**RESERVE**> will compromise the recording days available. When you have archived the reserved data to an external device, it is recommended to delete the internal reserved data.

8. To exit the Archive menu, click <**CLOSE**>.

# Archiving

## Reserved data management

You can search for the reserved data and delete or import it to a storage device.

1. From the <**ARCHIVING**> menu, select <**RESERVED DATA MANAGEMENT**>.
   The reserved data will be listed.
2. Select a data type from <**AVI**> and <**SNAPSHOT**>.
   - AVI : Searches AVI video fi les stored in the NVR.
   - SNAPSHOT : Searches captured snapshots stored in the NVR.
3. If you want to play the data, double-click a desired data item or click it and select <**PLAYBACK**>.
4. If you want to import to a storage device, connect it to the NVR and click <**EXPORT**>.
5. If you want to delete the reserved data, click < ✕ > next to the list. Click <**RELEASE ALL**> to cancel reserving the whole page at once.
6. To exit the Archive menu, click <**CLOSE**>.

## Playing the archived data

You can search the storage device for the archived data and check the details of or play it.

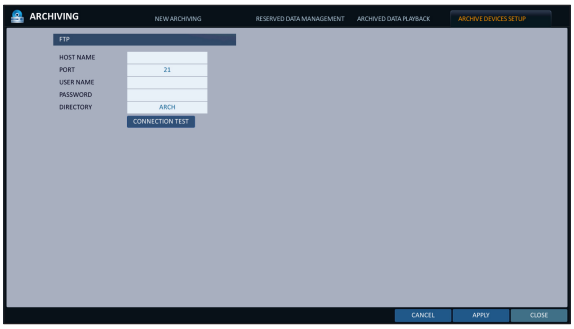
1. Connect the storage device containing the archived data.
2. When the storage device is recognized, click <**SEARCH**>.

3. To view the details, click < 🗎 > next to the list.
   - ✔ Click <**VERIFY INTEGRITY**> to check if the data is corrupt or incomplete.
4. Select an item to play from the lost and click <**PLAYBACK**>.
5. To exit the Archive menu, click <**CLOSE**>.

## Archive Devices Setup

Provide the FTP server information for archiving data in the HDD before testing the transfer.

1. From the <**ARCHIVING**> menu, select <**ARCHIVE DEVICES SETUP**>.




2. Move to the FTP information box.
3. Fill in each item using a virtual keyboard.
   - HOST NAME : enter the address at which you can access the server.
   - PORT : enter the port number to which you can access the server.
   - USER NAME : enter the user ID with which you can access the server.
   - PASSWORD : enter the connection password.
   - DIRECTORY : specify the archiving path.
4. When all information is filled, click <**CONNECTION TEST**> to check the connection status.
5. To apply the change, click <**APPLY**> in the bottom of the screen.
6. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen to return to the previous menu.

# Web Viewer

## What is the Web Viewer?

The Web Viewer is an application software program for a PC (for web browser) that provides user-friendly interface for easier access and use over the network, to access NVR remotely, view or search live / recorded videos and control NVR.

### System Requirements

The following is the minimum hardware and operating system requirements to run Web RA.

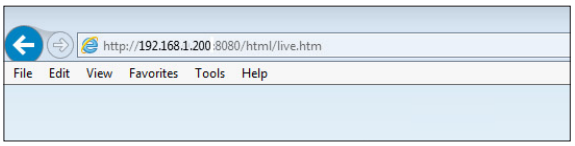
| | |
|---|---|
| Operating System | Windows XP Professional<br>Windows Vista Home Baisc / Premium<br>Window 7 |
| Web browsers | Internet Explorer 7.0 or later/Mozilla Firefox 3.6/Google Chrome 4.1/Opera 10<br>Some web browsers other than Internet Explorer may not fully function. |
| CPU | Intel Pentium 2.0 GHz |
| Memory | 512 MB |
| Display | 16-bit 1024 x 768 High Color |
| Hard Disk Drive | 50MB (space required for installing the web viewer)<br>*Additional HDD space is required for saving your recordings.<br>The file size of your recording may differ depending on the specified quality. |

### Connection

Open a browser and enter the IP address of NVR, or type the URL in the address bar.

#### To connect to the NVR from inside

- Check the "**Network Status**" and verify the <**IP ADDRESS**> and <**WEB SERVICE PORT**> of the NVR. (page 57)
- Enter the IP address and web service port in the address bar of the browser.
  Ex) http://192.168.1.200:8080




#### To connect to the NVR from outside

- **Using the IP address**

- Check the "**Network Status**" and verify the <**EXTERNAL IP ADDRESS**> and <**WEB SERVICE PORT**> of the NVR. (page 57)
- If using a fixed (external) IP, enter the external IP that is specified in the NVR in the address bar of the web browser.
  Ex) If the internal IP address is set to "http://222.112.4.48:8080" (192.xxx.xxx.xxx), no access from outside is allowed.

- **Using the URL**

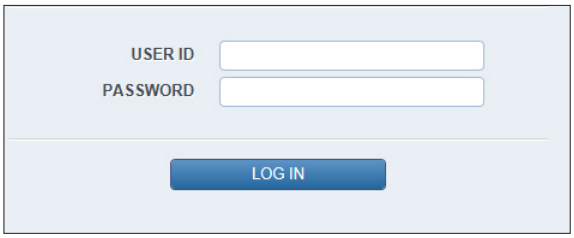
- Check the "**Network Status**" and verify the <**DDNS ADDRESS**> and <**WEB SERVICE PORT**> of the NVR. (page 57)
- Enter the DDNS address and web service port in the address bar of the browser.
  Ex) http://00115f123456.dvrlink.net:8080

✔ In a router network, you have to set the "Port Forwarding" and "DMZ Setting" to allow access from outside.

✔ For the necessary settings of the router, refer to the user manual of the router or contact the manufacturer of the router.

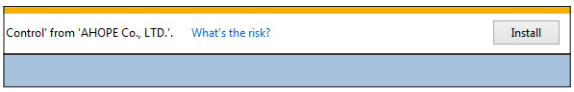
1. Provide the user ID and password.

   ✔ The default User name : ADMIN; the default password is 1234.



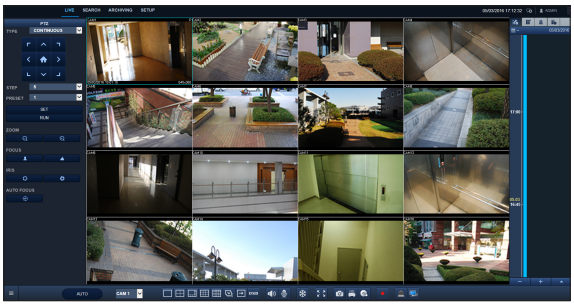

2. Click the upper warning bar to install the ActiveX.

   ✔ If you fail to download the ActiveX control, move to **Tools → Internet Options → Security → Custom Level →** Download unsigned ActiveX control, and change its setting from "**Disable (recommended)**" to "**Enable**", and then click OK.




3. Click <**Install**>.

4. When the installation is complete, you will see the live screen.



# Web Viewer

## Live

### Live Screen At a Glance

✔ For information about how to set the live screen, refer to "**Live Screen At a Glance**". (page 25)

| No. | Item | Description |
|---|---|---|
| ❶ | View selection tab | You can switch to the live, playback, Archiving and setup screen and check the provided information. |
| ❷ | PTZ | You can control PTZ cameras connected to each channel. (Only for PTZ cameras.) |
| ❸ | Video Quality | Select the video quality for live screen among <**AUTO**>, <**HIGH QUALITY**>, and <**LOW QUALITY**>. |
| ❹ | Channel | Select a channel listed in the screen. |
| ❺ | Split Mode | Select and switch to a desired split-screen mode. |
| | Sequence | Set the sequence mode, switch to the next camera or select the display screen mode. |
| ❻ | Voice transmission | With the microphone, your voice will be transmitted to the NVR, or you can turn on or off the output of the voice signal. |

| No. | Item | Description |
|---|---|---|
| ❼ | Freeze | Stop playing the video temporarily. |
| ❽ | Full screen | Select the full screen mode. |
| ❾ | Capture | Capture the selected image. |
| | Print | Print out the current screen. |
| | Save | Save the live video on the screen. |
| ❿ | Panic Record | Start the panic recording. |
| | Alarm Indicator | Turns on if an event occurs. It does not turn on if no reaction to the event is yet defined.<br>Click this to check the information of the event that occurred. |
| | Network Connection Status | Check if network connection is made via an external PC or mobile device.<br>Click this to view the details of the concurrent users and to check the network connection status. |
| ⓫ | Status Bar | Display time bar, log, alarm and network connection status for each channel. |
| ⓬ | Date/Time | Shows the access date/time. |
| | Settings | Set the Web Viewer display. |
| | ID | Display the ID of user connected.<br>You can change the password by clicking the corresponding button. |
| | LOG OUT | Performs logout process. |

## CHANGE PASSWORD

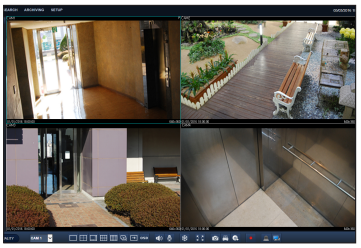
1. Click [ ADMIN ]
2. A pop-up dialog appears to allow you to change password.
3. Enter your old password and new password, then confirm your new one.
4. When done, click <**RENEW PW**> to save your settings.

# Web Viewer

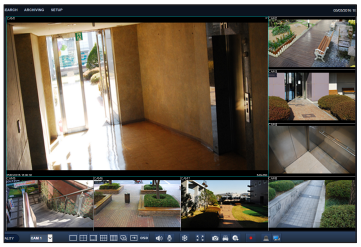
## Switching the split mode

Click the Switch button to switch the mode as follows:

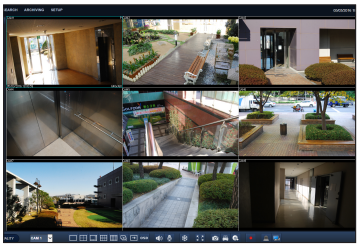
<1-split Mode>



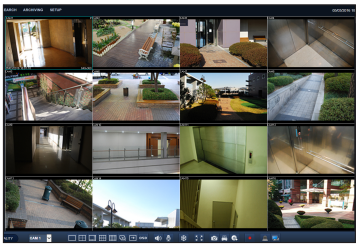
<4-split Mode>



<8-split Mode>



<9-split Mode>



<16-split Mode>

## Print

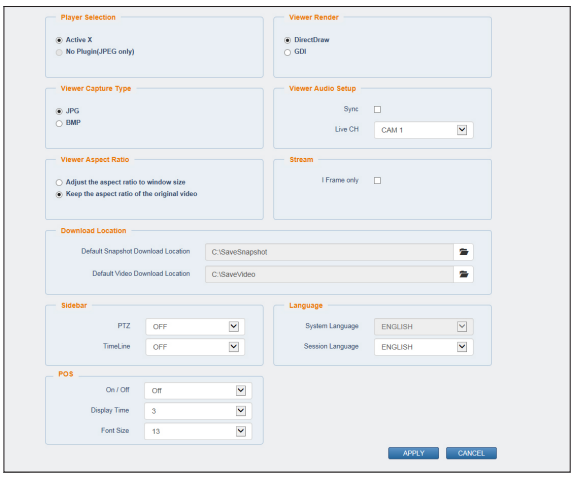
1. Click < >.
2. The current screen will be printed with the printer connected to the PC.

## Screen capture

1. Click < >.
2. The current screen of the selected channel will be saved to the path specified in the PC. (Default path: C:\SaveFolder) Click < > to display the context menu where you can change the saving path.

## ActiveX Settings

1. Click < >.
2. When the setup screen appears, you can change the settings of the Player Selection, Render type, capture type, audio Setup, Aspect ratio, video streaming and Download location, Sidebar, POS setup as well as the Language Selection.
   - ❯ Player Selection : You can select the Web Viewer Player.
   - ❯ Viewer Render : DirectDraw is recommended in order to enable the hardware acceleration.
3. If you want to change the download location, click < > (Save Folder) and specify a new path.
   The Windows Vista user cannot change the saving path.
4. Change the streaming settings according to the PC specification and network environment.
   - ❯ Sync : If this option is set, the audio signal will be synchronized with the video signal.
     However, you may encounter a delay due to buffering for the synchronization.
   - ❯ Live CH : Set the audio signal to use in live monitoring mode.
   - ❯ I Frame Only : Only the I frames (key frames) will be transferred.
   - ❯ Language : Click the Session Language.
5. When done, click <**APPLY**> to save your settings.

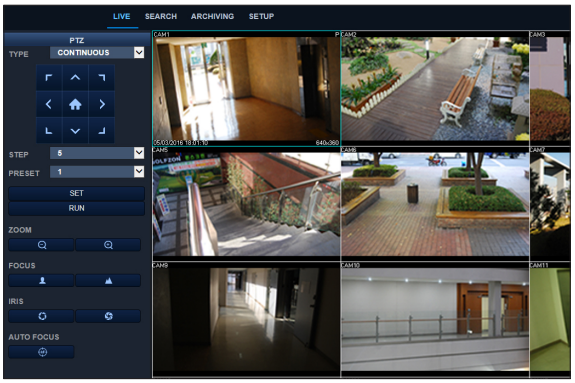


# Web Viewer

## PTZ tab

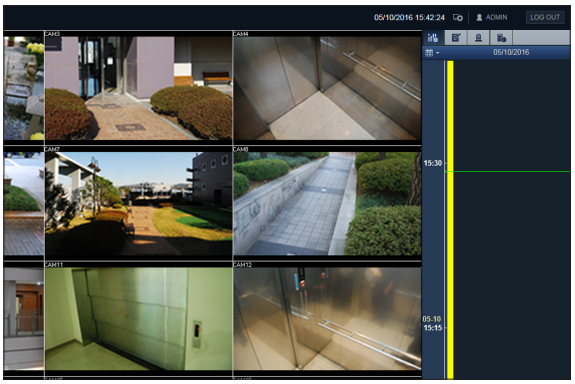
Click [ ] in bottom left area on screen.
Select whether to display the PTZ Settings tab.
You can control the operations of a PTZ camera.
Adjust the focus, zooming and iris of the camera.
You can use the arrow buttons to control the operations of the camera.

› PRESET : Move the camera in a predefined direction.



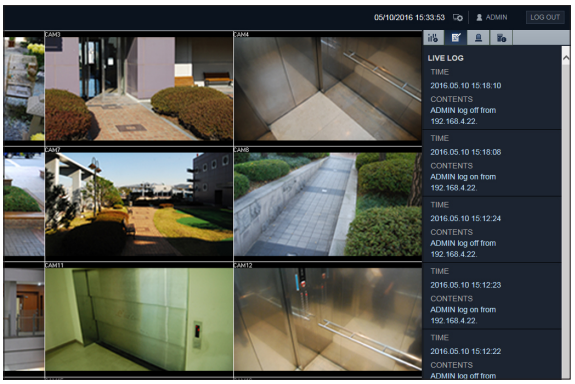

## Timeline tab

Click [ ] at the top of the screen.
Press the [+] button on the remote control or move the cursor to the right of the screen to display the timeline.
Double-click the timeline to move to the video screen. Drag and drop it to make backup or event search for the specified area.



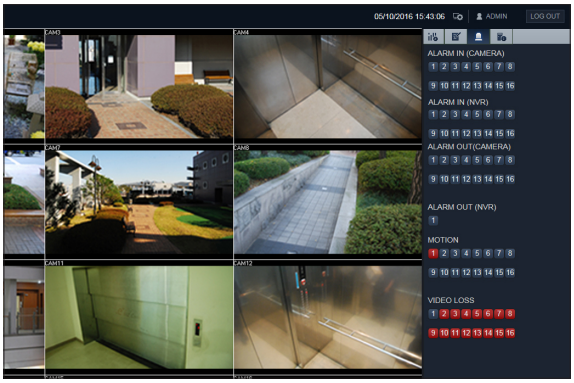

## Log tab

Click <**Log**> at the bottom of the screen.
You can check the log of the connected NVR.



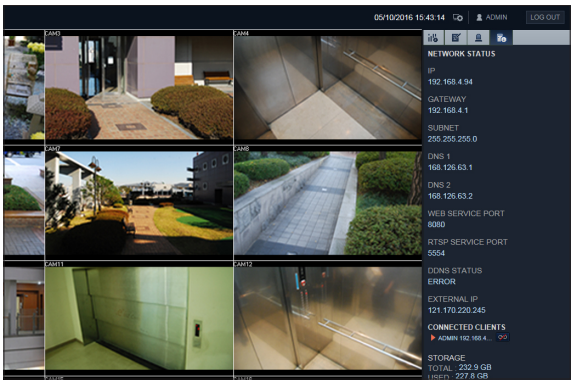
## Alarm IN/OUT tab

You can check the alarm status of each camera.




## NETWORK STATUS tab

You can check the network connection status.



# Web Viewer

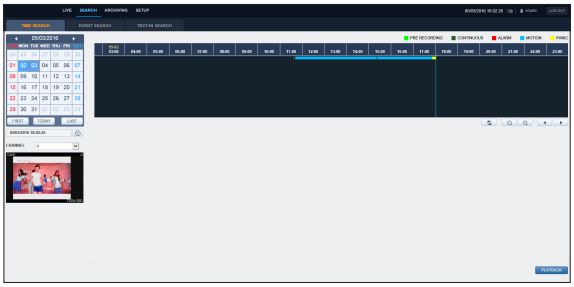
## Search

Click <**SEARCH**> to display the remote control screen for the NVR.

✔ For information about the Search, refer to "**Search Settings**". (page 90)

### Search by time

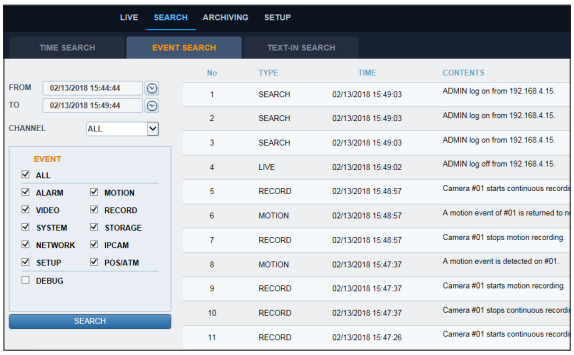
Use the timeline to search for the data recorded in the NVR.



1. Select a date that you want to search.
2. Click < >.
3. Check the existence of recording data in the bottom time line and specify the time range for your search.You can specify the start time by moving the time bar.
4. Click <**PLAYBACK**>.
   - › : If your changes are not applied to the current screen, reload the changes.
   - › PLAYBACK : Play the searched video.

### Search by event

You can sort the recording data items by event to facilitate your search.




1. Mark the checkbox of the event that you want to search for.
2. Specify the start and end dates and times for your log search.
3. Set the display order of the items found.
   - › LATEST : The most recent event will be listed on top.
   - › OLDEST : The earliest event will be listed on top.
4. Click <**SEARCH**>.
   You can check the log for your search at the bottom of the screen.
5. Select a log to play the recording data.

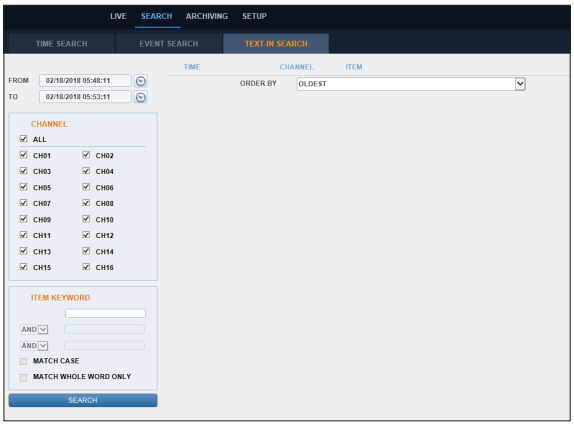
## Text-in Search

You can search for the recorded data in NVR by text.

1. Enter your desired text to search for in ITEM KEYWORD, and then click the check boxes such as MATCH CASE, MATCH WHOLE WORD ONLY, etc.
2. Select the check box(es) of channel(s) to search for.
3. Select your desired Start/End date and time to perform the log search.
4. Specify the displaying order for the searched items.

   ✔ Refer to the "**Search by event**" for displaying order of searched items. (page 108)

5. Press the <**SEARCH**> button.
   You can check the log resulted from the search near the bottom.




6. When selecting the log, you can watch the recorded video for corresponding event.

# Web Viewer

## Archiving

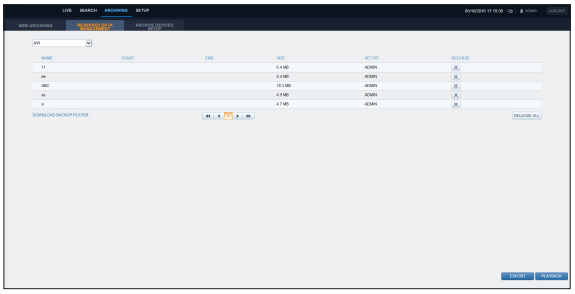
✔ For information about the Archive, refer to "**To start the Archive menu**". (page 97)

### New Archive

You can archive the searched data or reserve it.

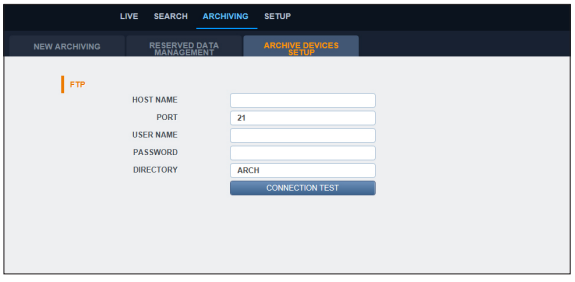
### Reserved data management

You can search for the reserved data and delete or import it to a storage device.



### Archive Devices Setup

Provide the FTP server information for archiving data in the HDD before testing the transfer.



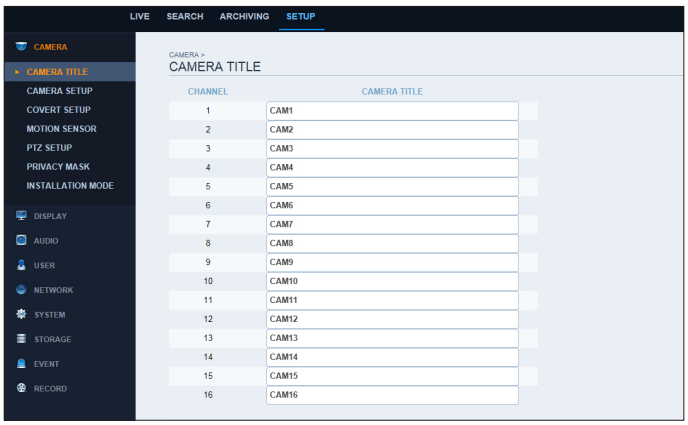
# Setup

Click <**SETUP**> to display the remote control screen for the NVR.
When done, click <**APPLY**> to apply the changes to the remotely connected NVR.

✔ If the NVR is in process of system or record setting, the remote control will be disabled.

❗ If you change the settings remotely at will, the major 'Record Settings' of the NVR may be changed, which is not recommended at all.

## Setup Viewer at a Glance

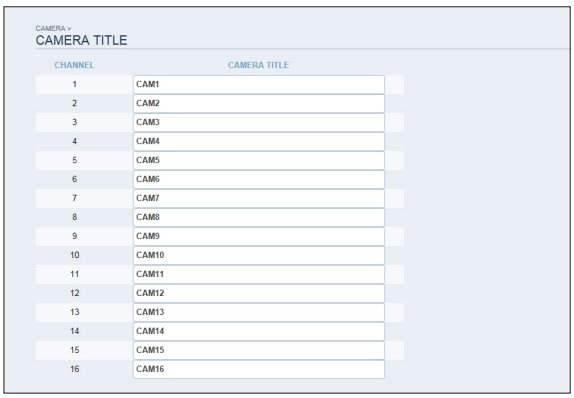



## Camera

### To name the camera title

You can name the camera title that is displayed on each channel screen. Select a channel to name and provide a new title. Then, click <**APPLY**> to apply it.

✔ You can enter up to 9 alphanumeric characters for the camera title.

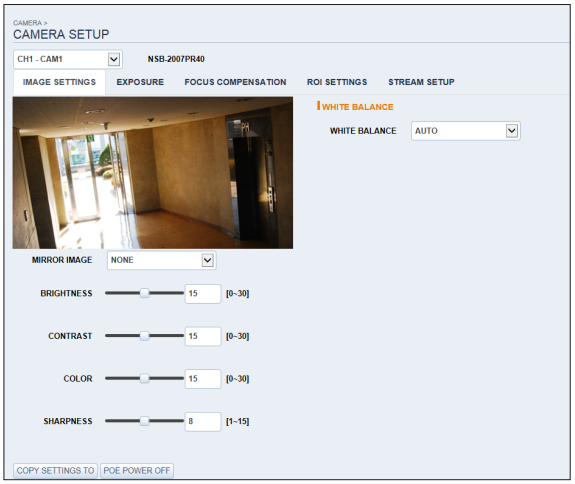


# Web Viewer

## Camera Setting

You can set the image and exposure of each channel.
When done, click <**APPLY**> to apply the changes.

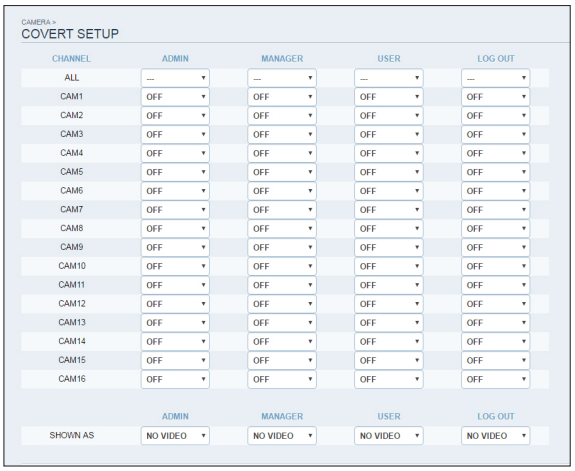
- ✔ The default color value is <**15**>. (Brightness, Contrast, Tint, Color)
- ✔ If you change the default settings, the video from the NVR or the video color may not be displayed properly.
- ✔ To apply the same settings to another channel's camera, click <**COPY SETTINGS TO**> button and set the checkbox.
- ✔ To cut the POE power, press the <**POE POWER OFF**> button.




## Covert Setting

You can set to hide the video of a specific camera from a specific user. Set to hide the camera video so that a specific user or user group can not view. To change the covert settings from user group to user, move to the <**USER**> menu and make necessary changes.
When done, click <**APPLY**> to apply the changes.

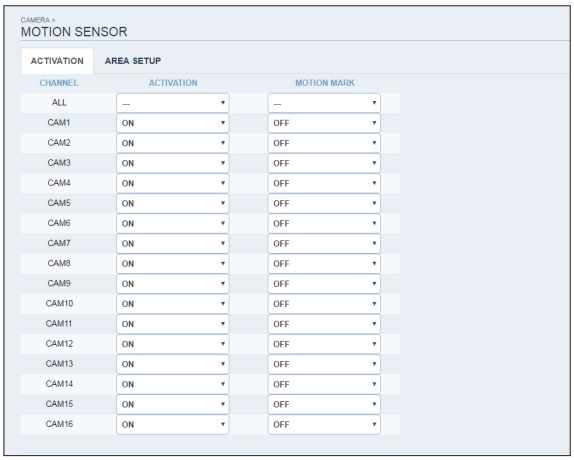
- › SHOW AS : Sets how to display video of the <**COVERT CHANNEL**> channel.
  - NO VIDEO : Appears to have no video for the channel.
  - COVERT : Shows nothing for the Live screen only.

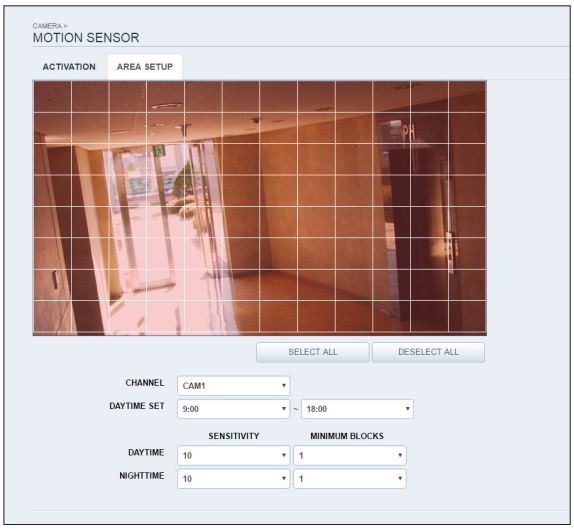


## Motion Setting

Specify the use of motion detection and reaction for each channel and set also the daytime/nighttime options.
Select a channel. Set the mask area and activation and specify the daytime range.
When done, click <**APPLY**> to apply the changes.

✔ For information about how to set the motion area, refer to "**Motion Area Setup**". (page 41)



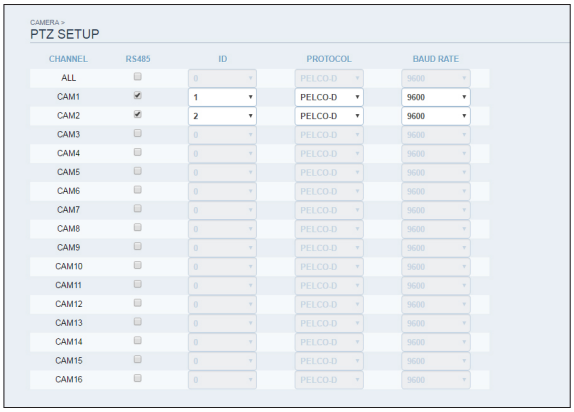



# Web Viewer

## PTZ Setting

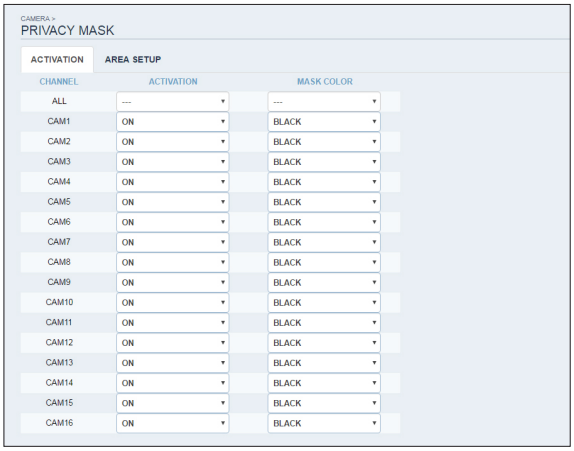
You can set the camera ID, protocol, baud rate and data transmission speed for each channel.

✔ For information about how to set the PTZ, refer to "**PTZ Settings**". (page 42)



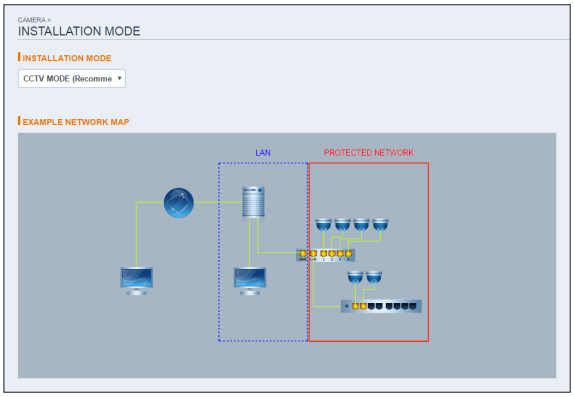

## Privacy Mask

You can enable a camera channel's privacy masking area and its mask color.




## INSTALLATION MODE

The network accessibility to the camera is defined by the camera's operation mode.

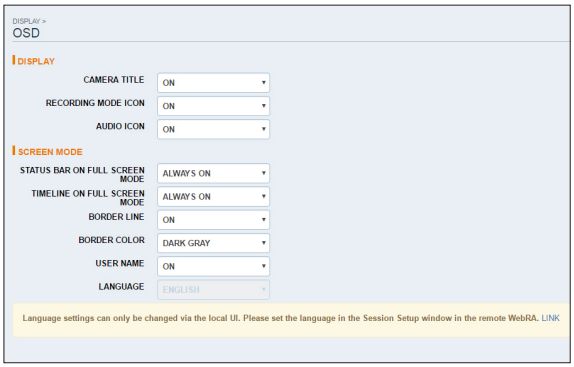


# Display

## OSD Setting

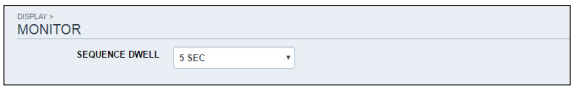
Configure the settings for the time, title, boundary, icon and language that will be displayed on the screen.
Make changes to each item of the OSD menu and click <**APPLY**> to apply the changes.

✔ For details about each displayed item, refer to "**OSD**". (page 45)




## Monitor Settings

You can set the interval of an active sequence.
Specify the interval and click <**APPLY**> to apply it.

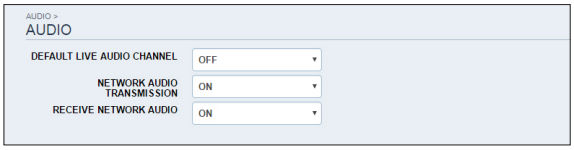


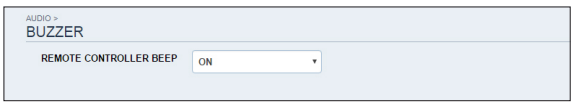

# Audio

## Audio/Buzzer

You can configure the settings of the voice and audio signal.

✔ For details about each displayed item, refer to "**Audio Setup**". (page 52)



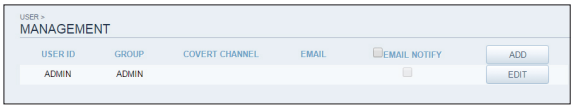



## User

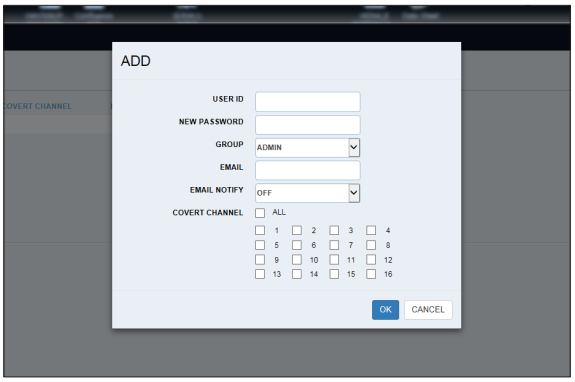
### User Management

You can add a user account and change the password.

✔ For details about each displayed item, refer to "**User Setting**". (page 53)




To add a user, click <**ADD**> and provide the user information.
If you want to delete the user click <**DELETE**> next to it.
When done, click <**APPLY**> to apply the change.




### Group Permission Setting

You can grant different user groups different permissions to a specific menu.
Mark the checkboxes of the menu items accessible by the user group.
When done, click <**APPLY**> to apply the changes.

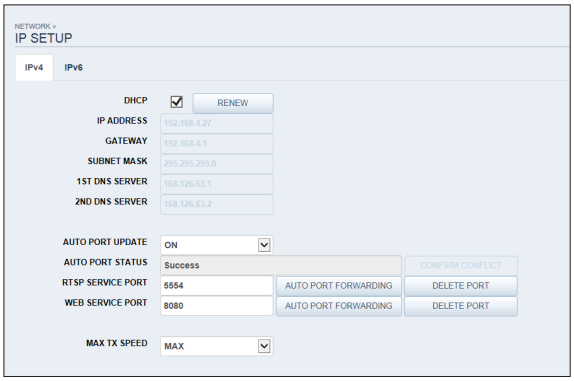
✔ For more information about the accessible menu items, refer to "**Group Authority**". (page 54)

# Network

## IP Setting

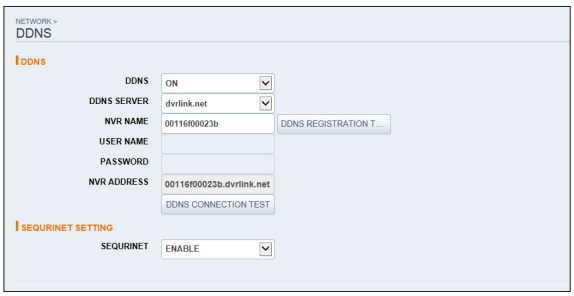
You can check the network connection status and change the baud rate.
Change the maximum transfer rate and click <**APPLY**> to apply it.

✔ For more information about each network entry, refer to "**IP Setup**". (page 55)




## DDNS Setting

You can configure the DDNS settings so that remote users who are connected to the network can access remotely.
Change the DDNS settings and click <**APPLY**> to apply the changes.

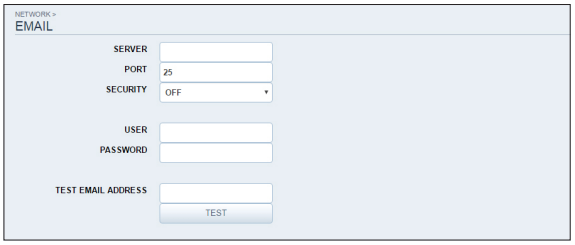


# Web Viewer

## Email Setting

You can register and test an email address so that an email notification is delivered at a specific interval or if an event occurs.
Provide the necessary information and click <**APPLY**> to apply it.

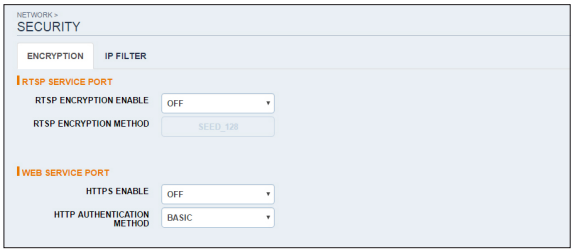
✔ For more information, refer to "**Email**". (page 57)

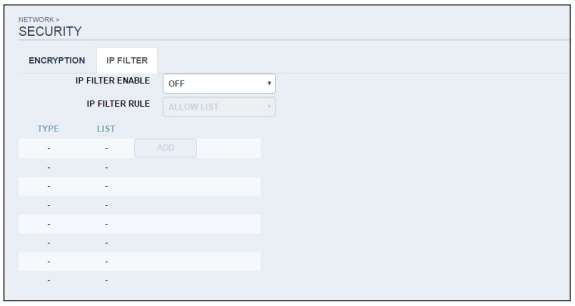



## Security Setting

For security purpose, you can set whether to use encryption and its method, and configure IP filtering.
Change the system network settings and click <**APPLY** > to apply the changes.

✔ For more information, refer to "**Security**". (page 59)

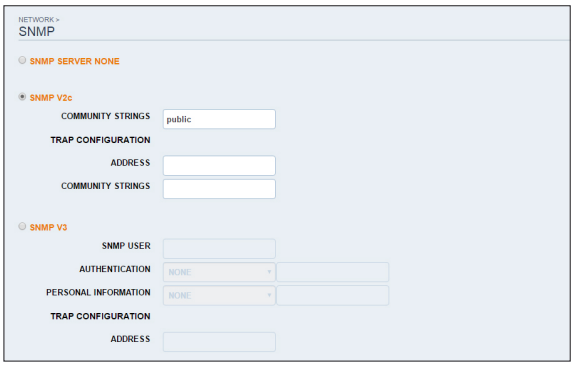



## SNMP

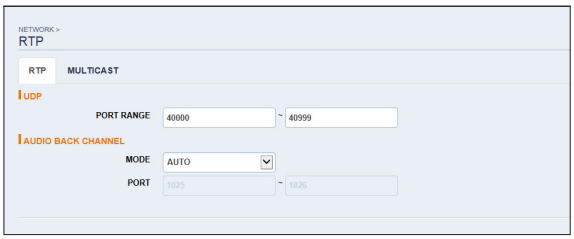
System or network administrator can monitor the network equipments, configure the environments, operate any other related tasks, etc. through the SNMP protocol in remote place.

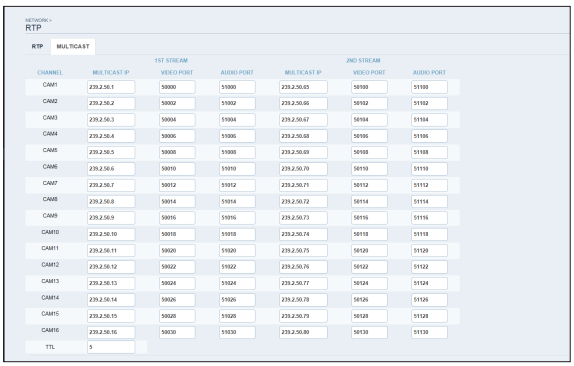
✔ V For more information, refer to "**SNMP**". (page 60)



## RTP

For more information, refer to "**RTP**". (page 61)



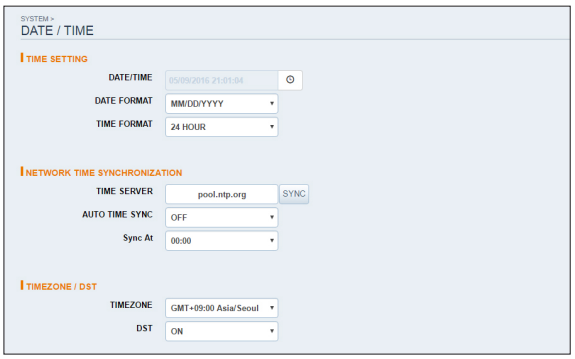



## System

### Date/Time Setting

Specify the current date and time.
When done, click <**APPLY**> to apply the changes.

✔ For more information about each of the time and date settings, refer to "**Date/Time**". (page 62)

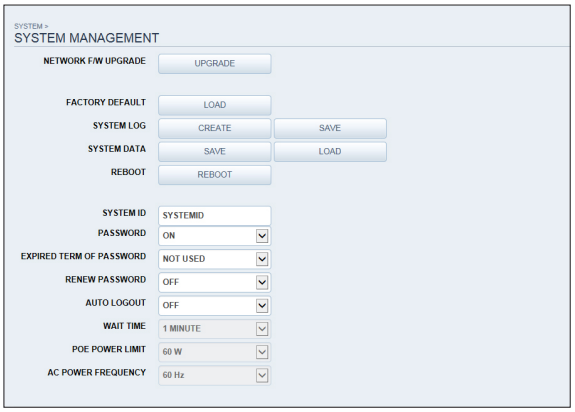



### System Management

You can configure the access settings of: log in, log out, and auto logout.

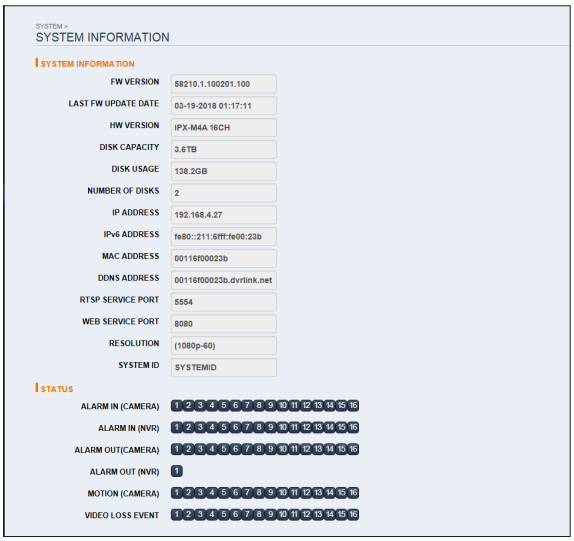
- Network F/W upgrade : Checks for the latest firmware available on the network with the given URL and update it.
  To apply a new firmware, click <**FW UPGRADE**> and provide the firmware URL.
- FACTORY DEFAULT : Return the NVR settings to the factory default.
- SYSTEM DATA : Save the system settings or get the system information from other device.
- REBOOT SYSTEM : You can reboot the NVR main body remotely.

✔ This function is available only when the NVR main body is displayed in LIVE screen.



## System Information

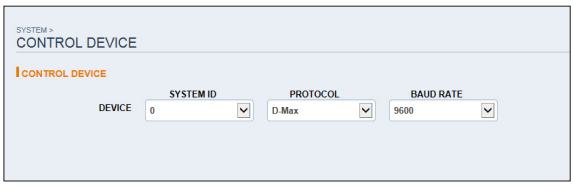
You can check information of system firmware version, disk space, and network settings, as well as the status information of network connection and alarm I/O.




## Control Device Setting

Set the connection of both the remote control and the keyboard control.
Change the communication settings and click <**APPLY**> to apply the changes.

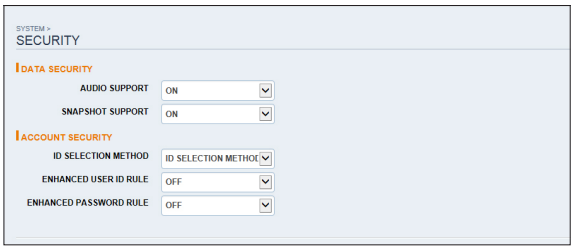
✔ For more information about each communication item, refer to "**Control Device**". (page 67)




## Security Setting

For security, you can set to apply reinforced password policy (to system, search/backup) and control accessing audio and snapshot.
Change the system security settings and click <**APPLY** > to apply the changes.

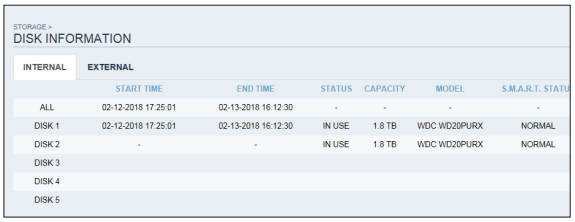
✔ For more information, refer to "**Security**". (page 69)



## Storage

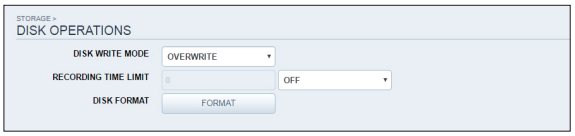
### Device Information

You can check a list of internal/external storage devices connected to the NVR as well as the recording time information of each device.




### Checking the disk operation

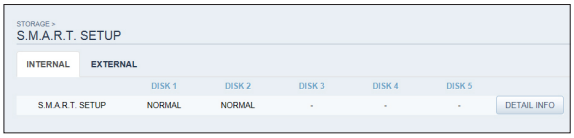
You can set the overwrite mode and recording period of a storage device, or format the disk.



### S.M.A.R.T Status

You can check the S.M.A.R.T status for each of the internal and external devices.

✔ What is S.M.A.R.T?
This is a sort of HDD self-diagnosis tool that detects any error on the system and alerts the user if an error occurs.

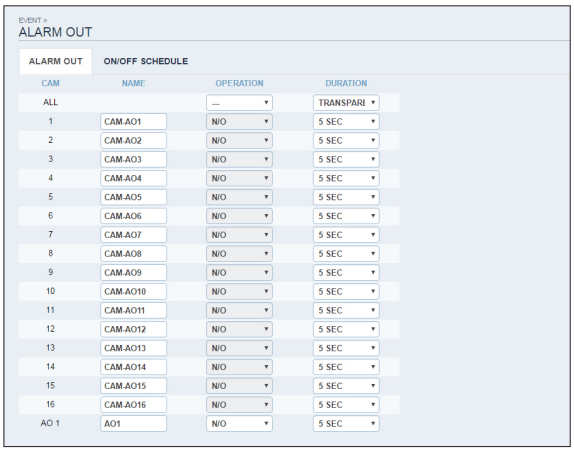


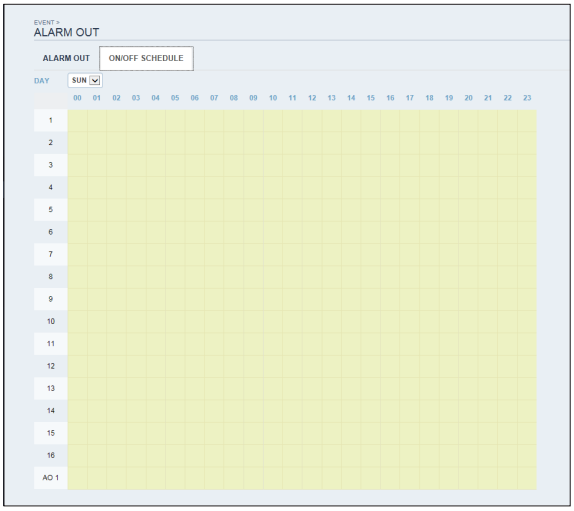

## Event

### Alarm Out

Specify the alarm output conditions with the work schedule. When done, click <**APPLY**> to apply the changes.

✔ For more information about the alarm output and ON/OFF schedule, refer to "**Alarm Out**". (page 73)

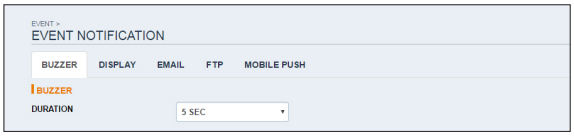


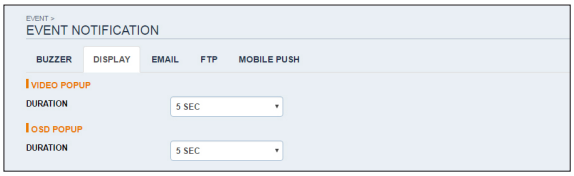



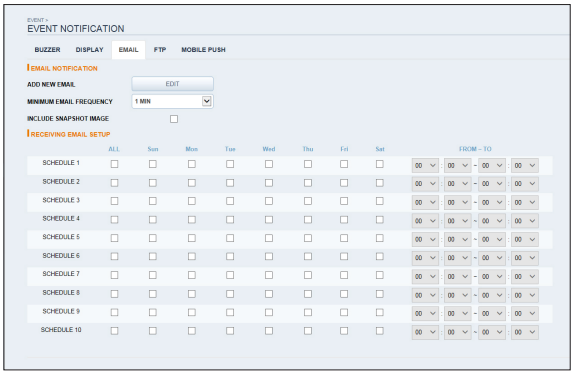
## Event Notification

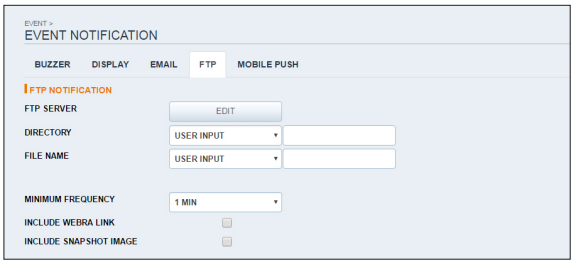
You can set desired event actions triggered by an event, such as <**BUZZER OUT**>, <**DISPLAY**>, <**EMAIL**>, <**FTP**> and <**MOBILE PUSH**> notifications.
Set the dwell time for buzzer or pop-up display, or set the email or FTP destination settings and then click <**APPLY**> to save your changes.

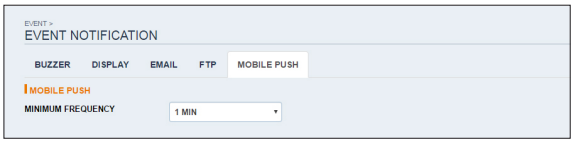
✔ For more information about the event notification, refer to "**Event Notification**". (page 74)



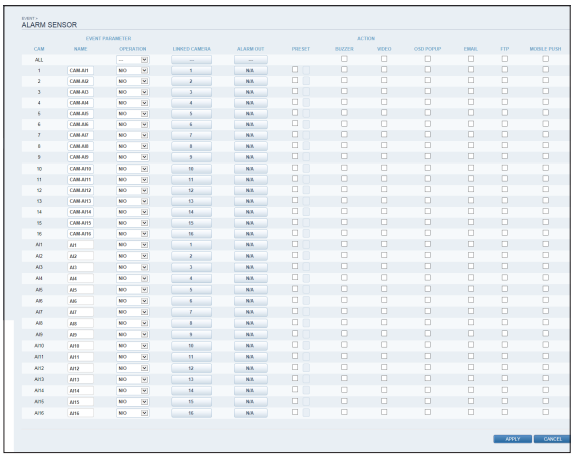



## Alarm Sensor

You can configure the settings of the alarm sensor and specify the operation of the sensor if an event occurs.
When done, click <**APPLY**> to apply the changes.

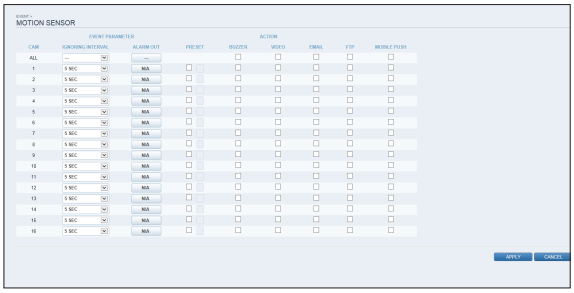
✔ For more information about each of the alarm sensor actions, refer to "**Alarm Sensor**". (page 77)




## Motion Sensor

You can set an action to execute when a motion is detected.
When done, click <**APPLY**> to apply the changes.

✔ For more information about how to set the motion sensor, refer to "**Motion Sensor**". (page 78)

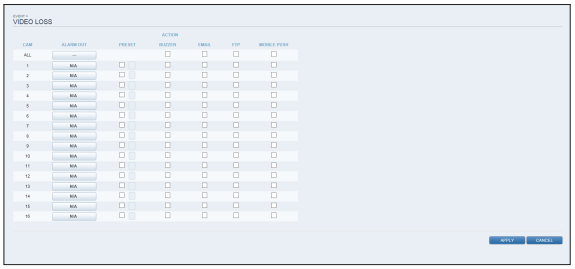


# Web Viewer

## Video Loss

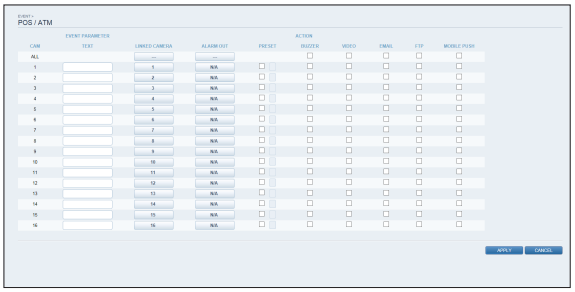
You can set to trigger alarm output or other actions when there is no video transfer from a camera.
When done, click <**APPLY**> to apply the changes.

✔ For more information about how to set the video loss, refer to "**Video Loss**". (page 79)



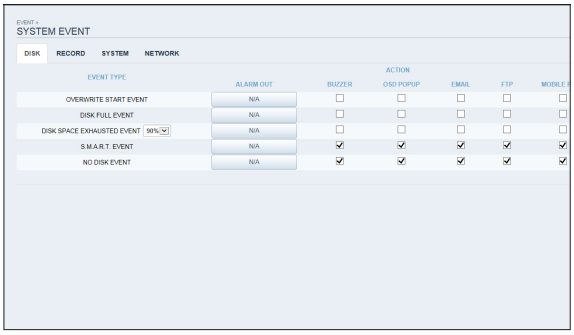

## POS / ATM

You can check the configuration of the POS/ATM device connected to NVR.
When done, click <**APPLY**> to apply the changes.



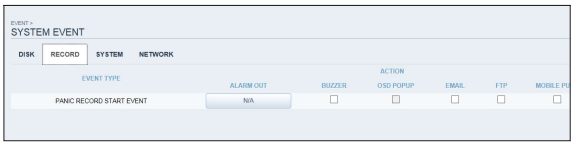
## System Event

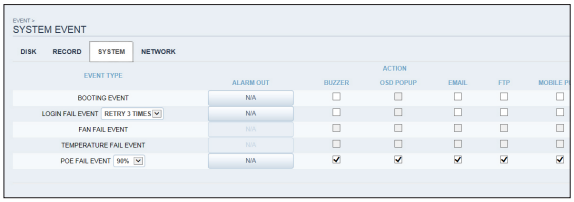
You can set event actions for disk, recording, network and system events. As same to setting event actions for normal events, you can set to trigger alarm output, buzzer, display on-screen pop-up, or send event notification via email and FTP.

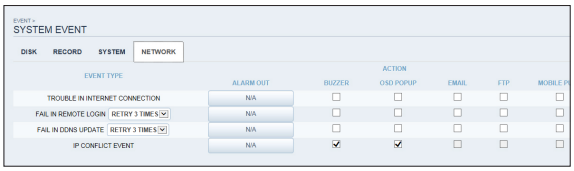



When done, click <**APPLY**> to apply the changes.

✔ For more information about how to set the system event, refer to "**System Event**". (page 80)



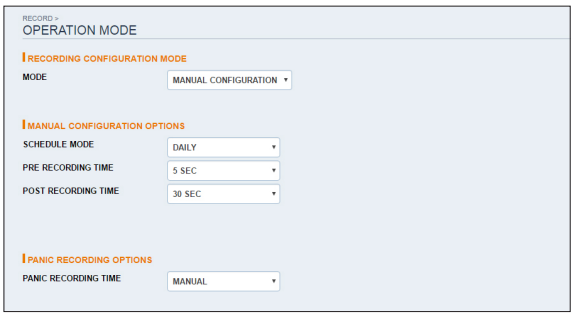



## Record Setup

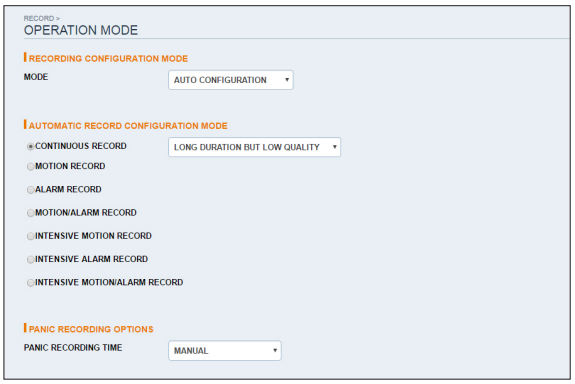
### Record Setting

You can set the recording options for Auto or Manual mode.



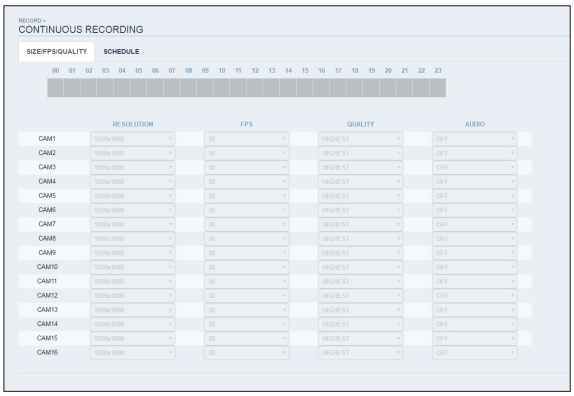

When done, click <**APPLY**> to apply the changes.

✔ For more information about how to set each mode, refer to "**Operation Mode**". (page 83)



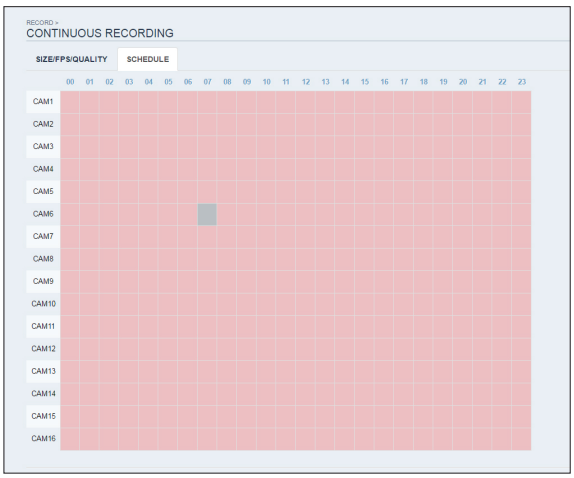
## Continuous Recording

You can configure the settings of: continuous recording time, recording size, frame rate per second and quality.
Click < ▼ > next to each item to display the list of values available.



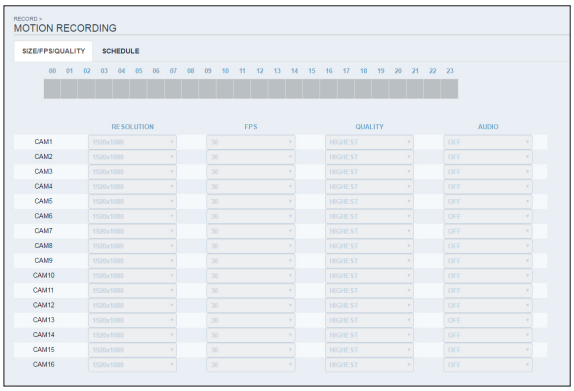

When you complete the recording size and schedule settings, click <**APPLY**> to apply your settings.

✔ For more information about the continuous recording size and schedule, refer to "**Continuous Recording**". (page 84)



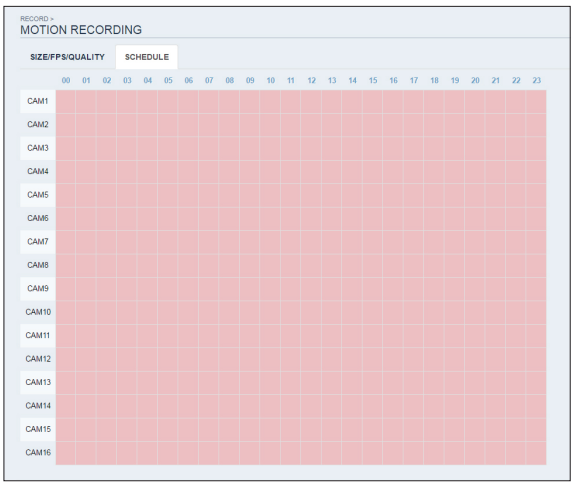
## Motion Recording

Set the <**SIZE/FPS/QUALITY/AUDIO**> and the <**SCHEDULE**> to apply if a motion event occurs.
Click < ▾ > next to each item to display the list of values available.



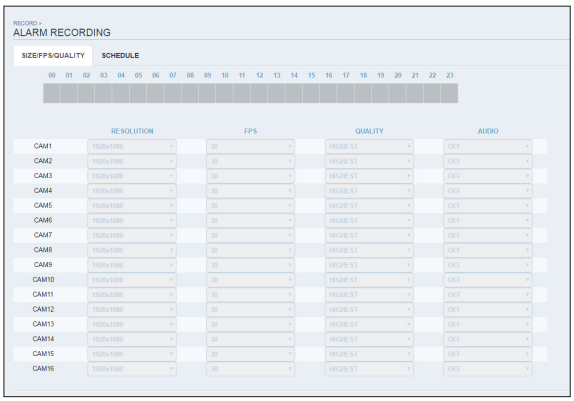

Complete setting the <**SIZE/FPS/QUALITY/AUDIO**> for the motion recording as well as the <**SCHEDULE**>, and click <**APPLY**> to apply the changes.

✔ For more information about the motion recording size and schedule, refer to "**Motion Recording**". (page 86)



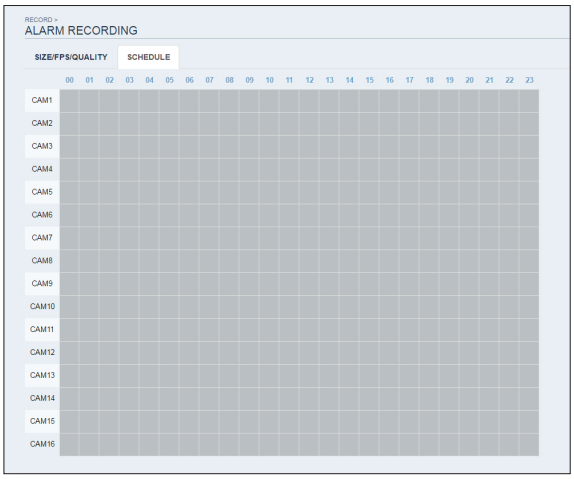
## Alarm Recording

Set the <**SIZE/FPS/QUALITY/AUDIO**> and the <**SCHEDULE**> to apply if an alarm event occurs.
Click < ▼ > next to each item to display the list of values available.




Complete setting the <**SIZE/FPS/QUALITY/AUDIO**> for the alarm recording as well as the <**SCHEDULE**>, and click <**APPLY**> to apply the changes.

✔ For more information about the alarm recording size and schedule, refer to "**Alarm Recording**". (page 86)

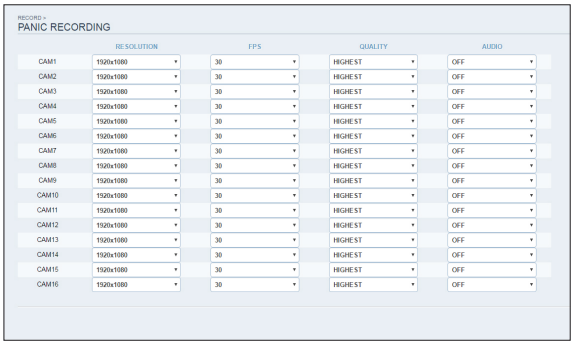


# Web Viewer

## Panic Recording

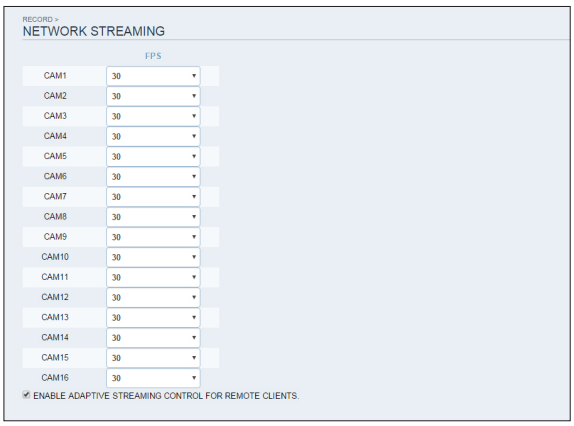
From the <**PANIC RECORD**> menu, you can set the resolution, FPS, quality and audio settings to your preference.
Click < ▼ > next to each item to display the list of values available.
When you have completed the manual record settings, click <**APPLY**> to apply the changes.

✔ For more information about the manual record settings, refer to "**Panic Recording**". (page 87)




## Network Streaming

You can specify the maximum size of network streaming and video resolution for remote users and change the FPS.
Click < ▼ > next to each item to display the list of values available.
When done, click <**APPLY**> to apply the settings.



## nViewer

You can use the smart viewer to monitor the network on a remote site and play the monitoring video anytime anywhere.



### nViewer specification

#### Minimum/ recommended specification

| OS | Minimum specification | Recommended specification |
|---|---|---|
| Android Phone | Processor :800 MHz or higher<br>Flash : 512 MB or higher<br>RAM : 512 MB or higher<br>SD Card : 4 GB or higher<br>OS : 2.0 or higher | Processor : 1 GHz or higher<br>Flash : 512 MB<br>RAM : 512 MB<br>SD Card : 16 GB or higher<br>OS : 2.1 or higher |
| iPhone | iPhone 3G,<br>iPod touch 3rd Generation<br>iPhone OS 3.1.3 or higher | iPhone 3GS or higher<br>iPhone OS 3.2 or higher |

# Mobile Viewer

## Using the nViewer on iPhone

### How to download the iPhone-dedicated application

From your iPhone, access the App Store.
Enter "nViewer" in the search bar to find it before downloading. Install the application on your iPhone.

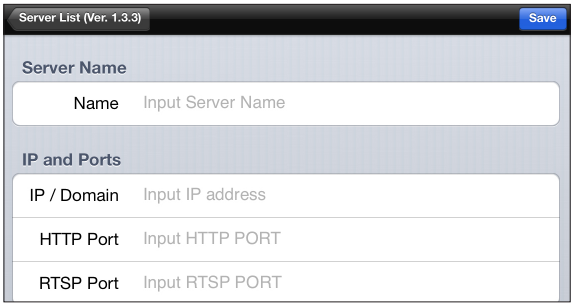
✔ The nViewer supports the 1/4/9/16 split screen mode.

! With the nViewer Lite, you cannot: check the log, control the PTZ operations or change the system settings.

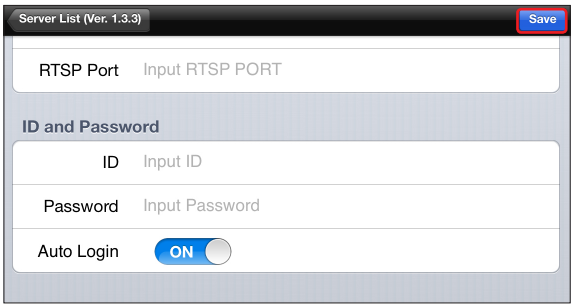
### To connect to NVR with nViewer

1. Select and run the nViewer.
2. Click < + > in the top right corner of the NVR List to select and add a site to the list.

3. Please enter a Name.
4. Provide the IP address, HTTP port number and RTSP port number.



5. Provide the access ID of the NVR as well as the password.
6. Select whether or not to save the ID and PW.
7. Click <**Save**>.



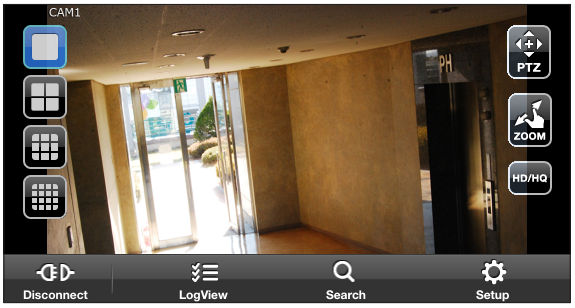

8. Select the site that you added in the NVR List.

9. Try to access the NVR.
If connected successfully, you will see the screen as shown.

# Mobile Viewer

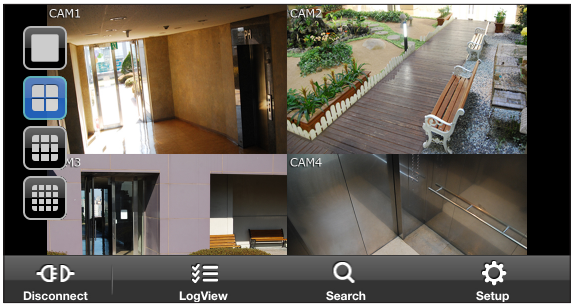
## Split Mode

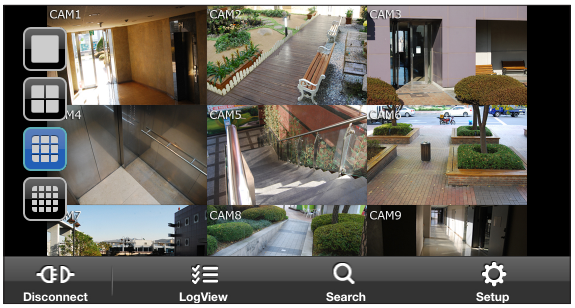
1. Click any area on the screen.
The main menu appears at the bottom of the screen.

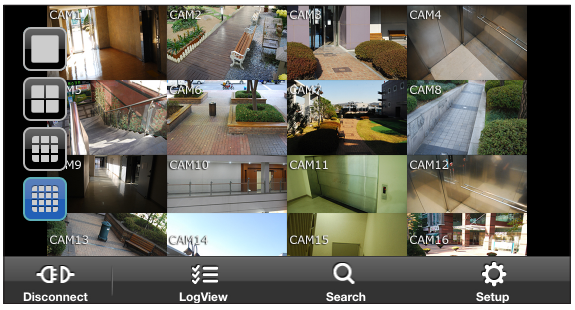



2. You can change your screen into 1-split mode by pressing the < > button; 4-split mode by pressing the < > button; and 9-split mode by pressing the < > button; and 16-split mode by pressing the < > button.

✔ Use the mouse to scroll the screen to the left or right to move to the next camera video screen.



## PTZ MODE

1. Press the < > button in Main menu.

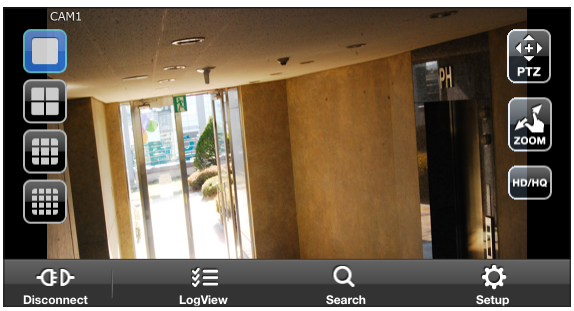
- ✔ You can control the focus by using the < , > button in your PTZ camera. Also, you can zoom in/out by using the < , >.
- ✔ By using the < , > button, you can select the Auto Focus to adjust the focus automatically or the Default Focus to use the default lens value.
- ✔ You can rotate and control the PTZ camera horizontally and vertically by using the < , , , >button in screen.
- ✔ : Adjusting the Position Step changes how much the PTZ Camera moves when receiving a directional command. Low position step values mean smaller, more precise movements per directional movement click. High position step values mean greater, less precise movements per directional movement click.
- ✔ You can capture currently displayed screen by using the < > button.

## ZOOM MODE

1. You can touch the screen with your two fingers to zoom in/out the screen. After zooming in/out, click the < > button to finish.

## HD/HQ MODE

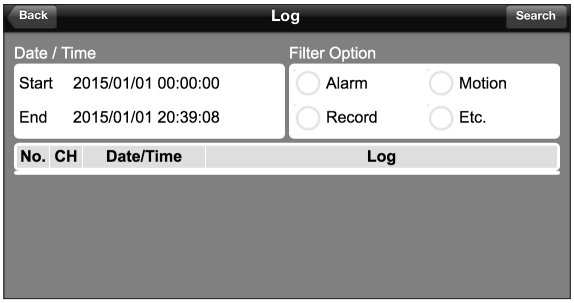
1. You can enjoy the HD/HQ screen by clicking the < > button.



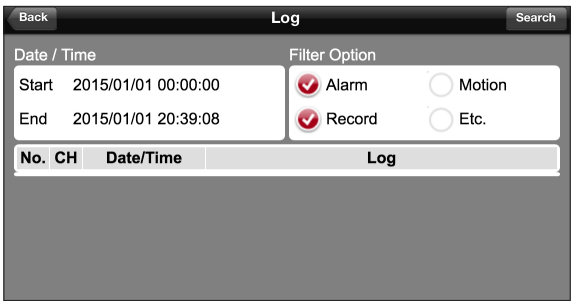
# Mobile Viewer

## Using the Log View

1. From the main menu, click < Log View >.
You can check the log of the data stored.



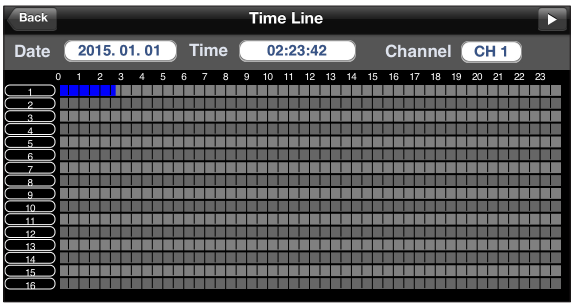

2. Select one from Alarm, Motion, Record, Etc. and click < >.
You will view the log of related items.



## Using the Search function

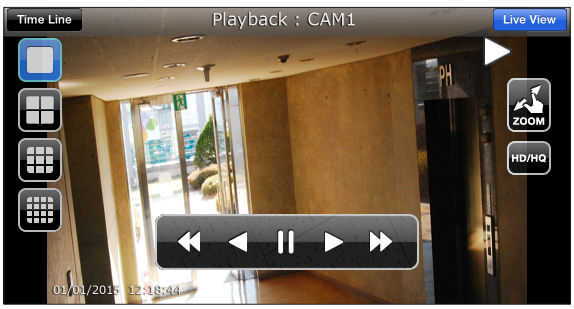
1. From the main menu, click < Search >.
   You can view the history of the data stored.

2. Select the date, time zone, and channel you want.
   You can select the start time by moving the time selection bar which is displayed vertically.




3. Click < ▶ > to play the video recorded at the specified time.

4. Click any area to display the play bar with which you can control the playing direction and speed of the video.

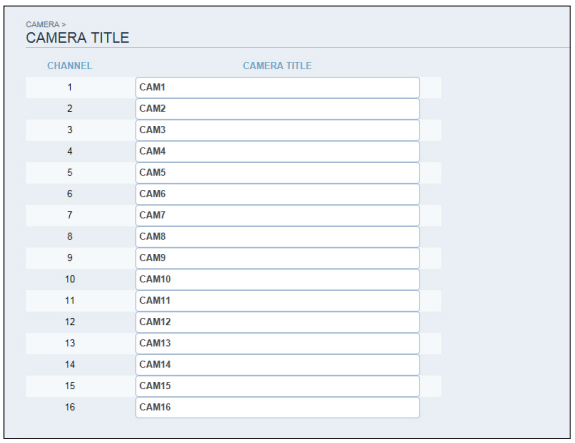


# Mobile Viewer

## Using the Setup function

From the main menu, click < Setup >.
You will be connected to the web viewer site.

✔ For details about each displayed item, refer to "**Setup**". (page 111)



# Using nViewer with Android

## How to download the Android-dedicated application

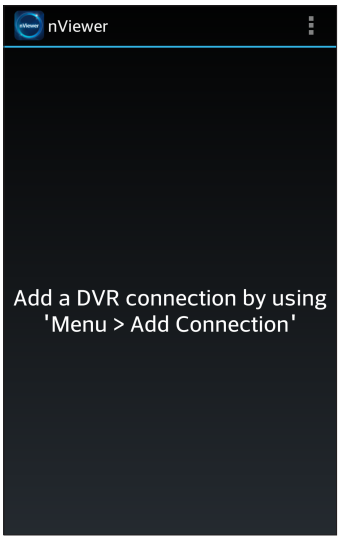
From your smart phone, access the Play Store.
Enter "nViewer" in the search bar to find it before downloading. Install the application on your Smart Phone.

✔ The nViewer supports the 1/4/9/16 split screen mode.

! With the nViewer Lite, you cannot: check the log, control the PTZ operations or change the system settings.

## To connect to NVR with nViewer

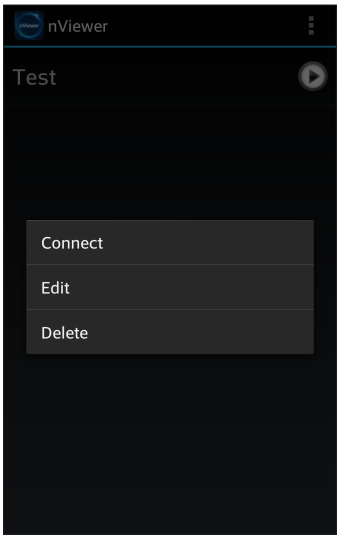
1. Select and run the nViewer.
2. Use the Add button to select and add a site to the list.




3. Please enter a Name.
4. Provide the IP address, HTTP port number and RTSP port number.
5. Provide the access ID of the NVR as well as the password.
6. Select whether or not to save the ID and PW.
7. Click <**Save**>.

# Mobile Viewer

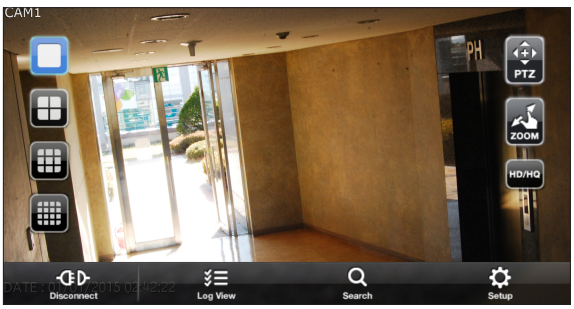
8. Select the site that you added in the NVR List.
Press and hold the mouse button to display the pop-up window.




9. Select <**Connect**> and try to access.
If connected successfully, you will see the screen as shown.

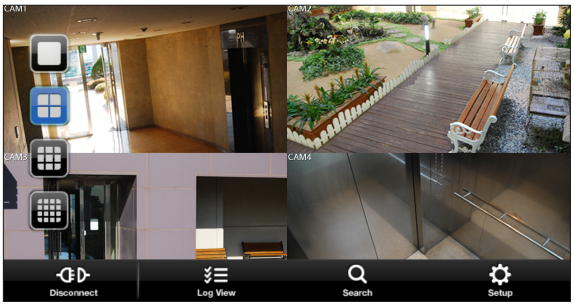
## Split Mode

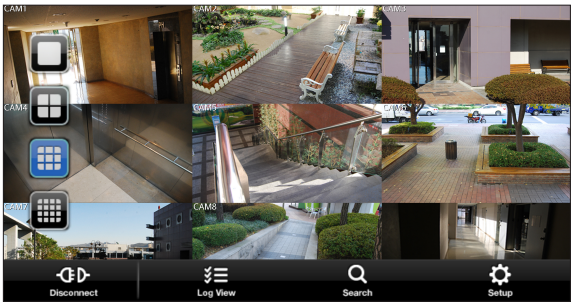
1. Click any area on the screen.
The main menu appears at the bottom of the screen.

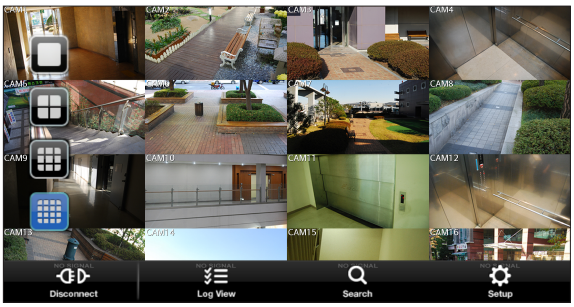


2. You can change your screen into 1-split mode by pressing the < ▣ > button; 4-split mode by pressing the < ⊞ > button; and 9-split mode by pressing the < ▦ > button; and 16-split mode by pressing the < ▦ > button.

✔ Use the mouse to scroll the screen to the left or right to move to the next camera video screen.



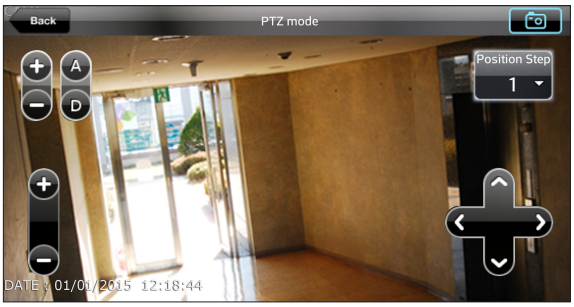



# Mobile Viewer

## PTZ MODE

1. Press the < > button in Main menu.



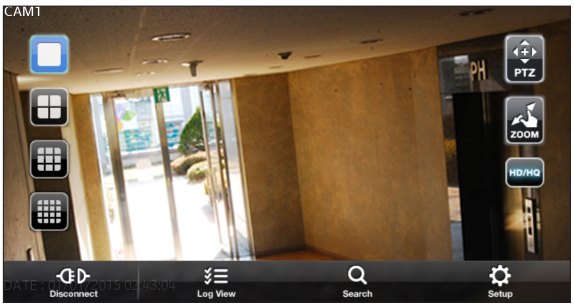

- ✔ You can control the focus by using the < , > button in your PTZ camera. Also, you can zoom in/out by using the < , >.
- ✔ By using the < , > button, you can select the Auto Focus to adjust the focus automatically or the Default Focus to use the default lens value.
- ✔ You can rotate and control the PTZ camera horizontally and vertically by using the < , , , > button in screen.
- ✔ : Adjusting the Position Step changes how much the PTZ Camera moves when receiving a directional command. Low position step values mean smaller, more precise movements per directional movement click. High position step values mean greater, less precise movements per directional movement click.
- ✔ You can capture currently displayed screen by using the < > button.

## ZOOM MODE

1. You can touch the screen with your two fingers to zoom in/out the screen. After zooming in/out, click the < > button to finish.

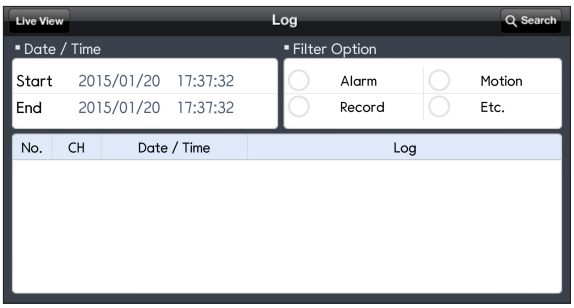
## HD/HQ MODE

1. You can touch the screen with your two fingers to zoom in/out the screen. After zooming in/out, click the < HD/HQ > button to finish.

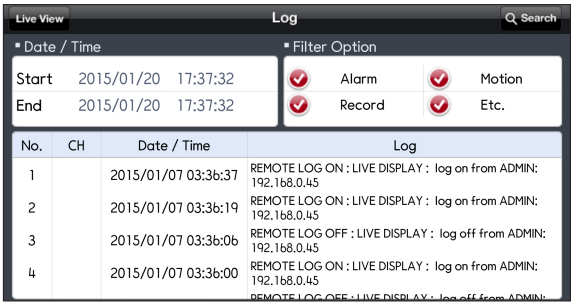



## Using the Log View

1. From the main menu, click < Log View >.
You can check the log of the data stored.



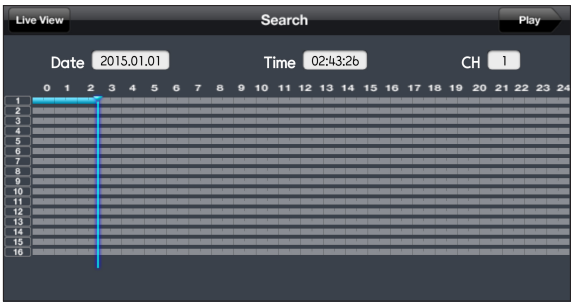

2. Select one from Alarm, Motion, Record, Etc. and click < >.
You will view the log of related items.



# Mobile Viewer

## Using the Search function

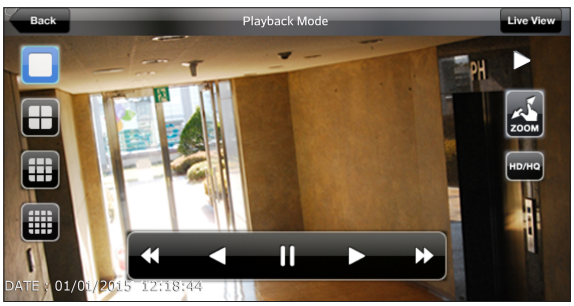
1. From the main menu, click < Search >.
   You can view the video of the recording data.




2. Select the date, time zone, and channel you want.
   You can select the start time by moving the time selection bar which is displayed vertically.

3. Click < Play > to play the video recorded at the specified time.

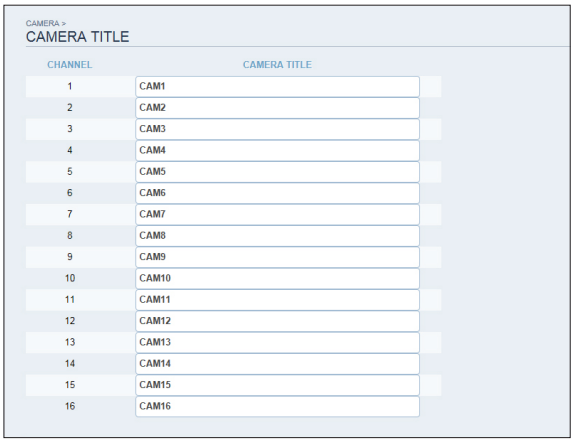
4. Click any area to display the play bar with which you can control the playing direction and speed of the video.



## Using the Setup function

From the main menu, click < Setup >.
You will be connected to the web viewer site.

✔ For details about each displayed item, refer to "**Setup**". (page 111)

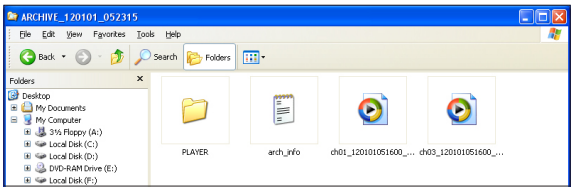


# Archive Viewer

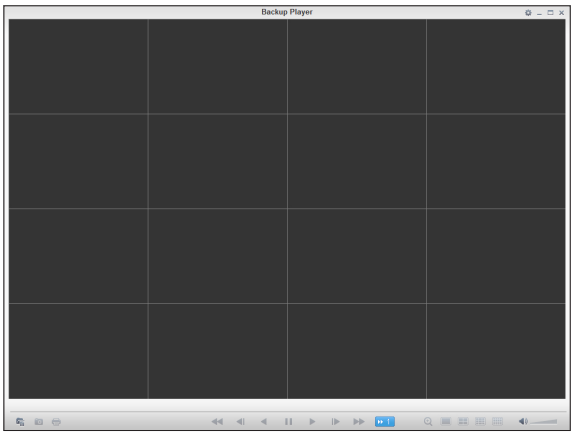
You can play the data archived in the NVR.
You can play the HDD data recorded by the NVR.

## Getting started with the Backup Player

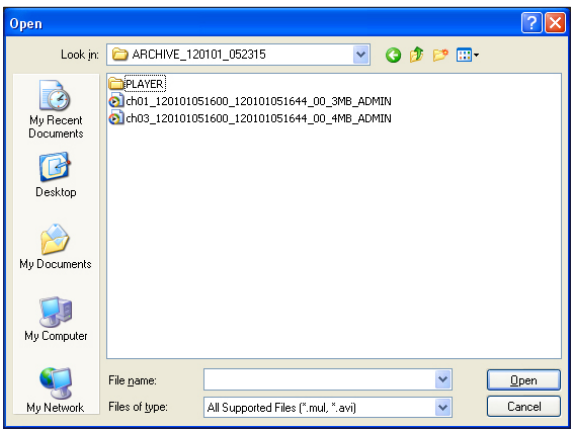
1. Connect the NVR to the backup USB storage device.
2. Open the folder saving the archived images.



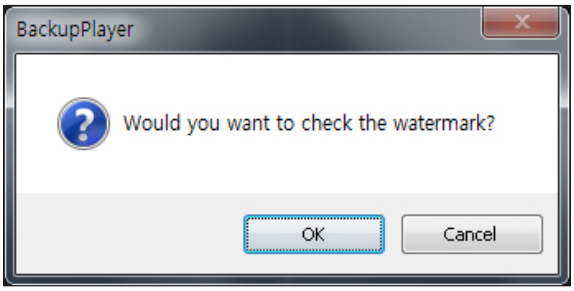

3. Run the Backup Player.

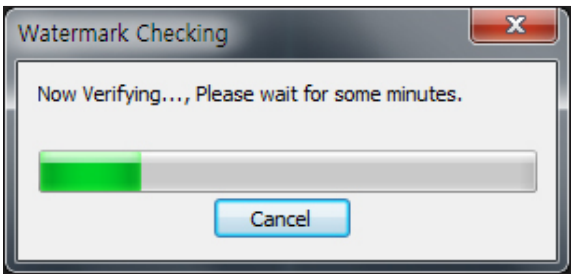



4. Click < > in the bottom left corner to display the file browser. Select the archived file to play.



5. Check the integrity of the archived file.




6. When done, the archived file will be played on the screen.

# Archive Viewer

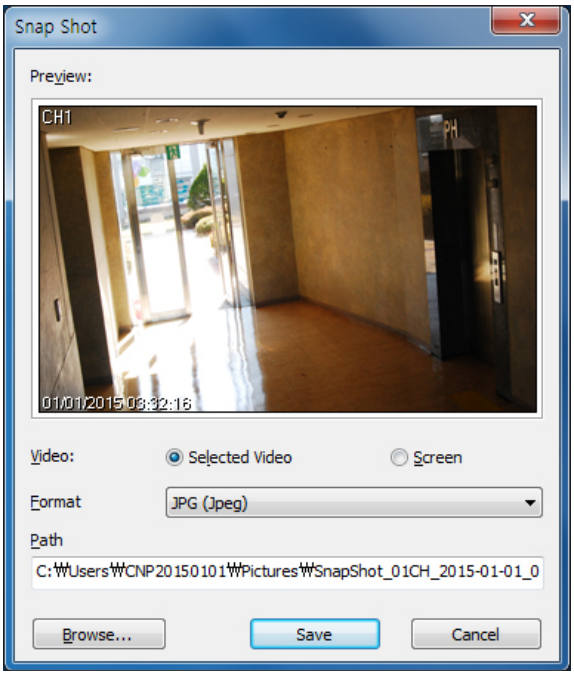
## Backup Player At a Glance

| No. | Item | Description |
|---|---|---|
| ❶ | Setup | Configure the environment settings. |
| | Minimize, Full Screen | You can minimize the Backup Player or expand it to the full screen. |
| | Close | Close the Backup Player. |
| ❷ | Channel Information | Show the channel information and the video resolution. |
| ❸ | Video Time | Display the time of the current video image. |
| ❹ | Play Time | Display the current playback time. |
| ❺ | File Search | Open the file that you backed up. |
| | Capture | Capture the current screen. |
| | Print | Print out the current screen. |
| ❻ | Playback Control | Control the playback direction and speed of the current video.<br>For more information about how to use the playback control buttons, refer to "**Using the play bar**". (page 95) |
| ❼ | Zoom, Split Mode | Switch to Zoom, 1-/4-/9-/16-split screen mode. |
| ❽ | Audio Setting | Show the sound signal status and volume level. |
| ❾ | Play Bar | Display the current playback position in the video. |

## Video Capture

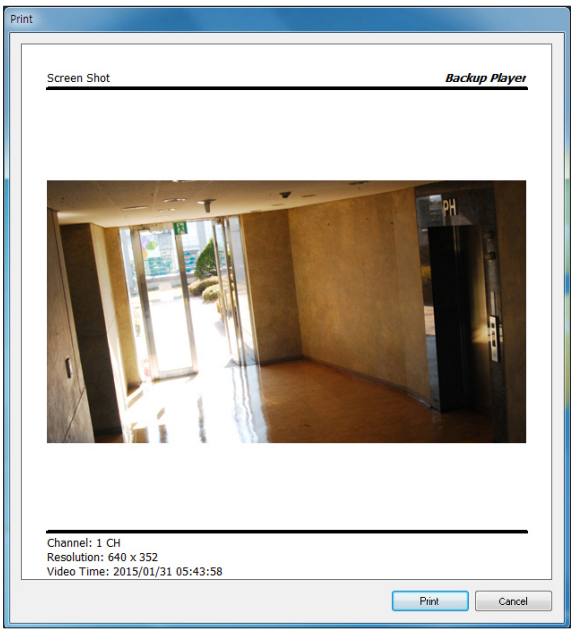
Click < > to capture the current video image.

- Selected Video : Capture the actual frame of the current video.
- Screen : Capture the visible portion of the current video.
- Format : Select a saving format. (BMP, JPG, PNG)
- Path : Specify the saving path.




## Print Out

Click < > Button to print out the image.
When the "**Print**" window appears, check the preview and click <**Print**>.

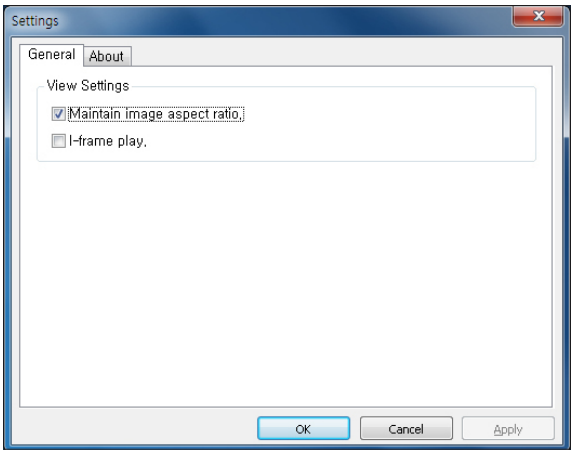


# Archive Viewer

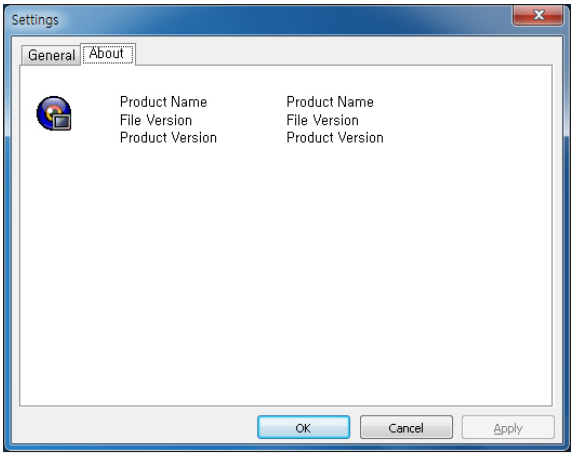
## Settings

Click < > to configure the Backup Player settings.
You can check the version of the Backup Player.

- Maintain image aspect ratio : Preserve the aspect ratio of the image.
  If you do not mark this option, the image will be adjusted to fit the screen.
- I-frame play. : Plays i-frames (key frames) of the video.




- About : You can check the program information including the current version.



## Specification

| Item | Details | | | Remarks |
|---|---|---|---|---|
| | 4 CH | 8 CH | 16 CH | |
| **VIDEO** | | | | |
| INPUT VIDEO | 4 x IP Camera (Max. 8MP) | 8 x IP Camera (Max. 8MP) | 16 x IP Camera (Max. 8MP) | |
| # OF CHANNELs | 4 CH | 8 CH | 16 CH | |
| MAIN MONITOR | VGA or HD Display | VGA or HD Display | VGA or HD Display | |
| MAIN MONITOR RESOLUTION | HD 4K 30Hz | HD 4K 30Hz | HD 4K 30Hz | |
| MOTION DETECTION | Yes (From IP Camera) | Yes (From IP Camera) | Yes (From IP Camera) | Depend on IP Camera |
| **AUDIO** | | | | |
| INPUT AUDIO | 4 CH (IP) + 1 CH (Internal) | 8 CH (IP) + 1 CH (Internal) | 16 CH (IP) + 1 CH (Internal) | Depend on IP Camera |
| OUTPUT AUDIO | 4 CH (IP) + 1 CH (Internal) | 8 CH (IP) + 1 CH (Internal) | 16 CH (IP) + 1 CH (Internal) | Depend on IP Camera |
| CODEC | G.711 | G.711 | G.711 | |
| **RECORDING** | | | | |
| CODEC | H.264 (BP, MP, HP), H.265 | H.264 (BP, MP, HP), H.265 | H.264 (BP, MP, HP), H.265 | |
| REC.RATE | MAX. 30 FPS@8MP/CH | MAX. 30 FPS@8MP/CH | MAX. 30 FPS@8MP/CH | Depend on IP Camera |
| REC.RESOLUTION | MAX. 8MP | MAX. 8MP | MAX. 8MP | Depend on IP Camera |
| **ALRM I/O** | | | | |
| ALARM INPUT | 4 CH (IP) + 4 CH (Internal) | 8 CH (IP) + 8 CH (Internal) | 16 CH (IP) + 16 CH (Internal) | Depend on IP Camera |
| ALARM OUTPUT | 4 CH (IP)+ 1 RELAY (Internal) | 8 CH (IP)+ 1 RELAY (Internal) | 16 CH (IP)+ 1 RELAY (Internal) | Depend on IP Camera |
| **STORAGE** | | | | |
| INTERNAL HDD (SATA) | 1 EA | 2 EA | 2 EA | |

# Appendix

| Item | Details | | | Remarks |
|---|---|---|---|---|
| | 4 CH | 8 CH | 16 CH | |
| **INTERFACES** | | | | |
| USB(USB2.0) | 2 ports | 2 ports | 2 ports | |
| RS-485 | 1 | 1 | 1 | |
| LAN | 4 (IPCamera, PoE) + 1 (WAN) | 8 (IPCamera, PoE) + 1 (WAN) | 8 (IPCamera, PoE) + 1 (LAN) + 1 (WAN) | |
| REMOTE CONTROL | YES | YES | YES | |
| **HUB** | | | | |
| Network | | | 2GE + 8FE(PoE) | |
| Total PoE Power | | | 72W | |
| NVR Management | | | ARM9 interior | |
| Adaptor | | | 48V, 96W | |
| **ETC** | | | | |
| WATCHDOG | YES | YES | YES | |
| COOLINGFAN | | 1EA | 1EA | |
| **POWER** | | | | |
| POWER SUPPLY | 48V adaptor | 48V adaptor | 48V adaptor | |
| POWER CONSUMPTION | 7W max. without HDD, CAM | 11W max. without HDD, CAM | 11W max. without HDD, CAM | |
| **ENVIRONMENT** | | | | |
| HUMIDITY | 10~90% NC | 10~90% NC | 10~90% NC | |
| TEMPERATURE | 0ºC ~ 40ºC (32ºF~104ºF) | 0ºC ~ 40ºC (32ºF~104ºF) | 0ºC ~ 40ºC (32ºF~104ºF) | |
| **CHASSIS** | | | | |
| DIMENSION | 260(W) x 262.6(D) x 44(H) mm | 380(W) x 314.6(D) x 44(H) mm | 380(W) x 314.6(D) x 44(H) mm | |
| WEIGHT | 1.55kg | 2.52kg | 2.52kg | |
| **CERTIFICATION** | | | | |
| | FCC, CE | FCC, CE | FCC, CE | |

## Compatible HDD Specifications

| | |
|---|---|
| Maximum SATA Speed | • SATA1(1.5G) : Can be used<br>• SATA2(3.0G) : Can be used<br>• SATA3(6.0G) : Devices of backward compatibility to SATA2 (3.0G) can be used. |
| Maximum Start-up Current | 12V, 2A (or lower) |
| Maximum Average Operation Power Consumption | 7W (or lower) |
| Maximum R/W Latency | Latency (Read : 13ms / Write : 13ms) or smaller |

✔ Use 3.5" HDD disks.

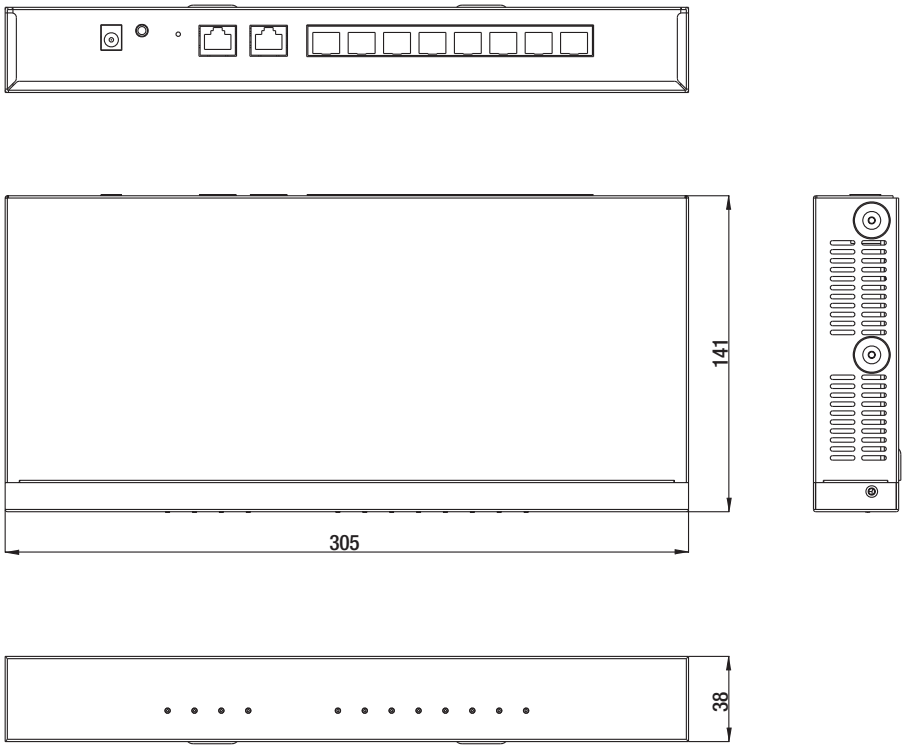
✔ Using HDD devices other than recommended specifications may cause serious problem.

✔ For further information of HDD specifications, refer to the applicable data sheet of the HDD manufacturer.

# Appendix

## Product Overview

### NVR-HUB (For 16channel NVR only)



## Troubleshooting (FAQ)

| Problem | Action |
|---|---|
| The system does not operate at all with no active LED in the front panel. | • Make sure that the rear switch is turned on.<br>• Make sure that the system gets supplied with power properly.<br>• Check the input voltage. |
| The unit continuously reboots. | • Check if the system fan in a side panel of the unit or the CPU fan inside the unit works properly.<br>If it fails, contact the retailer or the service center.<br>• Disconnect the HDD cable and try to boot the system again. If the system reboots successfully, install a new HDD and check if the system make recording normally. |
| The front LED is lit, but nothing is displayed on the screen yet. | • Check if your monitor supports the UHD(4K/30Hz) HDMI input.<br>• Make sure that the monitor input source is set to HDMI.<br>• If using the HDMI-to-DVI cable for the connection, ensure that the input source is set to DVI.<br>• Make sure that the system gets supplied with power properly.<br>• Check the input voltage. |
| The sides of the video image are displayed incomplete. | • If the monitor is over-scanning the video, the sides can be hidden.<br>If this is the case, switch the display mode of the monitor to the 1:1 pixel matching mode. Then, you will view the video in full screen.<br>• The 1:1 pixel matching is referred to differently depending on the monitor manufacturer (for example, "JUST SCAN" for Samsung, "ZERO OVERSCAN" for LG). For details, refer to the user manual of the monitor. |
| The camera is connected but no image is displayed. | • Make sure that the IP camera is compatible with the NVR. For the compatibility of the IP cameras, contact the retailer.<br>• Ensure that a 48V PoE adaptor is connected to the rear of the unit.<br>• Check if the camera supports PoE. If your camera is not compatible with the PoE protocols, use a separate power source for the camera.<br>• Check if the total power consumption of the cameras exceeds the rated capacity of the 48V PoE adaptor. If the total exceeds the rated capacity, the unit may not play the video or it may fail to operate.<br>If this is the case, use a separate power source for the camera. |
| It fails to connect to the web or mobile application. | • Check if the network cable is properly connected to the WAN(UP Link) port of the unit.<br>• You must have set the port forwarding if using a router.<br>• If you cannot get access with the DDNS address, use the IP address of the NVR instead.<br>If the NVR is connected to the router, use the IP address of the NVR.<br>You can check the IP address of the router in <**NETWORK STATUS**> - <**EXTERNAL IP ADDRESS**>. |
| I can access the web or mobile application but still no video image is displayed. | • You must have set the port forwarding if using a router.<br>• This may happen when the communications provider or network administrator has blocked the service port of the NVR.<br>Change the RTSP port and HTTP port numbers to different ones and set the port forwarding again.<br>• Try to access the web or mobile application using the new port numbers. |

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