User Manual

4CH/8CH/16CH 960H DVR

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

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 DVR 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 is capable of receiving inputs from up to 16 channels of 960H camera inputs of video and audio and recording onto a hard disk drive in real-time, as well as providing monitoring, playback and backup footages in excellent quality of 960H resolution.
It also provides transferring video and audio data to the networked external devices, which allows remote monitoring environment for computers and mobile devices including cell phones.

- Up to 16 channels of 960H camera video can be displayed at 480 fps / 400 fps in real time
- Up to 16 channels of 960H camera videos can be saved at maximum 480 (NTSC) / 400 (PAL) fps.
- Simultaneous recording and playback of maximum 16 channels (at 120 fps @ 960H)
- Supports H.264 HP (High Profile) CODEC
- Auto alarm feature with self-diagnostics on the system (HDD S.M.A.R.T, system temperature, network error, FAN error, etc.)
- Supports dual streaming for remote access service
- Supports HDD extension (eSATA)
- Various search methods (time, event, bookmark and thumbnail)
- Mass storage backup via USB port or FTP server
- Supports remote access and search using web browser
- Dedicated smart phone applications that can be used with iPhone and iPad or on Android OS
- 1080p Full HD GUI

Overview

What's included

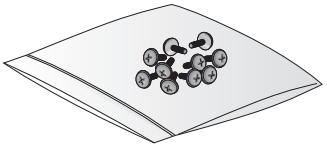
Mouse x1

Remote Control x1 & Batteries (AAA x2)

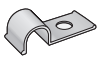
Power Cable x1

DC 12V Adaptor x1

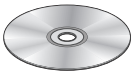
Conversion adaptor (For 8-channel/16-channel)



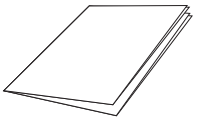
Screws



Adapter cable retainer clip x1



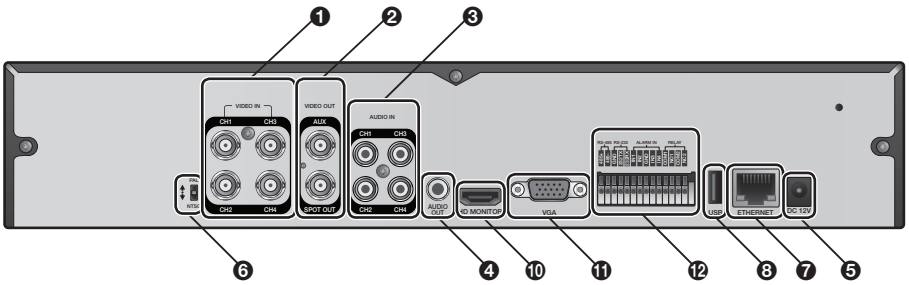
User manual CD



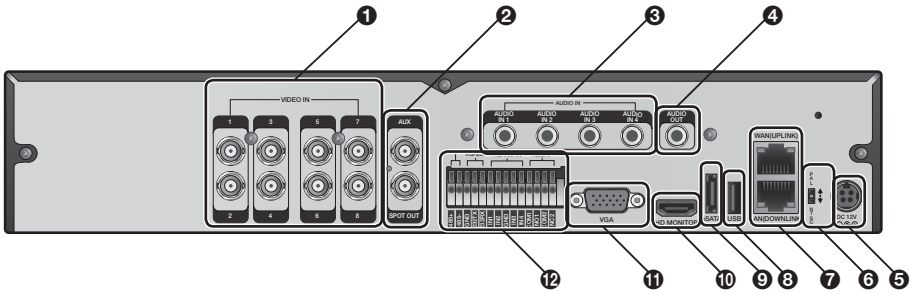
Quick Guide

Rear Panel

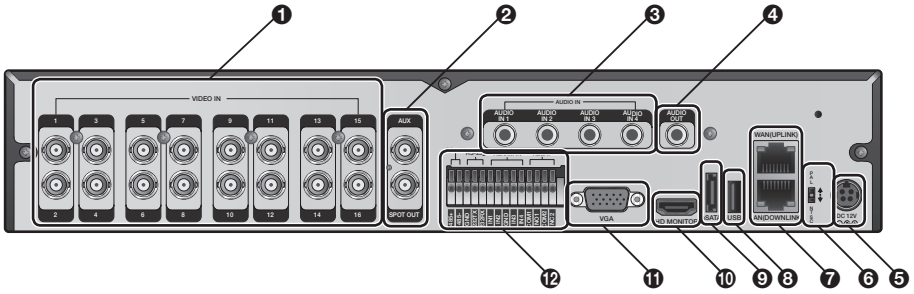
4 channels



8 channels



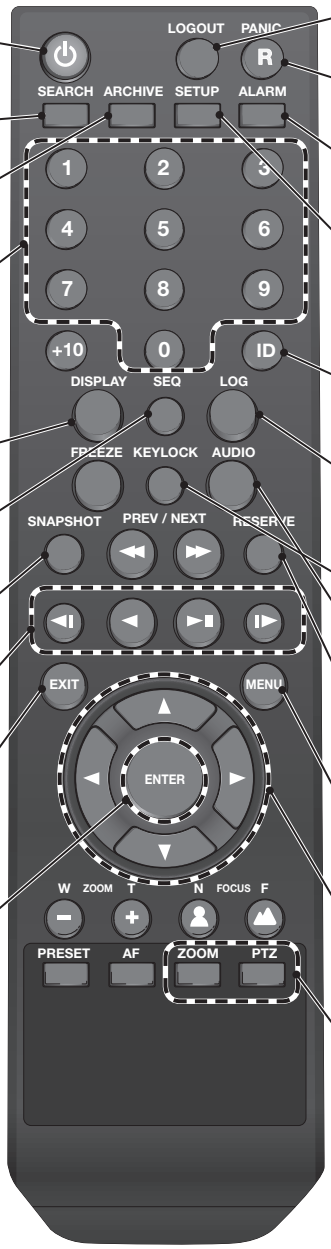
16 channels



Overview

No.	Name	Description
❶	VIDEO IN	Video input terminal for cameras.
❷	MONITOR	Monitor video output port.
	SPOT OUT	Exclusive port for SPOT output only. (Use HDMI cable to connect to a full HD class monitor.)
❸	AUDIO IN	Port for audio input.
❹	AUDIO OUT	Port for speaker connection.
❺	DC 12V	Power input port. Connect to a 12V adaptor.
❻	DIP Switch	Switch to select a video type or an output type.
❼	WAN(UPLINK)	Network port for connection to the Internet, router or hub.
	LAN(DOWN LINK)	Port for connecting the dedicated network device. ✔ Do not share it with other device.
❽	USB	Used for connecting USB storage or mouse.
❾	eSATA	Connection port for external eSATA storage.
❿	HD-MONITOR	HD monitor video output port.
⓫	VGA	VGA monitor video output port.
⓬	ALARM IN	Alarm input signal port.
	RELAY 1/2	Relay Terminal output port.
	RS485	Ports for communication with external devices such as PTZ camera and system keyboard.
	RS232	Connection ports for signal cables to external devices such as PTZ camera, POS and ATM devices.

Remote Control At a Glance



POWER
Turn on or off the power.

SEARCH
Display the search window.

ARCHIVE
Display the backup window.

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

DISPALY
Switch the split mode.

SEQ
Switch to sequence mode.

SNAPSHOT
Take a snapshot of the video.

◀I, ◀, ▶II, I▶
Used to change the direction or adjust the play speed in playback mode.

EXIT
Exit from the current screen and return to the previous screen.

ENTER
Select a menu item or apply your settings.

LOGOUT
Log out.

PANIC
Start the emergency recording.

ALARM
Show the alarm status with a popup window.

SETUP
Display the system setup menu.

ID
Set the remote control ID.

LOG
Display the log list.

KEYLOCK
Lock any operation on the unit.

AUDIO
Display the audio channel selection window.

RESERVE
Reserve the current video.

MENU
Display the tool bar on the live screen.

▲, ▼, ◀, ▶
Use to move through the menus.

ZOOM/PTZ
Enter the digital zoom or PTZ mode and control the operation.

Change the remote control ID

The remote control will be active only if the remote control ID matches with that specified on the DVR.

If multiple DVRs are installed on one place and you have just a single remote control, use the ID button to set the remote control ID. Only the ID-matching DVR can be controlled.

1. From <**SYSTEM**> - <**CONTROL DEVICE**> under the System Setup menu, set the <**REMOTE CONTROLLER ID**> and press <**APPLY**>.
   Select between 00 and 99. For more details, refer to <**SYSTEM SETUP**>.
2. Press the [**ID**] button on the remote control. The default remote control ID is 00.
3. Use the number buttons to provide a two-digit ID. If you want to enter 01, for instance, enter the number 0 and 1 in sequence.
   Check if the remote control ID is set properly by manipulating the remote control.
4. To reset the ID to 00, press and hold the [**ID**] button.

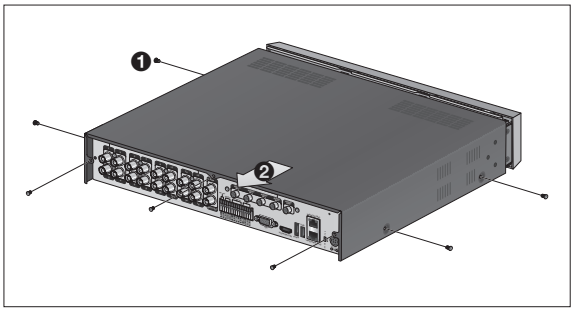
Replacing HDD

When an HDD is full or problematic, you can replace it with a new one by yourself.

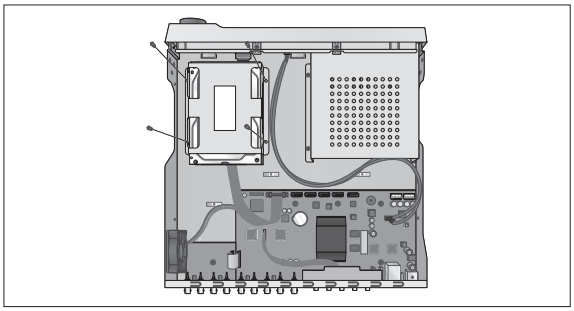
If installed 2 HDD drives

✔ Below illustrations are based on the 16-channel model.

1. Remove screws on the DVR's rear and both sides.
2. Pull the cover case forwards to separate it.

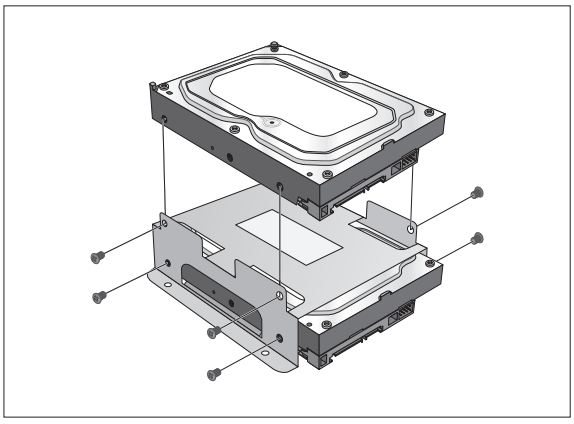


3. Remove screws fixing the bracket to separate it from the main unit.



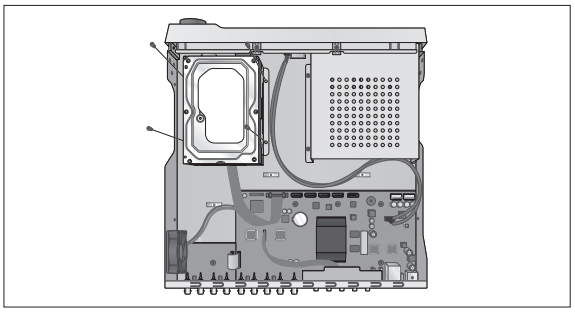
4. Once the bracket is separated, remove screws on both sides of the HDD drive to be separated and replaced.
5. Install the new HDD and fix screws on both sides.

✔ Make sure to install the drive with proper orientation.

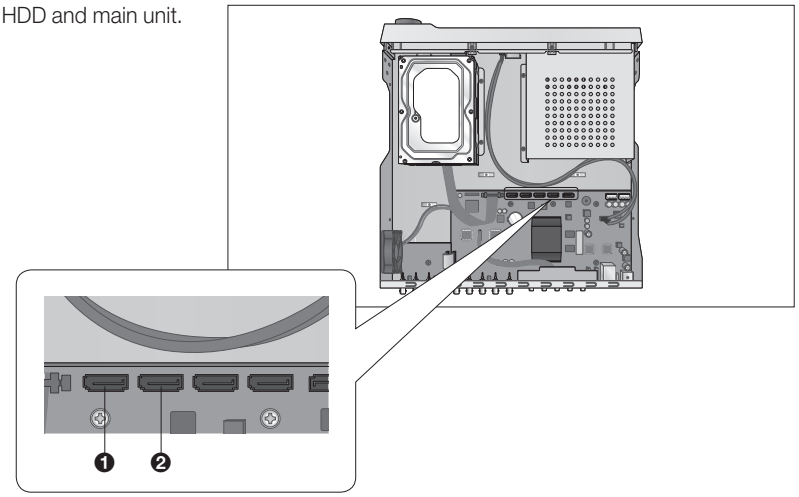


Installation

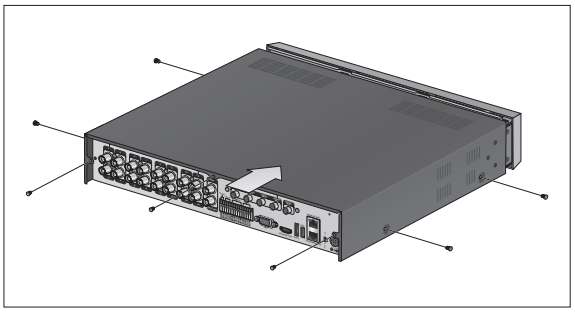
6. Carefully align the bracket installed with the new HDD to the main unit and firmly fix screws on both sides.



7. Connect the data cable to the HDD and main unit.



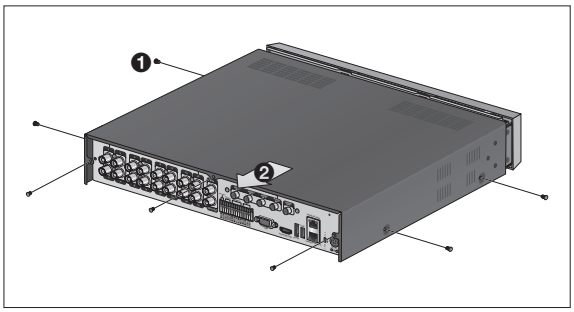
8. Place the cover case and fix screws on its rear and both sides.



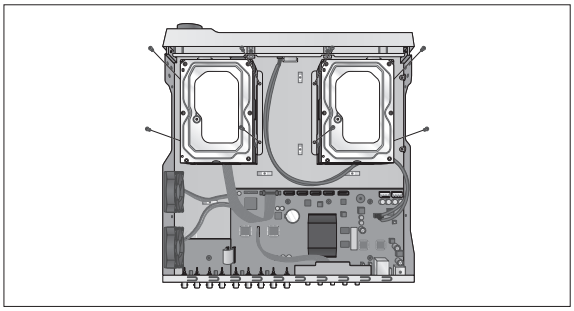
If installed 4 HDD drives

✔ Below illustrations are based on the 16-channel model.

1. Remove screws on the DVR's rear and both sides.
2. Pull the cover case forwards to separate it.

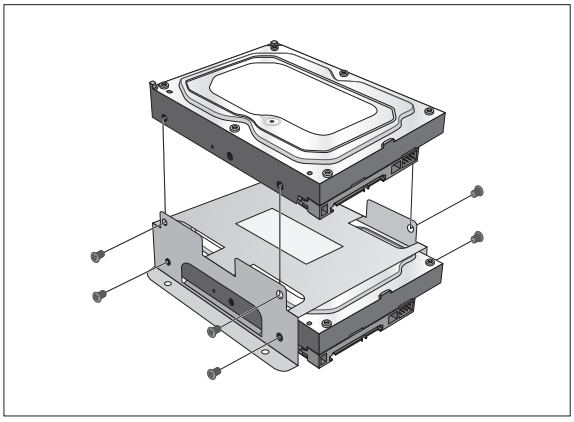


3. Remove screws fixing the bracket to separate it from the main unit.



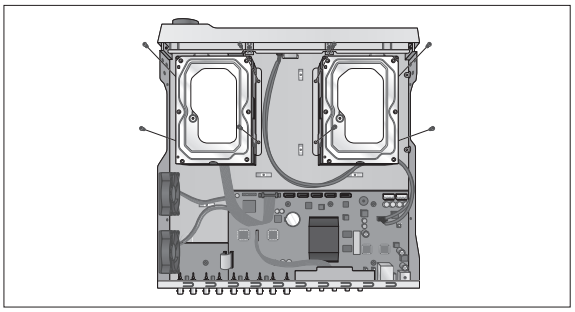
4. Once the bracket is separated, remove screws on both sides of the HDD drive to be separated and replaced.
5. Install the new HDD and fix screws on both sides.

✔ Make sure to install the drive with proper orientation.

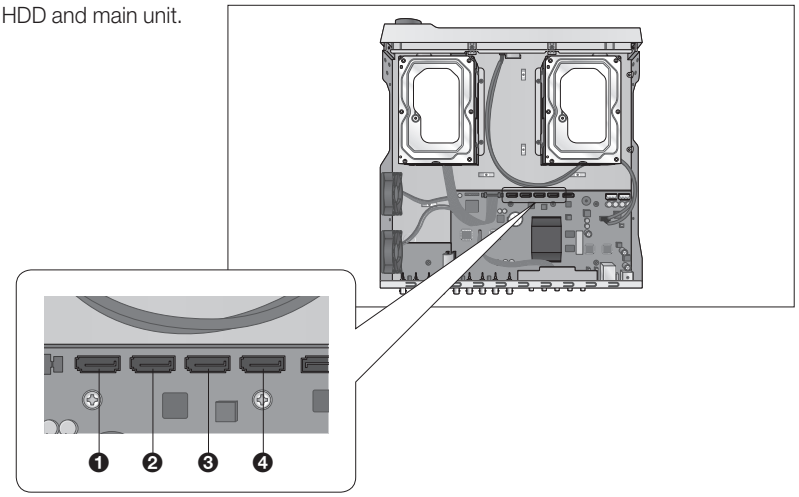


Installation

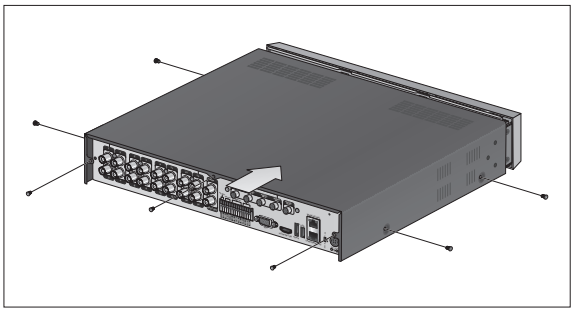
6. Carefully align the bracket installed with the new HDD to the main unit and firmly fix screws on both sides.



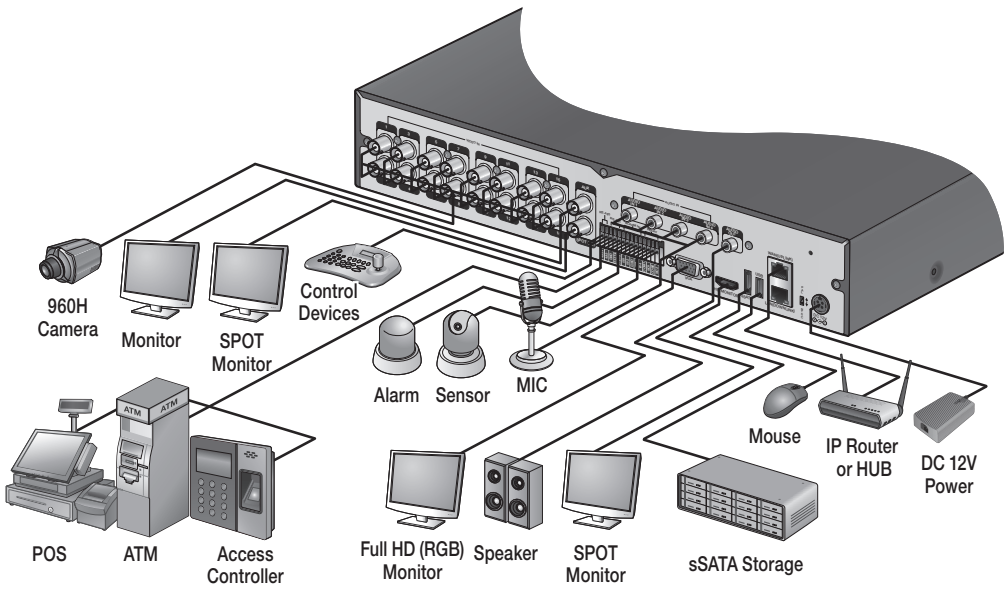
7. Connect the data cable to the HDD and main unit.



8. Place the cover case and fix screws on its rear and both sides.



Basic Layout



✔ Signal connection for POS and ATM is scheduled to be upgraded later.

! Since the cable quality may affect directly to the video quality depending on the distance between the camera and DVR, it is recommended to consult an authorized installer when installing the DVR.

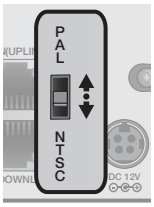
Installation

Connecting to an external device

Connecting to the monitor

This product supports 1080p 60 Hz HDMI monitors and regular monitors that support DVI and VGA inputs. Connect an HDMI cable to the port on the product's rear bottom, or connect an HDMI-DVI converter cable to connect a DVI monitor. Or, use VGA cable to connect the product with a VGA monitor.

- Once the product is set for NTSC or PAL output, connect cameras of the corresponding video standard for proper operations.
  Setting the product to NTSC or PAL decides available display output modes too.



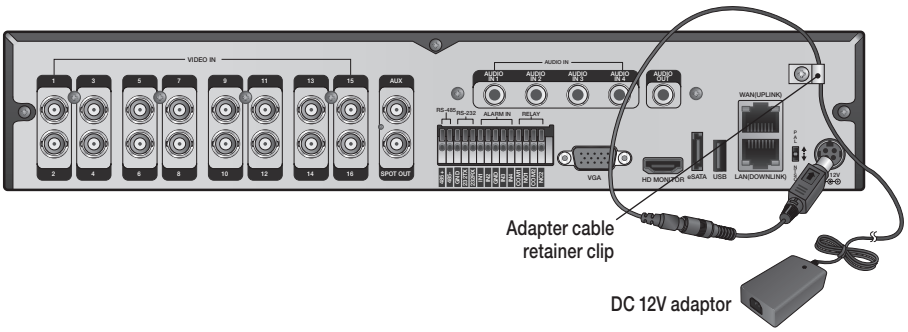
✔ The monitor's displaying operates at 50Hz if the product has been set to PAL output and the connected monitor supports both 50Hz and 60 Hz inputs. For NTSC setting, it works at 60 Hz.

❗ Make sure to connect the product to a monitor that supports 1920x1080 at 60Hz. (HDMI, DVI, VGA)

Power Connection

Plug the provided DC 12V adaptor in the rear power port of the DVR.

When done, attach the **Adapter cable retainer clip** to the rear panel and insert the cable in.



❗ For stable operation of the product, it is recommended to use the provided adapter. (12V, 5A)

❗ Make connection when the power is not applied yet.

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

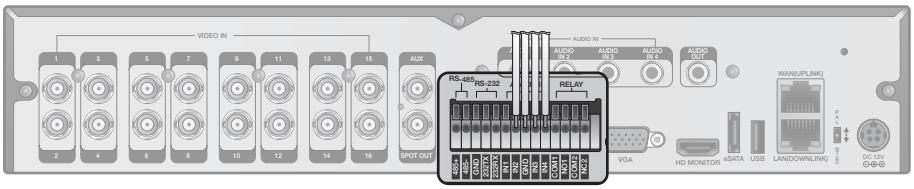
❗ Do not place the power cord under the carpet or rug. The power cord is usually earth-grounded. However, even if it's not earth-grounded, do never modify it on your own for earth-grounding.

❗ 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.

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. Push the Alarm In and [**GND**] terminals' bottom side with a sharp tipped tool such as screw driver.
2. While pushing, insert one end of alarm signal cable into the hole of Alarm In terminal.
3. While pushing, insert one end of ground cable into the hole of [**GND**] terminal.
4. To check proper insertion of cable, stop pushing and gently pull the cable and test whether it disconnects.
   To disconnect a cable, push the bottom side of the terminal and pull out the cable.

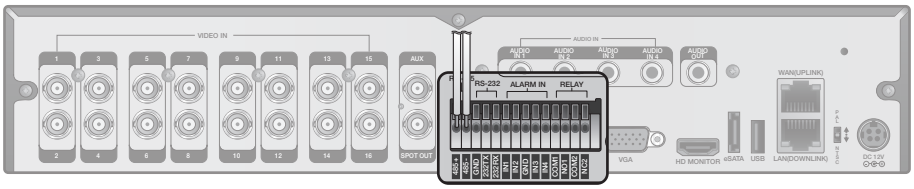
To connect the alarm output signal

Connect the signal cable of the alarm output device to the [**RELAY 1/2**] terminal on the product's rear side.

1. Push the [**NO**]/[**NC**]/[**COM**] terminal's bottom side with a sharp tipped tool such as screw driver.
2. While pushing, insert one end of alarm signal cable into the desired terminal of [**NO**] or [**NC**].
   - NO(Normal Open) : Normally Open but switching to Close if an alarm out occurs.
   - COM : Insert the grounding wire.
   - NC(Normal Close) : Normally Close but switching to Open if an alarm out occurs.
3. Insert the ground signal wire into the hole of the [**COM**] port (shown also below the screw), and tighten the screw.
4. To check proper insertion of cable, stop pushing and gently pull the cable and test whether it disconnects.
   To disconnect a cable, push the bottom side of the terminal and pull out the cable.

Installation

Communication Port



RS-485 Connection

Connect a PTZ Camera or 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 DVR and device.
Make communication settings in <**Control Device**>. (page 51)

1. Connect the signal cable to the RS-485 communication port on the product's rear side and the [**D+**] port of the PTZ camera/keyboard controller.
2. Connect the signal cable to the RS-485 communication port on the product's rear side and the [**D-**] port of the PTZ camera/keyboard controller.

✔ For RS-485 communication configuration, refer to the user's manual of the applicable PTZ camera or keyboard controller.

✔ Signal connection for POS and ATM is scheduled to be upgraded later.

RS-232 Connection

You can connect PTZ cameras, POS or ATM devices.
For connection of the text-in device, refer to the user manual of the text-in device.

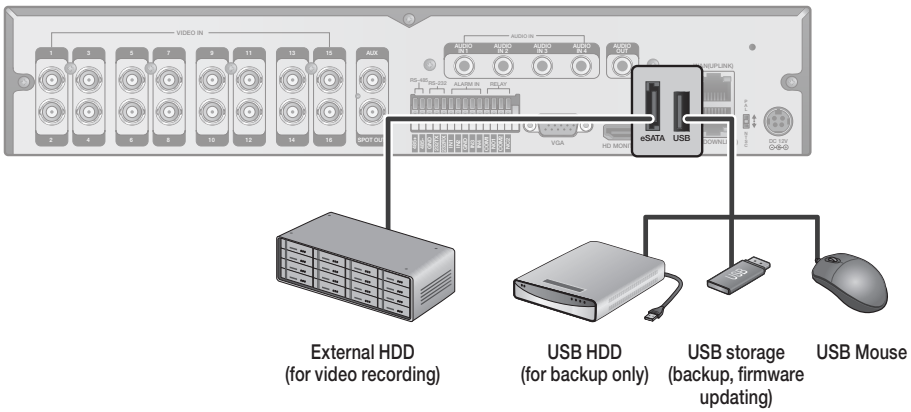
✔ Signal connection for POS and ATM is scheduled to be upgraded later.

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.

Storage and Mouse Connection

eSATA Storage



If the internal storage space is insufficient, you can extend your storage capacity by adding an eSATA storage device to the rear eSATA port.

✔ Using devices other than recommended eSATA products may cause serious problem.

USB Device

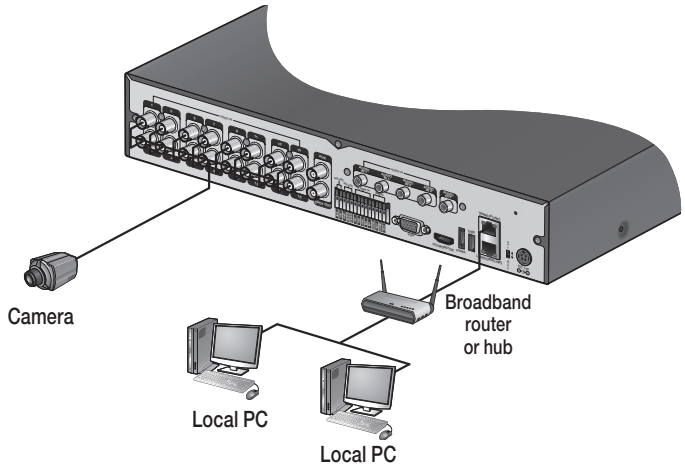
You can connect and use USB storage devices for backup of recorded video, saving snapshots, firmware updating, importing/exporting user configurations. Also, USB mouse can be connected for DVR manipulations.

❗ 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.

Network Connection

PC connection in the local network

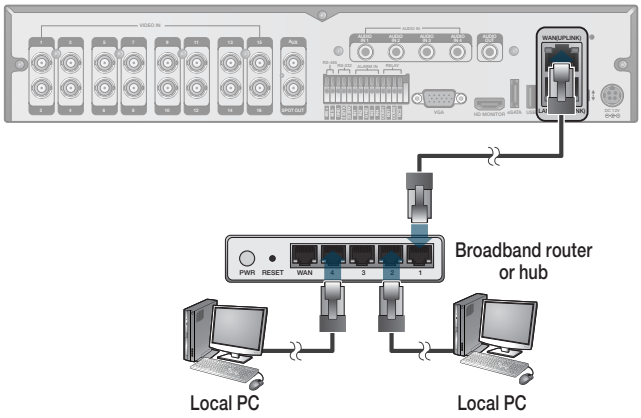
You can connect DVR to a PC in the same network and control or manipulate it on the PC monitor.



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

   ! The LAN (DOWN LINK) port is provided only for connecting to the dedicated backup network device. (Do not connect devices to this port.)

2. Connect the local PC to the router or hub.



3. Enter the address in the Web browser of your PC 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.

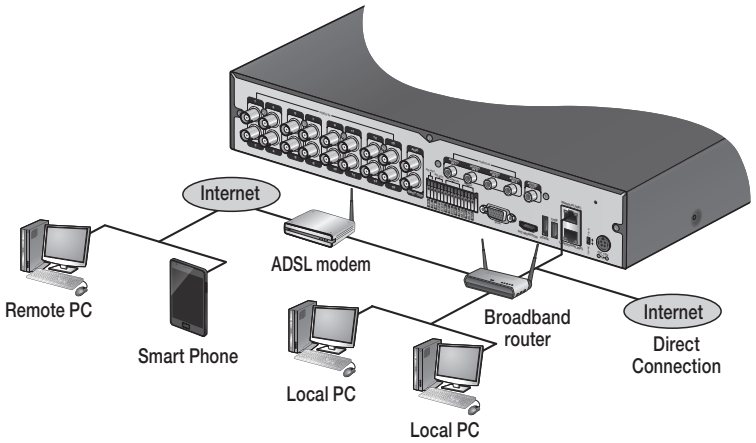
   ✔ If using the dedicated PC S/W, refer to the user manual of the program.

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.

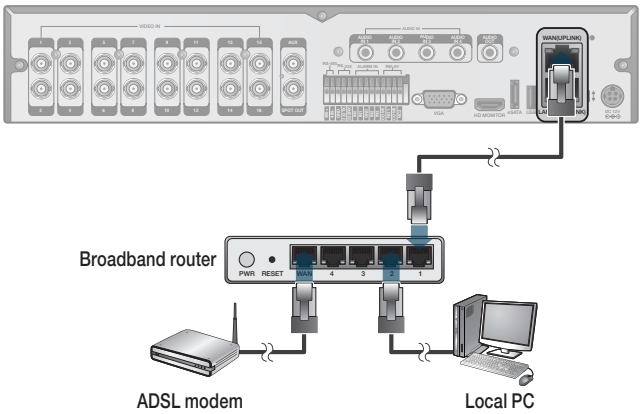
PC connection from a remote network

You can connect DVR 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.

   The LAN (DOWN LINK) port is reserved and only for servicing and development. (Do not connect devices to this port.)



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 45)

4. If the MAC address of the DVR 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

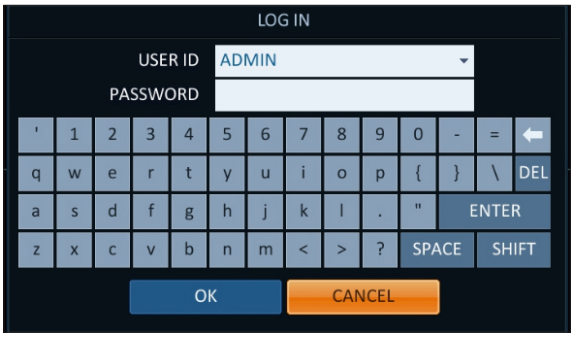
1. Connect the adaptor to the 12V power input port in the rear panel of DVR.
2. Turn on the power switch in the rear panel of DVR. With a beep, the logo screen appears several seconds after the front LED turns on.
3. When the booting process is completed, the live screen then the login screen appears.

Log In

To manipulate or access the menus of DVR, 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.

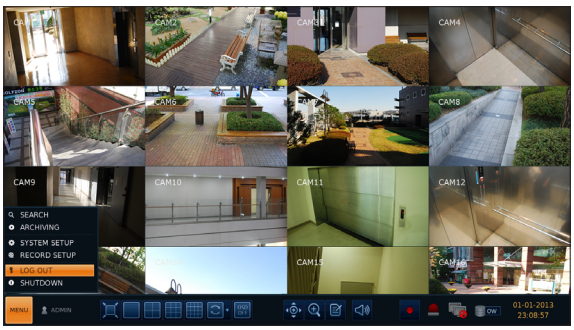


Log Out

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. While logged out, Search / Backup / System Settings / Record Settings / Exit menus are restricted to use.



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.

   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.

Monitoring

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.
Motion Detection Icon		A motion is detected by the connected camera.

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 Mode. When a user arranges channels on desired tiles of split screen, such setting is listed for later access. Selecting a screen setup directly switches the screen mode as configured.
		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.
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. 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 45)
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 63)
Date & Time	01-01-2013 13:38:21	Display the current time and date.

Monitoring

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. 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. 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: • Green : Continuous Recording • Red : Alarm Recording • Blue : Motion Recording • Yellow: Panic Recording

Quick Menu

Right click on a channel to display a quick menu popup window.

Item	Description
Channel No	Display the number of the current channel.
Play	Start playing the video of the selected channel from the specified time.
Zoom	Operates (digital) zooming on the selected channel.
Snapshot Capture	Capture the current live video and save it in the .jpeg format. ✔ Then, you can save the captured video in the HDD or export it to an external USB memory device.

Using the status bar in the live mode

Selecting a split mode

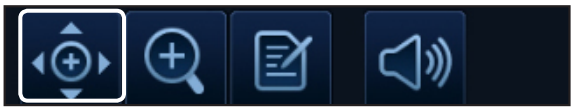
Click a desired split mode from 1, 4, 9 and 16 split screen. Or press the [**DISPLAY**] button on the remote control until a desired split mode is displayed.

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 38)

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.



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.

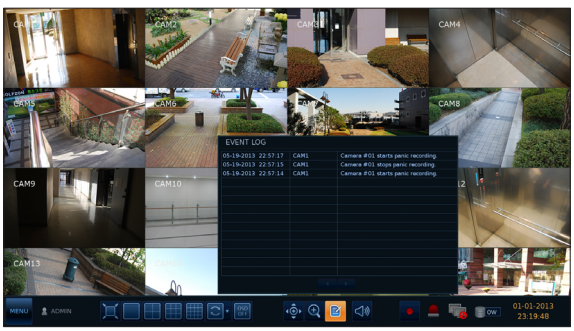
- CH1 - CAM1 : Select a channel to zoom in/out.
- : Zoom out the current (enlarged) image step by step.
- : Enlarge the current image step by step.
- Zoom Box : Use the yellow box to move to or select a desired zooming area.
- EXIT : Exit the zooming screen and return to the live screen.

✔ Digital zooming magnifies the video image digitally and produces enlarged images that may not be sharp and clear. For sharper and clearer magnification, it is recommended to use cameras supporting 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.



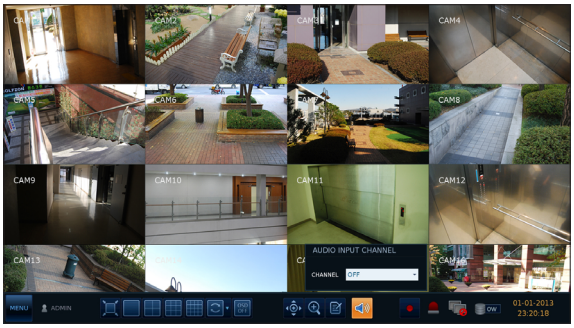
2. Double-click a desired log to display the event video. You will move to the play screen of the selected log.

To select an audio input channel

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

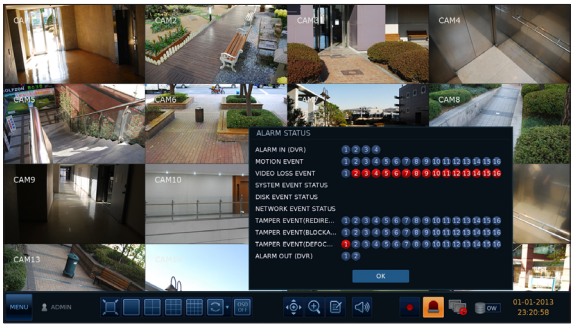
- CHANNEL : Produces the selected channel's audio, regardless of the split screen mode.
- LINK TO FULL SCREEN : When switching the DVR display mode to view one channel (Single Split), it produces the selected channel's audio.

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



To check the alarm status

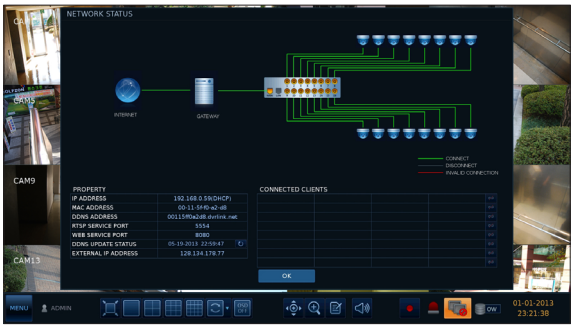
You can check alarms and events from each camera and the system.
Click <**OK**> to close the window.



To check the network status

Shows connection status of cameras and network devices. Click to display detailed information on current users and network connections.
Click <**OK**> to close the window.

✔ For more information, refer to "**Network Status**". (page 47).

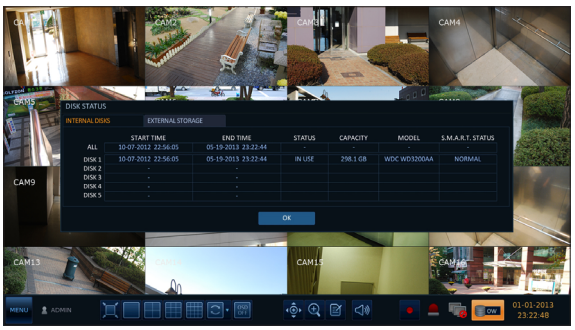


Monitoring

To check the disk status

You can check status and information on storage devices currently connected to the system.
Click <**OK**> to close the window.

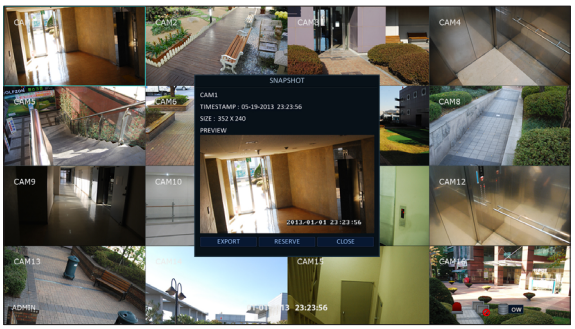
✔ For more information, refer to "**Disk Information**". (page 52).



Saving captured snapshots

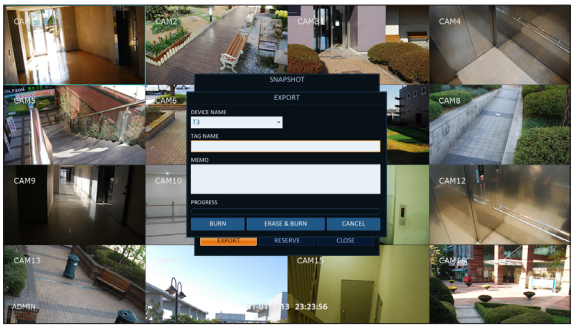
You can capture the current video screen and save or export to a connected storage device.

1. Select a channel first, 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 "**Archive** > **Reserved data management**" and can be backed up. (Page 76)



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.

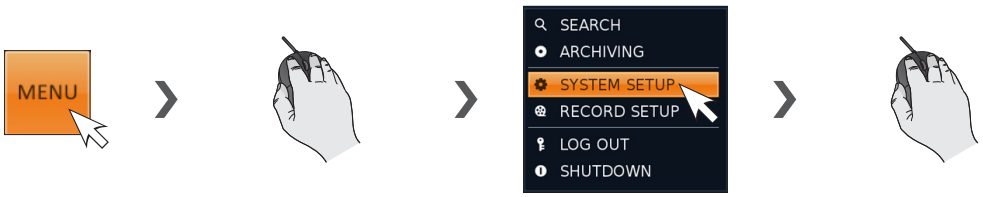
› ERASE & BURN : Deletes all files in the connected USB storage and then saves the snapshot.

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

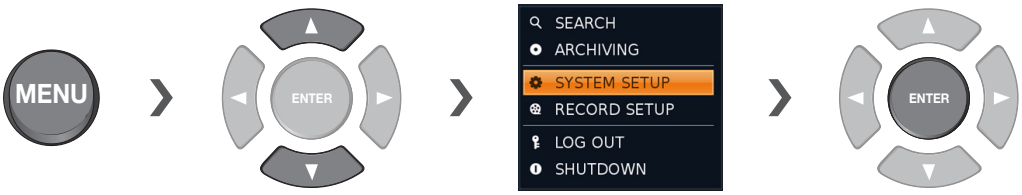
System Setting

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

System Setting

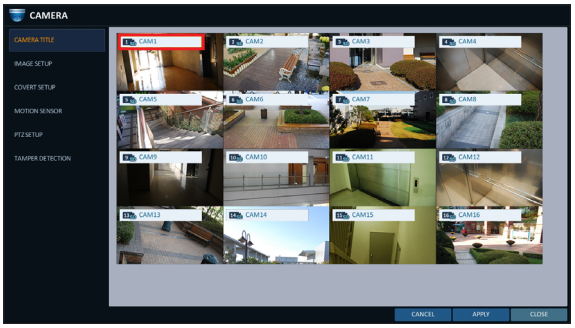
Camera Setting

You can configure the display settings of: camera title, hidden option, motion and camera type.

CAMERA TITLE

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

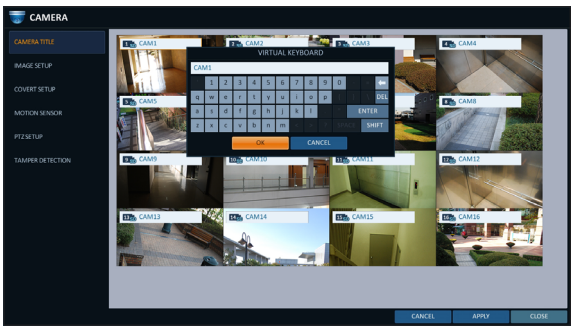
1. From <**SYSTEM SETUP**> - <**CAMERA**>, select <**CAMERA TITLE**>.
2. Use the [▲▼◀▶/**ENTER**] buttons on the remote control or use the mouse to select a channel that you want to rename.
   Alternatively, simply double-click the camera to rename from the top left corner.



3. Once the virtual keyboard appeared, select desired alphanumeric characters to complete your input, and press the <**OK**> button.

   ✔ The <**SHIFT**> key toggles letter case.

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. The confirmation message appears and you will return to the previous menu.

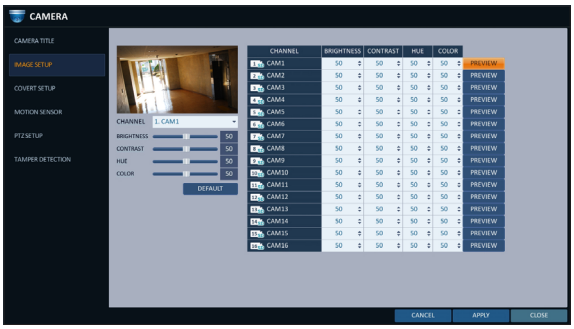


✔ Camera name allows up to 8 letters, combining numbers and upper/lower case alphabets.

Image Setup

You can adjust brightness, contrast, color and quality setting of each channel's camera. (Not available for HD-SDI cameras.)

1. From <**SYSTEM SETUP**> - <**CAMERA**>, select <**IMAGE SETUP**>.
2. Use [▲▼◀▶/**ENTER**] buttons of the remote control or mouse to edit 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.

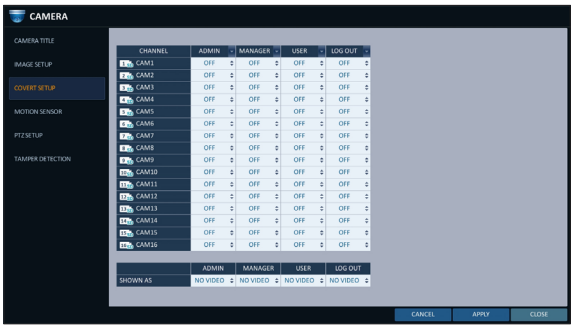


✔ Press <**PREVIEW**> button for adjusting with preview image.

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.
   - › SHOWN AS : Sets how a <**COVERT**> channel will be displayed on the monitor.
     - No Video : Nothing is displayed on the monitor for the <**COVERT**> channel as if it is not connected to a camera.
     - COVERT : Hides only the live monitoring.
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. The confirmation message appears and you will return to the previous menu.



System Setting

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 : turn on or off the motion sensor.
   - MARK : Set to <**ON**> to display the motion detection indicator on each video tile where applicable.
   - SENSITIVITY : Set the sensitivity level of the motion sensor to either Daytime or Nighttime.
   - EDIT AREA : Specify the motion detection area.
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. The confirmation message appears and you will return to the previous menu.

The motion detection sensitivity may differ depending on the characteristics of the connected camera or the installation environment.

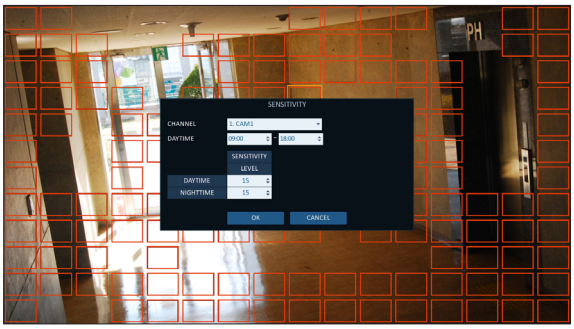
Motion Area Setup

From the motion setup window, click <**EDIT AREA**> in the right corner to display the area setup screen.
Setting the motion area may differ depending on the camera model. Below is a typical setting of the motion area.

1. Click <**EDIT AREA**> to move to the motion area setup screen.
2. If using the remote control, press the [**ENTER**] button to mark the current position.
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. Press the [**EXIT**] button on the remote control or right-click any area to display the popup window as in the right picture.



6. While the popup window is displayed, select <**Sensitivity**> to set the motion detection sensitivity of the channel currently selected.

   › Channel: Select the channel to set the motion sensitivity.
   - SENSITIVITY : 1(Low) ~ 30(High) - The higher the number is, the more higher the sensitivity level becomes.

   › DAYTIME : specify the time period that will be considered as daytime.
   - DAYTIME : specify the <**SENSITIVITY**> for the daytime.
   - NIGHTTIME : specify the <**SENSITIVITY**> for the nighttime.

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

   ✔ If unwanted events occur frequently at night, you may want to reduce the motion sensitivity for the night duty.

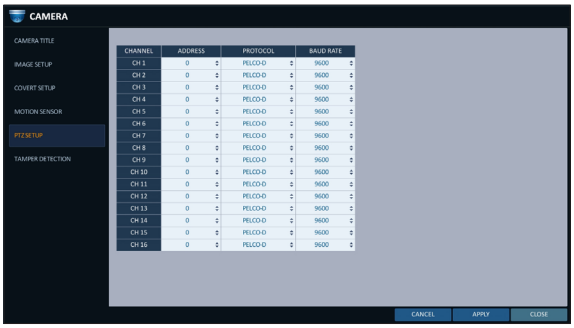
PTZ Settings

You can configure PTZ cameras connected to each channel. Set the camera ID, protocol, baud rate and PTZ control speed for each channel.

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

2. Use [▲▼◀▶/**ENTER**] buttons of the remote control or mouse to set protocol and bitrate of each channel.

   ✔ Refer to user's manual of the camera or consult camera installation service provider for further details on setting the PTZ camera, such as camera address, protocol and baud rate.



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

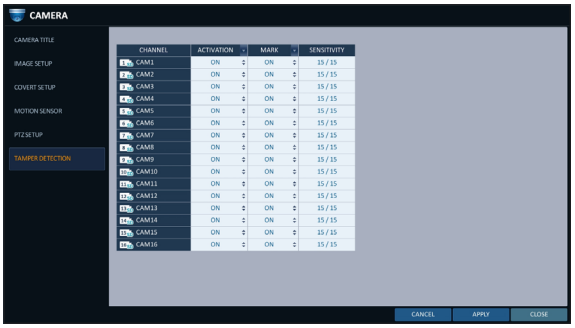
4. Once the setup completed, press the [**EXIT**] button of the remote control or click <**CLOSE**> button on the bottom to display a confirmation dialog. Click <**CANCEL**> to return to the previous menu.

TEMPER DETECTION

You can set to detect tampering attempt to interfere monitoring operations by tampering the installed camera.

1. Select the <**TEMPER DETECTION**> from the <**CAMERA**> menu items in <**SYSTEM SETUP**>.

2. Use [▲▼◀▶] buttons on the remote or the mouse to select <**MARK, SENSITIVITY**> and set the tampering detection conditions appropriately.



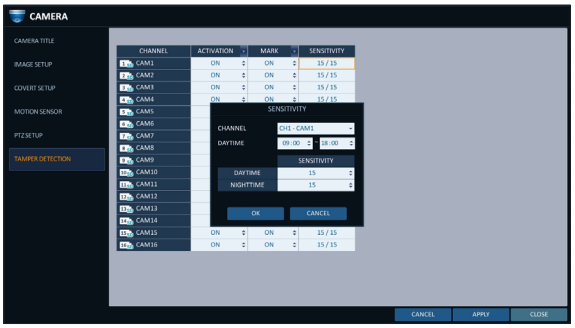
3. For each channel, set the day/night sensitivity.

4. Set the activation of each channel, and set whether to display indicator on the screen.

   › SENSITIVITY
   - LEVEL : The detection sensor's sensitivity for each detection block. (Can be separately set for day / night modes)

   › ACTIVATION : Set the detection for each channel to be enabled/disabled.

   › MARK : Turns on or off the detection indicator to be displayed on the screen.



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. The confirmation message appears and you will return to the previous menu.

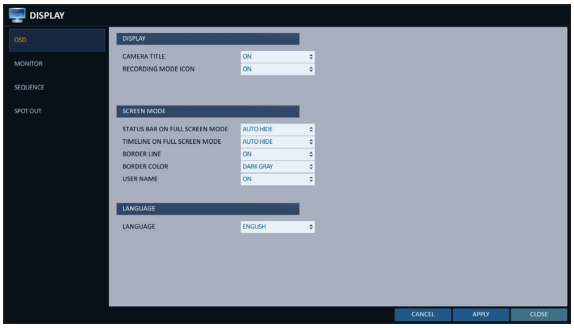
Display Setting

You can configure screen display setup for On-screen Display, Screen Layout, Sequence.

OSD

You can set Camera Name, Icon, Status Bar, Timeline, Borderline, User Name and Language.

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

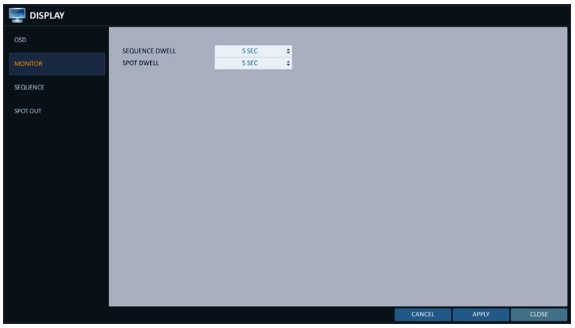


2. Use the [▲▼◀▶/**ENTER**] buttons on the remote control or use the mouse to set each option of the OSD item.
   - › CAMERA TITLE : specify the display of the camera title on the screen.
   - › RECORDING MODE ICON : specify the display of the record mode icon on the screen.
   - › STATUS BAR ON FULL 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. The confirmation message appears and you will return to the previous menu.

System Setting

Monitor

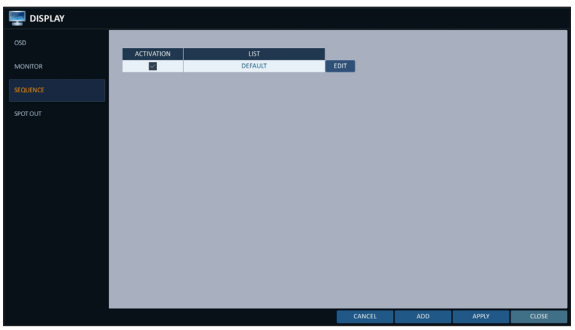
If you change from monitoring mode to sequence, you will have to set the interval of the sequence.



1. From <**SYSTEM SETUP**> - <**DISPLAY**>, select <**MONITOR**>.
2. Use the [▲▼◀▶/**ENTER**] button of the remote control or mouse to set the dwell for Sequence mode and SPOT Out dwell.
   - SEQUENCE DWELL : Sets the time interval to the next screen mode for Live monitoring, which defines individual screen mode's dwell time in the Sequence. (Can set to 1 sec ~ 60 sec)
   - SPOT DWELL : Sets the time interval to the next view type, which defines individual view type's dwell time for SPOT OUT. (Can set to 1 sec ~ 60 sec)
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. The confirmation message appears and you will return to the previous menu.

Sequence

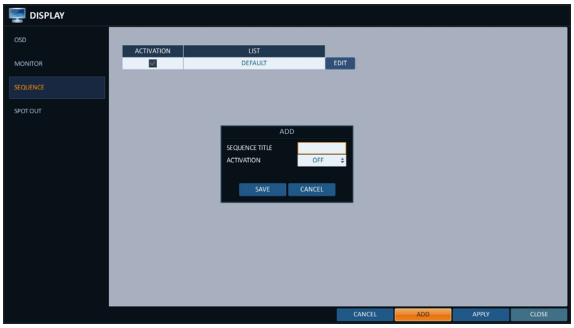
Select a split mode for the sequence, and also select a list of active items when the sequence is performed.



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. The confirmation message appears and you will 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**>.
4. When the <**ADD VIEW TYPE**> dialog appears, click <**ADD**>.
5. When the "**SEQUENCE SETUP**" dialog appears, select a split mode that you want to add from <**VIEW TYPE**>.



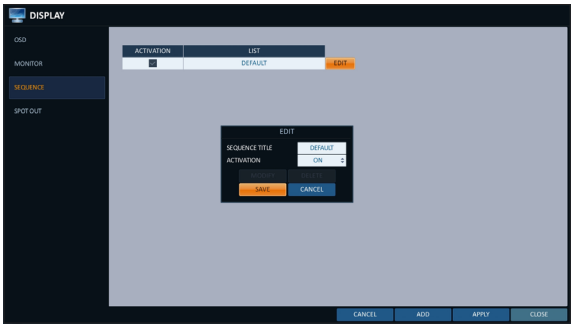
6. If the selected split mode is displayed on <**VIEW CONFIGURE**>, select a channel you want to display in each split screen.
7. Click <**CONFIRM**>.
   The set sequence mode is confirmed and will be added to the Add Sequence list in order
8. When done, click <**CLOSE**> in the bottom of the screen.
   After the sequence type is saved, you will return to the previous screen.

9. Place your mouse cursor over a desired tile of added Sequence, right click on it or press the [**ENTER**] button of the remote control to edit or delete it.

System Setting

To edit a sequence

1. Select a sequence that you want to edit in the list.
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**>.
2. Use [▲▼◀▶/**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

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.

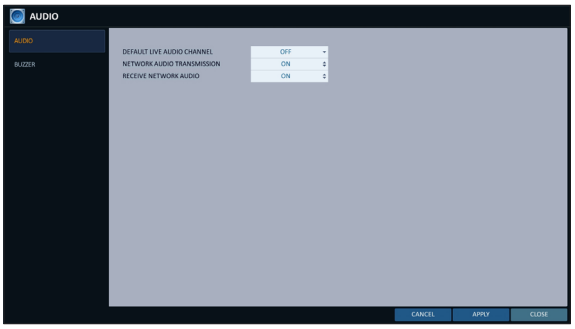
System Setting

Audio Setup

You can configure audio related settings (channel and network transfer) and signal beep for remote control operations.

Audio

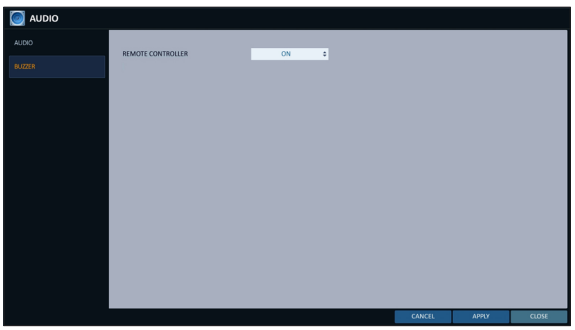
Choose whether to receive the live sound source and select an audio channel.



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 DVR transfers the audio signal to the remote client. DVR ➞ PC (Remote Client)
   - › RECEIVE NETWORK AUDIO : decide if DVR receives the audio signal from the remote client. PC (Remote Client) ➞ DVR
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. The confirmation message appears and you will return to the previous menu.

Buzzer

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 CONTROLLER : 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. The confirmation message appears and you will return to the previous menu.

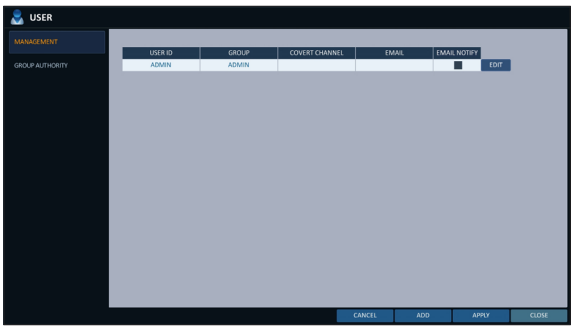
User Setting

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. The confirmation message appears and you will return to the previous menu.

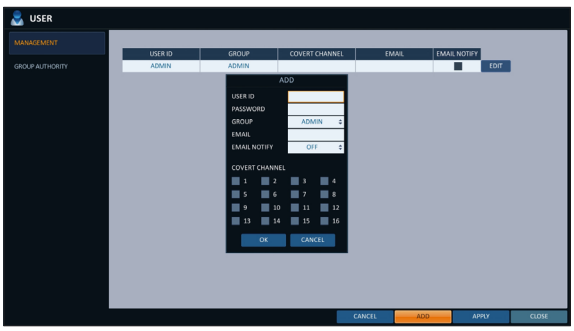


To add a user account

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.

     ✔ To use <**EMAIL NOTIFY**>, a sendmail server and its port should be configured previously.
   - › COVERT CHANNEL : You can set the channel to hide from a specific user.

     ✔ <**COVERT CHANNEL**> option hides the video of the selected channel from being displayed on the screen.
3. When done, click <**OK**>.
   The added user account will be listed.

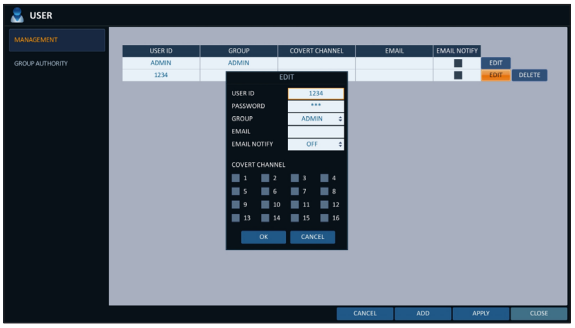


System Setting

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**>.

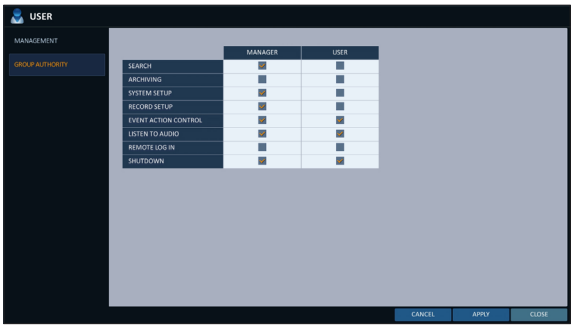
   ✔ The <**ADMIN**> account can not be changed or edited.



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.
   - › REMOTE LOG IN : Set the permission to access remotely.
   - › SHUTDOWN : Set the permission to shut down DVR from the System menu.

   ✔ The <**ADMIN**> account is the master account allowed for all permissions, which is not edited for individual permissions.
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. The confirmation message appears and you will return to the previous menu.

Network Setup

You can set IP address, DDNS and E-mail settings, and check network status.

IP Setup

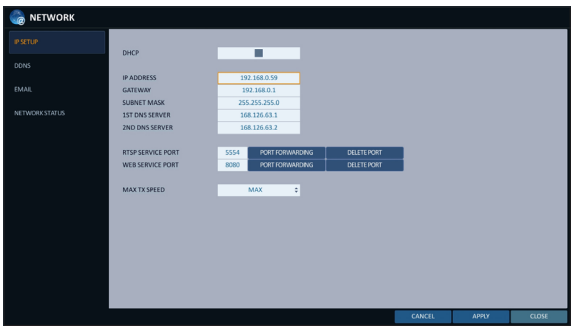
Edits IP address related properties and remote service port of the DVR.

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

2. Use the [▲▼◀▶/**ENTER**] buttons on the remote control or use the mouse to specify each item of the network settings.

   › DHCP : If it is checked, set the IP address of the DVR to Dynamic IP.

   ✔ For DHCP address allocation, the DVR should be connected to a network environment such as router that provides with DHCP server service.
   Simple network hubs may have no DHCP server.



3. Deselect DHCP option to enable manual static address configuration.

   › 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.
   › 2ST DNS SERVER : Enter the address of the secondary DNS server.
   › RTSP SERVICE PORT : port number that the remote client receives the DVR video from.
   › WEB SERVICE PORT : port number used for connecting to the DVR with the web browser.
   › PORT FORWARDING : If you are using a router, you can set the port forwarding so that external access to the DVR 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.

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. The confirmation message appears and you will return to the previous menu.

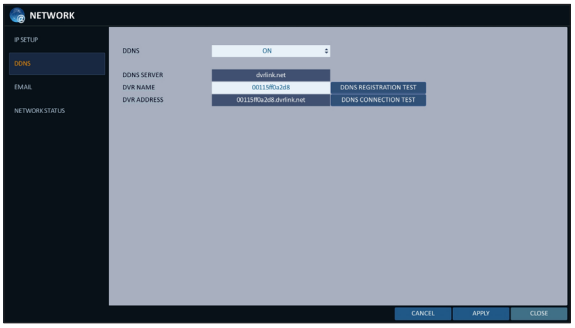
System Setting

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.

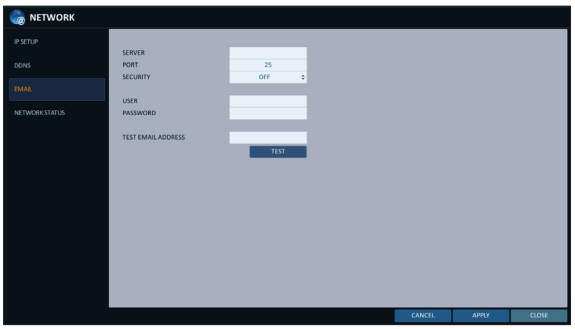


   - › DDNS : Specify the use of DDNS connection.
   - › DDNS SERVER : Select a server to connect to.
   - › DVR NAME : Enter the name of the DVR that you want to use as DDNS.
   - › DDNS REGISTRATION TEST : Check if the <**DVR NAME**> can be set as DDNS. If there is a duplicate name in the server, the registration will fail. If this is the case, rename the <**DVR NAME**> and press Test to check if it works properly.
   - › DVR ADDRESS : Provide the <**DVR 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.
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. The confirmation message appears and you will 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.



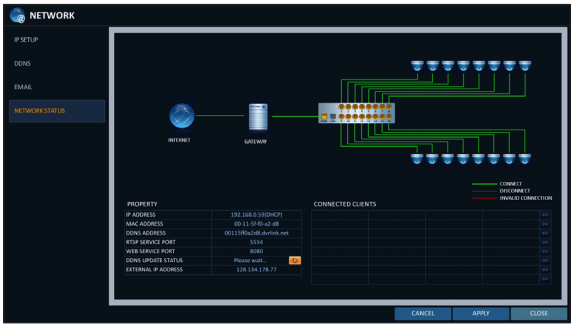
   - › SERVER : Set up the mail server.
     Set the mail server that will be used for notification to the DVR.
     Use the virtual keyboard to enter your mail server.
   - › PORT : Enter the mail server port.
   - › SECURITY : If it is set to <**ON**>, the email will be transferred in secure mode.
     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. The confirmation message appears and you will return to the previous menu.

Network Status

From the network map screen, you can check the internet connection status and 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. The confirmation message appears and you will return to the previous menu.

Network Map



- IP ADDRESS : Indicates the internal IP address of the DVR.
- MAC ADDRESS : Indicates the internal MAC address of the DVR.
- DDNS ADDRESS : Indicates the internal DDNS address of the DVR.
- 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.
- DDNS UPDATE 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 DVR.
  The DVR 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.

System Setting

System Setting

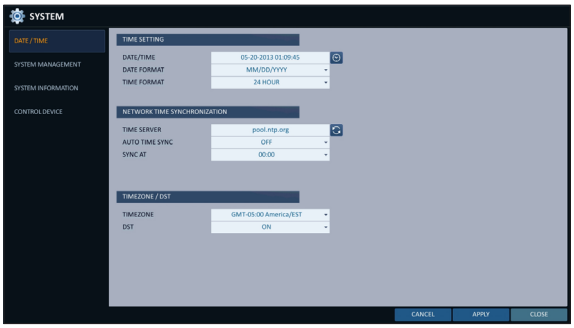
You can configure the settings of date/time, system management, and keyboard controller.

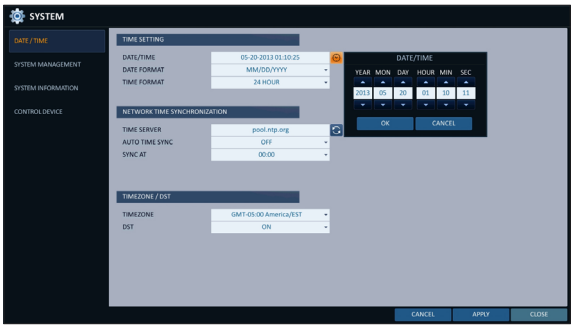
Date/Time

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).

   ✔ Both <**TIME SERVER**> and <**TIME SYNC**> will be enabled only if the DVR is connected to the Internet.





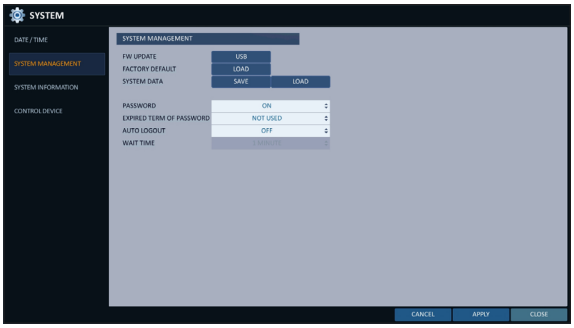
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen. The confirmation message appears and you will return to the previous menu.

System Management

You can check, update or reset the system information.

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

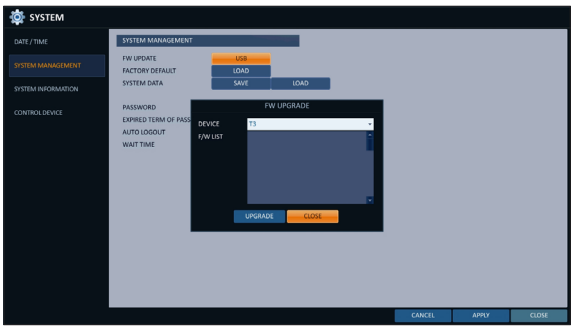
2. Use the [▲▼◀▶/**ENTER**] buttons on the remote control or use the mouse to set each option of the system management.



› FW UPDATE : you can update the current software with the latest version.

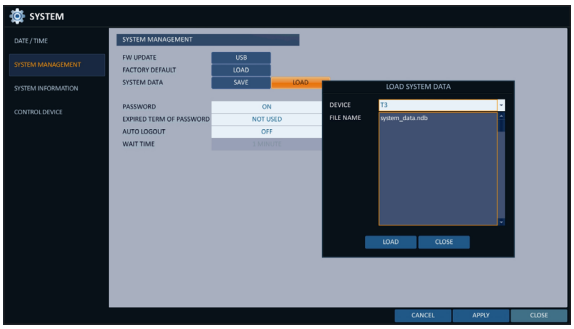
› FACTORY DEFAULT : Return the DVR settings to the factory default.

If you proceed with the firmware upgrade or select to reset to the factory default, all current settings of the DVR will be erased.
In such a case, you must configure the network, time and recording settings again.



› SYSTEM DATA : Save the system settings or get the system information from other device.

- SAVE : Store the DVR settings to a storage device. Connect the storage device to the USB port of DVR.
- LOAD : Apply the settings of the storage device to the DVR. Connect the storage device to the USB port of DVR.



› 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.

› AUTO LOGOUT : If there is no user input for a certain period of time, you can set to log out automatically.

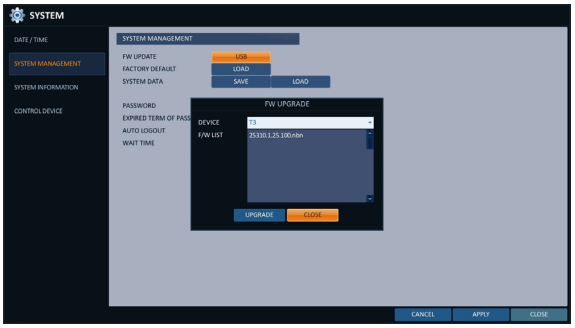
› WAIT TIME : Specify the waiting time for Auto Logout.

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

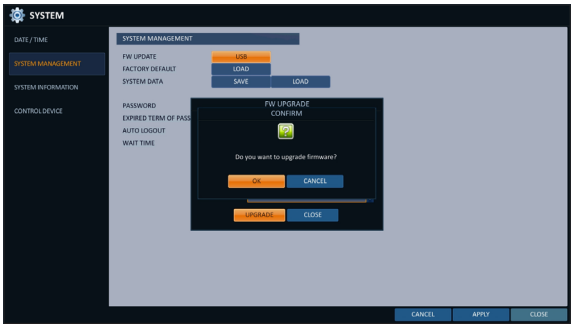
System Setting

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**>.

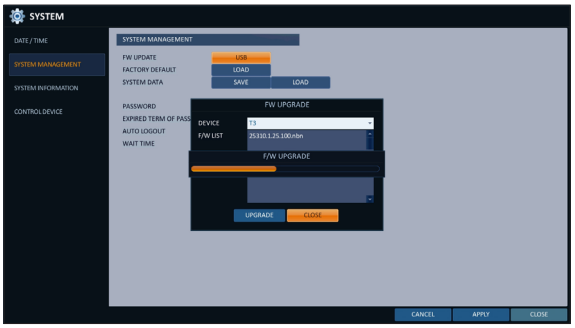


4. Click <**UPGRADE**>.
5. When the confirmation message appears, click <**OK**>.



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

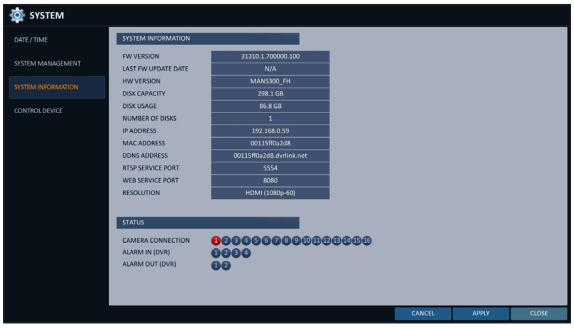
   If the DVR is forcibly turned off while the firmware upgrade is in progress, this can cause a serious damage to the DVR.



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. The confirmation message appears and you will return to the previous menu.

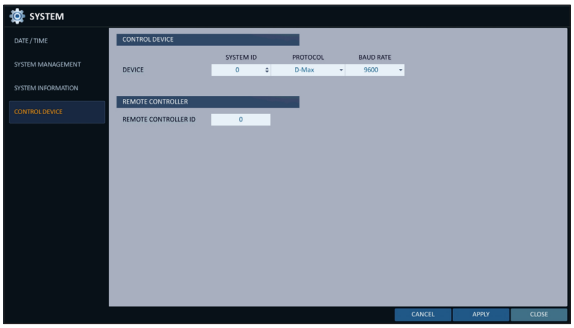


Control Device

Configure the settings of the remote control and keyboard controller.

✔ This function is provided for controlling individual DVR separately using a control device or remote control, in case the site has multiple DVRs of the same model.

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 DVR so that the keyboard controller can identify.
   - › PROTOCOL : Set up the protocol of the keyboard controller.
   - › BAUD RATE : Specify the RS485 communication speed.
   - › REMOTE CONTROLLER ID : Set the ID of 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. The confirmation message appears and you will 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.

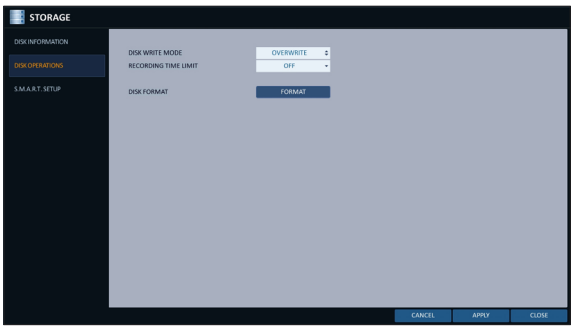
   - › START / END TIME : show the start time and end time of data stored in each disk.
   - › STATUS : check if the connected disk is being used by the DVR. If you encounter a problem with the disk, the DVR will terminate the connection to the disk and mark it as 'Not In Use'.
   - › CAPACITY : show the 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 DVR 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. If it is set to <**OFF**>, this function will be disabled.

   ✔ Ex) Record Time Limit : 1 day Even if there is sufficient free space in the HDD, it records / keeps videos of the most recent 1 day only.

   › DISK FORMAT : format the hard disk.

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

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

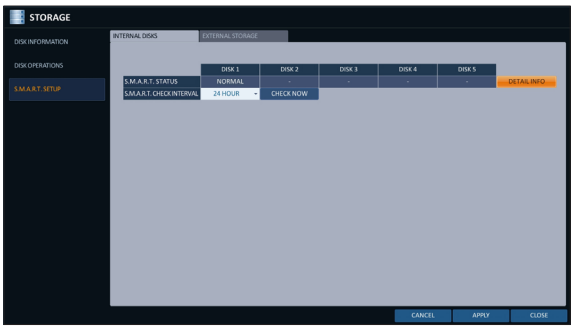
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen. The confirmation message appears and you will return to the previous menu.

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. The confirmation message appears and you will 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.

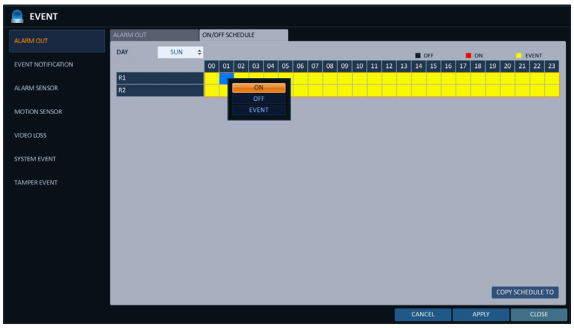
› TEST : Forcibly output the alarm for the test purpose.

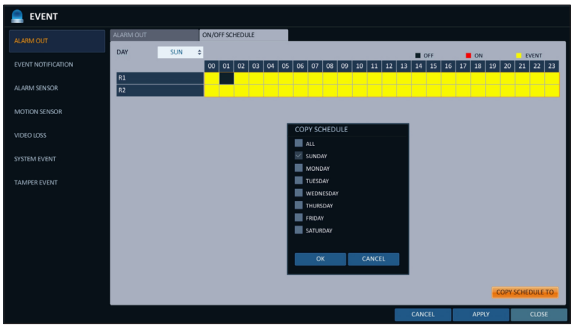
3. To apply the change, click <**APPLY**> in the bottom of the screen.
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen. The confirmation message appears and you will return to the previous menu.

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 SHEDULE 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. The confirmation message appears and you will return to the previous menu.





Event Notification

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

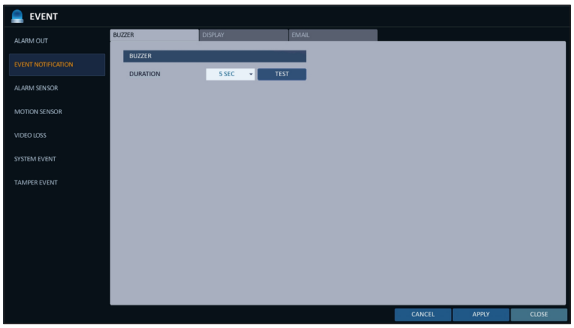
1. From <**SYSTEM SETUP**> - <**EVENT**>, select <**EVENT NOTIFICATION**>.
2. Use the [▲▼◀▶] buttons on the remote control or use the mouse to select one from <**BUZZER**>, <**DISPLAY**> and <**EMAIL**>.
3. Use the [▲▼◀▶/**ENTER**] buttons on the remote control or use the mouse to set the output method 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. The confirmation message appears and you will return to the previous menu.

System Setting

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.

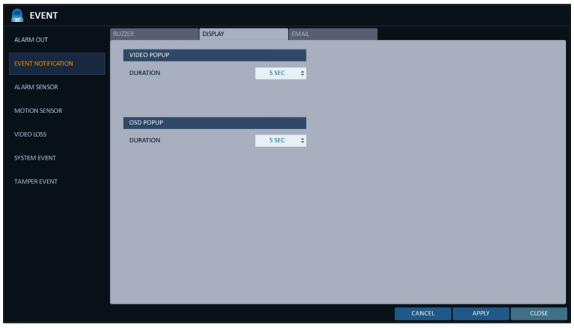


Display

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.
- TRANSPARENT : Keep the video popup displayed for as much time as the event lasts.
- 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.

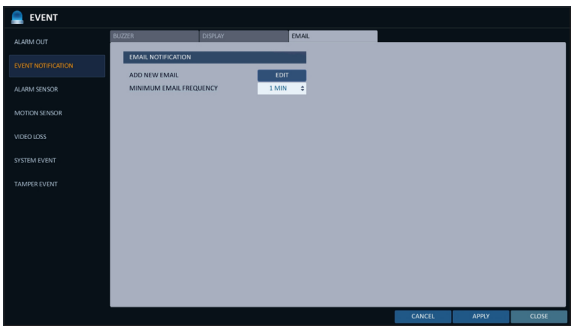
✔ If multiple events occur at the same time, or if multiple event-related video channels exist, the video popup will be displayed in the maximum split screen mode rather than the single split screen mode.



› 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.

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 43)



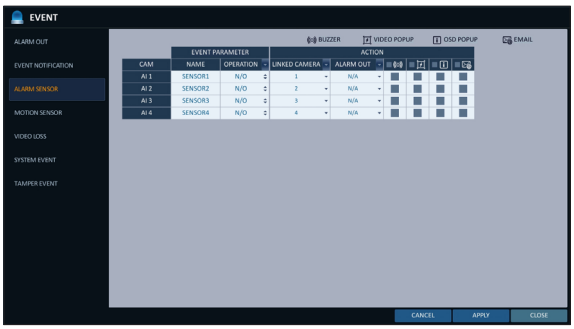
› ADD NEW EMAIL
If you want to add a new mail recipient beside the existing ones, click this to add the recipient.

› 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.

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 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.
   - › : Specify the output of the buzzer if an alarm is detected by the alarm sensor.
   - › : 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.
   - › : Select to display the OSD popup message if it is detected by the alarm sensor.
   - › : Select to send an email if detected by the alarm sensor.
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. The confirmation message appears and you will return to the previous menu.

System Setting

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**>.

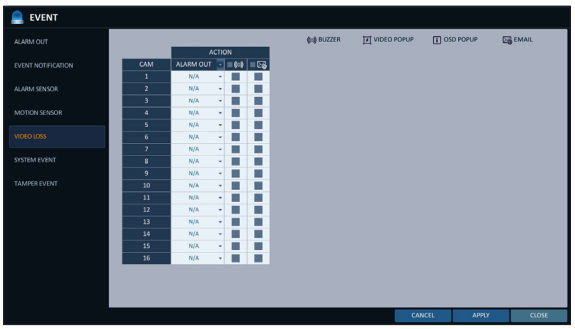
1. From <**SYSTEM SETUP**> - <**EVENT**>, select <**MOTION SENSOR**>.
2. Use the [▲▼◀▶] buttons on the remote control or use the mouse to specify the ignorance interval and operation.
   - › IGNORING INTERVAL : Specify the minimum interval of the motion event occurrence. For example, even if you have 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.
   - › : Specify the output of the buzzer if a motion is detected by the motion sensor.
   - › : Select to display the video popup if a motion is detected by the motion sensor.
   - › : Select to send an email if a motion is detected by the motion sensor.
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. The confirmation message appears and you will 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 <**EVENT LOSS**>.
2. Use the [▲▼◀▶] buttons on the remote control or use the mouse to specify the reaction to a video loss
   - › ALARM OUT : Specify the alarm output channel if a video loss occurs.
   - › : Specify the output of the buzzer if a video loss occurs.
   - › : Select to send an email if a video loss occurs.
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. The confirmation message appears and you will return to the previous menu.

System Event

You can set any action to an event related to the disk, recording, network or system. Like the other events, you may notify the event to the user using the alarm/buzzer output, OSD pop-up or email.

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. The confirmation message appears and you will return to the previous menu.

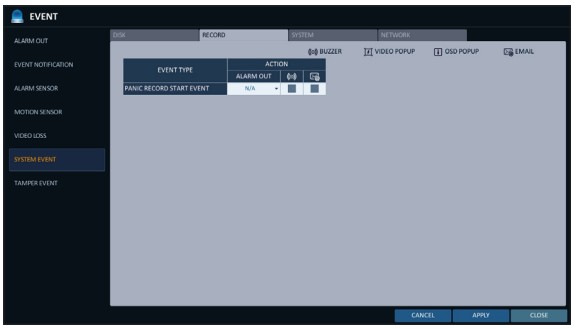
Disk

- 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 Setting

System

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

› LOGIN FAIL EVENT: This event occurs when the DVR 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 DVR. If you encounter a fan failure, contact the retailer or the service center for technical assistance.

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

Network

› TROUBLE IN INTERNET CONNECTION : Occurs if the Internet connection to the DVR fails.
If you do not want to connect the DVR 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 DVR tried to update the DDNS address but failed.

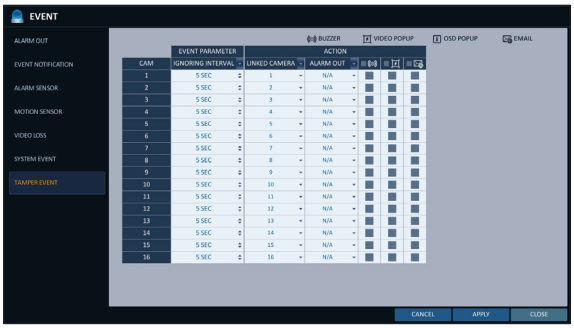
✔ If the DDNS address fails to be updated, the DVR may not connect to a remote client. If this is the case, enter the IP address from the client side to allow access from the DVR. This is just a temporary measure.
For the IP address, move to and check <**EXTERNAL IP ADDRESS**> from the <**NETWORK**>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

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

TAMPER EVENT

You can set how to react upon a detected tampering event.
Set the tampering event detection in <**TAMPER DETECTION**> for each channel.

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



2. Use [▲▼◀▶] buttons on the remote or the mouse to set the detection interval and its action.

   › IGNORING INTERVAL : Sets the minimum interval of one event detection.
   For example, if it is set to 5 seconds and a tampering attempt is detected within 5 seconds from the previous event, the detection is ignored and regarded as the same event. Set this interval to a longer one if tampering detection reports too frequent.

   › LINKED CAMERA : Select the camera to output the event action upon a tampering detection.

   › ALARM OUT : Set the alarm out channel for detected tampering event.

   › : Sets whether to sound beeper upon a tampering detection.

   › : Sets whether to display a video popup upon a tampering detection.

   › : Sets whether to send an email notification upon a tampering detection.

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

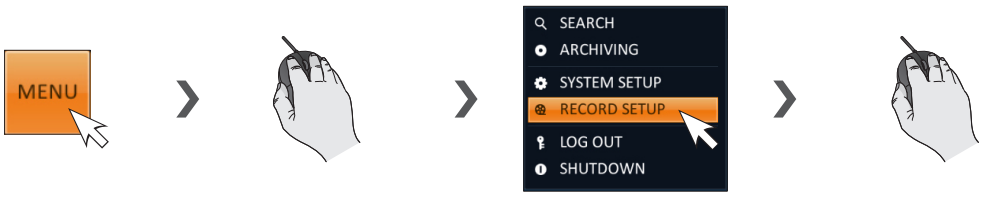
4. When done, press the [**EXIT**] button on the remote control or click <**CLOSE**> in the lower screen. The confirmation message appears and you will return to the previous menu.

Record Setting

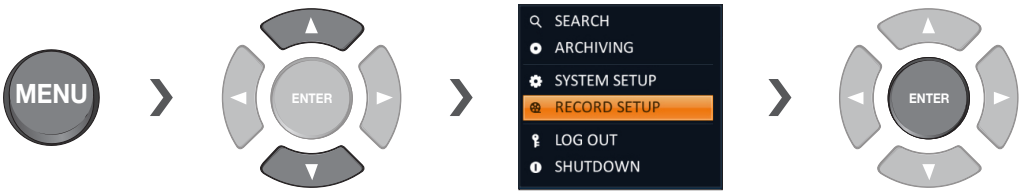
You can configure the record settings for the DVR. Only authorized users can access the Record Setup menu.

To start the Record Setup menu

How to use the mouse



How to use the remote control



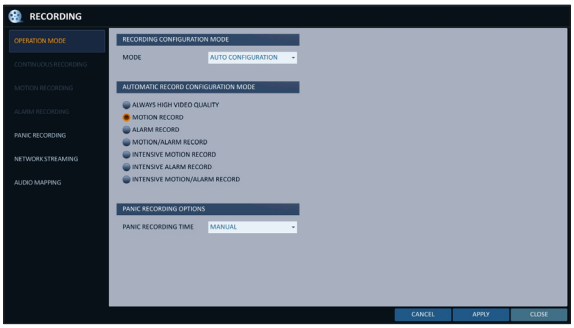
Operation Mode

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

1. From <**RECORDING**> 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. The confirmation message appears and you will return to the previous menu.

Auto Configuration

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

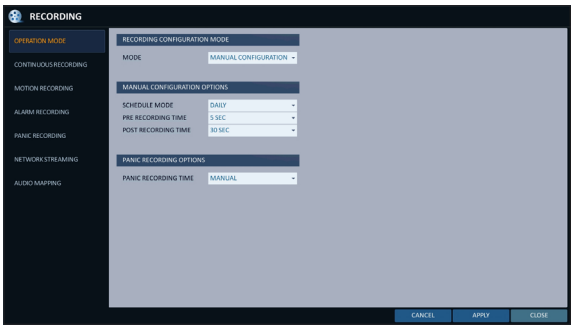


- ALWAYS HIGH VIDEO QUALITY : Recording will proceed in the best quality regardless of the event at all times.
  As this option will always make recording in the best quality, the recording period is the shortest compared to the other record modes.
- MOTION RECORD : Recording will proceed only if a motion 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 normal quality. However, the quality will switch to high if a motion is detected.
- INTENSIVE ALARM RECORD : Normally recording will be performed in normal quality. However, the quality will switch to high if an alarm event occurs.
- INTENSIVE MOTION/ALARM RECORD : Normally recording will be performed in normal quality. However, the quality will switch to high if an alarm event occurs or a motion is detected.

✔ Motion : Normally, it means the movement of an object. However, it implies a change to the illumination in the context of the DVR.
Ex) Vehicle lights (headlights), illumination change, etc.

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 : Set the recording schedule for a day (daily) or for a week (weekly).
  - 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 CONFIGURATION**>, recording will continue until you turn it off manually.

Record Setting

Continuous Recording

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

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

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

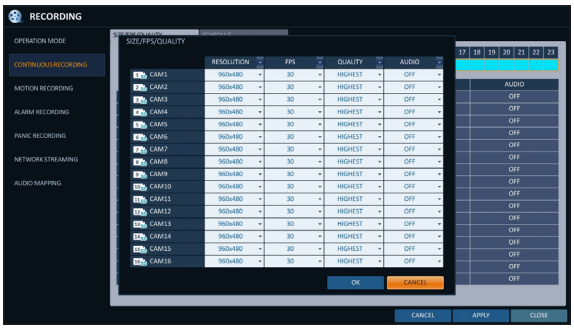
2. Use the [▲▼◀▶] buttons on the remote control or use the mouse to select either <**SIZE/FPS/QUALITY**> or <**SCHEDULE**>.

Size/FPS/Quality Setting

1. Please select the day of the week to perform the continuous recording.
   From <**OPERATION MODE**>, you must set the <**SCHEDULE MODE**> of the <**MANUAL CONFIGURATION OPTIONS**> to <**WEEKLY**> before you can specify the <**DAY**>.

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.



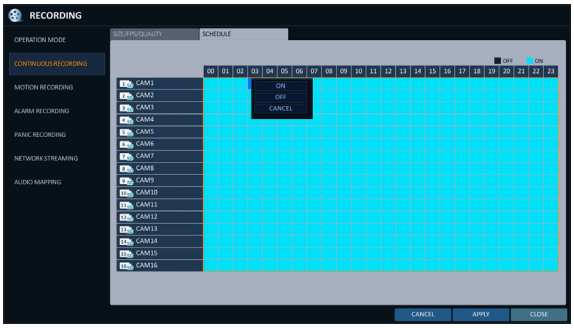
   ! Specify the <**RESOLUTION**>, <**FPS**>, <**QUALITY**> and use of the <**AUDIO**> recording for each channel.

   - 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.

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

! The video resolution and the FPS option may differ depending on the specification of the camera.

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. 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. The confirmation message appears and you will return to the previous menu.

Motion Recording

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

1. From the <**RECORDING**> menu, select <**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 of <**RESOLUTION**>, <**FPS**>, <**QUALITY**> and use of the <**AUDIO**> for the motion recording.

   ✔ For more information, see the "**Continuous Recording**". (page 64)
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. The confirmation message appears and you will return to the previous menu.

Record Setting

Alarm Recording

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

1. From the <**RECORDING**> menu, select <**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 of <**RESOLUTION**>, <**FPS**>, <**QUALITY**> and use of the <**AUDIO**> for the alarm recording.

   ✔ For more information, see the "**Continuous Recording**". (page 64)
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. The confirmation message appears and you will 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 <**RECORDING**> 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 64)
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. The confirmation message appears and you will return to the previous menu.

Network Streaming

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

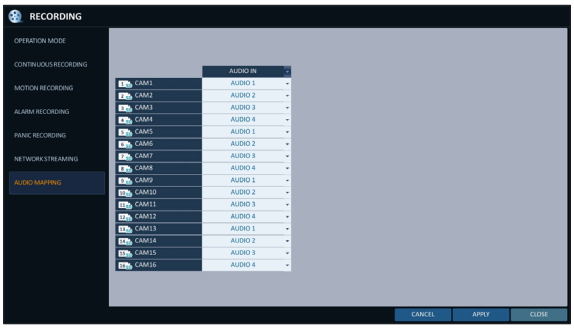
✔ Even if you set the resolution and FPS to high for the network streaming, the DVR will reduce the size or FPS according to the network status (speed) before transferring the recording video.

1. From the <**RECORDING**> 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 <**MAX RESOLUTION**> and <**MAX FPS**> for each channel.
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. The confirmation message appears and you will return to the previous menu.

AUDIO MAPPING

1. From the <**RECORDING**> menu, select <**AUDIO MAPPING**>.
2. Set the <**AUDIO IN**> of the AUDIO MAPPING.
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. The confirmation message appears and you will return to the previous menu.

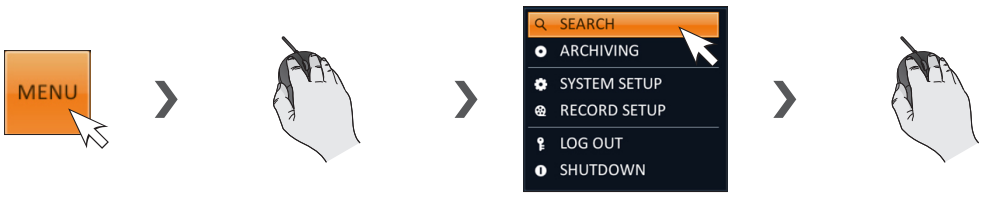


Search

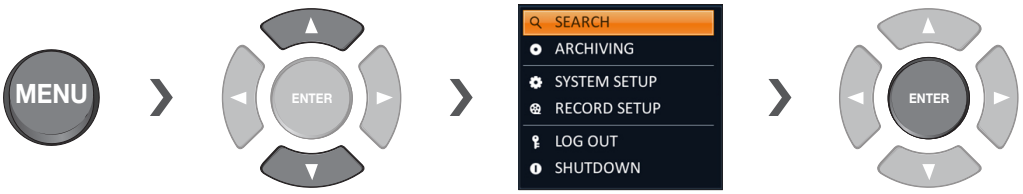
You can search for the recording data in the HDD by the criteria of time, thumbnail, event, etc.

To move to the Search menu while in monitoring

How to use the mouse



How to use the remote control 1

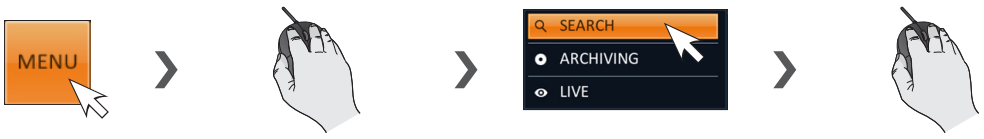


How to use the remote control 2

SEARCH

To move to the Search menu while in playback mode

How to use the mouse



How to use the remote control

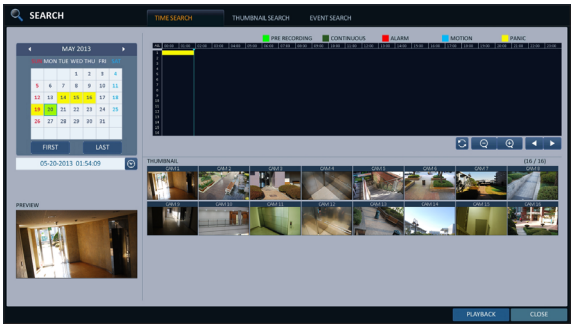
SEARCH

Search Settings

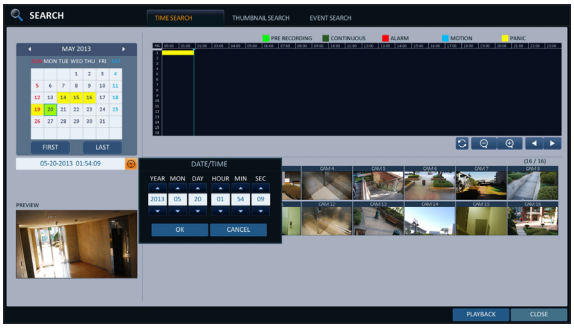
Time Search

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.

Search

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.

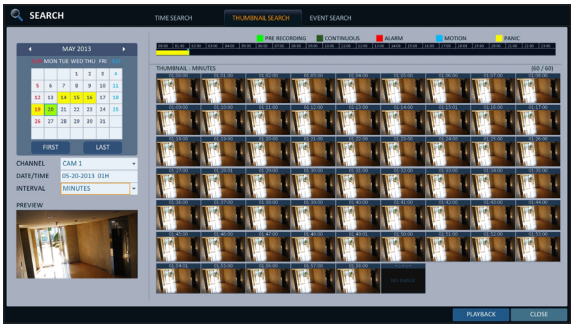
   - FIRST : The first date of recording is automatically selected.
   - LAST : The last date of recording is automatically selected.
   - CHANNEL : Select a channel to search for.
   - DATE/TIME : Specify the search date and time.

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

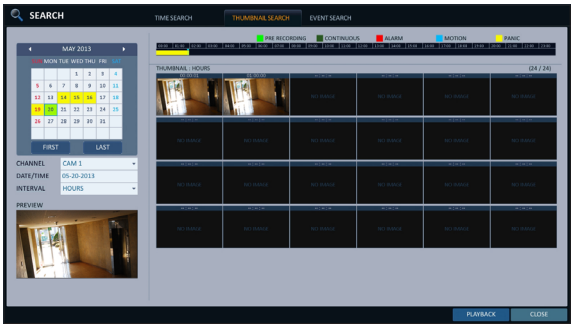
   - INTERVAL: Select a time interval of the thumbnail view.

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.

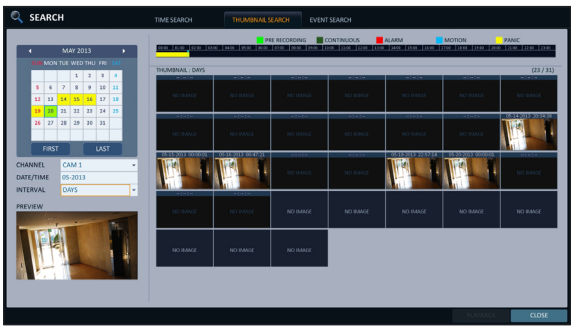
4. If you want to stop playing and return to the search screen, press [**EXIT**] or [**SEARCH**] on the remote control. You can also click <**MENU**> in the lower left corner and select a desired menu.



< "Minute" selection screen >



< "Hour" selection screen >



< "Day" selection screen >

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.

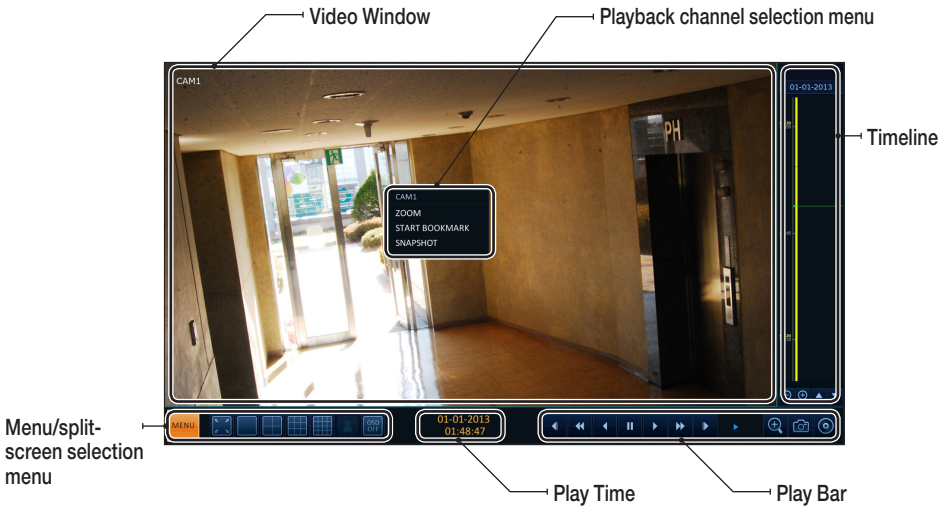
6. Double-click a desired event or click <**PLAY**> in the lower right corner to move to the play screen.
7. If you want to stop playing and return to the search screen, press [**EXIT**] or [**SEARCH**] on the remote control.
   You can also click <**MENU**> in the lower left corner and select a desired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

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 <**PLAY**> 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 27)

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 bookmarking	The "**Set bookmark**" popup appears, and you can bookmark a play point for the backup purpose.
Snapshot Capture	Capture the current live video and save it in the .jpeg format.

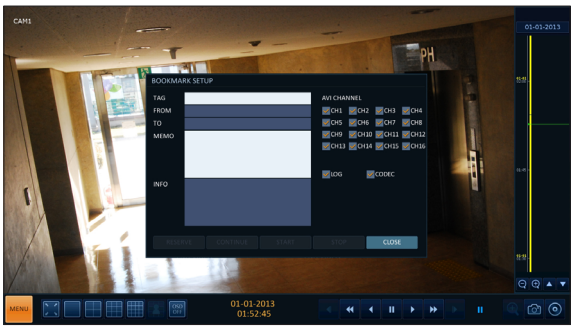
Using the play bar

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. Then, you can save the captured video in the HDD or export it to an external USB memory device. While you perform the snapshot, the current video will be stopped playing.
Start/end bookmark		Add a bookmark for the current playback screen. Press this to display the "**SET BOOKMARK**" 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. Then, the reserved data can be backed up in Archive menu or can be played in the "**RESERVED DATA MANAGEMENT**" menu.

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 <**ARCHIVE**> 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 <**ARCHIVE**> menu.
4. Press the [**ARCHIVE**] button on the remote control.

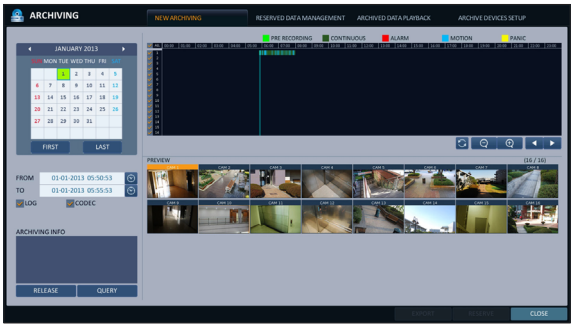
Using the Archive menu during monitoring

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

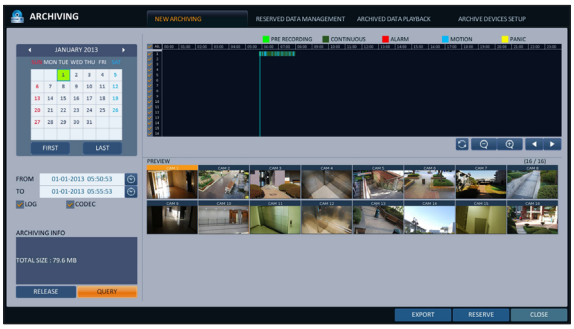
Archive

You can archive the searched data or reserve it.

1. From the <**ARCHIVE**> 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 <**START**> and <**END**> times.
   - ✔ Drag the timeline to specify the start and end time.



4. Mark the <**LOG**> and <**CODEC**> 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 DVR 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

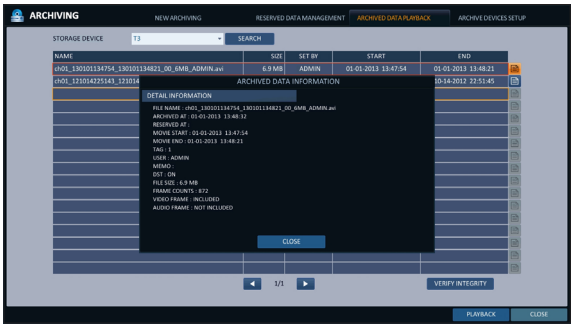
You can search for the reserved data and delete or import it to a storage device.

1. From the <**ARCHIVE**> menu, select <**RESERVED DATA MANAGEMENT**>.
   The reserved data will be listed.
2. Select a data type from <**AVI**> and <**Snapshot Capture**>.
   - › AVI : Searches AVI video files stored in the DVR.
   - › SNAPSHOT CAPTURE : Searches captured snapshots stored in the DVR.
3. If you want to play the data, double-click a desired data item or click it and select <**PLAY**>.
   - ✔ If selecting <**Snapshot Capture**>, the <**Play**> button will be disabled.
4. If you want to import to a storage device, connect it to the DVR and click <**EXPORT**>.
5. If you want to delete the reserved data, click < ✕ > next to the list. Click <**CANCEL 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.

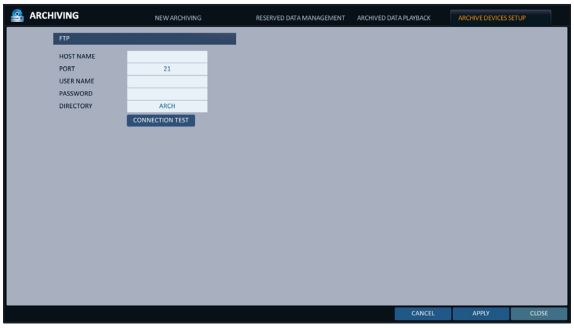
1. Connect the storage device containing the archived data.
2. When the storage device is recognized, click <**SEARCH**>.
3. To view the details, click < 🗎 > next to the list.
   - ✔ Click <**VERIFY INTEGRITY**> to check if the data is corrupt or incomplete.
4. Select an item to play from the list and 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 <**ARCHIVE**> 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. The confirmation message appears and you will return to the previous menu.

Web Viewer

What is the Web Viewer?

Web RA is a user-friendly software application that enables you to control the video data in connection with a remote DVR.

System Requirements

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

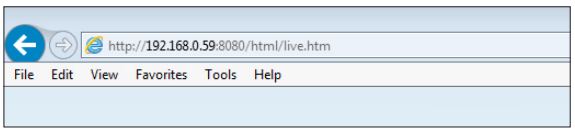
Operating System	Windows XP Professional Windows Vista Home Baisc / Premium Window 7
Web browsers:	Internet Explorer 7.0 or later/Mozilla Firefox 3.6/Google Chrome 4.1/Opera 10 Some web browsers other than Internet Explorer may not fully function.
CPU	Intel Pentium 4 / 2.0GHz or higher
Memory	512 MB
Display	16-bit 1024 x 768 High Color
Hard Disk Drive	50 MB (space required for installing the web viewer) * Additional HDD space is required for saving your recording data. The file size of your recording may differ depending on the specified quality.

Connection

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

To connect to the DVR from inside

- Check the "**Network Status**" and verify the <**IP ADDRESS**> and <**WEB SERVICE PORT**> of the DVR. (page 47)
- 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 DVR from outside

- **Using the IP address**

- Check the "**Network Status**" and verify the <**EXTERNAL IP ADDRESS**> and <**WEB SERVICE PORT**> of the DVR. (page 47)
- If using a fixed (external) IP, enter the external IP that is specified in the DVR 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**

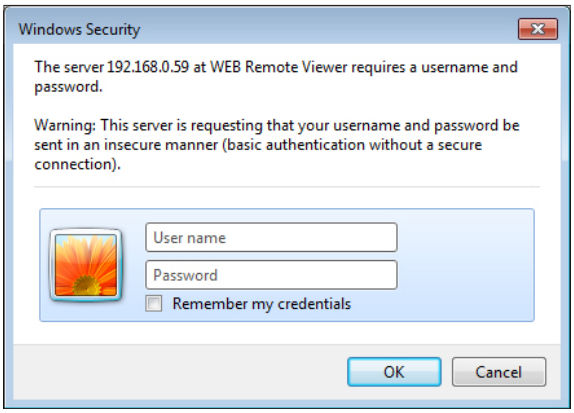
- Check the "**Network Status**" and verify the <**DDNS ADDRESS**> and <**WEB SERVICE PORT**> of the DVR. (page 47)
- Enter the DDNS address and web service port in the address bar of the browser.
  Ex) http://00115f123456.DVRLINK.NET:8080

✔ 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.

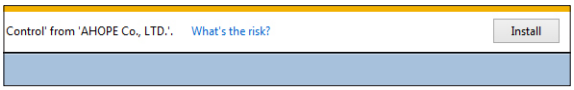
1. Provide the user ID and password.

   ✔ 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.



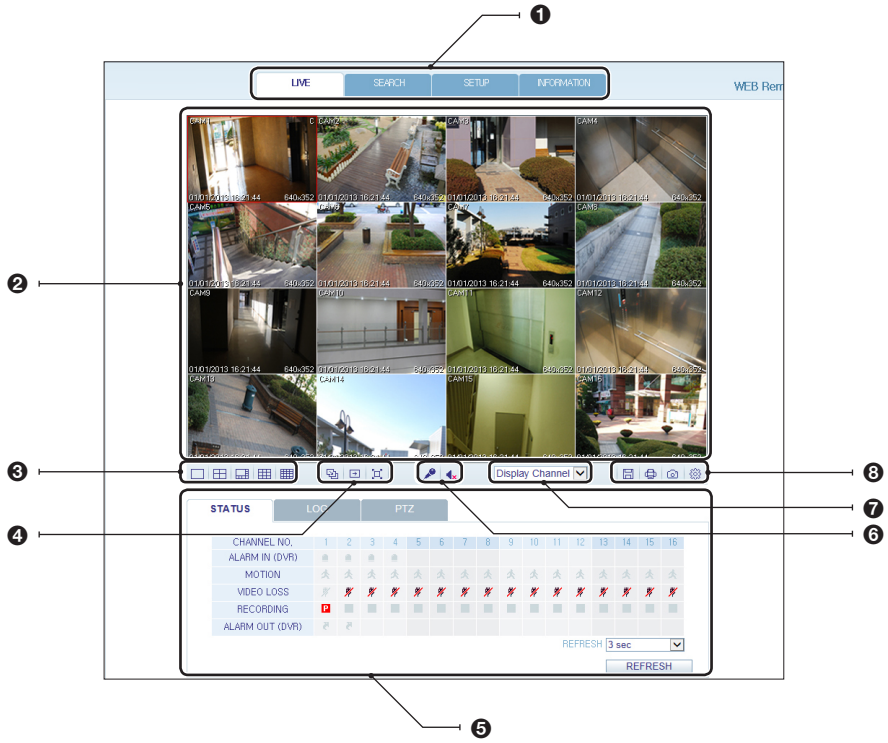
3. Click <**Install**>.

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

Web Viewer

Live

Live Screen At a Glance

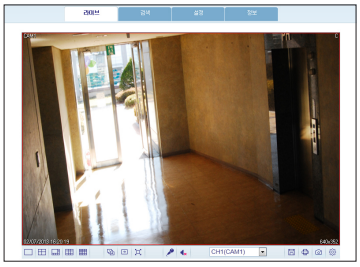


No.	Item	Description
❶	View selection tab	You can switch to the live, playback and setup screen and check the provided information.
❷	Live	Display the live screen of the currently connected DVR.
❸	Split Mode	Select and switch to a desired split-screen mode.
❹	Sequence	Set the sequence mode, switch to the next camera or select the full screen mode.
❺	Status	Show the connection status of each channel.
	Log	Show the log.
	Refresh Time	Set the interval at which the DVR Status is refreshed.
	Reload	Load the DVR Status immediately.

No.	Item	Description
❻	Voice transmission	You can turn on or off the output of the voice signal.
❼	Channel	Select a channel listed in the screen.
❽	Save	Save the live video on the screen.
	Print	Print out the current screen.
	Capture	Capture the selected image.
	ActiveX Settings	Configure the ActiveX settings or specify the saving path of the captured image.

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>

Web Viewer

To save the video

1. Click < > to start saving.
2. The video from the selected channel will be saved to the PC in the AVI format. (Default path: C:\SaveFolder)
   Click < > again to stop saving. Click <**ActiveX Setting**> to display the context menu where you can change the saving path.

Print

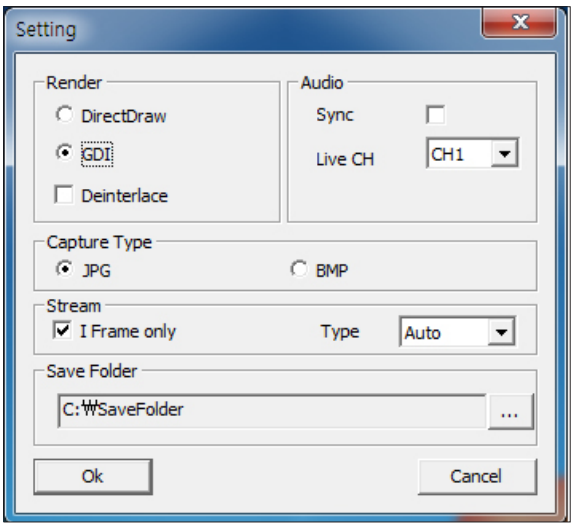
1. Click < >.
2. The current screen will be printed with the printer connected to the PC.

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 <**ActiveX Setting**> to display the context menu where you can change the saving path.

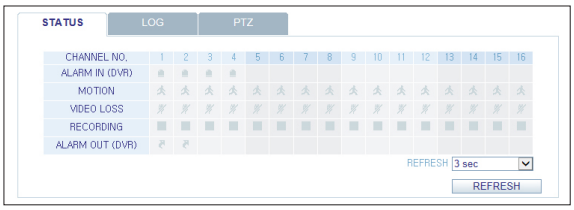
ActiveX Settings

1. Click < >.
2. When the setup screen appears, you can change the settings of the render type, audio, capture and saving path as well as the video streaming.
   - › Render : DirectDraw is recommended in order to enable the hardware acceleration.
3. If you want to change the saving path, 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.
   Auto mode is recommended.
   - › 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.
   - › Type
     - Auto : The DVR will optimize the quality and FPS to the network status and specification of the connected PC before transferring the data.
     - Main : The video will be transferred in high definition (HD).
     - Second : The video will be transferred in a medium definition (SD).
5. When done, click <**OK**> to save your settings.



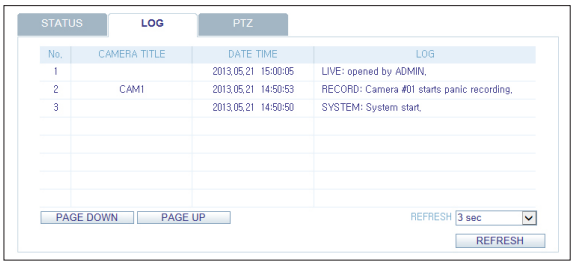
Status tab

Click <**STATUS**> at the bottom of the screen.
You can check the event occurrence for each channel of the connected DVR.



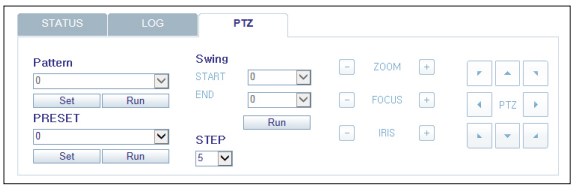
Log tab

Click <**LOG**> at the bottom of the screen.
You can check the log of the connected DVR.



PTZ tab

Click <**PTZ**> at the bottom of the screen.
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.



- Pattern : You can configure various settings of the camera including the zooming and movement. (Applied to some PTZ cameras only)
- PRESET : Move the camera in a predefined direction.
- Swing : The camera will move back and forth to a set position.

Web Viewer

Search

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

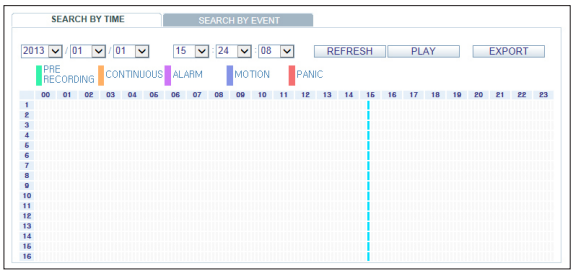
Search Viewer at a Glance

No.	Item	Description
❶	View selection tab	You can switch to the live, playback and setup screen and check the provided information.
❷	Playback Screen	Play the recording data.
❸	Split Mode	Select and switch to a desired split-screen mode.
❹	Sequence	Set the sequence mode, switch to the next camera or select the full screen mode. You can turn on/off the voice signal.
❺	Play button bar	You can control the playback screen.
❻	Time Selection	Specify the start time of playback.
❼	Time Line	Indicates the status of the recorded data.

No.	Item	Description
	REFRESH	Reload the time line.
❽	PLAY	Play the video that satisfies your search criteria.
	EXPORT	Archive the video that satisfies your search criteria.
❾	Channel Selection	Select a channel listed in the screen.
	Screen	Print out the current screen.
❿	Image Capture	Capture the selected image.
	ActiveX Settings	Configure the ActiveX settings or specify the saving path of the captured image.

Search by time

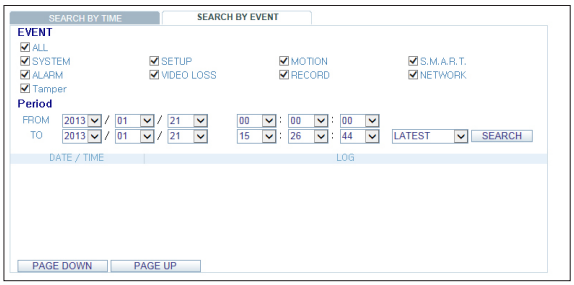
Use the timeline to search for the data recorded in the DVR.



1. Select a date that you want to search.
2. Click <**REFRESH**>.
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 <**PLAY**>.
   - › REFRESH : If your changes are not applied to the current screen, reload the changes.
   - › PLAY : Play the searched video.
   - › Backup : Archive the recorded 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.

Web Viewer

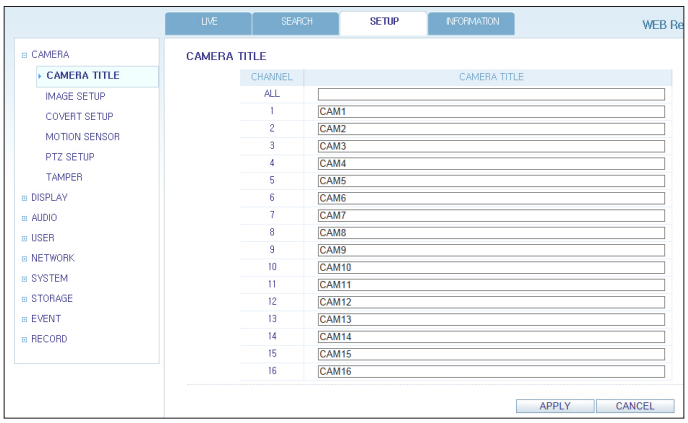
Setup

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

✔ If the DVR 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 DVR may be changed, which is not recommended at all.

Setup Viewer at a Glance

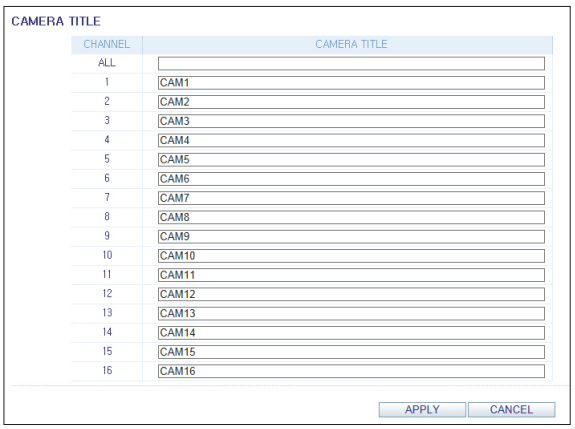


Camera

To name the camera title

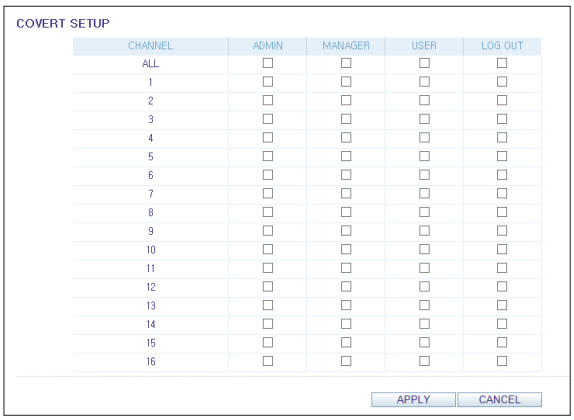
You can name the camera title that is displayed on each channel screen. Select a channel to name and provide a new title. Then, click <**APPLY**> to apply it.

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



Covert Setting

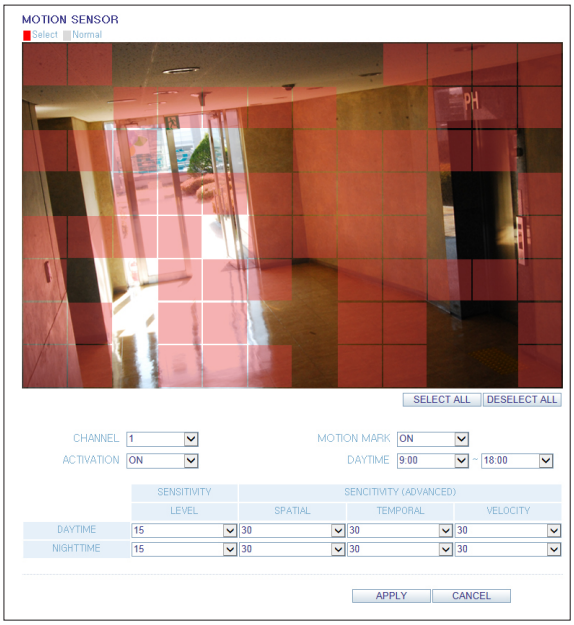
You can set to hide the video of a specific camera from a specific user. Set to hide the camera video so that a specific user or user group can not view. To change the covert settings from user group to user, move to the <**USER**> menu and make necessary changes.
When done, click <**APPLY**> to apply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



Motion Setting

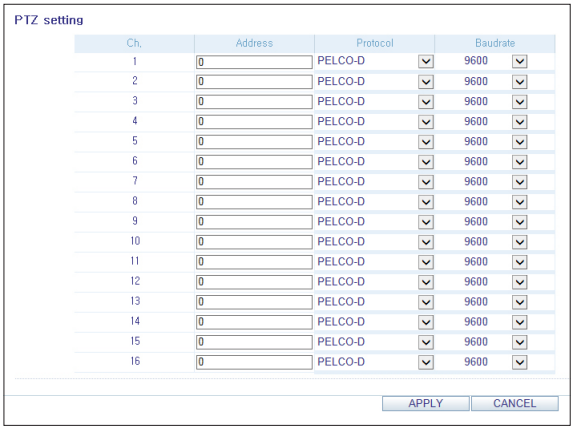
Specify the use of motion detection and reaction for each channel and set also the daytime/nighttime options.
Select a channel. Set the mask area and activation and specify the daytime range.
When done, click <**APPLY**> to apply the changes.

✔ For information about how to set the motion area, refer to "**Motion Area Setup**". (page 34)



PTZ setting

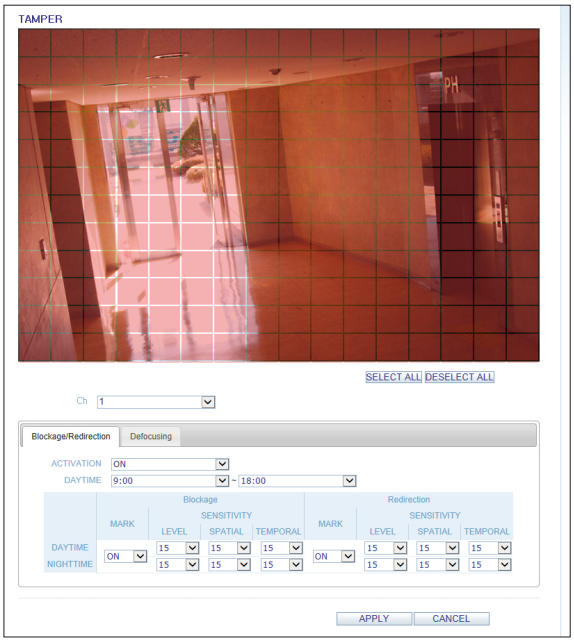
To make DVR utilize camera's PTZ functions, match the protocol and baud rate of connected cameras and DVR.



TAMPER

You can set to detect tampering attempt to interfere monitoring operations by tampering the installed camera.

✔ For information about how to set the TAMPER, refer to "**TEMPER DETECTION**". (page 36)

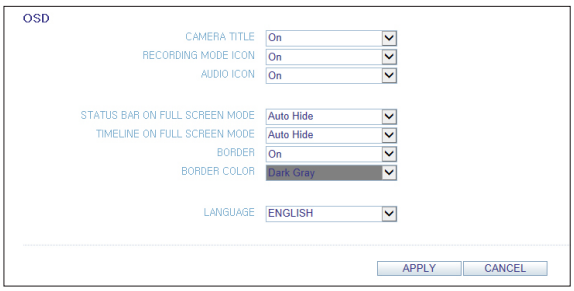


Display

OSD Setting

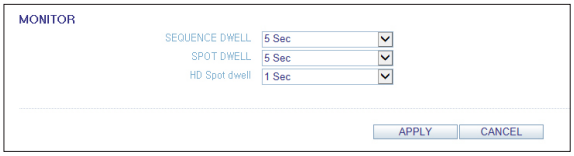
Configure the settings for the time, title, boundary, icon and language that will be displayed on the screen. Make changes to each item of the OSD menu and click <**APPLY**> to apply the changes.

✔ For details about each displayed item, refer to "**OSD**". (page 37)



Monitor Settings

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



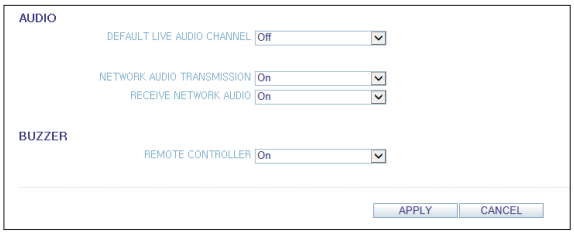
- Sequence Dwell : Switching time from one channel to the next channel in single screen mode.
- SPOT DWELL : It means the interval between the view types when displaying the SPOT Out monitoring screen.
- HD Spot dwell : Select the dwell time of one channel displayed on the monitor, when using HD monitor Spot Out.

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 43)

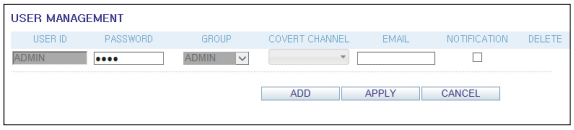


User

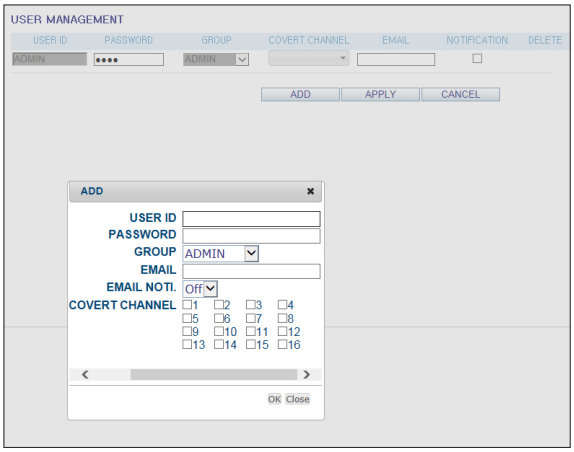
User Management

You can add a user account and change the password.

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



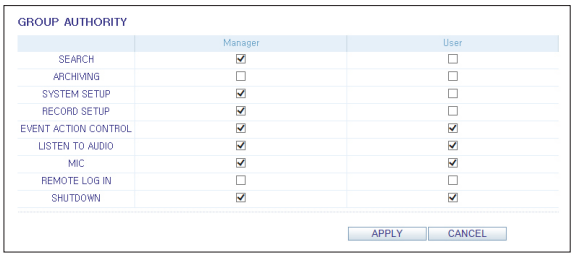
To add a user, click <**Add**> and provide the user information.
If you want to delete the user click <**DEL**> next to it.
When done, click <**APPLY**> to apply the change.



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 44)

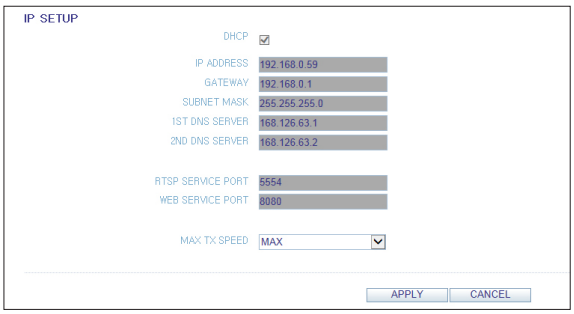


Network

Network Setting

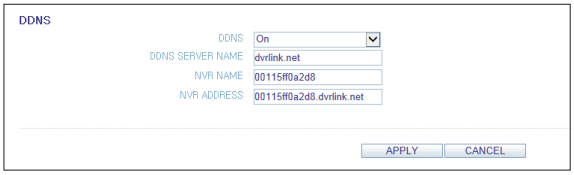
You can check the network connection status and change the baud rate.
Change the maximum transfer rate and click <**APPLY**> to apply it.

✔ For more information about each network entry, refer to "**IP Setup**". (page 45)



DDNS Setting

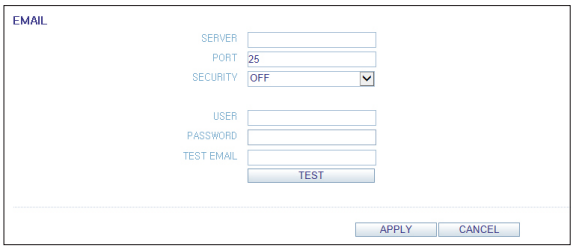
You can configure the DDNS settings so that remote users who are connected to the network can access remotely.
Change the DDNS settings and click <**APPLY**> to apply the changes.



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 46)

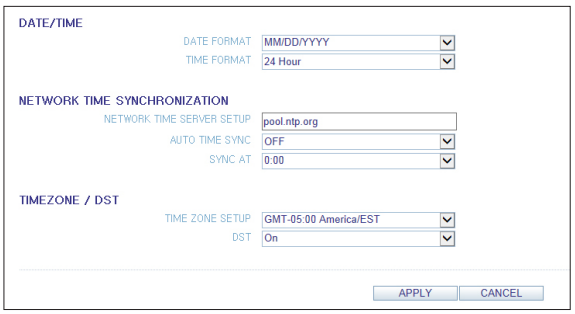


System

Date/Time Setting

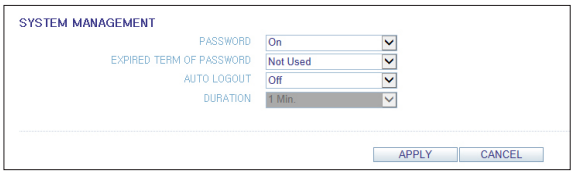
Specify the current date and time.
When done, click <**APPLY**> to apply the changes.

✔ For more information about each of the time and date settings, refer to "**Date/Time**". (page 48)



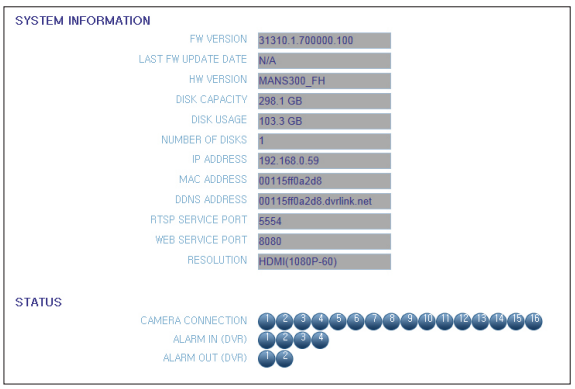
System Management

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



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

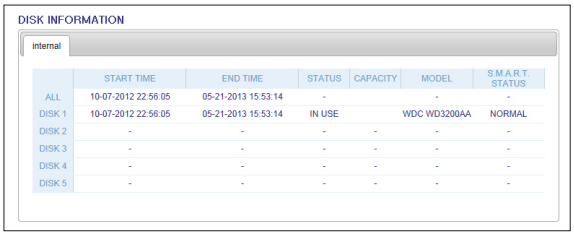
Set the connection of both the remote control and the keyboard control.
Change the communication settings and click <**APPLY**> to apply the changes.

✔ For more information about each communication item, refer to "**Control Device**". (page 51)

Storage

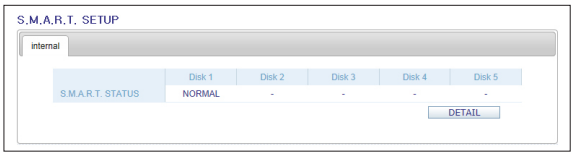
Device Information

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



S.M.A.R.T Status

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



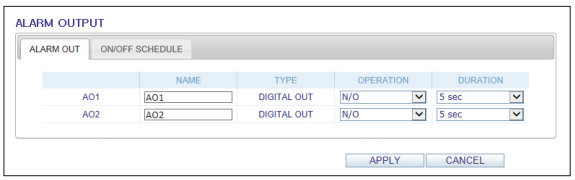
✔ What is S.M.A.R.T?
This is a sort of HDD self-diagnosis tool that detects any error on the system and alerts the user if an error occurs.

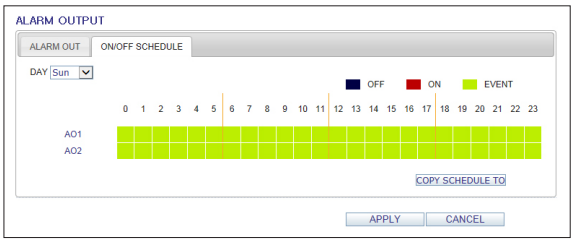
Sensor

Alarm Output

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 54)

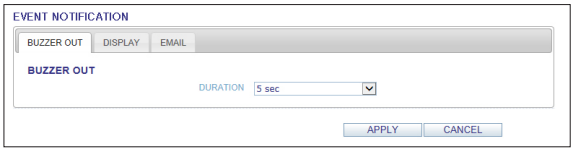


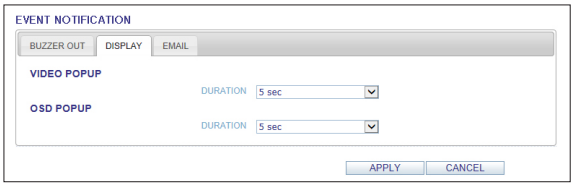


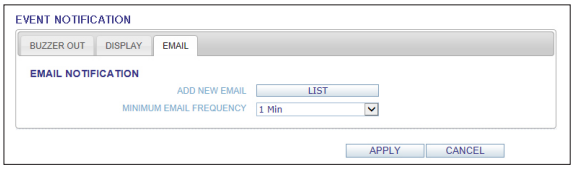
Event Notification

Specify the notification method using one of <**BUZZER OUT**>, <**DISPLAY**> and <**EMAIL**> against an event alarm that occurs.
Specify the buzzer output time, display time and email notification, and click <**APPLY**> to apply the changes.

✔ For more information about the event notification, refer to "**Event Notification**". (page 55)



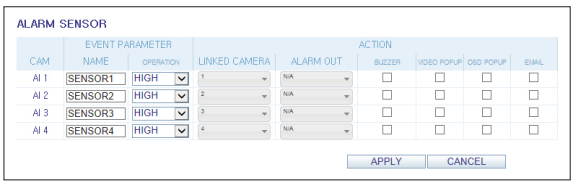




Alarm Sensor

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.

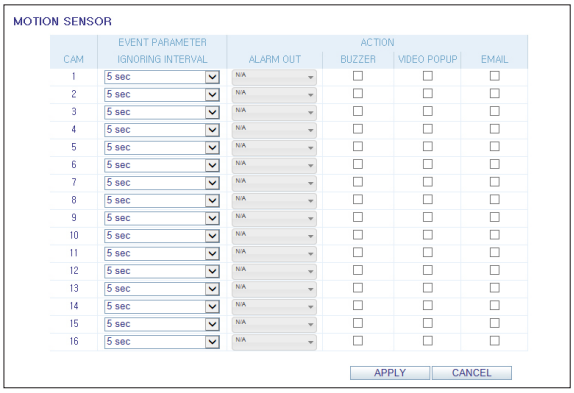
✔ For more information about each of the alarm sensor actions, refer to "**Alarm Sensor**". (page 57)



Motion Sensor

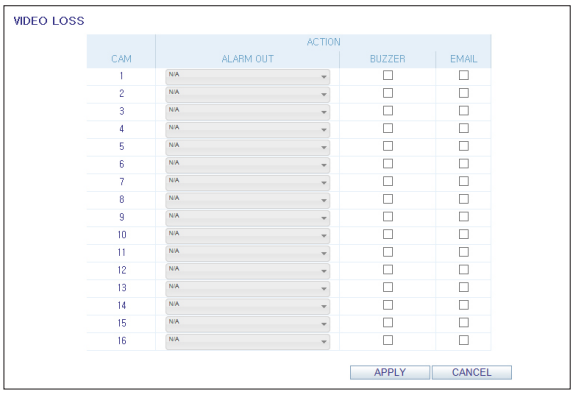
You can set an action to execute when a motion is detected.
When done, click <**APPLY**> to apply the changes.

✔ For more information about how to set the motion sensor, refer to "**Motion Sensor**". (page 58)



Video Loss

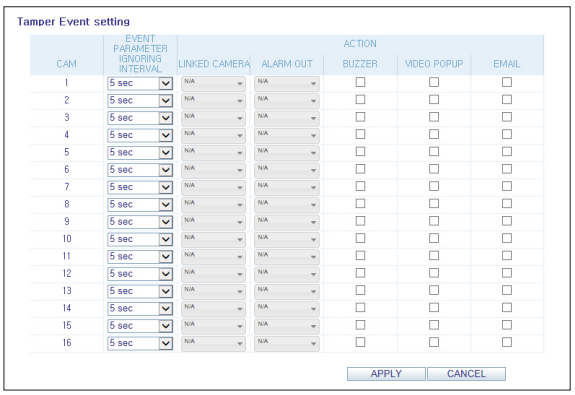
You can select an action for <**BUZZER**> and <**EMAIL**> and determine what to do on the alarm output port if no video is received from the camera.
When done, click <**APPLY**> to apply the changes.



Tamper Event setting

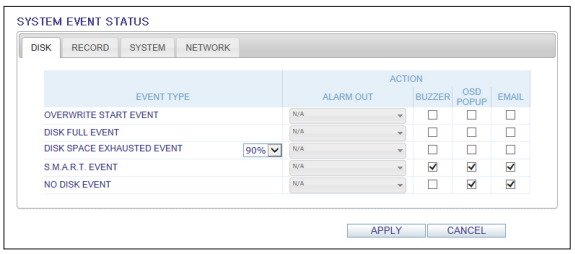
You can set how to react upon a detected tampering event.
When done, click <**APPLY**> to apply the changes.

✔ For more information about how to set the Tamper Event, refer to **"TAMPER EVENT"**. (page 61)



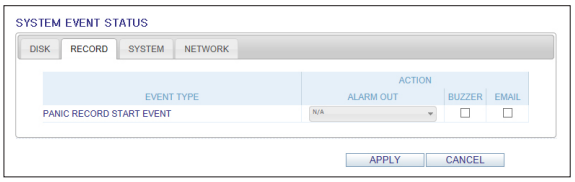
System Event

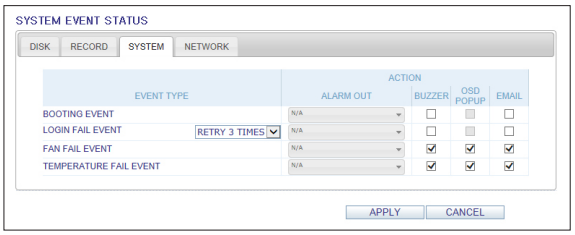
You can set which action to perform if an event related to the disk, recording, network or system happens.
You may want to notify the user of the event using the alarm output, buzzer, OSD popup and email.

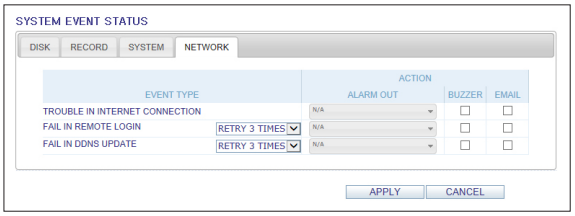


When done, click <**APPLY**> to apply the changes.

✔ For more information about how to set the system event, refer to "**System Event**". (page 59)



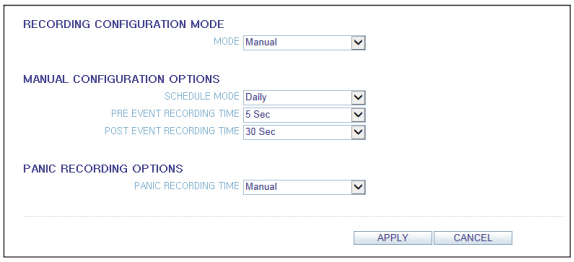




Record Setup

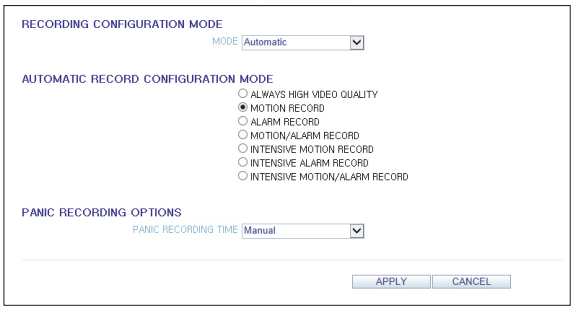
Record Setting

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



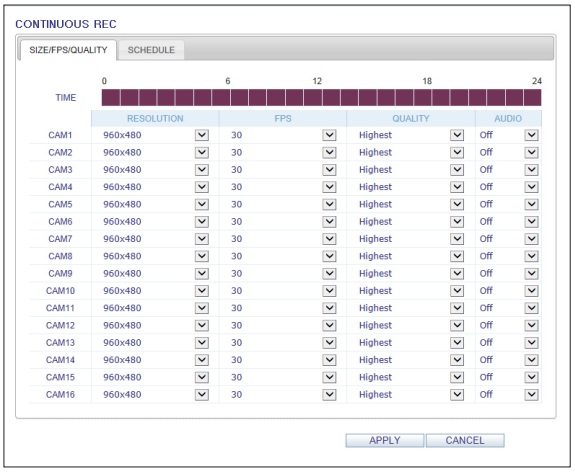
When done, click <**APPLY**> to apply the changes.

✔ For more information about how to set each mode, refer to "**Operation Mode**". (page 63)



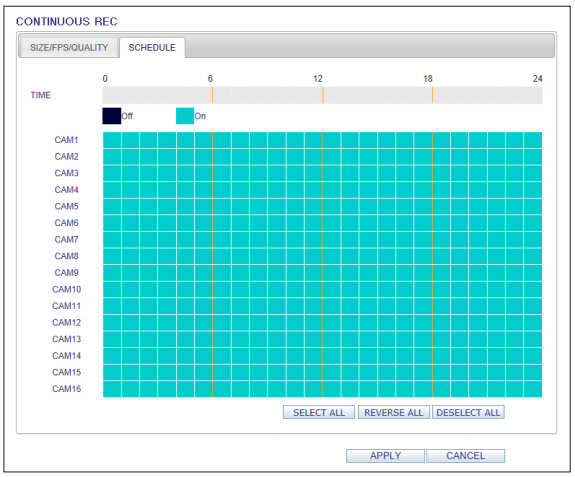
Continuous Recording

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.



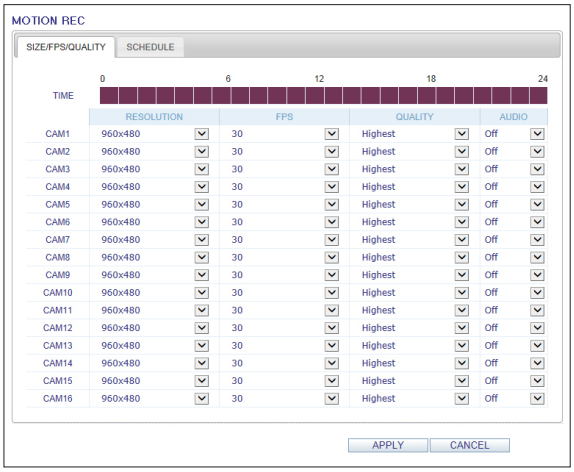
When you complete the recording size and schedule settings, click <**OK**> to apply your settings.

✔ For more information about the continuous recording size and schedule, refer to "**Continuous Recording**". (page 64)



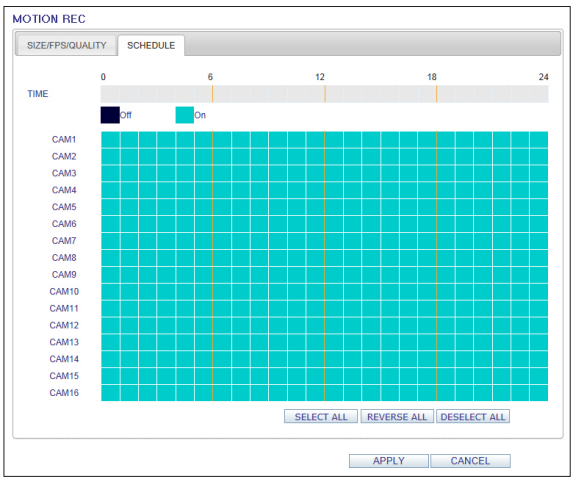
Motion Recording

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.



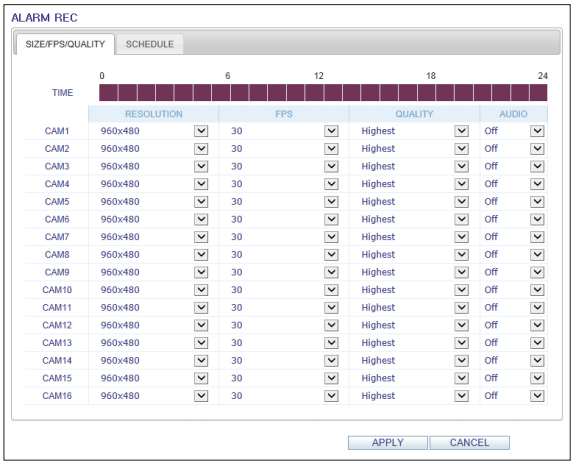
Complete setting the <**SIZE/FPS/QUALITY/AUDIO**> for the motion recording as well as the <**SCHEDULE**>, and click <**OK**> to apply the changes.

✔ For more information about the motion recording size and schedule, refer to "**Motion Recording**". (page 65)



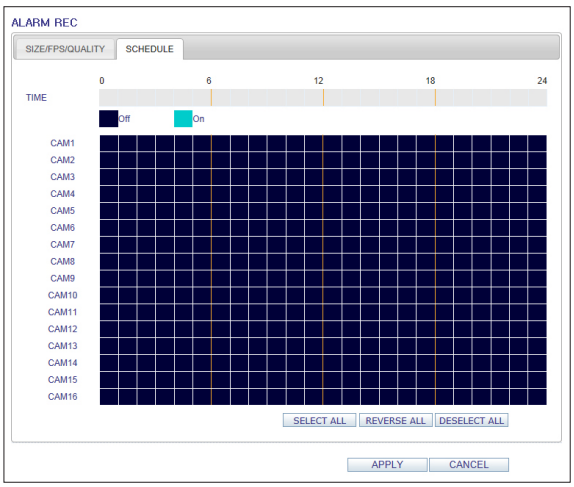
Alarm Recording

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 <**OK**> to apply the changes.

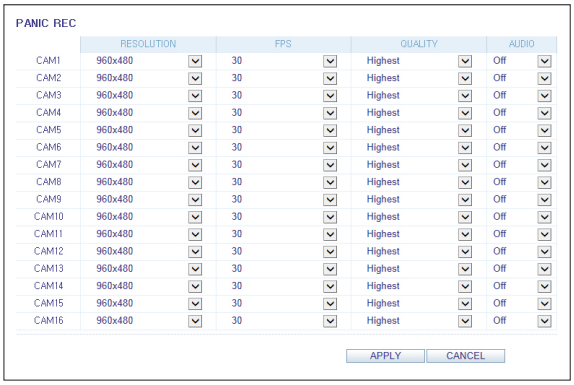
✔ For more information about the alarm recording size and schedule, refer to "**Alarm Recording**". (page 66)



Panic Recording

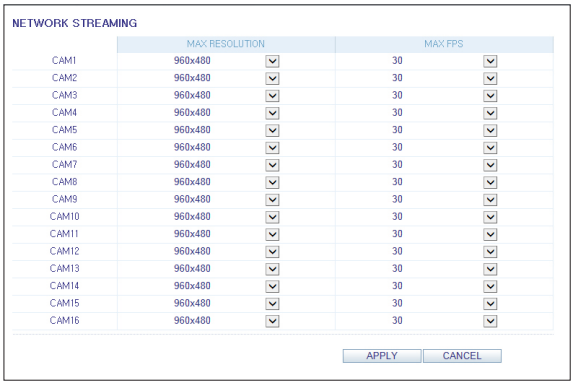
From the <**PANIC RECORD**> menu, you can set the resolution, FPS, quality and audio settings to your preference.
Click < > next to each item to display the list of values available.
When you have completed the manual record settings, click <**OK**> to apply the changes.

✔ For more information about the manual record settings, refer to "**Panic Recording**". (page 66)



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 <**OK**> to apply the settings.



About

Click the <**INFORMATION**> tab to check the model name of the DVR as well as the web viewer version.

Mobile Viewer

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 Flash : 512 MB or higher RAM : 512 MB or higher SD Card : 4 GB or higher OS : 2.0 or higher	Processor : 1 GHz or higher Flash : 512 MB RAM : 512 MB SD Card : 16 GB or higher OS : 2.1 or higher
iPhone	iPhone 3G, iPod touch 3rd Generation iPhone OS 3.1.3 or higher	iPhone 3GS or higher iPhone OS 3.2 or higher

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.

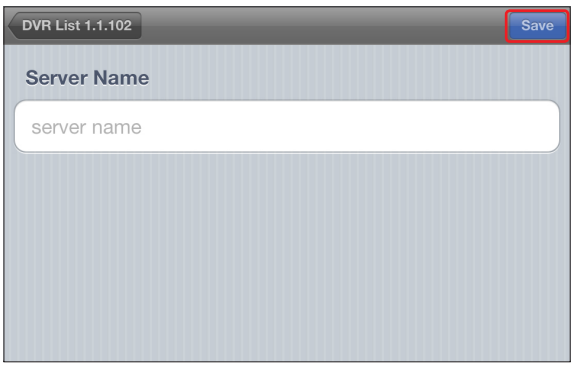
✔ The nViewer supports the 1/4 split screen mode.

! The nViewer Lite is a free application, and does not provide search, log view, PTZ control and system configuration functions.

To connect to DVR with nViewer

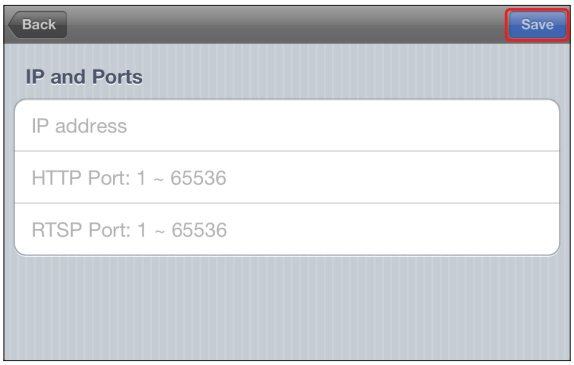
1. Select and run the nViewer.
2. Click < + > in the top right corner of the DVR List to select and add a site to the list.

3. Enter the server name and click <**Save**>.

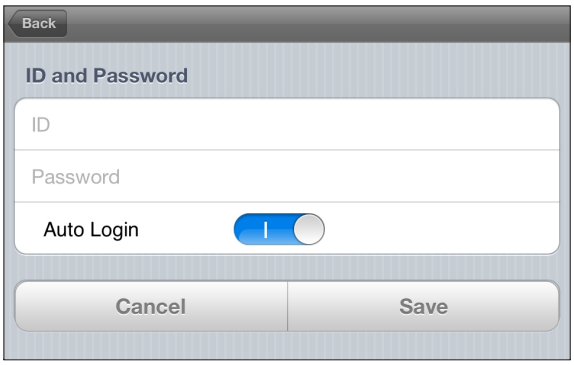


Mobile Viewer

4. Provide the IP address, HTTP port number and RTSP port number, and click <**Save**>.



5. Provide the access ID of the DVR as well as the password.
6. Specify the use of the Auto Login.
7. Click <**Save**>.

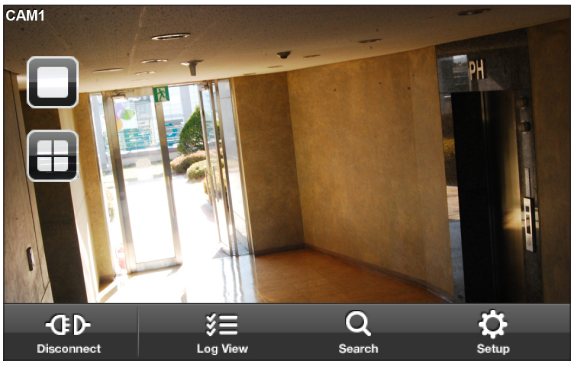


8. Select the site that you added in the DVR List.

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

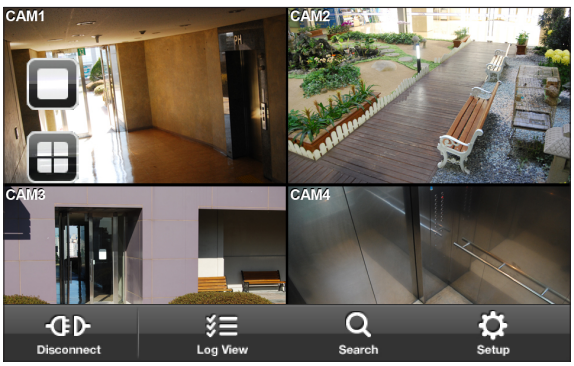
Split Mode

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



2. Click < ▣ > in the top left corner to switch to 1-split mode; click < ⊞ > to switch to 4-split mode.

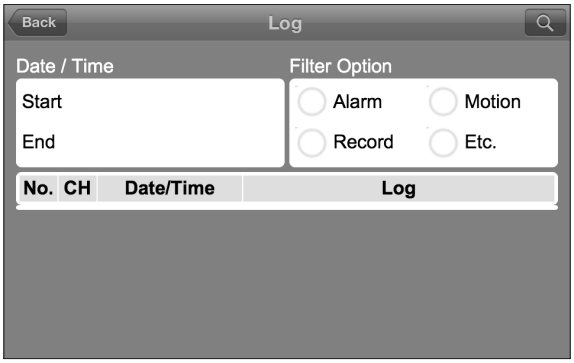
✔ Use the mouse to scroll the screen to the left or right to move to the next camera video screen.



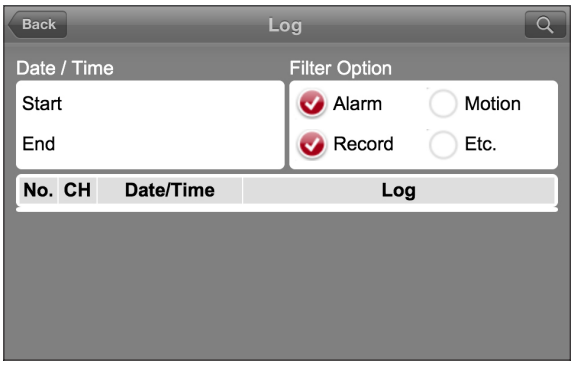
Mobile Viewer

Using the Log View

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



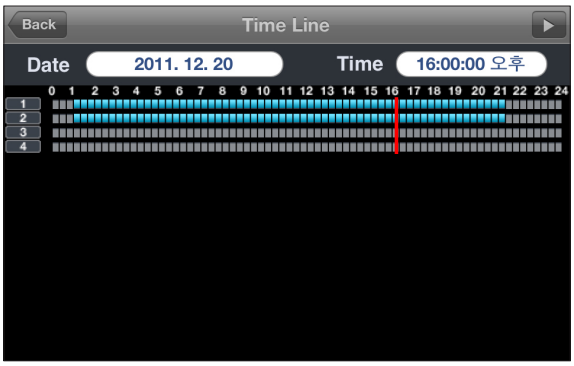
2. Select one from Alarm, Motion, Record, Etc. and click < > .
You will view the log of related items.



Using the Search function

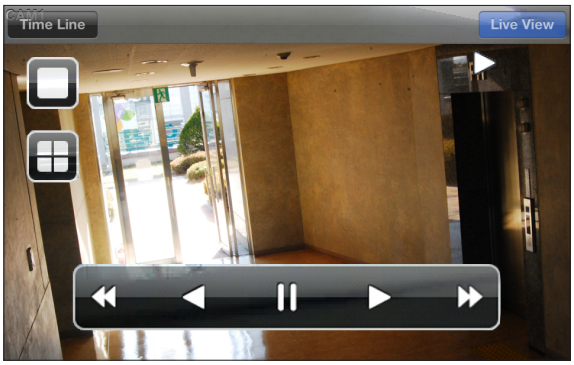
1. From the main menu, click < Search >.
   You can view the history of the data stored.

2. Select a desired time and date.
   You can use the vertical time bar to specify the start time.



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.

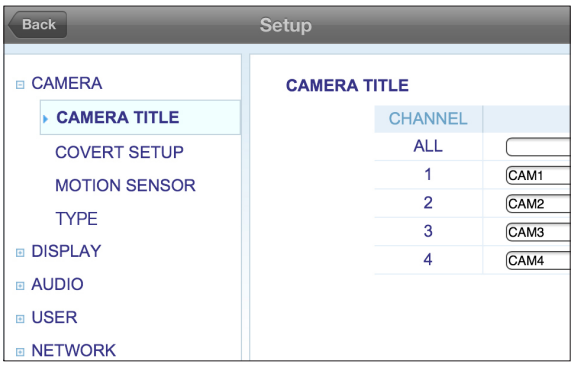


Mobile Viewer

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 86)



Using nViewer with Android

How to download the Android-dedicated application

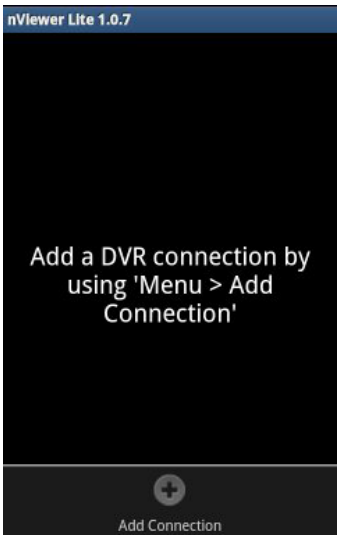
From your smart phone, access the Market.
Enter "nViewer" in the search bar to find it before downloading. Install the application on your Smart Phone.

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

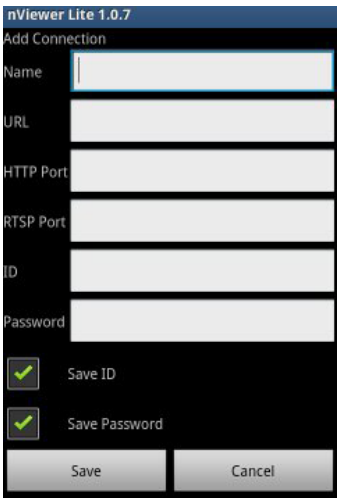
The nViewer Lite is a free application, and does not provide search, log view, PTZ control and system configuration functions.

To connect to DVR with nViewer

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

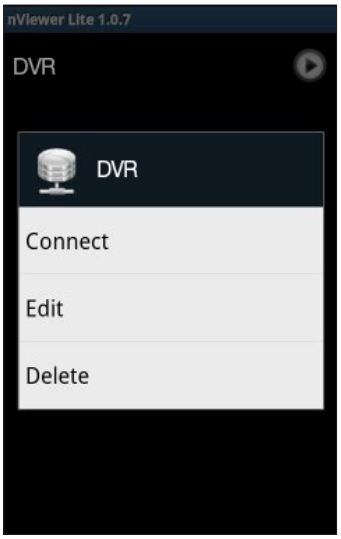


3. Please enter a Name.
4. Provide the IP address, HTTP port number and RTSP port number, and click <**Save**>.
5. Provide the access ID of the DVR as well as the password.
6. Select whether or not to save the ID and PW.
7. Click <**Save**>.



Mobile Viewer

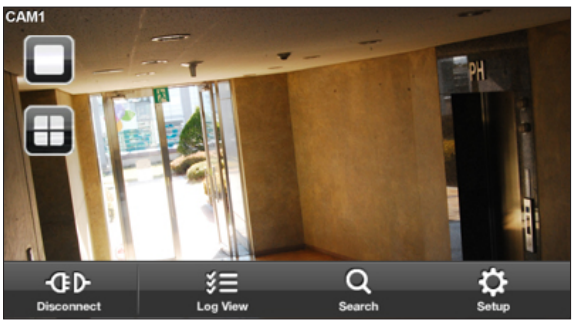
8. Select the site that you added in the DVR List.
Press and hold the mouse button to display the pop-up window.



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

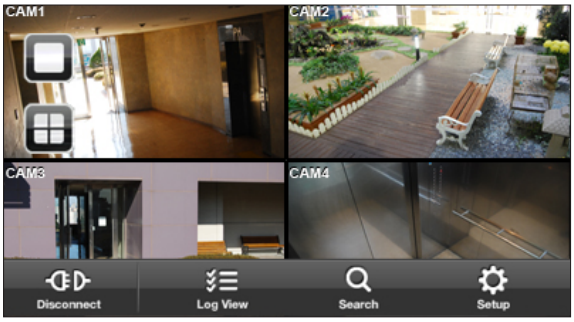
Split Mode

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



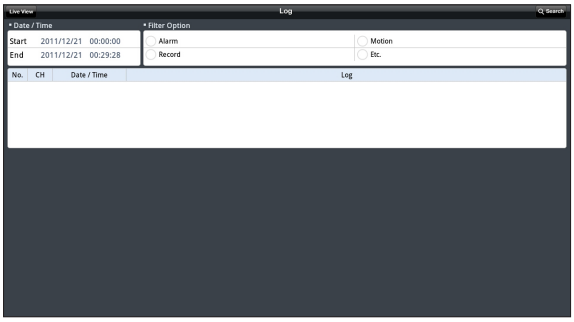
2. Click < > in the top left corner to switch to 1-split mode; click < > to switch to 4-split mode.

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

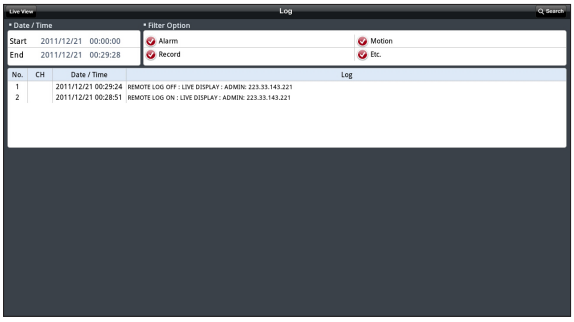


Using the Log View

1. From the main menu, click < >.
   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

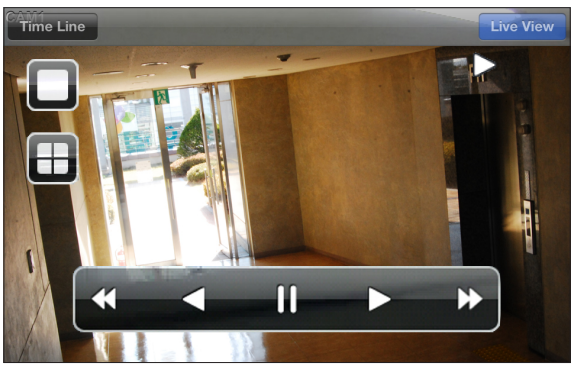
Using the Search function

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

2. Select a desired time and date.
You can use the vertical time bar to specify the start time.

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

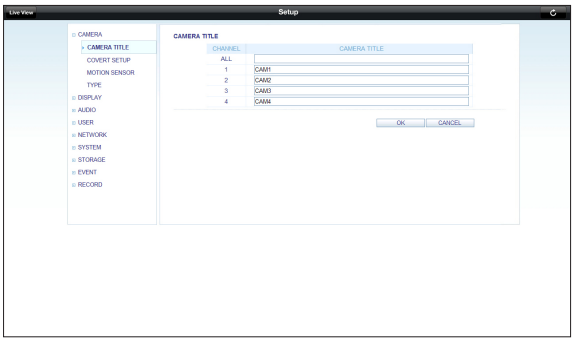
4. Click any area to display the play bar with which you can control the playing direction and speed of the video.



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 86)

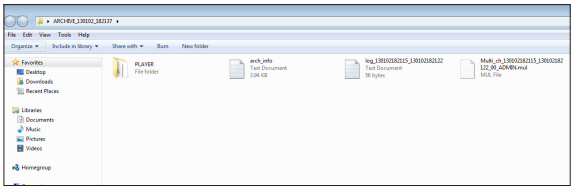


Archive Viewer

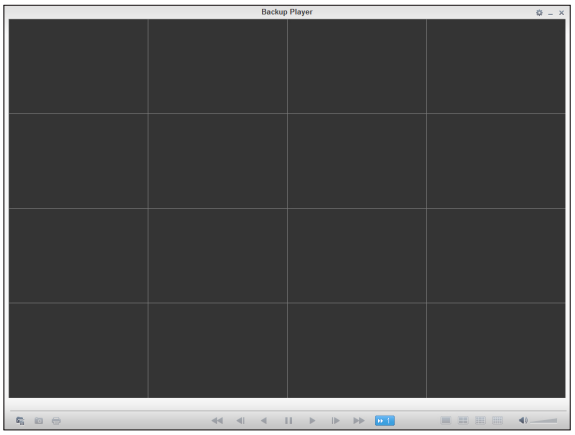
You can play the data archived in the DVR.
You can play the HDD data recorded by the DVR.

Getting started with the Backup Player

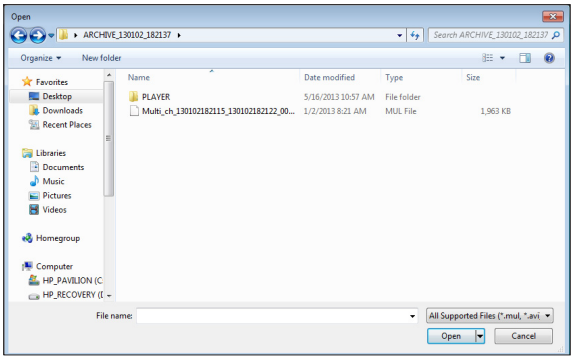
1. Connect the DVR to the backup USB storage device.
2. Open the folder saving the archived images.



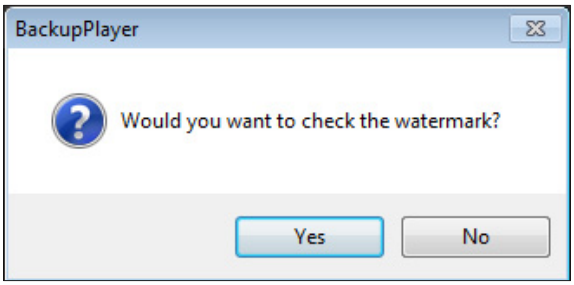
3. Run the Backup Player.

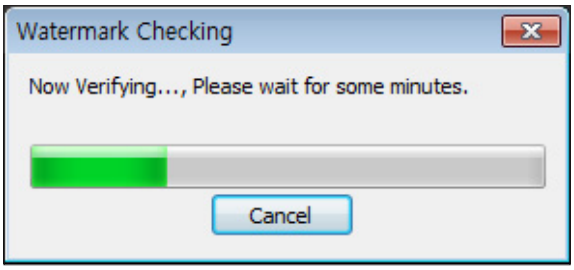


4. Click < > in the bottom left corner to display the file browser. Select the archived file to play.



5. Check the integrity of the archived file.
6. When done, the archived file will be played on the screen.





Archive Viewer

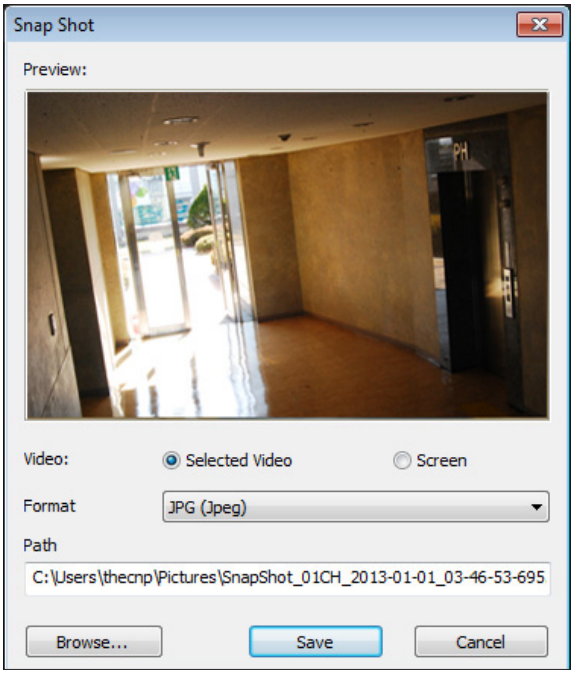
Backup Player At a Glance

No.	Item	Description
❶	Setup	Configure the environment settings.
	Minimize, Close	Minimize or close the Backup Player.
❷	Channel Information	Show the channel information and the video resolution.
❸	Play 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. For more information about how to use the playback control buttons, refer to "**Using the play bar**". (page 73)
❼	Split Mode	Switch to 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.
  - Default location : My Documents\My Pictures



Print Out

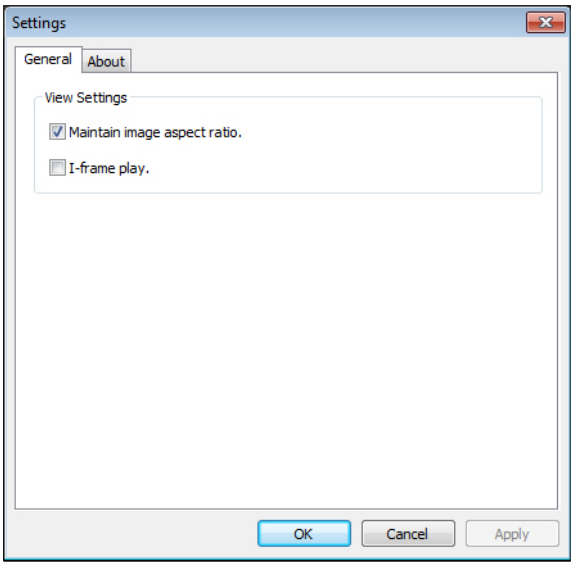
Click < > Button to print out the image.
When the "**Print**" window appears, check the preview and click <**Print**>.

Archive Viewer

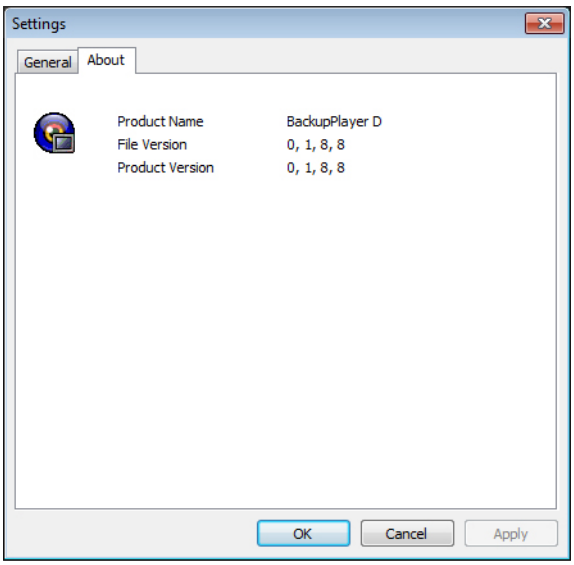
Settings

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 : Only the I frames (key frames) will be playback.



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



Appendix

Specification

Item		4CH	8CH	16CH
VIDEO	INPUT SIGNAL	NTSC/PAL	NTSC/PAL	NTSC/PAL
	MAIN MONITOR	VGA / HD	VGA / HD	VGA / HD
	SPOT OUT	Sub monitor (Digital) 2CH	Analog 1CH(1Vpp, 75Ohm), Sub monitor(Digital)	Analog 1CH(1Vpp, 75Ohm), Sub monitor(Digital)
	LOOP THROUGH	Software controlled termination / 4 CH(1Vpp, 75Ohm) for ANF3G-H 0412	Software controlled termination (TBD)	Software controlled termination (TBD)
	MOTION DETECTION	YES	YES	YES
AUDIO	INPUT SIGNAL	4CH(10KOhm, 2.8Vpp)	4CH(10KOhm, 2.8Vpp)	4CH(10KOhm, 2.8Vpp)
	OUTPUT SIGNAL	1CH(600Ohm, 2.8Vpp)	1CH(600Ohm, 2.8Vpp)	1CH(600Ohm, 2.8Vpp)
	CODEC	G.711	G.711	G.711
RECORDING	CODEC	H.264 HP	H.264 HP	H.264 HP
	REC. RATE	Up to 120FPS/ 100FPS @ 960H	Up to 240FPS/ 200FPS @ 960H	Up to 480FPS/ 400FPS @ 960H
		Up to 120FPS/ 100FPS @ D1	Up to 240FPS/ 200FPS @ D1	Up to 480FPS/ 400FPS @ D1
		Up to 120FPS/ 100FPS @ 2CIF	Up to 240FPS/ 200FPS @ 2CIF	Up to 480FPS/ 400FPS @ 2CIF
		Up to 120FPS/ 100FPS @ CIF	Up to 240FPS/ 200FPS @ CIF	Up to 480FPS/ 400FPS @ CIF
	REC. RESOLUTION	CIF, 2CIF, D1, 960H	CIF, 2CIF, D1, 960H	CIF, 2CIF, D1, 960H
ALRM I/O	ALARM INPUT	4CH, Pulled up to 5V via 10KOhm	4CH, Pulled up to 5V via 10KOhm	4CH, Pulled up to 5V via 10KOhm
	ALARM OUT	2CH, RELAY(5V, 35mA)	2CH, RELAY(5V, 35mA)	2CH, RELAY(5V, 35mA)
STORAGE	INTERNAL HDD	2EA	4EA, Up to 2TB HDD Disk	4EA, Up to 2TB HDD Disk
	EXTERNAL STORAGE	NAS(FTP Server, for Backup)	eSATA, NAS(FTP Server, for Backup)	eSATA, NAS(FTP Server, for Backup)
	INTERNAL ODD	1EA(DVD-RW) with HDD 2EA	1EA(DVD-RW) with HDD 2EA	1EA(DVD-RW) with HDD 2EA

Appendix

Item		4CH	8CH	16CH
INTERFACES	USB	3 ports(2Front + 1 Rear)	3 ports(2Front + 1 Rear)	3 ports(2Front + 1 Rear)
	RS-485	1	1	1
	RS-232	1	1	1
	LAN	1 (WAN) - 10/100/1000Mbps	1 (LAN) + 1 (WAN) - 10/100/1000Mbps	1 (LAN) + 1 (WAN) - 10/100/1000Mbps
	REMOTE CONTROL	YES	YES	YES
ETC	SIGNAL SWITCH	NTSC/PAL	NTSC/PAL	NTSC/PAL
	WATCHDOG	YES	YES	YES
	COOLING FAN	Max 1x 60mm	Max 2x 60mm	Max 2x 60mm
POWER	POWER SUPPLY	DC12V, Adaptor, 5A, 100~200V AC, 50-60Hz	DC12V, Adaptor, 5A (2HDD), 100~240V AC, 50-60Hz DC12V, Adaptor, 6.67A (4HDD) , 100~240V AC, 50-60Hz	DC12V, Adaptor, 5A (2HDD), 100~240V AC, 50-60Hz DC12V, Adaptor, 6.67A (4HDD) , 100~240V AC, 50-60Hz
	POWER CONSUMPTION	20W(HDD 2ea, Segate Pipeline 500GB)	35W(HDD 4ea, Segate Pipeline 500GB)	35W(HDD 4ea, Segate Pipeline 500GB)
ENVIRONMENT	TEMPERATURE	0ºC ~ 40ºC(32ºF~104ºF)	0ºC ~ 40ºC(32ºF~104ºF)	0ºC ~ 40ºC(32ºF~104ºF)
	HUMIDITY	10 ~ 90% NC	10 ~ 90% NC	10 ~ 90% NC
CHASSIS	DIMENSION (WxDxH)	1.5U(360 x 360 x 66)	1.5U(360 x 360 x 66)	1.5U(360 x 360 x 66)
	WEIGHT	-	-	-
CERTIFICATION	UL, CUL, FCC, CE	-	-	-

Compatible HDD Specifications

Maximum SATA Speed	• SATA1(1.5G) : Can be used • SATA2(3.0G) : Can be used • 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

Troubleshooting (FAQ)

Problem	Action
The system does not operate at all with no active LED in the front panel.	• Make sure that the system gets supplied with power properly. • 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. If it fails, contact the retailer or the service center. • 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 1080p 60Hz HDMI, VGA input. • Ensure that the input source settings of the monitor match with the output source settings of the DVR. • If using the HDMI-to-DVI cable for the connection, ensure that the input source is set to DVI. • Make sure that the system gets supplied with power properly. • 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. 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. • 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 camera is compatible with the DVR. For the compatibility of the cameras, contact the retailer. • Ensure that the output settings of the camera match with the camera type settings of the DVR.
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. • You must have set the port forwarding if using a router. • If you cannot get access with the DDNS address, use the IP address of the DVR instead. If the DVR is connected to the router, use the IP address of the DVR. 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. • This may happen when the communications provider or network administrator has blocked the service port of the DVR. Change the RTSP port and HTTP port numbers to different ones and set the port forwarding again. • Try to access the web or mobile application using the new port numbers.

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