

Performance Series HREP2

4-, 8-, 16-Channel DVR

HREP24

HREP24X

HREP28

HREP28X





HREP216

HREP216X

User Guide

User Guide

Cautions and Warnings

	<p>CAUTION RISK OF ELECTRIC SHOCK DO NOT OPEN</p>		 <p>THIS SYMBOL INDICATES THAT DANGEROUS VOLTAGE CONSTITUTING A RISK OF ELECTRIC SHOCK IS PRESENT WITHIN THE UNIT.</p>
<p>CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE THE COVER. NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>			 <p>THIS SYMBOL INDICATES THAT IMPORTANT OPERATING AND MAINTENANCE INSTRUCTIONS ACCOMPANY THIS UNIT.</p>

Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.

CAUTION Use only with the supplied 12 V DC power adapter.

Regulatory Statements

FCC Compliance Statement

Information to the User: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Note Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Canadian Compliance Statement

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la Classe A est conforme à la norme NMB-003 du Canada.

Manufacturer's Declaration of Conformance

North America

The equipment supplied with this guide conforms to UL 60950-1 and CSA C22.2 No. 60950-1.

Europe

The manufacturer declares that the equipment supplied with this guide is compliant with the essential requirements of the EMC directive 2004/108/EC and the Low Voltage Directive (LVD) 2006/95/EC, and the RoHS Directive 2011/65/EU, conforming to the requirements of standards EN 55022 for emissions, EN 50130-4 for immunity, EN 60950 for Electrical Equipment safety, and EN 50581 for assessment of electrical and electronic products with respect to the restriction of hazardous substances.

CAUTION To comply with EN50130-4 requirements, a UPS should be employed.

WARNING This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Waste Electrical and Electronic Equipment (WEEE)



Correct disposal of this product (applicable in the European Union and other European countries with separate collection systems).

This product should be disposed of, at the end of its useful life, as per applicable local laws, regulations, and procedures.

Safety Instructions

BEFORE OPERATING OR INSTALLING THE UNIT, READ AND FOLLOW ALL INSTRUCTIONS.

AFTER INSTALLATION, retain the safety and operating instructions for future reference

1. **HEED WARNINGS** - Adhere to all warnings on the unit and in the operating instructions.

2. INSTALLATION

- Install in accordance with the manufacturer's instructions. Do not block any ventilation openings.
 - Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.
 - Do not install the unit in an extremely hot or humid location, or in a place subject to dust or mechanical vibration. The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.
 - Any wall or ceiling mounting of the product should follow the manufacturer's instructions and use a mounting kit approved or recommended by the manufacturer.
3. **POWER SOURCES** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your facility, consult your product dealer or local power company. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
 4. **HEAT** - Situate away from items that produce heat or are heat sources such as radiators, heat registers, stoves, or other products (including amplifiers).

Note Operation Max temperature: 40°C (104°F).

5. **WATER AND MOISTURE** - Do not use this unit near water or in an unprotected outdoor installation, or any area classified as a wet location.
6. **MOUNTING SYSTEM** - Use only with a mounting system recommended by the manufacturer, or sold with the product.
7. **ATTACHMENTS** - Do not use attachments not recommended by the product manufacturer as they may result in the risk of fire, electric shock, or injury to persons.
8. **ACCESSORIES** - Only use accessories specified by the manufacturer.
9. **CLEANING** - Do not use liquid cleaners or aerosol cleaners. Use a dry cloth for cleaning.
10. **SERVICING** - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
11. **REPLACEMENT PARTS** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

CAUTION Do not alter the polarized or grounding plug. A polarized plug has two blades with one wider than the other. A grounding plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. When the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.

CAUTION RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

Note USB Load condition: USB Ports (5 Vdc, Max. 500 mA).

Warranty and Service

Subject to the terms and conditions listed on the Product warranty, during the warranty period Honeywell will repair or replace, at its sole option, free of charge, any defective products returned prepaid.

In the event you have a problem with any Honeywell product, please call Customer Service at 1.800.323.4576 for assistance or to request a **Return Merchandise Authorization (RMA)** number.

Be sure to have the model number, serial number, and the nature of the problem available for the technical service representative.

Prior authorization must be obtained for all returns, exchanges, or credits. **Items shipped to Honeywell without a clearly identified Return Merchandise Authorization (RMA)**

Typographical Conventions

This document uses the following typographical conventions:

Font	What it represents	Example
Helvetica	Keys on the keyboard	Press Ctrl+C
Luci da	Values of editable fields that are mentioned in the body text of the document for reference purposes, but do not need to be entered as part of a procedure	The Time from field can be set to Hours:Minute:Seconds.
	Text strings displayed on the screen Syntax	The message Unauthorized displays. (object) entered
Swiss721 BT Bold	Words or characters that you must type. The word "enter" is used if you must type text and then press the Enter or Return key.	Enter the password .
	Menu titles and other items you select	Double-click Open from the File menu.
	Buttons you click to perform actions	Click Exit to close the program.

Font	What it represents	Example
<i>Italic</i>	Placeholders: words that vary depending on the situation	<i>user name</i>
	Cross-reference to external source	Refer to the <i>System Administrator Guide</i> .
	Cross-reference within document	See <i>Chapter 2, Installation</i> .

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1

Overview

This document introduces the HREP2 4-, 8-, and 16-Channel Digital Video recorders and covers how to install and operate these DVRs.

This document is intended for system integrators, installers, and end-user operators.

Safety Instructions

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 are 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 following instructions.

- Secure at least 18 centimeters 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.

Note 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 feeds 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 (NTSC) / 400 fps (PAL) in real time.
- Up to 16 channels of 960H camera videos can be saved at maximum 480 fps (NTSC) / 400 fps (PAL).
- 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, and so on).
- Supports dual streaming for remote access service.

- Supports HDD extension (eSATA).
- Various search methods (time, event, bookmark and thumbnail).
- Mass storage backup through 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 operating system.
- 1080p Full HD GUI.

What's Included



Remote Control (x1)
and Batteries (AAA x2)



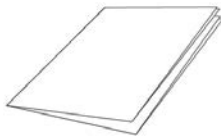
DC 12V Adapter (x1)



Power Cable (x1)



Screws



Quick Guide



Conversion Adapter
(for 8-/16-channel)



Adapter Cable
Retainer Clip (x1)



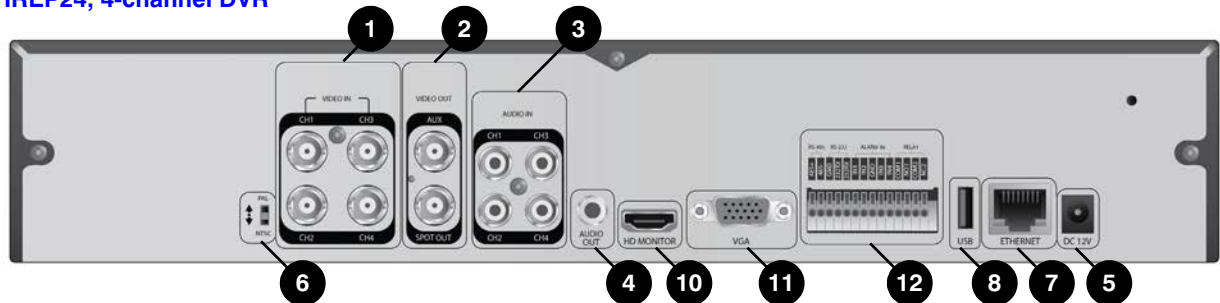
Mouse (x1)



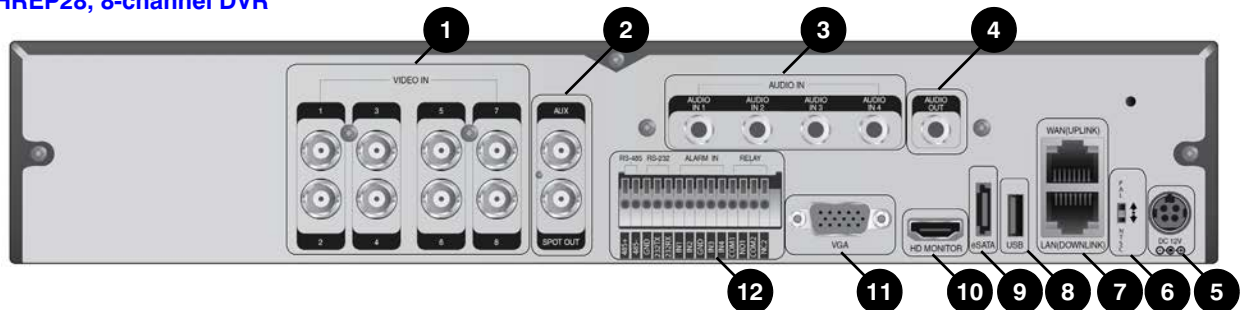
User manual CD

Rear Panel

HREP24, 4-channel DVR



HREP28, 8-channel DVR



HREP216, 16-channel DVR

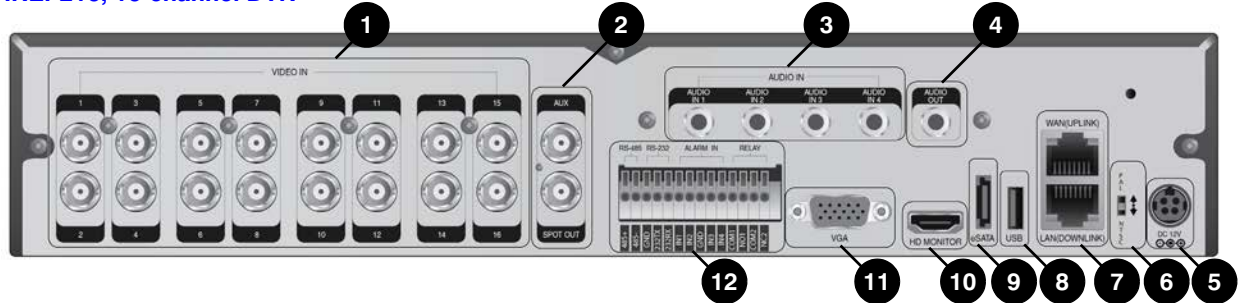


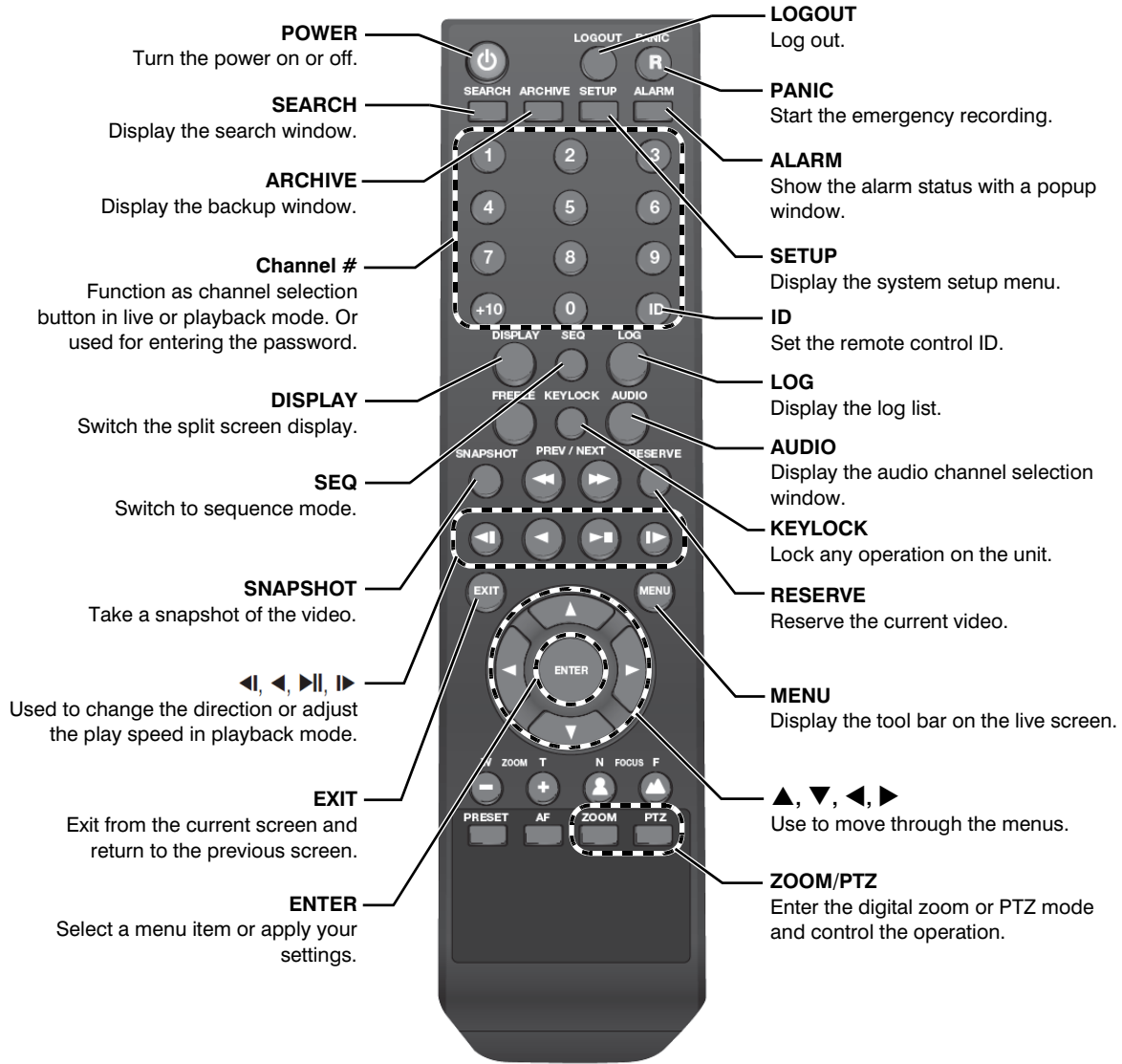
Table 1-1 Rear Panel Connection Descriptions

No.	Name	Description
1	VIDEO IN	Video input terminal for cameras.
	MONITOR	Monitor video output port.
2	SPOT OUT	Exclusive port for SPOT output only (use HDMI cable to connect to an HD monitor).
3	AUDIO IN	Port for audio input.
4	AUDIO OUT	Port for speaker connection.
5	DC 12V	Power input port. Connect to a 12V adapter.
6	DIP Switch	Switch to change unit's video standard between NTSC and PAL.

Table 1-1 Rear Panel Connection Descriptions (cont'd)

No.	Name	Description
	WAN(UPLINK)	Network port for connection to the Internet, router or hub.
7	LAN(DOWNLINK)	Port for connecting the dedicated network device. Note Do not share it with other device.
8	USB	Used for connecting USB storage or mouse.
9	eSATA	Connection port for external eSATA storage.
10	HD-MONITOR	HD monitor video output port.
11	VGA	VGA monitor video output port.
	ALARM IN	Alarm input signal port
	RELAY 1/2	Relay terminal output port.
12	RS-485	Ports for communication with external devices such as PTZ camera and system keyboard.
	RS-232	Connection ports for signal cables to external devices such as PTZ camera, POS and ATM devices.

Remote Control at a Glance



Change the Remote Control ID

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

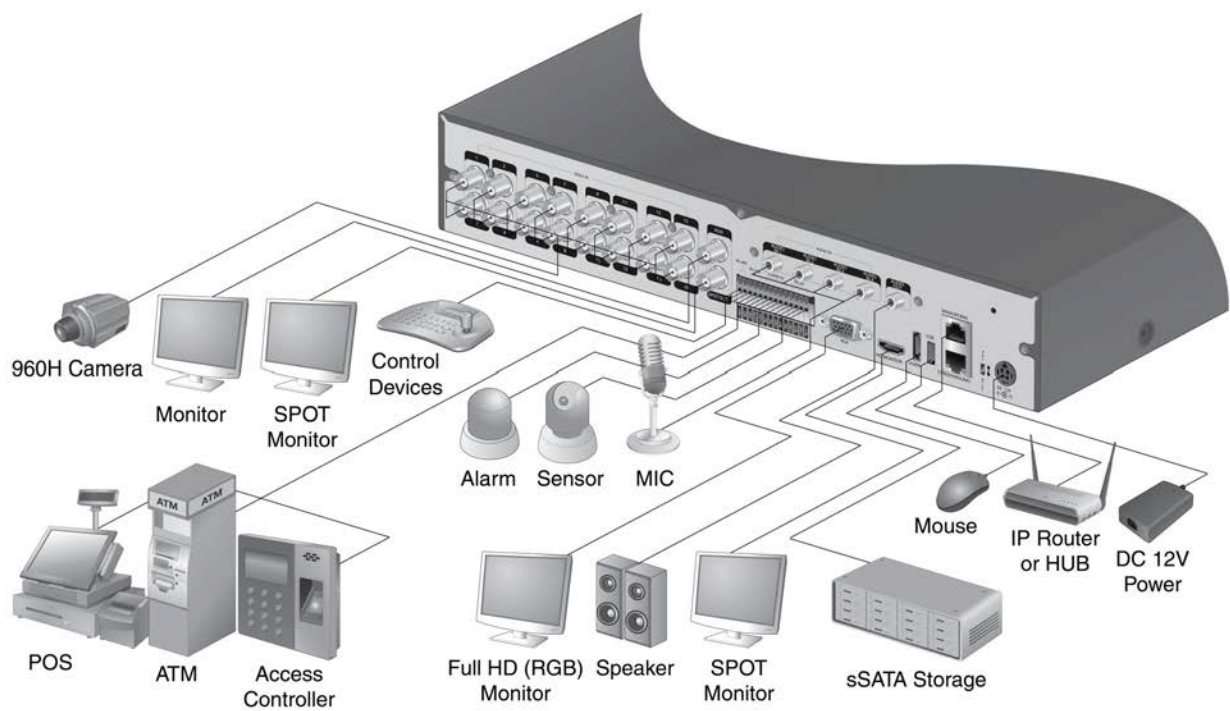
If multiple DVRs are installed on one place and you have just a single remote control, use the ID button to set the remote control ID. Only the ID-matching DVR can be controlled.

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 on page 55](#).
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 remote control 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 and checking that the functions pressed are performed on the unit.
4. To reset the ID to **00**, press and hold the **ID** button.

2

Installation

Basic System Layout



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

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

Connecting to an External Device

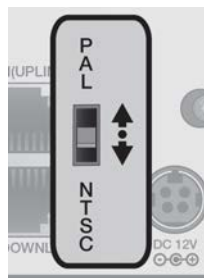
Connecting to the Monitor

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

Once the product is set for NTSC or PAL, connect cameras of the corresponding video standard for proper operations.

Setting the product to NTSC or PAL determines the unit's video input and output standards (see [Figure 2-1](#)).

Figure 2-1 Setting NTSC or PAL Video Standards



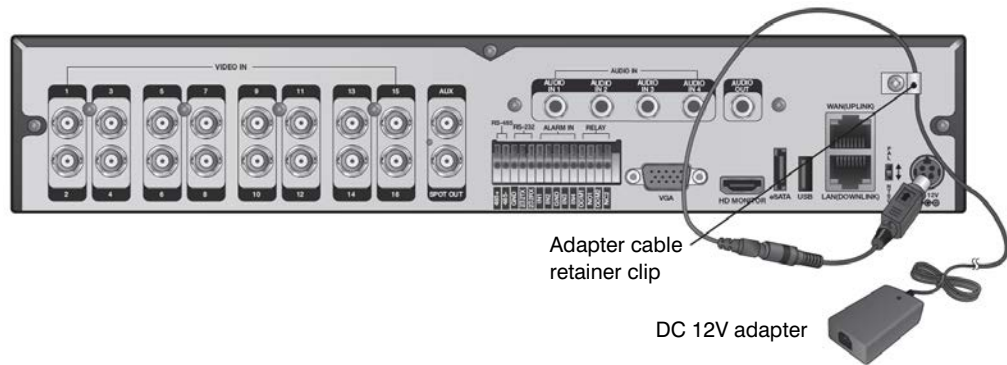
Note The monitor's displaying operates at 50 Hz if the product has been set to PAL output and the connected monitor supports both 50 Hz and 60 Hz inputs. For the NTSC setting, it works at 60 Hz.

CAUTION Make sure to connect the product to a monitor that supports 1920 x 1080 at 60Hz (HDMI, DVI, VGA).

Connecting Power

Plug the provided DC 12V adapter in the rear power port of the DVR. When done, attach the *Adapter cable retainer clip* to the rear panel and insert the cable into the clip.

Figure 2-2 Power Connection on Rear Panel



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

CAUTION Make the connection before applying the power.

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

CAUTION 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, never modify it on your own for earth-grounding.

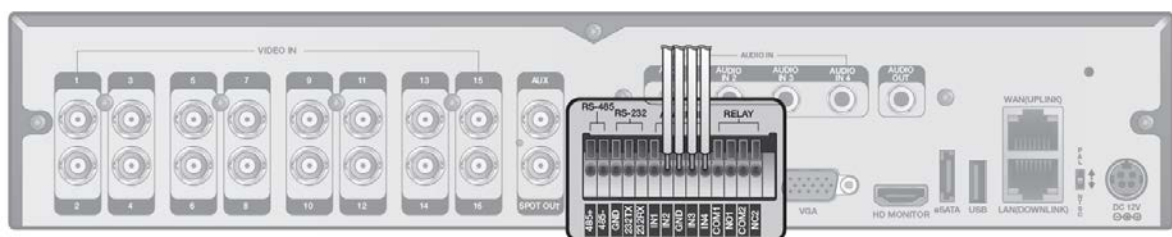
CAUTION Do not insert multiple devices in a single power socket. It may cause a power overload.

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

Alarm Input/Output Connections

Connecting the Alarm Input Signal

Figure 2-3 Alarm Connections on the DVR Rear Panel



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

1. Push the Alarm **IN** and **GND** terminals' bottom side inwards with a sharp tipped tool such as a screwdriver.
2. While pushing inwards, insert one end of the alarm signal cable into the hole of Alarm **IN** terminal.
3. While pushing inwards, insert one end of the ground cable into the hole of the **GND** terminal.
4. To check proper insertion of the cable, stop pushing the terminal's bottom side inwards and gently pull the cable and test whether it disconnects.

Note To disconnect a cable, push the bottom side of the terminal inwards and pull out the cable.

Connecting the Alarm Output Signal

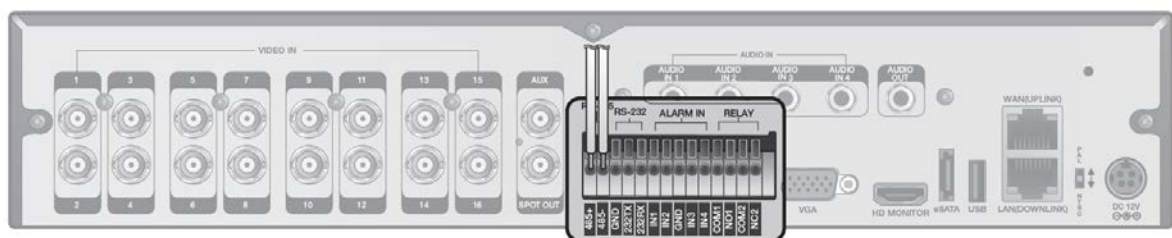
Connect the signal cable of the alarm output device to the **RELAY 1/2** terminal on the DVR's rear panel.

1. Push the **NO/NC/COM** terminal's bottom side inwards with a sharp tipped tool such as a screwdriver.
2. While pushing inwards, insert one end of the 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.
4. To check proper insertion of the cable, stop pushing the terminal's bottom side inwards and gently pull the cable and test whether it disconnects.

Note To disconnect a cable, push the bottom side of the terminal inwards and pull out the cable.

Communication Port Connection

Figure 2-4 Communication Port Connections on the Rear Panel



Connecting an RS-485 Device

You can connect a PTZ Camera or Keyboard Controller through the RS-485 port. You can also connect a text-in device such as a POS or ATM.

After connecting the control device, be sure to match the connection settings between the DVR and device. Make the communication settings in the Control Device section (see [Control Device Settings on page 87](#)).

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

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

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

Connecting an RS-232 Device

You can connect PTZ cameras, POS or ATM devices through the RS-232 port. For connection of the text-in device, refer to the user manual of the text-in device.

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

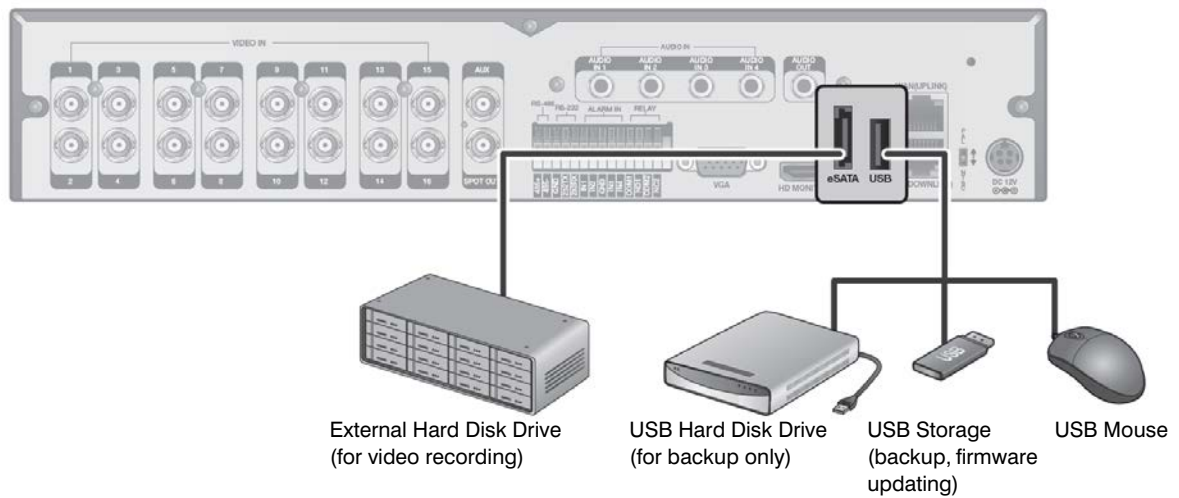
Audio Device Connection

You can connect an audio output device such as a speaker amplifier to the DVR rear panel.

Connect the audio input device such as a microphone to the rear panel **Audio In** port, connect the audio output device such as a speaker amplifier to the **Audio Out** port.

Storage and Mouse Connection

Figure 2-5 USB and eSATA Rear Panel Connections



Connecting eSATA Storage

If the internal storage space is insufficient, you can expand your storage capacity by adding an eSATA storage device to the rear panel eSATA port (see [Figure 2-5](#)).

Note Using devices other than recommended eSATA products may cause serious problem. Recommended eSATA products include: Sarotech C5-US3 external eSATA device.

Connecting a USB Device

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

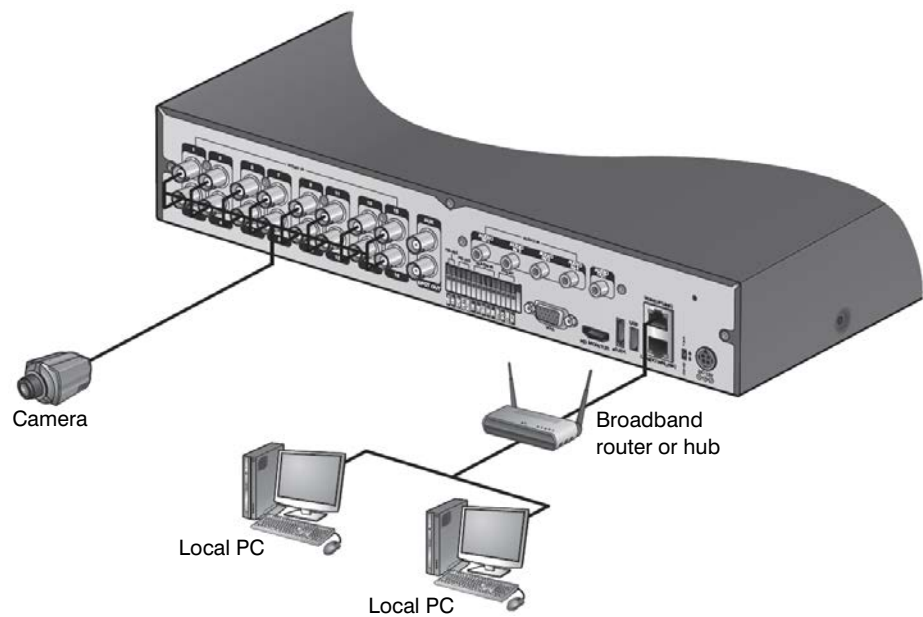
CAUTION If you need to connect a USB HDD with a high power consumption, it is recommended to use a separate power source for that HDD.

Network Connection

Connecting to a PC in the Local Network

You can connect the DVR to a PC in the same network and control or manipulate it using the PC monitor, keyboard and mouse.

Figure 2-6 Network Connection Overview

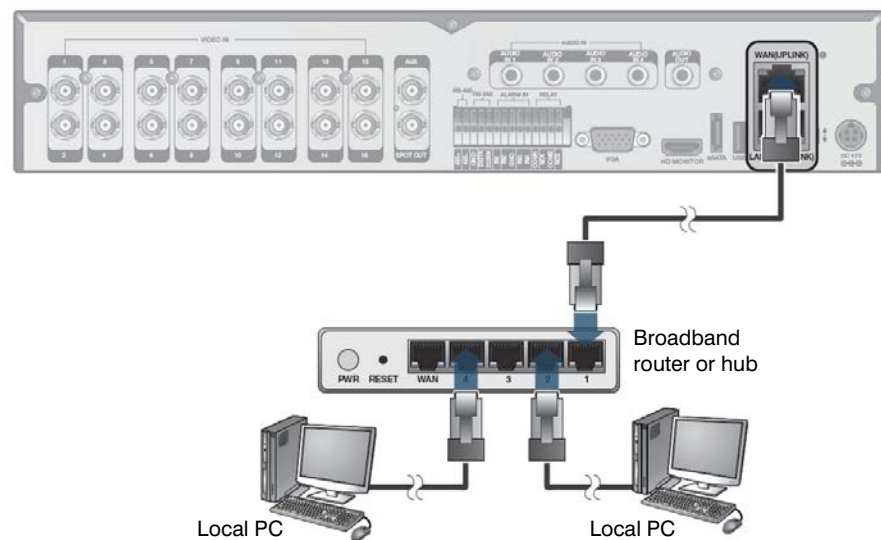


1. Connect the **WAN(UPLINK)** port in the rear panel to the router or hub (see [Figure 2-7](#)).

CAUTION 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 (see [Figure 2-7](#)).

Figure 2-7 Connecting Router or Hub to the DVR



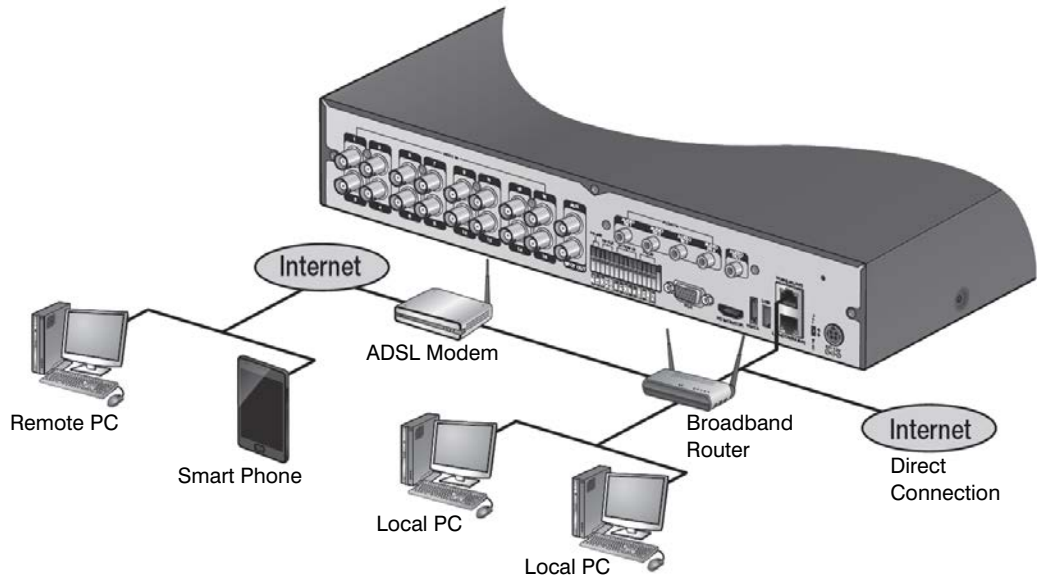
3. Enter the address in the Web browser of your PC in the format of: **http://IP address:Web service port** (for example: `http://192.168.0.23:8080`). The web service port is set to 8080 by default. From the Network Setup screen, you can change the port number.
4. Provide the ID and password before logging in. Then, you can view the monitoring screen.
Access ID (factory default): **ADMIN**
Password: **1234**

CAUTION For security purposes, change the password before you use the product for the first time after purchasing.

Connecting to a PC from a Remote Network

You can connect the 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.

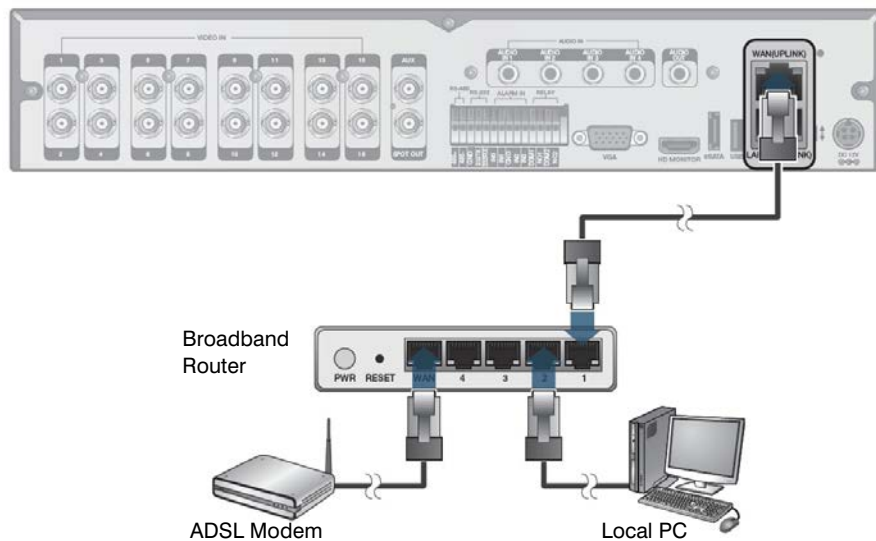
Figure 2-8 Remote Network Connection Overview



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

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

Figure 2-9 Connecting Router for Remote Network Connection



2. Connect the **WAN(UPLINK)** port of the router directly to the fixed IP LAN cable, or connect it to the ADSL modem (see [Figure 2-9](#)).

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 on page 77](#).
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**.

3

Monitoring

Getting Started

1. Connect the adapter to the 12V power input port in the rear panel of the 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 with the login screen appears.

Logging In

To manipulate or access the menus of DVR, you will need to log in.

1. When the system starts, the login screen appears (see [Figure 3-1](#)).

Figure 3-1 Log In Screen

The screenshot shows a login interface titled "LOG IN". It features a "USER ID" dropdown menu currently set to "ADMIN" and a "PASSWORD" input field. Below these is a numeric keypad with buttons for digits 1-0, symbols like tilde, equals, and left arrow, and a "DEL" button. A second row of the keypad includes letters q-w-e-r-t-y-u-i-o-p, curly braces, backslash, and "ENTER". A third row includes letters a-s-d-f-g-h-j-k-l, apostrophe/quotation mark, and "ENTER". A fourth row includes letters z-x-c-v-b-n-m, less-than/greater-than, question mark, "SPACE", and "SHIFT". At the bottom are two buttons: "OK" and "CANCEL".

2. Select a user with the drop-down list 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 (see [Figure 3-4](#)).

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

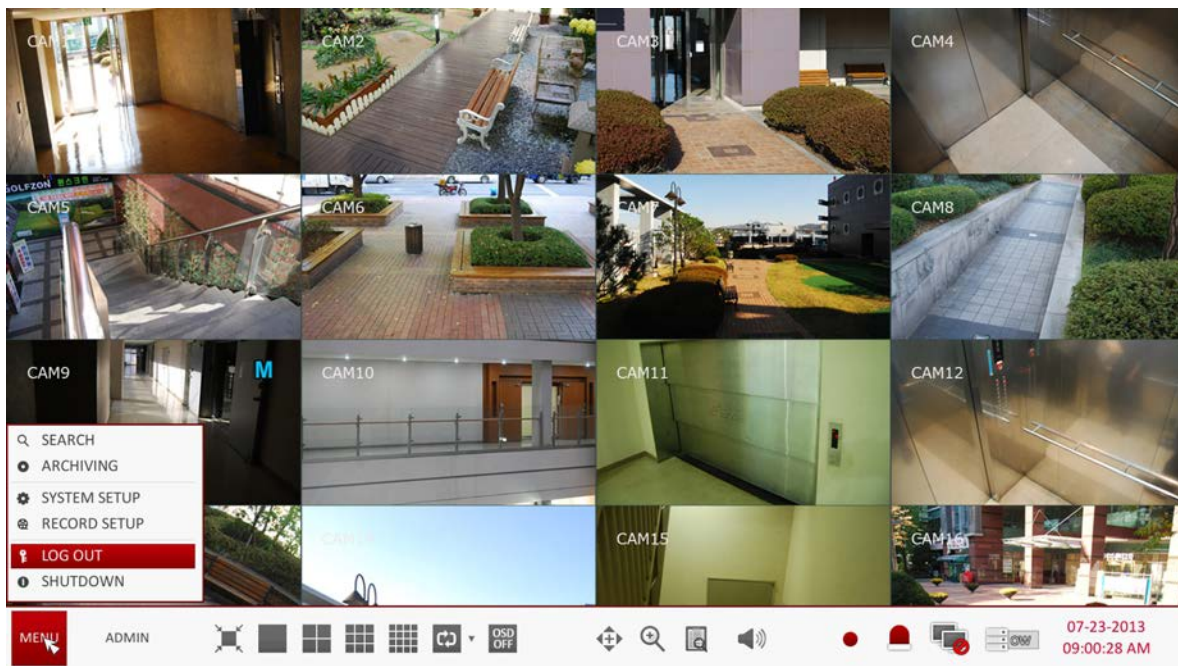
Logging Out

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

Note 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 (see *Figure 3-2*), then select to **LOG OUT**, or press the **LOGOUT** button on the remote control.

Figure 3-2 Selecting Log Out from Menu

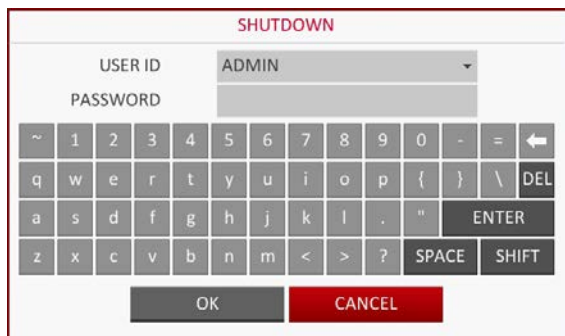


2. While logged out, the Search / Backup / System Settings / Record Settings / Exit menus are restricted to use.

System Shutdown

1. In the monitoring screen, click **MENU** in the bottom left corner of the screen (see *Figure 3-2*), then select to **SHUTDOWN** the system, or press the **POWER** button on the remote control.

Figure 3-3 Shutdown Screen



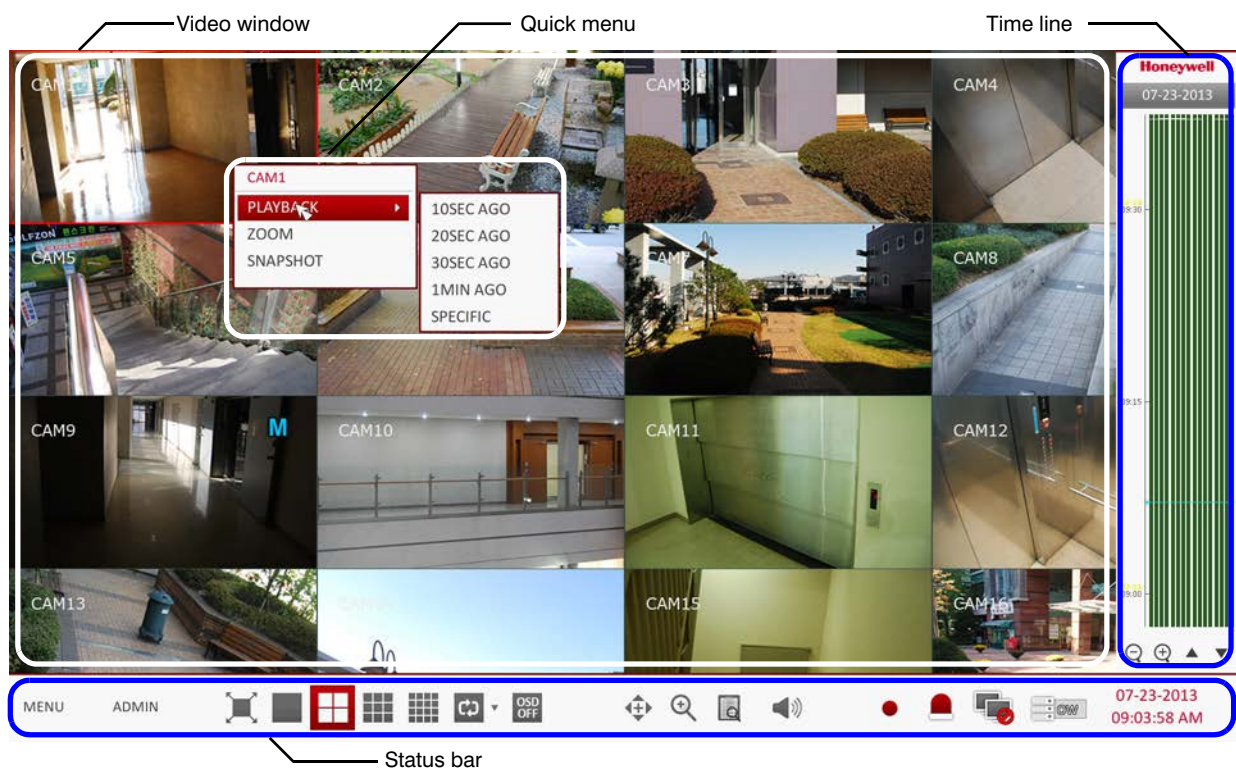
- Use the virtual keyboard to enter the password, then click OK (see [Figure 3-3](#)).

CAUTION Be sure to use this procedure to shut down the systems. 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 will increase the bad sectors, causing data loss and shortened life cycle of the disk.

Live Screen at a Glance

The live screen largely consists of three components: video window, status bar and timeline zone (see [Figure 3-4](#)).




Figure 3-4 Live Screen



Video Window

Table 3-1 describes the icons that are used in the video window.

Table 3-1 Video Window Icons

Item		Description
Camera ID	CAM1	Shows 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

Figure 3-5 The 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.

Table 3-2 Status Bar Descriptions
















Item		Description
Menu Button		Select one of the System setup, Search and Backup menu items to access them.
User ID		Show the ID of the user who is currently logged in.
Screen Control Buttons		Edit the screen layout to show video in full screen mode, or to show the video along with the status bar and timeline.
		Use these icons to select the split screen mode to view video with (choose from single, quad, 9-panel or 16-panel screens).
		Select Auto Sequence Mode. When a user arranges channels on desired tiles on a split screen view, this setting is listed for later selection. Selecting a screen setup directly switches the screen mode as configured.
		Display or hide the on-screen display (OSD) menus on the screen.
PTZ		Go to the PTZ screen. You can control the PTZ operations of a PTZ-compliant camera on the PTZ screen.
Zoom		Zoom in or out on the selected video image.

Table 3-2 Status Bar Descriptions (cont'd)





Item		Description
Quick Log		Display the log list of 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 emergency recording.
Alarm Indicator		Blinks when an event occurs. It will not blink if no action to the event has been set. Click to view information about the event that occurred.
Network Connection Status		Check if the network connection is made through an external PC or mobile device. Click this to view the details of the concurrent users and to check the network connection status.
Disk Space		Show the disk space information. If you have set the disk to overwrite mode, it will be displayed "OW" (Over Write) from the starting point of the overwriting.
Date and Time		Shows the current date and time.

Timeline

Press the ► button on the remote control or move the cursor to the right of the screen to display the timeline ([Table 3-3](#) describes timeline elements and buttons).

Double-click the timeline to move to the video screen. Drag and drop it to make a backup or event search for the specified area.

Table 3-3 Timeline Element Descriptions

Item		Description
Timeline Date		Display the date of the current timeline. Click this button to select a different date for the timeline.
Zoom in/out of Timeline		Expand or collapse the timeline.
Navigation through Timeline		Move to the previous or next point of time in the timeline. You can also use the mouse wheel to navigate through the timeline.
Timeline Bar		Represents the recorded data. The color of each bar indicates: <ul style="list-style-type: none"> • 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 (see [Figure 3-4](#)). describes the quick menu commands.

Table 3-4 Quick Menu Descriptions

Item	Description
Channel Number	Display the number of the currently displayed 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.

Note After capturing the image, you can save it to the hard drive or export it to an external USB memory device.

Using the Status Bar in Live Mode

Selecting a Split Screen Mode

Click a desired split mode from 1-, 4-, 9- and 16-panel split screen options. Alternatively, press the **DISPLAY** button on the remote control until a desired split mode is displayed.



Selecting an Auto Sequence Mode


Click the Sequence button in the status bar (see [Figure 3-6](#)), or press the **SEQ** button on the remote control to perform the specified sequence mode.

Figure 3-6 Selecting an Auto Sequence



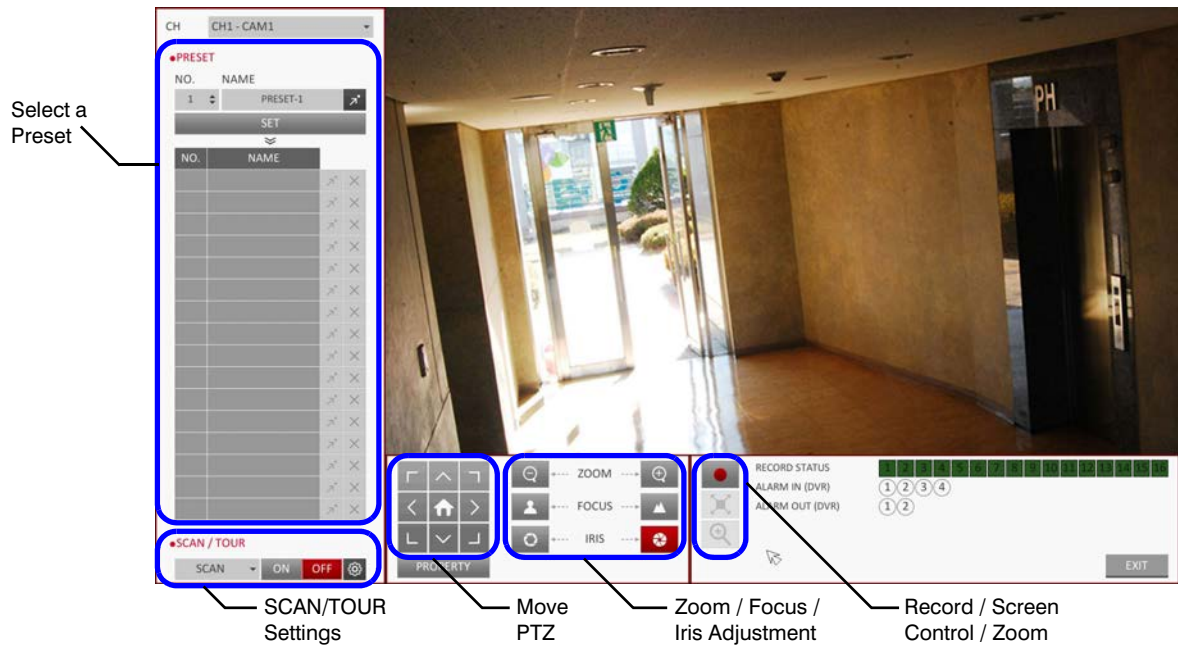
You can configure the sequence settings in the **SEQUENCE** menu. For more information, refer to [Sequence Settings on page 66](#).

Controlling a PTZ Camera

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 on the remote control to initiate the predefined sequence.

In PTZ mode, use buttons on the screen to control PTZ movement, or use the **ZOOM**, **FOCUS** and **PRESET** buttons on the remote control to control the PTZ.

Figure 3-7 PTZ Mode Controls On Screen



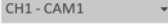



Digital Zooming

You can enlarge the monitoring screen for a 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 and select **ZOOM**. Alternatively, you can press the **ZOOM** button on the remote control.

Figure 3-8 Zoom Control Screen



- The zoom control screen opens (see [Figure 3-8](#)). When the menu bar appears in the bottom right of the screen, use these buttons to control the zooming:
 -  : Select a channel to zoom in/out.
 -  : Zoom out of the current (enlarged) image step by step.
 -  : Enlarge the current image step by step.
 - Zoom Box: Use the video insert in the yellow box to move to or select a desired zooming area.
 -  : Exit the zooming screen and return to the live screen.

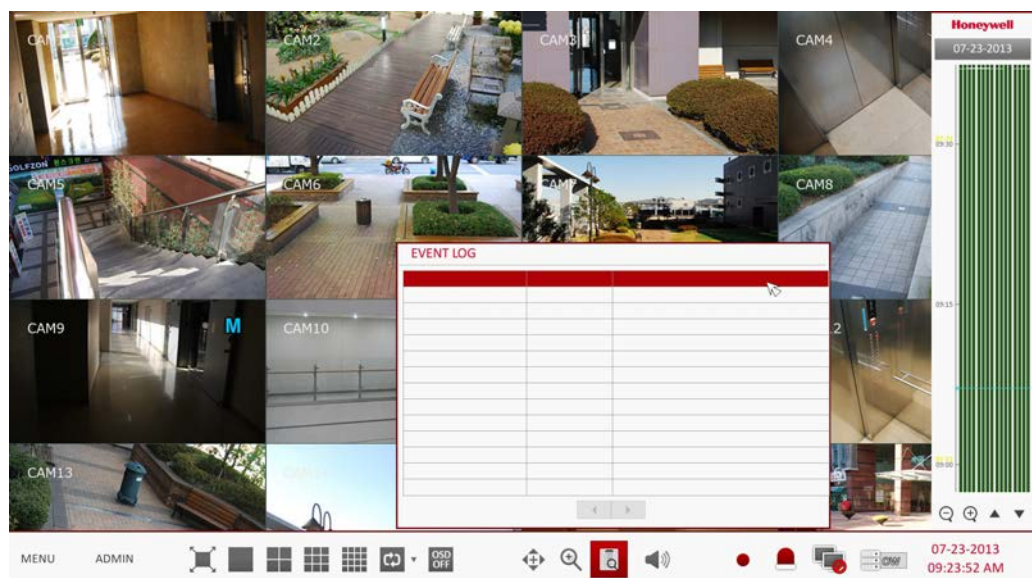
Note Digital zooming magnifies the video image digitally and produces enlarged images that may not be as sharp and clear after enlarging. For sharper and clearer magnification, it is recommended to use cameras that support optical zooming.

Checking the Event Log

You can check the log of the events that occurred.

- Click Log to display the **EVENT LOG** window (see [Figure 3-9](#)). The log list is sorted with the latest one on top.

Figure 3-9 Event Log Window



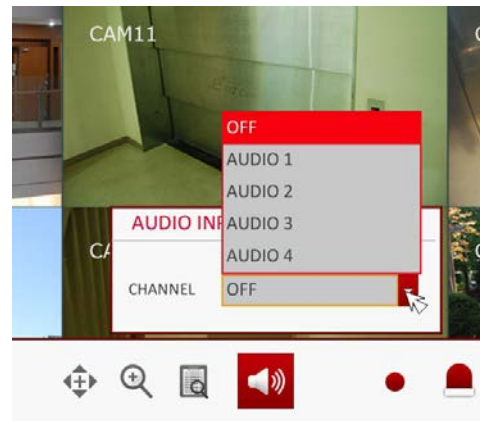
- Double-click a desired log to display the event video. This will open the play screen of the selected log.

Selecting 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.

Figure 3-10 Selecting an Audio Input Channel



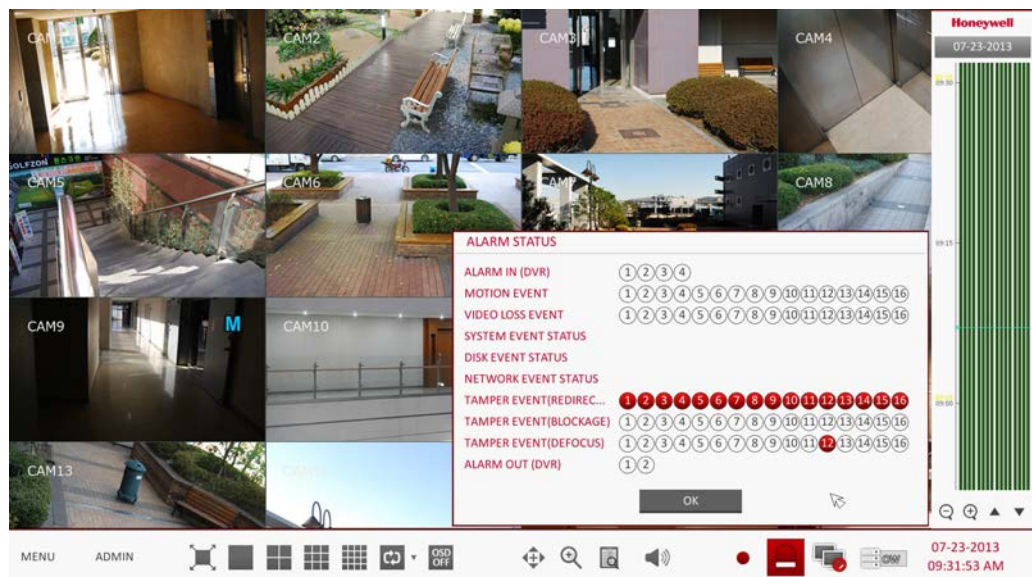
Note A camera with a supported audio input should be selected. The DVR must be connected to a speaker to play audio.

Checking the Alarm Status

You can check alarms and events from each camera and the system.

Click **OK** to close the window.

Figure 3-11 Checking the Alarm Status



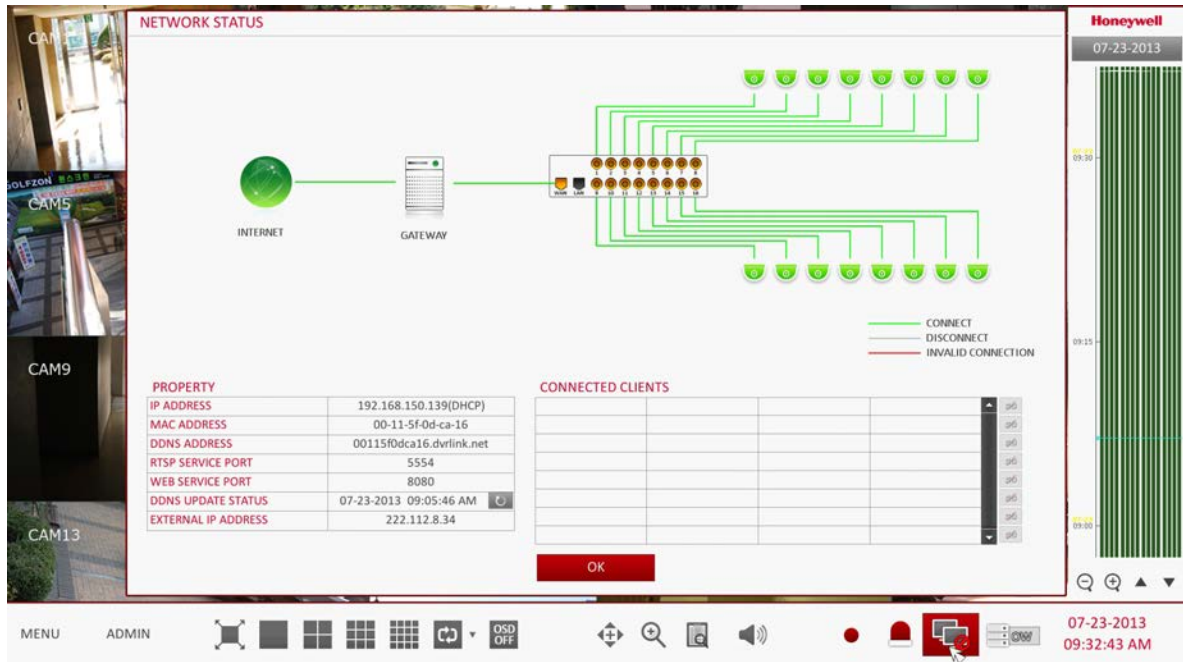
Checking the Network Status

This screen shows the connection status of cameras and network devices.

Click to display detailed information on current users and network connections.

Click **OK** to close the window.

Figure 3-12 Checking the Network Status



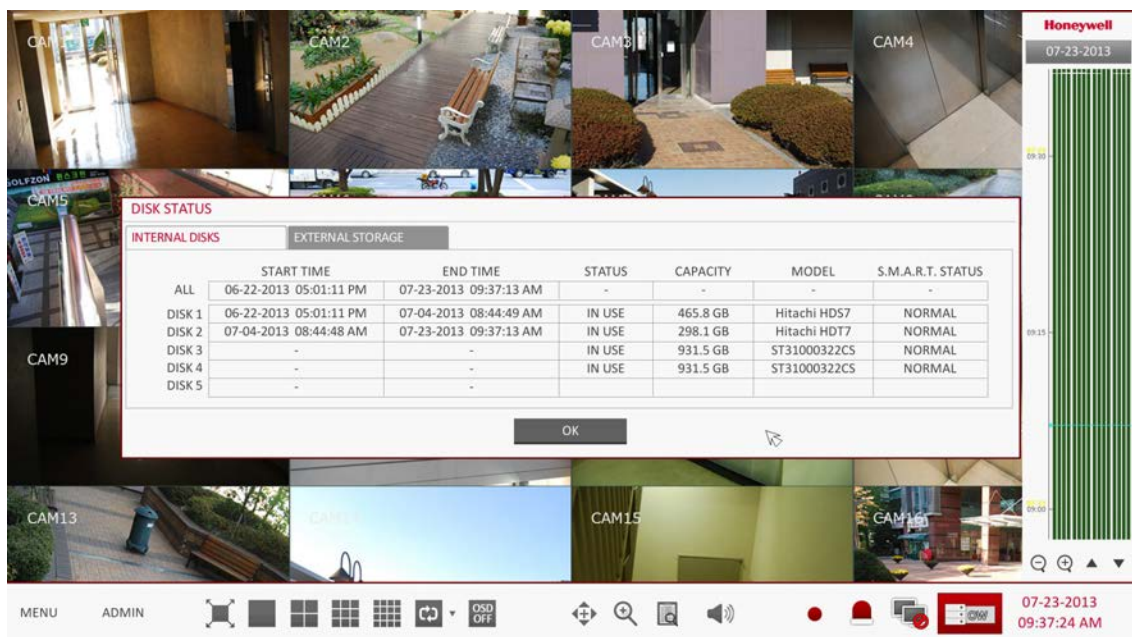
Note For more information, refer to *Network Status on page 80*.

Checking the Disk Status

You can check status and information of storage devices currently connected to the system.

Click **OK** to close the window.

Figure 3-13 Checking the Disk Status



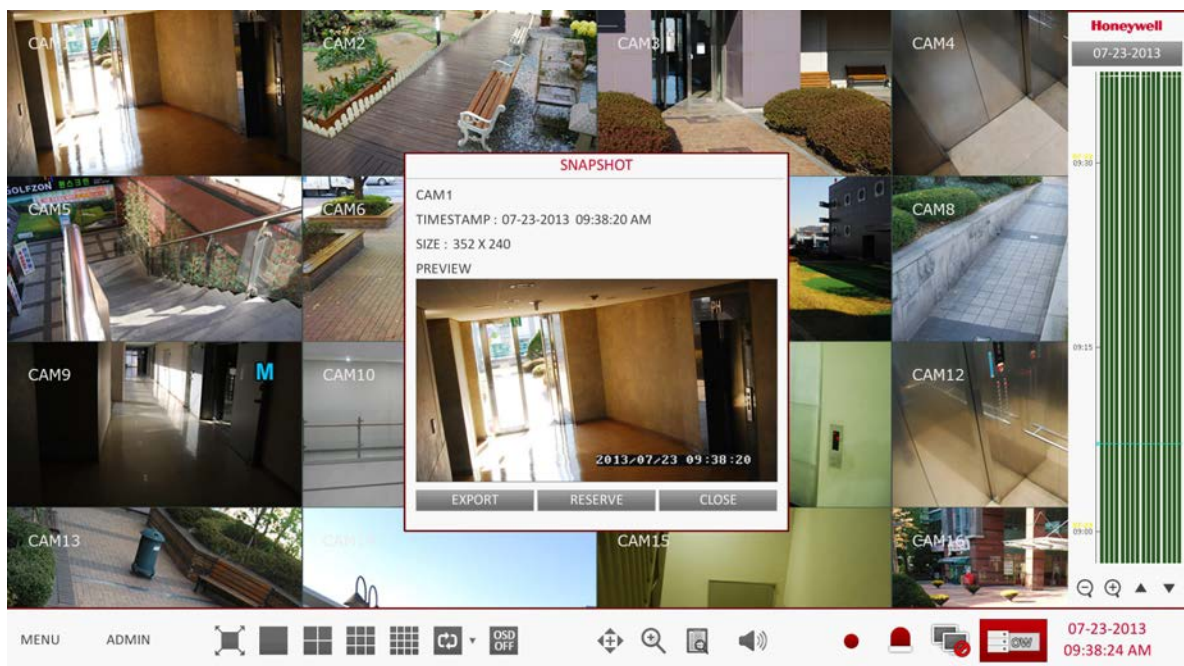
Note For more information, refer to [Disk Information on page 88](#).

Saving Captured Snapshots

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

1. Select a channel first, and right click to open the quick menu, and select **SNAPSHOT** from the menu, or press the **SNAPSHOT** button on the remote control.

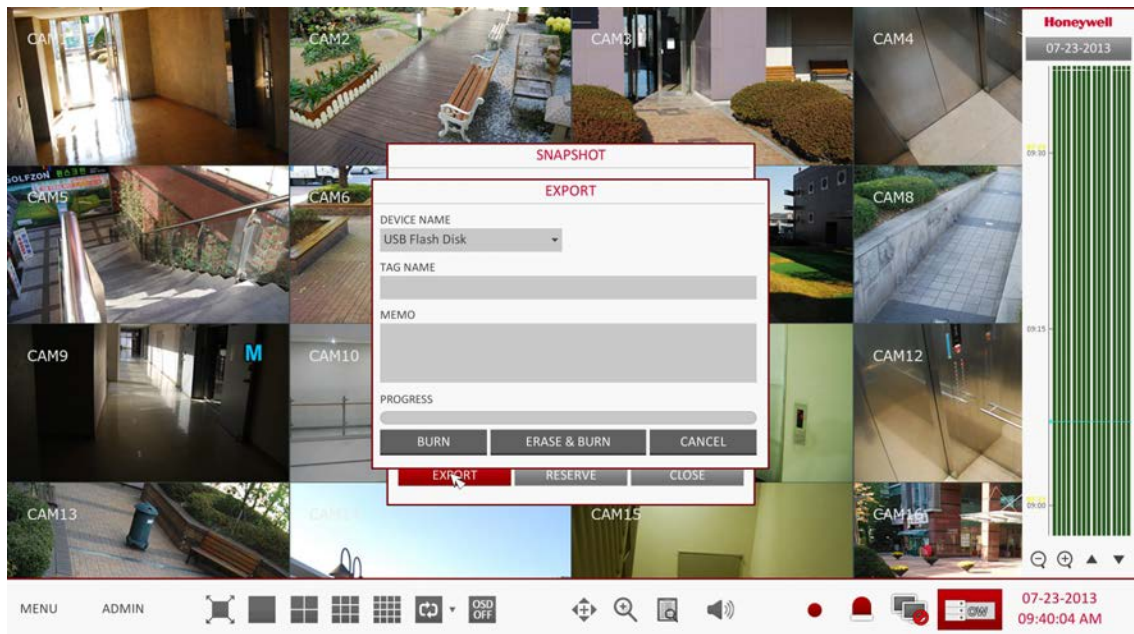
Figure 3-14 Saving a Snapshot Image



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

Note The saved image can be found in the Archived > Reserved data management screen and can be backed up at a later time (see [Reserved Data Management on page 131](#)).

Figure 3-15 Exporting a Snapshot Image



3. If you selected **EXPORT** in [step 2](#) above, enter the **TAG NAME** and **MEMO** (if needed) and press **BURN** or **ERASE & BURN** (see [Figure 3-15](#)). A progress bar appears and indicates the progress of exporting to the 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.

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

4

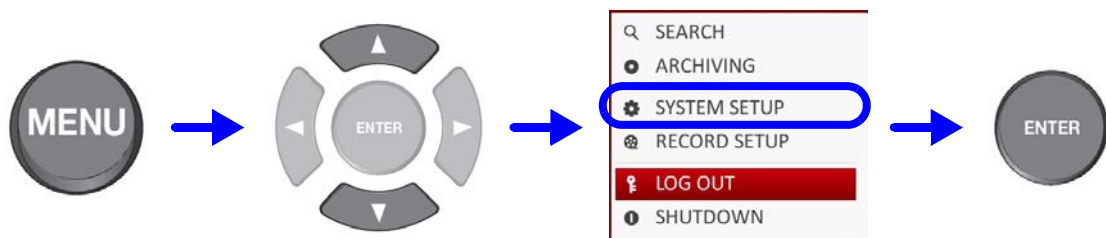
System Setup

Opening the System Setup Menu

Using the Mouse



Using the Remote Control (Method 1)



Using the Remote Control (Method 2)



Camera Settings

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

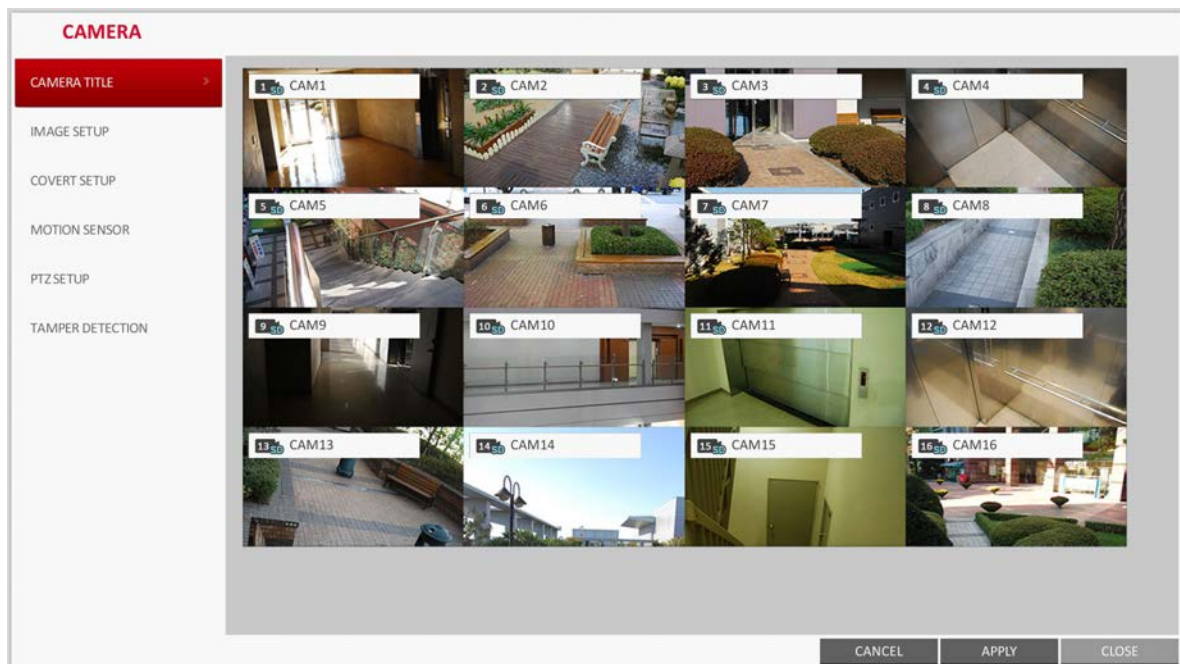
Camera Title

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

1. From **SYSTEM SETUP** > **CAMERA**, select **CAMERA TITLE** (see [Figure 4-1](#)).
2. Use the ▲, ▼, ◀, ▶, and **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.

Figure 4-1 Camera Title Re-Naming

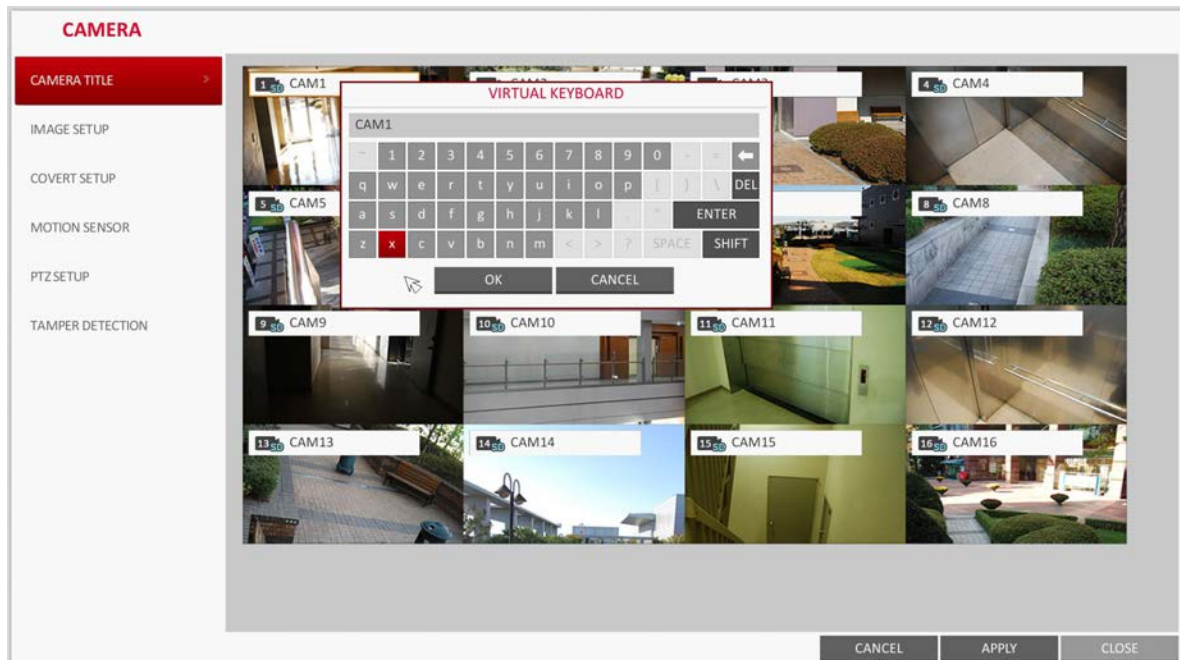


3. Once the virtual keyboard appeared (see [Figure 4-2](#)), select desired alphanumeric characters to complete your input, and press the **OK** button.

Note The **SHIFT** key toggles letter case.

4. To apply the change, click **APPLY** at the bottom of the screen.

Figure 4-2 Entering Camera Title with Virtual Keyboard



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

Note Camera name allows up to 8 characters in the camera title, combining numbers and upper/lower case letters.

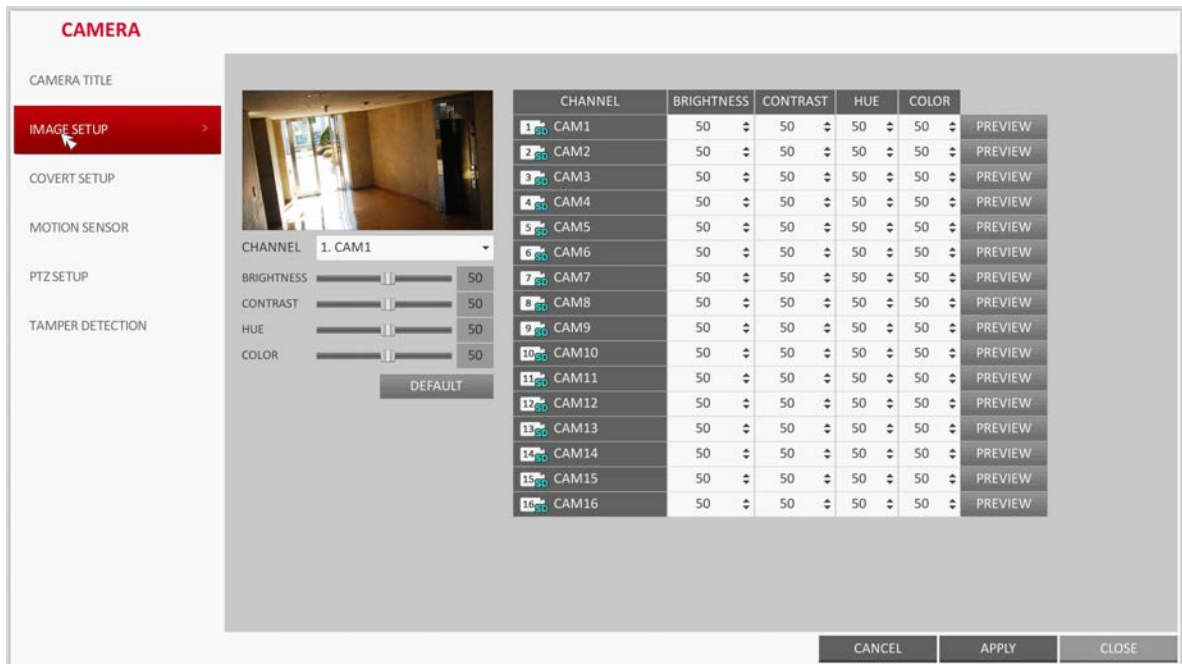
Image Setup

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

- From **SYSTEM SETUP** > **CAMERA**, select **IMAGE SETUP** (see [Figure 4-3](#)).
- Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or mouse to edit settings.
- To apply your changes, click **APPLY** at the bottom of the screen.
- Once completed with setup, press **EXIT** on the remote control or click **CLOSE** at the bottom of the screen. A confirmation dialog appears and returns to the previous menu.

Note Press the **PREVIEW** button preview your adjustments in the image.

Figure 4-3 Image Setup Screen

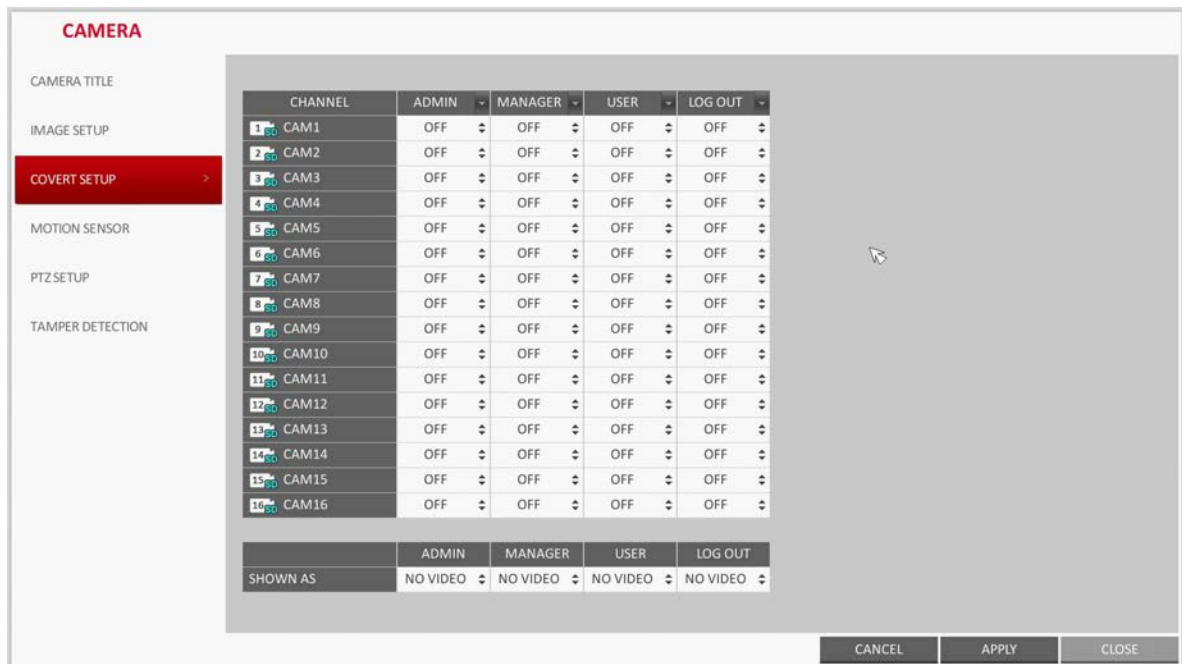


Covert Setup

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

1. From **SYSTEM SETUP** > **CAMERA**, select **COVERT SETUP** (see [Figure 4-4](#)).

Figure 4-4 Covert Setup Screen



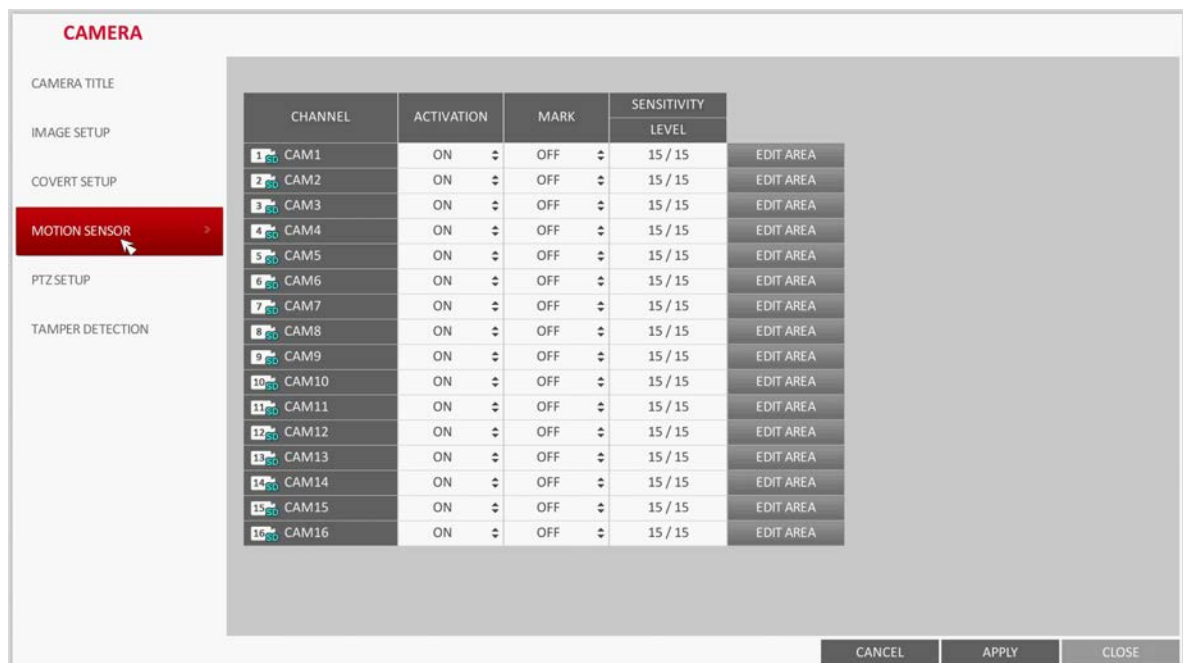
2. Use the ▲, ▼, ◀, ▶, and **ENTER** buttons on the remote control or use the mouse to select a covert channel(s) from a specific user group.
 - **ADMIN, MANAGER, USER:** Set them to **ON**. The selected channel will be covert from the applicable user account.
 - **LOG OUT:** Set it to **ON**. When the 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. Select from:
 - **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** at the bottom of the screen.
4. When done, press **EXIT** on the remote control or click **CLOSE** at the bottom of the screen. The confirmation message appears and you will return to the previous menu.

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** (see [Figure 4-5](#)).

Figure 4-5 Motion Sensor Screen



2. Use the ▲, ▼, ◀, ▶, and **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** at the bottom of the screen.

- When done, press **EXIT** on the remote control or click **CLOSE** at the bottom of the screen. The confirmation message appears and you will return to the previous menu.

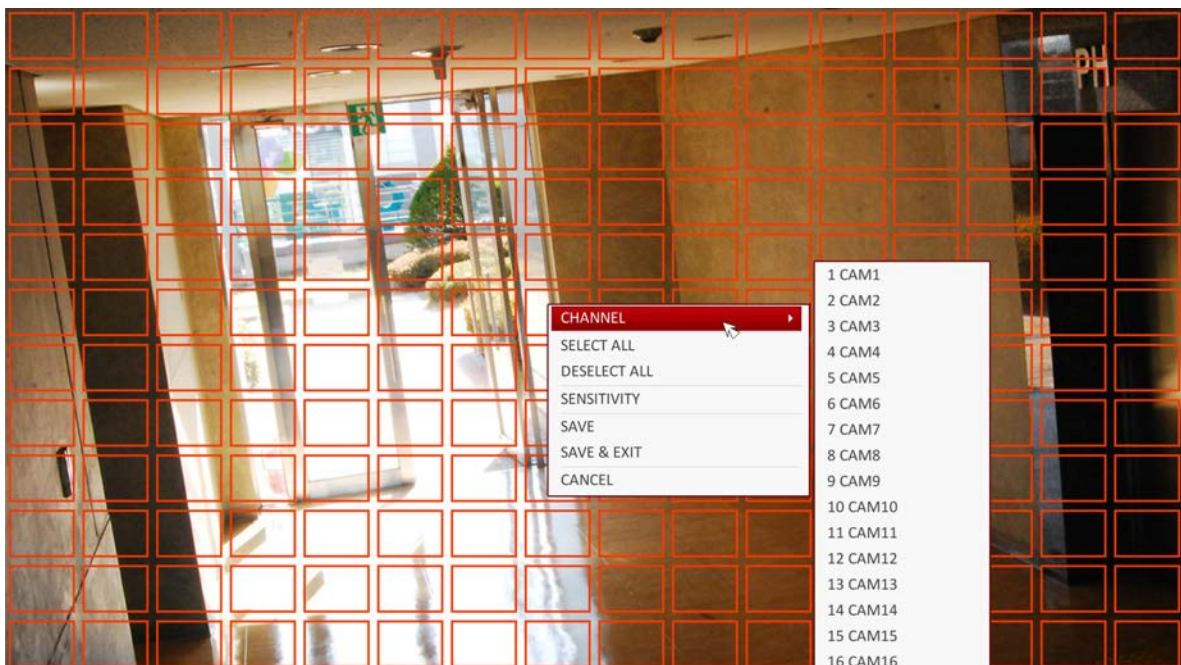
CAUTION The motion detection sensitivity may differ depending on the characteristics of the connected camera or the installation environment.

Setting the Motion Area

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.

- Click **EDIT AREA** to open the motion area setup screen (see [Figure 4-6](#)).

Figure 4-6 Setting a Motion Detection Area



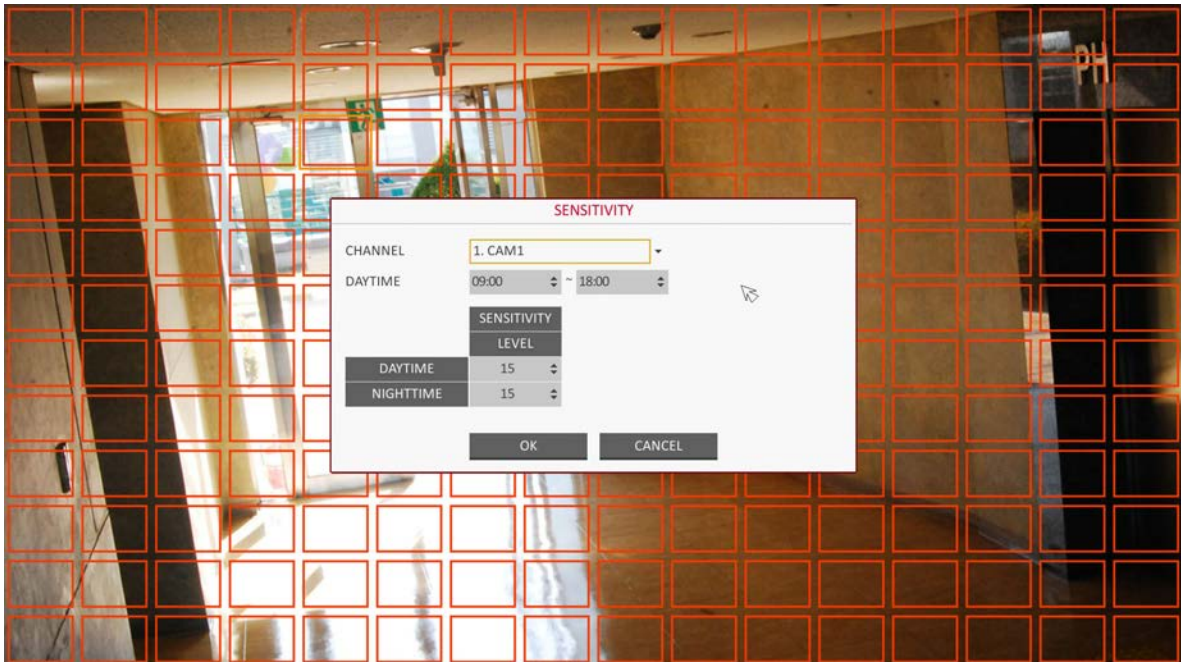
- If you are using the remote control, press **ENTER** to mark the current position.
- Use the arrow buttons to move to a desired block and press **ENTER**. The area setup will begin.

Then, use the arrow buttons to specify the area.

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

- If you select the specified area again, it will be released from the selected motion area.
- Press **EXIT** on the remote control or right-click any area to display the popup menu as shown in [Figure 4-6](#).
- While the popup menu is displayed, select **Sensitivity** to set the motion detection sensitivity of the channel currently selected (see [Figure 4-7](#)).

Figure 4-7 Setting Motion Sensitivity



Use the following options to set up the motion sensitivity:

- **CHANNEL:** Select the channel to set the motion sensitivity on.
- **DAYTIME:** Specify the time period that will be considered as daytime.
- **SENSITIVITY:** 1 (Low) ~ 30 (High). The higher the number is, the more sensitive the sensitivity level becomes.
- **DAYTIME:** Specify the **SENSITIVITY** level for the daytime.
- **NIGHTTIME:** Specify the **SENSITIVITY** level for the nighttime.

Note 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** (see [Figure 4-8](#)).
2. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or mouse to set protocol and bitrate of each channel.

Note Refer to the PTZ camera's user guide, or consult a camera installation service provider for further details on setting up the PTZ camera, such as camera address, protocol and baud rate.

Figure 4-8 PTZ Camera Setup Screen

CHANNEL	ADDRESS	PROTOCOL	BAUD RATE
1 CAM1	0	PELCO-D	9600
2 CAM2	0	PELCO-D	9600
3 CAM3	0	PELCO-D	9600
4 CAM4	0	PELCO-D	9600
5 CAM5	0	PELCO-D	9600
6 CAM6	0	PELCO-D	9600
7 CAM7	0	PELCO-D	9600
8 CAM8	0	PELCO-D	9600
9 CAM9	0	PELCO-D	9600
10 CAM10	0	PELCO-D	9600
11 CAM11	0	PELCO-D	9600
12 CAM12	0	PELCO-D	9600
13 CAM13	0	PELCO-D	9600
14 CAM14	0	PELCO-D	9600
15 CAM15	0	PELCO-D	9600
16 CAM16	0	PELCO-D	9600

3. To apply the change, click **APPLY** at the bottom of the screen.
4. When the setup is completed, press **EXIT** on the remote control or click **CLOSE** at the bottom of the screen to display a confirmation dialog.

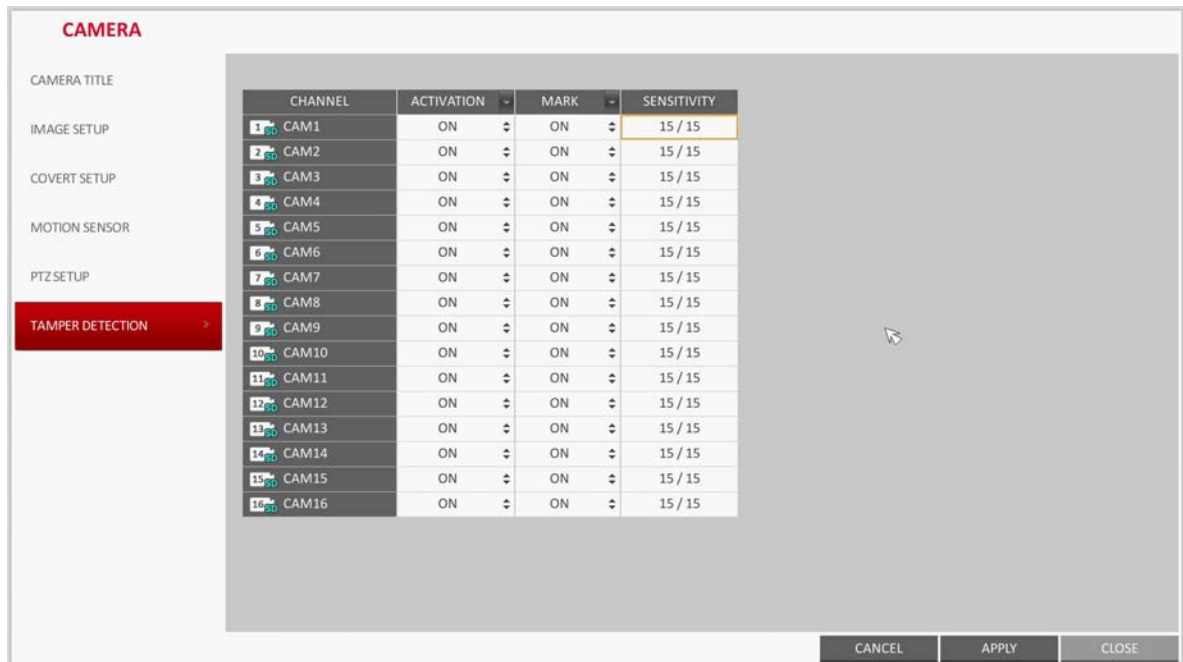
Click **CANCEL** to return to the previous menu.

Tamper Detection

You can set the DVR to detect tampering (attempt to interfere monitoring operations by tampering with an installed camera).

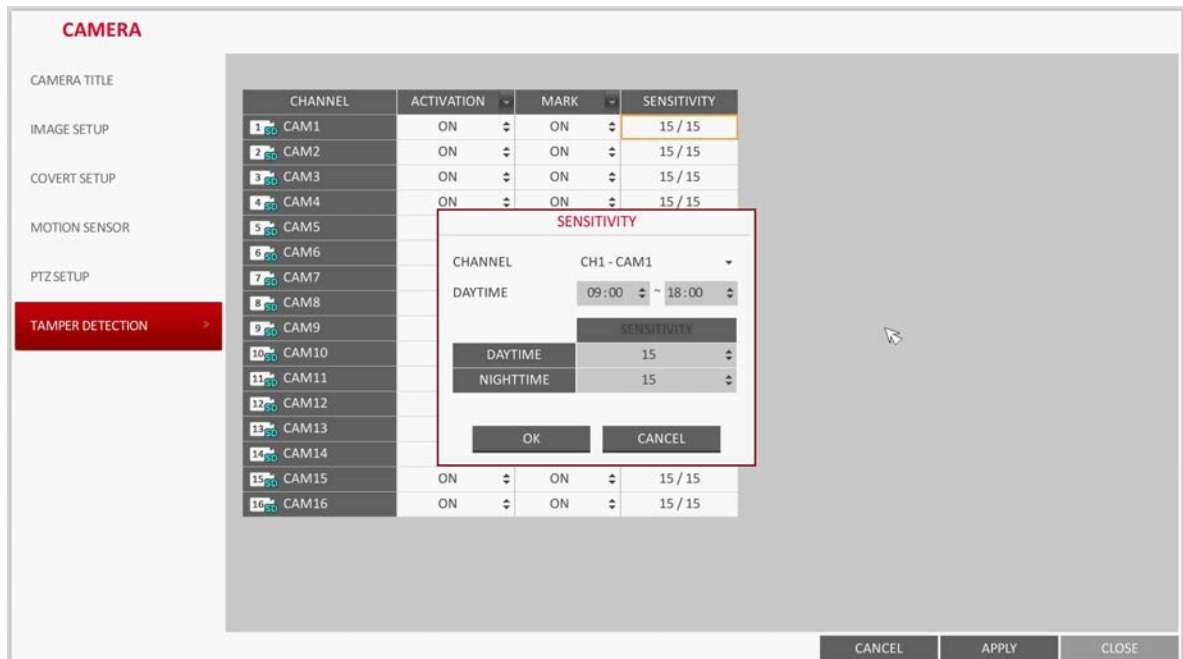
1. From **SYSTEM SETUP** > **CAMERA**, select **TAMPER DETECTION** (see [Figure 4-9](#)).
2. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or mouse to select the **ACTIVATION** drop-down list for the camera to turn tamper detection for that camera **ON** or **OFF**.
3. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or mouse to select the **MARK** drop-down list for the camera to program tamper detection for. **MARK** turns the detection indicator to be displayed onscreen **ON** or **OFF**.

Figure 4-9 Tamper Detection Screen



4. Select **SENSITIVITY** to open the sensitivity options for the camera (see [Figure 4-10](#)). Enter the **SENSITIVITY** values in the window that opens:
 - **SENSITIVITY LEVEL:** This specification can be set separately for Day and Night modes. This value sets the detection sensor's sensitivity for each detection block.
 - **DAYTIME:** If the sensitivity value will be different for day and night times, specify the time period that will be considered day time in the **DAYTIME** fields.

Figure 4-10 Tamper Detection Sensitivity



5. To apply the change, click **APPLY** at the bottom of the screen.
6. When done, press **EXIT** on the remote control or click **CLOSE** at the bottom of the 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 Settings

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

1. From **SYSTEM SETUP** > **DISPLAY**, select **OSD** (see [Figure 4-11](#)).
2. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or mouse to set each option of the OSD item.

Figure 4-11 OSD Options Screen

The screenshot shows the 'DISPLAY' menu with the 'OSD' sub-menu selected. The settings are organized into three sections: DISPLAY, SCREEN MODE, and LANGUAGE. Each setting is a dropdown menu.

Section	Setting	Value
• DISPLAY	CAMERA TITLE	ON
	RECORDING MODE ICON	ON
• SCREEN MODE	STATUS BAR ON FULL SCREEN MODE	AUTO HIDE
	TIMELINE ON FULL SCREEN MODE	AUTO HIDE
	BORDER LINE	ON
	BORDER COLOR	DARK GRAY
	USER NAME	ON
• LANGUAGE	LANGUAGE	ENGLISH

At the bottom right of the screen are three buttons: CANCEL, APPLY, and CLOSE.

Set the following OSD options:

- **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** at the bottom of the screen.
 4. When done, press **EXIT** on the remote control or click **CLOSE** at the bottom of the screen. The confirmation message appears and you will return to the previous menu.

Monitor Settings

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** (see [Figure 4-12](#)).

Figure 4-12 Monitor Options Screen



2. Use the ▲, ▼, ◀, ▶, and **ENTER** buttons on 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** at the bottom of the screen.
4. When done, press **EXIT** on the remote control or click **CLOSE** at the bottom of the screen. The confirmation message appears and you will return to the previous menu.

Sequence Settings

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** (see [Figure 4-13](#)).
2. Use the ▲, ▼, ◀, ▶, and **ENTER** buttons on the remote control or 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.

Figure 4-13 Sequence Options Screen

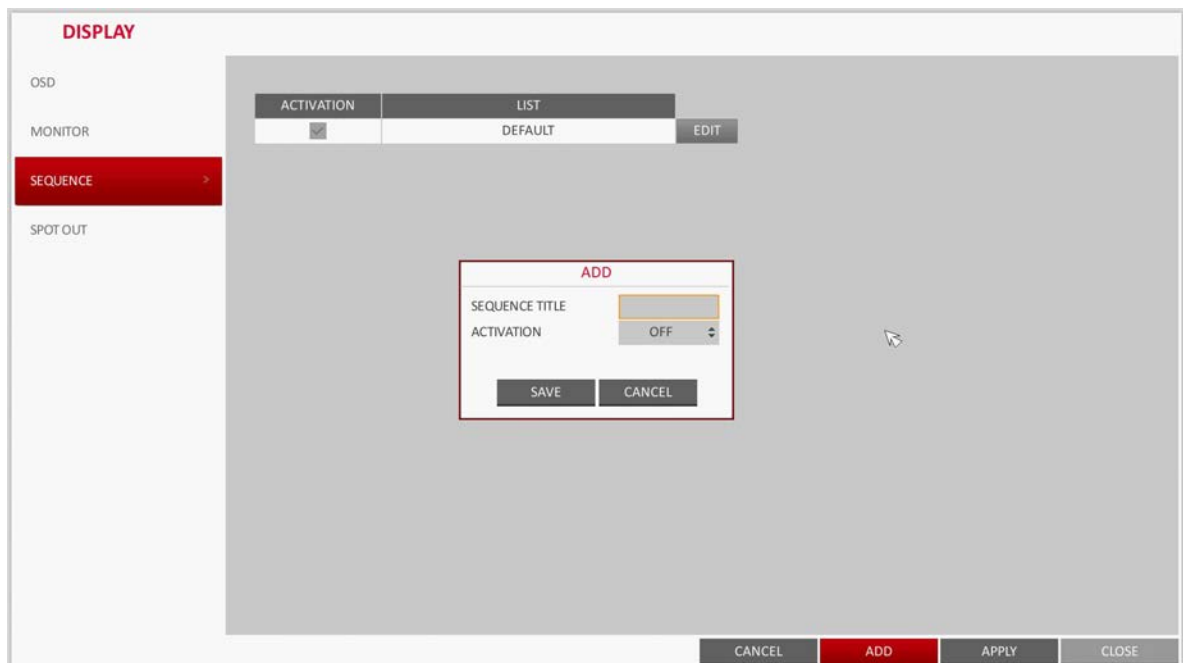


3. To apply the change, click **APPLY** at the bottom of the screen.
4. When done, press **EXIT** on the remote control or click **CLOSE** at the bottom of the screen. The confirmation message appears and you will return to the previous menu.

Adding a Sequence

1. Click **ADD** in the bottom of the screen.
2. When the ADD dialog appears (see [Figure 4-14](#)), enter a **SEQUENCE TITLE** using the virtual keyboard.

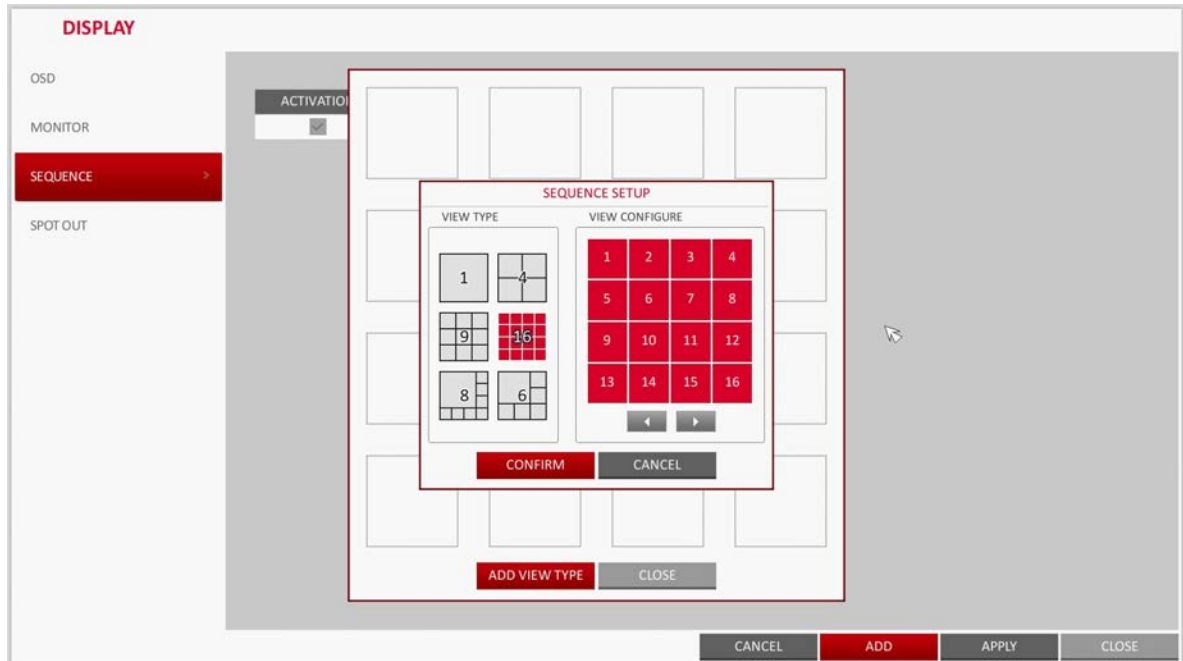
Figure 4-14 Adding a Sequence Screen



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. From the **VIEW TYPE** area, select a split mode that you want to add.

Figure 4-15 Sequence Setup Screen

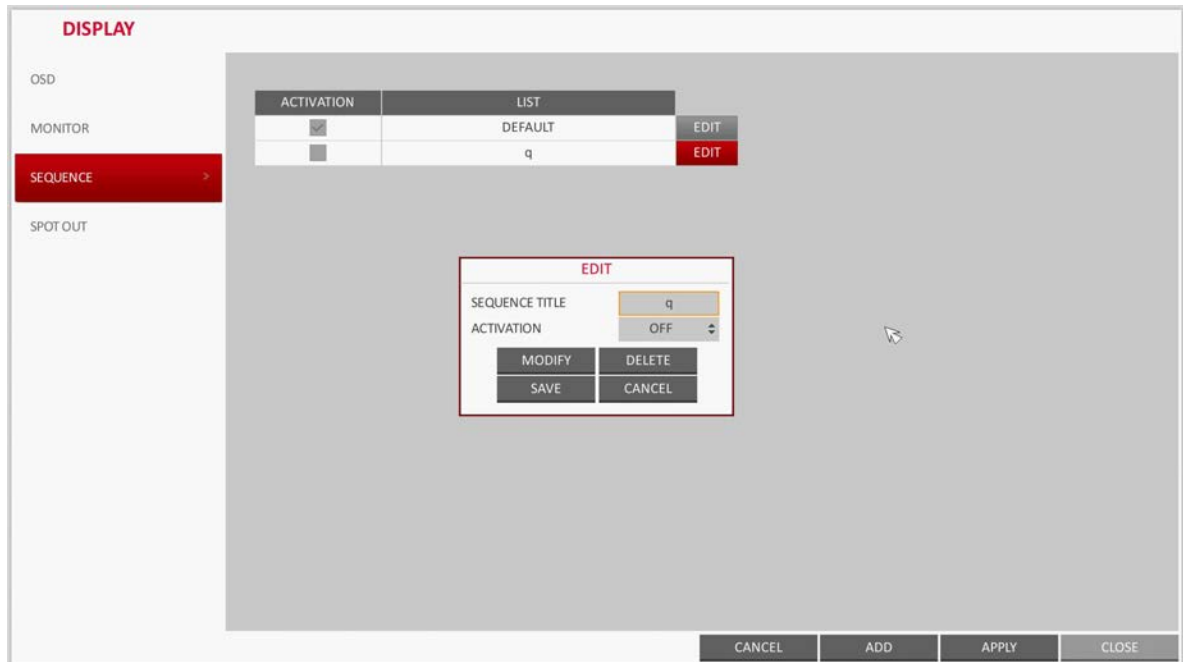


6. The selected split mode is displayed in the **VIEW CONFIGURE** area of the screen. Select a channel you want to display in each channel of the split screen layout.
7. Click **CONFIRM**.
The set sequence mode is confirmed and will be added to the Add Sequence list in the order it was added.
8. When finished with the sequence, click **CLOSE** at 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 on the remote control to edit or delete the sequence.

Editing a Sequence

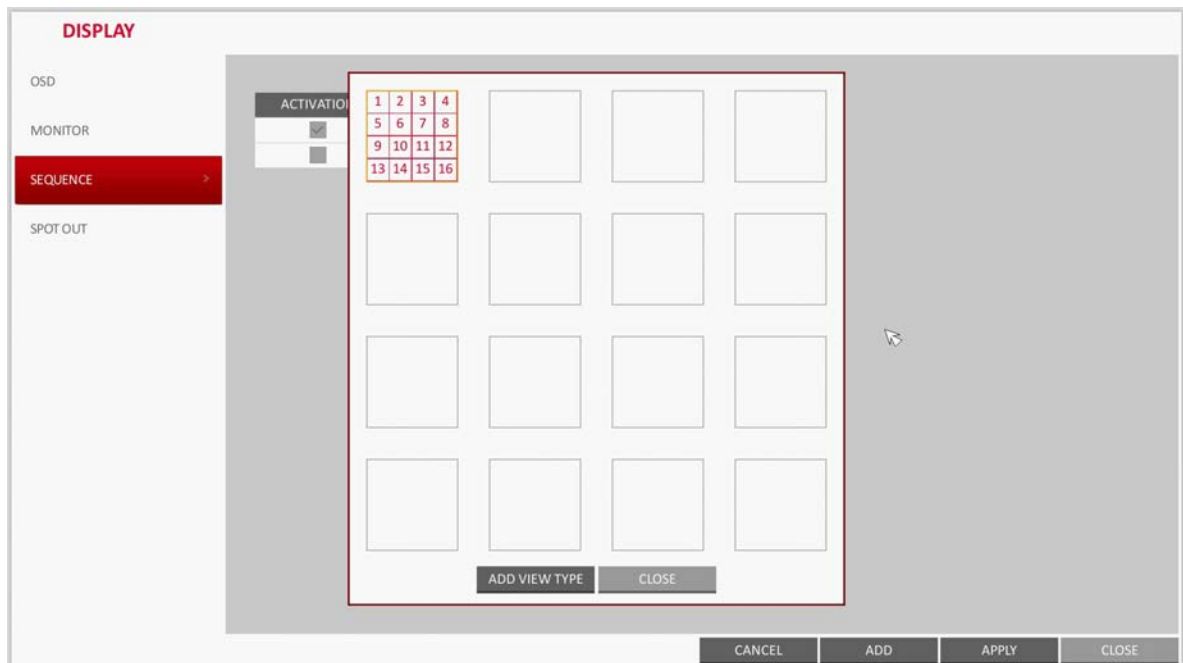
1. Select a sequence that you want to edit in the list.
2. The EDIT dialog appears (see [Figure 4-16](#)).
3. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or use the mouse to edit the selected sequence.
 - **SEQUENCE TITLE**: enter a new sequence name.
 - **ACTIVATION**: specify the use of the sequence.
 - **MODIFY**: change the settings of the sequence mode.
 - **DELETE**: delete the selected sequence list.
 - **CANCEL**: cancel the changes.

Figure 4-16 Editing a Sequence



- Pressing the **MODIFY** button will display the Edit Sequence window (see [Figure 4-17](#)).

Figure 4-17 Edit Sequence Window



- 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** from the menu.
- When you are finished editing, click **CLOSE** to close the window.
- To apply your changes, click **APPLY** at the bottom of the screen.

Spot Out Settings

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** (see [Figure 4-18](#)).

Figure 4-18 Spot Out Options Screen

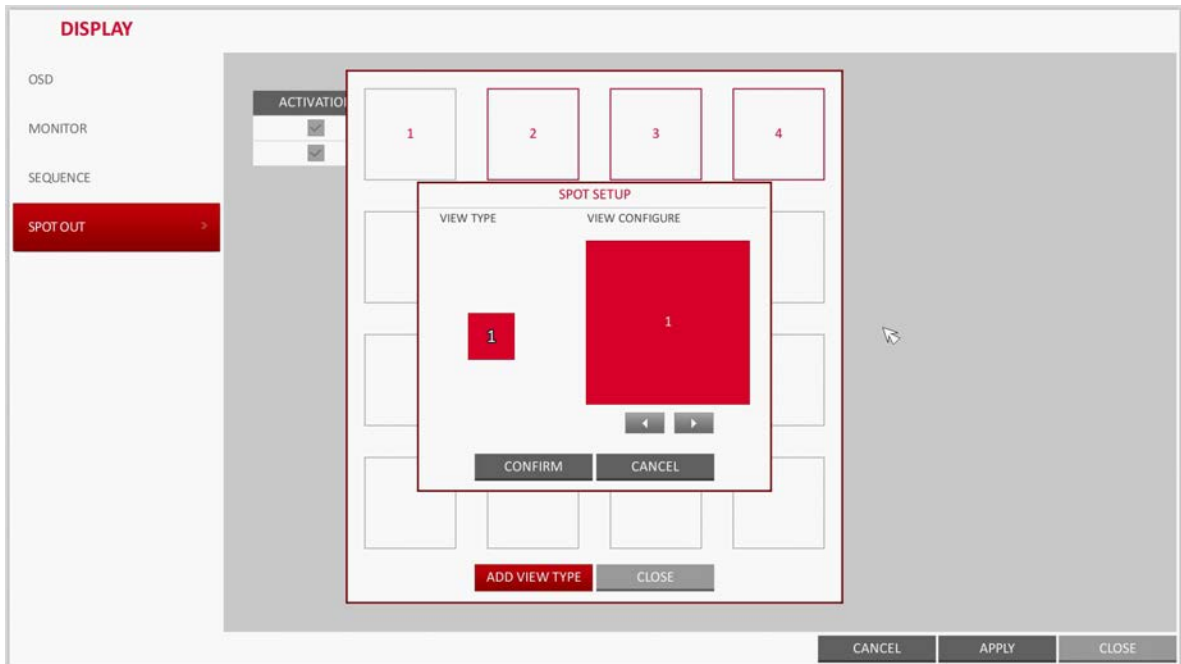


2. Use the ▲, ▼, ◀, ▶, and **ENTER** buttons on the remote control or mouse to edit Spot Out properties.
 - **SPOT TITLE:** Name the Spot Out setup.
 - **ACTIVATION:** Set whether to activate / deactivate the spot out setup.
 - **MODIFY:** Edit the view type of the spot output.
 - **SAVE:** Save the changes of spot output settings.
3. To apply your changes, click **APPLY** at the bottom of the screen.
4. Once completed with setup, press the **EXIT** button on the remote control or click **CLOSE** at the bottom of the screen. A confirmation dialog appears and returns to the previous menu.

Adding a View Type to a Spot Output

1. Select an item from the SPOT Output list to be changed.
2. The MODIFY window appears. Click **MODIFY**.
3. When the View Type selection window appears, click **ADD VIEW TYPE**.
4. Select the desired View Type and configuration, and click **CONFIRM**.

Figure 4-19 Spot Setup Screen

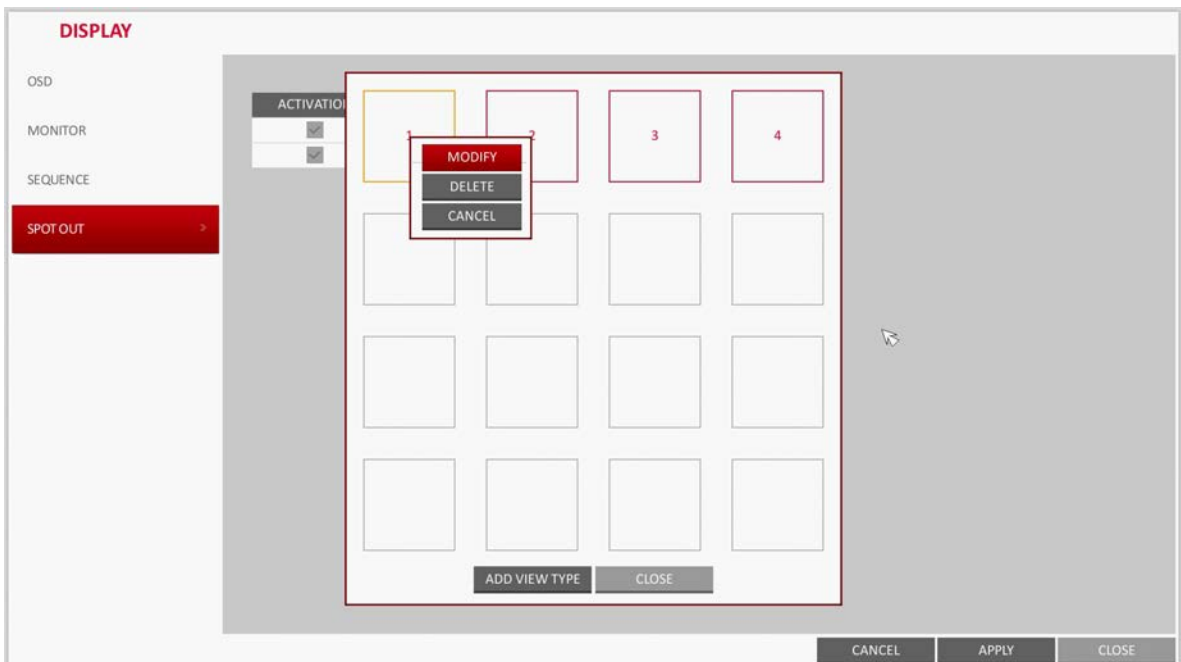


5. Complete adding and click **CLOSE** to close the edit window.

Editing/Deleting a View Type of Spot Output

1. Select an item from the SPOT Output list to be changed.
2. The MODIFY window appears. Click **MODIFY** (see [Figure 4-20](#)).

Figure 4-20 Modifying a Spot Output View Type



3. When the View Type selection window appears, select the desired View Type to be edited or deleted, and press the **ENTER** button on 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.

Audio Setup

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

Audio Options

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

1. From **SYSTEM SETUP** > **AUDIO**, select **AUDIO** (see [Figure 4-21](#)).

Figure 4-21 Audio Setup Options



2. Use the **▲**, **▼**, **◀**, **▶**, and **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 the 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.

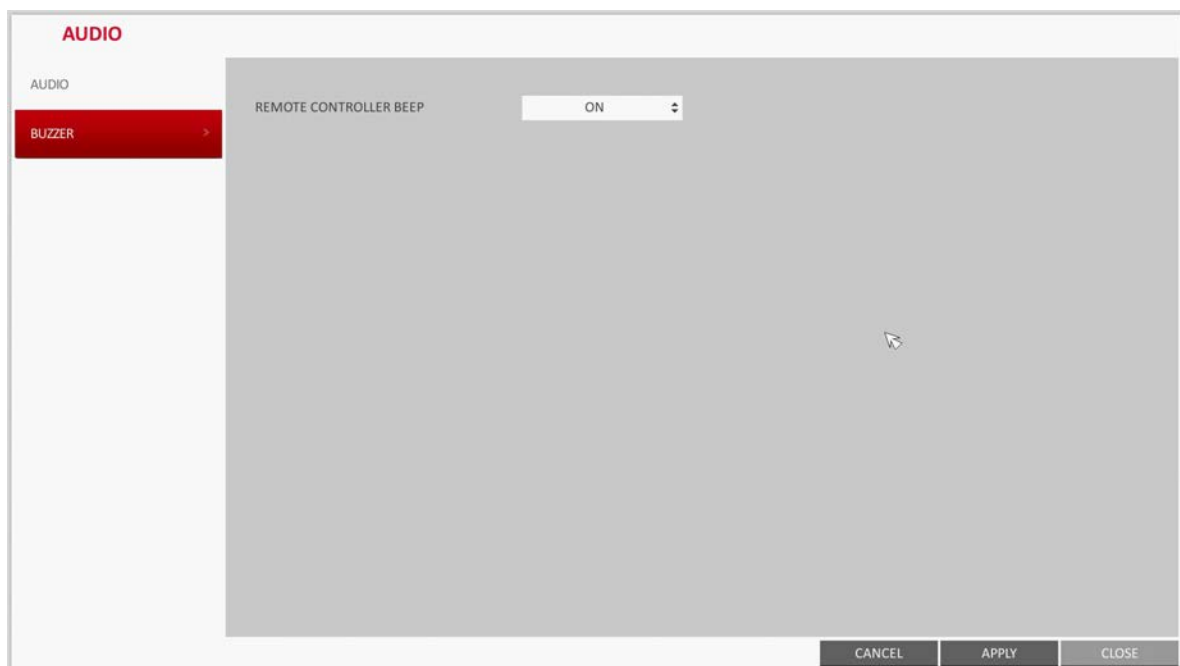
3. To apply the change, click **APPLY** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Buzzer Options

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

1. From **SYSTEM SETUP** > **AUDIO**, select **BUZZER** (see [Figure 4-22](#)).

Figure 4-22 Buzzer Options Screen



2. Use the **▲**, **▼**, **◀**, **▶**, and **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** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

User Settings

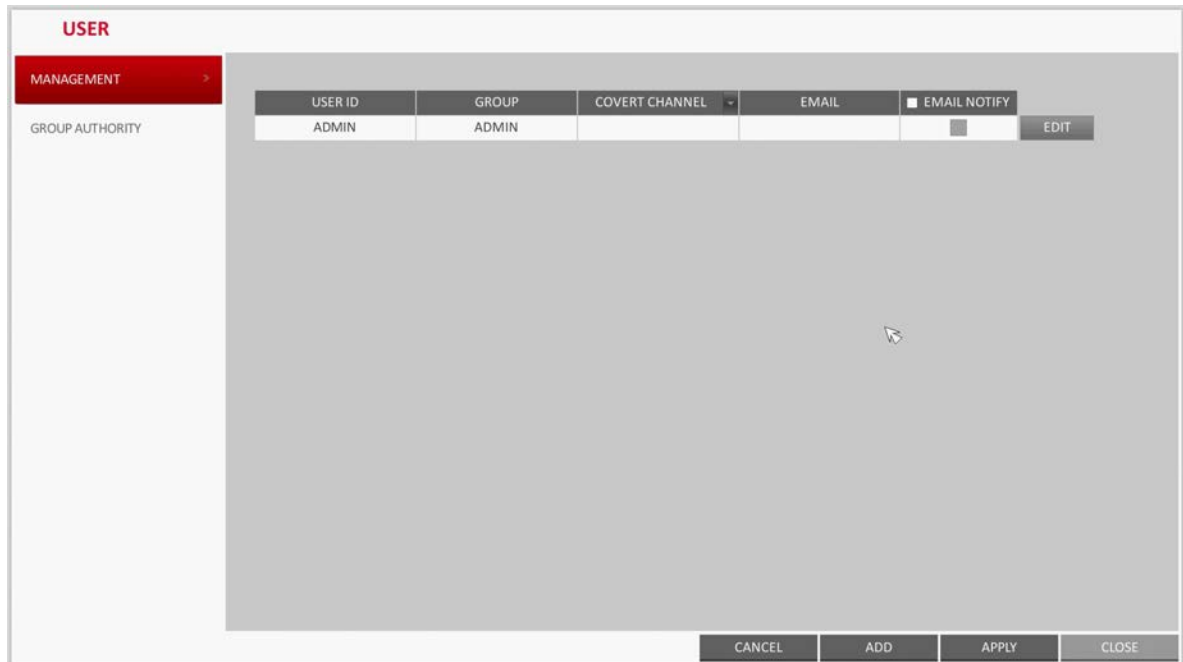
You can configure the settings regarding user management and user and group permissions.

User Management Options

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

1. From **SYSTEM SETUP** ► **USER**, select **MANAGEMENT** (see [Figure 4-23](#)).

Figure 4-23 User Management Options



2. Use the ▲, ▼, ◀, ▶, and **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** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Adding a User Account

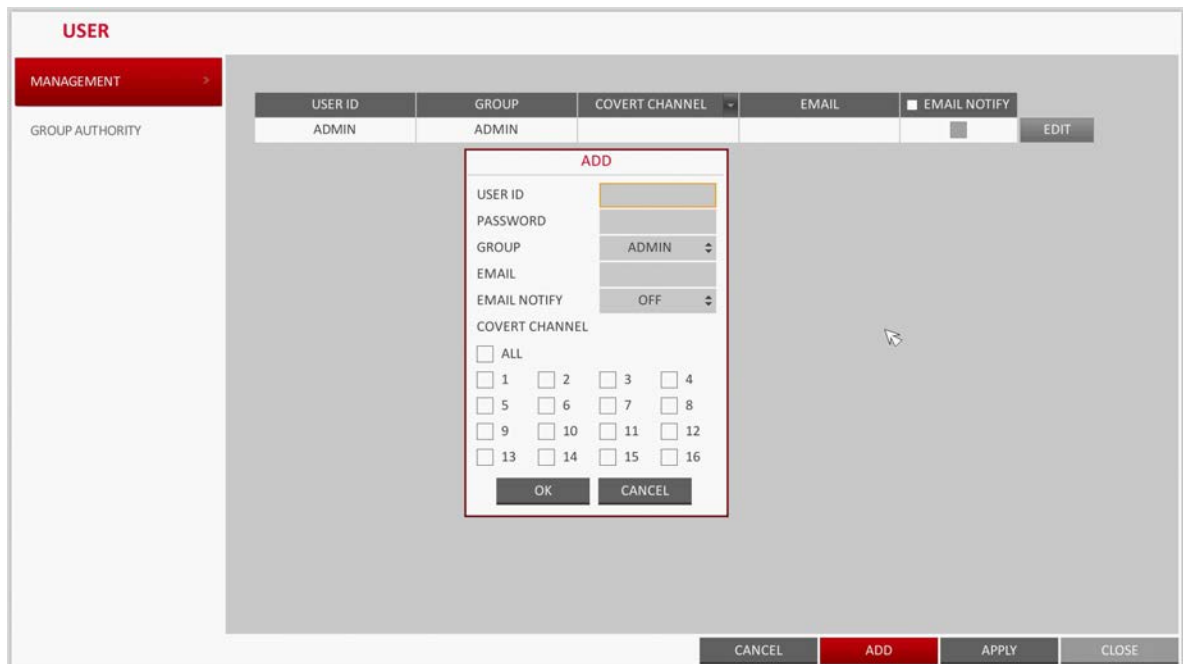
1. Click **ADD** at the bottom of the User Management screen (see [Figure 4-24](#)).
2. Use the ▲, ▼, ◀, and ▶ buttons on the remote control and move to a desired item. Then, press **ENTER** to select the item.
 - **USER ID:** Enter the user ID using the virtual keyboard.
 - **PASSWORD:** With the virtual 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.

Note To use **EMAIL NOTIFY**, a sendmail server and its port should be previously configured.

- **COVERT CHANNEL:** You can set the channel to hide from a specific user.

Note The **COVERT CHANNEL** option hides the video of the selected channel from being displayed on the screen.

Figure 4-24 Adding a User



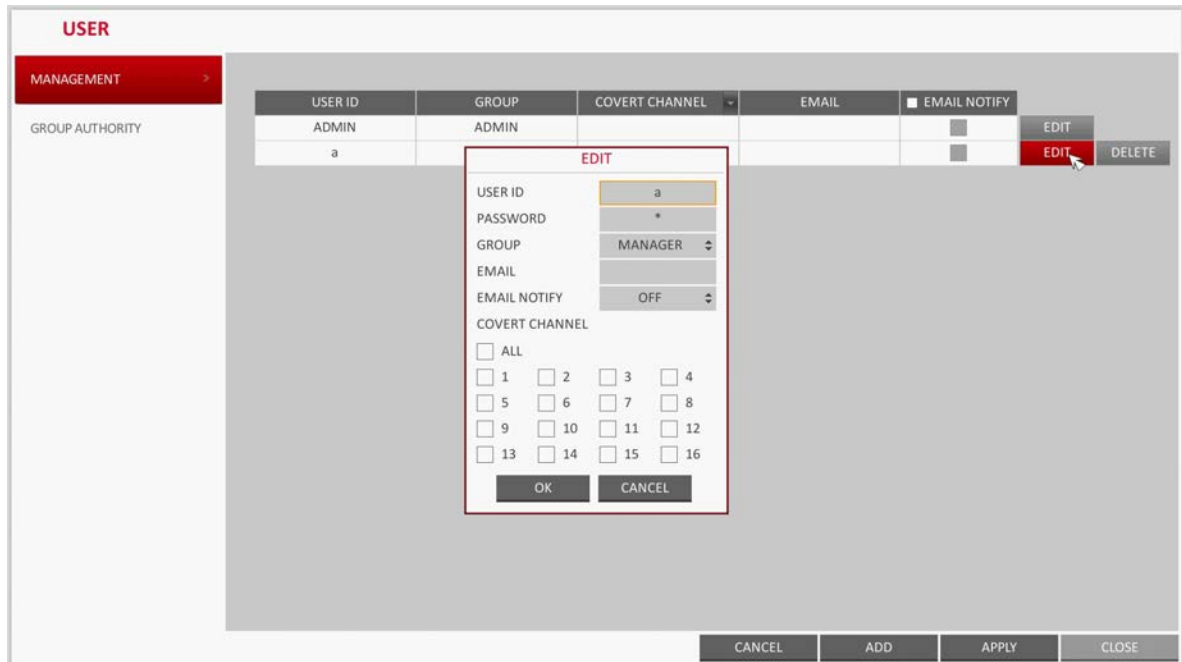
3. When finished, click **OK**. The new user account will be listed.

Editing a User Account

1. From the list of users, select a user account to edit and click **EDIT** next to it.
2. From the Edit window (see [Figure 4-25](#)), make necessary changes and click **OK**.

Note The **ADMIN** account can not be changed or edited.

Figure 4-25 Editing a User Account



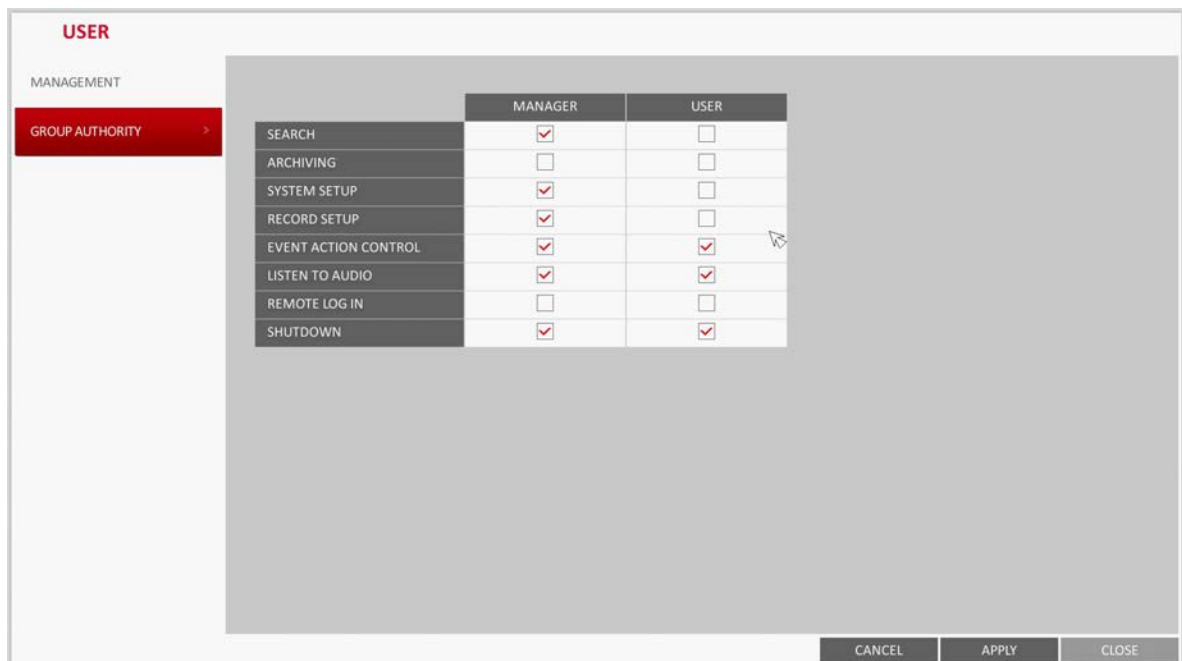
3. To delete the user account, click **DELETE**.

Group Authority Settings

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

1. From **SYSTEM SETUP** > **USER**, select **GROUP AUTHORITY** (see [Figure 4-25](#)).

Figure 4-26 Group Authority Settings Screen



2. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or use the mouse to set the permissions for both **MANAGER** and **USER** groups.
 - **SEARCH**: Set the access permissions for the Search menu.
 - **ARCHIVING**: Set the access permissions for the Backup menu.
 - **SYSTEM SETUP**: Set the access 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 an 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 the DVR from the System menu.

Note The **ADMIN** account is the master account and is allowed for all permissions. The **ADMIN** account can not be edited for individual permissions.

3. To apply the change, click **APPLY** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the 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 the remote service port of the DVR.

1. From **SYSTEM SETUP** **▶** **NETWORK**, select **IP SETUP** (see [Figure 4-27](#)).
2. Use the **▲**, **▼**, **◀**, **▶**, and **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.

Note For DHCP address allocation, the DVR should be connected to a network environment, such as a router, that provides with DHCP server service.

Simple network hubs may have no DHCP server.

Figure 4-27 IP Setup Screen

The screenshot shows the 'NETWORK' menu with 'IP SETUP' selected. The configuration fields are as follows:

DHCP	<input checked="" type="checkbox"/>	RENEW
IP ADDRESS	192.168.150.139	
GATEWAY	192.168.150.1	
SUBNET MASK	255.255.255.0	
1ST DNS SERVER	168.126.63.1	
2ND DNS SERVER	0.0.0.0	
RTSP SERVICE PORT	5554	AUTO PORT FORWARDING DELETE PORT
WEB SERVICE PORT	8080	AUTO PORT FORWARDING DELETE PORT
MAX TX SPEED	MAX	

At the bottom of the screen are buttons for CANCEL, APPLY, and CLOSE.

3. Deselect the **DHCP** option to enable manual static IP 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** at the bottom of the screen.
5. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

DDNS Settings

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

Note 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** (see [Figure 4-28](#)).

Figure 4-28 DDNS Settings Screen

The screenshot shows the DDNS Settings screen. On the left is a navigation menu with 'NETWORK' at the top, followed by 'IP SETUP', 'DDNS' (highlighted in red), 'EMAIL', and 'NETWORK STATUS'. The main area contains the following settings:

DDNS	ON	
DDNS SERVER	dvrlink.net	
DVR NAME	00115f0dca16	DDNS REGISTRATION TEST
DVR ADDRESS	00115f0dca16.dvrlink.net	DDNS CONNECTION TEST

At the bottom of the screen are three buttons: CANCEL, APPLY, and CLOSE.

2. Use the ▲, ▼, ◀, ▶, and **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** at the bottom of the screen.

Email Settings

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** (see [Figure 4-29](#)).

Figure 4-29 Email Settings Screen

The screenshot shows the 'EMAIL' settings screen within the 'NETWORK' menu. On the left, a sidebar lists 'IP SETUP', 'DDNS', 'EMAIL' (highlighted in red), and 'NETWORK STATUS'. The main area contains the following fields and controls:

- SERVER:** A text input field.
- PORT:** A dropdown menu showing '25'.
- SECURITY:** A dropdown menu showing 'OFF'.
- USER:** A text input field.
- PASSWORD:** A text input field.
- TEST EMAIL ADDRESS:** A text input field.
- TEST:** A button below the test email address field.

At the bottom right, there are three buttons: 'CANCEL', 'APPLY', and 'CLOSE'.

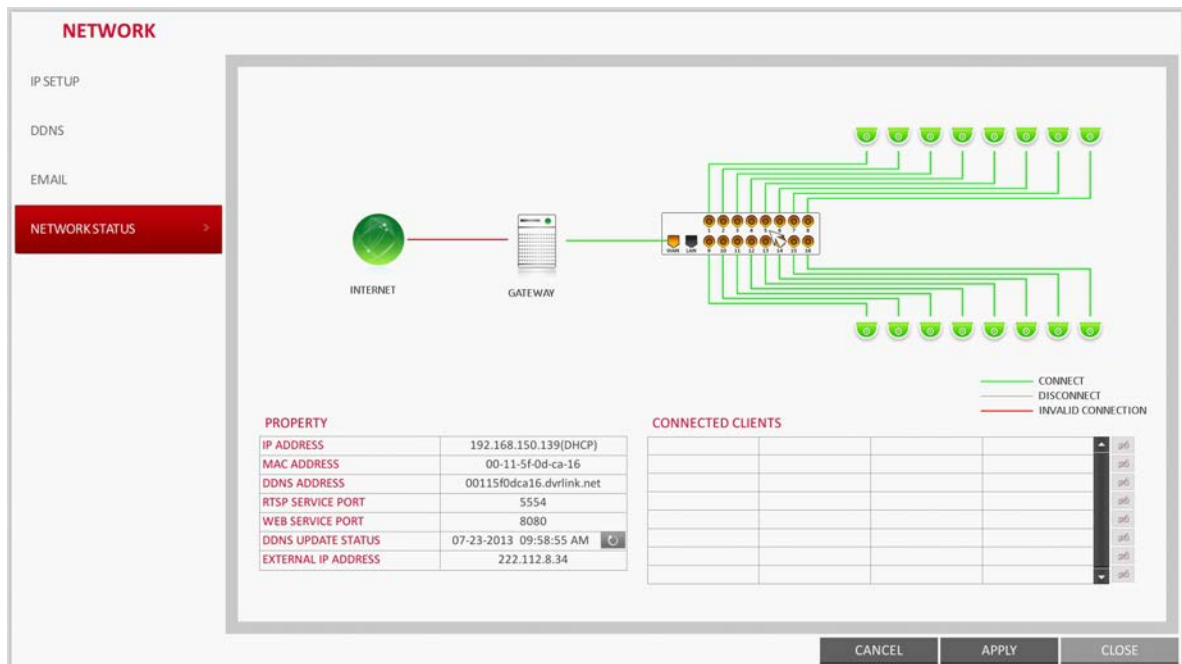
2. Use the ▲, ▼, ◀, ▶, and **ENTER** buttons on the remote control or use the mouse to specify the use of email and select a server.
 - **SERVER:** Set up the mail server. Set the mail server that will be used for notification to the DVR. Use the virtual keyboard to enter your mail server.
 - **PORT:** 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** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the 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** (see [Figure 4-30](#)).
2. Use the ▲, ▼, ◀, ▶, and **ENTER** buttons on the remote control or use the mouse to select one between **NETWORK MAP** and **DETAIL STATUS**.
3. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Figure 4-30 Network Status Screen



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 forcibly terminate the connection of an unwanted client.

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

System Settings

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

Date/Time Settings

Specify the current date and time.

1. From **SYSTEM SETUP** > **SYSTEM**, select **DATE/TIME** (see [Figure 4-31](#)).

Figure 4-31 Date/Time Settings Screen

The screenshot shows the 'SYSTEM' settings interface. The left sidebar has 'DATE/TIME' selected. The main content area is titled 'SYSTEM' and contains the following settings:

- TIME SETTING**
 - DATE/TIME: 07-23-2013 10:25:48 AM
 - DATE FORMAT: MM/DD/YYYY
 - TIME FORMAT: AM / PM
- NETWORK TIME SYNCHRONIZATION**
 - TIME SERVER: pool.ntp.org
 - AUTO TIME SYNC: OFF
 - SYNC AT: 00:00
- TIMEZONE / DST**
 - TIMEZONE: GMT+00:00 Europe/London
 - DST: ON

At the bottom of the screen are three buttons: CANCEL, APPLY, and CLOSE.

2. Use the ▲, ▼, ◀, ▶, and **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 (see [Figure 4-32](#)).
 - **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).

Figure 4-32 Date/Time Manual Setting

SYSTEM

DATE/TIME

SYSTEM MANAGEMENT

SYSTEM INFORMATION

CONTROL DEVICE

TIME SETTING

DATE/TIME: 07-23-2013 10:25:51 AM

DATE FORMAT: MM/DD/YYYY

TIME FORMAT: AM / PM

NETWORK TIME SYNCHRONIZATION

TIME SERVER: pool.ntp.org

AUTO TIME SYNC: OFF

SYNC AT: 00:00

TIMEZONE / DST

TIMEZONE: GMT+00:00 Europe/London

DST: ON

DATE/TIME

YEAR	MON	DAY	HOUR	MIN	SEC
2013	07	23	10	25	48

OK CANCEL

CANCEL APPLY CLOSE

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

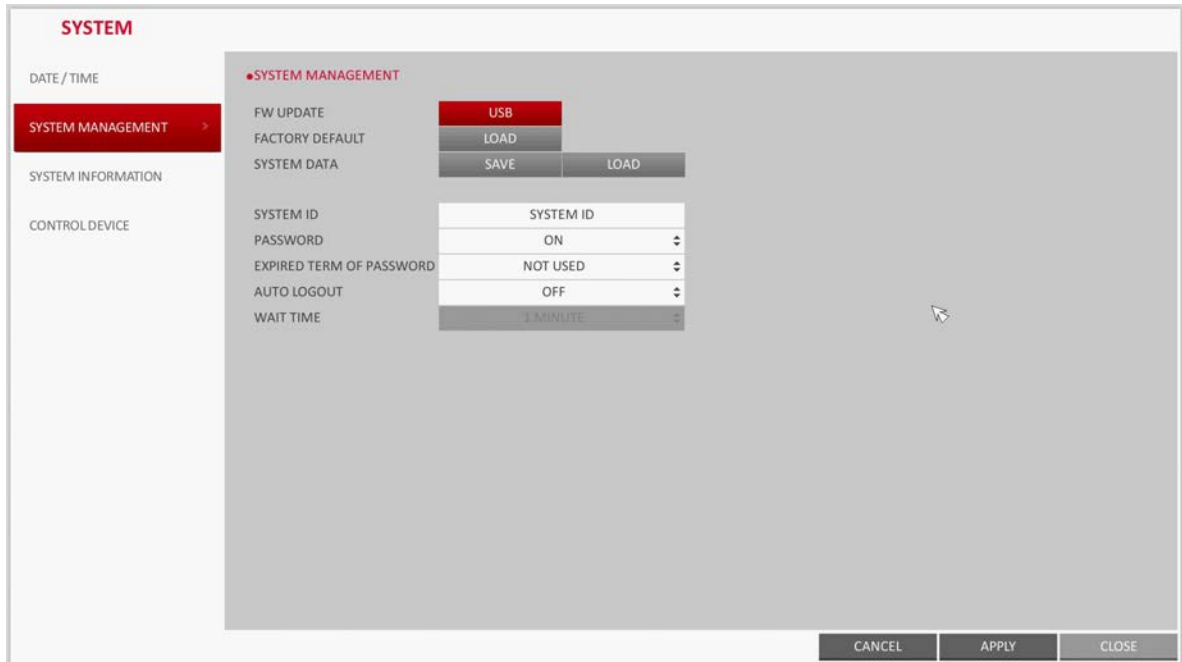
- To apply the change, click **APPLY** at the bottom of the screen.
- When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

System Management Settings

You can check, update or reset the system information.

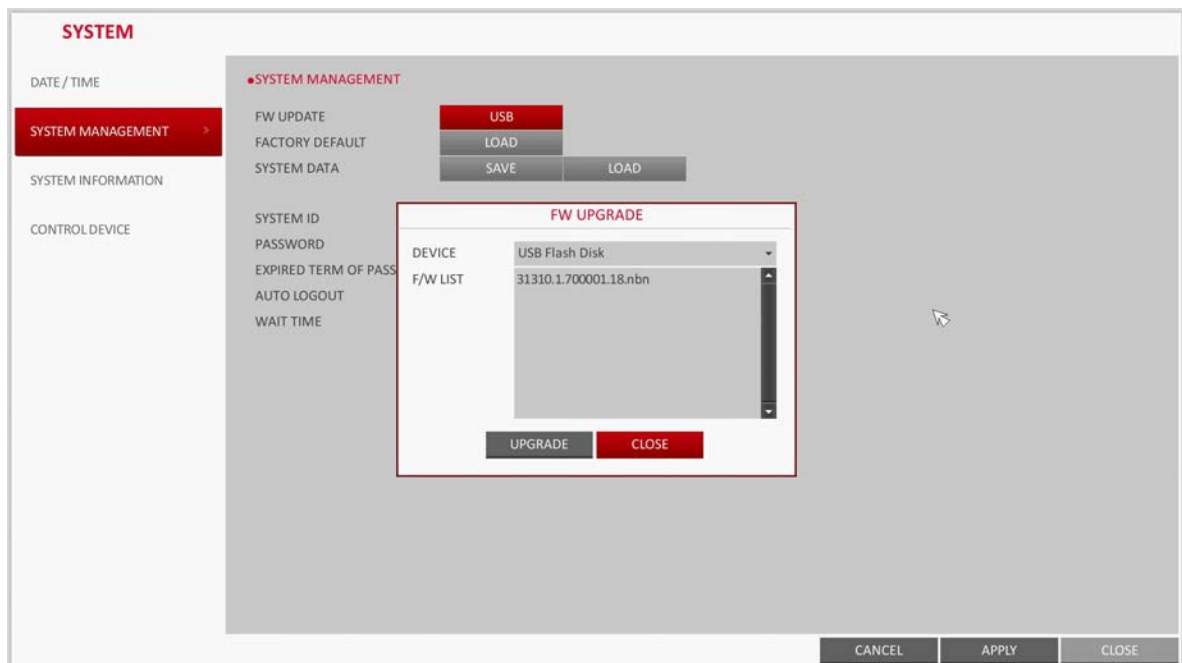
- From **SYSTEM SETUP** ► **SYSTEM**, select **SYSTEM MANAGEMENT** (see [Figure 4-33](#)).

Figure 4-33 System Management Screen



2. Use the ▲, ▼, ◀, ▶, and **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 (see [Figure 4-34](#)).

Figure 4-34 System Management Upgrading Firmware

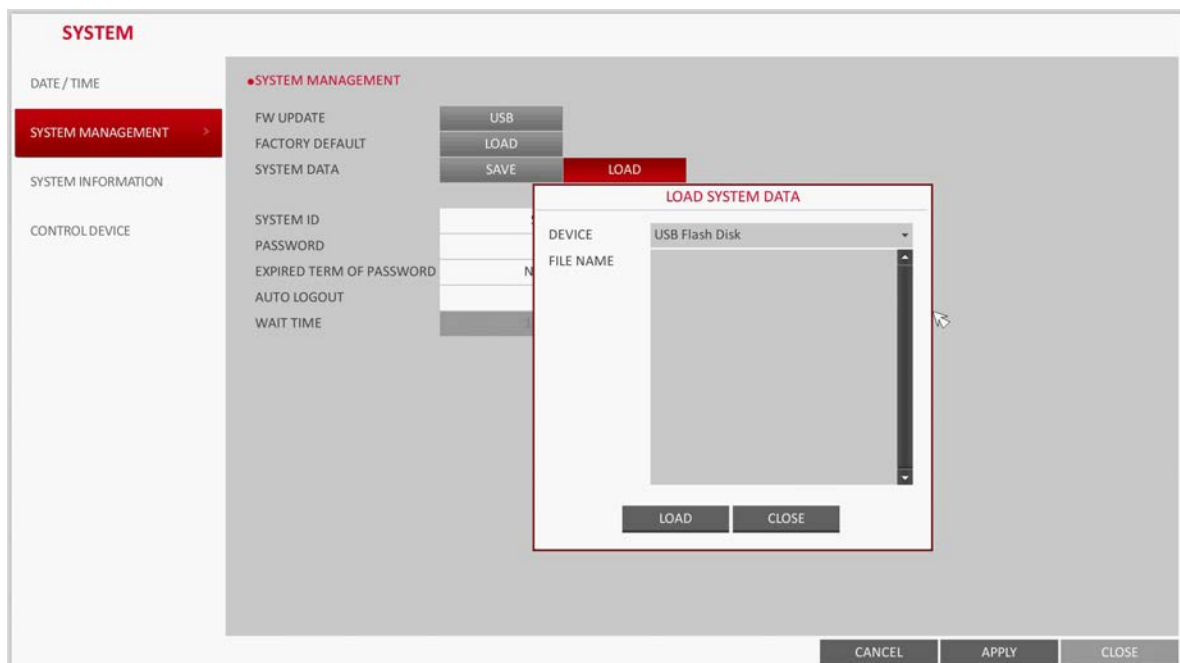


- **FACTORY DEFAULT:** Return the DVR settings to the factory default.

CAUTION 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 another 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 DVR USB port (see [Figure 4-35](#)).

Figure 4-35 System Management Loading System Data



- **PASSWORD:** Open or close the dialog box for settings of the menus: quit, system settings, record settings, backup, and search.

CAUTION If it is set to Off, note that the ADMIN account is only effective and access to all menus will be restricted.

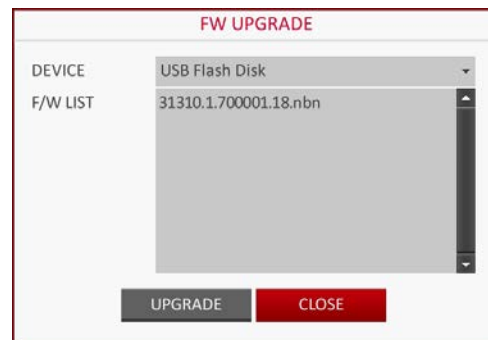
- **EXPIRED TERM OF PASSWORD:** You will be prompted to change the current password after a certain period of time.
 - **AUTO LOGOUT:** If there is no user input for a certain period of time, you can set to log out automatically.
 - **WAIT TIME:** Specify the waiting time for Auto Logout.
3. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen to return to the previous menu.

Upgrading Firmware

1. Connect the USB storage device that contains the upgrade files to the DVR.

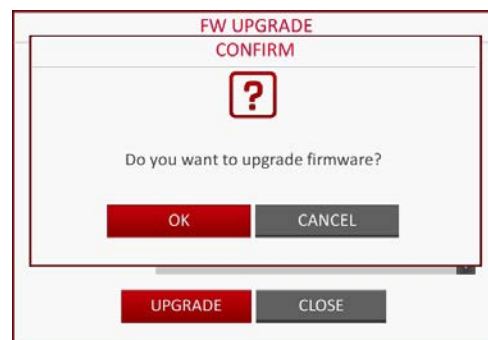
- Click **USB**. The FW UPGRADE dialog opens (see [Figure 4-36](#)).

Figure 4-36 FW Upgrade Dialog



- Select an upgrade file from the files in listed in the **F/W LIST**.
- Click **UPGRADE**.
- When the confirmation message appears (see [Figure 4-37](#)), click **OK**.

Figure 4-37 Confirming Firmware Upgrade



- The progress bar displays the progress of the firmware upgrade process (see [Figure 4-38](#)).

Figure 4-38 Firmware Upgrade Progress Bar



- When the upgrade is complete, reboot the system.

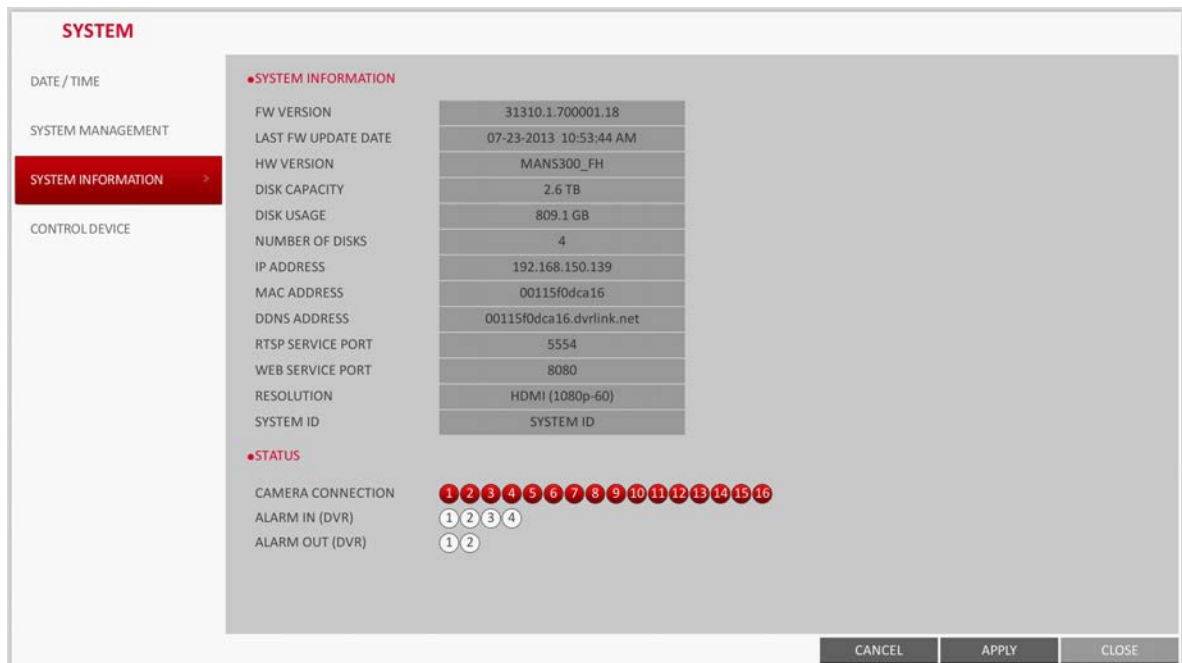
CAUTION If the DVR is forcibly turned off while the firmware upgrade is in progress, this can cause a serious damage to the DVR.

System Information

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

1. From **SYSTEM SETUP** > **SYSTEM**, select **SYSTEM INFORMATION** (see [Figure 4-39](#)).

Figure 4-39 System Information Screen



2. Check the status of the current system.
3. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Control Device Settings

Configure the settings of the remote control and keyboard controller.

Note 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** (see [Figure 4-40](#)).
2. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or use the mouse to set the connection options for the control device.

Figure 4-40 Control Device Settings

The screenshot shows a web interface for 'SYSTEM' settings. On the left is a navigation menu with 'CONTROL DEVICE' selected. The main area is titled 'CONTROL DEVICE' and contains two sections: 'CONTROL DEVICE' and 'REMOTE CONTROLLER'. The 'CONTROL DEVICE' section has three dropdown menus: 'SYSTEM ID' (0), 'PROTOCOL' (D-Max), and 'BAUD RATE' (9600). The 'REMOTE CONTROLLER' section has one text input field: 'REMOTE CONTROLLER ID' (0). At the bottom right are three buttons: 'CANCEL', 'APPLY', and 'CLOSE'.

- **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** at the bottom of the screen.
 4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Storage Settings

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

Disk Information

This screen will show information about the connected disk.

1. From **SYSTEM SETUP** > **STORAGE**, select **DISK INFORMATION**.
 2. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or use the mouse to select either **INTERNAL** (see [Figure 4-41](#)) or **EXTERNAL STORAGE** (see [Figure 4-42](#)).
- Please check the status for each connected device.

Figure 4-41 Disk Information for Internal Disks

STORAGE								
DISK INFORMATION								
INTERNAL DISKS								
		START TIME	END TIME	STATUS	CAPACITY	MODEL	S.M.A.R.T. STATUS	
<input type="checkbox"/>	ALL	06-22-2013 05:01:11 PM	07-24-2013 01:45:32 AM	--	--	--	--	
<input checked="" type="checkbox"/>	1 DISK 1	06-22-2013 05:01:11 PM	07-04-2013 08:44:49 AM	IN USE	465.8 GB	Hitachi HDS7	NORMAL	
<input checked="" type="checkbox"/>	2 DISK 2	07-04-2013 08:44:48 AM	07-23-2013 10:44:42 PM	IN USE	298.1 GB	Hitachi HDT7	NORMAL	
<input checked="" type="checkbox"/>	3 DISK 3	07-23-2013 10:44:39 PM	07-24-2013 01:45:32 AM	IN USE	931.5 GB	ST31000322CS	NORMAL	
<input checked="" type="checkbox"/>	4 DISK 4	--	--	IN USE	931.5 GB	ST31000322CS	NORMAL	
<input checked="" type="checkbox"/>	5 DISK 5							

CANCEL APPLY CLOSE

Figure 4-42 Disk Information for External Storage

STORAGE								
DISK INFORMATION								
EXTERNAL STORAGE								
		START TIME	END TIME	STATUS	CAPACITY	MODEL	S.M.A.R.T. STATUS	
<input type="checkbox"/>	ALL	--	--	--	--	--	--	
<input type="checkbox"/>	1 DISK 1							
<input type="checkbox"/>	2 DISK 2							
<input type="checkbox"/>	3 DISK 3							
<input type="checkbox"/>	4 DISK 4							
<input type="checkbox"/>	5 DISK 5							

CANCEL APPLY CLOSE

- **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.

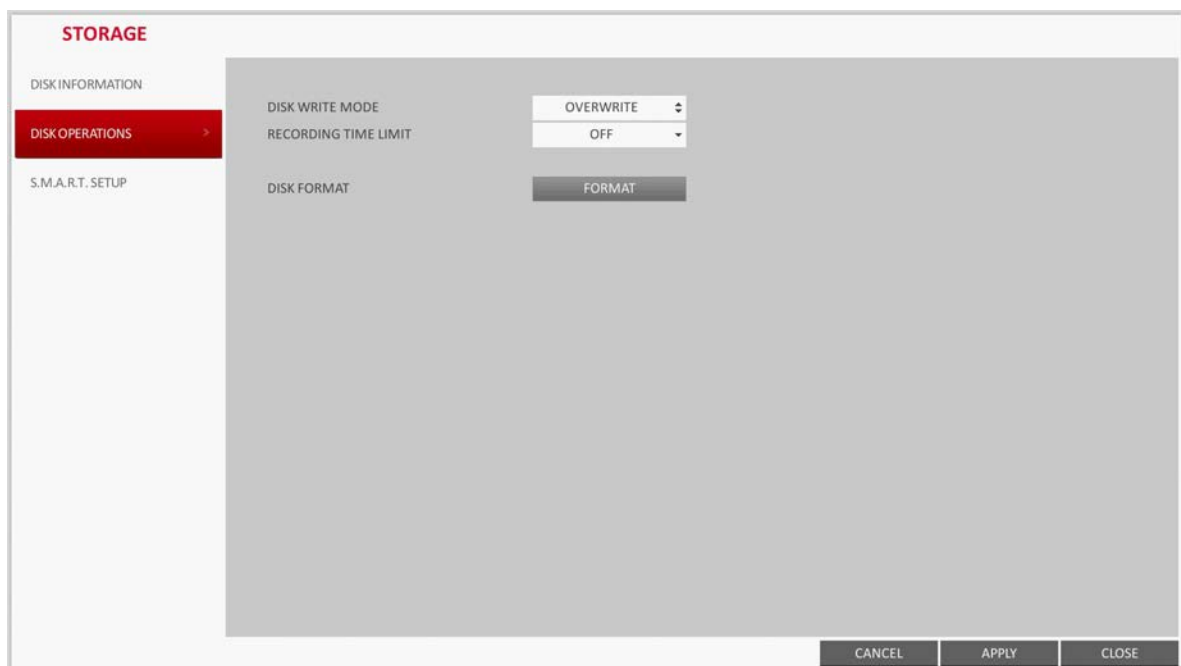
If you leave the problem unresolved, no recording may be enabled. So it is recommended that you replace the disk immediately.
 - **ERROR:** The disk fails or is unable to use due to an error of the disk or the cable. The disk should be replaced immediately. Contact the retailer or the customer service to replace the disk.
- 3. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the 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** (see [Figure 4-43](#)).

Figure 4-43 Disk Operations Screen



2. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or use the mouse to set the operation conditions of the disk.
 - **DISK WRITE MODE:** Specify the option for writing to the disk.
 - 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.

For example: Record Time Limit set to **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.

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

3. To apply the change, click **APPLY** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the 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.

Note 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** (see [Figure 4-44](#)).

Figure 4-44 S.M.A.R.T. Setup Screen



2. Use the **▲**, **▼**, **◀**, **▶**, and **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** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the 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** (see [Figure 4-45](#)).
2. Use the ▲, ▼, ◀, ▶, and **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.

Figure 4-45 Alarm Out Screen



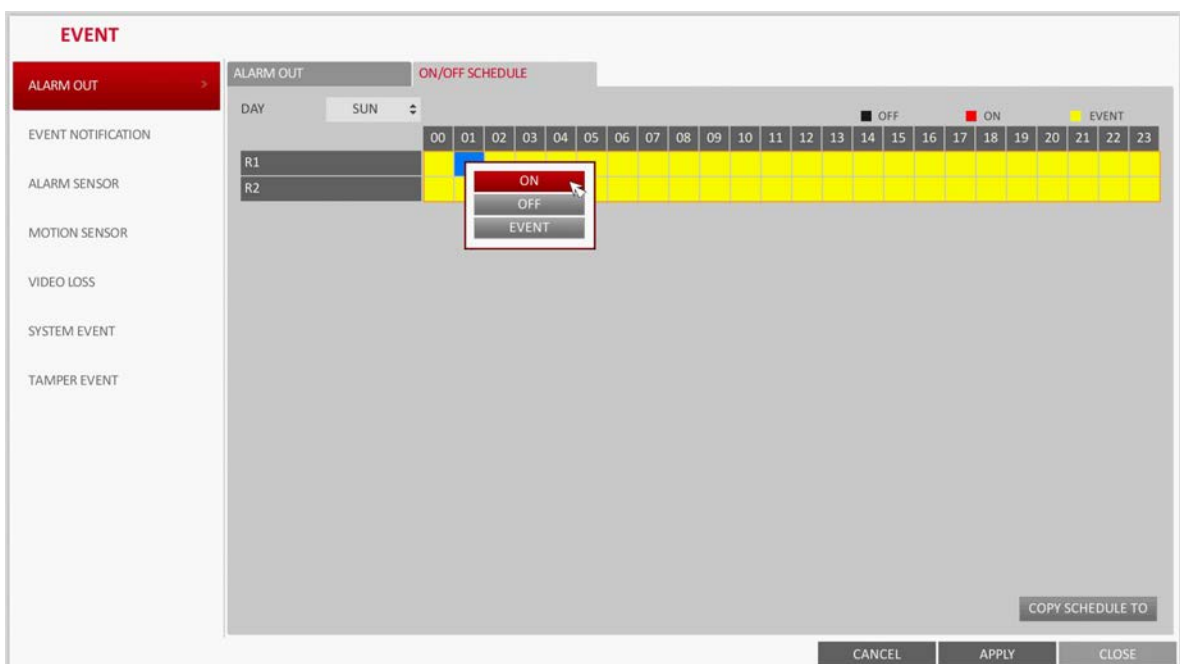
3. To apply the change, click **APPLY** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

ON/OFF Schedule

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

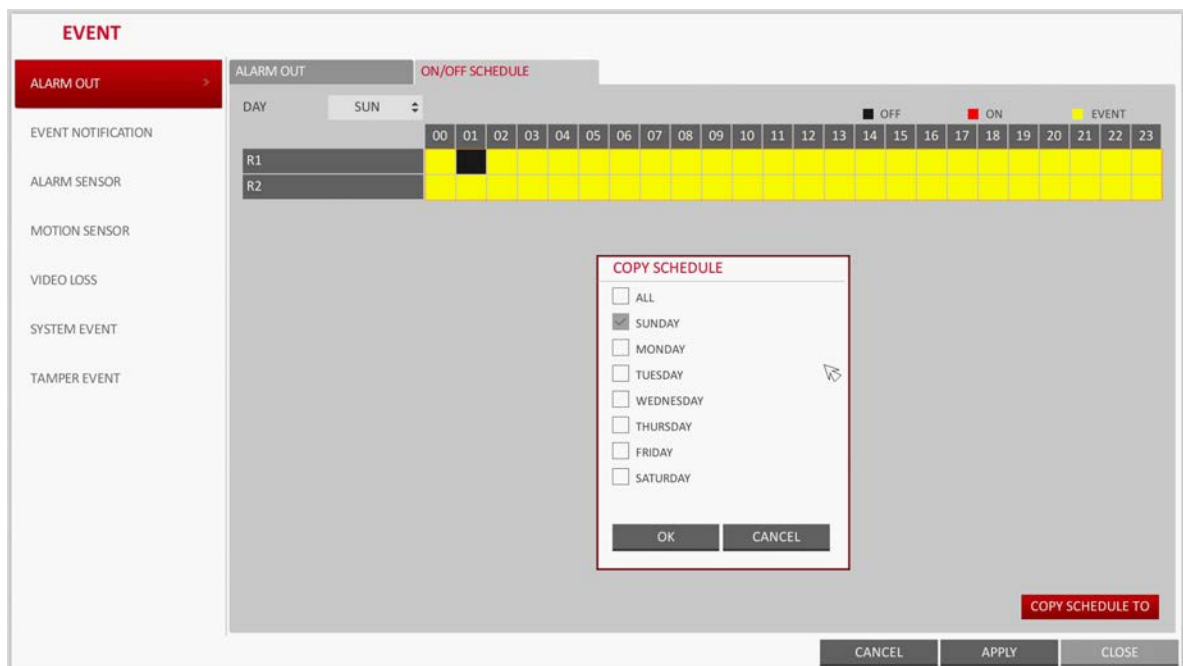
1. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or use the mouse to select a **DATE** for the schedule.

Figure 4-46 Alarm Schedule Setup



2. Drag the mouse to resize the cell or use the on the ▲, ▼, ◀, and ▶ buttons to move to the cell, then press **ENTER**.
3. Select a desired alarm output mode (see [Figure 4-46](#)).
 - **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. To copy the schedule to another day, click **COPY SCHEDULE TO**. The Copy Schedule dialog box opens (see [Figure 4-47](#)).
5. Check the checkbox of the date that you want to copy the schedule to (see [Figure 4-47](#)).

Figure 4-47 Copying a Schedule



6. When finished, click **OK** to copy the schedule.
7. To apply the change, click **APPLY** at the bottom of the screen.
8. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the 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 ▲, ▼, ◀, and ▶ buttons on the remote control or use the mouse to select one from **BUZZER**, **DISPLAY** and **EMAIL**.
3. Use the ▲, ▼, ◀, ▶, and **ENTER** buttons on the remote control or use the mouse to set the output method and duration.
4. To apply the change, click **APPLY** at the bottom of the screen.
5. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

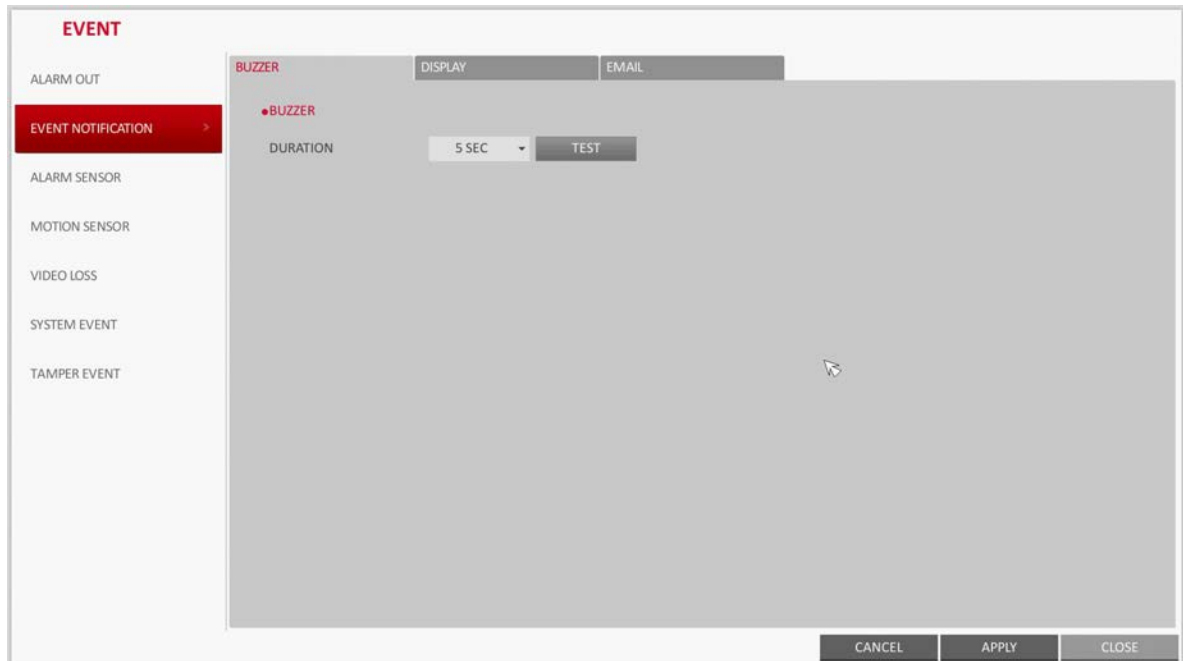
Buzzer Output

You can notify the user of the event using the buzzer (see [Figure 4-48](#)).

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.

Figure 4-48 Event Notification Buzzer Options



Display

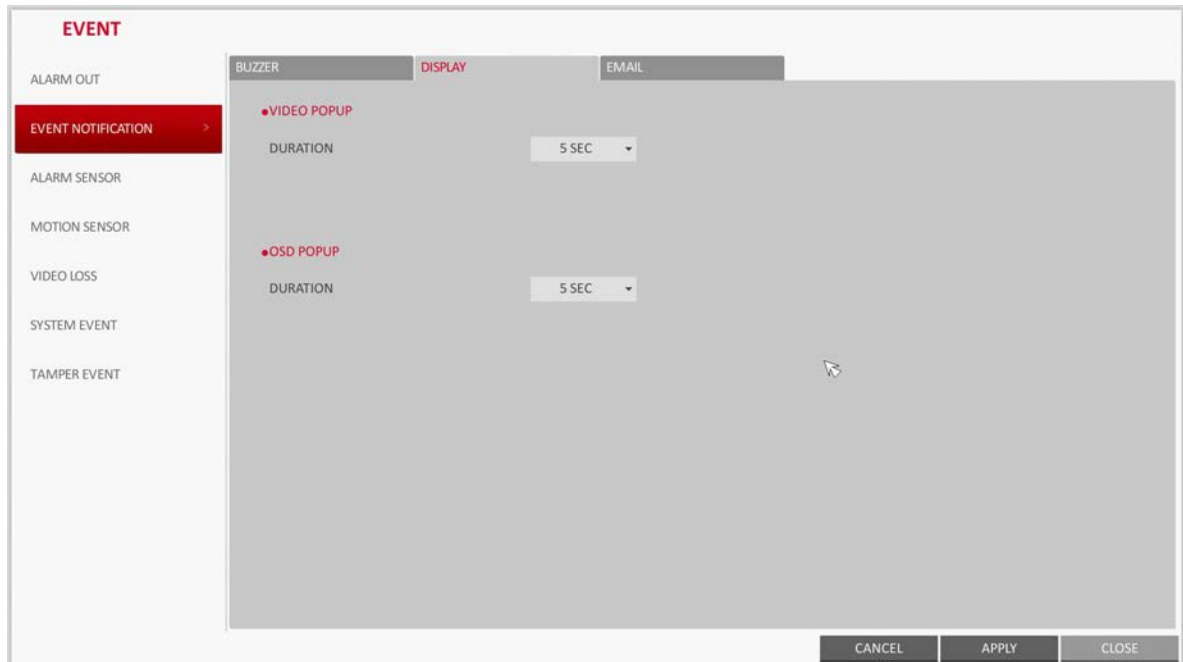
If an event occurs, you can display the video screen or a popup message to notify the user of the event (see [Figure 4-49](#)).

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.

Note 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.

Figure 4-49 Event Notification Display Options



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

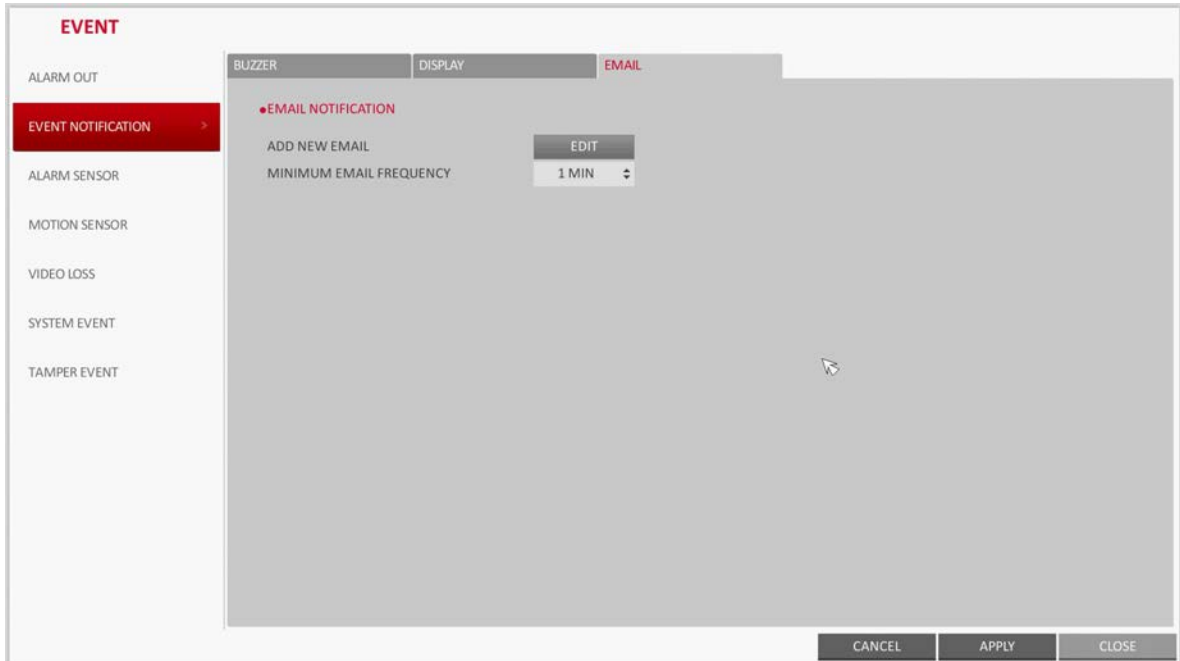
If an event occurs, this will notify registered users of the event by email. If you do not want to receive the email, uncheck the **EMAIL NOTIFY** option in User Management (see [User Management Options on page 74](#) for more information).

- **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.

Note 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.

Figure 4-50 Event Notification Email Options

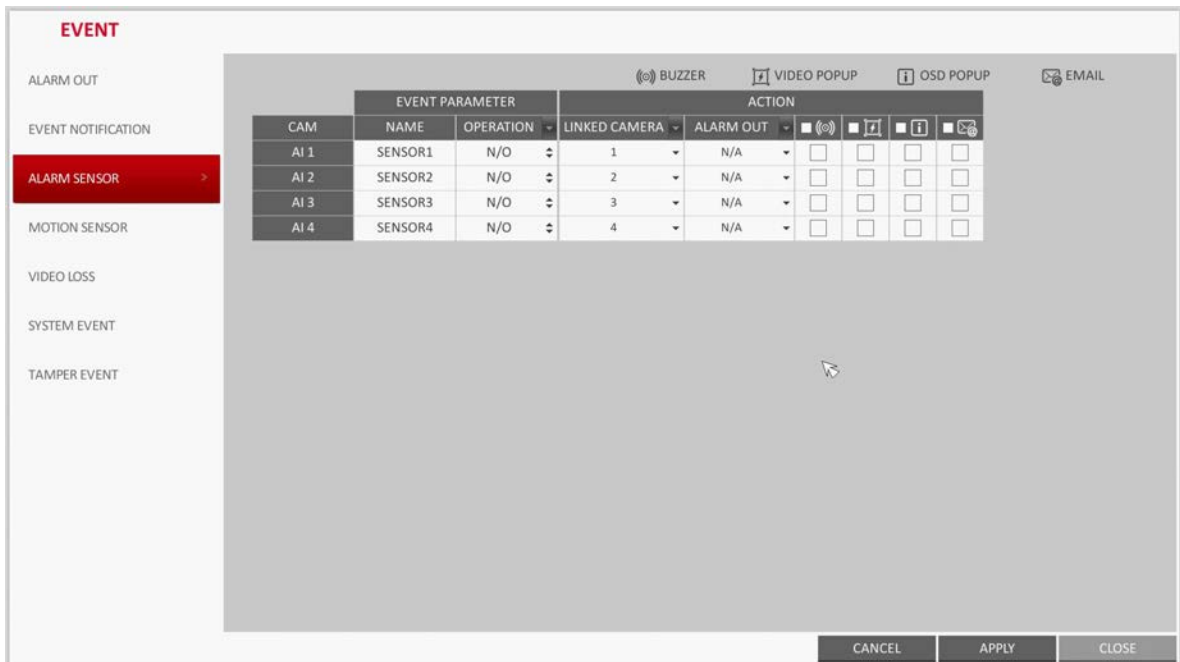






Alarm Sensor Settings

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** (see [Figure 4-51](#)).

Figure 4-51 Alarm Sensor Event Options



2. Use the ▲, ▼, ◀, and ▶ 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 screen 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** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Motion Sensor Settings

In this menu you can set an action to execute when a motion is detected. For the motion sensor detection settings, see [Motion Sensor on page 59](#).

1. From **SYSTEM SETUP > EVENT**, select **MOTION SENSOR** (see [Figure 4-52](#)).
2. Use the ▲, ▼, ◀, and ▶ 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.

Note 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.

Figure 4-52 Motion Sensor Event Options

EVENT

ALARM OUT

EVENT NOTIFICATION

ALARM SENSOR

MOTION SENSOR

VIDEO LOSS

SYSTEM EVENT

TAMPER EVENT

BUZZER VIDEO POPUP OSD POPUP EMAIL

CAM	EVENT PARAMETER		ACTION			
	IGNORING INTERVAL	ALARM OUT	BUZZER	VIDEO POPUP	OSD POPUP	EMAIL
1	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	5 SEC	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CANCEL APPLY CLOSE

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

Video Loss Settings

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

1. From **SYSTEM SETUP** > **EVENT**, select **VIDEO LOSS** (see [Figure 4-53](#)).

Figure 4-53 Video Loss Event Options

EVENT

ALARM OUT

EVENT NOTIFICATION

ALARM SENSOR

MOTION SENSOR

VIDEO LOSS



SYSTEM EVENT

TAMPER EVENT

BUZZER VIDEO POPUP OSD POPUP EMAIL

CAM	ACTION	
	ALARM OUT	BUZZER
1	N/A	<input type="checkbox"/>
2	N/A	<input type="checkbox"/>
3	N/A	<input type="checkbox"/>
4	N/A	<input type="checkbox"/>
5	N/A	<input type="checkbox"/>
6	N/A	<input type="checkbox"/>
7	N/A	<input type="checkbox"/>
8	N/A	<input type="checkbox"/>
9	N/A	<input type="checkbox"/>
10	N/A	<input type="checkbox"/>
11	N/A	<input type="checkbox"/>
12	N/A	<input type="checkbox"/>
13	N/A	<input type="checkbox"/>
14	N/A	<input type="checkbox"/>
15	N/A	<input type="checkbox"/>
16	N/A	<input type="checkbox"/>

CANCEL APPLY CLOSE

2. Use the ▲, ▼, ◀, and ▶ 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** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

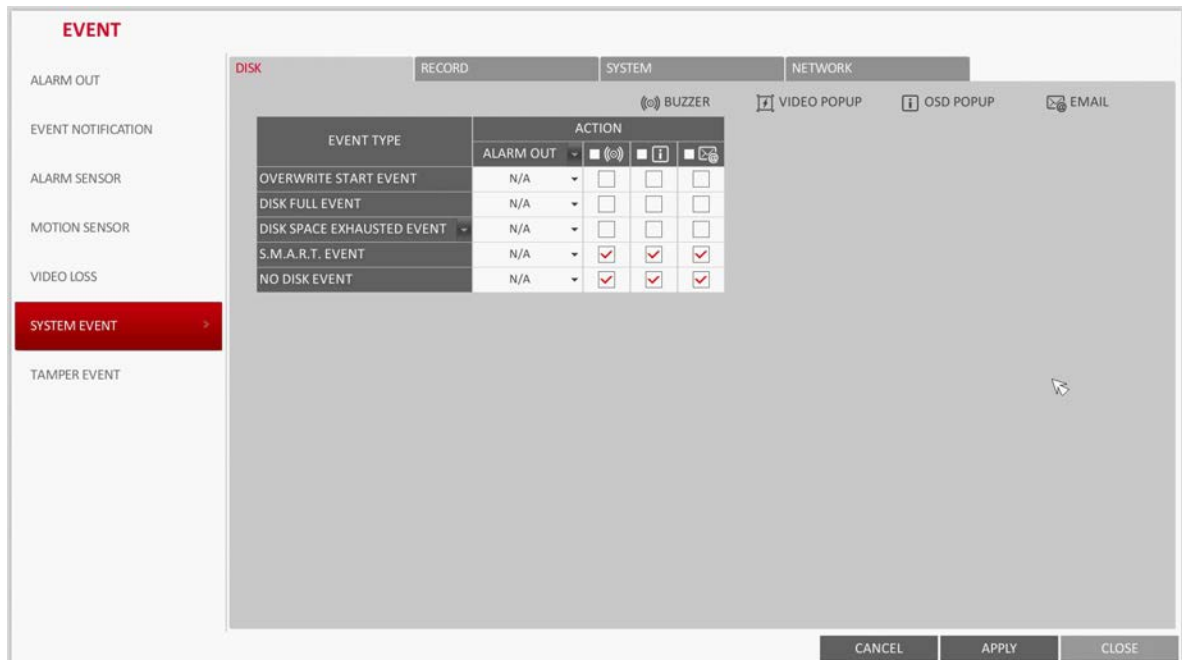
System Event Settings

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 ▲, ▼, ◀, and ▶ buttons on the remote control or use the mouse to specify the reaction to each event.
3. To apply the change, click **APPLY** at the bottom of the screen.
4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Disk System Event Settings

Figure 4-54 Disk System Event Settings



- **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.

CAUTION 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 System Event Settings

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

Figure 4-55 Record System Event Settings



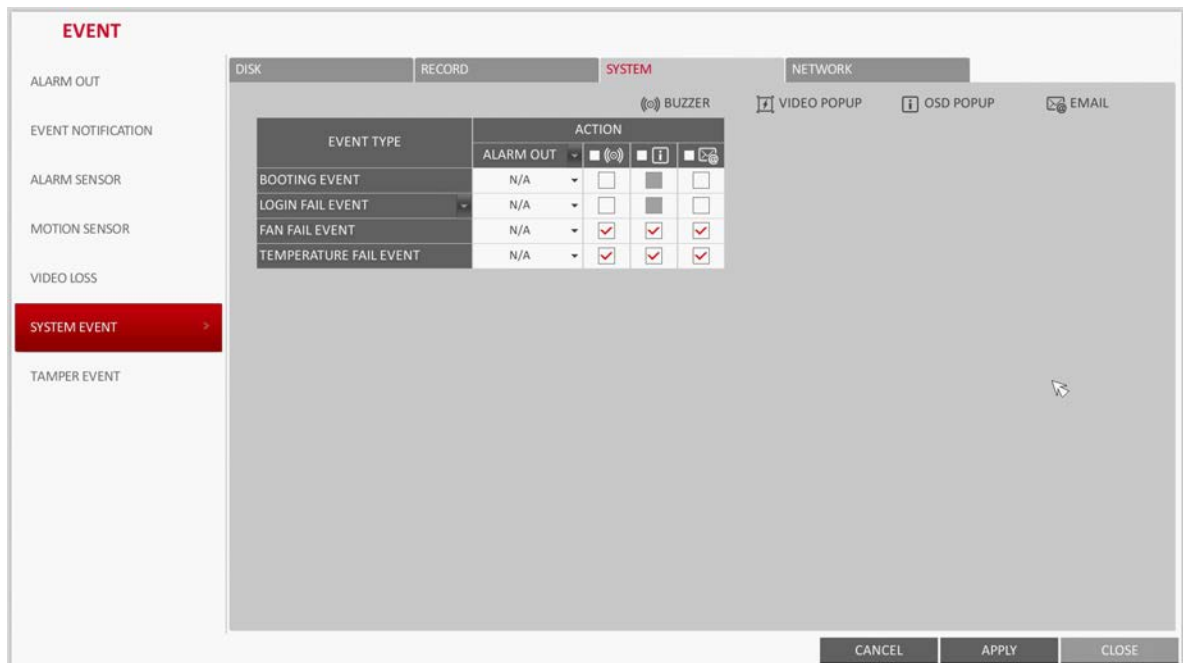
System Event Settings

- **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.

Note 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.

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

Figure 4-56 System Event Settings



Network System Event Settings

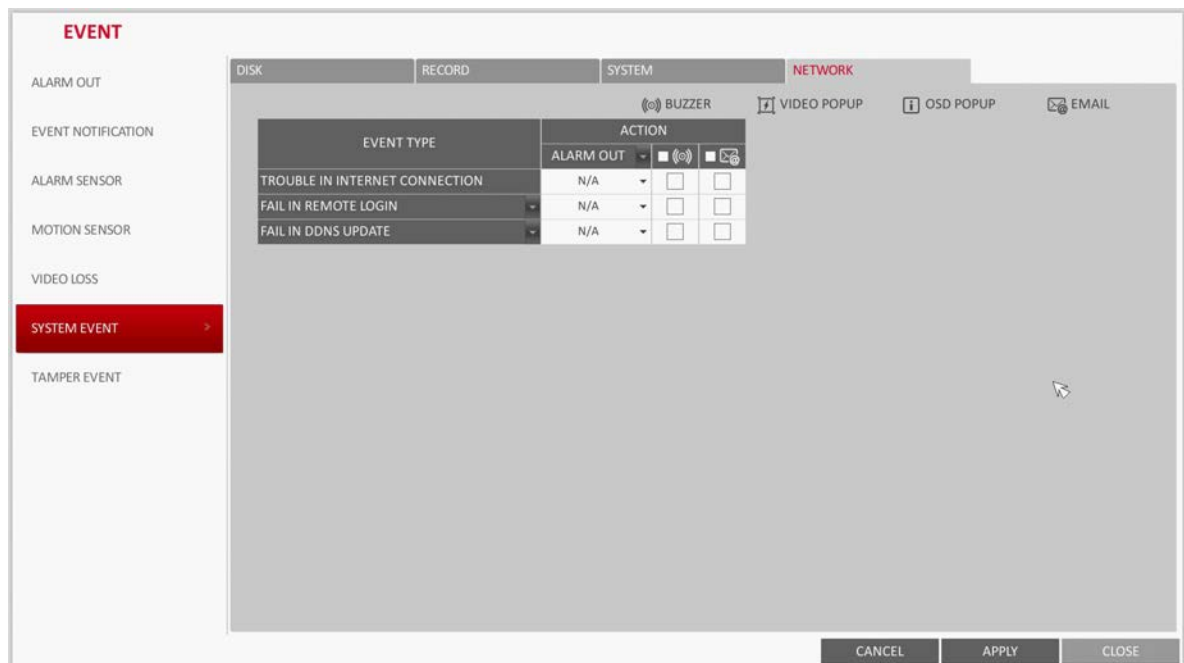
- TROUBLE IN INTERNET CONNECTION:** Occurs if the Internet connection to the DVR fails.
 If you do not want to connect the DVR to the network, leave the **ACTION** item blank.
- FAIL IN REMOTE LOGIN:** This event occurs if a remote client fails to log in due to an invalid ID or password.
 You can specify 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.

Note 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.

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

Figure 4-57 Network System Event Settings

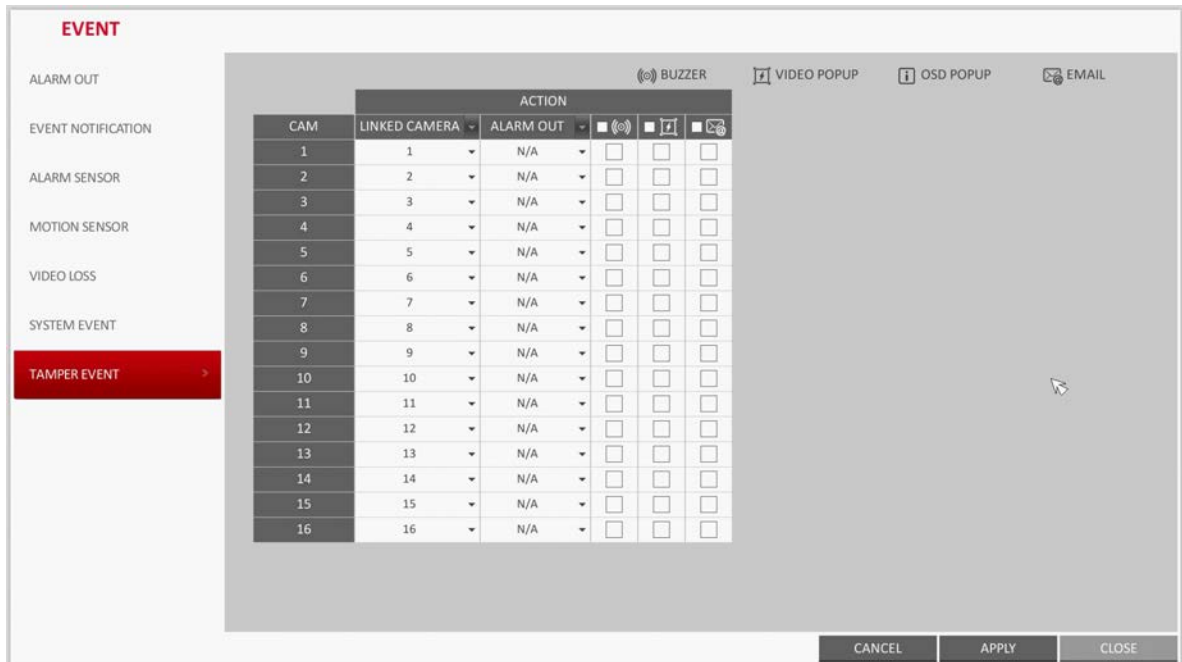


Tamper Event Settings

You can set how to react upon a detected tampering event. To set the tampering event detection in for each channel, see [Tamper Detection on page 62](#).

1. From **SYSTEM SETUP** > **EVENT**, select **TAMPER EVENT** (see [Figure 4-58](#)).
2. Use ▲, ▼, ◀, and ▶ buttons on the remote or the mouse to set the detection interval and its action.

Figure 4-58 Tamper Event Settings



- **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** at the bottom of the screen.
 4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

5

Recording Setup

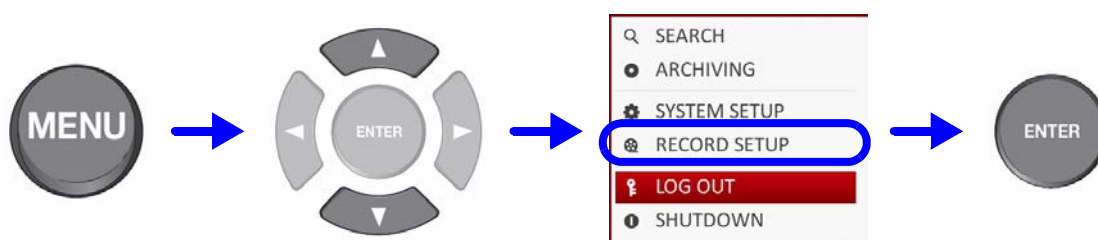
You can configure the record settings for the DVR. Only authorized users can access the Record Setup menu.

Opening the Record Setup Menu

Using the Mouse



Using the Remote Control



Record Setup

Operation Mode Settings

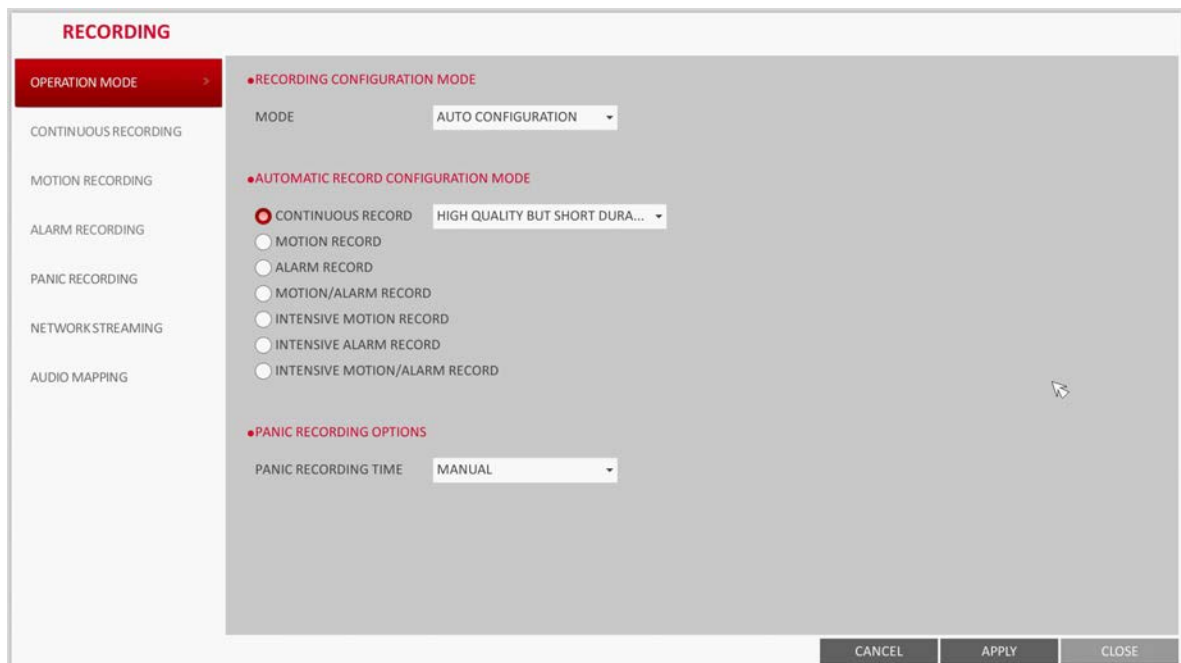
In this menu you can set the recording options for Auto or Manual mode.

1. From **RECORDING** menu, select **OPERATION MODE**.
2. Use the ▲, ▼, ◀, and ▶ 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** at the bottom of the screen.
5. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Auto Configuration Settings

If you choose your preferred record mode, the DVR will recommend you the optimized settings for the selected record mode (see [Figure 5-1](#)).

Figure 5-1 Operation Mode Auto Configuration



- **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.

Note Motion: Normally, it means the movement of an object. However, it implies a change to the illumination in the context of the DVR.
For example: Vehicle lights (headlights), illumination change, and so on.

Manual Configuration Settings

If you set the record mode to **MANUAL CONFIGURATION**, the manual configuration window (see [Figure 5-2](#)) will appear where you can set the manual recording and panic recording options.

Figure 5-2 Operation Mode Manual Configuration

The screenshot shows a web interface for recording configuration. On the left is a sidebar with menu items: OPERATION MODE (highlighted), CONTINUOUS RECORDING, MOTION RECORDING, ALARM RECORDING, PANIC RECORDING, NETWORKSTREAMING, and AUDIO MAPPING. The main area is titled 'RECORDING' and contains the following settings:

- RECORDING CONFIGURATION MODE:** MODE is set to 'MANUAL CONFIGURATION'.
- MANUAL CONFIGURATION OPTIONS:**
 - SCHEDULE MODE: 'DAILY'
 - PRE RECORDING TIME: '5 SEC'
 - POST RECORDING TIME: '30 SEC'
- PANIC RECORDING OPTIONS:**
 - PANIC RECORDING TIME: 'MANUAL'

At the bottom right, there are three buttons: CANCEL, APPLY, and CLOSE.

- **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.

Continuous Recording Settings

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

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

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

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

Size/FPS/Quality Settings

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 (see [Figure 5-3](#)).

Or use the **▲**, **▼**, **◀**, and **▶** buttons on the remote control to move to the cell and press **ENTER**. Then, use the **▲**, **▼**, **◀**, and **▶** buttons to move to a desired cell and press **ENTER** again.

Figure 5-3 Continuous Recording Size/FPS/Quality

The screenshot shows the **RECORDING** menu with **CONTINUOUS RECORDING** selected. The **SCHEDULE** table is visible, showing a selection on day 01. Below it is the **SIZE/FPS/QUALITY** table for 16 channels.

	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	RESOLUTION		FPS		QUALITY		AUDIO																	
1	CAM1	960x480		30		HIGHEST		OFF																
2	CAM2	960x480		30		HIGHEST		OFF																
3	CAM3	960x480		30		HIGHEST		OFF																
4	CAM4	960x480		30		HIGHEST		OFF																
5	CAM5	960x480		30		HIGHEST		OFF																
6	CAM6	960x480		30		HIGHEST		OFF																
7	CAM7	960x480		30		HIGHEST		OFF																
8	CAM8	960x480		30		HIGHEST		OFF																
9	CAM9	960x480		30		HIGHEST		OFF																
10	CAM10	960x480		30		HIGHEST		OFF																
11	CAM11	960x480		30		HIGHEST		OFF																
12	CAM12	960x480		30		HIGHEST		OFF																
13	CAM13	960x480		30		HIGHEST		OFF																
14	CAM14	960x480		30		HIGHEST		OFF																
15	CAM15	960x480		30		HIGHEST		OFF																
16	CAM16	960x480		30		HIGHEST		OFF																

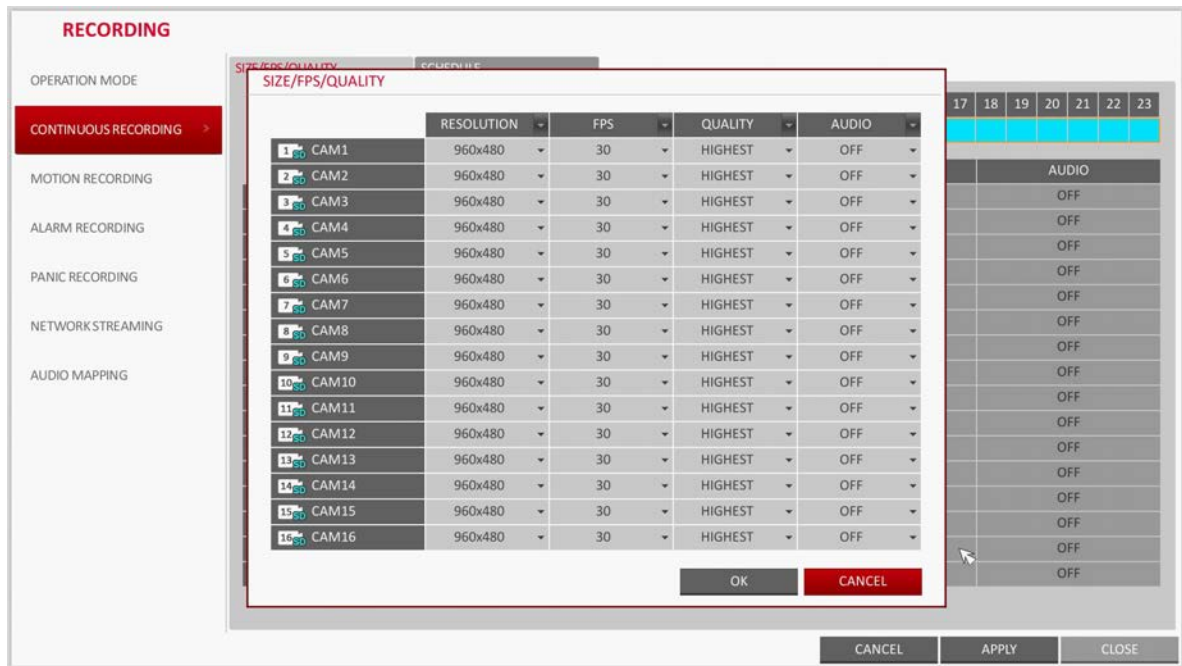
At the bottom right of the screen are buttons for **CANCEL**, **APPLY**, and **CLOSE**.

3. When the cell selection is complete, the **SIZE/FPS/QUALITY** table appears (see [Figure 5-4](#)).

CAUTION 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.

Figure 5-4 Size/FPS/Quality Table



4. When finished, click **OK**.

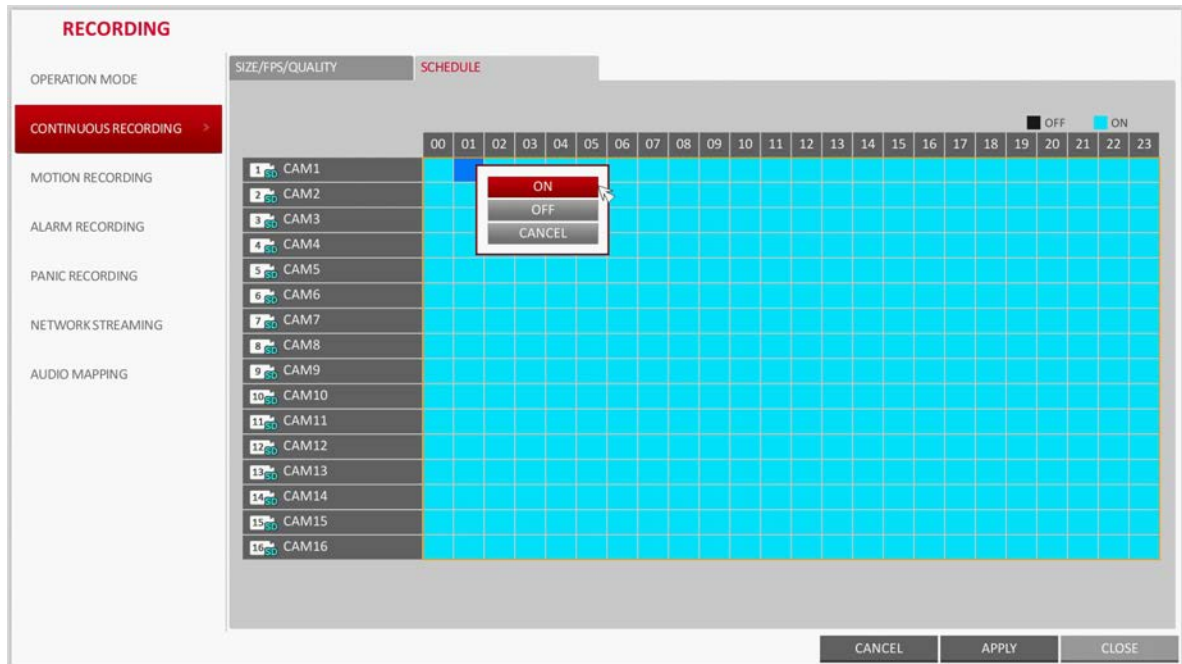
You can check the recording size in the size table under the time selection bar.

CAUTION The video resolution and the FPS options available to select may differ depending on the specification of the connected 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 ▲, ▼, ◀, and ▶ buttons on the remote control to move to the cell and press **ENTER**. Then, use the ▲, ▼, ◀, and ▶ 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 (see [Figure 5-5](#)).
4. To apply the change, click **APPLY** at the bottom of the screen.
5. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Figure 5-5 Continuous Recording Schedule Setup



Motion Recording Settings

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

1. From the **RECORDING** menu, select **MOTION RECORDING** (see [Figure 5-6](#)).

Figure 5-6 Motion Recording Settings



2. Use the ▲, ▼, ◀, and ▶ 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.

Note The SIZE/FPS/QUALITY and SCHEDULE setup is performed the same as was described in the [Continuous Recording Settings](#) section (page 108). For more information on setting resolution, FPS and quality, see [Size/FPS/Quality Settings on page 108](#). For more information on setting a motion recording schedule, see [Schedule Setting on page 109](#).

4. To apply the change, click **APPLY** at the bottom of the screen.
5. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Alarm Recording Settings

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

1. From the **RECORDING** menu, select **ALARM RECORDING** (see [Figure 5-7](#)).

Figure 5-7 Alarm Recording Settings



2. Use the ▲, ▼, ◀, and ▶ 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.

Note The SIZE/FPS/QUALITY and SCHEDULE setup is performed the same as was described in the [Continuous Recording Settings](#) section (page 108). For more information on setting resolution, FPS and quality, see [Size/FPS/Quality Settings on page 108](#). For more information on setting a alarm recording schedule, see [Schedule Setting on page 109](#).

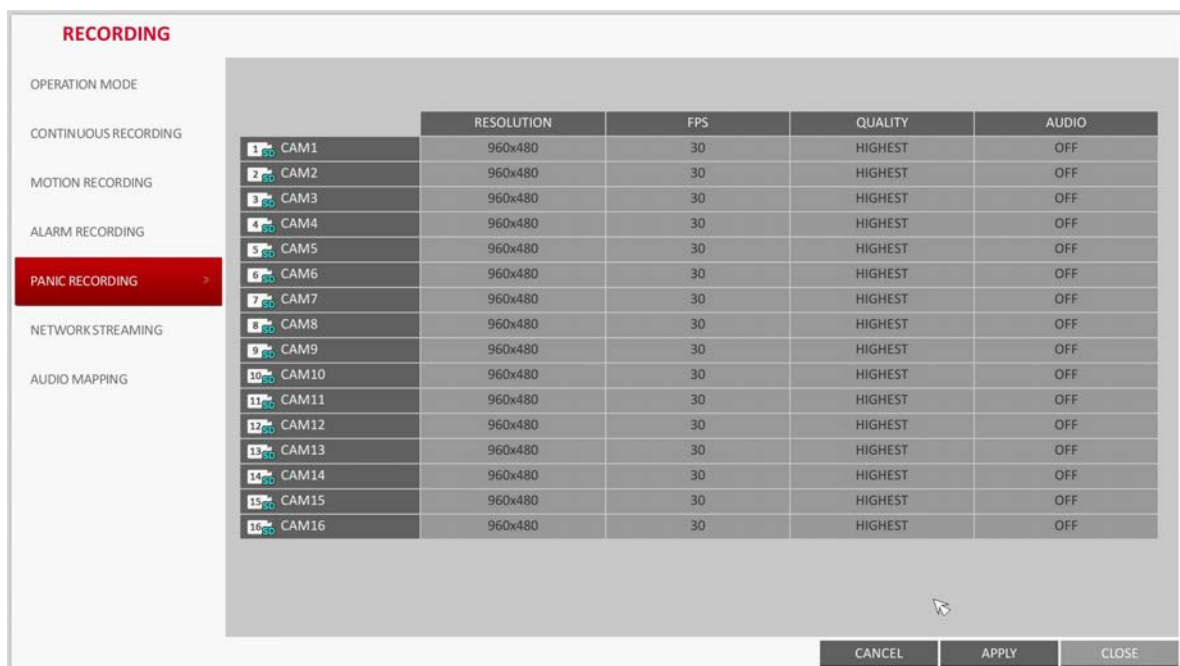
- To apply the change, click **APPLY** at the bottom of the screen.
- When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Panic Recording Settings

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

- From the **RECORDING** menu, select **PANIC RECORDING** (see [Figure 5-8](#)).

Figure 5-8 Panic Recording Settings



- Set each item of **RESOLUTION**, **FPS**, **QUALITY** and use of the **AUDIO** for the panic recording.

Note The SIZE/FPS/QUALITY setup is performed the same as was described in the [Continuous Recording Settings](#) section ([page 108](#)). For more information on setting resolution, FPS and quality, see [Size/FPS/Quality Settings on page 108](#).

- To apply the change, click **APPLY** at the bottom of the screen.
- When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

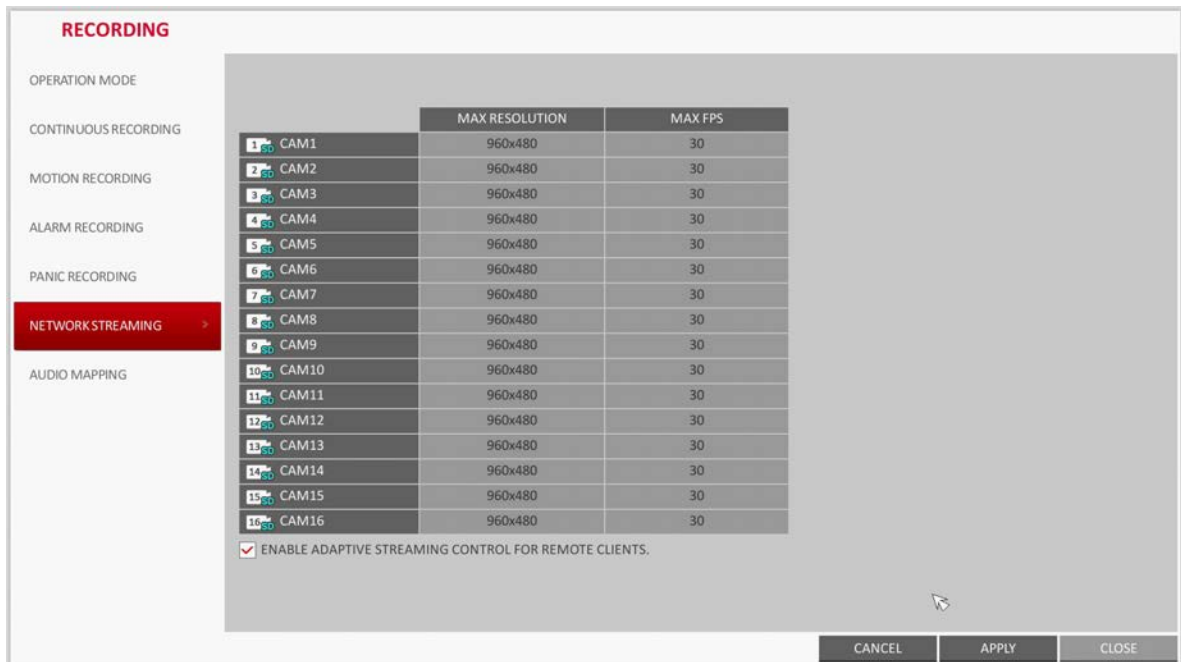
Network Streaming Settings

You can specify the maximum size of network streaming for remote users and set the FPS (frames per second).

Note 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** (see [Figure 5-9](#)).

Figure 5-9 Network Streaming Settings

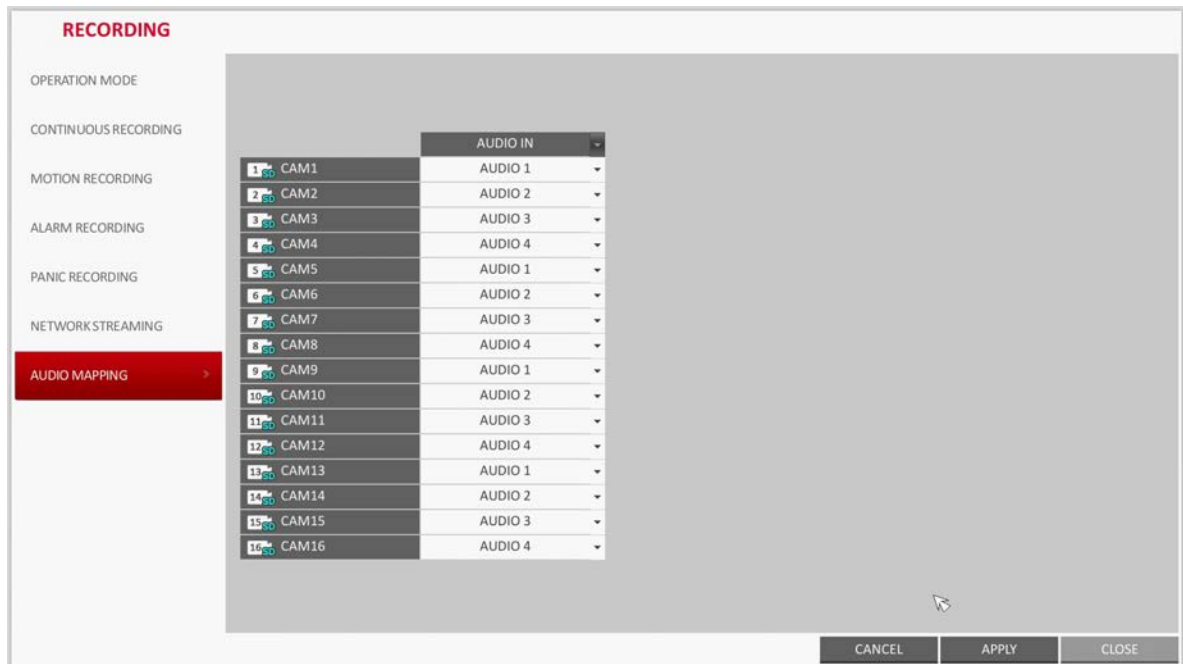


2. Use the **▲**, **▼**, **◀**, **▶**, and **ENTER** buttons on the remote control or use the mouse to select an item that you want to edit.
3. Set the **MAX RESOLUTION** and **MAX FPS** for each channel.
4. When finished, click **OK**.
5. To apply the change, click **APPLY** at the bottom of the screen.
6. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Audio Mapping Settings

1. From the **RECORDING** menu, select **AUDIO MAPPING** (see [Figure 5-10](#)).
2. Set the **AUDIO IN** of the **AUDIO MAPPING** screen.
3. To apply the change, click **APPLY** at the bottom of the screen.

Figure 5-10 Audio Mapping Settings



4. When finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Searching

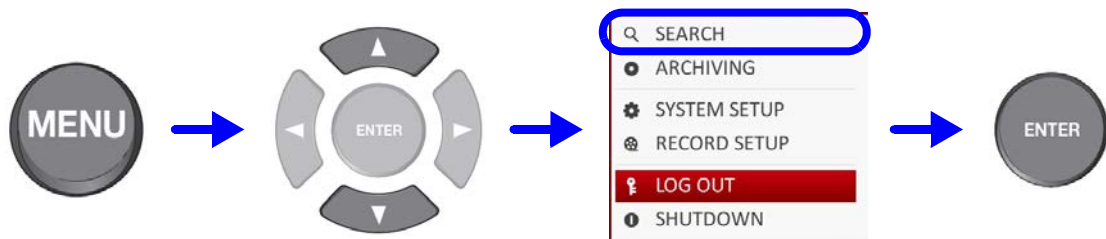
You can search for the recording data in the HDD by the criteria of time, thumbnail, event, and so on.

Opening the Search Menu While Monitoring

Using the Mouse



Using the Remote Control (Method 1)

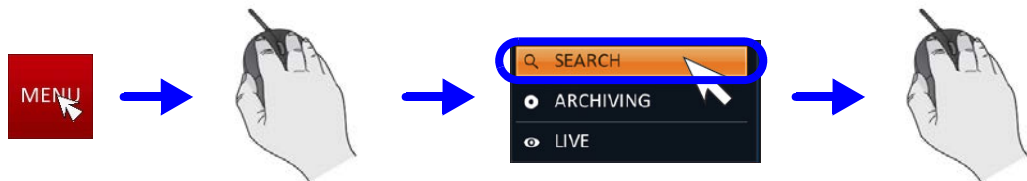


Using the Remote Control (Method 2)



Opening the Search Menu While in Playback Mode

Using the Mouse



Using the Remote Control



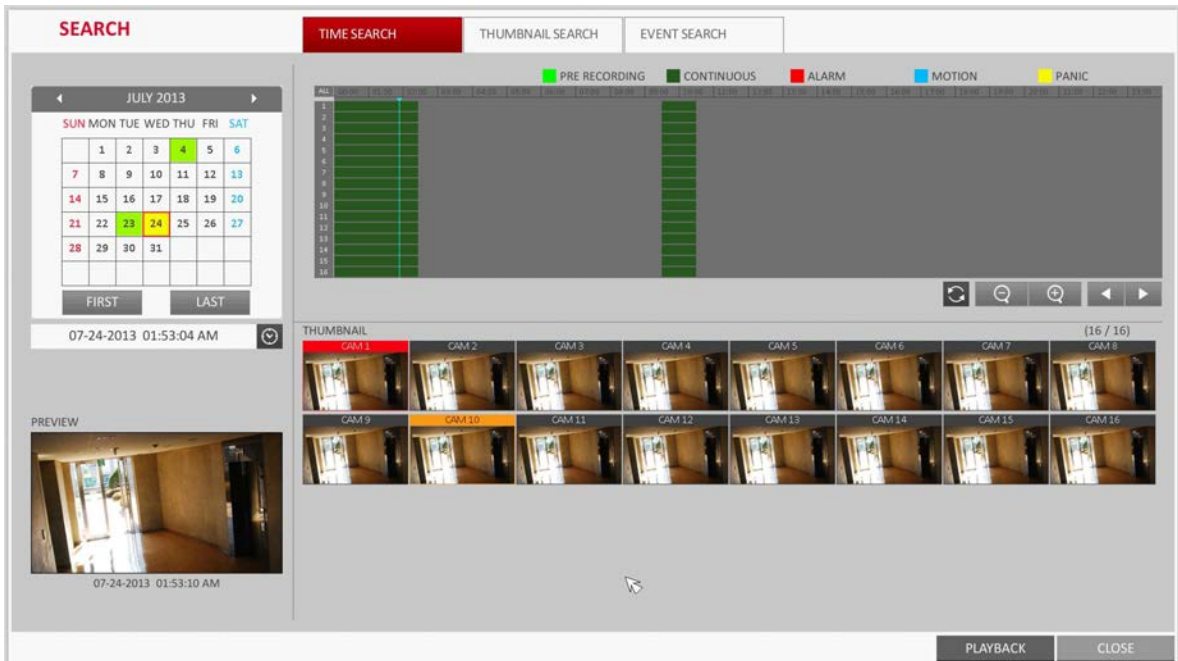
Search Settings

Time Search

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

1. From the **SEARCH** menu, select **TIME SEARCH** (see [Figure 6-1](#)).

Figure 6-1 Time Search Window




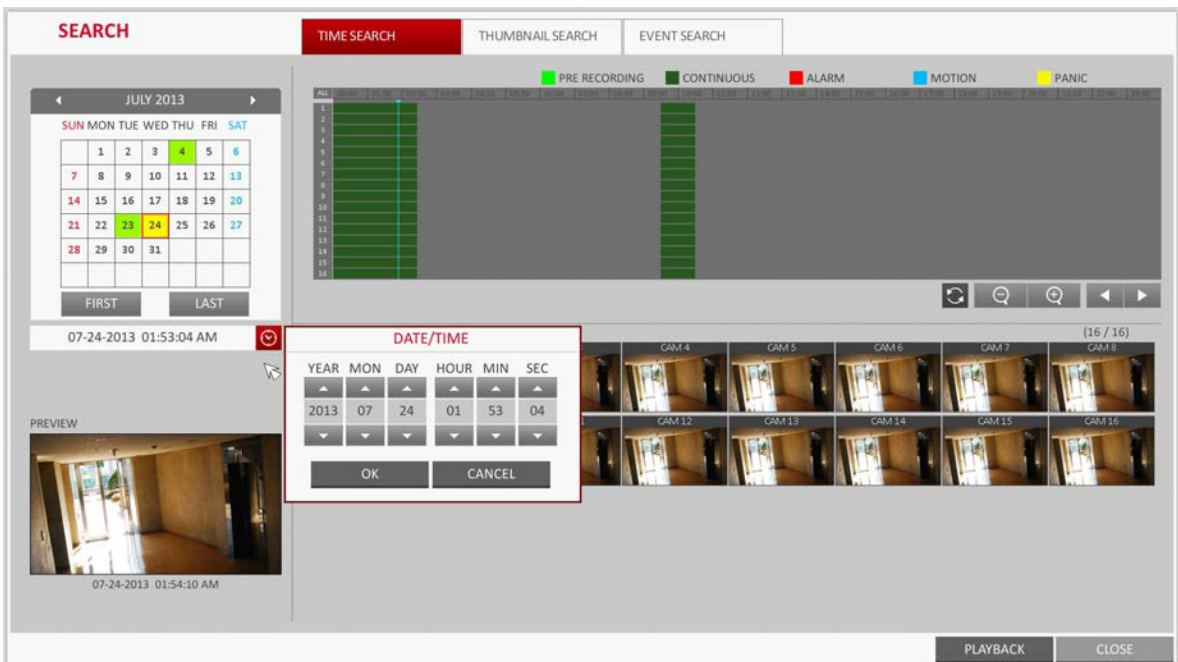





2. Use the ▲, ▼, ◀, and ▶ buttons or use the mouse to specify the search date and time from the calendar in the left corner of the screen.
 - **FIRST**: The first date of recording is automatically selected.
 - **LAST**: The last date of recording is automatically selected.
 -  : Press this to display the time selection menu where you can specify the time and date (see [Figure 6-2](#)).

Figure 6-2 Time Search Changing Date and Time



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 ▲, ▼, ◀, and ▶ buttons on the remote control to move to a desired channel and press **ENTER**. You can check the video in **PREVIEW**.

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

6. Press the **ENTER** button again on the remote control with the mouse, or simply double-click on the channel. You will move to the playback screen.
7. If you want to stop playing back 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 ▲, ▼, ◀, and ▶ 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.

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

- **INTERVAL**: Select a time interval of the thumbnail view from **MINUTES** (see [Figure 6-3](#)), **HOURS** (see [Figure 6-4](#)), or **DAYS** (see [Figure 6-5](#)).

- Double-click a desired play time in the recording data bar, or double-click a desired time image from the thumbnail list.
The playback screen will open.
- If you want to stop playing back 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.

Figure 6-3 Thumbnail Search - Minutes Selection

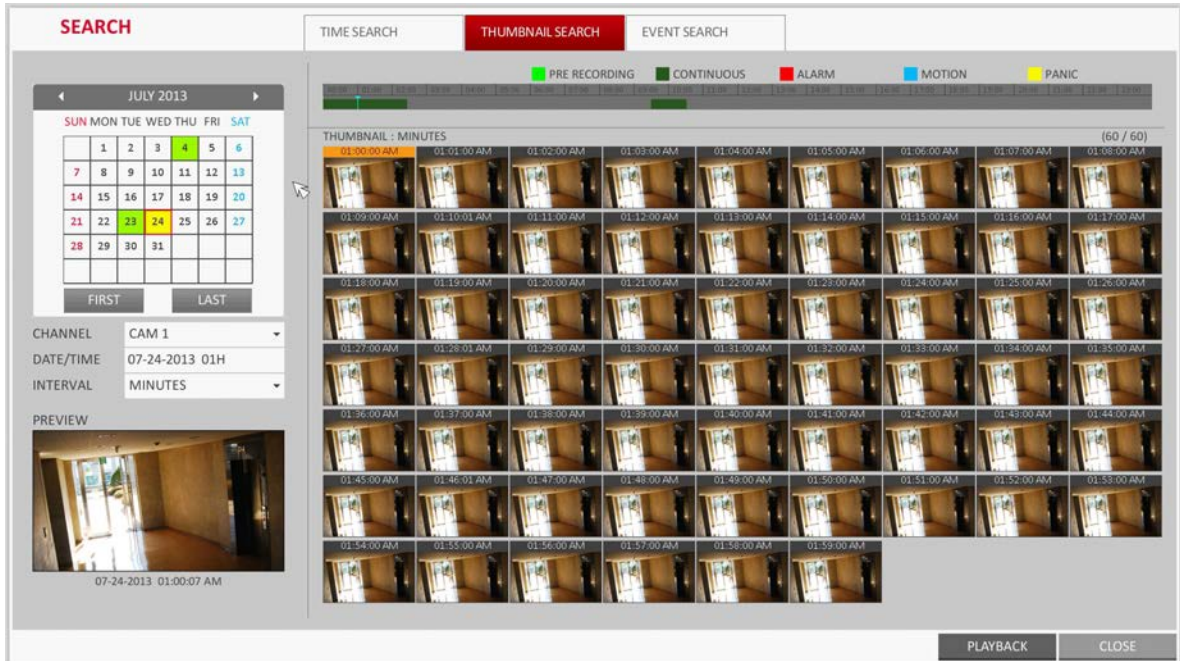


Figure 6-4 Thumbnail Search - Hours Selection

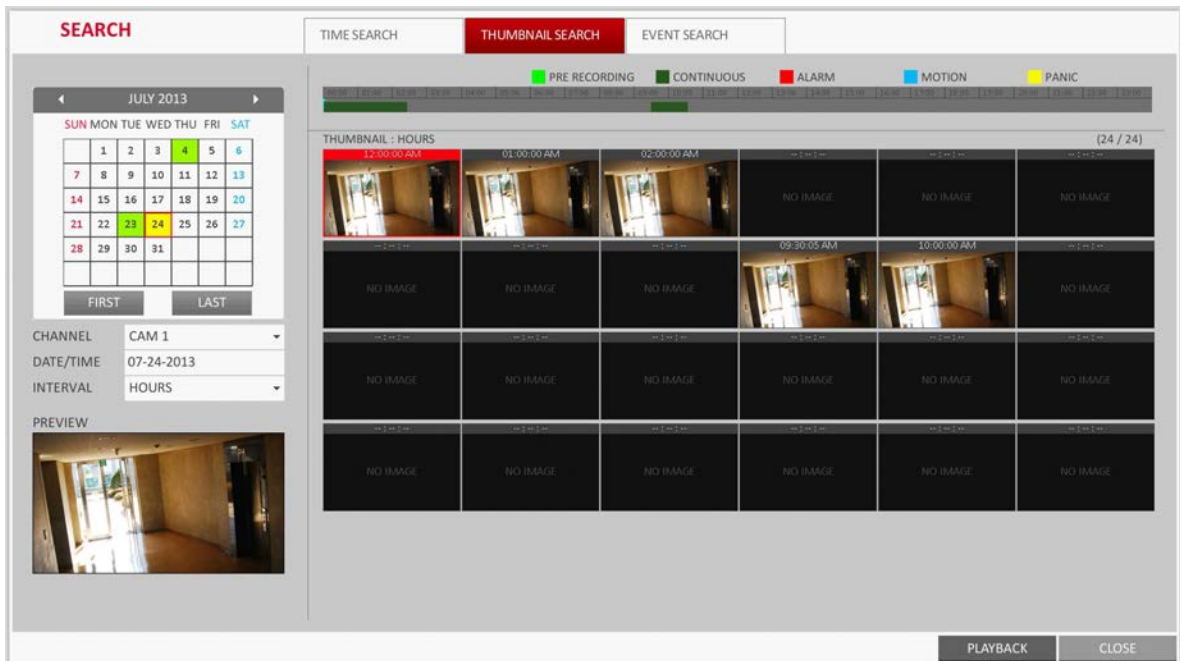
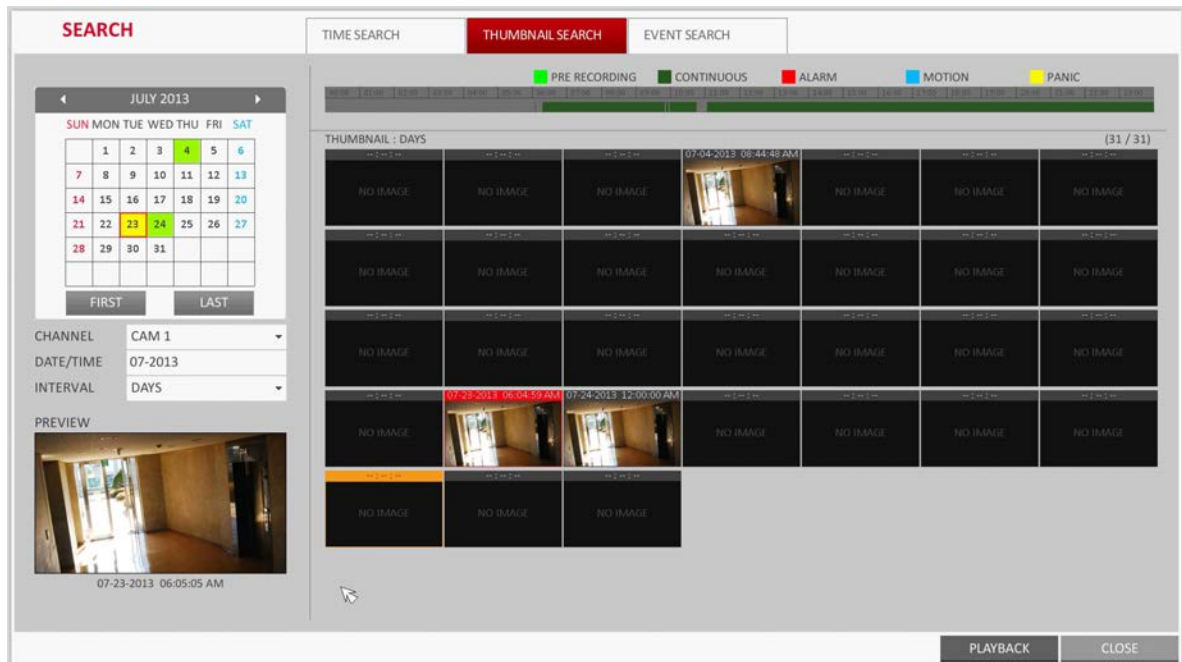


Figure 6-5 Thumbnail Search - Days Selection

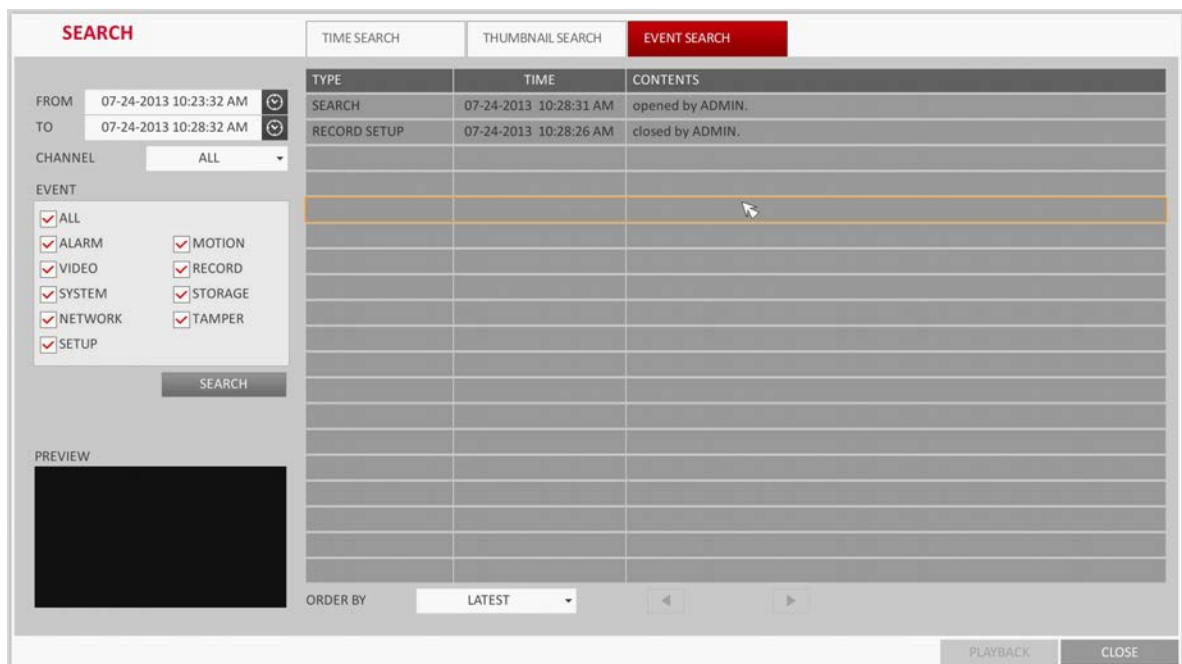


Event Search

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** (see [Figure 6-6](#)).

Figure 6-6 Event Search Screen



2. Use the ▲, ▼, ◀, and ▶ 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 open the playback screen.
7. If you want to stop playing back and return to the search screen, press **EXIT** or **SEARCH** on the remote control. You can also click **MENU** in the lower left corner and select a desired menu.

Playback

To playback video from search results:

- You can search for and playback search results (see [Chapter 6, Searching](#)).

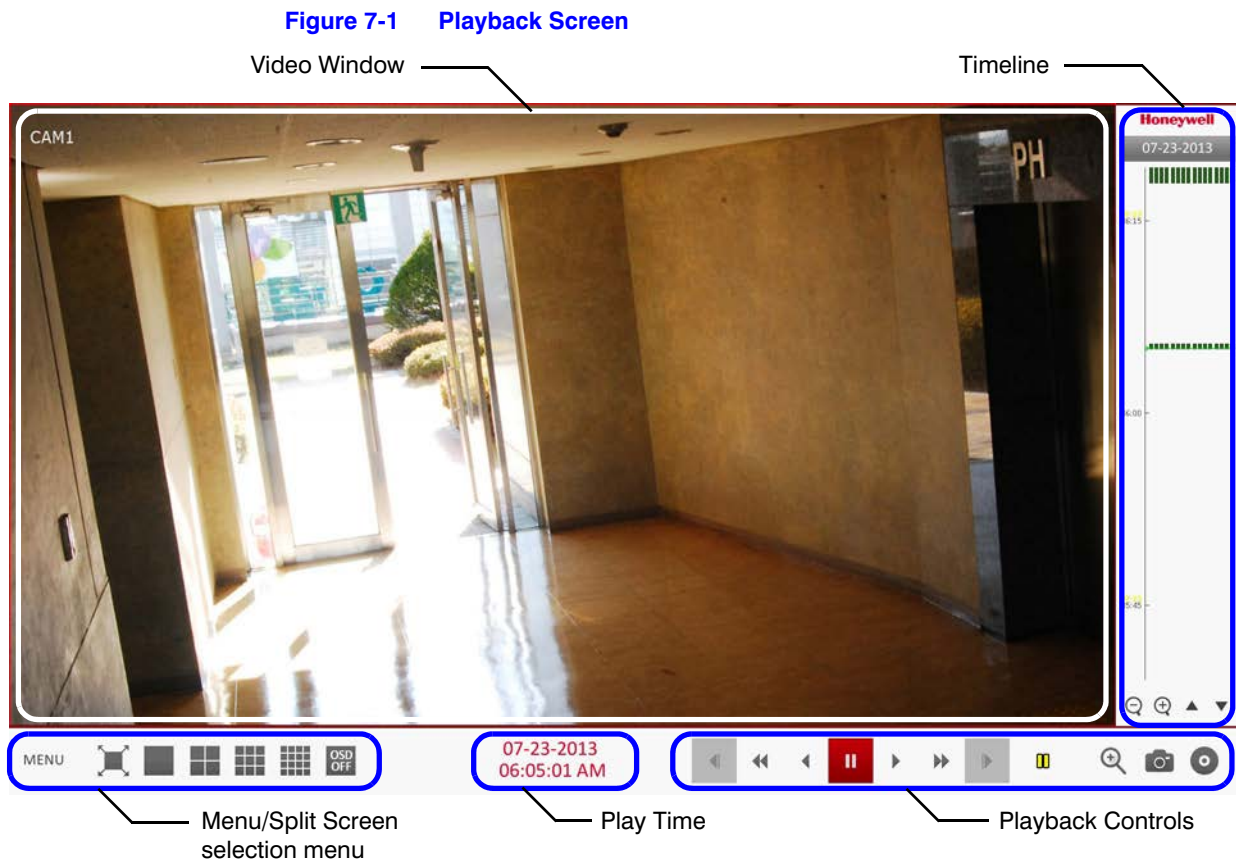
To play video with the live viewer:

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

Note 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 desired play time.

Playback Screen Configuration



Video Window

Displays the current video.

Timeline

Displays 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 in this menu, refer to [Using the Status Bar in Live Mode on page 48](#).

Playback Controls

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

Table 7-1 Playback Controls Descriptions

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 any 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 images in the HDD or export it to an external USB memory device. While you perform the snapshot, the current video will stop 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 indicate 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.

Playback Channel Selection Menu

Table 7-2 Playback Context Menu Description

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 the single channel 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.

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 backup.


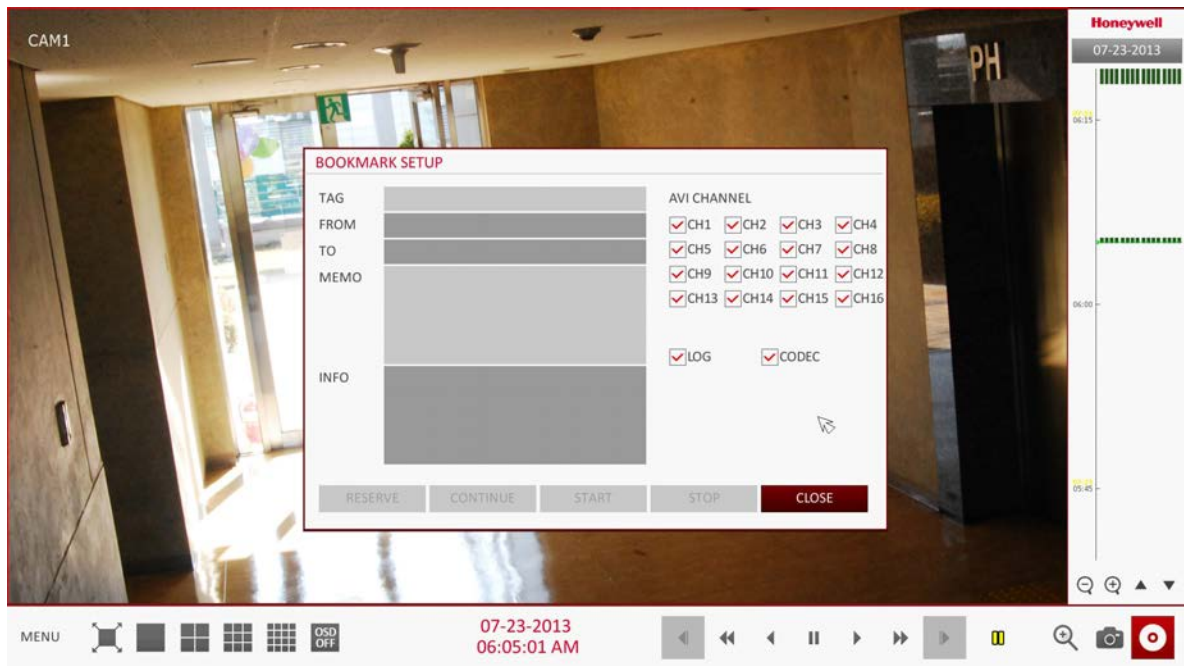
1. Press the **BOOKMARK** button (). The **BOOKMARK SETUP** window opens (see [Figure 7-2](#)).
2. Provide a tag in the **TAG** item for data reservation.

Figure 7-2 Bookmarking




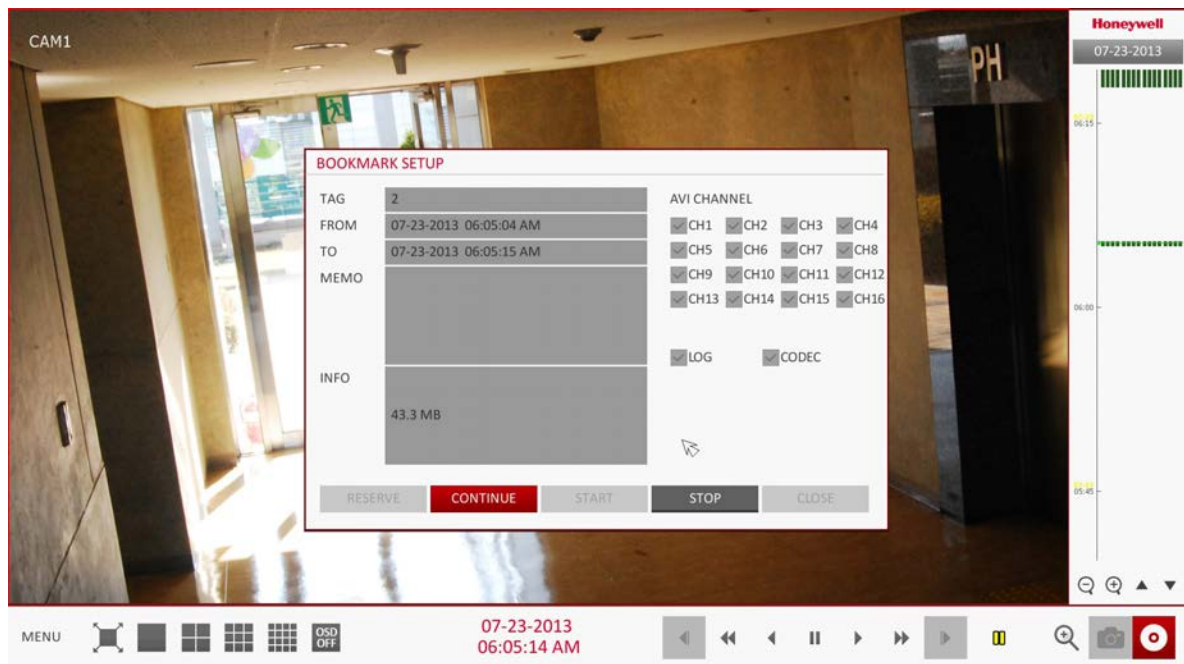
3. Provide the details of the reserved data in the **MEMO** input field.
4. Click **START**. You will return to the play screen with the backup progress.
5. To stop the bookmarking, click **BOOKMARK** ().
6. To quit the bookmarking, click **STOP**.
To continue with bookmarking, just click **CONTINUE**.

Figure 7-3 Reserving a Bookmark



7. Click **RESERVE**.

You can export the reserved data to a connected storage device using the **ARCHIVE** menu.

Note 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.

8

Archiving

Opening 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.

Archiving Options

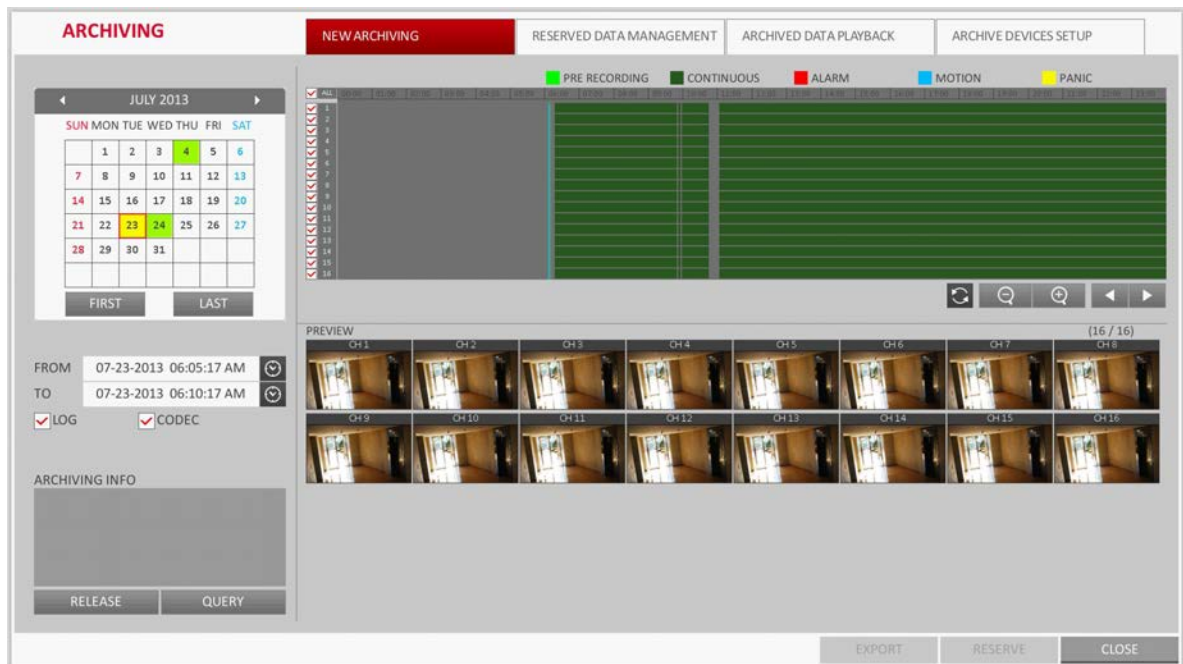
Creating a New Archive

You can archive the searched data or reserve it.

1. From the **ARCHIVE** menu, select **NEW ARCHIVING** (see [Figure 8-1](#)).
2. Select a date for the archive from the calendar in the left.

-
- Note** 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.
-

Figure 8-1 New Archiving



3. Check the **START** and **END** times.

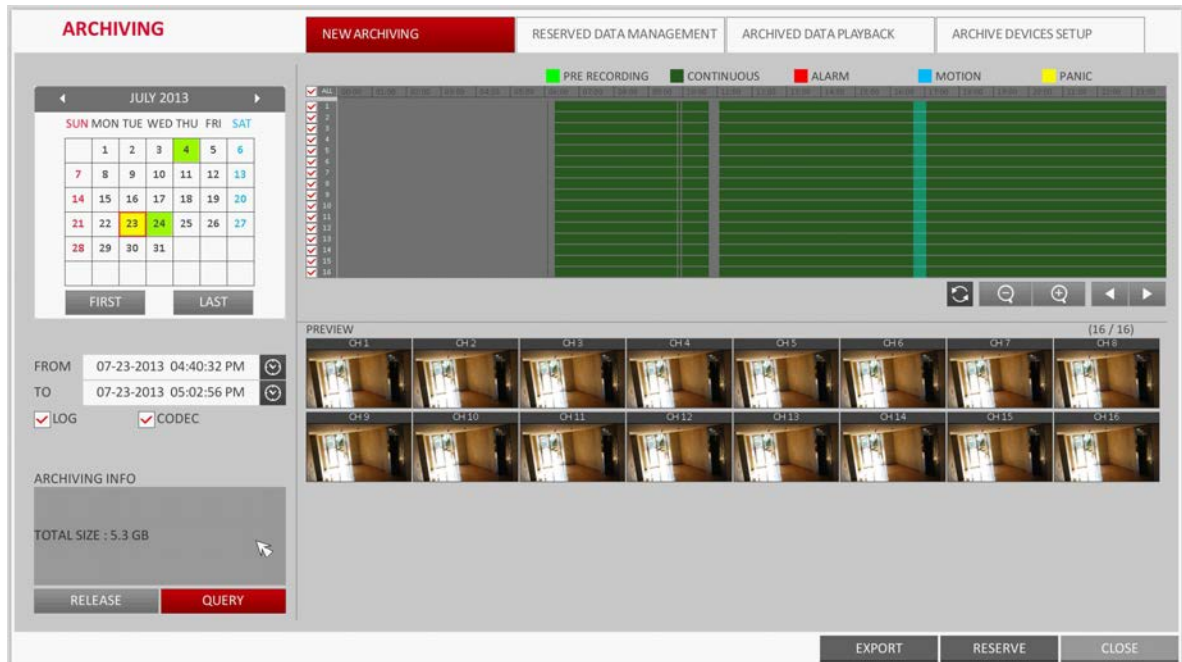
-
- Note** Drag the timeline to specify the start and end time.
-

4. Mark the **LOG** and **CODEC** checkboxes and select to include the archiving.
5. Click **QUERY**. The results will be listed in **ARCHIVING INFO** (see [Figure 8-2](#)).

-
- Note** The maximum backup capacity for one time is 20 GB.
If the archiving request exceeds 20 GB, the end time will be adjusted to within 20 GB.
-

6. If you want to export the data to a storage device, connect the storage device to the DVR and click **EXPORT**.

Figure 8-2 Archiving Info Retrieved



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.

Note 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**.

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 (see [Figure 8-3](#)).
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.

Figure 8-3 Reserved Data Management



3. If you want to play the data, double-click a desired data item or click it and select **PLAY**.

Note If selecting **SNAPSHOT CAPTURE**, the **PLAY** button will be disabled.

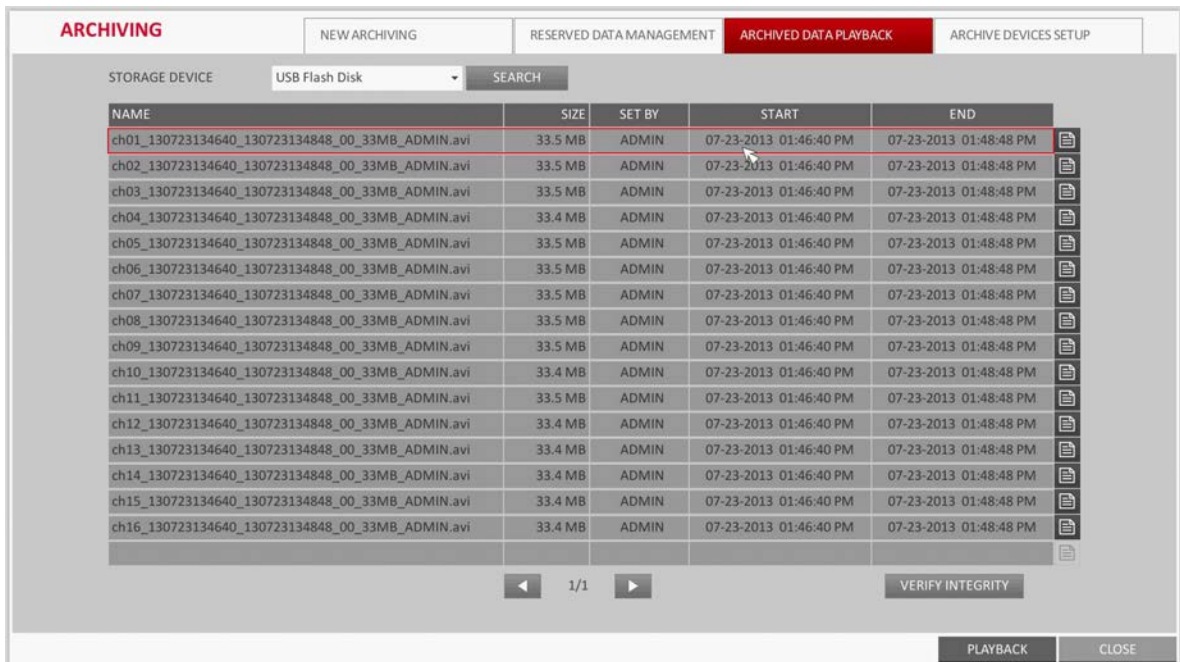
4. If you want to export to a storage device, connect the storage device to the DVR and click **EXPORT**.
5. If you want to delete the reserved data, click **X** next to the list. Click **CANCEL ALL** to cancel reserving the whole page at once.
6. To exit the Archive menu, click **CLOSE**.

Playing the Archived Data

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

1. Connect the storage device containing the archived data.
2. When the storage device is recognized, click **SEARCH** (see *Figure 8-4*).

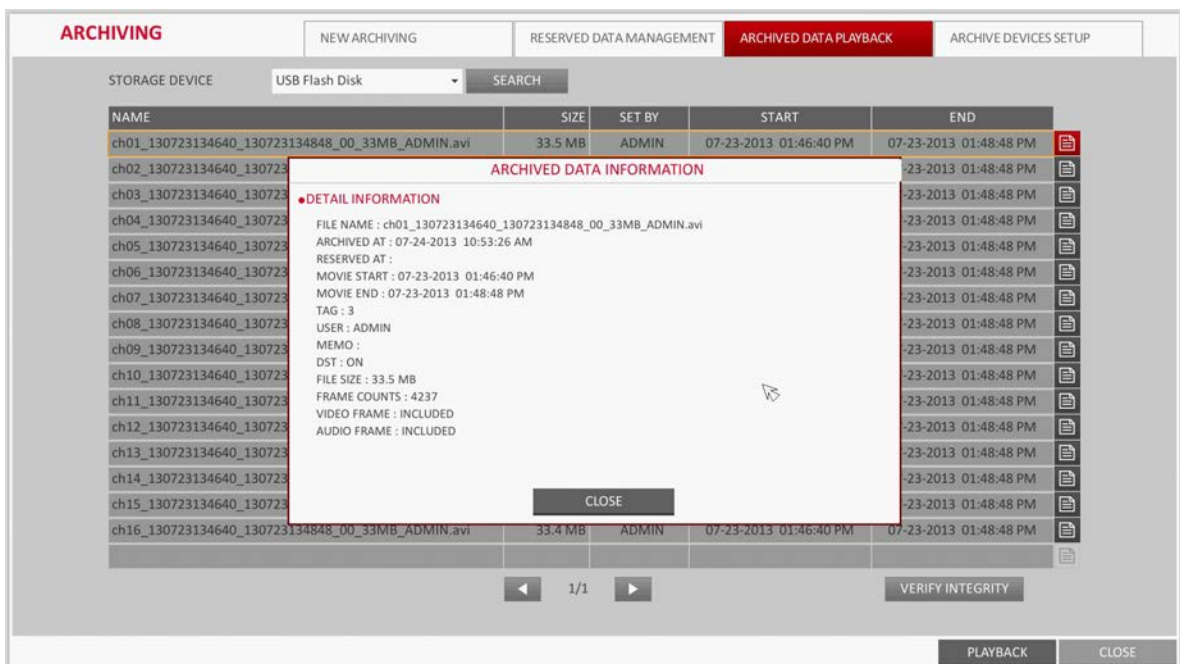
Figure 8-4 Searching for Archived Data on a Storage Device



- To view the details, click  next to the list (see Figure 8-5).

Note Click **VERIFY INTEGRITY** to check if the data is corrupt or incomplete.

Figure 8-5 Archived Data Info



- Select an item to play from the list and click **PLAYBACK**.
- 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 DEVICE SETUP** (see [Figure 8-6](#)).

Figure 8-6 Archive Device Setup

2. Move to the FTP information box.
3. Fill in each item using the 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 finished, press the **EXIT** button on the remote control or click **CLOSE** in the lower part of the screen. The confirmation message appears and you will return to the previous menu.

Web Viewer

Overview

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.

Table 9-1 System Requirements

Item	Requirement
Operating System	Windows XP Professional Windows Vista Home Basic/Premium Windows 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 / 2.0 GHz 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)

Note Additional HDD space is required for saving your recording data. The file size of your recording may differ depending on the specified quality.

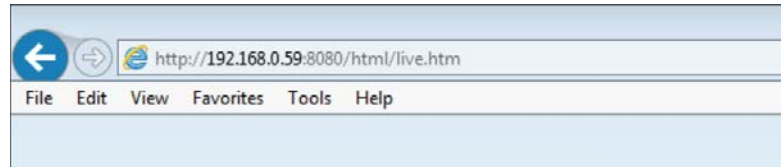
Connection

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

Connecting to the DVR from Inside

- Check the Network Status and verify the **IP ADDRESS** and **WEB SERVICE PORT** of the DVR (see [Network Status on page 80](#) for more information).
- Enter the IP address and web service port in the address bar of the browser.
For example: `http://192.168.1.200:8080`

Figure 9-1 DVR URL in the Address Bar



Connecting 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 (see [Network Status on page 80](#) for more information).
- If using a fixed (external) IP, enter the external IP that is specified in the DVR in the address bar of the web browser.

For example: 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 (see [Network Status on page 80](#) for more information).
- Enter the DDNS address and web service port in the address bar of the browser.

For example: `http://00115f123456.DVRLINK.NET:8080`

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

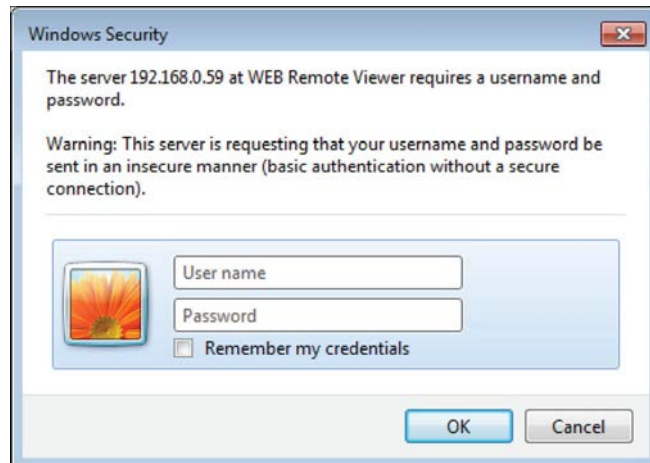
Note For the necessary settings of the router, refer to the router's user manual or contact the router's manufacturer.

Logging in to the Web Viewer

1. Provide the user ID and password (see [Figure 9-2](#)).

Note The default User name is **ADMIN**; the default Password is **1234**.

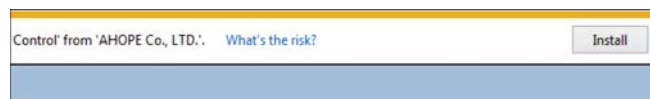
Figure 9-2 Web Viewer Login



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

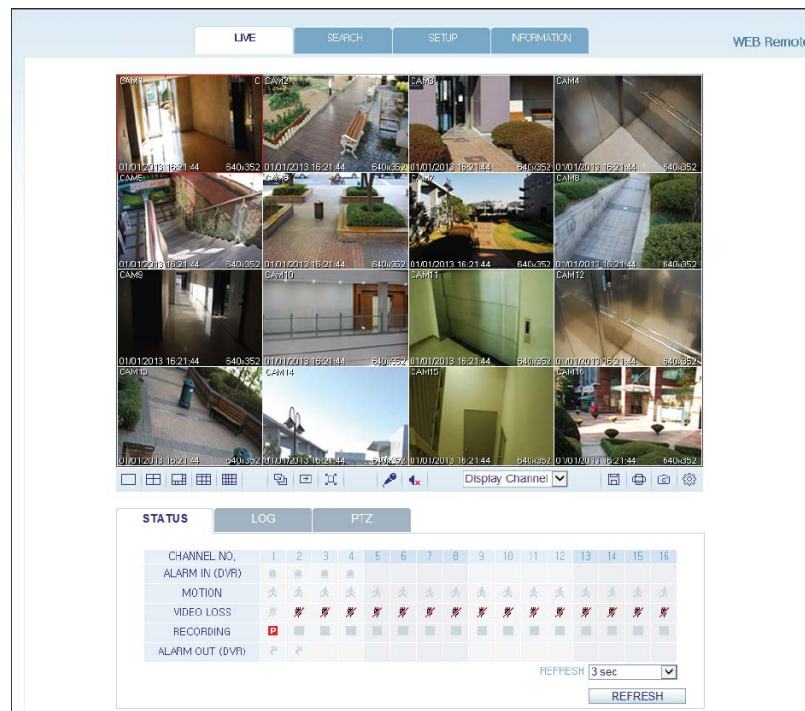
Note If you fail to download the ActiveX control, move to **Tools > Internet Options > Security > Custom Level > Download unsigned ActiveX control**, and change its setting from **Disable (recommended)** to **Enable**, and then click **OK**.

Figure 9-3 ActiveX Control Install



3. Click **Install**.
4. When the installation is complete, you will see the live screen (see [Figure 9-4](#)).

Figure 9-4 Web Viewer Live Screen



Web Viewer: Live

Live Screen at a Glance

Figure 9-5 Web Viewer Live Screen Descriptions

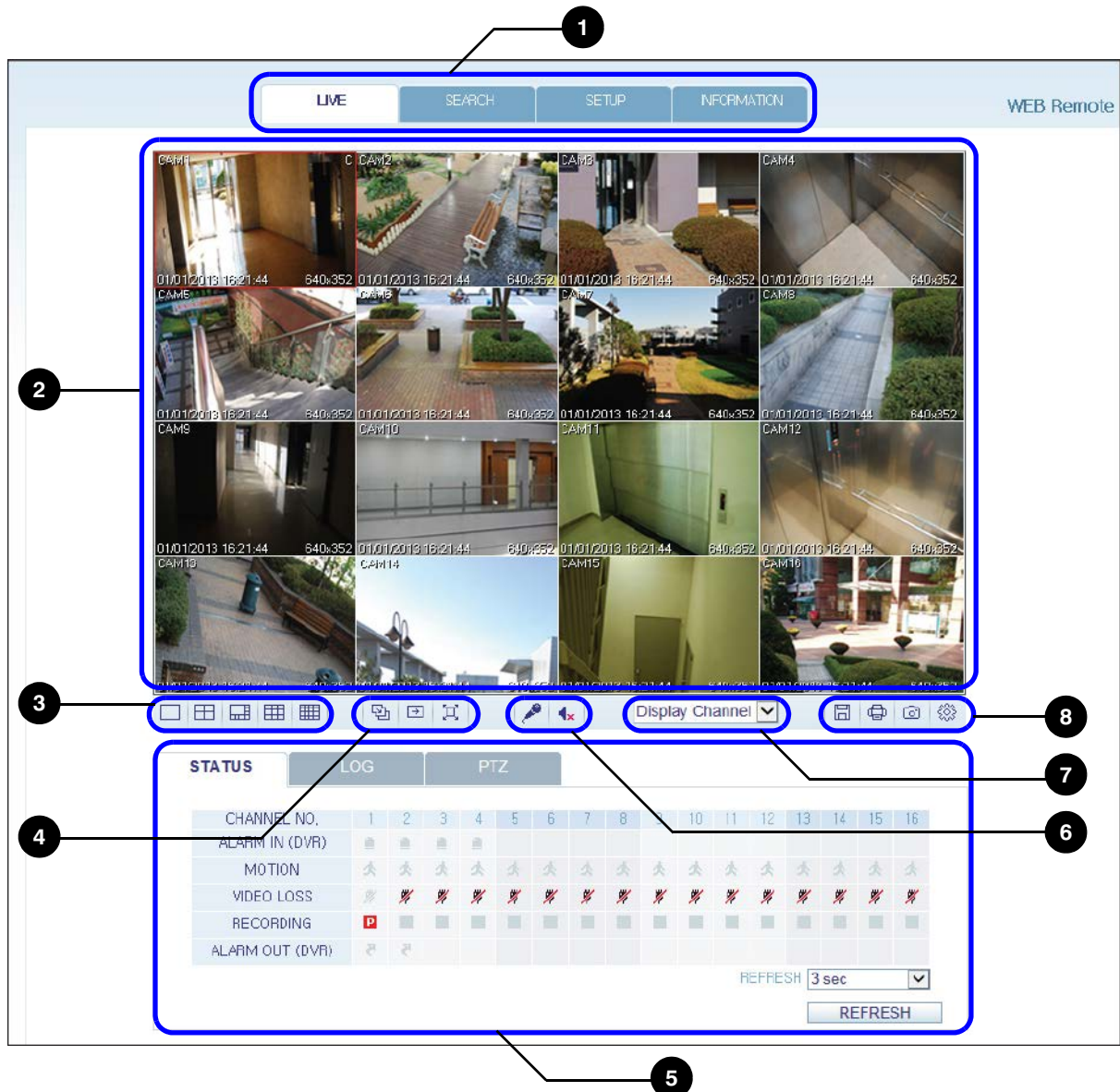


Table 9-2 Web Viewer Live Screen Descriptions

No.	Name	Description
1	View Selection Tab	You can switch to the live, playback and setup screens and check the provided information.
2	Live Screen	Display the live screen of the currently connected DVR.
3	Split Mode	Select and switch to a desired split-screen mode.

Table 9-2 Web Viewer Live Screen Descriptions (cont'd)

No.	Name	Description
4	Sequence	Set the sequence mode, switch to the next camera or select the full screen mode.
	Status	Show the connection status of each channel.
	Log	Show the log.
5	Refresh Time	Set the interval at which the DVR Status is refreshed.
	Reload	Load the DVR Status immediately.
	Voice Transmission	You can turn on or off the output of the voice signal.
7	Channel	Select a channel listed in the screen.
	Save	Save the live video on the screen.
	Print	Print out the current screen.
8	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 shown in [Figure 9-6](#).

Figure 9-6 Split Screen Modes



1-Split Mode



4-Split Mode



8-Split Mode




9-Split Mode




16-Split Mode

Saving the Video


1. Click  to start saving.
2. The video from the selected channel will be saved to the PC in the AVI format. The default path is C:\SaveFolder.

Click  again to stop saving. Click **ActiveX Setting** to display the context menu where you can change the saving path.

Printing

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

Capturing a Screen Image

1. Click .
2. The current screen of the selected channel will be saved to the path specified in the PC. The default path is C:\SaveFolder.
Click **ActiveX Setting** to display the context menu where you can change the saving path.

ActiveX Settings


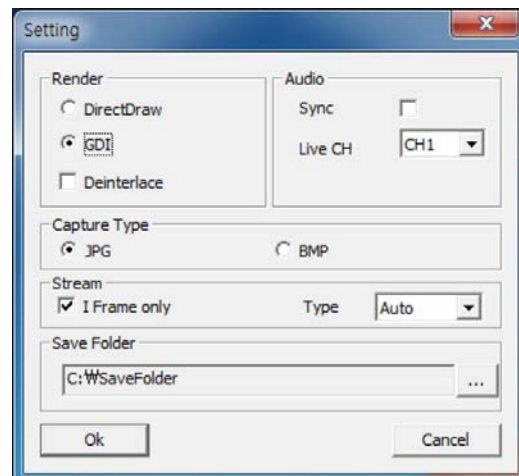

1. Click  (see *Figure 9-7*).

Figure 9-7 ActiveX Settings



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.
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.

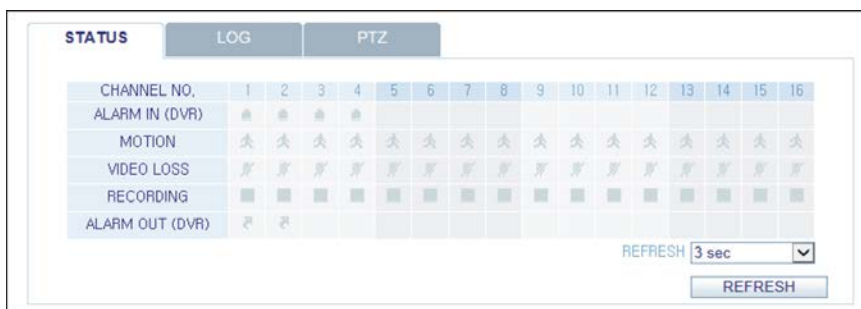
- **Sync:** If this option is set, the audio signal will be synchronized with the video signal. However, you may encounter a delay due to buffering for the synchronization.
- **Live CH:** Set the audio signal to use in live monitoring mode.
- **I Frame Only:** Only the I frames (key frames) will be transferred.

- **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 finished, click **OK** to save your settings.

Status Tab

Click **STATUS** at the bottom of the screen (see [Figure 9-8](#)). You can check the event occurrence for each channel of the connected DVR.

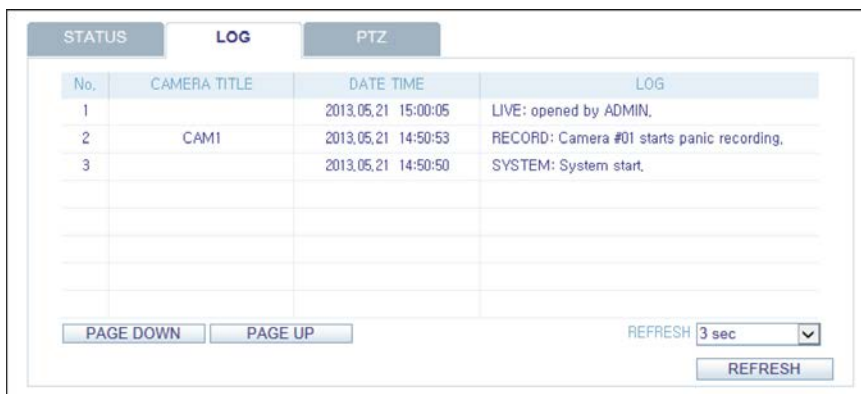
Figure 9-8 Web Viewer Live Screen Status Tab



Log Tab

Click **LOG** at the bottom of the screen (see [Figure 9-9](#)). You can check the log of the connected DVR.

Figure 9-9 Web Viewer Live Screen Log Tab



PTZ Tab

Click **PTZ** at the bottom of the screen (see [Figure 9-10](#)). 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.

Figure 9-10 Web Viewer Live Screen PTZ Tab



Web Viewer: Searching

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

Search Viewer at a Glance

Figure 9-11 Web Viewer Search Screen Descriptions



Table 9-3 Web Viewer Search Screen Descriptions

No.	Name	Description
1	View Selection Tab	You can switch to the live, playback and setup screens and check the provided information.
2	Playback Screen	Plays the recording data.
3	Split Mode	Select and switch to a desired split-screen mode.
4	Sequence	Set the sequence mode, switch to the next camera or select the full screen mode. You can turn on/off the voice signal.
5	Play Button Bar	You can control the playback screen.
6	Time Selection	Specify the start time of playback.
7	Time Line	Indicates the status of the recorded data.
	Refresh	Reload the time line.
8	Play	Play the video that satisfies your search criteria.
	Export	Archive the video that satisfies your search criteria.

Table 9-3 Web Viewer Search Screen Descriptions (cont'd)

No.	Name	Description
9	Channel Selection	Select a channel listed in the screen.
	Screen	Print out the current screen.
10	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 (see [Figure 9-12](#)).

1. Select a date that you want to search.

Figure 9-12 Web Viewer Search By Time

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 (see [Figure 9-13](#)).

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.

Figure 9-13 Web Viewer Search By Event

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.

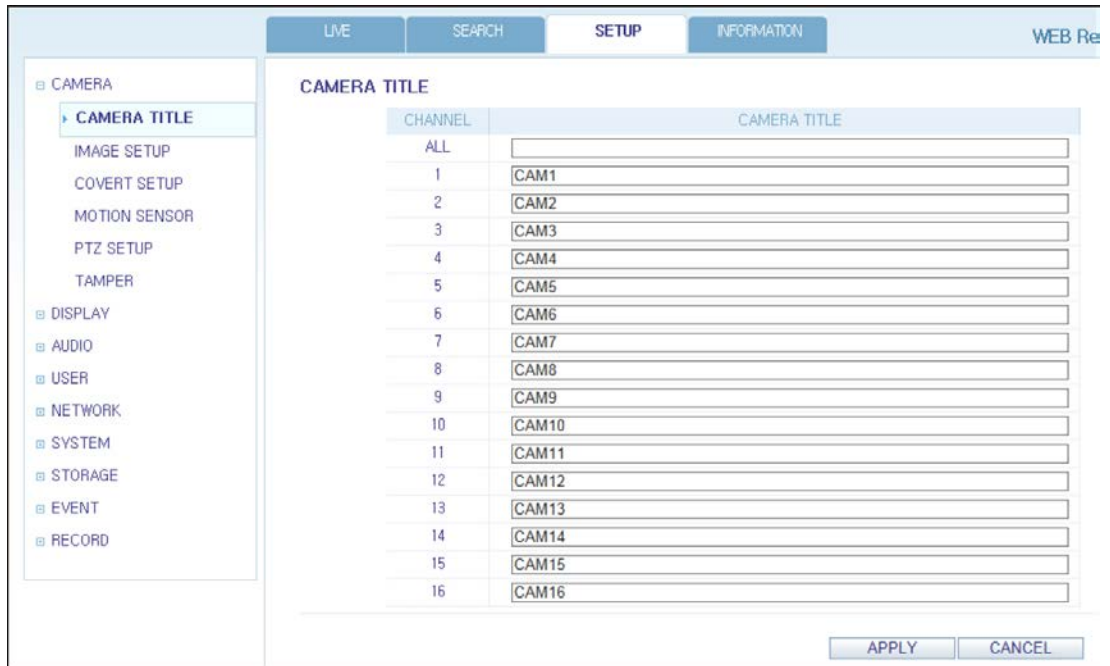
When finished, click **OK** to apply the changes to the remotely connected DVR.

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

CAUTION If you often change the settings remotely, the major Record Settings of the DVR may be changed, which is not recommended.

Setup Viewer at a Glance

Figure 9-14 Web Viewer Setup Screen

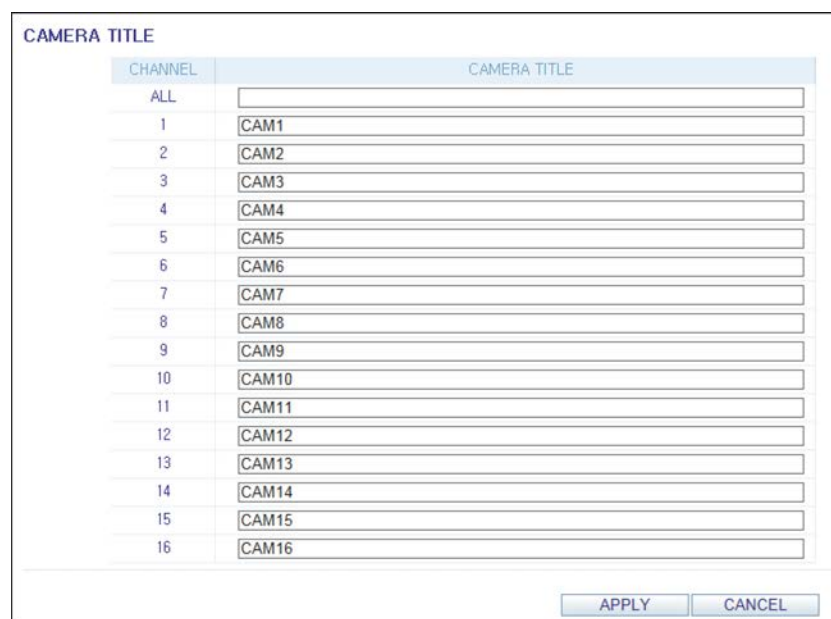


Camera Settings

Naming 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 (see [Figure 9-15](#)). Then, click **APPLY** to apply it.

Figure 9-15 Naming a Camera Title



Note 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 (see [Figure 9-16](#)). 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 finished, click **APPLY** to apply the changes.

Figure 9-16 Web Viewer Covert Setup

COVERT SETUP				
CHANNEL	ADMIN	MANAGER	USER	LOG OUT
ALL	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Motion Setting

Specify the use of motion detection and reaction for each channel and set also the daytime/nighttime options (see [Figure 9-17](#)).

Select a channel. Set the mask area and activation and specify the daytime range.

When finished, click **APPLY** to apply the changes.

Note For more information about how to set the motion area, refer to [Setting the Motion Area on page 60](#).

Figure 9-17 Web Viewer Motion Sensor Setup

MOTION SENSOR
 Select Normal



SELECT ALL DESELECT ALL

CHANNEL: 1 MOTION MARK: ON
 ACTIVATION: ON DAYTIME: 9:00 ~ 18:00

	SENSITIVITY		SENSITIVITY (ADVANCED)		
	LEVEL	SPATIAL	TEMPORAL	VELOCITY	
DAYTIME	15	30	30	30	
NIGHTTIME	15	30	30	30	

APPLY CANCEL

PTZ Setting

Figure 9-18 Web Viewer PTZ Setup

PTZ setting

Ch.	Address	Protocol	Baudrate
1	0	PELCO-D	9600
2	0	PELCO-D	9600
3	0	PELCO-D	9600
4	0	PELCO-D	9600
5	0	PELCO-D	9600
6	0	PELCO-D	9600
7	0	PELCO-D	9600
8	0	PELCO-D	9600
9	0	PELCO-D	9600
10	0	PELCO-D	9600
11	0	PELCO-D	9600
12	0	PELCO-D	9600
13	0	PELCO-D	9600
14	0	PELCO-D	9600
15	0	PELCO-D	9600
16	0	PELCO-D	9600

APPLY CANCEL

To make DVR utilize camera's PTZ functions, match the protocol and baud rate of connected cameras and DVR (see [Figure 9-18](#)).

Tamper Setup

You can set to detect tampering attempts to interfere with monitoring operations by tampering with installed cameras (see [Figure 9-19](#)).

Note For more information about how to set the Tamper settings, refer to [Tamper Detection on page 62](#).

Figure 9-19 Web Viewer Tamper Setup



Display Settings

OSD Settings

Configure the settings for the time, title, boundary, icon and language that will be displayed on the screen (see [Figure 9-20](#)).

Make changes to each item of the OSD menu and click **APPLY** to apply the changes.

Note For more details about each displayed item, refer to *OSD Settings on page 64*.

Figure 9-20 Web Viewer OSD Settings

Setting	Value
CAMERA TITLE	On
RECORDING MODE ICON	On
AUDIO ICON	On
STATUS BAR ON FULL SCREEN MODE	Auto Hide
TIMELINE ON FULL SCREEN MODE	Auto Hide
BORDER	On
BORDER COLOR	Dark Gray
LANGUAGE	ENGLISH

Monitor Settings

You can set the interval of an active sequence (see *Figure 9-21*). 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:** Setting 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.

Figure 9-21 Web Viewer Monitor Settings

Setting	Value
SEQUENCE DWELL	5 Sec
SPOT DWELL	5 Sec
HD Spot dwell	1 Sec

Audio

Audio/Buzzer

You can configure the settings of the voice and audio signal (see *Figure 9-22*).

Note For more details about each displayed item, refer to *Audio Setup on page 72*.

Figure 9-22 Web Viewer Audio Setup

AUDIO

DEFAULT LIVE AUDIO CHANNEL

NETWORK AUDIO TRANSMISSION

RECEIVE NETWORK AUDIO

BUZZER

REMOTE CONTROLLER

User Settings

User Management

You can add a user account and change the password (see [Figure 9-23](#)).

Figure 9-23 Web Viewer User Management

USER MANAGEMENT

USER ID	PASSWORD	GROUP	COVERT CHANNEL	EMAIL	NOTIFICATION	DELETE
ADMIN	••••	ADMIN			<input type="checkbox"/>	

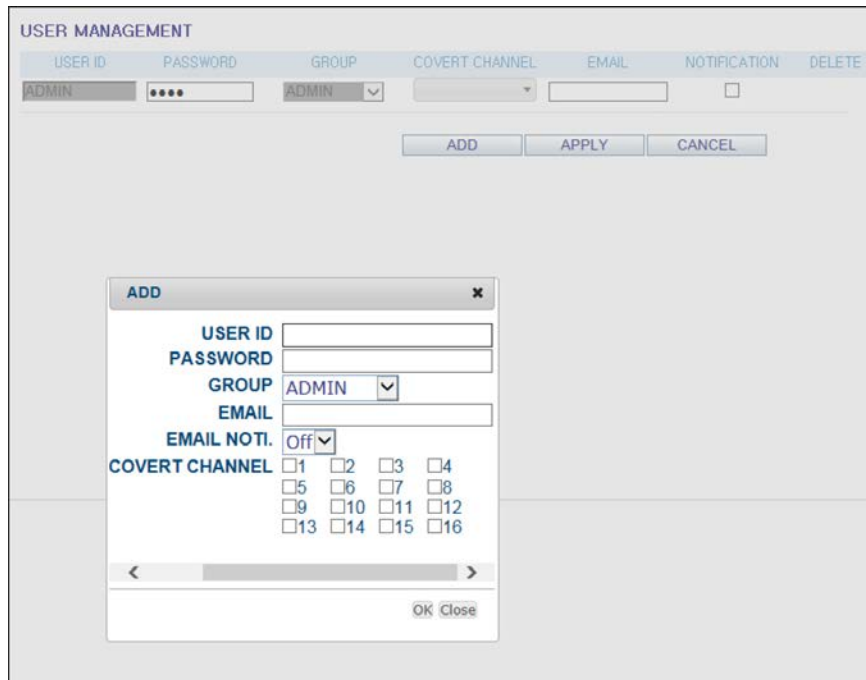
Note For more details about each displayed item, refer to [User Settings on page 73](#).

To add a user, click **ADD** and provide the user information (see [Figure 9-24](#)).

If you want to delete the user click **DEL** next to that user.

When finished, click **APPLY** to apply the change.

Figure 9-24 Web Viewer Adding a User

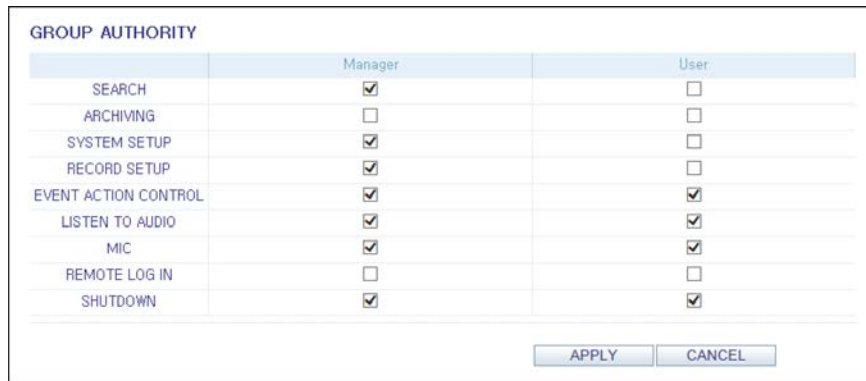


Group Permission Setting

You can grant different user groups different permissions to a specific menu (see [Figure 9-25](#)).

Mark the checkboxes of the menu items to be accessible by the user group.

Figure 9-25 Web Viewer Group Authority Setup



When finished, click **APPLY** to apply the changes.

Note For more information about the accessible menu items, refer to [Group Authority Settings on page 76](#).

Network Settings

IP Setup

You can check the network connection status and change the baud rate (see [Figure 9-26](#)).

Change the maximum transfer rate and click **APPLY** to apply it.

Figure 9-26 Web Viewer Network Settings

IP SETUP	
DHCP	<input checked="" type="checkbox"/>
IP ADDRESS	192.168.0.59
GATEWAY	192.168.0.1
SUBNET MASK	255.255.255.0
1ST DNS SERVER	168.126.63.1
2ND DNS SERVER	168.126.63.2
RTSP SERVICE PORT	5554
WEB SERVICE PORT	8080
MAX TX SPEED	MAX
<input type="button" value="APPLY"/> <input type="button" value="CANCEL"/>	

Note For more information about each network entry, refer to [IP Setup on page 77](#).

DDNS Settings

You can configure the DDNS settings so that remote users who are connected to the network can access remotely (see [Figure 9-27](#)).

Change the DDNS settings and click **APPLY** to apply the changes.

Figure 9-27 Web Viewer DDNS Settings

DDNS	
DDNS	<input checked="" type="checkbox"/>
DDNS SERVER NAME	dvrlink.net
NVR NAME	00115ff0a2d8
NVR ADDRESS	00115ff0a2d8.dvrlink.net
<input type="button" value="APPLY"/> <input type="button" value="CANCEL"/>	

Email Settings

You can register and test an email address so that an email notification is delivered at a specific interval or if an event occurs (see [Figure 9-28](#)).

Provide the necessary information and click **APPLY** to apply it.

Note For more information, refer to [Email Settings on page 79](#).

Figure 9-28 Web Viewer Email Settings

EMAIL

SERVER

PORT

SECURITY

USER

PASSWORD

TEST EMAIL

System Settings

Date/Time Settings

Specify the current date and time (see [Figure 9-29](#)).

When finished, click **APPLY** to apply the changes.

Note For more information about each of the time and date settings, refer to [Date/Time Settings on page 82](#).

Figure 9-29 Web Viewer Date/Time Settings

DATE/TIME

DATE FORMAT

TIME FORMAT

NETWORK TIME SYNCHRONIZATION

NETWORK TIME SERVER SETUP

AUTO TIME SYNC

SYNC AT

TIMEZONE / DST

TIME ZONE SETUP

DST

System Management

You can configure the access settings of: log in, log out, and auto logout (see [Figure 9-30](#)).

Figure 9-30 Web Viewer System Management

SYSTEM MANAGEMENT	
PASSWORD	On
EXPIRED TERM OF PASSWORD	Not Used
AUTO LOGOUT	Off
DURATION	1 Min.

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 (see [Figure 9-31](#)).

Figure 9-31 Web Viewer System Information

SYSTEM INFORMATION	
FW VERSION	31310.1.700000.100
LAST FW UPDATE DATE	N/A
HW VERSION	MANS300_FH
DISK CAPACITY	298.1 GB
DISK USAGE	103.3 GB
NUMBER OF DISKS	1
IP ADDRESS	192.168.0.59
MAC ADDRESS	00115ff0a2d8
DDNS ADDRESS	00115ff0a2d8.dvrlink.net
RTSP SERVICE PORT	5554
WEB SERVICE PORT	8080
RESOLUTION	HDMI(1080P-60)

STATUS	
CAMERA CONNECTION	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16
ALARM IN (DVR)	1 2 3 4
ALARM OUT (DVR)	1 2

Control Device Setting

Set the connection of both the remote control and the keyboard control (see [Figure 9-32](#)).

Change the communication settings and click **APPLY** to apply the changes.

Figure 9-32 Web Viewer Control Device Settings

CONTROL DEVICE			
DEVICE	SYSTEM ID	PROTOCOL	BAUD RATE
0		D-Max	9600

Note For more information about each communication item, refer to [Control Device Settings on page 87](#).

Storage Settings

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 (see [Figure 9-33](#)).

Figure 9-33 Web Viewer Device Information

	START TIME	END TIME	STATUS	CAPACITY	MODEL	S.M.A.R.T. STATUS
ALL	10-07-2012 22:56:05	05-21-2013 15:53:14	-	-	-	-
DISK 1	10-07-2012 22:56:05	05-21-2013 15:53:14	IN USE	-	WDC WD3200AA	NORMAL
DISK 2	-	-	-	-	-	-
DISK 3	-	-	-	-	-	-
DISK 4	-	-	-	-	-	-
DISK 5	-	-	-	-	-	-

S.M.A.R.T Status

You can check the S.M.A.R.T status for each of the internal and external devices (see [Figure 9-34](#)).

Figure 9-34 Web Viewer S.M.A.R.T. Setup

S.M.A.R.T. STATUS	Disk 1	Disk 2	Disk 3	Disk 4	Disk 5
NORMAL	NORMAL	-	-	-	-

[DETAIL](#)

Note 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 Settings

Alarm Output Settings

Specify the alarm output conditions (see [Figure 9-35](#)) with the work schedule (see [Figure 9-36](#)).

When finished, click **APPLY** to apply the changes.

Note For more information about the alarm output and ON/OFF schedule, refer to *Alarm Out on page 92*.

Figure 9-35 Web Viewer Alarm Output

	NAME	TYPE	OPERATION	DURATION
AO1	AO1	DIGITAL OUT	N/O	5 sec
AO2	AO2	DIGITAL OUT	N/O	5 sec

Figure 9-36 Web Viewer Alarm Schedule

DAY: Sun

Legend: OFF (black), ON (red), EVENT (green)

Grid: 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

AO1: [Green grid]

AO2: [Green grid]

Event Notification

Specify the notification method using one of **BUZZER OUT** (see *Figure 9-37*), **DISPLAY** (see *Figure 9-38*) and **EMAIL** (see *Figure 9-39*) against an event alarm that occurs.

Specify the buzzer output time, display time and email notification, and click **APPLY** to apply the changes.

Note For more information about the event notification, refer to *Event Notification on page 94*.

Figure 9-37 Web Viewer Buzzer Out Event Notification

BUZZER OUT | DISPLAY | EMAIL

BUZZER OUT

DURATION: 5 sec

Figure 9-38 Web Viewer Display Event Notification

The screenshot shows a web interface titled "EVENT NOTIFICATION". At the top, there are three tabs: "BUZZER OUT", "DISPLAY", and "EMAIL". The "EMAIL" tab is currently selected. Below the tabs, there are two sections: "VIDEO POPUP" and "OSD POPUP". Each section has a "DURATION" label followed by a dropdown menu set to "5 sec". At the bottom right, there are two buttons: "APPLY" and "CANCEL".

Figure 9-39 Web Viewer Email Event Notification

The screenshot shows a web interface titled "EVENT NOTIFICATION". At the top, there are three tabs: "BUZZER OUT", "DISPLAY", and "EMAIL". The "EMAIL" tab is currently selected. Below the tabs, there is a section titled "EMAIL NOTIFICATION". It contains an "ADD NEW EMAIL" button, a "LIST" button, and a "MINIMUM EMAIL FREQUENCY" dropdown menu set to "1 Min". At the bottom right, there are two buttons: "APPLY" and "CANCEL".

Alarm Sensor Settings

You can configure the settings of the alarm sensor and specify the operation of the sensor if an event occurs (see [Figure 9-40](#)).

When finished, click **APPLY** to apply the changes.

Note For more information about each of the alarm sensor actions, refer to [Alarm Sensor Settings on page 97](#).

Figure 9-40 Web Viewer Alarm Sensor Settings

The screenshot shows a web interface titled "ALARM SENSOR". It contains a table with columns for "CAM", "EVENT PARAMETER", "LINKED CAMERA", "ACTION", and "ALARM OUT". The "EVENT PARAMETER" column is further divided into "NAME" and "OPERATION". The "ACTION" column is further divided into "BUZZER", "VIDEO POPUP", "OSD POPUP", and "EMAIL".

CAM	EVENT PARAMETER		LINKED CAMERA	ALARM OUT	ACTION			
	NAME	OPERATION			BUZZER	VIDEO POPUP	OSD POPUP	EMAIL
AI 1	SENSOR1	HIGH	1	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AI 2	SENSOR2	HIGH	2	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AI 3	SENSOR3	HIGH	3	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
AI 4	SENSOR4	HIGH	4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

At the bottom right of the table, there are two buttons: "APPLY" and "CANCEL".

Motion Sensor Settings

You can set an action to execute when a motion is detected (see [Figure 9-41](#)).

When finished, click **APPLY** to apply the changes.

Note For more information about how to set the motion sensor, refer to *Motion Sensor Settings* on page 98.

Figure 9-41 Web Viewer Motion Sensor Settings

MOTION SENSOR						
CAM	EVENT PARAMETER		ACTION			
	IGNORING INTERVAL		ALARM OUT	BUZZER	VIDEO POPUP	EMAIL
1	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	5 sec	▼	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Video Loss Settings

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 (see *Figure 9-42*).

When finished, click **APPLY** to apply the changes.

Figure 9-42 Web Viewer Video Loss Settings

VIDEO LOSS				
CAM	ALARM OUT	ACTION		
		BUZZER	EMAIL	
1	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
2	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
3	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
4	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
5	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
6	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
7	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
8	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
9	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
10	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
11	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
12	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
13	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
14	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
15	N/A	<input type="checkbox"/>	<input type="checkbox"/>	
16	N/A	<input type="checkbox"/>	<input type="checkbox"/>	

Tamper Event Settings

You can set how to react upon a detected tampering event (see [Figure 9-43](#)).

Figure 9-43 Web Viewer Tamper Event Settings

Tamper Event setting

CAM	EVENT PARAMETER IGNORING INTERVAL	LINKED CAMERA	ACTION			
			ALARM OUT	BUZZER	VIDEO POPUP	EMAIL
1	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	5 sec	N/A	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

When finished, click **APPLY** to apply the changes.

Note For more information about how to set the Tamper Event, refer to [Tamper Event Settings on page 103](#).

System Event Settings

You can set which action to perform if an event related to the disk (see [Figure 9-44](#)), recording (see [Figure 9-45](#)), network (see [Figure 9-47](#)) or system (see [Figure 9-46](#)) happens. You may want to notify the user of the event using the alarm output, buzzer, OSD popup and email.

When finished, click **APPLY** to apply the changes.

Figure 9-44 Web Viewer System Event Status - Disk

SYSTEM EVENT STATUS

DISK RECORD SYSTEM NETWORK

EVENT TYPE	ACTION			
	ALARM OUT	BUZZER	OSD POPUP	EMAIL
OVERWRITE START EVENT	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DISK FULL EVENT	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
DISK SPACE EXHAUSTED EVENT 90%	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
S.M.A.R.T. EVENT	N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
NO DISK EVENT	N/A	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

Figure 9-45 Web Viewer System Event Status - Record

SYSTEM EVENT STATUS

DISK RECORD SYSTEM NETWORK

EVENT TYPE	ACTION		
	ALARM OUT	BUZZER	EMAIL
PANIC RECORD START EVENT	N/A	<input type="checkbox"/>	<input type="checkbox"/>

APPLY CANCEL

Figure 9-46 Web Viewer System Event Status - System

SYSTEM EVENT STATUS

DISK RECORD SYSTEM NETWORK

EVENT TYPE		ACTION			
		ALARM OUT	BUZZER	OSD POPUP	EMAIL
BOOTING EVENT		N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LOGIN FAIL EVENT	RETRY 3 TIMES	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
FAN FAIL EVENT		N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
TEMPERATURE FAIL EVENT		N/A	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

APPLY CANCEL

Figure 9-47 Web Viewer System Event Status - Network

SYSTEM EVENT STATUS

DISK RECORD SYSTEM NETWORK

EVENT TYPE		ACTION		
		ALARM OUT	BUZZER	EMAIL
TROUBLE IN INTERNET CONNECTION		N/A	<input type="checkbox"/>	<input type="checkbox"/>
FAIL IN REMOTE LOGIN	RETRY 3 TIMES	N/A	<input type="checkbox"/>	<input type="checkbox"/>
FAIL IN DDNS UPDATE	RETRY 3 TIMES	N/A	<input type="checkbox"/>	<input type="checkbox"/>

APPLY CANCEL

Note For more information about how to set the system event, refer to [System Event Settings on page 100](#).

Recording Setup

Record Settings

You can set the recording options for Auto (see [Figure 9-49](#)) or Manual (see [Figure 9-48](#)) mode.

When finished, click **APPLY** to apply the changes.


Figure 9-48 Web Viewer Recording Configuration - Manual

Figure 9-49 Web Viewer Recording Configuration - Automatic

Note For more information about how to set each mode, refer to [Operation Mode Settings on page 106](#).

Continuous Recording Settings

You can configure the settings of: continuous recording time (see [Figure 9-51](#)), recording size, frame rate per second and quality (see [Figure 9-50](#)).

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.

Figure 9-50 Web Viewer Continuous Recording - Size/FPS/Quality

The screenshot shows the 'CONTINUOUS REC' window with the 'SCHEDULE' tab selected. At the top, there are two tabs: 'SIZE/FPS/QUALITY' and 'SCHEDULE'. Below the tabs is a timeline from 0 to 24 hours with markers at 0, 6, 12, 18, and 24. The main area is a table with columns for Resolution, FPS, Quality, and Audio. All 16 cameras (CAM1 to CAM16) are configured with Resolution: 960x480, FPS: 30, Quality: Highest, and Audio: Off. There are 'APPLY' and 'CANCEL' buttons at the bottom right.

	RESOLUTION	FPS	QUALITY	AUDIO
CAM1	960x480	30	Highest	Off
CAM2	960x480	30	Highest	Off
CAM3	960x480	30	Highest	Off
CAM4	960x480	30	Highest	Off
CAM5	960x480	30	Highest	Off
CAM6	960x480	30	Highest	Off
CAM7	960x480	30	Highest	Off
CAM8	960x480	30	Highest	Off
CAM9	960x480	30	Highest	Off
CAM10	960x480	30	Highest	Off
CAM11	960x480	30	Highest	Off
CAM12	960x480	30	Highest	Off
CAM13	960x480	30	Highest	Off
CAM14	960x480	30	Highest	Off
CAM15	960x480	30	Highest	Off
CAM16	960x480	30	Highest	Off

Figure 9-51 Web Viewer Continuous Recording - Schedule

The screenshot shows the 'CONTINUOUS REC' window with the 'SCHEDULE' tab selected. At the top, there are two tabs: 'SIZE/FPS/QUALITY' and 'SCHEDULE'. Below the tabs is a timeline from 0 to 24 hours with markers at 0, 6, 12, 18, and 24. A legend shows a black square for 'Off' and a cyan square for 'On'. The main area is a grid where all cells for 16 cameras (CAM1 to CAM16) are cyan, indicating recording is on. There are 'SELECT ALL', 'REVERSE ALL', and 'Deselect ALL' buttons above the 'APPLY' and 'CANCEL' buttons at the bottom right.

Note For more information about the continuous recording size and schedule, refer to [Continuous Recording Settings on page 108](#).

Motion Recording Settings

Set the **SIZE/FPS/QUALITY/AUDIO** (see *Figure 9-52*) and the **SCHEDULE** (see *Figure 9-53*) to apply if a motion event occurs.

Click next to each item to display the list of values available.

Figure 9-52 Web Viewer Motion Recording - Size/FPS/Quality

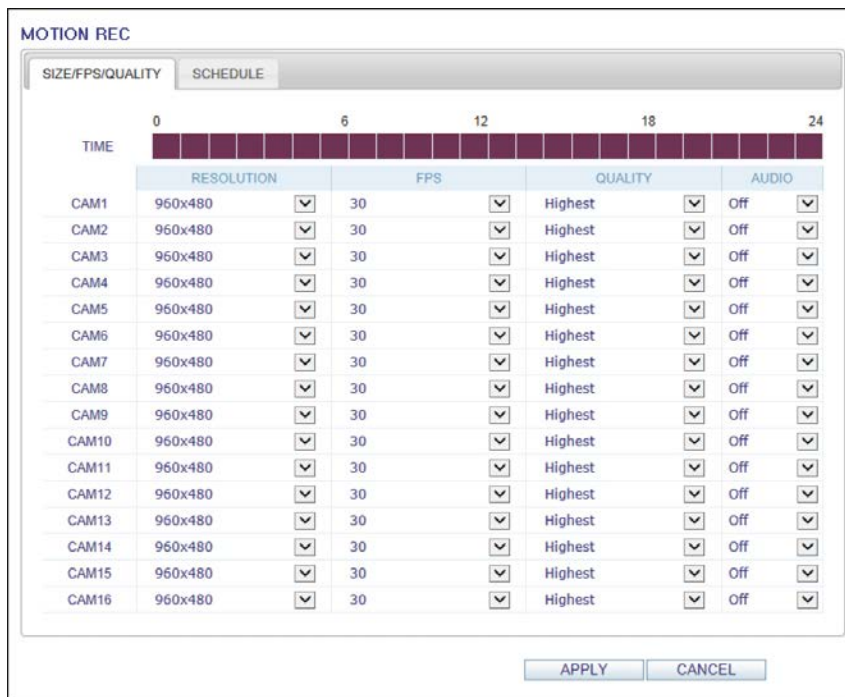
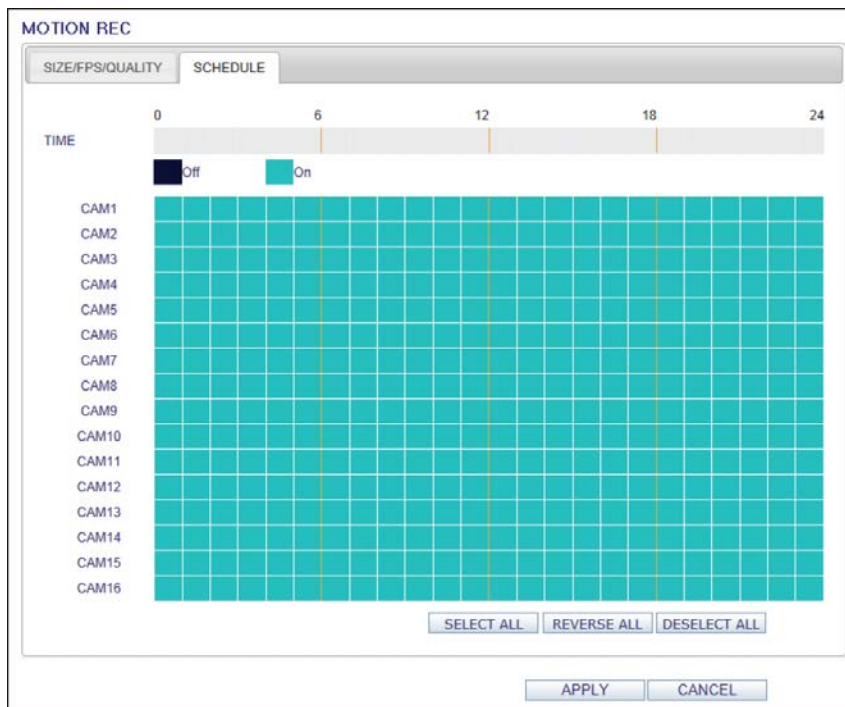


Figure 9-53 Web Viewer Motion Recording - Schedule



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

Note For more information about the motion recording size and schedule, refer to [Motion Recording Settings on page 110](#).

Alarm Recording Settings

Set the **SIZE/FPS/QUALITY/AUDIO** (see [Figure 9-54](#)) and the **SCHEDULE** (see [Figure 9-55](#)) to apply if an alarm event occurs.

Click next to each item to display the list of values available.

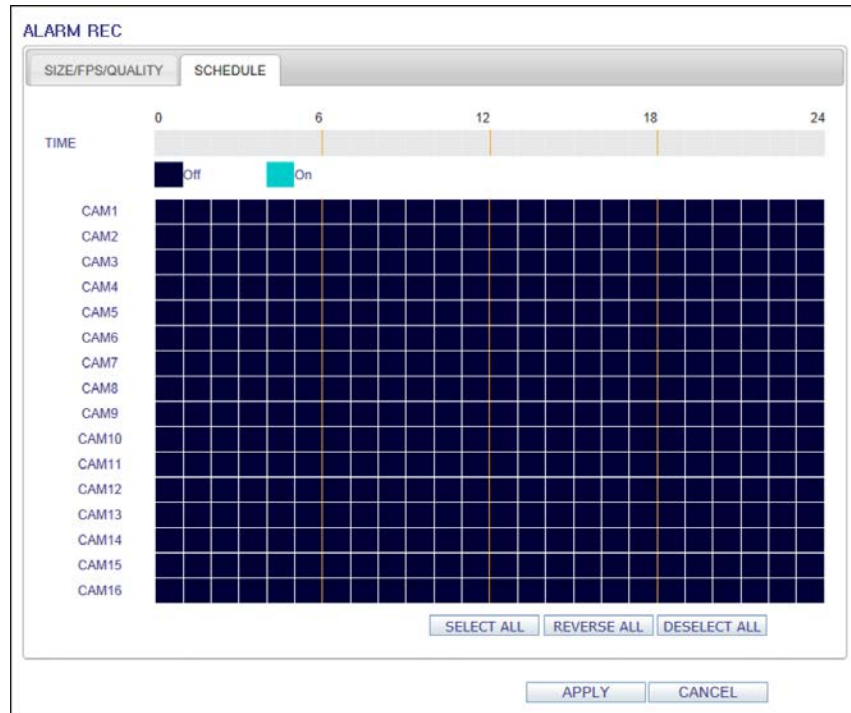
Complete setting the **SIZE/FPS/QUALITY/AUDIO** for the alarm recording as well as the **SCHEDULE**, and click **OK** to apply the changes.

Note For more information about the alarm recording size and schedule, refer to [Alarm Recording Settings on page 111](#).

Figure 9-54 Web Viewer Alarm Recording - Size/FPS/Quality

TIME	0				6				12				18				24			
	RESOLUTION	FPS	QUALITY	AUDIO	RESOLUTION	FPS	QUALITY	AUDIO	RESOLUTION	FPS	QUALITY	AUDIO	RESOLUTION	FPS	QUALITY	AUDIO	RESOLUTION	FPS	QUALITY	AUDIO
CAM1	960x480	30	Highest	Off																
CAM2	960x480	30	Highest	Off																
CAM3	960x480	30	Highest	Off																
CAM4	960x480	30	Highest	Off																
CAM5	960x480	30	Highest	Off																
CAM6	960x480	30	Highest	Off																
CAM7	960x480	30	Highest	Off																
CAM8	960x480	30	Highest	Off																
CAM9	960x480	30	Highest	Off																
CAM10	960x480	30	Highest	Off																
CAM11	960x480	30	Highest	Off																
CAM12	960x480	30	Highest	Off																
CAM13	960x480	30	Highest	Off																
CAM14	960x480	30	Highest	Off																
CAM15	960x480	30	Highest	Off																
CAM16	960x480	30	Highest	Off																

Figure 9-55 Web Viewer Alarm Recording - Schedule

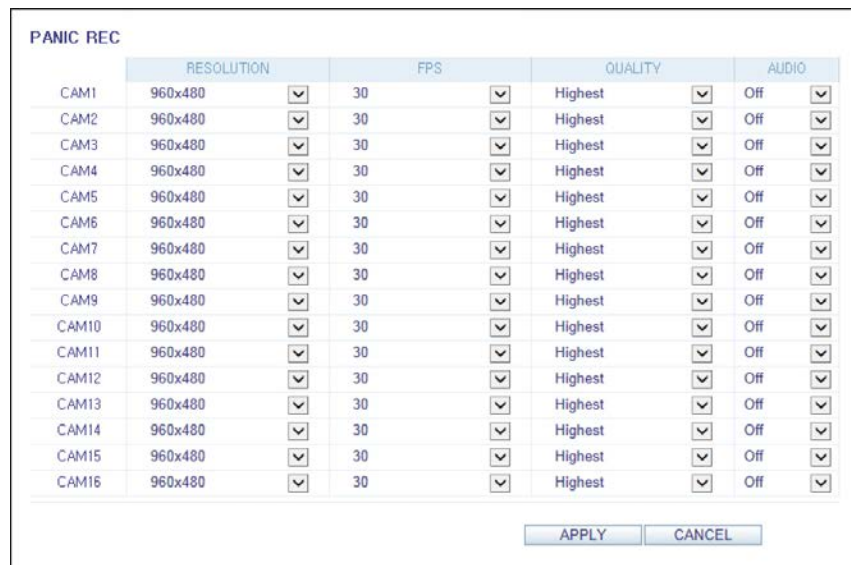


Panic Recording Settings

From the **PANIC RECORD** menu, you can set the resolution, FPS, quality and audio settings to your preference (see *Figure 9-56*).

Click next to each item to display the list of values available.

Figure 9-56 Web Viewer Panic Recording Settings



When you have completed the manual record settings, click **OK** to apply the changes.

Note For more information about the manual record settings, refer to [Panic Recording Settings on page 112](#).

Network Streaming Settings

You can specify the maximum size of network streaming and video resolution for remote users and change the FPS (see [Figure 9-57](#)).

Click next to each item to display the list of values available.

When done, click **OK** to apply the settings.

Figure 9-57 Web Viewer Network Streaming Settings

NETWORK STREAMING				
	MAX RESOLUTION		MAX FPS	
CAM1	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM2	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM3	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM4	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM5	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM6	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM7	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM8	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM9	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM10	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM11	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM12	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM13	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM14	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM15	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>
CAM16	960x480	<input type="checkbox"/>	30	<input type="checkbox"/>

About

Click the **INFORMATION** tab to check the model name of the DVR as well as the web viewer version (see [Figure 9-58](#)).

Figure 9-58 Web Viewer Information

Web Viewer Information
DVR Model : 16CH / 480FPS
WEB Version : WEB_v2.1.2_1.2.7.9_120622

10

Mobile Viewer

HREP2 Mobile Remote Viewer Overview

You can use the HREP2 smart mobile remote viewer to monitor the network on a remote site and play the monitoring video anytime, anywhere.

HREP2 Mobile Viewer Specification

Minimum / Recommended Specification

Table 10-1 Mobile System Requirements

Device	Minimum Specification	Recommended Specification
Android Phone	Processor: 800 MHz or higher	Processor: 1 GHz or higher
	Flash: 512 MB or higher	Flash: 512 MB
	RAM: 512 MB or higher	RAM: 512 MB
	SD Card: 4 GB or higher	SD Card: 16 GB or higher
	OS: 2.0 or higher	OS: 2.1 or higher
Device	Supported Models	Recommended Specifications
iPhone/iPad	iPhone 3G	iPhone 3GS or higher
	iPhone OS 3.1.2 or higher	iPhone OS 3.2 or higher
	iPad 2	iOS 4.3 or higher
	iPad 3 with Retina display	iOS 4.3 or higher
	iPod Touch 3rd Generation	

Using the HREP2 Mobile Viewer with iPhone/iPad

How to Download the iPhone/iPad-Dedicated Application

From your iPhone or iPad, access the App Store.

Enter **HREP2** in the search bar to find the application. Download the application and install it on your iPhone/iPad.

Note The HREP2 Mobile Remote Viewer supports the 1/4 split screen mode.

Note The HREP2 Mobile Remote Viewer is a free application that provides live viewing, playback, searching, log view, PTZ control and system configuration functions.

Connecting to the DVR with HREP2 Remote Viewer

1. Select and run the HREP2 Remote Viewer application.
2. Use **+** in the top right corner of the DVR List to select and add a site to the list (see [Figure 10-1](#)).

Figure 10-1 iPhone HREP2 Remote Viewer Empty DVR List



3. Enter the server name and tap **Save** (see [Figure 10-2](#)).

Figure 10-2 iPhone HREP2 Remote Viewer Server Name

4. Provide the IP address, HTTP port number and RTSP port number, and tap **Save** (see [Figure 10-3](#)).

Figure 10-3 iPhone HREP2 Remote Viewer IP and Ports

5. Provide the access ID of the DVR as well as the password (see [Figure 10-4](#)).
6. Specify the use of the Auto Login.
7. Tap **Save**.

Figure 10-4 iPhone HREP2 Remote Viewer ID and Password

8. Select the site that you added in the DVR List (see [Figure 10-5](#)).

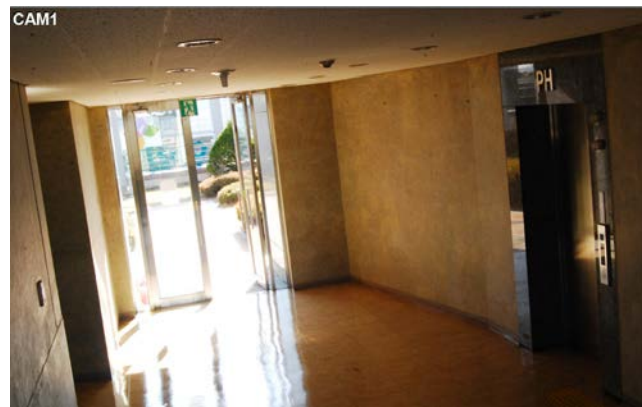
Figure 10-5 iPhone HREP2 Remote Viewer DVR List with Added DVR



9. Try to access the DVR.

If connected successfully, you will see the screen as shown in [Figure 10-6](#).

Figure 10-6 iPhone HREP2 Remote Viewer Live Screen

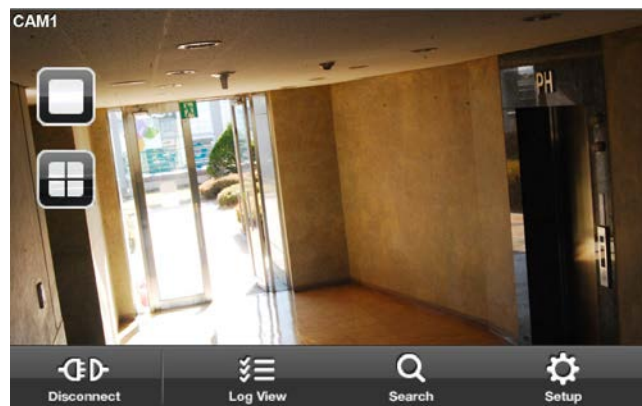




Split Screen Mode

1. Tap any area on the screen.

The main menu appears at the bottom of the screen (see [Figure 10-7](#)).

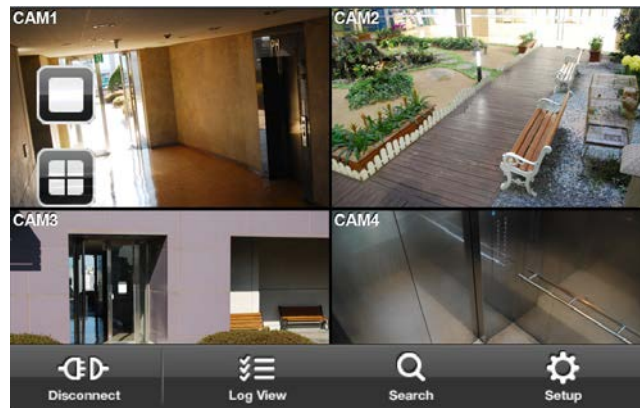
Figure 10-7 iPhone HREP2 Remote Viewer Live Screen with Main Menu



2. Tap  in the top left corner to switch to 1-split mode. Tap  to switch to 4-split mode (see [Figure 10-8](#)).

Note Swipe the screen to the left or right to move to the next camera video screen.

Figure 10-8 iPhone HREP2 Remote Viewer Live Screen Quad View



Using the Log View


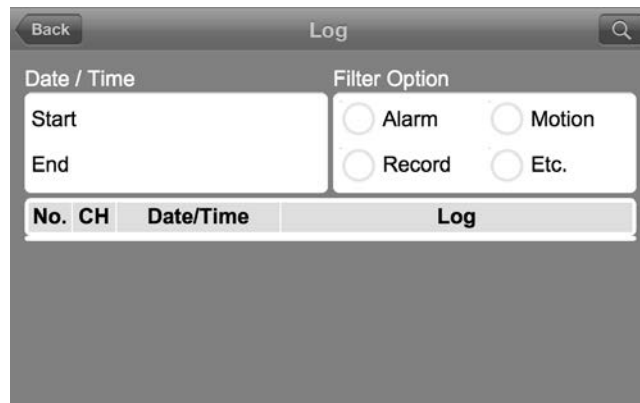
1. From the main menu, tap . You can check the log of the stored data (see [Figure 10-9](#)).

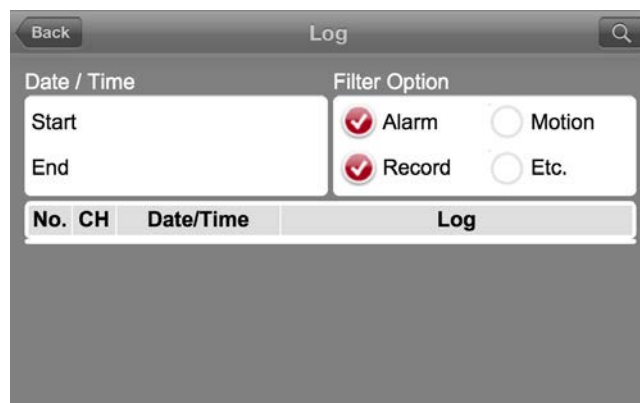
Figure 10-9 iPhone HREP2 Remote Viewer Log View



2. Select one or more from **Alarm**, **Motion**, **Record**, and **Etc.** and tap  (see [Figure 10-10](#)).

You will view the log of related items.

Figure 10-10 iPhone HREP2 Remote Viewer Log View with Filter Selected



Using the Search Function


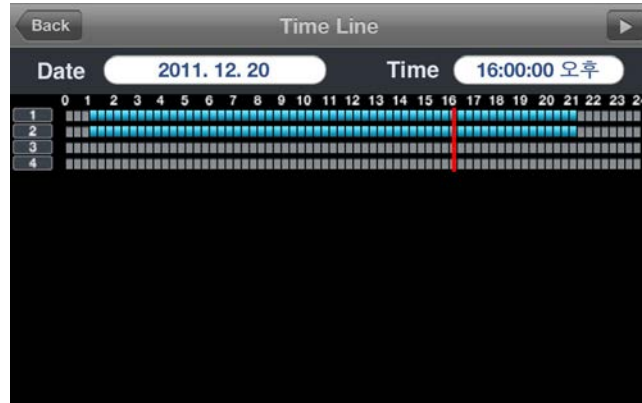
1. From the main menu, tap . You can view the history of the stored data.
2. Select a desired time and date for searching (see [Figure 10-11](#)).
You can use the vertical time bar to specify the start time.

Figure 10-11 iPhone HREP2 Remote Viewer Time Line




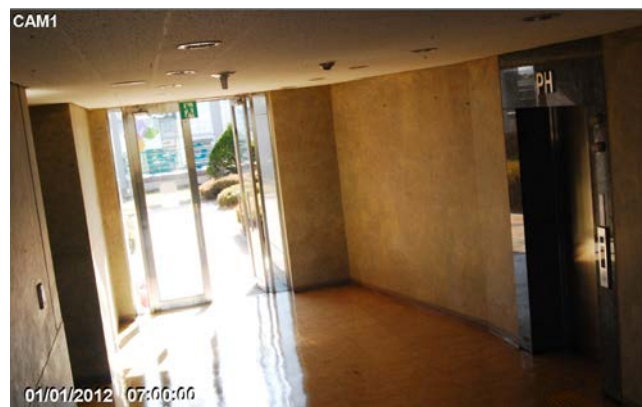
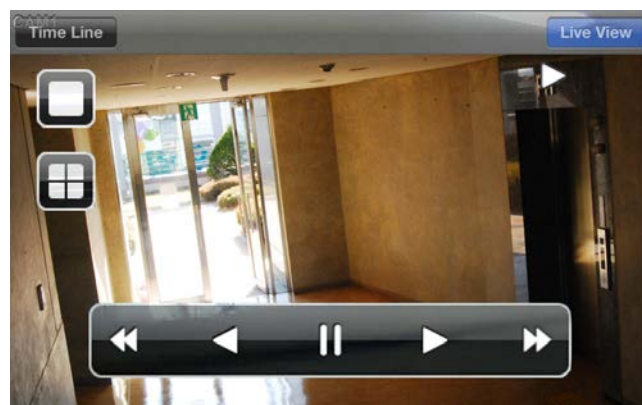
3. Tap  to play the video recorded at the specified time (see [Figure 10-12](#)).

Figure 10-12 iPhone HREP2 Remote Viewer Playback



4. Touch any area of the screen to display the play bar with which you can control the playing direction and speed of the video playback (see [Figure 10-13](#)).

Figure 10-13 iPhone HREP2 Remote Viewer Playback with Play Bar



Using the Setup Function

From the main menu, click  (see [Figure 10-14](#)).

You will be connected to the web viewer site.

Figure 10-14 iPhone HREP2 Remote Viewer Setup Screen



Note For more details about the setup options for the DVR, refer to [System Setup on page 55](#).

Using the HREP2 Remote Viewer with Android

How to Download the Android-Dedicated Application

From your smart phone, access the Market.

Enter **HREP2** in the search bar to find it. Download the application and install it on your Smart Phone.

Note The HREP2 Mobile Remote Viewer supports the 1/4 split screen mode.

Note The HREP2 Mobile Remote Viewer is a free application that provides live viewing, playback, searching, log view, PTZ control and system configuration functions.

Connecting to the DVR with HREP2 Remote Viewer

1. Select and run the HREP2 Remote Viewer application.
2. Press the **Menu** button and tap **Add Connection** to select and add a site to the list (see [Figure 10-15](#)).

Figure 10-15 Android HREP2 Remote Viewer Empty DVR List

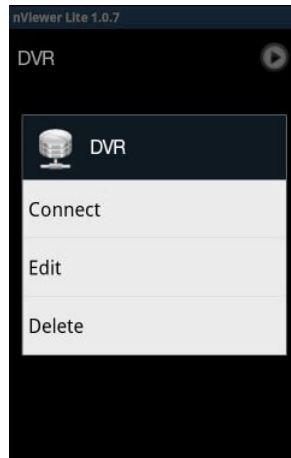


3. Please enter a **Name** for the new connection (see [Figure 10-16](#)).
4. Provide the IP address (**URL**), **HTTP Port** number and **RTSP Port** number, and click **Save**.

Figure 10-16 Android HREP2 Remote Viewer Add Connection Form

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. Tap **Save**.
8. Select the site that you added in the DVR List.
Tap and hold the DVR name to display the pop-up window (see [Figure 10-17](#)).

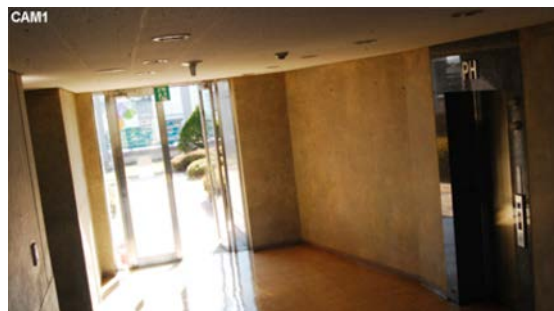
Figure 10-17 Android HREP2 Remote Viewer DVR List with Pop-Up Window



9. Tap **Connect** and try to access the DVR.

If connected successfully, you will see the screen as shown in [Figure 10-18](#).

Figure 10-18 Android HREP2 Remote Viewer Live Screen

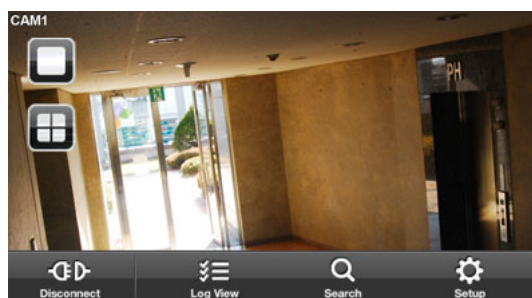




Split Screen Mode

1. Tap any area on the screen.

The main menu appears at the bottom of the screen (see [Figure 10-19](#)).

Figure 10-19 Android HREP2 Remote Viewer Live Screen with Menu



2. Tap  in the top left corner to switch to 1-split mode. Tap  to switch to 4-split mode.

Note Swipe the screen to the left or right to move to the next camera video screen.

Using the Log View


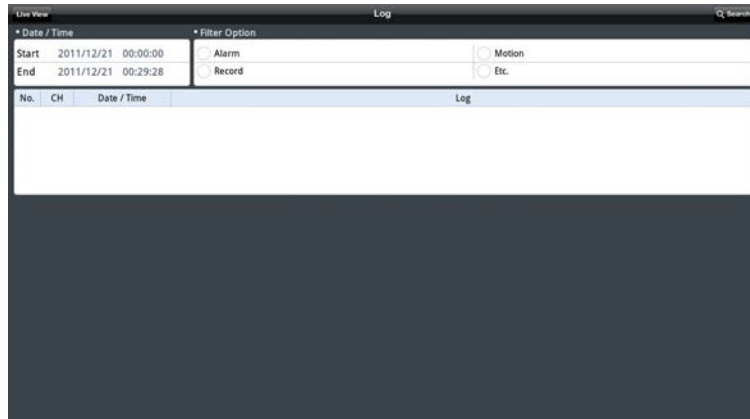
1. From the main menu, tap  (see [Figure 10-20](#)).
You can check the log of the data stored.

Figure 10-20 Android HREP2 Remote Viewer Log View



2. Select one or more from **Alarm**, **Motion**, **Record**, **Etc.** and click **Search**.
You will view the log of related items (see [Figure 10-21](#)).

Figure 10-21 Android HREP2 Remote Viewer Log View with Search Results



Using the Search Function


1. From the main menu, tap .
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 (see [Figure 10-22](#)).

Figure 10-22 Android HREP2 Remote Viewer Search Timeline



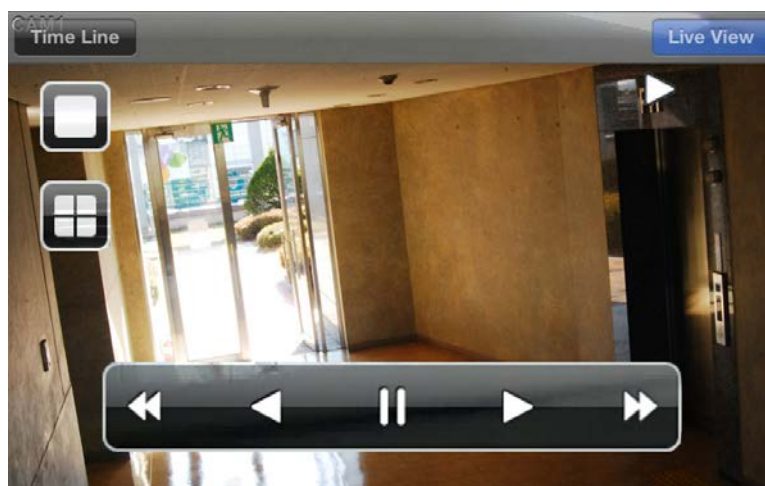
3. Tap **Play** to play the video recorded at the specified time (see [Figure 10-23](#)).

Figure 10-23 Android HREP2 Remote Viewer Playback Screen



4. Click any area to display the play bar with which you can control the playing direction and speed of the video (see [Figure 10-24](#)).

Figure 10-24 Android HREP2 Remote Viewer Playback Screen with Controls



Using the Setup Function


From the main menu, click . You will be connected to the web viewer site and can make configuration changes to the unit (see [Figure 10-25](#)).

Figure 10-25 Android HREP2 Remote Viewer Setup Screen



Note For more details about the setup options for the DVR, refer to [System Setup on page 55](#).

11

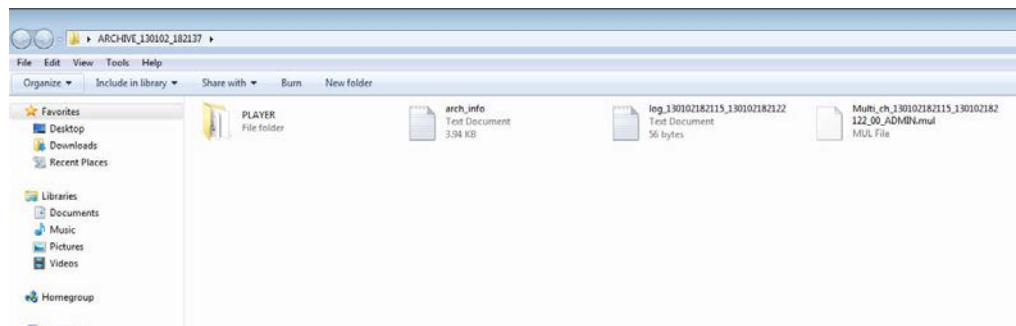
Archive Viewer

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

Getting Started with the Backup Player

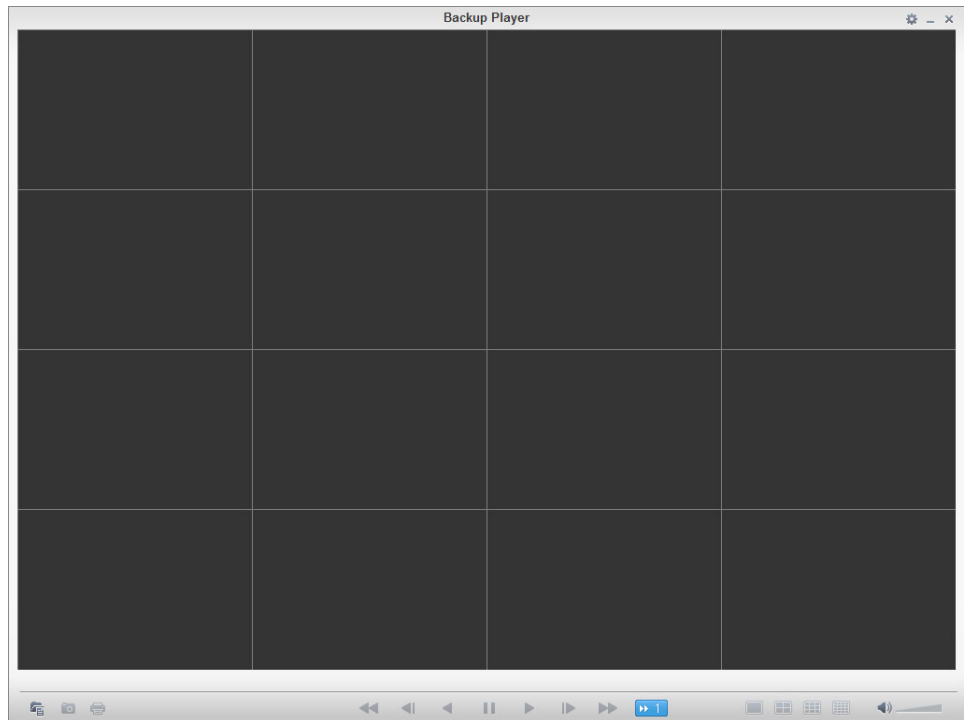
1. Connect the DVR to the backup USB storage device.
2. Open the folder saving the archived images.

Figure 11-1 Opening Folder of Archived Images



3. Run the Backup Player (see [Figure 11-2](#)).

Figure 11-2 Backup Player




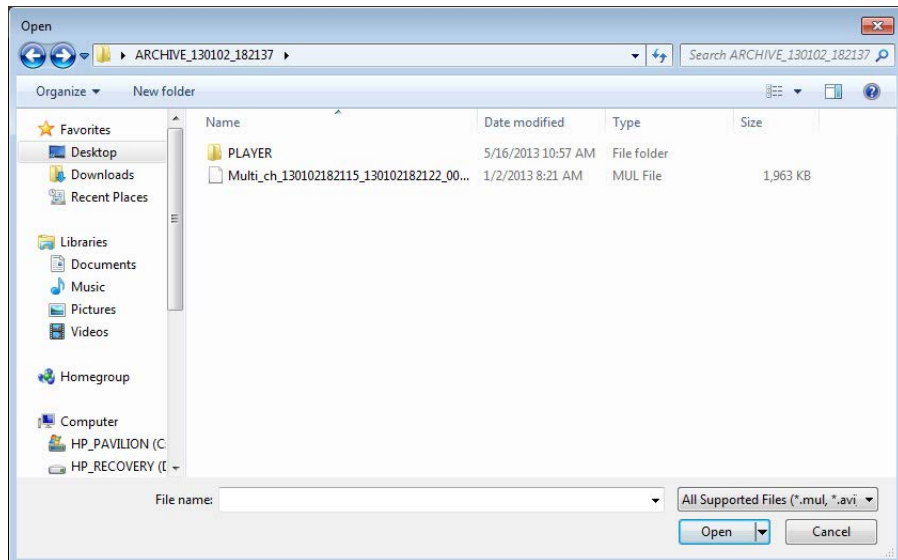
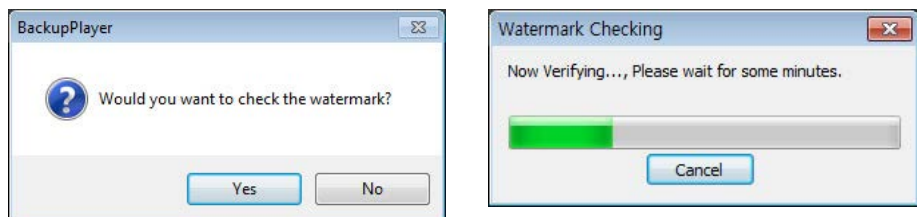
4. Click  in the bottom left corner to display the file browser (see [Figure 11-3](#)). Select the archived file to play.

Figure 11-3 Selecting Archived File to Play



5. Check the integrity of the archived file (see [Figure 11-4](#)).

Figure 11-4 Checking Watermark of Archived File



- When finished, the archived file will be played on the screen.

Using the Backup Player

Figure 11-5 Backup Player Overview

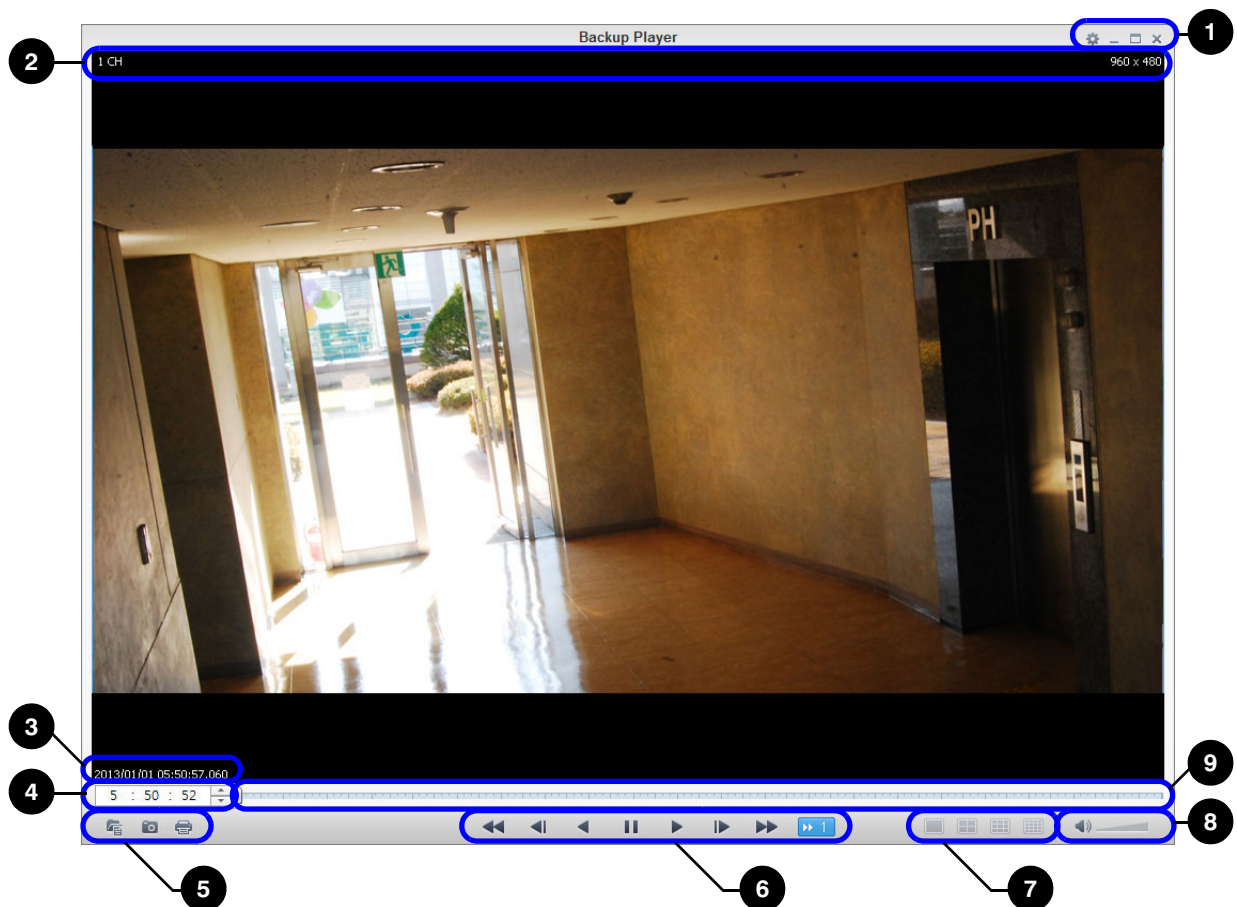



Table 11-1 Backup Player Screen Descriptions

No.	Name	Description
1	Setup	Configure the environment settings.
	Minimize, Close	Minimize or close the Backup Player.
2	Channel Information	Show the channel information and the video resolution.
3	Play Time	Display the time of the current video image.
4	Play Time	Display the current playback time.
	File Search	Open the file that you backed up.
	Capture	Capture the current screen.
5	Print	Print out the current screen.

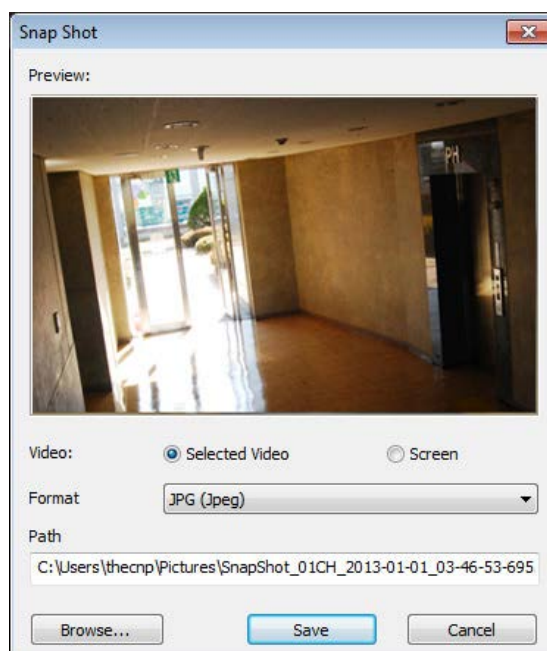
Table 11-1 Backup Player Screen Descriptions (cont'd)

No.	Name	Description
6	Playback Control	Control the playback direction and speed of the current video. For more information about how to use the playback controls, see Playback Controls on page 125 .
7	Split Mode	Switch to 1-/4-/9-/16-split screen mode.
8	Audio Setting	Show the sound signal status and volume level.
9	Play Bar	Display the current playback position in the video.

Video Capturing

Click  to capture the current video image (see [Figure 11-6](#)).

- **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

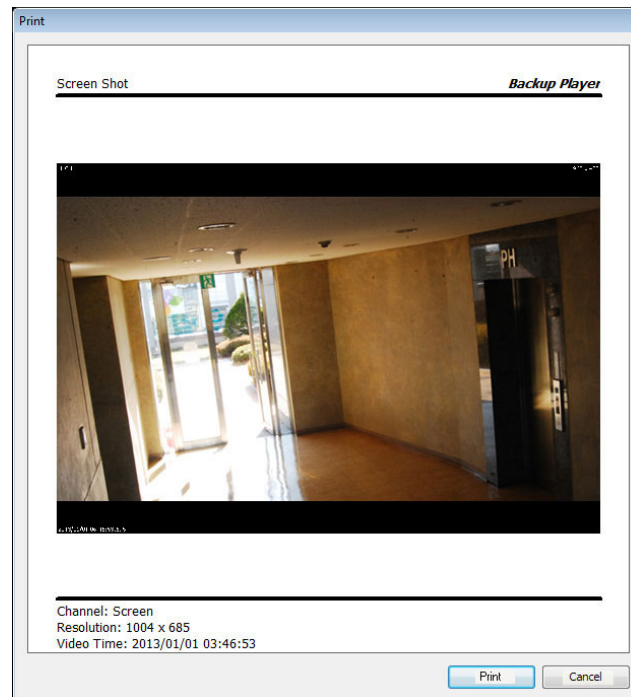
Figure 11-6 Video Capture Screen

Printing Out


Click  to print out the image.

When the Print window appears (see [Figure 11-7](#)), check the preview and click **Print**.

Figure 11-7 Print Image Screen



Backup Player Settings

Click  to configure the Backup Player settings (see [Figure 11-8](#)). You can check the version of the Backup Player (see [Figure 11-9](#)).

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

Figure 11-8 Backup Player Settings Screen

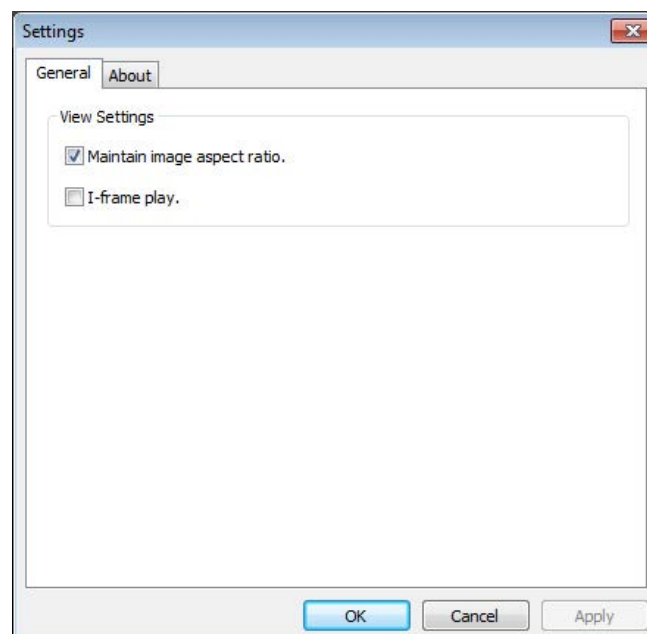
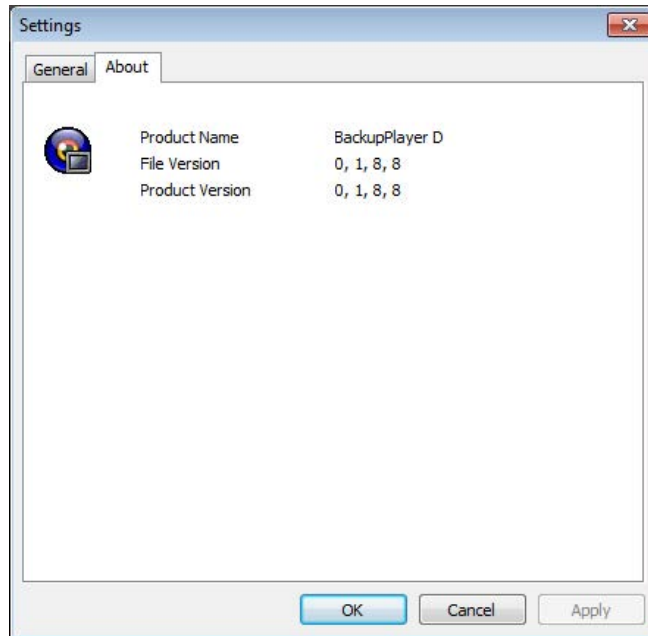


Figure 11-9 Backup Player About Screen





Specifications

Table A-1 HREP2 DVR Specifications

Category	Item	4-Channel	8-Channel	16-Channel
VIDEO	INPUT SIGNAL	NTSC/PAL	NTSC/PAL	NTSC/PAL
	MAIN MONITOR	VGA/HD	VGA/HD	VGA/HD
	SPOT OUT	Sub monitor (Digital) 2 CH	Analog 1 CH (1 Vp-p @ 75 ohms), Sub monitor (Digital)	Analog 1 CH (1 Vp-p @ 75 ohms), Sub monitor (Digital)
	LOOP THROUGH	Software controlled termination / 4 CH (1 Vp-p @ 75 ohms) for ANF3G-H 0412	Software controlled termination (TBD)	Software controlled termination (TBD)
	MOTION DETECTION	YES	YES	YES
AUDIO	INPUT SIGNAL	4 CH (10,000 ohms, 2.8 Vp-p)	4 CH (10,000 ohms, 2.8 Vp-p)	4 CH (10,000 ohms, 2.8 Vp-p)
	OUTPUT SIGNAL	1 CH (600 ohms, 2.8 Vp-p)	1 CH (600 ohms, 2.8 Vp-p)	1 CH (600 ohms, 2.8 Vp-p)
	CODEC	G.711	G.711	G.711
RECORDING	CODEC	H.264 HP	H.264 HP	H.264 HP
	REC. RATE	Up to 120 FPS / 100 FPS @ 960H	Up to 240 FPS / 200 FPS @ 960H	Up to 480 FPS / 400 FPS @ 960H
		Up to 120 FPS / 100 FPS @ D1	Up to 240 FPS / 200 FPS @ D1	Up to 480 FPS / 400 FPS @ D1
		Up to 120 FPS / 100 FPS @ 2CIF	Up to 240 FPS / 200 FPS @ 2CIF	Up to 480 FPS / 400 FPS @ 2CIF
		Up to 120 FPS / 100 FPS @ CIF	Up to 240 FPS / 200 FPS @ CIF	Up to 480 FPS / 400 FPS @ CIF
REC. RESOLUTION	CIF, 2CIF, D1, 960H	CIF, 2CIF, D1, 960H	CIF, 2CIF, D1, 960H	
ALARM I/O	ALARM INPUT	4 CH, Pulled up to 5 V via 10,000 ohms	4 CH, Pulled up to 5 V via 10,000 ohms	4 CH, Pulled up to 5 V via 10,000 ohms
	ALARM OUT	2 CH, RELAY (5 V, 35 mA)	2 CH, RELAY (5 V, 35 mA)	2 CH, RELAY (5 V, 35 mA)

Table A-1 HREP2 DVR Specifications (cont'd)

Category	Item	4-Channel	8-Channel	16-Channel
STORAGE	INTERNAL HDD	2 EACH	4 EACH, Up to 2 TB HDD Disk	4 EACH, Up to 2 TB HDD Disk
	EXTERNAL STORAGE	NAS (FTP Server, for backup)	eSATA, NAS (FTP Server, for backup)	eSATA, NAS (FTP Server, for backup)
	INTERNAL ODD	1 EACH (DVD-RW) with HDD 2 EACH	1 EACH (DVD-RW) with HDD 2 EACH	1 EACH (DVD-RW) with HDD 2 EACH
INTERFACES	USB	3 Ports (2 Front + 1 Rear)	3 Ports (2 Front + 1 Rear)	3 Ports (2 Front + 1 Rear)
	RS-485	1	1	1
	RS-232	1	1	1
	LAN	1 (WAN) - 10/100/1000 Mbps	1 (LAN) + 1 (WAN) - 10/100/1000 Mbps	1 (LAN) + 1 (WAN) - 10/100/1000 Mbps
	REMOTE CONTROL	YES	YES	YES
ETC	SIGNAL SWITCH	NTSC/PAL	NTSC/PAL	NTSC/PAL
	WATCHDOG	YES	YES	YES
	COOLING FAN	Max 1x 60 mm	Max 2x 60 mm	Max 2x 60 mm
POWER	POWER SUPPLY	12 V DC, Adapter, 5 A, 100 ~ 200 V AC, 50-60 HZ	12 V DC, Adapter, 5 A (2HDD), 100 ~ 240 V AC, 50-60 HZ 12 V DC, Adapter, 6.67 A (4HDD), 100 ~ 240 V AC, 50-60 HZ	12 V DC, Adapter, 5 A (2HDD), 100 ~ 240 V AC, 50-60 HZ 12 V DC, Adapter, 6.67 A (4HDD), 100 ~ 240 V AC, 50-60 HZ
	POWER CONSUMPTION	20 W (HDD 2 each, Seagate Pipeline, 500 GB)	35 W (HDD 4 each, Seagate Pipeline, 500 GB)	35 W (HDD 4 each, Seagate Pipeline, 500 GB)
ENVIRONMENT	TEMPERATURE	0°C ~ 40° C (32°F ~ 104°F)	0°C ~ 40° C (32°F ~ 104°F)	0°C ~ 40° C (32°F ~ 104°F)
	HUMIDITY	10 ~ 90% non-condensing	10 ~ 90% non-condensing	10 ~ 90% non-condensing
CHASSIS	DIMENSION (WxDxH)	1.5 U (360 x 360 x 66 mm)	1.5 U (360 x 360 x 66 mm)	1.5 U (360 x 360 x 66 mm)
	WEIGHT	Unit: 4.4 kg Shipping: 7.5 kg	Unit: 4.4 kg Shipping: 7.5 kg	Unit: 4.4 kg Shipping: 7.5 kg
CERTIFICATION	Emissions	CE: EN 55022 class B FCC: Part 15B class B	CE: EN 55022 class B FCC: Part 15B class B	CE: EN 55022 class B FCC: Part 15B class B
	Immunity	EN 55022: 2010 EN 61000-3-2: 2006 + A1: 2009 +A2: 2009 EN 61000-3-3: 2008 EN 50130-4 EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011	EN 55022: 2010 EN 61000-3-2: 2006 + A1: 2009 +A2: 2009 EN 61000-3-3: 2008 EN 50130-4 EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011	EN 55022: 2010 EN 61000-3-2: 2006 + A1: 2009 +A2: 2009 EN 61000-3-3: 2008 EN 50130-4 EN 60950-1: 2006 + A11: 2009 + A1: 2010 + A12: 2011
	Safety	CSA, UL 60950-1	CSA, UL 60950-1	CSA, UL 60950-1

B

Hard Drives

Compatible HDD Specifications

Table B-1 Hard Disk Drive Minimum Specifications

Specification	Requirement
Maximum SATA Speed	<ul style="list-style-type: none">• SATA1 (1.5 G): Can be used• SATA2 (3.0 G): Can be used• SATA3 (6.0 G): Devices of backward compatibility to SATA2 (3.0 G) can be used.
Maximum Start-up Current	12 V, 2 A (or lower)
Maximum Average Operation Power Consumption	7.0 W (or lower)
Maximum R/W Latency	Latency (Read: 13 ms / Write: 13 ms) or smaller

Note Use 3.5" HDD disks.

Note Using HDD devices other than recommended specifications may cause serious problems.

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



Troubleshooting

Table C-1 Frequently Asked Questions

Problem	Action
The system does not operate at all with no active LED in the front panel.	<ul style="list-style-type: none">• Make sure that the system gets supplied with power properly.• Check the input voltage.
The unit continuously reboots.	<ul style="list-style-type: none">• Check if the system fan in a side panel of the unit or the CPU fan inside the unit works properly. If the fan 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 starts recording normally.
The front LED is lit, but nothing is displayed on the screen yet.	<ul style="list-style-type: none">• 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.	<ul style="list-style-type: none">• 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, it is called <i>JUST SCAN</i> for Samsung, <i>ZERO OVERSCAN</i> for LG, and so on). For details, refer to your monitor's user manual.
The camera is connected but no image is displayed.	<ul style="list-style-type: none">• 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.

Table C-1 Frequently Asked Questions (cont'd)

Problem	Action
It fails to connect to the web or mobile application.	<ul style="list-style-type: none"> • 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.	<ul style="list-style-type: none"> • 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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The software included in this product contains copyrighted software that is licensed under the GPL/LGPL.

- GPL Software: linux kernel, busybox, cdrtools, dvd+rw-tools, smartctl, uboot, bash, udev, sysklogd.
- LGPL Software: glibc, vmstat, glib, gtk, libESMTP, iconv, gstreamer, pango.
- OpenSSL License: OpenSSL.

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Honeywell Security Products Americas (Head Office)

2700 Blankenbaker Pkwy, Suite 150
Louisville, KY 40299, USA
www.honeywell.com/security
☎ +1 800 323 4576

Honeywell Security Europe/South Africa

Aston Fields Road, Whitehouse Industrial Estate
Runcorn, WA7 3DL, United Kingdom
www.honeywell.com/security/uk
☎ +44 (0) 1928 754 028

**Honeywell Security Products Americas
Caribbean/Latin America**

9315 NW 112th Ave.
Miami, FL 33178, USA
www.honeywell.com/security/clar
☎ +1 305 805 8188

Honeywell Security Pacific

Level 3, 2 Richardson Place
North Ryde, NSW 2113, Australia
www.asia.security.honeywell.com
☎ +61 2 9353 7000

Honeywell Security Asia

35F Tower A, City Center, 100 Zun Yi Road
Shanghai 200051, China
www.asia.security.honeywell.com
☎ +86 21 5257 4568

Honeywell Security Middle East/N. Africa

Emaar Business Park, Sheikh Zayed Road
Building No. 2, Office No. 30
Post Office Box 232362
Dubai, United Arab Emirates
www.honeywell.com/security/me
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Honeywell Security Northern Europe

Ampèrestraat 41
1446 TR Purmerend, The Netherlands
www.honeywell.com/security/nl
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Honeywell Security Deutschland

Johannes-Mauthe-Straße 14
D-72458 Albstadt, Germany
www.honeywell.com/security/de
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Honeywell Security France

Immeuble Lavoisier
Parc de Haute Technologie
3-7 rue Georges Besse
92160 Antony, France
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☎ +33 (0) 1 40 96 20 50

Honeywell Security Italia SpA

Via della Resistenza 53/59
20090 Buccinasco
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Honeywell Security España

Avenida de Italia, n° 7, 2ª planta
C.T. Coslada
28821 Coslada, Madrid, Spain
www.honeywell.com/security/es
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Document 800-15802 – Rev A – 12/2013

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