

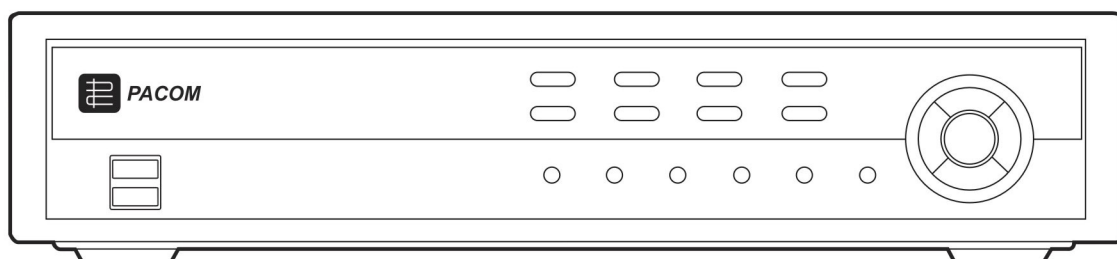


SmartIP-4E (S84237)

4 Channel Network Video Recorder

SmartIP-8E (S84238)

8 Channel Network Video Recorder





WARNING

RISK OF ELECTRIC SHOCK
DO NOT OPEN



WARNING: TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

COMPLIANCE NOTICE OF FCC:

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 USERS WILL BE REQUIRED TO CORRECT THE INTERFERENCE AT THEIR OWN EXPENSE.

WARNING: CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS OF DIGITAL APPARATUS MEETS ALL REQUIREMENTS OF THE CANADIAN INTERFERENCE-CAUSING EQUIPMENT REGULATIONS.

The information in this manual is believed to be accurate as of the date of publication. We are not responsible for any problems resulting from the use thereof. The information contained herein is subject to change without notice. Revisions or new editions to this publication may be issued to incorporate such changes.

The software included in this product contains some Open Sources. You may obtain the complete corresponding source code from us. See the Open Source Guide on the software CD (*OpenSourceGuide\OpenSourceGuide.pdf*) or as a printed document included along with the User's Manual.

Important Safeguards

1. Read Instructions

All the safety and operating instructions should be read before the appliance is operated.

2. Retain Instructions

The safety and operating instructions should be retained for future reference.

3. Cleaning

Unplug this equipment from the wall outlet before cleaning it. Do not use liquid aerosol cleaners. Use a damp soft cloth for cleaning.

4. Attachments

Never add any attachments and/or equipment without the approval of the manufacturer as such additions may result in the risk of fire, electric shock or other personal injury.

5. Water and/or Moisture

Do not use this equipment near water or in contact with water.

6. Ventilation

Place this equipment only in an upright position. This equipment has a high voltage circuit inside, which can cause a fire or electric shock if anything is inserted through the ventilation holes on the side of the equipment.

7. Accessories

Do not place this equipment on an unstable cart, stand or table. The equipment may fall, causing serious injury to a child or adult, and serious damage to the equipment. Wall or shelf mounting should follow the manufacturer's instructions, and should use a mounting kit approved by the manufacturer.



This equipment and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the equipment and cart combination to overturn.

8. Power Sources

This equipment 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, please consult your equipment dealer or local power company.

9. Power Cords

Operator or installer must remove power and TNT connections before handling the equipment.

10. Lightning

For added protection for this equipment during a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the equipment due to lightning and power-line surges.

11. Overloading

Do not overload wall outlets and extension cords as this can result in the risk of fire or electric shock.

12. Objects and Liquids

Never push objects of any kind through openings of this equipment as they may touch dangerous voltage points or short out parts that could result in a fire or electric shock. Never spill liquid of any kind on the equipment.

13. Servicing

Do not attempt to service this equipment yourself. Refer all servicing to qualified service personnel.

14. Damage requiring Service

Unplug this equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- A. When the power-supply cord or the plug has been damaged.
- B. If liquid is spilled, or objects have fallen into the equipment.
- C. If the equipment has been exposed to rain or water.
- D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the equipment to its normal operation.
- E. If the equipment has been dropped, or the cabinet damaged.
- F. When the equipment exhibits a distinct change in performance — this indicates a need for service.

15. Replacement Parts

When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

16. Safety Check

Upon completion of any service or repairs to this equipment, ask the service technician to perform safety checks to determine that the equipment is in proper operating condition.

17. Field Installation

This installation should be made by a qualified service person and should conform to all local codes.

18. Correct Batteries

Warning: Risk of explosion if battery is replaced by an incorrect type. Dispose of used batteries according to the instructions.

19. Tmra

A manufacturer's maximum recommended ambient temperature (Tmra) for the equipment must be specified so that the customer and installer may determine a suitable maximum operating environment for the equipment.

20. Elevated Operating Ambient Temperature

If installed in a closed or multi-unit rack assembly, the operating ambient temperature of the rack environment may be greater than room ambient. Therefore, consideration should be given to installing the equipment in an environment compatible with the manufacturer's maximum rated ambient temperature (Tmra).

21. Reduced Air Flow

Installation of the equipment in the rack should be such that the amount of airflow required for safe operation of the equipment is not compromised.

22. Mechanical Loading

Mounting of the equipment in the rack should be such that a hazardous condition is not caused by uneven mechanical loading.

23. Circuit Overloading

Consideration should be given to connection of the equipment to supply circuit and the effect that overloading of circuits might have on over current protection and supply wiring. Appropriate consideration of equipment nameplate ratings should be used when addressing this concern.

WEEE (Waste Electrical & Electronic Equipment)

Correct Disposal of This Product

(Applicable in the European Union and other European countries with separate collection systems)



This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please separate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.

Table of Contents

Chapter 1 — Introduction	1
Feature	1
Chapter 2 — Installation	3
Package Contents	3
Required Installation Tools	3
Audio Out	3
Video Out	4
Video Input	4
Network Port	4
Factory Reset Switch	4
Alarm Input/Output	5
Power Cord Connector	5
Chapter 3 — Configuration	7
Front Panel Controls	7
Camera Buttons	7
LED	7
Arrow Buttons	7
Play/Pause Button	8
Menu Button	8
PTZ/Zoom Button	8
Group/Sequence Button	8
Search Button	8
Display Button	8
Panic Button	8
USB Port	8
Remote Control Buttons	9
ID Button	9
Camera Buttons	9
Search Button	9
Arrow Buttons	10
Alarm Button	10
Sequence Button	10
Menu Button	10
Playback Buttons	10
Bookmark Button	10
Panic Button	10
Layout Button	10
Freeze Button	10
Log Button	11
Enter Button	11
Zoom Button	11
Clip Copy Button	11
Turning on the Power	11
Initial Unit Setup	11
Setup Screen	12
System Setup	12

General	12
Date/Time	21
User	23
Storage	24
Recording Setup	26
General	26
Schedule	27
Pre-Event	29
Network Setup	30
General	30
IP Address	31
DVRNS	32
RTSP	34
Notification	35
Event Setup	37
Video-Analytics	37
Alarm-In	41
Video Loss	41
System Event	42
Device Setup	43
Alarm-Out	43
Display Setup	44
OSD	44
Monitor	45
Status Setup	46
Event	46
Storage	47
Camera Setup	47
Network Camera	47
General	49
Profile	51
Upgrade	53
Chapter 4 — Operation	55
Turning on the Power	55
Live Monitoring	55
Live Monitoring Menu	55
Active Cameo Mode	57
Zoom Mode	57
Event Monitoring	57
Covert Camera	58
Recording Video	58
Panic Recording	58
Recording Audio	58
Playing Recorded Video	59
Searching Video	60
Search Menu	60
Event Log Search	62
Record Table Search	63
Motion Search	65
Bookmarks	66

Clip-Copy	66
Appendix	69
USB Hard Disk Drive Preparation	69
Time Overlap	69
WebGuard	70
Web Monitoring Mode	71
Web Search Mode	72
Map of Screens	74
Troubleshooting	75
System Log Notices	75
Error Code Notices	76
Specifications	77

List of Illustrations

Figure 1 : Typical NVR installation.	1
Figure 2 : NVR rear panel.	3
Figure 3 : 8-Channel NVR front panel.	7
Figure 4 : Infrared remote control.	9
Figure 5 : Login screen.	11
Figure 6 : Logout screen.	12
Figure 7 : Setup screen.	12
Figure 8 : System – General setup screen.	13
Figure 9 : System – Date/Time setup screen.	21
Figure 10 : System – User setup screen.	23
Figure 11 : System – Storage setup screen.	25
Figure 12 : Record – General setup screen.	26
Figure 13 : Record – Schedule setup screen.	27
Figure 14 : Schedule – Settings (Advanced Mode) setup screen.	28
Figure 15 : Record – Pre-Event setup screen.	29
Figure 16 : Network – General setup screen.	30
Figure 17 : Network – IP Address (Manual) setup screen.	31
Figure 18 : Network – DVRNS setup screen.	33
Figure 19 : Network – RTSP setup screen.	34
Figure 20 : Network – Notification setup screen.	35
Figure 21 : Event – Video-Analytics (Motion) setup screen.	37
Figure 22 : Event – Video-Analytics (TripZone) setup screen.	39
Figure 23 : Event – Video-Analytics (Tampering) setup screen.	40
Figure 24 : Event – Alarm-In setup screen.	41
Figure 25 : Event – Video Loss setup screen.	42
Figure 26 : Event – System Event setup screen.	42
Figure 27 : Device – Alarm-Out setup screen.	43
Figure 28 : Display – OSD setup screen.	44
Figure 29 : Display – Monitor setup screen.	45
Figure 30 : Status – Event setup screen.	46
Figure 31 : Status – Storage setup screen.	47
Figure 32 : Camera – Network Camera setup screen.	48
Figure 33 : Camera – General setup screen.	49
Figure 34 : Camera – Profile (Simple Mode) setup screen.	52

Figure 35 : Camera – Profile (Advanced Mode) setup screen.	52
Figure 36 : Camera – Upgrade setup screen.	53
Figure 37 : Live Monitoring menu.....	55
Figure 38 : Select Playback Camera menu.....	59
Figure 39 : Search menu.....	60
Figure 40 : Event Log Search screen.....	62
Figure 41 : Record Table Search screen.	63
Figure 42 : Motion Search screen.	65
Figure 43 : Bookmarks screen.	66
Figure 44 : Clip-Copy screen.	67

Chapter 1 — Introduction

Feature

Your color network video recorder (NVR) provides recording capabilities for four or eight network camera inputs. It provides exceptional picture quality in both live and playback modes, and offers the following features:

- 4 or 8 Network Video Input
- H.264 Codec
- Monitor Connectors: 1 HDMI, 1 VGA
- Multiple Search Engines (Date/Time, Record Table, Event)
- Real-time Recording (240 Images per Second with 1280x720 Resolution)
- Continuous Recording in Disk Overwrite Mode
- Continues Recording while Transmitting to Remote Site and during Playback
- User-friendly Graphical User Interface (GUI) Menu System
- Multiple Recording Modes (Time-lapse, Pre-event, Event and Panic)
- 8-Channel Audio Recording and 1-Channel Audio Playback
- PoE (Power over Ethernet) network camera connections
- 2 USB 2.0 Ports
- Alarm Connections Include: Input and Output
- Built-in Alarm Buzzer
- Live or Recorded Video Access via Ethernet
- Time Synchronization using industry standard protocol
- IR Remote Control
- Self-diagnostics with automatic notification including hard disk drive S.M.A.R.T. protocol

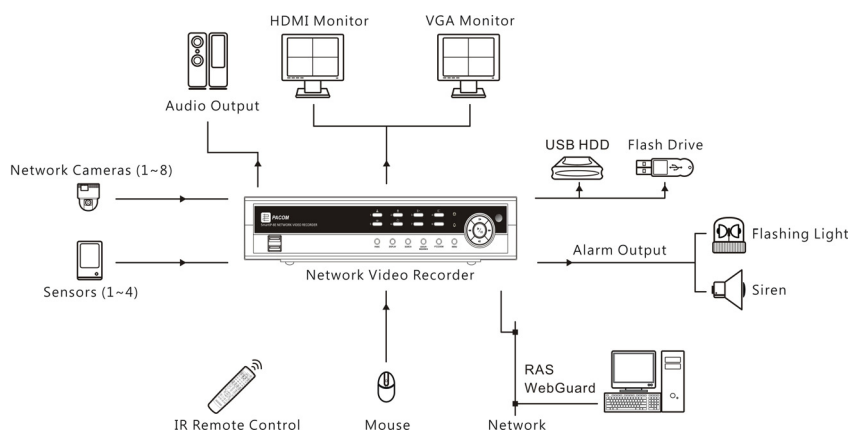


Figure 1 : Typical NVR installation.

NOTE: This manual covers the 4- and 8-channel network video recorders. The NVRs are identical except for the number of cameras that can be connected and the number of cameras that can be displayed. For simplicity, the illustrations and descriptions in this manual refer to the 8-camera model.

Chapter 2 — Installation

Package Contents

The package contains the following:

- Network Video Recorder
- Power Cord and Power Adaptor (NVR, PSE)
- Quick User Manual
- RAS Software CD (User's Manual included)
- USB Mouse
- Infrared Remote Control

Required Installation Tools

No special tools are required to install the NVR. Refer to the installation manuals for the other items that make up part of your system.

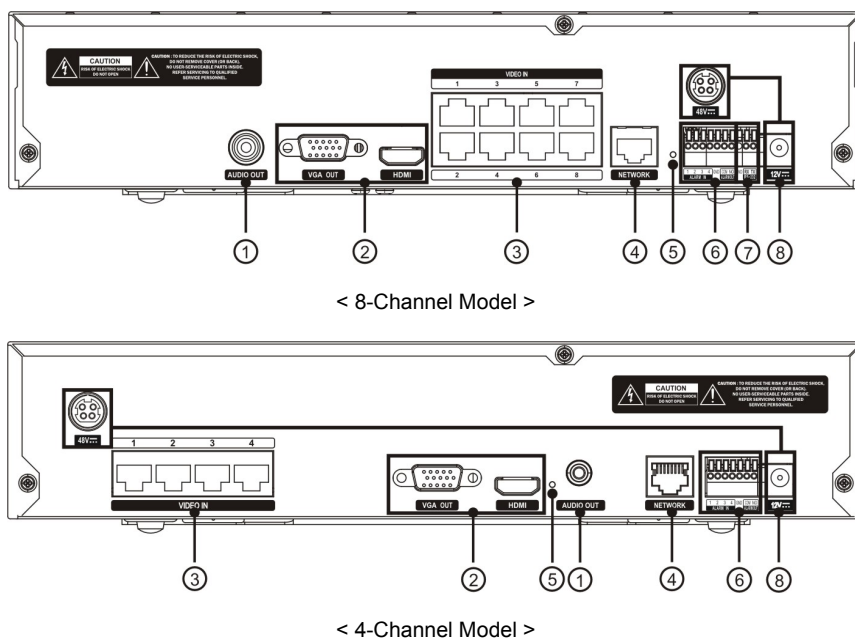


Figure 2 : NVR rear panel.

- | | | | |
|------------------------|----------------------|--------------------------------|----------------|
| ① Audio Out | ② Video Out | ③ Video Input | ④ Network Port |
| ⑤ Factory Reset Switch | ⑥ Alarm Input/Output | ⑦ RS232 Port (Not Implemented) | |
| ⑧ Power Cord Connector | | | |

Audio Out

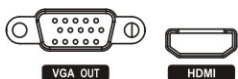


Connect AUDIO OUT to your amplifier.

NOTE: It is the user's responsibility to determine if local laws and regulations permit recording audio.

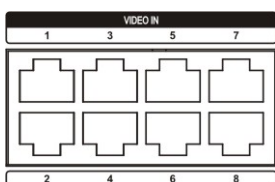
The NVR does not have amplified audio output, so you will need a speaker with an amplifier. The NVR does not have a pre-amplifier for audio input, so the audio input should be from an amplified source, not directly from a microphone.

Video Out



A VGA OUT connector is provided so that you can use a standard, multi-sync computer monitor, and an HDMI (High-Definition Multimedia Interface) connector is provided so that you can use an HDMI monitor. Use the cable supplied with your monitor to connect it to the NVR.

Video Input



Connect Cat5/Cat5e/Cat6 cables with an RJ-45 jack to the VIDEO IN connectors.

CAUTION: The Video Input connector is designed to be connected directly (1:1) with cable between the system and the camera.

Network Port



The NVR can be networked using the 10Mb/100Mb/1Gb Ethernet connector. Connect a Cat5/Cat5e/Cat6 cable with an RJ-45 jack to the NVR connector. The NVR can be networked with a computer for remote monitoring, searching, configuration and software upgrades. See *Chapter 3 – Configuration* for configuring the Ethernet connections.

CAUTION: The network connector is not designed to be connected directly with cable or wire intended for outdoor use.

Factory Reset Switch



The NVR has a Factory Reset switch to the right of the NETWORK connector (to the left of the AUDIO OUT connector for the 4-ch model) on the rear panel. This switch will only be used on the rare occasions that you want to return all the settings to the original factory settings.

CAUTION: When using the *Factory Reset*, you will lose any settings you have saved.

To reset the unit, you will need a straightened paperclip:

1. Turn the NVR off.
2. Turn it on again.
3. While the NVR is initializing, the front panel LEDs will blink. When the front panel LEDs blink, poke the straightened paperclip into the unlabeled hole to the right of the Network connector (to the left of the Audio Out connector for the 4-ch model).
4. Hold the reset switch until the NVR's internal buzzer sounds twice.
5. Release the reset switch. All of the NVR's settings are now at the original settings it had when it left the factory.

Alarm Input/Output



NOTE: To make connections on the Alarm Connector Strip, press and hold the button and insert the wire in the hole below the button. After releasing the button, tug gently on the wire to make certain it is connected. To disconnect a wire, press and hold the button above the wire and pull out the wire.

ALARM IN 1 to 4: You can use external devices to signal the NVR to react to events. Mechanical or electrical switches can be wired to the ALARM IN and GND (Ground) connectors. The threshold voltage of electrical switches for NO (Normally Open) is below 0.3V, and should be stable at least 0.5 seconds to be detected. The voltage range of alarm input is from 0V to 5V. See *Chapter 3 — Configuration* for configuring alarm input.

GND (Ground): Connect the ground side of the Alarm input and/or alarm output to the GND connector.

NOTE: All the connectors marked GND are common.

NO (Relay Alarm Outputs): The NVR can activate external devices such as buzzers or lights. Connect the device to the COM (Common) and NO (Normally Open) connectors. NO is a relay output which sinks 2A@125VAC and 1A@30VDC. See *Chapter 3 — Configuration* for configuring alarm output.

Connector Pin Outs:

ALARM IN (1 to 4)	Alarm Inputs 1 to 4
GND	Chassis Ground
COM	Common
NO	Relay Alarm Out (Normally Open)

Power Cord Connector



Connect the connector (12V) of the adaptor to the NVR, and connect the AC power cord to the adaptor and then to the wall outlet.



The NVR has an imbedded PSE (Power Supply Equipment) for PoE network cameras. Connect the connector (48V) of the adaptor to the NVR, and connect the AC power cord to the adaptor and then to the wall outlet.

WARNING: ROUTE POWER CORDS SO THAT THEY ARE NOT A TRIPPING HAZARD. MAKE CERTAIN THE POWER CORD WILL NOT BE PINCHED OR ABRADED BY FURNITURE. DO NOT INSTALL POWER CORDS UNDER RUGS OR CARPET. THE POWER CORD HAS A GROUNDING PIN. IF YOUR POWER OUTLET DOES NOT HAVE A GROUNDING PIN RECEPTACLE, DO NOT MODIFY THE PLUG. DO NOT OVERLOAD THE CIRCUIT BY PLUGGING TOO MANY DEVICES IN TO ONE CIRCUIT.

Your NVR is now ready to operate. Refer to *Chapter 3 — Configuration* and *Chapter 4 — Operation*.

Chapter 3 — Configuration

NOTE: Your NVR should be completely installed before proceeding. Refer to *Chapter 2 — Installation*.

Front Panel Controls

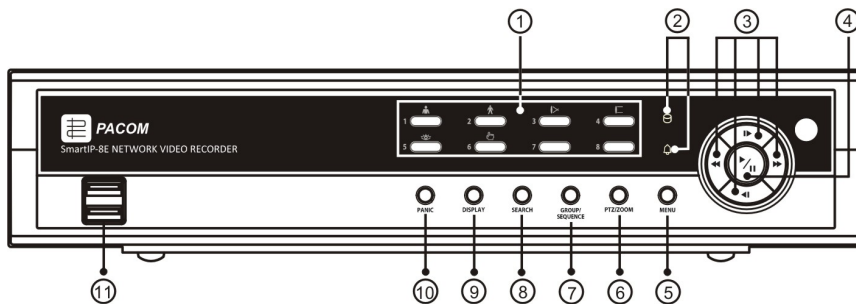


Figure 3 : 8-Channel NVR front panel.

- | | | | |
|------------------|-------------------|-------------------------|---------------------|
| ① Camera Buttons | ② LED | ③ Arrow Buttons | ④ Play/Pause Button |
| ⑤ Menu Button | ⑥ PTZ/Zoom Button | ⑦ Group/Sequence Button | |
| ⑧ Search Button | ⑨ Display Button | ⑩ Panic Button | ⑪ USB Port |

Many of the buttons have multiple functions. The buttons on the infrared remote control, while laid out differently, perform the same functions as those on the front panel. The following describes each button and control. Take a few minutes to review the descriptions. You will use these to initially set up your NVR and for daily operations.

NOTE: A separate Alarm button is not provided. Pressing any button on the front panel or remote control resets alarm output including the internal buzzer when the alarm is activated. However, when you are in the menu mode, you have to exit the menu first to reset alarm output.

The infrared sensor on the NVR is just to the right of arrow buttons. Make certain that nothing blocks the sensor, or the remote control will not function properly.

When you use wireless communication devices (such as Wi-Fi or Bluetooth) near the NVR, the remote control might not function properly.

You can also use a USB mouse to navigate through the screens and menus much like you would on a computer.

Camera Buttons

Pressing the individual camera buttons will cause the selected camera to display full screen. Buttons are also used to enter passwords.




LED


- **HDD LED:** The HDD LED flickers when the NVR is recording or searching video on the hard disk drive.
- **Alarm LED:** The Alarm LED is lit when alarm output or internal buzzer is activated.

Arrow Buttons

These buttons are used to navigate through menus and GUI. You can also use them to change numbers by highlighting a number in the menu and using the Up and Down arrow buttons to increase or decrease the number's value.

Play/Pause Button

In the live monitoring mode, pressing the  button freezes the current screen and the screen displays . When in the playback mode, pressing the  button plays back images at regular speed or pauses playing video.


Pressing the  button selects a highlighted item or completes an entry that you have made during system setup.

Menu Button

In the Live Monitoring mode and Search mode, pressing the **MENU** button displays the menu icons at the top of the screen. Pressing the button also hides the menu icons. During menu setup, pressing the button closes the current menu or setup dialog box.

In the Search mode clip-copying can be done instantly by pressing and holding the **MENU** button for three or more seconds.

PTZ/Zoom Button




Pressing the **PTZ/ZOOM** button zooms in the current image on the screen. You can use the arrow buttons to move the rectangle to another area. Pressing the  (Play/Pause) button zooms in the image in rectangle.

(Not Implemented) Pressing and holding the **PTZ/ZOOM** button for three seconds or longer enters the PTZ (Pan/Tilt/Zoom) mode and the PTZ icon flickers. Pressing the button again exits the PTZ mode. Pressing the arrow buttons or **MENU** button allows you to control properly configured cameras.

Group/Sequence Button

When in the live mode, pressing the **GROUP/SEQUENCE** button changes the screen from the current camera group to the next camera group, and the screen displays the page number. Pressing and holding the button for three seconds or longer displays live channels sequentially.

Search Button


Pressing the **SEARCH** button enters the playback mode, and pressing the button again exits the playback mode. When entering the playback mode, video is paused. Pressing the  (Play/Pause) button plays back video at regular speed. The screen displays  when the NVR is in the Pause mode and the screen displays  when the NVR is playing back video.

When in one of the multi-view formats, pressing this **SEARCH** button enters the Triplex mode. The NVR supports the Triplex function: monitoring, recording and playing back at the same time.

Display Button

Pressing the **DISPLAY** button toggles between different display formats. The available formats are: 2x2 and 3x3.

Panic Button

Pressing the **PANIC** button starts panic recoding of all camera channels, and displays  on the screen. Pressing the button again will stop panic recording.

USB Port

Two USB ports on the front panel are provided to connect external hard disk or flash drives for video clip copying or system upgrades. Position external drives close enough to the NVR so that you can make the cable connections, usually less than 6 feet. Use the USB cable provided with the hard disk drive to connect it to the NVR.

A USB mouse can be connected to one of the ports. You can use the mouse to navigate through the screens and menus much like you would on a computer.

Remote Control Buttons

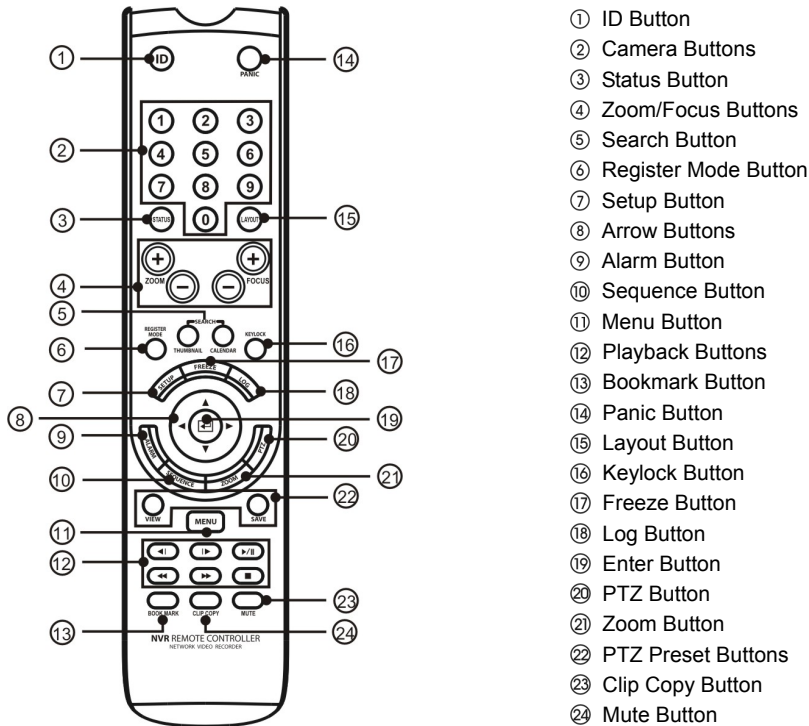


Figure 4 : Infrared remote control.

NOTE: Some buttons on the remote control have not been yet implemented and they are not described below. For simplicity, the button descriptions in this manual refer to the front panel buttons.

ID Button

If a NVR System ID is set to 0, the infrared remote control will control that NVR without any additional operations. (Refer to the *System Information* setup screen in this chapter for further information on setting the System ID.) If the system ID is 1 to 9, you must to press the **ID** button and then press the number button (1 to 9) in order to control that NVR. If the System ID of two or more NVRs is set to 0, those NVRs will react to the infrared remote control at the same time.

Camera Buttons

Pressing the individual camera buttons will cause the selected camera to display full screen. Buttons 1 to 9 are also used to enter passwords.

Search Button

In the search mode, pressing the **CALENDAR** button displays the Calendar Search screen.

Arrow Buttons

These buttons are used to navigate through menus and GUI. You can also use them to change numbers by highlighting a number in the menu and using the **Up** and **Down** arrow buttons to increase or decrease the number's value.

Pressing the **Left** and **Right** buttons moves through screen pages in the Live Monitoring mode and Search mode.

Alarm Button

Pressing the **ALARM** button resets the NVR's outputs including the internal buzzer during an alarm.















Sequence Button

When in the Live Monitoring mode, pressing the **SEQUENCE** button displays live channels sequentially.

Menu Button

In the Live Monitoring mode and Search mode, pressing the **MENU** button displays the menu icons at the top of the screen. Pressing the button also hides the menu icons. During menu setup, pressing the button closes the current menu or setup dialog box.

Playback Buttons


- **Rewind:** Pressing the  button plays video backward at high speed. Pressing the button again toggles the playback speed from ,  and .
- **Play/Pause:** Pressing the  button plays back video at regular speed and pressing the button again pauses video. The screen displays  when the NVR is in the Pause mode and the screen displays  when the NVR is playing back video.
- **Fast Forward:** Pressing the  button plays video forward at high speed. Pressing the button again toggles the playback speed from ,  and .
- **Stop:** Pressing the  button stops playback and enters the Live Monitoring mode.
- **Backward:** When in the pause mode, pressing the  button moves to the previous image.
- **Forward:** When in the pause mode, pressing the  button moves to the next image.

In the Live Monitoring mode, pressing any playback button enters to the Search mode.

Bookmark Button

When in the playback mode, pressing the **BOOKMARK** button adds the current playback point to the bookmark list or moves to the registered bookmark point.

Panic Button

Pressing the **PANIC** button starts panic recoding of all camera channels, and displays  on the screen. Pressing the button again will stop panic recording.

Layout Button

Pressing the **LAYOUT** button toggles between different display formats. The available formats are: 2x2 and 3x3.

Freeze Button

Pressing the **FREEZE** button freezes the current live screen.

Log Button

Pressing the **LOG** button displays the Login or Logout screen.

Enter Button

The **↵** (Enter) button selects a highlighted item or completes an entry that you have made during system setup. This button is also used to enter the Cameo mode in the Live Monitoring mode or Search mode.

Zoom Button

Pressing the **ZOOM** button zooms the current image on the screen. A rectangle temporarily displays showing what area of the screen has been enlarged. You can use the arrow buttons to move the rectangle to another area.

Clip Copy Button

Pressing the **CLIP COPY** button allows you to copy video clips.

Turning on the Power

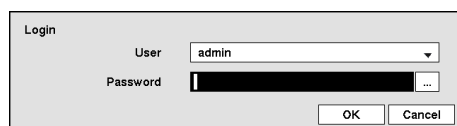
Connecting the power cord to the NVR turns on the unit. The unit takes approximately 60 seconds to initialize.

Initial Unit Setup

Before using your NVR for the first time, you will want to establish the initial settings. This includes items such as time and date, display language, camera, record mode, network and password. Your NVR can be set up using various screens and dialog boxes.

Throughout the screens you will see **↵**. Highlighting the **↵** and pressing the **⌂** button gives you the opportunity to reset that screen to its default settings. After you are finished with any setup screen, you can highlight **Save** and press the **⌂** button to save the changes and exit the screen. If you do not wish to save the changes, highlight **Cancel** and press the **⌂** button to exit the screen.

Press the **MENU** button or move the mouse pointer on the right edge of the screen and then select **Ⓐ** (Login) in the Live Monitoring menu to enter the setup screens. The Login screen appears.



Select a User and enter the password by pressing the appropriate combination of Camera number buttons and then the **⌂** button. There is no default password when logging in the **admin** user for the first time.

Figure 5 : Login screen.

NOTE: To assure the secure management of the system, setting up a password is strongly recommended. If you cannot use the front panel buttons, click the **⌂** button using the mouse to enter a password, and the virtual keyboard displays. See instructions below for using the virtual keyboard.

NOTE: To log the user out of the system, press the **MENU** button or move the mouse pointer on the right edge of the screen and then select **6** (Logout) in the Live Monitoring menu. The Logout screen displays asking you to confirm whether or not you want to log out the current user.

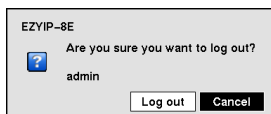


Figure 6 : Logout screen.

Setup Screen



- ① System
- ② Record
- ③ Network
- ④ Event
- ⑤ Device
- ⑥ Display
- ⑦ Status
- ⑧ Camera

Figure 7 : Setup screen.

Press the **MENU** button or move the mouse pointer on the right edge of the screen and then select **6** (Setup) in the Live Monitoring menu to enter the setup screen.

While setting up the NVR, there will be many opportunities to enter names and titles. When making these entries, a Virtual Keyboard will appear.



Use the arrow keys to highlight the character you want in the name or title and press the **Enter** button. That character appears in the title bar and the cursor moves to the next position. Pressing **Enter** toggles between the upper and lower case keyboards, **Left Arrow** backspaces, and **X** deletes entered characters.

System Setup

General

Highlight **General** and press the **Enter** button, and the General screen appears.

Figure 8 : System – General setup screen.

In the **General** screen, you can name the site location, assign a System ID number, select the language the screens are displayed in, display software version number, upgrade the software, show the System Log, display recorded time data, and clear all data.

Highlight the **Site** box and press the F9 button. A virtual keyboard appears that you can use to enter a Site Name. Once you have entered your title, highlight OK and press the F9 button.

Highlight the box beside **System ID** and press the F9 button. Change the number by highlighting it and using the Up and Down arrow buttons to increase and decrease the number from 0 to 99.



Highlight the box beside **Language** and press F9 button. A drop-down menu displays the available languages. Highlight the desired language and press the F9 button.

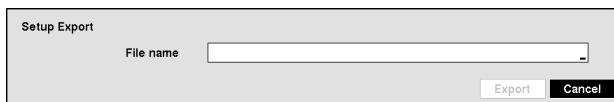
The box beside **Version** displays the software version of the NVR.

To upgrade the software, connect a USB device containing the upgrade package file to the NVR. Highlight **Upgrade...** and press the F9 button. The **Upgrade** screen appears. The screen displays the upgrade package file names that are available. The “.rui” indicates that the file is for software upgrades and “.ofi” indicates that the file is for optical drive firmware upgrades.

Select the desired file and press the F9 button. Highlighting the **Install** button and pressing the F9 button will install the selected software package. Highlighting the **Cancel** button and pressing the F9 button will close the window without upgrading the software. If the upgrade package file is not installed on the NVR properly, you will get an error message. The system restarts automatically after completing the upgrade.

CAUTION: The USB device must be FAT16 or FAT32 format.



You can import saved NVR settings or export the current NVR settings. To import saved NVR settings, connect the USB device containing the setup file (.dat) to the NVR. Highlight **Setup – Import...** and press the  button. Select the desired setup file and press the **Import** button to import the selected settings and change the NVR settings accordingly. Highlight **Include Network Setup** and press the  button to toggle between On and Off. When set to Off, the network settings will not be changed.



Setup Export


File name

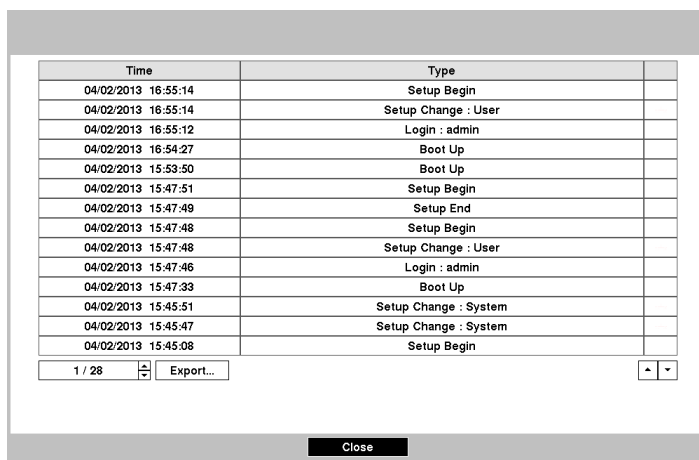
Export **Cancel**

To export the current NVR settings, connect the USB device to the NVR. Highlight **Setup – Export...** and press the  button. Highlight the box beside **File name** and press the  button. A virtual keyboard allows you to enter the file name. Selecting **Export** will save the current settings in .dat file format on the USB device.



NOTE: Even after changing the NVR settings by importing saved settings, the time-related settings (Date/Time, Time Zone and Daylight Saving Time) will NOT be changed.

CAUTION: The USB device must be FAT16 or FAT32 format.



Highlight **Show System Log...** and press the  button to display the System Log.



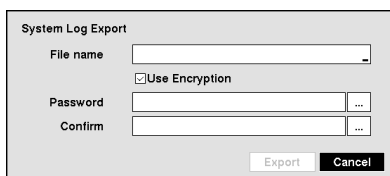
Time	Type	
04/02/2013 16:55:14	Setup Begin	
04/02/2013 16:55:14	Setup Change : User	
04/02/2013 16:55:12	Login : admin	
04/02/2013 16:54:27	Boot Up	
04/02/2013 15:53:50	Boot Up	
04/02/2013 15:47:51	Setup Begin	
04/02/2013 15:47:49	Setup End	
04/02/2013 15:47:48	Setup Begin	
04/02/2013 15:47:48	Setup Change : User	
04/02/2013 15:47:46	Login : admin	
04/02/2013 15:47:33	Boot Up	
04/02/2013 15:45:51	Setup Change : System	
04/02/2013 15:45:47	Setup Change : System	
04/02/2013 15:45:08	Setup Begin	

1 / 28  **Export...** 

Close

The System Log screen lists system activities (up to 5,000 from the latest) that have occurred along with the time and date. The  icon will be displayed in the last column for system activities of the remote site. You can scroll through the log pages by using the Up and Down arrows, or you can go directly to a log page by entering the log page number in the box at the bottom left of the screen. Highlight **Close** and press the  button to exit the screen.

To export the system log information, connect the USB device to the NVR. Highlight **Export...** and press the  button.



System Log Export


File name

☒ Use Encryption



Password


Confirm


Export **Cancel**


Highlight the box beside **File name** and press the  button. A virtual keyboard allows you to enter the file name. Selecting **Export** will save the log information in .txt file format on the USB device.

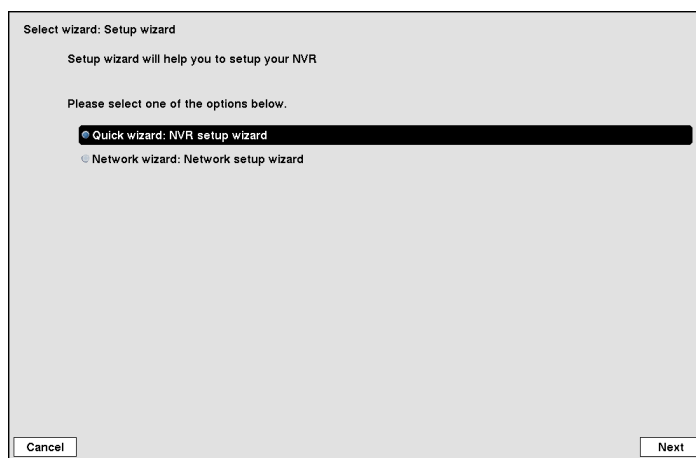
NOTE: When opening the saved .txt file, setting to the proper character encoding and using fixed width fonts will be required to read the file properly.

Highlighting **Use Encryption** and pressing the  button toggles between On and Off. When set to on, the log information will be saved in .html file format with encryption. Highlight the box next to **Password** and press the  button. A virtual keyboard appears allowing you to enter the password. You will be asked to enter the password to open the saved .html file in the web browser.

Highlighting **Clear All Data** and pressing the  button will clear all video data. You will be asked to verify that you wish to clear all data before the NVR erases the video data. **Clear All Data** will not clear the System Log.

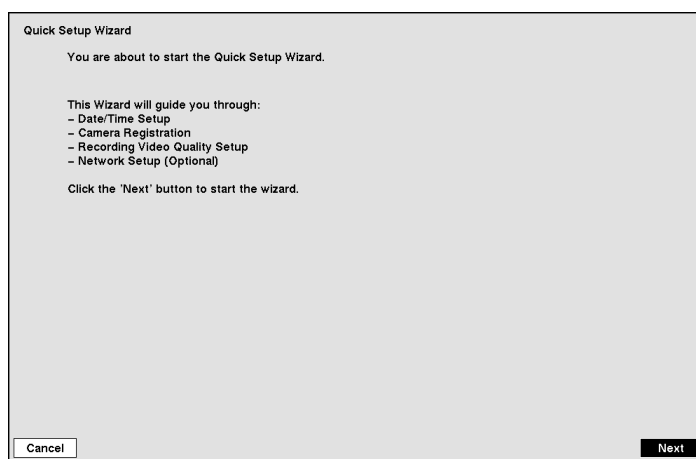
Highlight **System Shutdown** and press the  button. The Shutdown screen displays asking you to confirm whether or not you want to shut the system down.

Highlight **Wizard** and press the  button. The Wizard setup screen appears. The Wizard setup guides you through configuring the system for basic operation.



Select either **Quick wizard** or **Network wizard** and select the **Next** button to start the selected setup wizard.

NOTE: Selecting the **Cancel** button throughout the screens exits the **Quick Setup Wizard** without saving your changes and returns to the main setup screen.



If you selected the **Quick wizard**, selecting the **Next** button starts the **Quick Setup Wizard**.

Quick Setup Wizard (Step 1/6)

Date/Time Setup

Date: 04/02/2013 Format

Time: 17:17:10 Format

Time Zone: GMT + 10:00 Canberra, Melbourne, Sydney

☒ Use Daylight Saving Time

Cancel Back Next

Date/Time Setup

- **Date:** Set the system date and select the date format.
- **Time:** Set the system time and select the time format.
- **Time Zone:** Select your time zone.
- **Use Daylight Saving Time:** Selecting the box sets the system to use daylight saving time.

NOTE: The Date/Time will be set, and the clock will start when you click the **Next** button.

Quick Setup Wizard (Step 2/6)

Camera Registration (START)

Select the camera you want to register, and insert the camera password.
Click the 'Next' button start to camera registration.

Cancel Back Next

Select the **Next** button to start the Camera Registration.

Quick Setup Wizard (Step 3/6)

Camera Registration (SEARCH & INITIALIZE)

Click the 'Next' button to start camera registration.

No.	Address	Product	Mac Address	Channel
<input checked="" type="checkbox"/> 1	169.254.29.228	NC-EB310-P	00:03:22:11:2a:7e	Ch 1
<input checked="" type="checkbox"/> 2	169.254.155.145	NC-B310-DP	00:03:22:11:2a:07	Ch 2
<input checked="" type="checkbox"/> 3	169.254.7.201	NC-D310-WHI	00:03:22:11:2d:87	Ch 3
<input type="checkbox"/> 4				
<input type="checkbox"/> 5				
<input type="checkbox"/> 6				
<input type="checkbox"/> 7				
<input type="checkbox"/> 8				

Stop

Cancel Back Next

Camera Registration (SEARCH & INITIALIZE)

- No.: Select the camera you want to register.
- Channel: Select the camera channel.

Quick Setup Wizard (Step 4/6)

Camera Registration (PASSWORD)

Please enter the password to be assigned to the camera.

Password

Confirm

Cancel Back Next

Camera Registration (PASSWORD)

- Password: Enter the password (default: no password or pacom) to be assigned to the camera.
- Confirm: Confirm the password.

Quick Setup Wizard (Step 5/6)

Camera Registration (END)

Camera registration completed properly.

No.	Address	Product	Mac Address	Channel
<input type="checkbox"/> 1	169.254.29.228	NC-EB310-P	00:03:22:11:2a:7e	Ch 1
<input type="checkbox"/> 2	169.254.155.145	NC-B310-DP	00:03:22:11:2a:07	Ch 2
<input type="checkbox"/> 3	169.254.215.233	NC-D310-WHI	00:03:22:11:2d:87	Ch 3
<input type="checkbox"/> 4				
<input type="checkbox"/> 5				
<input type="checkbox"/> 6				
<input type="checkbox"/> 7				
<input type="checkbox"/> 8				

Cancel Back Next

Camera Registration (END)

If the camera registration has been completed, select the Next button.

Quick Setup Wizard (Step 6/6)

Record Video Quality Setup

Which video quality profile would you prefer to use?

- ☒ Standard Recording Profile (SRP)
- ☐ High Video Quality Priority Profile (HVQPP)
- ☐ Longer Recording Time Priority Profile (LRTTP)

The HVQPP provides the highest video quality recording at that highest frame rate but requires more hard disk space than the LRTTP. Please see the User's Manual for details.

Cancel Back Next

Record Video Quality Setup

- Select the desired video quality profile from:
 - Standard Recording Profile
 - Higher Video Quality Priority Profile
 - Longer Recording Time Priority Profile

NOTE: The higher quality setting requires more storage space.

The recording resolution will be set to Very High when selecting *High Video Quality Priority Profile*, High when selecting *Standard Recording Profile*, and Standard when selecting *Longer Recording Time Priority Profile*.

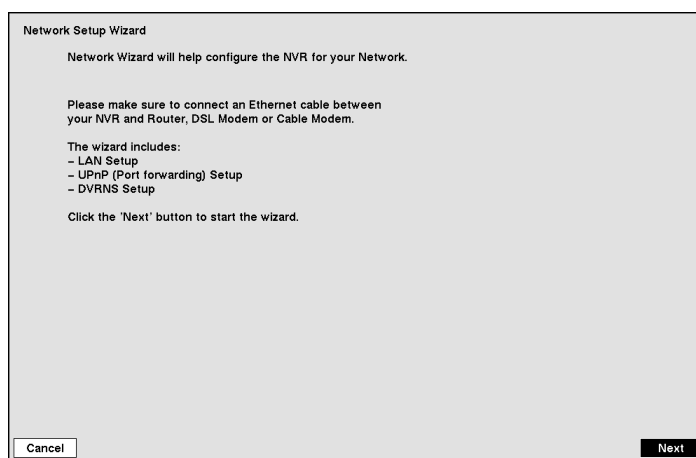
The recording quality and recording speed of each camera channel will be set as show below according to the *Record Method* and *Record Video Quality* you set.

	1MP Camera	2MP Camera
SRP*	Standard (D1) / 30 ips (Motion Event Record)	1080p / 10 ips (Motion Event Record)
HVQPP*	High (720p) / 30 ips (Continuous Record)	1080p / 15ips (Continuous Record)
LRTTP*	Standard (D1) / 5 ips (Motion Event Record)	1080p / 5ips (Motion Event Record)

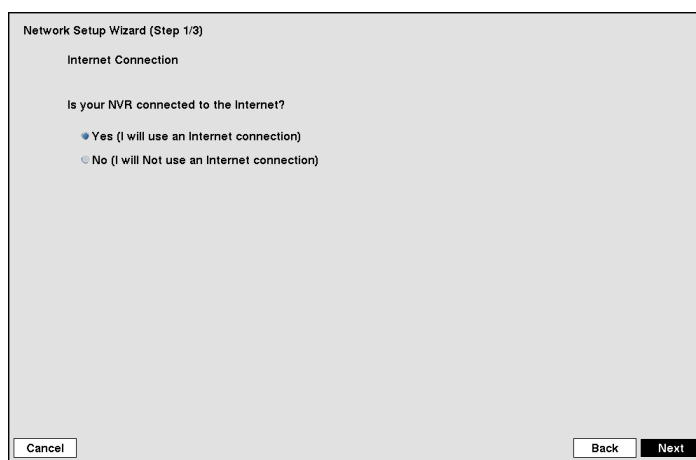
* Record Video Quality: SRP (Standard Recording Profile), HVQPP (High Video Quality Priority Profile), LRTTP (Longer Recording Time Priority Profile)



Select the **Finish** button to finish the Quick Setup Wizard and select the **Go to Network Setup** button to start the Network Setup.



If you selected the **Go to Network Setup**, select the **Next** button to start the Network Setup Wizard.



Internet Connection

Select whether or not your NVR is connected to the Internet.

Network Setup Wizard (Step 2/3)

LAN Setup

Auto Configuration

Get IP, Gateway, Subnet Mask

☐ Use DSL/PPPoE Setup

Search DNS Server

Check Internet connectivity

Search UPnP/PortForwarding

LAN Setup

Select between Auto Configuration and Manual Configuration for network configuration, and then select the Test button to test the network configuration you selected.

NOTE: Selecting *Auto Configuration* allows the NVR to automatically obtain LAN parameters (IP address, Gateway, Subnet Mask and DNS Server address). Selecting *Manual Configuration* allows you to set up LAN parameters manually.

The network configuration you set should be tested by selecting *Test*, otherwise the *Next* button will not be selected, and you cannot move to the next step.

- Use DSL/PPPoE Setup: Selecting the box allows you to set up the DSL network. Entering the ID and password for DSL connection is required.

Network Setup Wizard (Step 3/3)

DVRNS Setup

☒ Use DVR Name Service

DVRNS Server

Port (10000 ~ 12000)

☐ Use NAT

NVR Name

You may register your NVR name and use it instead of the IP address when accessing the NVR through internet. Type in your preferred NVR name and check its availability.

DVRNS Setup

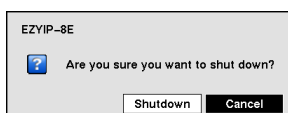
- Use DVR Name Service: Select the box to use the DVR Name Service.
- DVRNS Server: Enter the IP address or domain name of the DVRNS server.
- Port: Set the port number of the DVRNS server.
- Use NAT: Select the box to use the NAT (Network Address Translation) device.
- NVR Name: Enter the NVR name to be registered on the DVRNS server.
- Check: Select the box to check whether or not the name you entered can be used.

NOTE: The NVR name you entered should be checked by selecting *Check*, otherwise the DVRNS changes will not be saved.

When entering no name or a name already registered on the DVRNS server, an error message displays.



Select the Finish button to finish the Setup Wizard.



After selecting Shutdown and pressing the ⏻ button, a screen will appear telling you when it is safe to disconnect power.

Date/Time

Highlight Date/Time and press the ⏻ button, and the Date/Time setup screen appears.

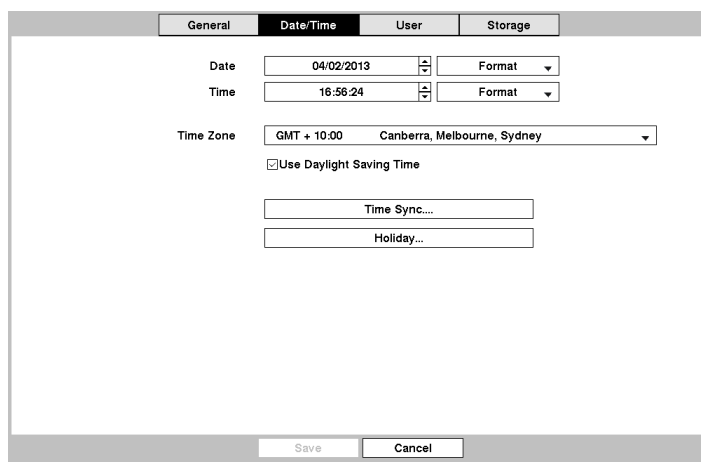









Figure 9 : System – Date/Time setup screen.



Highlight the first box beside **Date** and press the ⏻ button. The individual sections of the date will highlight. Use the Up and Down arrow buttons to change the number. Use the Left and Right arrow buttons to move between month, date and year. Once you have the correct date, press the ⏻ button.

Highlight the Format box beside **Date** and press the  button. Select from the three available date formats and press the  button to save your selected format.


Highlight the first box beside **Time** and press the  button. The individual sections of the time will highlight. Use the **Up** and **Down** arrow buttons to change the number. Use the **Left** and **Right** arrow buttons to move between hour, minutes and seconds. Once you have the correct time, press the  button.

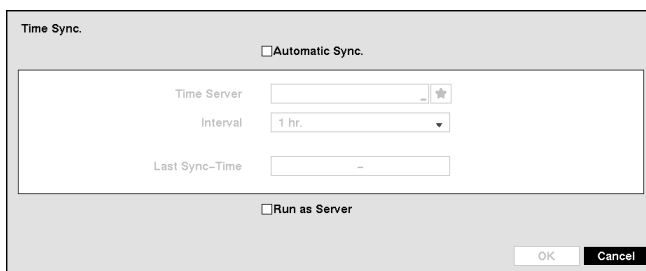
Highlight the Format box beside **Time** and press the  button. Select from the three available time formats and press the  button to save your selected format.

NOTE: The clock will not start running until you have highlighted Save and pressed the  button.

Highlight the box beside **Time Zone** and press the  button. Select your time zone from the list and press the  button.



Highlight **Use Daylight Saving Time** and press the  button. Pressing the  button toggles between On and Off.

Highlighting **Time Sync...** and pressing the  button displays the Time Sync. screen. You can set up time synchronization between the NVR and standard time servers that are available in most time zones and countries, or between the NVR and another NVR.




The Time Sync. screen has a title bar "Time Sync.". Below it is a checkbox labeled "Automatic Sync.". Underneath is a form area with three fields: "Time Server" with a text input and a star icon, "Interval" with a dropdown menu showing "1 hr.", and "Last Sync-Time" with a text input showing "--". Below the form area is another checkbox labeled "Run as Server". At the bottom right are "OK" and "Cancel" buttons.



Highlight the box beside **Automatic Sync.** and press the  button. This toggles between On and Off.


Highlight the box beside **Time Server** and press the  button. A virtual keyboard appears that you can use to enter the IP address or domain name of the time server. Highlighting  allows you to select your time server from a list of registered time servers.

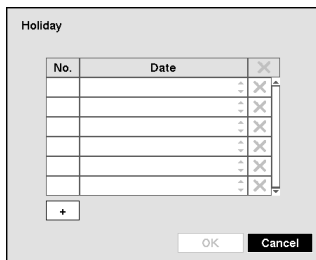
NOTE: You can use the domain name instead of IP address if you already set up the DNS Server when setting up the Network – IP Address.

Highlight the box beside **Interval** and press the  button. Set the time interval for synchronization from 30 minutes to 1 day at various time intervals.


Last Sync-Time displays the last time the NVR was synchronized with the time server.




Highlight **Run as Server** and press the  button. Pressing the  button toggles between On and Off. When it is On, the NVR you are setting up will run as a time server.

Highlighting **Holiday...** and pressing the  button displays the Holiday screen.




The Holiday screen has a title bar "Holiday". Below it is a table with two columns: "No." and "Date". There are six rows in the table. To the right of each date cell is a small "X" icon. Below the table is a "+" button. At the bottom are "OK" and "Cancel" buttons.

You can set up holidays by highlighting **+** and pressing the  button. The current date appears.

Highlight the month and day and change them by using the **Up** and **Down** arrow buttons. Press the  button to add the date. Dates can be deleted by highlighting the  beside the date and pressing the  button.

NOTE: Holidays that do not fall on the same date each year should be updated once the current year's holiday has passed.

User

Highlight **User** and press the  button. The User setup screen displays the authorized groups and users. You can add and delete groups and users. When adding a group, you can assign authority levels to the group.

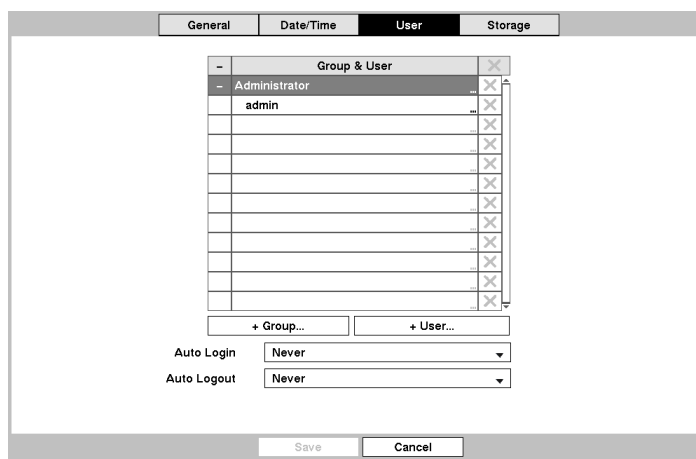








Figure 10 : System – User setup screen.


The +/- column is used to collapse and expand user groups. If there is a + or – in this column, it indicates the item is a Group Name. If there is a – in front of the Group Name, it indicates that the group has been “expanded” and all of the User Names within that group are displayed below the Group Name. If there is a + in front of the Group Name, it indicates that the group has been “collapsed” and all of the User Names within that group are hidden. To collapse or expand a group, highlight the +/- column in front of the desired group and press the  button.

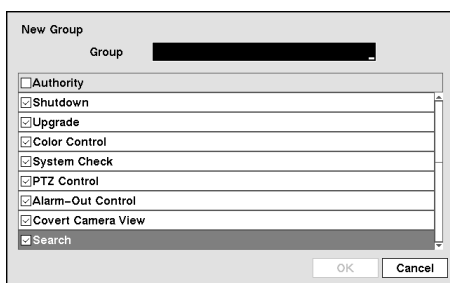
Highlighting a Group Name and pressing the  button allows you to change the authority levels assigned to the group.



CAUTION: Write down the new password and save it in a secure place. If the password is forgotten, the unit must be reset using the *Factory Reset Button* and all data settings will be lost.

Highlighting a User Name and pressing the  button allows you to add or change the password assigned to that user. You can also change the group to which the user is assigned.

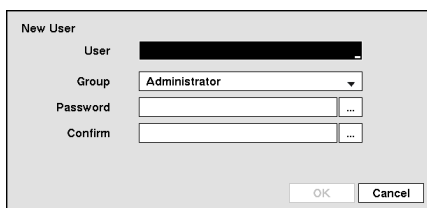
The  column can be used to delete a User Name or an entire Group. If the  is grayed out, that Group or User cannot be deleted. Highlight the  and press the  button. You will be asked to confirm that you want to delete the User or Group. To delete the User currently logged into the NVR on a local system or a PC running RAS, log the user out of the system first and then delete the user.


To add a Group, highlight the + Group... box and press the  button. A virtual keyboard appears allowing you to enter the Group name. You can use up to 15 characters including spaces in the group name. Enter the name and assign authority levels to the group.




Highlighting the Authority box and pressing the  button will toggle between all authority levels being turned On and Off. Highlighting the individual authority level boxes and pressing the  button will toggle between that authority level being turned On and Off. The authority levels that can be turned On and Off are:

- Shutdown – The user can shut the system down on a local system.
- Upgrade – The user can upgrade the software on a local system or a PC running RAS.
- Color Control – The user can control brightness, contrast, hue and saturation for cameras on a local system or a PC running RAS.
- System Check – The user can view the remote system status or check the remote system status as a batch process on a PC running RAS.
- PTZ Control – The user can control the PTZ camera on a local system or a PC running RAS. (Not Implemented)
- Alarm-Out Control – The user can reset the NVR's outputs including the internal buzzer during an alarm by pressing the any button on a local system or alarm-out control button on a PC running RAS.
- Covert Camera View – The user can view video from cameras set as Covert while in the Live Monitoring or Search mode on a local system or a PC running RAS.
- Search – The user can access the Search mode on a local system or a PC running RAS.
- Clip-Copy – The user can copy video clips on a local system or a PC running RAS.
- Setup – The user without Setup authority cannot establish any system settings excluding system shutdown and logout on a local system or a PC running RAS.
- System Time Change – The user can change the system date and time on a local system or a PC running RAS.
- Data Clear – The user can clear all video data or format disks on a local system or a PC running RAS.
- PTZ Setup – The user can establish all PTZ settings on a local system or a PC running RAS. (Not Implemented)
- Alarm-Out Setup – The user can establish all Alarm-Out settings on a local system or a PC running RAS.
- Covert Camera Setup – The user can establish all Covert Camera settings on a local system or a PC running RAS.
- Record Setup – The user can establish all Record settings on a local system or a PC running RAS.
- Setup Import – The user can import saved NVR settings from a local system or a PC running RAS.
- Setup Export – The user can export the current NVR settings to a local system or a PC running RAS.




To add a User, highlight the + User... box and press the  button. A virtual keyboard appears allowing you to enter the User Name. Enter the name and assign the User to a Group and password. You can use camera buttons on the front panel to assign the password. The password can be up to 8 digits. You will be asked to confirm the password.

NOTE: In addition to using the front panel buttons or the infrared remote control, you can use the virtual keyboard to assign the password. To display the virtual keyboard click the  button using the mouse.

Highlighting the box beside Auto Login allows you to select a User to be automatically logged in when the NVR is powered up. It can also be set to never automatically login a user.

Highlighting the box beside Auto Logout allows you to select from a list of times that the user will be automatically logged out. The options are: Never, 1 min., 3 min., 5 min., 10 min., 15 min., 20 min., 30 min. and 1 hr.

Storage

Highlight Storage and press the  button. The Storage setup screen appears and displays information about the NVR's storage devices.

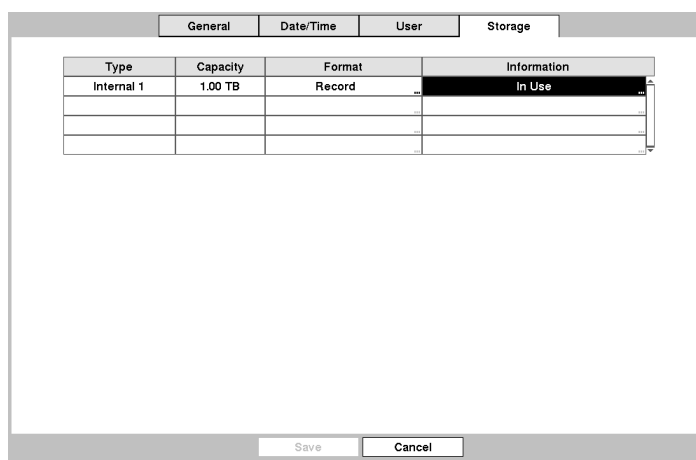


Figure 11 : System – Storage setup screen.

The information in the **Type** column describes the storage device.

The capacity of the storage device is displayed in the **Capacity** column.

The **Format** column displays whether the device is used for recording (**Record**) or not (**Not Using**). **Not formatted** indicates the device is not formatted.

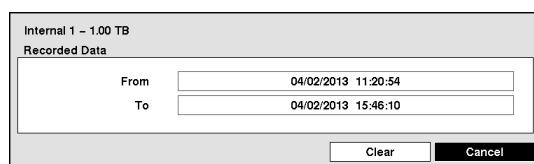


Highlight the box in the **Format** column for the desired storage device and press the button. You will be able to format the device for recording or archiving. When selecting **Not Using** from **Use As** and highlighting the **Format** button, the device will not be used for recording.

NOTE: The NVR does **NOT** support USB hard disk drives with a version lower than 2.0.

The **Information** column displays whether the device is being used or not. **Other** indicates the device has been used for another NVR.

Highlight the box in the **Information** column for the desired storage device and press the button. You will be able to check the time information about recorded data.



If you want to erase recorded data on the selected device, highlight **Clear** and press the button. You will be asked whether or not you want to delete the data.

If you want to use a USB hard disk drive, highlight **Use** and press the button after connecting the device. Highlight **Don't Use** and press the button if you want to stop using the device.

CAUTION: Do **NOT** disconnect the USB cable or the power from the device while copying video clips. If the USB cable is disconnected while copying video clips, archived data might be lost.

Recording Setup

General


Highlight General and press the  button, and the General setup screen appears.



The screenshot shows the 'General' tab of the 'Record' setup screen. It contains the following elements:

- Recycle:** A checked checkbox.
- Event Record Dwell:** A dropdown menu set to '5 sec.'.
- Auto Deletion:** A slider bar with a numeric input set to '0' and a 'Never' button.
- Limit Time-Lapse Recording:** A slider bar with a 'Never' button.
- Use Audio Recording:** An unchecked checkbox.
- Network Recording Fallover:** A checked checkbox.
- Use Panic Recording:** A checked checkbox.
- Panic Recording Duration:** A dropdown menu set to '1 hr.'.
- Profile:** A dropdown menu set to 'Profile 3'.
- Buttons:** 'Save' and 'Cancel' buttons at the bottom right.

Figure 12 : Record – General setup screen.

Highlighting **Recycle** and pressing the  button toggles between On and Off. In the Recycle mode, the NVR records over the oldest video data once all available storage space has been used. When Recycle is turned off, the NVR stops recording once all available storage space has been used.

Highlight the **Event Record Dwell** box and set the length of time you would like to record for the associated event. You can set the dwell from 5 seconds to 15 minutes. Refer to *Event Actions* screen in this chapter for information regarding event recording.


Highlight the slide bar beside **Auto Deletion**, and use the Left and Right arrow buttons or Up and Down arrow buttons to adjust the length of time recorded data will be kept from 1 to 999 days. The NVR automatically deletes video recorded earlier than the user-defined period under three conditions: at midnight, whenever the system reboots or whenever the user changes the Auto Deletion settings. Selecting **Never** will disable the Auto Deletion function.


Highlight the slide bar beside **Limit Time-Lapse Recording**, and use the Left and Right arrow buttons to adjust the length of the maximum storage time for time-lapse recording from 1 to 99 days. The Limit Time-Lapse Recording feature will function when the storage device has enough space to record video data longer than the preset period. When this feature is On, the NVR records over the oldest “time-lapse” video once all available storage has been used in the Recycle mode, so more event video can be saved. Selecting **Never** will disable the Limit Time-Lapse Recording function.


NOTE: When the storage device does not have enough space to record video data longer than the preset **Limit Time-Lapse Recording** period, the NVR records over the oldest video data (time-lapse or event video) as it would in the Recycle mode even if this feature is turned On.

The maximum storage time is only an estimate because the amount of space required to store video varies depending on many factors such as motion and image complexity.

CAUTION: When more than one disk is installed in the unit, the NVR records video on the disks sequentially based on time. And these sequentially recorded videos have the advantage that you can search recorded video easily even though a disk is removed from the unit. However, video recorded in the same time range might be saved on different disks by channel and by the type of recording mode. Once the Limit Time-Lapse Recording is set to On, the NVR will maintain this recording limitation even after disabling the function. If you want the NVR to record video on the disks sequentially based on time again, you must format all disks that are currently used for recording.

The NVR can record up to eight audio inputs. Highlighting Use Audio Recording and pressing the  button toggles between On and Off.

Highlighting Network Recording Failover and pressing the  button toggles between On and Off. When set to on, the NVR records video temporarily saved on the camera when the network failure restores.

Highlighting Use Panic Recording and pressing the  button toggles between On and Off.

Highlight the Panic Recording Duration box and set the duration of panic recording. Panic recording will stop automatically after the preset duration as long as the **PANIC** button is not pressed to stop the panic recording. You can set the dwell from 5 minutes to 1 hour. Select No Limit if you want to stop panic recording manually.

Highlight the Panic Recording Profile box and select the profile for panic recording.

Schedule

Highlight Schedule and press the  button, and the Schedule setup screen appears.

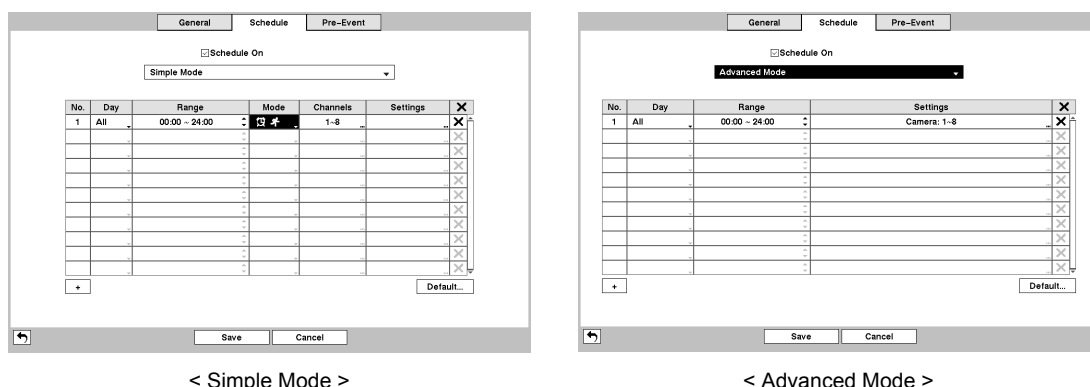






Figure 13 : Record – Schedule setup screen.


You can program the NVR to record only during certain times based on time, day of the week, and holidays. The smallest time segment you can use is 15 minutes.


Highlighting Schedule On and pressing the  button toggles between On and Off. In the Schedule On mode, the NVR records video based on the schedule established in the Schedule screen. When turning Schedule recording Off, you will be asked to confirm your decision, and  displays at the top-left corner of each camera screen. Panic recording will function even when Schedule is turned off.  displays during panic recording.

Highlight the Schedule Mode box and press the  button. You can select between Simple Mode and Advanced Mode. Selecting Advanced Mode allows you to set up individual recording schedule for each event.

NOTE: Changing the schedule mode will reset all event and action statuses.



Highlight the + and press the  button to add a schedule item.






Highlight the box under the **Day** heading and press the  button to change the days that the scheduled recording will take place. Choose from: Sun, Mon, Tue, Wed, Thu, Fri, Sat, M~F, Hol and All.



Highlight the box under the **Range** heading and press the  button to change the time range that the scheduled recording will take place. The smallest time segment you can use is 15 minutes.


Highlight the box under the **Mode** heading and press the  button to change the recording mode that will be used. Choose from: No Record, Time, Event and Time & Event. (Simple Mode Only)


When the NVR is in the **No Record** mode, it will not record during the preset day and time range as long as the **PANIC** button is not pressed. Use the **No Record** mode when you do NOT want the NVR to record during certain times.

When the NVR is in the **Time** mode, the  icon displays at the top-left corner of the screen. The NVR will record and displays the  icon at the top-left corner of the screen during the scheduled times.

When the NVR is in the **Event** mode, the red  icon displays at the top-left corner of the screen. The NVR will record and displays the  icon at the top-left corner of the screen when any event occurs. When the NVR is in the **Pre-Event** recoding mode, the yellow  icon displays when there is no event, and the NVR is not recording. When the NVR is in the **Pre-Event** mode, the red  and  display when any event occurs and the NVR starts recoding.

When the NVR is in the **Time & Event** mode, the NVR will follow the Time settings and the  icon displays at the top-left corner of the screen. The NVR follows the Event settings and the  icon displays.

Highlight the box under the **Channels** heading and press the  button to select which cameras will be recorded. (Simple Mode Only)

Highlight the box under the **Settings** heading and press the  button to define the recording settings.

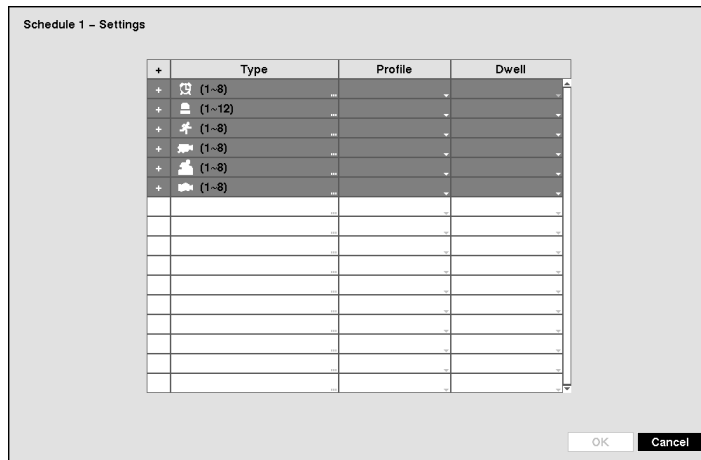


Figure 14 : Schedule – Settings (Advanced Mode) setup screen.

You can set the Profile (Profile and Dwell for Advanced Mode setup) of the recording for any modes you set up in the Mode column. If you do not set the Profile and Dwell in the Settings column, the NVR will follow the default settings. See below for details.

NOTE: Descriptions of the Record icons in the Type column are as follows:

- | | | |
|-------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|
|  Time-lapse (Time) |  Alarm-In |  Motion |
|  Video Loss |  Trip-Zone |  Tampering |


Channels that are not defined will use the setting values of the previous schedule item.


When multiple events are detected at the same time from a specific channel, the NVR will record event video with the high setting values if the Profile and Dwell values of events are different from each other. (Advanced Mode Only).


Highlight the box under the **X** heading and press the  button to delete the recording settings. You will be asked to confirm that you want to delete the settings.

Highlight **Default...** and press the  button. The Default screen appears.


Default		
Mode	Profile	Dwell
Time	Profile 2	
Event	Profile 1	5 sec.

 OK Cancel

Highlighting boxes under **Profile** and pressing the  button allows you to select the profile you would like to record for the associated event. (Advanced Mode Only)

Highlighting boxes under **Dwell** and pressing the  button allows you to set the length of time you would like to record for the associated event. (Advanced Mode Only)

Pre-Event

Highlight **Pre-Event** and press the  button, and the Pre-Event setup screen appears. If you do not have Event set up in the Record Schedule, a message will display alerting you to this fact.

General			Schedule	Pre-Event
No.	Profile	Dwell		
<input type="checkbox"/> 1.	Profile 3	00 min. 05 sec.		
<input type="checkbox"/> 2.	Profile 3	00 min. 05 sec.		
<input type="checkbox"/> 3.	Profile 3	00 min. 05 sec.		
<input type="checkbox"/> 4.	Profile 3	00 min. 05 sec.		
<input type="checkbox"/> 5.	Profile 3	00 min. 05 sec.		
<input type="checkbox"/> 6.	Profile 3	00 min. 05 sec.		
<input type="checkbox"/> 7.	Profile 3	00 min. 05 sec.		
<input type="checkbox"/> 8.	Profile 3	00 min. 05 sec.		


 Save Cancel

Figure 15 : Record – Pre-Event setup screen.

When the NVR is in the Event Record mode it is possible to have it record images before the event occurs. The **Pre-Event** screen allows you to define how to handle pre-event recording.

You can turn individual cameras On or Off for pre-event recording and select the Profile for pre-event recording.

You can set the amount of time to record prior to the event by adjusting the **Dwell**. You can set the **Dwell** from 5 seconds to 30 minutes. The longer the dwell set, the fewer maximum ips can be set.

NOTE: Depending on the Profile of recorded video, the pre-event Dwell you set may not be attainable.

When the NVR is in the Time or Time & Event mode, it ignores the pre-event settings and follows the time settings.

Network Setup

General

Highlight General and press the  button, and the General setup screen displays.

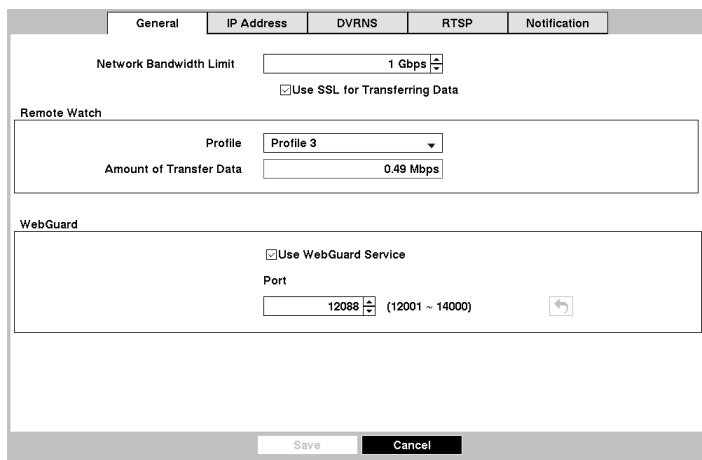



Figure 16 : Network – General setup screen.

You can limit the network bandwidth settings so that system does not consume too much network bandwidth. Highlight the box beside **Network Bandwidth Limit** and press the Up and Down arrow buttons to set the desired maximum bandwidth from 50Kbps to 1Gbps.

NOTE: When limiting the network bandwidth, the remote watch image on the PC running RAS or WebGuard might not be displayed properly.


Highlight **Use SSL for Transferring Data** and press the  button to toggle between On and Off. When it is On, the security of data except video and audio transmitted for remote monitoring or remote recording can be enhanced by using the SSL (Secure Sockets Layer) authentication. When using the SSL function, the NVR cannot be connected with a remote program or a network keyboard which does not support the SSL function.


CAUTION: The remote connection will be disconnected temporarily after changing the SSL settings.

NOTE: This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).

Highlight the box beside **Remote Watch – Profile**. Select the Profile for transferring data to the remote site.

The box beside **Remote Watch – Amount of Transfer Data** displays how much data will be transferred with the profile you set.

Highlight **WebGuard – Use WebGuard Service** and press the  button to toggle between On and Off. See *Appendix – WebGuard* for detailed descriptions of the WebGuard service.

Highlight the box beside **WebGuard – Port** and press the  button. Set the port number used when accessing WebGuard by using the Up and Down arrow buttons to increase or decrease the numbers.

IP Address

Highlight IP Address and press the  button, and the IP Address setup screen displays.

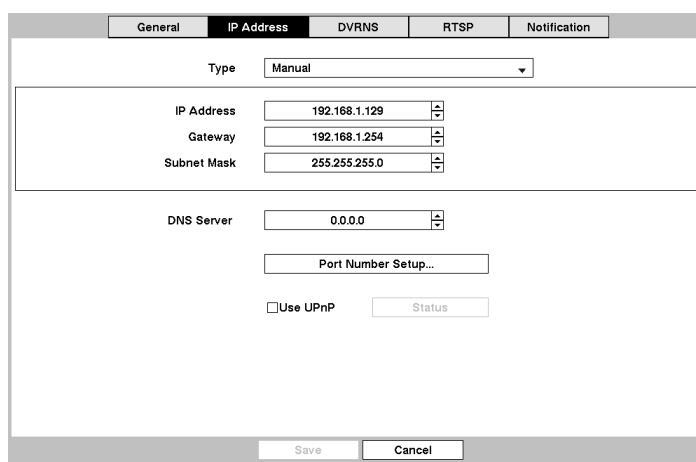




Figure 17 : Network – IP Address (Manual) setup screen.

Highlight the box beside Type and press the  button. You can select the type of network configuration from: Manual, DHCP and ADSL (with PPPoE). Select the desired type and press the  button.

Selecting Manual from the Type allows you to set up LAN parameters manually.

Change the numbers by highlighting them and using the Up and Down arrow buttons to increase or decrease the number. The factory default LAN settings are:

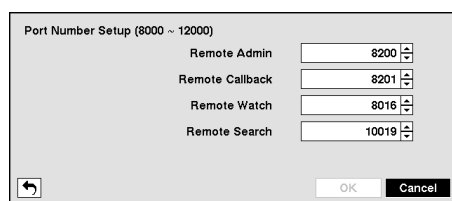
IP Address: 192.168.1.129
 Gateway: 192.168.1.254
 Subnet Mask: 255.255.255.0

NOTE: You will need to get the appropriate IP Address, Gateway and Subnet Mask from your network administrator.

Highlight the box beside DNS Server. Press the Up and Down arrow buttons to set the IP address of the DNS server.

Highlight the Port Number Setup... box and press the  button. The Port Number Setup screen appears.

NOTE: You will need to get the appropriate Port Numbers for each RAS and WebGuard related program (Admin, Callback, Watch and Search) from your network administrator.




Change the numbers by highlighting them and using the Up and Down arrow buttons to increase or decrease the number. The factory default Port settings are:

Remote Admin: 8200
 Remote Callback: 8201
 Remote Watch: 8016
 Remote Search: 10019

NOTE: The system restarts automatically after changing the port settings.


Do NOT use the same port number for two different programs, otherwise, the NVR cannot be connected with the PC running RAS or WebGuard.

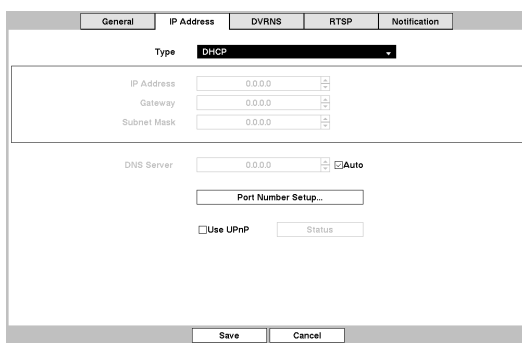
CAUTION: When changing the port settings, you must change the port settings on the PC running RAS as well. Refer to the RAS manual for details.

Highlight **Use UPnP** and press the  button to toggle between On and Off. When it is On, port forwarding from the NAT (Network Address Translation) device to the NVR will be enabled automatically via UPnP (Universal Plug and Play) service. This function will be especially useful when accessing a port on a private IP address.

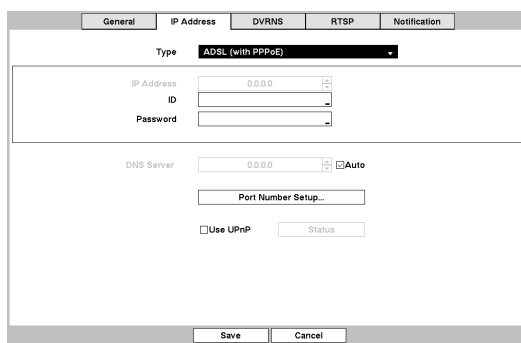
NOTE: For the UPnP service to work, the NAT device should support the UPnP Port Forwarding function and the function should be set to enabled.

You cannot change the port settings when *Use UPnP* is On.

Highlight the **Status** box and press the  button to display the port numbers forwarded from the NAT device via UPnP service.




The screenshot shows the 'IP Address' configuration tab. The 'Type' dropdown is set to 'DHCP'. Below it, there are input fields for 'IP Address', 'Gateway', and 'Subnet Mask', all showing '0.0.0.0'. There is also a 'DNS Server' field with '0.0.0.0' and an 'Auto' checkbox. A 'Port Number Setup...' button is visible. At the bottom, there is a 'Use UPnP' checkbox and a 'Status' button. 'Save' and 'Cancel' buttons are at the very bottom.




The screenshot shows the 'IP Address' configuration tab. The 'Type' dropdown is set to 'ADSL (with PPPoE)'. Below it, there are input fields for 'IP Address' (0.0.0.0), 'ID', and 'Password'. There is also a 'DNS Server' field with '0.0.0.0' and an 'Auto' checkbox. A 'Port Number Setup...' button is visible. At the bottom, there is a 'Use UPnP' checkbox and a 'Status' button. 'Save' and 'Cancel' buttons are at the very bottom.


Selecting **DHCP** from the **Type** and highlighting **Save** button reads the current IP address of the NVR configured by DHCP (Dynamic Host Configuration Protocol) network.

Highlight **Auto** (Default) and press the  button to toggle between On and Off. When it is On, the NVR will obtain the IP address of the DNS server automatically.

NOTE: Selecting **Auto** will only be enabled when the NVR is configured for DHCP or an ADSL network.

Selecting **ADSL (with PPPoE)** allows you to set up the ADSL network.

Highlight the box beside **ID** and press the  button. A virtual keyboard appears allowing you to enter the ID for ADSL connection.

Highlight the box beside **Password** and press the  button. A virtual keyboard appears allowing you to enter the password for ADSL connection.

NOTE: Entering the **ID** and **Password** and highlighting **OK** reads the current IP address of the NVR configured by the ADSL network.

If the NVR is configured for DHCP or an ADSL network, the IP address of the NVR might change whenever the unit is turned on.

DVRNS

Highlight **DVRNS** and press the  button, and the DVRNS setup screen displays.

Figure 18 : Network – DVRNS setup screen.

Highlight Use DVR Name Service and press the button to toggle between On and Off.

NOTE: The DVRNS (DVR Name Service) allows the NVR to use Dynamic IP addresses for remote connection. When this feature is On, you can access your NVR remotely using the NVR name instead of its IP address. For the DVRNS feature, the NVR should be registered on the DVRNS server and the DNS server should be configured during Network – IP Address setup.

Highlight the box beside DVRNS Server and press the button. A virtual keyboard appears allowing you to enter the IP address or domain name of the DVRNS server.

NOTE: You will need to get the IP Address or domain name of the DVRNS Server from your network administrator.

You can use the domain name instead of IP address if you already set up the DNS Server when setting up the Network – IP Address.

Highlight the box beside Port and press the button. Set the port number of the DVRNS server using the Up and Down arrow buttons to increase or decrease the numbers.

Highlight Use NAT and press the button to toggle between On and Off.

NOTE: When using the NAT (Network Address Translation) device, refer to the NAT manufacturer's instructions for the proper network settings.

Highlight the box beside NVR Name and press the button. A virtual keyboard appears allowing you to enter the NVR name to be registered on the DVRNS server.

Highlight the Check box and press the button to check whether or not the name you entered can be used.

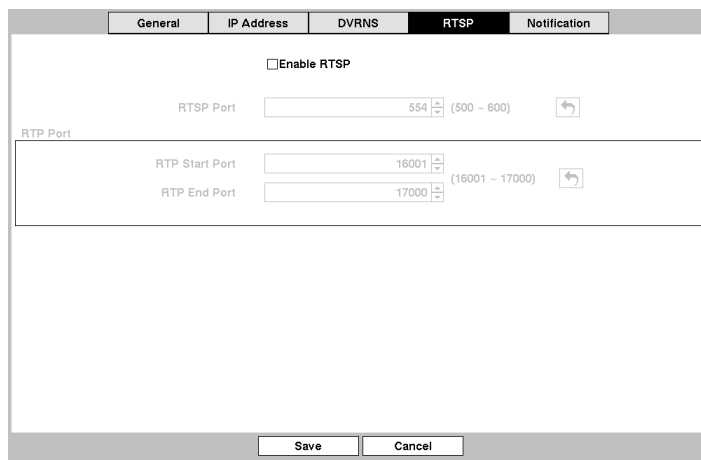
NOTE: The NVR name you entered should be checked by selecting Check, otherwise the DVRNS changes will not be saved.

When entering no name or a name already registered on the DVRNS server, an error message displays.

Highlighting Save and pressing the button registers the NVR on the DVRNS server. Proper DVRNS settings will display the help desk information of the DVRNS server in the box beside Help Desk.

RTSP


Highlight RTSP and press the  button. The RTSP setup screen displays.





The screenshot shows the RTSP setup screen with the following elements:

- Tabs: General, IP Address, DVRNS, **RTSP**, Notification
- Enable RTSP: ☐
- RTSP Port: 554 (range 500 ~ 600)
- RTP Port section:
 - RTP Start Port: 16001 (range 16001 ~ 17000)
 - RTP End Port: 17000
- Buttons: Save, Cancel


Figure 19 : Network – RTSP setup screen.

Highlight Enable RTSP (Real-Time Streaming Protocol) and press the  button to toggle between On and Off. You will be able to change the settings if Enable RTSP is enabled.

Highlight the box beside RTSP Port and press the  button. Set the port number of the RTSP server obtained from your system administrator.

Highlight the box beside RTP Start Port and press the  button. Set the start port number of the RTP server obtained from your system administrator.

Highlight the box beside RTP End Port and press the  button. Set the end port number of the RTP server obtained from your system administrator.

Highlight Use Mobile and press the  button to toggle between On and Off. When set to on, you can access a remote NVR using a Blackberry or other mobile devices.

NOTE: Selecting *Use Mobile* sets the WebGuard service to be enabled automatically regardless of your WebGuard settings.

When using NAT (Network Address Translation) or firewall services, opening all UDP ports allows you to access a NVR using Blackberry and Android devices.

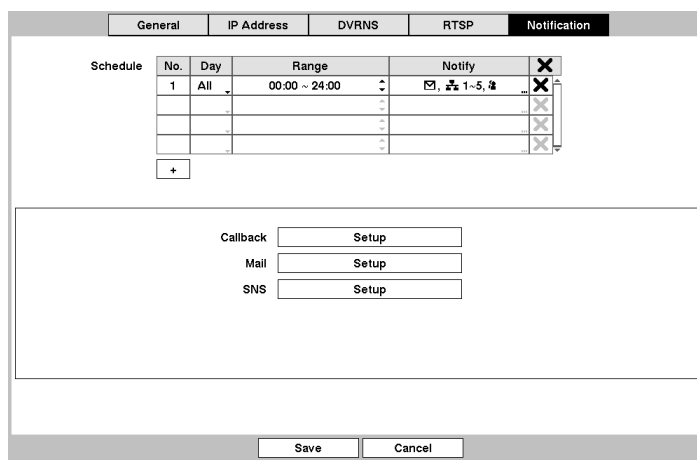
You can access a remote NVR and monitor live video images using media players, such as VLC Player, supporting RTSP service. Start the media player on your local PC and enter "rtsp://ID:Password@IP address:RTSP port number/trackID='channel number'", or start Internet Explorer on your Blackberry or other mobile devices and enter "http://IP address:Webguard port number/".

Some media players might play video properly depending on network conditions.

RTSP service might not be supported, depending on the type of media player.

Notification



Highlight Notification and press the  button. The Notification setup screen displays.



No.	Day	Range	Notify
1	All	00:00 ~ 24:00	1-5, 1-5, 1-5


Callback
 Mail
 SNS

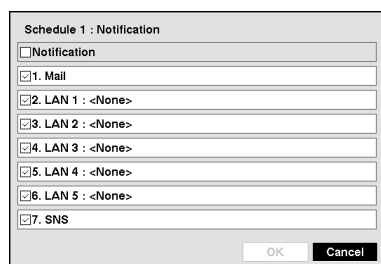
Figure 20 : Network – Notification setup screen.

You can add and edit notification schedules. Highlight the + and press the  button to add a schedule. Highlighting the boxes under the Column heading and pressing the  button allows you to edit the information in those boxes.

The Day box allows you to select the days that the notification schedule will be active. The choices are: Sun, Mon, Tue, Wed, Thu, Fri, Sat, M~F, Hol and All.

The Range box allows you to set the time that the notification schedule will be active in 15-minute increments from 00:00 to 24:00.

Highlight the desired box under the Notify heading, and press the  button. The Schedule Notify menu appears.



Schedule 1 : Notification

☐ Notification

☒ 1. Mail

☒ 2. LAN 1 : <None>




☒ 3. LAN 2 : <None>

☒ 4. LAN 3 : <None>


☒ 5. LAN 4 : <None>

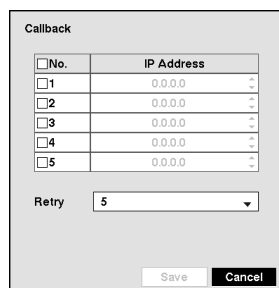
☒ 6. LAN 5 : <None>

☒ 7. SNS

You can toggle the entire list On and Off by highlighting Notification and pressing the  button. You can toggle the individual items On and Off by highlighting that item and pressing the  button. Highlight OK and press the  button to accept your changes.

NOTE: For the Notify action, the notify item you select should be enabled in the Notification setup screen and the NVR should be registered in the RAS (Remote Administration System).


Highlight Callback – Setup and press the  button, and the Callback screen appears. The NVR can be set up to contact a computer running RAS (Remote Administration System) when an event occurs.




Callback


No.	IP Address
<input type="checkbox"/> 1	0.0.0.0
<input type="checkbox"/> 2	0.0.0.0
<input type="checkbox"/> 3	0.0.0.0
<input type="checkbox"/> 4	0.0.0.0
<input type="checkbox"/> 5	0.0.0.0

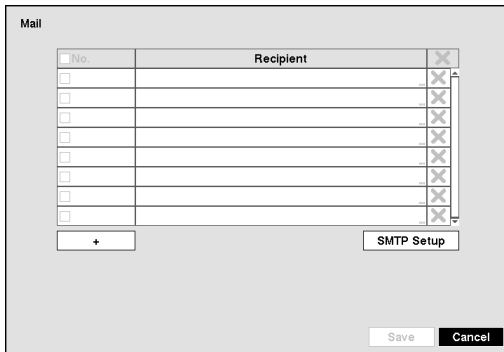
Retry


Highlight the box under the No. heading and press the  button to toggle between On and Off. You will only be able to change the IP addresses if No. is enabled.


Highlight the IP Address box that you want to change and press the  button. Use the arrow buttons to enter the IP address of the computer you want contacted during an event. You can enter up to five IP addresses.

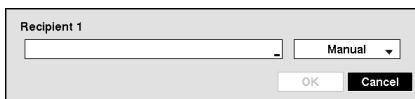
Highlight the box beside Retry and enter the number of times you would like the NVR to try contacting the computer. You can select from 1 to 10 retries.


Highlight **Mail – Setup** and press the  button, and the Mail screen appears. The NVR can be set up to send an email when an event occurs.



The Mail account can be turned On or Off by highlighting the boxes under the **No.** heading and pressing the  button.


Highlight the **+** and press the  button to add a mail recipient.




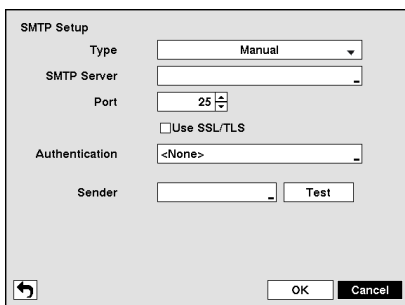
Highlight the first box under **Recipient** and press the  button. A virtual keyboard appears that you can use to enter the recipient's e-mail address.


Highlight the second box under **Recipient** and press the  button. You can select between **Manual** and listed SMTP mail server providers.


NOTE: The e-mail address must include the "@" character to be a valid address.

The Mail accounts can be deleted by highlighting the **X** beside the account and pressing the  button.

Highlight **SMTP Setup** and press the  button. The SMTP Setup screen appears.





Highlight the box beside **Type** and press the  button. You can select between **Manual** and listed SMTP mail server providers.

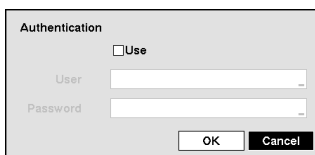
Highlight the box beside **SMTP Server** and press the  button. A virtual keyboard appears that you can use to enter the IP address or domain name of the SMTP server.




NOTE: You will need to get the IP Address or domain name of the SMTP Server from your network administrator.


NOTE: You can use the domain name instead of IP address if you already set up the DNS Server when setting up the Network – IP Address.

Highlight the box beside **Port** and press the  button. Use the arrow buttons to enter the SMTP Server port number obtained from your system administrator. The default port number is 25.

Highlight **Use SSL/TLS** and press the  button to toggle between On and Off. When it is On, the NVR can send an email via an SMTP server requiring SSL (Secure Sockets Layer) authentication.




Highlight the box beside **Authentication** and press the  button. An Authentication screen appears. Highlight **Use** and press the  button to toggle between On and Off. Highlight the box beside **User/Password** and press the  button. A virtual keyboard appears allowing you to enter the user ID and password.


NOTE: In addition to using the front panel buttons or the infrared remote control, you can use the virtual keyboard to assign the password. To display the virtual keyboard click the  button using the mouse.

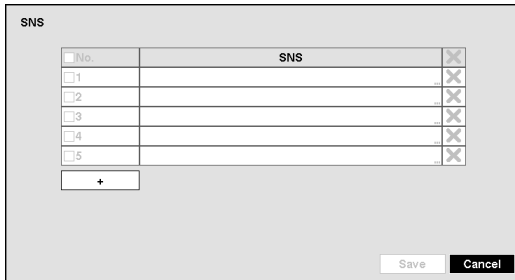
This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).


Highlight the box beside Sender and enter the sender's e-mail address. Use the virtual keyboard to enter the e-mail address.

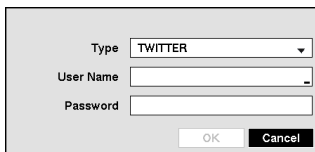
NOTE: The e-mail address must include the "@" character to be a valid address.



Highlight the Test box and press the  button to test emailing with the current settings you made.


Highlight SNS – Setup and press the  button, and the SNS screen appears. The NVR can be set up to post a message via SNS (Social Network Service) when an event occurs.





You can add and edit the SNS account on this screen. The SNS account can be turned On or Off by highlighting the boxes under the No. heading and pressing the  button.



To add an SNS account, highlight the + and press the  button. Highlight the box beside Type and press the  button. Selecting TWITTER from the Type allows you to post a tweet on Twitter when an event occurs.

Highlight the box beside User Name/Password and press the  button. A virtual keyboard appears allowing you to enter the user name and password.

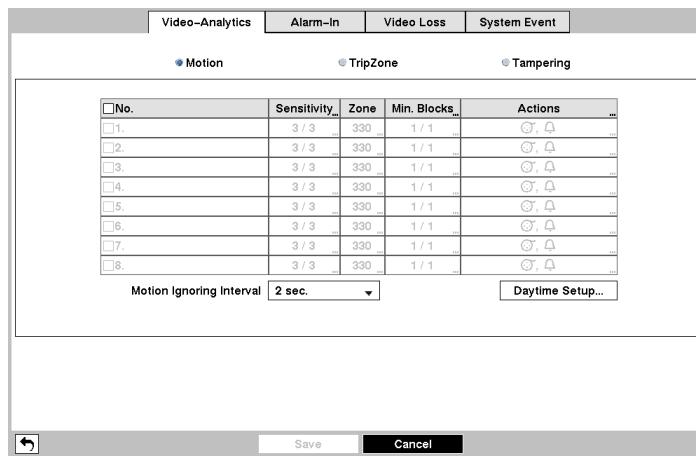
The SNS accounts can be deleted by highlighting the  beside the account and pressing the  button.

NOTE: Posting a tweet might fail because of Twitter limitations.

Event Setup

Video-Analytics

Highlight Video-Analytics and press the  button, and the Video-Analytics setup screen appears.



















No.	Sensitivity	Zone	Min. Blocks	Actions
1	3 / 3	330	1 / 1	 
2	3 / 3	330	1 / 1	 
3	3 / 3	330	1 / 1	 
4	3 / 3	330	1 / 1	 
5	3 / 3	330	1 / 1	 
6	3 / 3	330	1 / 1	 
7	3 / 3	330	1 / 1	 
8	3 / 3	330	1 / 1	 

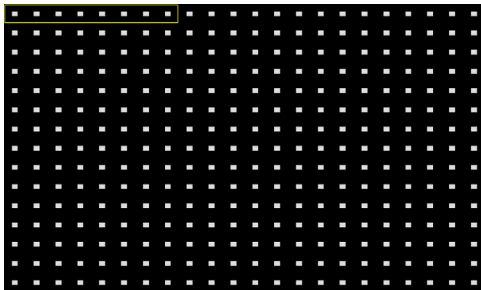
Figure 21 : Event – Video-Analytics (Motion) setup screen.

NOTE: The following description is for *Motion* setup.

Video motion detection can be turned On or Off for each camera.

Highlighting the box under the **Sensitivity** heading and pressing the \odot button allows you to adjust the NVR's sensitivity to motion for Daytime and Nighttime independently. There are five settings with 1 being the least sensitive and 5 being the most sensitive.

You can define the area of the image where you want to detect motion; e.g., a doorway. Highlight the box under the **Zone** heading, and press the \odot button. The Motion Detection Zone screen displays.



The Motion Detection Zone screen is laid over the video for the selected camera. You can set up motion detection zones by selecting or clearing blocks.

NOTE: You can set up motion zones one block at a time in groups of eight (four for the 4-channel NVR) individual block groups. A block group is positioned within the image area using the Up and Down arrow buttons, and individual blocks within the block groups are selected or cleared using the camera buttons.

Press the \odot button to display the menu screen. The menu on the setup screen has the following functions:

Select – Activates highlighted blocks to detect motion.
Clear – Deactivates highlighted blocks so that they will not detect motion.
Reverse – Activates inactive highlighted blocks and deactivates active highlighted blocks.
Select All – Activates all blocks to detect motion.
Clear All – Deactivates all blocks so that they will not detect motion.
Reverse All – Activates inactive blocks and deactivates active blocks.
OK – Accepts changes and closes Zone setup.
Cancel – Exits Zone setup without saving changes.

You can adjust the minimum number of detection blocks that must be activated to trigger a motion alarm. Highlighting the box under the **Min. Blocks** heading and pressing the \odot button allows you to adjust the minimum number of detection blocks for Daytime and Nighttime independently. Smaller numbers provide greater sensitivity because fewer detection blocks must be activated.

Highlight the box under the **Actions** and press the \odot button. The NVR can be set to react to motion detection differently for each camera. Each camera can be associated with another camera, trigger an Alarm-Out connector, sound the NVR's internal buzzer, and/or notify a number of different devices.

You can control excessive event logging and remote notification of motions detected after the motion dwell time by adjusting the motion ignoring dwell intervals. Highlight the box beside **Motion Ignoring Interval** and press the \odot button. A list of intervals ranging from 1 to 5 seconds or **Never** appears. The NVR will not log and notify motion events occurred during the preset interval range.

NOTE: The record action for motion events will not be affected by the Motion Ignoring function.

Highlighting **Daytime Setup** and pressing the \odot button allows you to set up the Daytime range.

Highlight the box beside **Daytime** and press the \odot button. Use the Up and Down arrow buttons to set the Daytime range. The NVR will consider the remaining time range as the Nighttime.

NOTE: The following description is for *TripZone* setup.

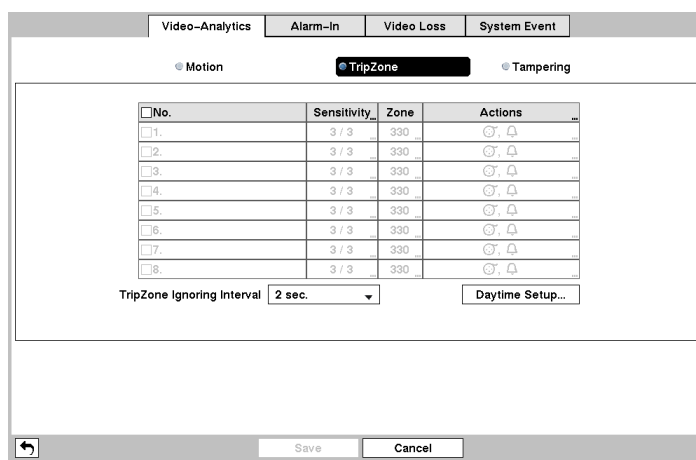
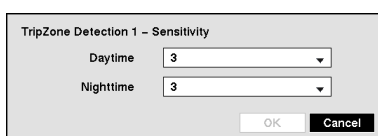
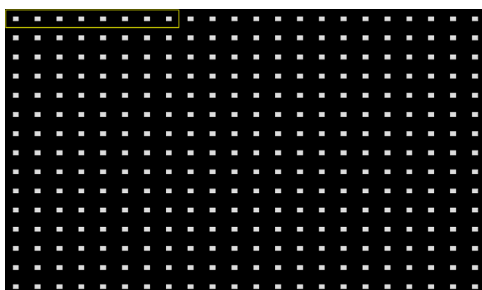


Figure 22 : Event – Video-Analytics (TripZone) setup screen.



Highlighting the box under the **Sensitivity** heading and pressing the button allows you to adjust the NVR's sensitivity to tripzone detection for Daytime and Nighttime independently. There are five settings with 1 being the least sensitive and 5 being the most sensitive.

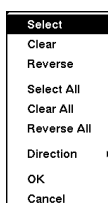
You can define the area of the image where you want to detect motion; e.g., a doorway. Highlight the box under the **Zone** heading, and press the button. The Zone screen displays.



The Zone screen is laid over the video for the selected camera. You can set up tripzone detection zones by selecting or clearing blocks.

NOTE: You can set up zones one block at a time in groups of eight (four for the 4-channel NVR) individual block groups. A block group is positioned within the image area using the Up and Down arrow buttons, and individual blocks within the block groups are selected or cleared using the camera buttons.

Press the button to display the menu screen. The menu on the setup screen has the following functions:




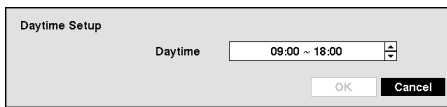
Select – Activates highlighted blocks to detect tripzone.
Clear – Deactivates highlighted blocks so that they will not detect tripzone.
Reverse – Activates inactive highlighted blocks and deactivates active highlighted blocks.
Select All – Activates all blocks to detect tripzone.
Clear All – Deactivates all blocks so that they will not detect tripzone.
Reverse All – Activates inactive blocks and deactivates active blocks.
Direction – Select the direction of the tripzone to be considered as an event.
OK – Accepts changes and closes Zone setup.
Cancel – Exits Zone setup without saving changes.

Highlight the box under the **Actions** and press the button. The NVR can be set to react to tripzone detection differently for each camera. Each camera can be associated with another camera, trigger an Alarm-Out connector, sound the NVR's internal buzzer, and/or notify a number of different devices.

Highlight the box beside **TripZone Ignoring Interval** and press the button. A list of intervals ranging from 1 to 5 seconds or **Never** appears. The NVR will not log and notify tripzone events occurred during the preset interval range.


NOTE: The record action for motion events will not be affected by the TripZone Ignoring function.

Highlighting Daytime Setup and pressing the  button allows you to set up the Daytime range.

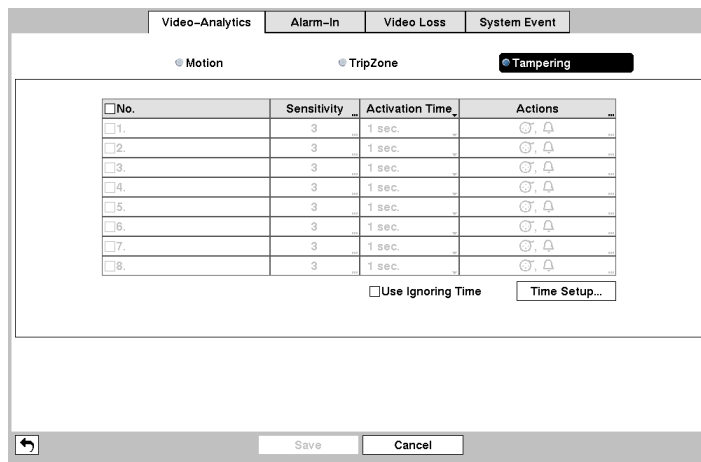


Daytime Setup

Daytime

















Highlight the box beside Daytime and press the  button. Use the Up and Down arrow buttons to set the Daytime range. The NVR will consider the remaining time range as the Nighttime.

NOTE: The following description is for *Tampering* setup.



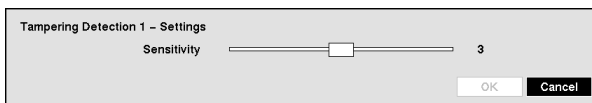
Video-Analytics ☒ Alarm-In ☐ Video Loss ☐ System Event

☒ Motion ☒ TripZone ☒ Tampering

No.	Sensitivity	Activation Time	Actions
1	3	1 sec.	 
2	3	1 sec.	 
3	3	1 sec.	 
4	3	1 sec.	 
5	3	1 sec.	 
6	3	1 sec.	 
7	3	1 sec.	 
8	3	1 sec.	 


☐ Use Ignoring Time

Figure 23 : Event – Video-Analytics (Tampering) setup screen.




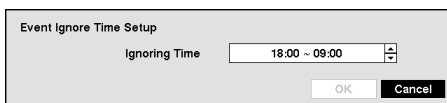
Tampering Detection 1 - Settings

Sensitivity

Highlighting the box under the Sensitivity heading and pressing the  button allows you to adjust the NVR's sensitivity to tampering. There are five settings with 1 being the least sensitive and 5 being the most sensitive.



Highlighting the box under the Activation Time heading allows you to set the duration before the NVR will report a Tampering. The NVR will not consider any camera temper to be a Tampering if the detected tampering is less than the Activation Time set on this screen.

Highlight the box under the Actions and press the  button. The NVR can be set to react to tampering detection differently for each camera. Each camera can be associated with another camera, trigger an Alarm-Out connector, sound the NVR's internal buzzer and/or notify a number of different devices.



Event Ignore Time Setup

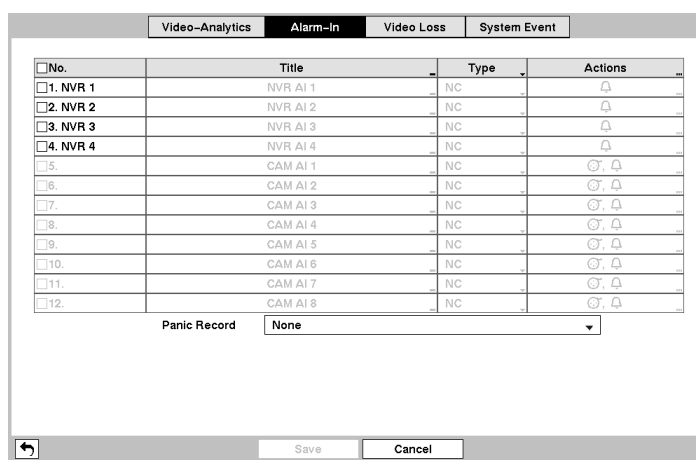
Ignoring Time

Highlight Use Ignoring Time and press the  button to toggle between On and Off. When set to On, the NVR will ignore tampering events occurring during the preset period. Highlighting Time Setup and pressing the  button allows you to set up event ignoring time.

NOTE: The record action for motion events will not be affected by the Tampering Ignoring function.

Alarm-In

Highlight Alarm-In and press the  button, and the Alarm-In setup screen appears.




The screen displays a table with columns: No., Title, Type, and Actions. Below the table is a 'Panic Record' section with a dropdown menu set to 'None'. At the bottom are 'Save' and 'Cancel' buttons.


No.	Title	Type	Actions
<input type="checkbox"/> 1. NVR 1	NVR Ai 1	NC	
<input type="checkbox"/> 2. NVR 2	NVR Ai 2	NC	
<input type="checkbox"/> 3. NVR 3	NVR Ai 3	NC	
<input type="checkbox"/> 4. NVR 4	NVR Ai 4	NC	
<input type="checkbox"/> 5.	CAM Ai 1	NC	
<input type="checkbox"/> 6.	CAM Ai 2	NC	
<input type="checkbox"/> 7.	CAM Ai 3	NC	
<input type="checkbox"/> 8.	CAM Ai 4	NC	
<input type="checkbox"/> 9.	CAM Ai 5	NC	
<input type="checkbox"/> 10.	CAM Ai 6	NC	
<input type="checkbox"/> 11.	CAM Ai 7	NC	
<input type="checkbox"/> 12.	CAM Ai 8	NC	

Panic Record: None


Save Cancel


Figure 24 : Event – Alarm-In setup screen.

The alarm terminal strip on the back of the NVR has inputs associated with each alarm. You can set up each input on the Alarm-In screen. You can turn each input On or Off by highlighting the alarm number and pressing the  button.

Each input can be given a title. Highlight the desired Title box and press the  button. A virtual keyboard appears allowing you to enter a title name.

Each input can be set as NO (normally open) or NC (normally closed).

Highlight the box under the **ACTIONS** and press the  button. You can set the actions the NVR will take whenever it senses an input on one of its alarm input connectors. Alarm input can be associated with cameras, trigger an Alarm-Out connector, sound the NVR's internal buzzer, and/or notify a number of different devices.

You can set up the NVR to start panic recording whenever it senses an input on one of its alarm input connectors. Highlight the box beside **Panic Record** and press the  button. A list of Alarm Inputs appears, and you can select which alarm input you want associated with panic recording. The NVR will continue panic recording until an input on the selected alarm input is released as long as the **PANIC** button is not pressed to stop the panic recording.

Video Loss

Highlight Video Loss and press the  button, and the Video Loss setup screen appears.

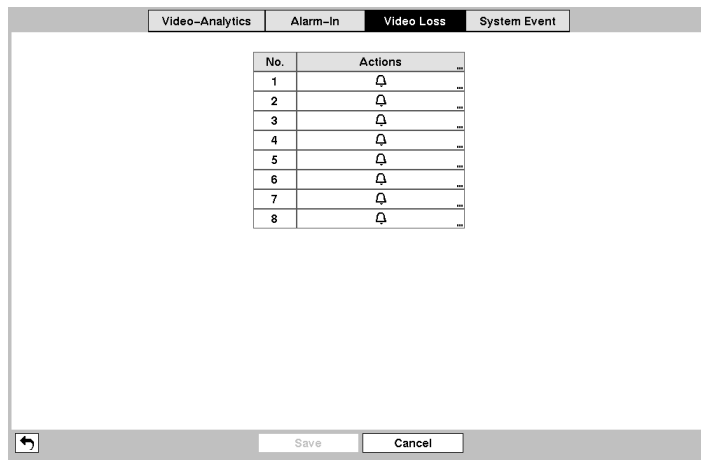


Figure 25 : Event – Video Loss setup screen.

Highlight the box under the **Actions** and press the button. The NVR can be set to react to video loss differently for each camera. Each camera can be associated with another camera, trigger an Alarm-Out connector, sound the NVR's internal buzzer, and/or notify a number of different devices.

System Event

Highlight **System Event** and press the button, and the System Event setup screen appears.

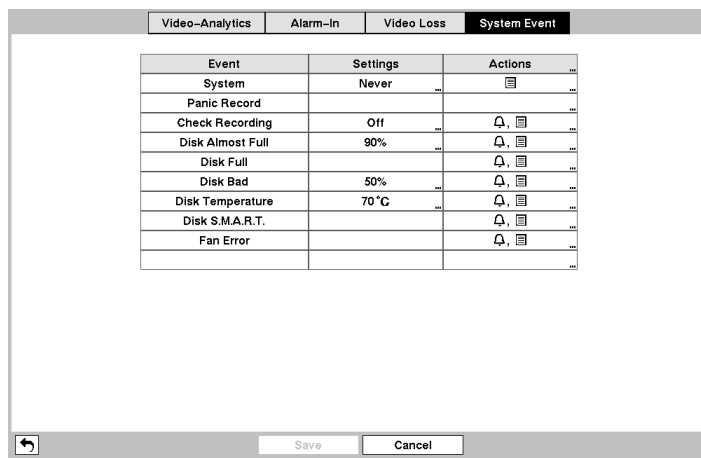


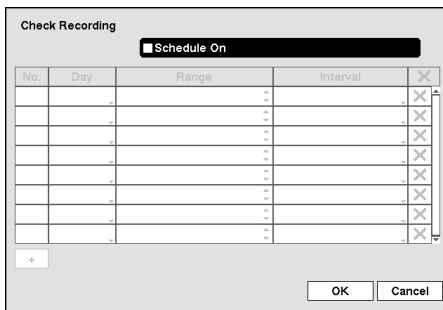
Figure 26 : Event – System Event setup screen.

The NVR can be configured to run self-diagnostics and report the results.

Highlight the **Settings** box beside the desired event (System, Check Recording, Disk Almost Full, Disk Bad, or Disk Temperature), and press the button.



Highlight the **Settings** box beside **System** and press the button. You can select the interval that you want the NVR to run self-diagnostics on the system. You can select from 1 hr. to 30 days or Never.


Highlight the **Settings** box beside **Check Recording** and press the button. The Check Recording screen appears.





The 'Check Recording' dialog box has a title bar 'Check Recording'. Below it is a tab labeled 'Schedule On'. The main area contains a table with columns: No., Day, Range, Interval, and a delete button (X). The table has 10 rows. At the bottom left is a '+' button, and at the bottom right are 'OK' and 'Cancel' buttons.


No.	Day	Range	Interval	
				X
				X
				X
				X
				X
				X
				X
				X
				X
				X

Highlighting **Schedule On** and pressing the  button toggles On and Off. When set to On, you can select the day, time range and interval that you want the NVR to run self-diagnostics on the recorder. The **Interval** can be selectable from 1 min. to 7 days or **Never**. Highlight the **+** and press the  button to add a schedule item. The **X** box allows you to delete a check recording schedule.

Highlight the **Settings** box beside **Disk Almost Full**, and press the  button. Select the percentage level of disk usage at which you want the NVR to trigger an alert. Percentage levels range from 80% to 99%.

Highlight the **Settings** box beside **Disk Bad**, and press the  button. Select percentage level of bad disk sectors at which you want the NVR to trigger an alert. Percentage levels range from 10% to 90%.

Highlight the **Settings** box beside **Disk Temperature**, and press the  button. Select the temperature of hard disk drive at which you want the NVR to trigger an alert if the temperature exceeds the defined threshold. Refer to the hard disk drive manufacturer's documentation for the correct temperature setting.


The NVR can be set to react to system events. Highlight the **ACTIONS** box beside the desired event and press the  button. System events can be associated with an Alarm-Out connector, sound the NVR's internal buzzer, and/or notify a number of different devices.

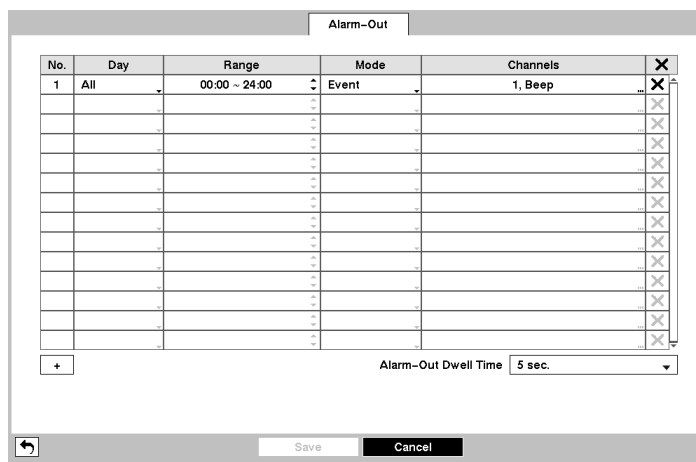
NOTE: *Alarm-Out* action cannot be set to *System* and *Panic Record* events.

For the *Notify* action to work, the NVR should be registered in the *RAS (Remote Administration System)*.

Device Setup

Alarm-Out

Highlight **Alarm-Out** and press the  button. The Alarm-Out screen allows you to change the settings and establish a schedule for each alarm output from the NVR.





The 'Alarm-Out' screen has a title bar 'Alarm-Out'. Below it is a table with columns: No., Day, Range, Mode, Channels, and a delete button (X). The table has 10 rows. The first row is populated with: No. 1, Day All, Range 00:00 ~ 24:00, Mode Event, Channels 1, Beep. At the bottom left is a '+' button. At the bottom right is a dropdown menu labeled 'Alarm-Out Dwell Time' with '5 sec.' selected. At the very bottom are 'Save' and 'Cancel' buttons.


No.	Day	Range	Mode	Channels	
1	All	00:00 ~ 24:00	Event	1, Beep	X
					X
					X
					X
					X
					X
					X
					X
					X
					X


Figure 27 : Device – Alarm-Out setup screen.


You can add and edit alarm output schedules. Highlight the **+** and press the  button to add a schedule.


Highlighting the boxes under the **Column** heading and pressing the  button allows you to edit the information in those boxes.


Highlighting the boxes under the **Day** box and pressing the  button allows you to select the days that the alarm schedule will be active. The choices are: Sun, Mon, Tue, Wed, Thu, Fri, Sat, M~F, Hol and All.

Highlighting the boxes under the **Range** box and pressing the  button allows you to set the time that the alarm schedule will be active in 15-minute increments from 00:00 to 24:00.

Highlighting the boxes under the **Mode** box and pressing the  button allows you to set how the alarm reacts during the scheduled time. When set to **On**, the Alarm-Out is active during the scheduled time. When set to **Event**, the Alarm-Out is only active when there is an Event during the scheduled time.


Highlighting the boxes under the **Channels** box and pressing the  button allows you to set which alarm outputs will be active. You can also select the NVR's internal buzzer.

The  box allows you to delete an alarm output schedule. You will be asked to confirm whether or not you really wish to delete the schedule.

Highlighting the box beside **Alarm-Out Dwell Time** and pressing the  button allows you to set the dwell time of the alarm output. Dwell times range from 5 seconds to 15 minutes.

Display Setup

OSD

Highlight OSD and press the  button. The OSD screen allows you to select what information will be displayed on the monitor.

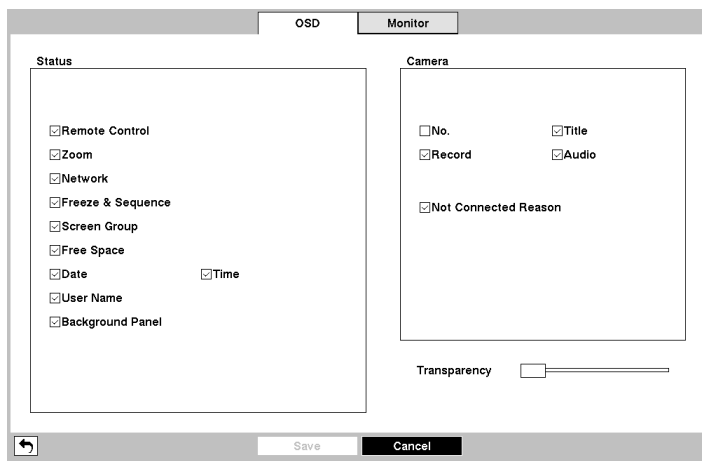











Figure 28 : Display – OSD setup screen.

Highlighting an item and pressing the  button toggles that item On and Off. When an item is On, there is a checkmark in the box beside it. The following items can be turned On or Off:

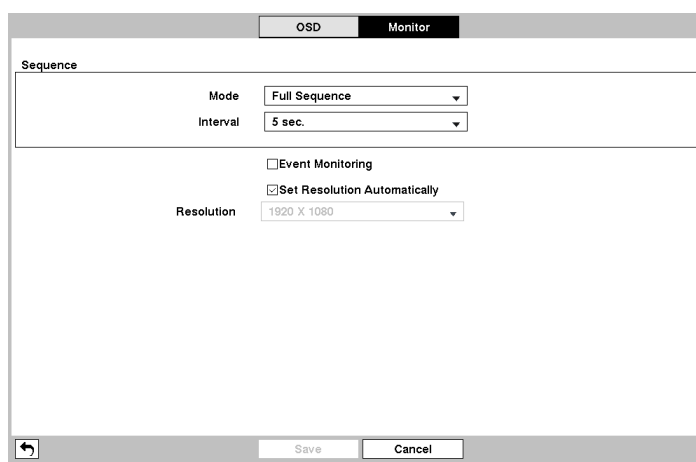
- **Remote Control** – The icon  displays when the NVR can be controlled by the infrared remote control.
- **Zoom** – The icon  displays on the enlarged video.
- **Network** – The icon  displays when the unit is connected to a network via Ethernet. The icon  displays on each camera when audio communication is available between the NVR and a PC running RAS via Ethernet.
- **Freeze & Sequence** – The icon  displays while in the Freeze mode, and the icon  displays while in the Sequence mode.
- **Screen Group** – The number of screen group displays when the NVR is not in the 3x3 display mode of the 8-channel NVR, and 2x2 mode of the 4-channel NVR.

- **Free Space** – The icon  displays when the NVR is in the Recycle mode, and the percentage of available storage space displays when the NVR is not in the Recycle mode.
- **Date/Time** – The current date and time information displays.
- **User Name** – The name of the current user logged in displays.
- **Background Panel** – The background panel at the bottom of the screen displays in black.
- **Camera No.** – The camera number displays at the top-left corner of each camera screen.
- **Camera Title** – The camera title displays at the top-left corner of each camera screen.
- **Record** – The record related icons display on each camera screen.
- **Audio** – The icon  displays on each camera screen for which the NVR can play live audio.
- **Not Connected Reason** – The error code displays on the associated camera screen when the network camera is not connected properly. Refer to *Appendix – Error Code Notices* for error code information.

You can adjust the transparency of the setup screens by highlighting **Transparency** and using the Left and Right arrow buttons.


Monitor


Highlight **Monitor** and press the  button, and the Monitor setup screen appears.



The image shows the 'Monitor' setup screen. At the top, there are two tabs: 'OSD' and 'Monitor', with 'Monitor' being the active tab. Below the tabs, the screen is titled 'Sequence'. It contains several settings: 'Mode' is set to 'Full Sequence' with a dropdown arrow; 'Interval' is set to '5 sec.' with a dropdown arrow; there is an unchecked checkbox for 'Event Monitoring'; there is a checked checkbox for 'Set Resolution Automatically'; and 'Resolution' is set to '1920 X 1080' with a dropdown arrow. At the bottom of the screen, there are three buttons: a back arrow, 'Save', and 'Cancel'.

Figure 29 : Display – Monitor setup screen.


Highlight the box beside **Mode** and press the  button. You can select between Full Sequence and Cameo Sequence.



Pressing the **SEQUENCE** button on the remote control or selecting  (Sequence) in the Live Monitoring menu causes the NVR to sequence cameras, and the NVR can sequence cameras in two modes: “Full” and “Cameo”. In the Full mode, the NVR sequences through the cameras and displays them full screen. In the Cameo mode, the bottom right window in a multi-screen format sequences through the cameras.



NOTE: Any cameras that are Off, have lost video or are set to Covert (unless the user has authority to view covert cameras) will be excluded from the Cameo sequence.


You can define the screen layout in a variety of formats and set the NVR to sequence through the different screen layouts (pages) so that all the cameras will be displayed. You can also set up the NVR to display one camera or a group of cameras all the time while cycling through the remaining cameras in a “cameo” window. This can be done with one camera displayed full screen while displaying the cameras in a grid pattern with the bottom right window as the cameo.

NOTE: Sequence cannot be used in the 3x3 display mode of the 8-channel, and 2x2 mode of the 4-channel NVR.

You can adjust the display dwell time by highlighting the box beside **Interval** and pressing the  button. You can select dwell intervals ranging from 3 seconds to 2 minutes.

Highlight Event Monitoring On and press the  button. Pressing the  button toggles between On and Off. When it is On, the NVR will display the camera associated with the event when an event occurs.

Highlight the box beside Set Resolution to Manual Mode and press the  button. Pressing the  button toggles between On and Off. When it is On, you can set the resolution manually regardless of the resolution supported by the monitor. When it is Off, the resolution will automatically be set to the maximum resolution supported on the monitor when the NVR reboots.

Highlight the box beside Resolution and press the  button. You can select from 1024 X 768, 1280 X 720, 1280 X 1024 and 1920 X 1080.

NOTE: When the resolution you selected is not supported for the currently connected monitor, cameras may not be displayed properly on the monitor. In this case, pressing the **DISPLAY** button restarts the NVR and displays cameras with the maximum resolution supported on the monitor.

Status Setup

Event

Highlight Event and press the  button, and the Event setup screen appears.

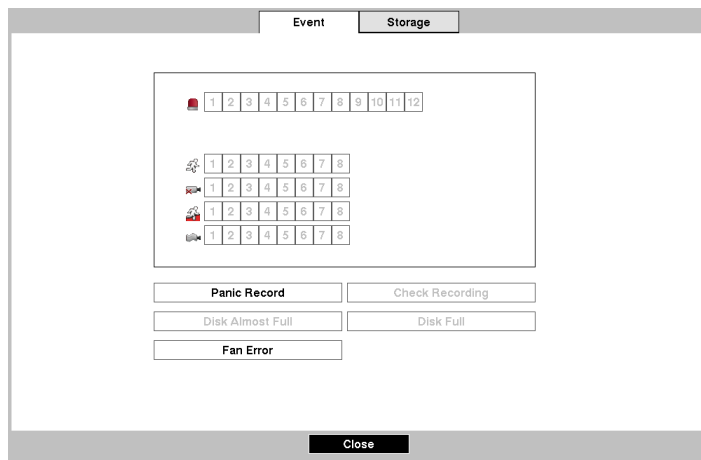







Figure 30 : Status – Event setup screen.

The Event Status screen displays the status of the NVR's systems and inputs. Events will be highlighted, and related channels or events will flicker for five seconds when detected.

 (Alarm-In),  (Motion),  (Video Loss),  (Trip-Zone) and  (Tampering) will be highlighted when each event is detected based on the settings you made in the Alarm-In, Video-Analytics and Video Loss setup screen on the Event menu..

Panic Record will be highlighted while the NVR is in the panic recording mode.

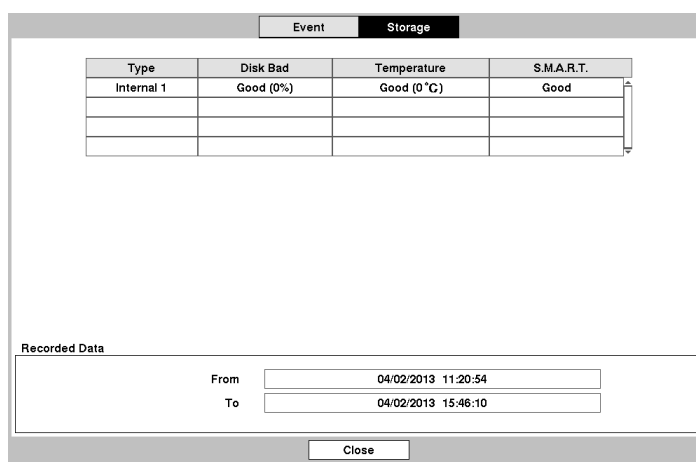
Check Recording will be highlighted when each event is detected based on the settings you made in the System Event setup screen on the Event menu.

Disk Almost Full will be highlighted when the NVR is not in the Recycle mode and the level of disk usage reaches the Disk Almost Full percentage you made in the System Event setup screen on the Event menu. Disk Full will be highlighted when the NVR is not in the Recycle mode and all available storage space has been used.

Fan Error will be highlighted when the cooling fan to the left of the power cord on the rear panel is not working for more than four seconds.

Storage

Highlight Storage and press the  button, and the Storage setup screen appears.



Type	Disk Bad	Temperature	S.M.A.R.T.
Internal 1	Good (0%)	Good (0 °C)	Good

Recorded Data

From

To

Figure 31 : Status – Storage setup screen.

The Type column displays the type of storage device.

The Disk Bad column displays the percentage of bad sectors. **Not formatted** indicates the device is not formatted.

The Temperature column displays the temperature of the storage device.

The S.M.A.R.T. column displays “Good”, “Bad” or “N/A”, depending on storage conditions.

- Good – The storage condition is normal.
- Bad – Data cannot be written on or read from the storage device.
- N/A – Storage conditions are normal, however, the S.M.A.R.T. monitoring is not working or supported.

NOTE: When the storage condition is “Bad”, the Event Status – Storage screen displays and you can check the storage condition for details. Once the “Bad” message displays, replacing the hard disk drive is recommended, usually within 24 hours.

Temperature and *S.M.A.R.T.* information will be available only for internal hard disk drives supporting the SMART (Self-Monitoring Analysis and Reporting Technology) monitoring program.

The box beside Recorded Data – From / To displays the time information of recorded data.

Camera Setup

Network Camera

Highlight Network Camera and press the  button, and the Network Camera setup screen appears.

No.	Network Camera List	
1	CAM1	X
2	CAM2	X
3	CAM3	X
4		X
5		X
6		X
7		X
8		X

Scan...

Save Cancel

Figure 32 : Camera – Network Camera setup screen.

Highlight the box under the Network Camera List heading and press the button to displays the information of selected network cameras.

Highlight the box under the heading and press the button to delete registered network cameras.

Highlight the Scan... box and press the button, and the Device Scan setup screen appears.

No.	Address	Product	Mac Address	Channel
1	169.254.29.228	NC-EB310-P	00:03:22:11:2a:7e	
2	169.254.7.201	NC-D310-WHI	00:03:22:11:2d:87	
3	169.254.155.145	NC-B310-DP	00:03:22:11:2a:07	
4				
5				
6				
7				
8				
9				
10				
11				
12				

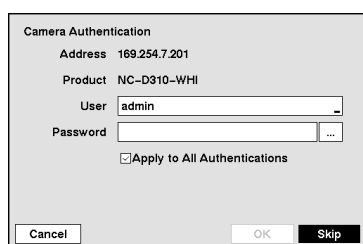
Stop

Searching... Device Register Close

Highlight Device Register and press the button to register the selected network camera(s) from the list. A Camera Authentication screen appears. Setting up the Camera Authentication is required to register the network camera to the NVR.

NOTE: If the network camera has the improper IP address to register, the camera settings will be initialized when registering it. The camera takes approximately 60 seconds to initialize.

Registering the network camera might be failed depending on its settings. In this case, scan the camera again and register it.



Camera Authentication

Address 169.254.7.201



Product NC-D310-WHI

User

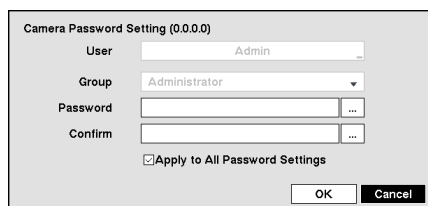
Password

☒ Apply to All Authentications

Cancel OK Skip

Highlight the box beside **User/Password** and press the  button. A virtual keyboard appears allowing you to enter the user ID and password. Highlight **Apply to All Authentication** and press the  button to apply the same authentication information to all the network cameras in the list. When selecting multiple network cameras in the list, selecting **Skip** skips the authentication settings for the current network camera and displays the Camera Authentication screen of the next network camera.

The Camera Password Settings screen appears when the default password has not been set.



Camera Password Setting (0.0.0.0)

User



Group

Password

Confirm

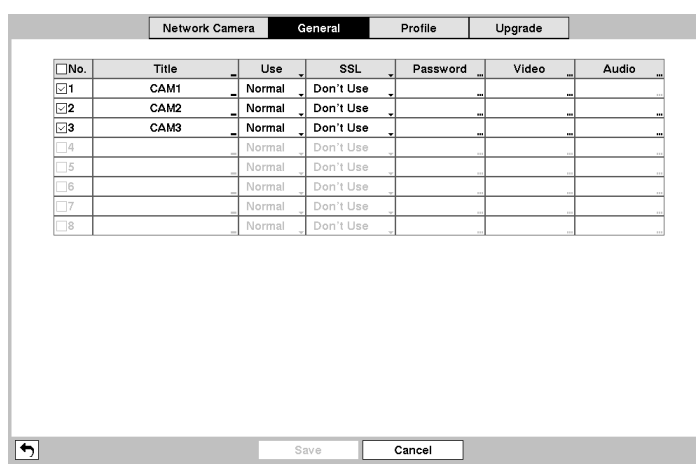
☒ Apply to All Password Settings

OK Cancel

Highlight the box beside **Password** and press the  button. A virtual keyboard appears allowing you to enter the password). Highlight **Apply to All Password Settings** and press the  button to apply the same password to all the network cameras in the list. When selecting multiple network cameras in the list, selecting **Skip** skips the authentication settings for the current network camera and displays the Camera Password Setting screen of the next network camera.

General

Highlight **General** and press the  button, and the General setup screen appears.



Network Camera General Profile Upgrade

<input type="checkbox"/> No.	Title	Use	SSL	Password	Video	Audio
<input checked="" type="checkbox"/> 1	CAM1	Normal	Don't Use			
<input checked="" type="checkbox"/> 2	CAM2	Normal	Don't Use			
<input checked="" type="checkbox"/> 3	CAM3	Normal	Don't Use			
<input type="checkbox"/> 4		Normal	Don't Use			
<input type="checkbox"/> 5		Normal	Don't Use			
<input type="checkbox"/> 6		Normal	Don't Use			
<input type="checkbox"/> 7		Normal	Don't Use			
<input type="checkbox"/> 8		Normal	Don't Use			


Save Cancel

Figure 33 : Camera – General setup screen.


You can turn the camera number On or Off, and you can change the Title of each camera using the virtual keyboard. You can also determine which cameras will display on the monitors by selecting Normal, Covert 1 or Covert 2 from a drop-down list in the Use column.

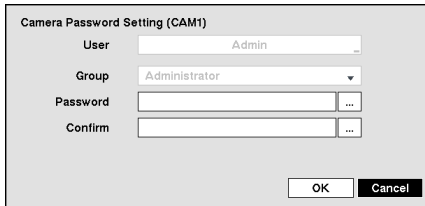
NOTE: When selecting the **Covert 1**, the NVR displays the camera title and status icons on the covert video. When selecting the **Covert 2**, the NVR displays only camera title on the covert video.

A user who does not have Covert Camera View authority cannot view video from cameras set to Covert 1 or Covert 2 in both the live monitoring and playback modes.

Highlight the box under the SSL heading and press the  button to select between Don't Use, Standard and High. When set to Standard or High, the security of outgoing data from the camera can be enhanced by using the SSL (Secure Sockets Layer) protocol.

CAUTION: The camera connection will be disconnected temporarily after changing the SSL settings.

Highlight the box under the Password heading and press the  button to change the password.



Camera Password Setting (CAM1)


User:


Group:

Password:

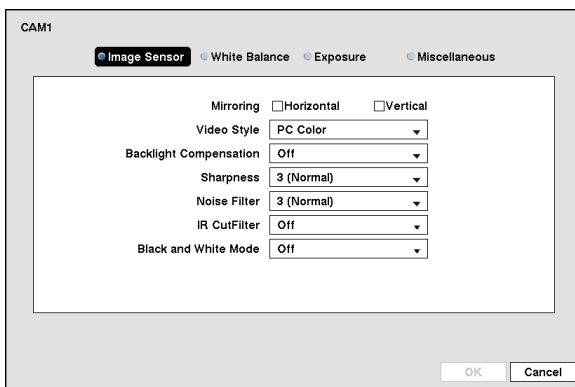
Confirm:

OK Cancel

Highlight the box beside Password and press the  button. A virtual keyboard appears allowing you to enter the password.

Highlight the box under the Video heading and press the  button to change the video settings.

NOTE: Refer to the network camera manual for more detailed instructions on setting up the Video.



CAM1

☒ Image Sensor ☐ White Balance ☐ Exposure ☐ Miscellaneous

Mirroring: ☐ Horizontal ☐ Vertical

Video Style:

Backlight Compensation:

Sharpness:

Noise Filter:

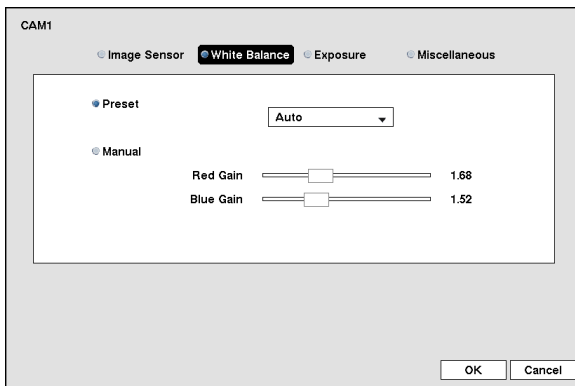
IR CutFilter:

Black and White Mode:

OK Cancel

Image Sensor

- **Mirroring:** Check the Horizontal or Vertical box to flip images horizontally or vertically.
- **Video Style:** Select the video style between TV Color and PC Color.
- **Backlight Compression:** Set whether to enable or disable the backlight compensation.
- **Sharpness:** Set the sharpness of images.
- **Noise Filter:** Set the degree of the noise filtration.
- **IR CutFilter:** When the IR cut filter is enabled, the camera blocks infrared light.
- **Black and White Mode:** When in the black and white mode, images are displayed in black and white and are clearer in low light conditions.



CAM1

☐ Image Sensor ☒ White Balance ☐ Exposure ☐ Miscellaneous

☒ Preset ☐ Manual

Preset:

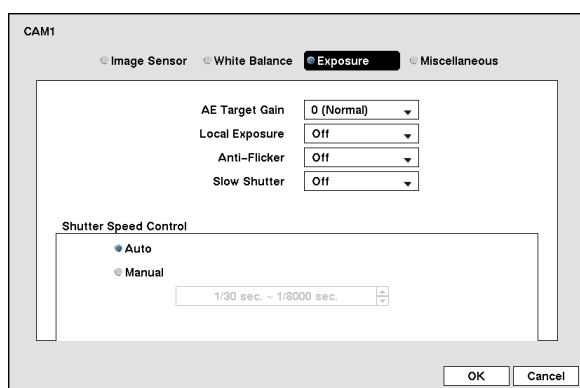
Red Gain:

Blue Gain:

OK Cancel

White Balance

- **Preset:** Select the preset white balance value based on the conditions.
- **Manual:** Select to adjust the white balance manually. Adjust the Red and Blue gain.



CAM1

Image Sensor White Balance **Exposure** Miscellaneous

AE Target Gain: 0 (Normal)

Local Exposure: Off

Anti-Flicker: Off

Slow Shutter: Off

Shutter Speed Control

Auto

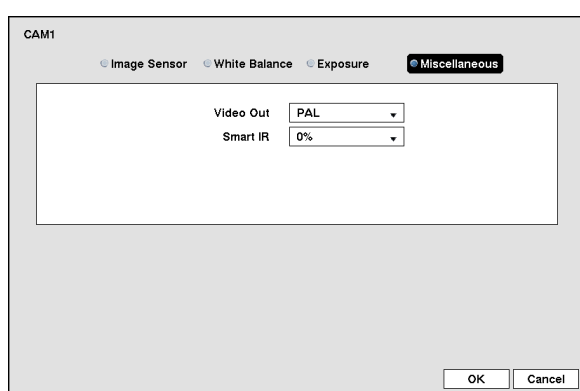
Manual

1/30 sec. ~ 1/8000 sec.

OK Cancel

Exposure

- **AE Target Gain:** Set the target gain for the exposure compensation.
- **Local Exposure:** Set the local exposure.
- **Anti-Flicker:** Set to the same frequency as the lighting when the AC power is used for the lighting such as a fluorescent lights.
- **Slow Shutter:** Set the slow shutter mode.
- **Shutter Speed Control:** Set the shutter speed.



CAM1

Image Sensor White Balance Exposure **Miscellaneous**


Video Out: PAL

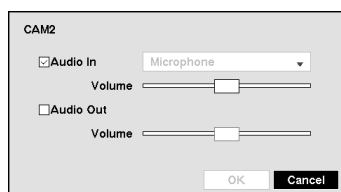
Smart IR: 0%

OK Cancel

Miscellaneous

- **Video Out:** Select the video signal (NTSC or PAL) for video out.
- **Smart IR:** Set the brightness of the IR LED. The higher the value is set, the brighter it is. Selecting Auto will adjust the brightness automatically.

Highlight the box under the **Audio** heading and press the  button to change the audio settings.



CAM2

☒ Audio In: Microphone

Volume: [Slider]

☐ Audio Out

Volume: [Slider]

OK Cancel

- **Audio In:** Check the box to enable audio in and adjust the volume.
- **Audio Out:** Check the box to enable audio out and adjust the volume.

Profile

Highlight Profile and press the  button, and the Profile setup screen appears.

Network Camera General **Profile** Upgrade

Select Mode: Simple Mode

Profile 1

Resolution: 1280 X 720
Quality: Standard
IPS: 30.00 ips

Profile 2

Resolution: 704 X 480
Quality: Standard
IPS: 30.00 ips

Profile 3

Resolution: 352 X 240
Quality: Standard
IPS: 30.00 ips

Save Cancel

Figure 34 : Camera – Profile (Simple Mode) setup screen.

Highlight the box beside Select Mode box and press the button. You can select between Simple Mode and Advanced Mode. Selecting Advanced Mode allows you to set up individual profiles for each camera.

NOTE: The following description is for *Simple Mode* setup. If both 1MP and 2MP cameras are registered to the NVR, select *Simple Mode – 720P* for 1MP camera profile setup and select *Simple Mode – FULL HD* for 2MP camera profile setup.

Highlighting boxes beside Resolution and pressing the button allows you to set the image resolution for streaming. You can select from 1280 X 720, 704 X 480 and 352 X 240 for 1MP cameras, and 1920 X 1280, 1280 X 720 and 704 X 480 for 2MP cameras.

Highlighting boxes beside Quality and pressing the button allows you to set the image quality for streaming. You can select from Very High, High, Standard and Basic.

Highlighting boxes beside IPS and pressing the button allows you to set the images per second for streaming. You can select from 1.00 to 30.00 ips.

NOTE: The Resolution, Quality and IPS values of the Profile 3 cannot be set higher than those of the Profile 2, and the Resolution, Quality and IPS values of the Profile 2 cannot be set higher than those of the Profile 1.

NOTE: The following description is for *Advanced Mode* setup.

Network Camera General **Profile** Upgrade

Select Mode: Advanced Mode

Camera	Resolution	Quality	IPS
1. CAM1			
Profile 1	1280 X 720	Standard	30.00 ips
Profile 2	704 X 480	Standard	30.00 ips
Profile 3	352 X 240	Standard	30.00 ips
2. CAM2			
Profile 1	1280 X 720	Standard	30.00 ips
Profile 2	704 X 480	Standard	30.00 ips
Profile 3	352 X 240	Standard	30.00 ips
3. CAM3			
Profile 1	1280 X 720	Standard	30.00 ips
Profile 2	704 X 480	Standard	30.00 ips
Profile 3	352 X 240	Standard	30.00 ips
4.			
Profile 1	1280 X 720	Standard	30.00 ips

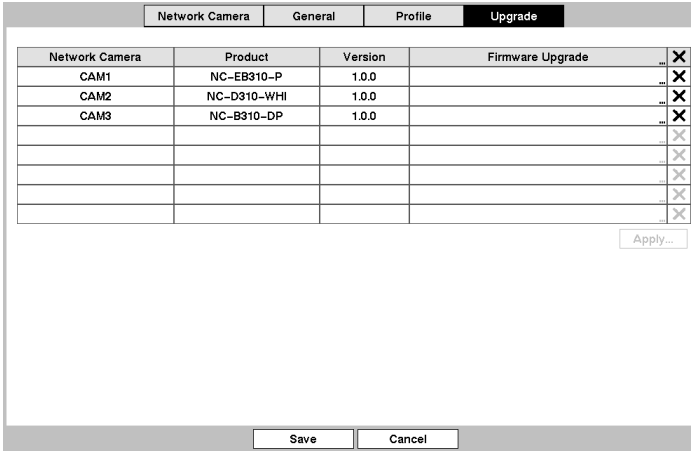
Save Cancel

Figure 35 : Camera – Profile (Advanced Mode) setup screen.

Selecting **Advanced Mode** allows you to set up individual profiles for each camera. Set up the **Resolution**, **Quality** and **IPS** for each profiles. Setting up the profiles is almost identical to setting up the profiles for **Simple Mode**.

Upgrade

Highlight **Upgrade** and press the  button, and the Upgrade setup screen appears.







Network Camera	Product	Version	Firmware Upgrade
CAM1	NC-EB310-P	1.0.0	... X
CAM2	NC-D310-WHI	1.0.0	... X
CAM3	NC-B310-DP	1.0.0	... X
			... X
			... X
			... X
			... X

Apply...

Save Cancel

Figure 36 : Camera – Upgrade setup screen.

To upgrade the firmware of network cameras, connect a USB device containing the upgrade package file to the NVR. Highlight the box under the **Firmware Upgrade** and press the  button. Select the desired file and press the  button. Highlighting the **Install** button and pressing the  button will install the selected firmware package. Highlighting the **Cancel** button and pressing the  button will close the window without upgrading the firmware. If the upgrade package file is not installed on the NVR properly, you will get an error message.

NOTE: The network camera reboots automatically after completing the upgrade and its registration on the NVR will be released. Try to register the camera again by referring to the **Camera – Network Camera** settings. The NVR does not check the software version of the camera when upgrading the firmware.

CAUTION: Do NOT disconnect the USB cable or the power from the external drive while upgrading the firmware.

Chapter 4 — Operation

NOTE: This chapter assumes your NVR has been installed and configured. If it has not, please refer to Chapters 2 and 3.

The front panel controls are described in *Chapter 3 — Configuration*.

Turning on the Power

Once you have installed the NVR following the instructions in *Chapter 2 — Installation*, it is ready to record.

Live Monitoring

As soon as the NVR completes its initialization process, it will begin showing live video on the attached monitor and playing live audio through the attached speaker. The default mode is to display all cameras at once. Pressing any camera button will cause that camera to display full screen. It displays live video and plays live audio until the user enters another mode.

While in the live monitoring mode, pressing the **MENU** button displays the following Live Monitoring menu on the right edge of the screen. Pressing the **MENU** button again hides the menu. You can navigate through menus and items by pressing the arrow buttons.



Figure 37 : Live Monitoring menu.

NOTE: The Live Monitoring menu also can be displayed by moving the mouse pointer to the right edge of the screen.




Live Monitoring Menu

Login/Logout




Selecting **①** (Login) in the Live Monitoring menu accesses the Login screen, and you will be asked to select a User and enter the password to log into the system. Selecting **②** (Logout) in the Live Monitoring menu displays the Logout screen asking you to confirm whether or not you want to log out the current user.

Display


- **Screen Format 2x2, Screen Format 3x3:** Selecting **②** (Display) → Screen Format 2x2 or Screen Format 2x2 displays the cameras in the selected multiview screen mode (2x2, 3x3).

- **Previous Group, Next Group:** Selecting  (Display) → Previous Group or Next Group moves to the previous or next page.
- **Edit Group:** Selecting  (Display) → Edit Group enters to the Active Cameo mode. Refer to the following *Active Cameo Mode* section for details.
- **Camera OSD, Status OSD:** Selecting  (Display) → Camera OSD or Status OSD toggles Camera OSD or Status OSD On and Off.



Freeze

Selecting  (Freeze) in the Live Monitoring menu will freeze the current image on the screen until you select  again. While in the Freeze mode, the icon  displays in bottom-left corner if Freeze is selected in the Display setup screen (OSD tab).




Alarm

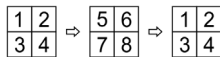
Selecting  (Alarm) in the Live Monitoring menu resets the NVR's outputs including the internal buzzer during an alarm.

Panic

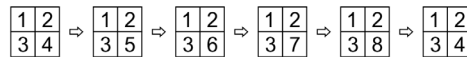
Selecting  (Panic) in the Live Monitoring menu starts panic recording of all cameras, and selecting  again stops panic recording. It is the same as pressing the **PANIC** button.

Sequence



Selecting  (Sequence) in the Live Monitoring menu causes the cameras to display sequentially. It is the same as pressing the **SEQUENCE** button on the remote control. When in one of the multi-view formats, selecting  will cause the NVR to go through predefined screen layouts (Full Sequence). Or, the bottom, right screen will display live cameras sequentially (Cameo Sequence). For example, if you select  in the 2x2 format, the NVR changes pages as follows:



< Full Sequence >







< Cameo Sequence >

Selecting  again in the Live Monitoring menu exits the Sequence mode. While in the Sequence mode, the  icon displays in bottom-left corner if Sequence is selected in the Display setup screen (OSD tab). If all the cameras in a page are Off, or have lost video or are set to Covert (unless the user has authority to view covert cameras), that page will be excluded from the sequence.

NOTE: The **Full Sequence** for the full sequence monitoring and the **Cameo Sequence** for the cameo sequence monitoring should be selected in the Display setup screen (Monitor tab).

Camera Menu


- **Zoom:** Selecting  (Camera Menu) → Zoom and choosing the camera number zooms the current image of the selected camera on the screen. It is the same as pressing the **ZOOM** button. Selecting Zoom again in the Camera Menu again exits the Zoom mode. Refer to the following *Zoom Mode* section for details.
- **Color Control:** Selecting  (Camera Menu) → Color Control and choosing the camera number allows you to control brightness, contrast, hue and saturation for each camera for the selected camera if a user who has Color Control authority logs into the system. It is the same as pressing and holding a camera button for a few seconds.
- **Information:** Selecting  (Camera Menu) → Information and choosing the camera number allows you to check the information of the selected camera.
- **Audio:** Selecting  (Camera Menu) → Audio toggles audio output On and Off.

NOTE: It is important that cameras and monitors are correctly installed and adjusted prior to making any image adjustments using the NVR's controls.



NOTE: Any image adjustments you make will be applied to both the live video on the monitors and the recorded video.

The **Camera Menu** also can be displayed by clicking the right mouse button on the screen while in the live monitoring mode.


Export

Selecting  (Export) → Clip-Copy in the Live Monitoring menu displays the Clip-Copy screen and allows you to clip copy setup. See the following *Clip Copy* section for details.


Search

- **All Channels:** Selecting  (Search) → All Channels plays back video of all cameras. It is the same as pressing the **SEARCH** button.
- **Triplex:** Selecting  (Search) → Triplex enters the Triplex mode and plays back video of the selected camera. While in the Triplex Mode, live monitoring will continue except for the camera that has been selected for playback.

Setup



Selecting  (Setup) in the Live Monitoring menu enters the Main Setup screen. Refer to *Chapter 3 — Configuration* for detailed descriptions of system setup.

Active Cameo Mode


You can enter the Active Cameo mode by selecting **Edit Group** from the Live Monitoring – Display menu in any multi-view format. The yellow outline surrounding the video indicates the active cameo, and pressing the arrow buttons moves the active cameo. Pressing the  (Play/Pause) button exits the Active Cameo mode. Selecting **Exit Group Edit** in the cameo menu displayed when pressing the **MENU** button also exits the Active Cameo mode. The active cameo mode will remain in effect for 15 seconds if there is no further operation.

In active cameo mode, press the button for the camera you want to display in the active cameo. After setting the camera number to active cameo, the NVR moves the active cameo to the next cameo. When the camera number exists on the current screen, the active cameo is changed with the existing camera number. When the camera number does not exist on the current screen, the active cameo is replaced by the camera number. You can change the screen layout in this way.

Zoom Mode

You can enlarge an area of the video by pressing the **ZOOM** button. For a few seconds after pressing the **ZOOM** button, a rectangle displays on the screen. A rectangle shows the area that will be enlarged. You can move the rectangle around using the arrow buttons. Pressing the  (Play/Pause) button in the Zoom mode toggles the zoom size between 2x, 3x and 4x. Exit the Zoom mode by pressing the **ZOOM** button. While in the Zoom mode, the icon  displays if Zoom is selected in the Display setup screen (OSD tab).

Event Monitoring

When an event occurs, the NVR will display the camera associated with the event and the icon  displays on screen if **Event Monitoring** is selected in the Display setup screen (Monitor tab).

How the cameras are displayed depends on the number of cameras associated with the event. If one camera is associated with the event, the NVR will display the camera full screen. If two to four cameras are associated with the event, the NVR will display the cameras on a 2x2 screen. If five to eight cameras are associated with the event, the NVR will display the cameras on a 3x3 screen.

Event monitoring lasts for the dwell time set for event recording. After the dwell time has elapsed, the monitor returns to the previous screen unless another event has occurred. If you want to return to the live monitoring mode before the dwell time has elapsed, press the **DISPLAY** button or one of the camera buttons.

Covert Camera

If a camera is set up as **Covert 1** in the Camera setup screen (General tab), that camera will not be displayed unless a user with **Covert Camera View** authority logs into the system. However the camera title and status icons will be displayed on the monitor.

If a camera is set up as **Covert 2** in the Camera setup screen (General tab), that camera appears to be Off unless a user with **Covert Camera View** authority logs into the system. The camera title will be grayed out and status icons will not be displayed on the monitor.

NOTE: When a camera is set up as **Covert 1**, the NVR displays the camera title and status icons on the covert video. When set up as **Covert 2**, the NVR displays only the camera title on the covert video.

If a user who has **Covert Camera View** authority logs into the system, the user can view video from cameras set to **Covert 1** or **Covert 2** including the camera titles and status icons.

Recording Video

Once you have installed the NVR following the instructions in *Chapter 2 — Installation*, it is ready to record. The NVR will start recording based on the settings you made in the **Record** setup screen. See *Chapter 3 — Configuration*.

Recycle On or **Recycle Off**. The factory default is **Recycle On**. It does this by recording over the oldest video once the hard disk is full. Setting the NVR to **Recycle Off** causes it to stop recording once the hard disk is full.

Although you will be able to record without changing the unit from its original factory settings, you will want to take advantages of the NVR's many tools. See *Chapter 3 — Configuration* for detailed descriptions of the recording mode options.

Panic Recording

Selecting **!** (Panic) in the Live Monitoring menu or Search menu, or pressing the **PANIC** button starts panic recording of all cameras. Selecting **!** or pressing the button again stops panic recording. If you set the Panic Recording Duration in the Record setup screen (General tab), panic recording will stop automatically according to the preset duration as long as **!** is not selected or the **PANIC** button is not pressed.


NOTE: When the NVR is not in the **Recycle** mode and all available storage space has been used, panic recording will not operate.

Recording Audio

If the NVR was set up to record audio, it will record audio from up to eight inputs when video is recording.

NOTE: Make certain you comply with all local and federal laws and regulations when recording audio.

Playing Recorded Video

If a user who has **Search** authority logs into the system, the user can view recorded image. Once video has been recorded, you can view it by pressing the  (Play/Pause) button.

The NVR supports the Triplex function: monitoring, recording and playing back at the same time. Pressing the **SEARCH** button when in one of the multi-view formats enters the Triplex mode and displays the Select Playback Camera menu.



Selecting **All Channels** plays back video of all cameras. The NVR maintains the same display format as it does in the live mode. You can also change the screen layout in the same way as you do in the live mode.

Selecting the camera number under **Triplex** enters the Triplex mode and plays back video of the selected camera. When in the single-screen display format, the camera currently displayed on the screen will be selected for the search channel. During the Triplex mode, the NVR maintains the same display format as it does in the live mode. A red outline surrounding the video and the camera title indicates the search channel. While in the Triplex Mode, the NVR continues recording cameras as they were set up in the recording schedule. Also, live monitoring will continue except for the camera that has been selected for playback.












Figure 38 : Select Playback Camera menu.

When playing video for the first time, the NVR will display the most recent image. When playing video subsequent times, the NVR will start playing video from the last recalled image. Recorded audio will be played when the NVR displays a camera with recorded audio in full screen mode.

NOTE: Only the administrator and users with Covert Camera View authority can view video from covert cameras. The covert cameras in the playback mode are determined by the current camera settings.

Camera Buttons: Pressing the individual camera buttons will cause the selected camera to display full screen.

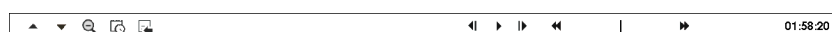
Playback Buttons


- **Forward:** When in the pause mode, pressing the  button moves to the next image.
- **Backward:** When in the pause mode, pressing the  button moves to the previous image.
- **Rewind:** Pressing the  button plays video backward at high speed. Pressing the button again toggles the playback speed from  and .
- **Play/Pause:** Pressing the  button plays back video at regular speed. The screen displays  when the NVR is in the Pause mode and the screen displays  when the NVR is playing back video.
- **Fast Forward:** Pressing the  button plays video forward at high speed. Pressing the button again toggles the playback speed from  and .
- **Search/Stop:** Pressing the **SEARCH** button while in the Live Monitoring mode enters the Search mode. Pressing the **SEARCH** button while in the Search mode returns the NVR to the Live Monitoring mode.


ZOOM Button: Pressing the **ZOOM** button zooms in the current image on the screen.

DISPLAY Button: Pressing the **DISPLAY** button toggles different display formats. The available formats are: 2x2 and 3x3.


You can use a mouse for convenient playback control. Position the mouse pointer on the playback screen, and the following Record Table Search (Compact View Mode) screen will display. The individual controls on the toolbar perform the following functions as described below:




 Go to the previous image

 Fast backward play

 Play/Pause

 Fast forward play

 Go to the next image

NOTE: The playback speed “x1” will not be supported in the 3x3 display mode.

Searching Video

While in the search mode, pressing the **MENU** button displays the following Search menu on the right edge of the screen. Pressing the **MENU** button again hides the menu. You can navigate through menus and items by pressing the arrow buttons.



Figure 39 : Search menu.

NOTE: The Search menu also can be displayed by moving the mouse pointer to the right edge of the screen.

Search Menu

Search

- **Event Log Search:** Selecting (Search) → Event Log Search selects video from the event log. See the following *Event Log Search* section for details.
- **Record Table Search:** Selecting (Search) → Record Table Search selects using a recording table. See the following *Record Table Search* section for details.
- **Motion Search:** Selecting (Search) → Motion Search selects motion events. See the following *Motion Search* section for details.

Go To





- **Go to the First:** Selecting (Go To) → Go to the First displays the first recorded image.
- **Go to the Last:** Selecting (Go To) → Go to the Last displays the last recorded image.
- **Go to the Date/Time:** Selecting (Go To) → Go to the Date/Time displays the Go to the Date/Time screen.

Move the cursor over the date and time and press the button. You can use the Left and Right arrow buttons to highlight the year, month, day, hours, minutes and seconds. Use the Up and Down arrow buttons to change to the date and time you want to search for video.


Once you have set the date and time you want, press the (Play/Pause) button. Then highlight **Go** and press the button. The selected date and time will display. (If no video was recorded during the selected time, a message appears alerting you that no image was recorded at that time.) The playback buttons can now be used to review the surrounding video.

- **Bookmark:** Selecting (Go To) → Bookmark adds the current playback point to the bookmark list. See the following *Bookmarks* section for details.



Display

- **Screen Format 2x2, Screen Format 3x3:** Selecting  (Display) → Screen Format 2x2 or Screen Format 2x2 displays the cameras in the selected multiview screen mode (2x2, 3x3).
- **Previous Group, Next Group:** Selecting  (Display) → Previous Group or Next Group moves to the previous or next page.
- **Edit Group:** Selecting  (Display) → Edit Group enters to the Active Cameo mode. Refer to the previous *Live Monitoring – Active Cameo Mode* section for details.
- **Camera OSD, Status OSD:** Selecting  (Display) → Camera OSD or Status OSD toggles Camera OSD or Status OSD On and Off.



Alarm

Selecting  (Alarm) in the Search menu resets the NVR's outputs including the internal buzzer during an alarm.

Panic




Selecting  (Panic) in the Search menu starts panic recording of all cameras, and selecting  again stops panic recording. It is the same as pressing the **PANIC** button.

Camera Menu


- **Zoom:** Selecting  (Camera Menu) → Zoom and choosing the camera number zooms the current playback image of the selected camera on the screen. It is the same as pressing the **ZOOM** button. Selecting Zoom again exits the Zoom mode.
- **Audio:** Selecting  (Camera Menu) → Audio toggles audio playback On and Off. Recorded audio will be played when the NVR displays a camera with recorded audio in full screen mode.

NOTE: The *Camera Menu* also can be displayed by clicking the right mouse button on the screen while in the search mode.


Export

- **A–B Clip-Copy:** Selecting  (Export) → A–B Clip-Copy will set the starting point of the video to be clip copied, and the  icon displays at the bottom-left corner of the screen. Selecting A–B Clip-Copy again will set the ending point of the video to be clip copied and displays the Clip-Copy screen. See the following *Clip Copy* section for details.
- **Clip-Copy:** Select  (Export) → Clip-Copy, and the Clip-Copy screen appears to allow clip copy setup. See the following *Clip Copy* section for details.

Data Source

Selecting  (Data Source) in the Search menu allows you to select the data source to be searched. Selecting **Record** searches recorded data on primary storage installed in the NVR, and selecting **Other** searches recorded data on storage used for another NVR then installed in this NVR.

Exit

Selecting  (Exit) in the Search menu exits the search mode and enters the live monitoring mode.

Event Log Search

Time	Type
04/02/2013 17:14:11	TripZone: CAM4
04/02/2013 17:14:11	Tampering: CAM4
04/02/2013 17:14:09	Motion 4: CAM4
04/02/2013 17:14:08	TripZone: CAM2
04/02/2013 17:13:59	TripZone: CAM2
04/02/2013 17:13:56	TripZone: CAM2
04/02/2013 17:13:55	Tampering: CAM2
04/02/2013 17:13:54	Motion 2: CAM2
04/02/2013 17:13:50	TripZone: CAM4
04/02/2013 17:13:49	Motion 4: CAM4
04/02/2013 17:13:46	Motion 4: CAM4
04/02/2013 17:13:31	Motion 2: CAM2
04/02/2013 17:12:57	Motion 2: CAM2
04/02/2013 17:12:51	Motion 4: CAM4



Option... ▲ ▼

Close

Figure 40 : Event Log Search screen.

The NVR maintains a log of each time the Alarm Input port is activated. The **Event Log Search** screen displays this list. Use the arrow buttons to highlight the event for which you would like to see video.

There is no determined user authority to display the Event Log Search screen, however, the event video will not be played unless a user with **Search** authority logs into the system.

Pressing the  (Play/Pause) button will extract the event video and display the first image of the event. Pressing the  button will start playing the “event” video segment. Pressing the **SEARCH** button returns to live monitoring.

NOTE: It is possible that no recorded image displays on the current screen. Press the **DISPLAY** button and change the screen mode to 3x3. You will be able to easily see the camera have recorded video during target time.

You can also narrow your event search by selecting the Option... button and setting up the new search condition.

Event Log Search Option

From ☒ First

To ☒ Last

☐ Check Time Overlap

Alarm-In ☐ Panic Record

Motion ☐ Check Recording

Video Loss ☐ Disk Almost Full

TripZone ☐ Disk Bad


Tampering ☐ Disk Temperature


Record Channels ☐ Disk S.M.A.R.T.


☐ Fan Error


Search Cancel


You can search video from the first to last recorded images, or you can set the start and stop times and dates.


Highlight the box beside **From** and press the  button to toggle between On and Off. When set to Off, you can enter a specific Date and Time. When set to On, the search will be from the first recorded image.


Highlight the box beside **To** and press the  button to toggle between On and Off. When set to Off, you can enter a specific Date and Time. When set to On, the search will be to the last recorded image.


Highlight the box beside **Check Time Overlap** and press the  button. It toggles between On and Off. You will only be able to turn the Check Time Overlap on or off if a user-defined date and time is set to From and To. If the NVR's date and time have been reset, it is possible for the NVR to have more than one overlapping start and stop time. When set to On, you will be asked to select one of the overlapping start and stop time. When set to Off, the NVR will display search results from all start times to all stop times.


Highlight the box beside **Alarm-In** and press the  button. You can select the alarm inputs that you want to include in your search.

Highlight the box beside **Motion** and press the  button. You can select the cameras for which you want any reports of motion detection.

Highlight the box beside **Video Loss** and press the  button. You can select the cameras for which you want any reports of lost video.


Highlight the box beside **Trip-Zone** and press the  button. You can select the cameras for which you want any reports of trip-zone.

Highlight the box beside **Tampering** and press the  button. You can select the cameras for which you want any reports of tampering.

Highlight the box beside **Record Channels** and press the  button. You can select the cameras that you want to search for any reports of event recorded data. The NVR will display the events (not the camera channels) that occurred and that also are recorded on the camera channel that you selected. If you do not select a camera channel in this field, the NVR will search events that are not associated with cameras.

You can also toggle On and Off self-diagnostic System Events as part of your search. The choices are:

- Panic Record
- Check Recording
- Disk Almost Full
- Disk Bad
- Disk Temperature
- Disk S.M.A.R.T.
- Fan Error

Once you set your desired search conditions, highlight **Search** and press the  button to display the search results in the Event Log Search screen. Selecting **Cancel** exits the screen without saving the changes.

Record Table Search

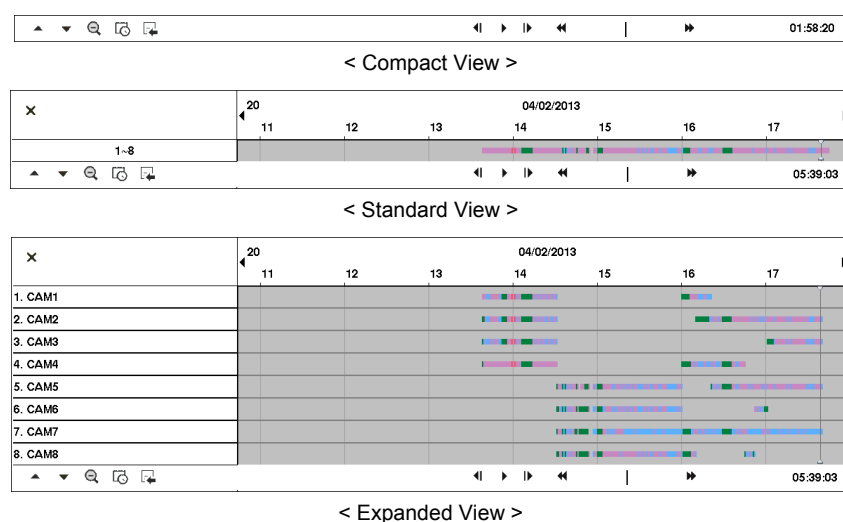


Figure 41 : Record Table Search screen.

Recording information about video images currently displayed on the screen displays on the recording status bar. A grey vertical line indicates the current search position. To search specific video, move the vertical line by using the **Left** or **Right** arrow buttons on the front panel or by clicking the mouse on the desired segment.

If the NVR's time and date have been reset to a time that is earlier than some recorded video, it is possible for the NVR to have more than one video stream in the same time range. In this case, the overlapping time range in the record table will be separated by a yellow vertical line.

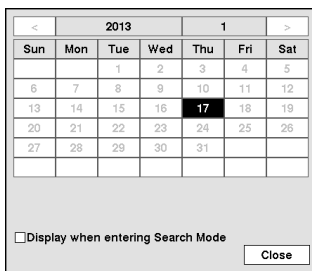
NOTE: The recorded data in the time range located after the white vertical line is the latest.

There are three view modes. Standard view, Expanded view and Compact view. Standard view (default) displays combined recording information of all camera channels currently displayed on the screen. In the Standard view mode, selecting the ▲ icon located at the bottom switches to the Expanded view mode. The Expanded view displays the recording information of each camera channel currently displayed on the screen. Selecting the ▼ icon in the Standard view mode switches to the Compact view mode which displays only the toolbar. Selecting the ▲ icon in the Compact view mode switches to the Standard view mode, and selecting the ▼ icon in the Expanded view mode switches to the Standard view mode.

Selecting 🔍 or 🔍 located at the bottom zooms the record table. Selecting 🔍 displays eight hours (1-minute based), and selecting 🔍 displays 24 hours (3-minute based) at once. To move to earlier or later times that are not shown in the current record table screen, select the arrows located at the end of the times by using the arrow buttons on the front panel.

NOTE: If the NVR has images recorded in more than one recording mode in the same time range, the recording status bar displays recording information in the following priority order: Panic → Pre-Event → Event → Time → Irregular (Irregular recording caused by temporary disconnection from the network camera). The color of the bar indicates different recording modes: Red for Panic, Yellow for Pre-Event, Purple for Event, Blue for Time, and Green for Irregular.

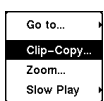
Selecting 📅 located at the bottom displays the Calendar Search screen.



Days with recorded video display on the calendar with white numbers. You can highlight the days with recorded video by using the arrow buttons. Once you have highlighted a day, press the ⏮ (Play/Pause) button to select it. The first recorded image of the selected date will pause on the screen. Once you have selected the date you want to search, review the surrounding video by using the playback controls located at the bottom of the Record Table Search screen.

Highlight Display when entering Search Mode and press the ⏮ button to toggle between On and Off. When set to On, the Calendar Search screen will display when entering the Search mode.

Selecting 📄 located at the bottom displays the Search menu.



- **Go To:** Displays the first or last recorded image, searches by date and time, or adds the current playback point to the bookmark list (see the previous *Searching Video – Go To* and *Bookmarks* sections of this chapter for more details).
- **Clip-Copy:** Clips a video segment and saves it (see the following *Clip Copy* section for more details).
- **Zoom:** Zooms the current playback image.
- **Slow Play:** Plays video at low speed (x1/2, x1/3, x1/4, x1/6 and x1/8).

NOTE: The playback speed “x1” will not be supported in the 3x3 display mode.

The individual playback controls at the bottom perform the following functions as described below:

- | | | |
|----------------------------|---------------------|------------------------|
| ⏮ Go to the previous image | ⏮ Play/Pause | ⏭ Go to the next image |
| ⏮ Fast backward play | ⏭ Fast forward play | |

Selecting ✕ in the top-left corner exits the Record Table Search screen.

Motion Search

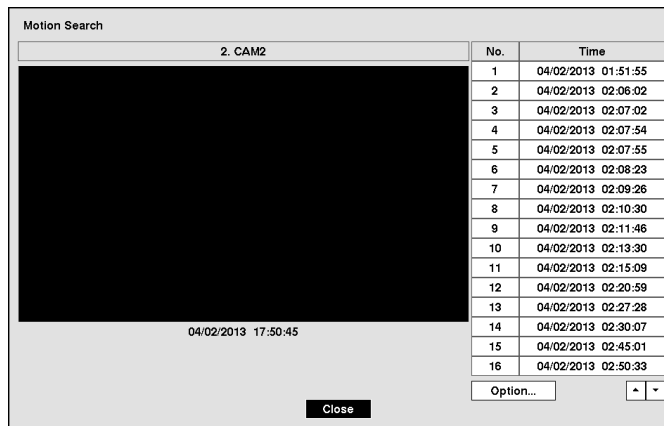


Figure 42 : Motion Search screen.

The Motion Search... can be selected from the Search menu while the NVR displays the camera full screen. The Motion Search screen displays a list of motion events. Use the arrow buttons to highlight the event for which you would like to see video and press the ⏮ (Play/Pause) button to display the video associated with the selected event on the small search screen.

Highlighting Close and pressing the ⏮ button will extract the video associated with the Motion event and display the first image of the event. Pressing the ⏮ button will start playing the “event” video segment. Pressing the **SEARCH** button returns to live monitoring.

You can also narrow your event search by selecting the Option... button and setting up the new search condition.

Motion Search Option

From: ☒ First 04/02/2013 17:15:47

To: ☒ Last 04/02/2013 17:15:47

Type: Motion Search

Zone: 192 Block(s)...

Sensitivity: 3

Min. Blocks: 1

Search Cancel

You can search video from the first to last recorded images, or you can set the start and stop times and dates.

Highlight the box beside From and press the ⏮ button to toggle between On and Off. When set to Off, you can enter a specific Date and Time. When set to On, the search will be from the first recorded image.

Highlight the box beside To and press the ⏮ button to toggle between On and Off. When set to Off, you can enter a specific Date and Time. When set to On, the search will be to the last recorded image.

Highlight the box beside Type and press the ⏮ button. You can select between Motion Search and Museum Search. Motion Search detects motion in the defined area. Museum Search detects if a defined object has moved.

Highlight the box beside Zone and press the ⏮ button. An image from the video appears with a grid overlaid. You can turn sensor blocks On and Off to define the area of the picture in which you want to search for motion.

NOTE: Defining the area of the image in which you want to search for motion is nearly identical to setting up the NVR for Motion Detection. Please refer to *Motion Setup Screen* in *Chapter 3 — Configuration* for more detailed instructions on setting up the detection blocks.

NOTE: When setting the Museum Search Zone, the zone should be placed inside of the border line of the target object. If the selected block is placed on the border line, the sensitivity of the Museum Search may decrease.

The zone should be placed or focused on the centre or, at least, within the outline of targeted object.

Highlight the box beside **Sensitivity** and press the \odot button. You will be able to select from 1 (low sensitivity) to 5 (high sensitivity).

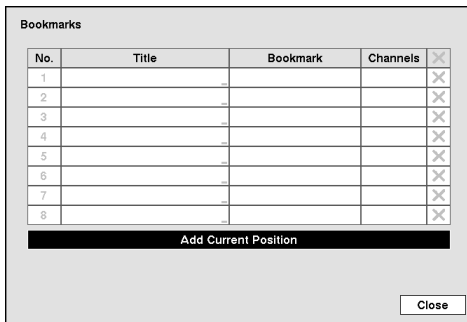
Highlight the box beside **Min. Blocks** and press the \odot button. You will be able to set the number of sensor blocks that must be activated. Setting the Min Blocks will only be available if Motion Search is selected.

Once you set your desired search conditions, highlight **Search** and press the \odot button to display the search results in the Motion Search screen. Selecting **Cancel** exits the screen without saving the changes.

When you search for motion events of another camera, you will be asked whether or not you want to delete the previous search results from the list.

Bookmarks

The Bookmarks screen can be accessed by selecting **Bookmark** in the Search – Go To menu.



Highlight the **Add Current Position** box and press the \odot (Play/Pause) button to add the current playback point to the bookmark list. Highlight the **Title** box and enter the name of the registered bookmark. Use the virtual keyboard to enter the bookmark name.


NOTE: Up to eight bookmarks can be registered.

Use the arrow buttons to highlight the bookmark point for which you would like to see video. The selected bookmark will display on the screen. The playback buttons can now be used to review the surrounding video.

Figure 43 : Bookmarks screen.

Clip-Copy

Video clips can be copied on an external USB hard disk or flash drive. The copied video clips can be viewed on computers running Microsoft Windows 2000, XP, Vista or 7. Refer to the *Appendix – USB Hard Disk Drive Preparation* for information on preparing the external drive for clip copy.

Selecting **A-B Clip-Copy** in the Search – Export menu or pressing the **CLIP COPY** button on the remote control during playback will set the starting point of the video to be clip copied, and the  icon displays at the bottom-left corner of the screen. Selecting **A-B Clip-Copy** in the Search – Export menu or pressing the **CLIP COPY** button on the remote control again will set the ending point of the video to be clip copied by displaying the Clip-Copy screen.

Pressing and holding the **MENU** button on the front panel or the **CLIP COPY** button on the remote control for more than three seconds while in the Search mode initiates the One-Touch Clip Copy function. The last recorded image will be the ending point of video to be clip copied, and the system will automatically begin to calculate the possible video data size that the selected storage media can handle.

Select **Clip-Copy** in the Search – Export menu, and the Clip-Copy screen appears to allow clip copy setup.

Figure 44 : Clip-Copy screen.

The Data Source box displays the source from which you make a video clip copy.

You can search video from the first to last recorded images, or you can set the start and stop times and dates.

Highlight the box beside **From** and press the ⏮ (Play/Pause) button to toggle between On and Off. When set to Off, you can enter a specific Date and Time. When set to On, the search will be from the first recorded image. When highlighting 📅 and pressing the ⏮ button the bookmark list displays and the bookmark point you selected will be the starting date and time.

Highlight the box beside **To** and press the ⏮ button to toggle between On and Off. When set to Off, you can enter a specific Date and Time. When set to On, the search will be to the last recorded image. When highlighting 📅 and pressing the ⏮ button the bookmark list displays and the bookmark point you selected will be the ending date and time.

Highlight the box beside **Channels** and press the ⏮ button. You can select the cameras that you would like to include in your video clip.

Highlight the box beside **Password** and press the ⏮ button. A virtual keyboard appears allowing you to enter the password for reviewing the video clips.

Highlight the box beside **Dest.** and press the ⏮ button. You can select the storage device on which you would like to record the video clip.

CAUTION: The USB device for clip copy must be FAT 16 or FAT32 format.

The NVR automatically assigns a file name to the video clip. However, you can give the video clip file a different name. Highlight the box beside **File Name** and press the ⏮ button. A virtual keyboard appears. Enter a file name for the video you are backing up and select **Close**. The NVR will automatically add the camera number (for example “01”) and “.exe” to the file name.

NOTE: When naming a file, you cannot use the following characters: \, /, :, ;, *, ?, !, “, <, >, |.

Highlight **Use Site Info** and press the ⏮ button. This will toggle between On and Off. When this feature is On, you can add the site name to the file name for the video you are backing up.

NOTE: When the site name is added to the file name, some special characters (\, /, :, ;, *, ?, !, “, <, >, |) in the site name will be converted to “_”.

Once you have given the video clip a file name, highlight the **Start** button and press the ⏮ button. The confirmation screen displaying data size will appear. When the storage device does not have enough space, the NVR will ask if you want to copy as much of the video clip as possible in the available space. Highlight the **Continue** button and press the ⏮ button to continue clip copy.

Once the clip copy starts, you can cancel it by selecting **Cancel** or hide the screen by selecting **Close**. When selecting **Close**, Clip Copy continues and a confirmation screen will display when complete.

NOTE: The file size for clip copy is limited to 30GB. When copying video clips larger than 2GB, the video clips will be save in units of 2GB. For example, 3 individual 2GB files will be created when saving a 6GB video clip. However, the file size for the One-Touch Clip Copy is limited to 2GB.

You can use other functions on the NVR while video is being backed up. To do this, highlight the Close button and press the ☺ button. You can return to the Clip-Copy screen at any time to check the progress.

You do not need to install any special software on your personal computer to review the video clips. Refer to RAS manual for instructions on how to review video clips you have copied.

NOTE: During Clip Copy, you cannot shut the system down, clear data on the storage device, or format the storage device.

CAUTION: Do NOT disconnect the USB cable or the power from the external drive while copying video clips. If the external drive is shut down or the USB cable is disconnected while copying video clips, THE NVR SYSTEM MAY NOT WORK NORMALLY OR THE EXTERNAL DRIVE COULD BE DAMAGED, and you will get an error message the next time you try to copy video clips. You will need to power down the NVR and restart it to get rid of the error message. Once the file system of the USB hard disk drive has been corrupted, this error message cannot be dismissed. Even after restarting the NVR it may automatically restart while preparing to clip copy. You must recover the file system using the recovery program, or you must reformat the hard disk drive.

Appendix

USB Hard Disk Drive Preparation

NOTE: The following description is for preparing a USB hard disk drive under Windows 2000. Preparing a USB hard disk drive under Windows XP, Window Vista and Window 7 is almost identical to Windows 2000.

1. Connect the USB hard disk drive to your computer using the USB Cable.
2. Turn on your computer.
3. The USB device icon should display on the Taskbar.
4. If the USB hard disk drive is partitioned or has data, it will show up in *My Computer* as a hard disk drive icon. Check the file system by right clicking on the icon and checking under *Properties > General > File System*. If the file system is NOT FAT32 format, format the USB hard disk drive using the FAT32 format.
5. If the USB hard disk drive is not partitioned, go to *Administrative Tools* in *Control Panel* and launch *Computer Management*. Open *Disk Management* in *Storage* and right click an unallocated region of the USB hard disk drive. Then, click *Create Partition*.
6. In the *Create Partition* wizard, click *Next* then *Primary Partition*, and follow the instructions on the screen. Make sure that the FAT32 is selected for the file system.

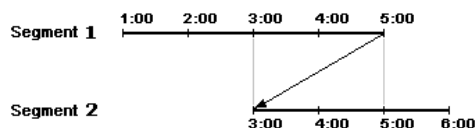
NOTE: The partition size should be less than 32GB because of Microsoft limitations.

After formatting is complete, the USB hard disk drive will be added to *My Computer*.

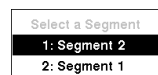
7. Connect the USB hard disk drive to the NVR.

Time Overlap

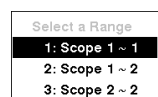
If the NVR's time and date have been reset to a time that is earlier than the existing recorded video, it is possible for the NVR to have more than one video stream in the same time range. In this case, you can search overlapping video streams individually by selecting a specific segment. For example, when the NVR has recorded video from one to five o'clock and the user changes the time backward from five to three o'clock and then continues recording until six o'clock, there will be two video streams and segments from three to five o'clock.



You can search overlapping video streams by selecting a specific time or time range. If you want to search recorded video at four o'clock during the overlapping time range using a search menu such as *Go to the Date/Time*, select the segment you want to search.



If you want to search recorded video from four to five o'clock during the overlapping time range using a search menu such as *Event Log Search* or *Motion Search*, it is possible for the NVR to have two overlapping start and stop times. You will be asked to select one of the overlapping start and stop times from the search time ranges as follows:



- From four o'clock of the first segment to five o'clock of the first segment
- From four o'clock of the first segment to five o'clock of the second segment
- From four o'clock of the second segment to five o'clock of the second segment

WebGuard

WebGuard allows you to access a remote NVR, monitor live video images and search recorded video using Internet Explorer web browser anytime from virtually anywhere.

Computer system requirements for using the WebGuard program are:

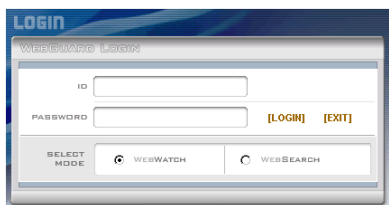
- Operating System: Microsoft® Windows® XP (Service Pack 3), Microsoft® Windows® Vista (Service Pack 1), Microsoft® Windows® 7
- CPU: Intel Pentium III (Celeron) 600MHz or faster
- RAM: 128MB or higher
- VGA: 8MB or higher (1024x768, 24bpp or higher)
- Internet Explorer: Version 6.0 or later (32 Bit)

Start Internet Explorer on your local PC. You can run the WebGuard program by entering the following information in the address field.

- “http://IP address:port number” (The NVR IP address and the WebGuard port number (default: 12088) set in the Network setup screen (General tab))
- Or, “http://DVRNS server address/NVR name” (The DVRNS server address and the NVR name registered on the DVRNS server)
- Or, “http://www.dvronline.net” (Entering the NVR IP address or the NVR name will be required when logging in)

NOTE: You will need to get the appropriate IP address for the NVR you want to connect to and the WebGuard port number from your network administrator.

WebGuard only works with Microsoft Internet Explorer and will NOT work with other browsers.



Select between the WEBWATCH (Web monitoring) and WEBSEARCH (Web search) modes. Entering ID and PASSWORD and clicking the [LOGIN] button logs in using the selected mode.

You will need to enter the NVR IP address in the DVR ADDRESS field when running the WebGuard program by entering <http://www.dvronline.net>. Selecting the Use DVRNS option allows you to enter the NVR name registered on the DVRNS server instead of the IP address. You must enter the DVRNS server address and port number in the SETUP setting when selecting the Use DVRNS option.

NOTE: Do NOT close the LOGIN window during the WebGuard operation, otherwise, it will cause a script error when switching between Web monitoring and Web search modes, and you will need to restart the WebGuard program.

When running the updated WebGuard for the first time, Internet Explorer might occasionally load the information of the previous version. In this case, delete the temporary internet files by selecting Tools → Internet Options → General tab, and then run WebGuard again.

There might be a problem that the bottom of WebGuard page is cropped due to the address or status bars in Microsoft Internet Explorer 7.0. In this situation, it is recommended that websites open windows without address or status bars by changing the internet setting. (Go to the Tools → Internet Options → Security tab → Click the Custom level... button → Select *Enable* for the *Allow websites to open windows without address or status bars* option)

When running WebGuard in the Microsoft Windows Vista or higher operating system, it is recommended to start Internet Explorer with elevated administrator permissions. Click the right mouse button on the Internet Explorer icon and select the *Run as administrator* option from the context menu. Otherwise, some functions of the WebGuard might be limited to use.

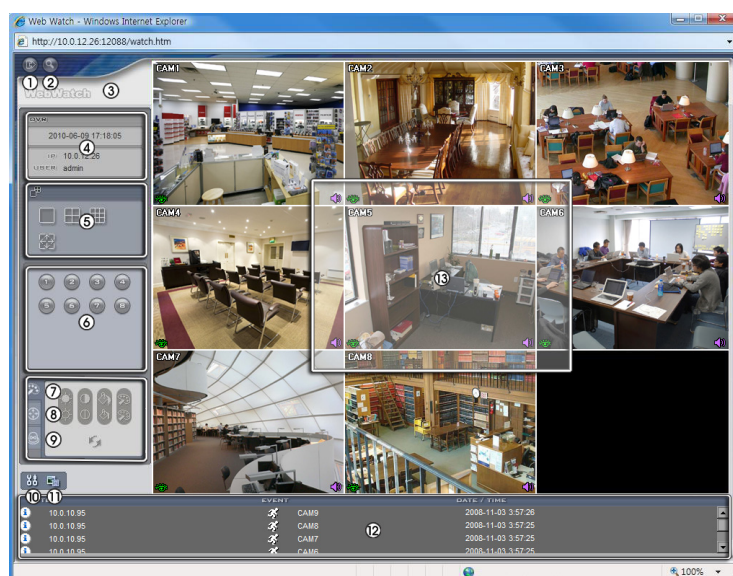
NOTE: There might be a problem with screen display or screen update due to low image transmission speed when using the Microsoft Windows Vista or higher operating system. In this situation, it is recommended that you disable the Auto Tuning capability of your computer.

Run the *Command Prompt* with elevated administrator permissions (Go to the Start Menu → Accessories → Command Prompt → Click the right mouse button and select the *Run as administrator* option). Then enter “netsh int tcp set global autotuninglevel=disable” and hit the enter key. Restart your computer to apply the changes.

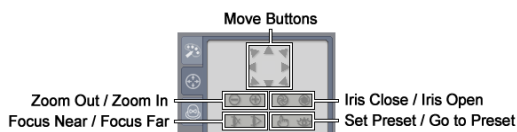
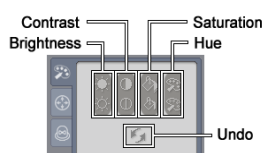
If you want to enable the Auto Tuning capability again, enter “netsh int tcp set global autotuninglevel=normal” after running the Command Prompt with elevated administrator permissions. Restart your computer to apply the changes.



Web Monitoring Mode

WebWatch is a remote web monitoring program that allows you to monitor live video transmitted in real-time from the remote NVR.








- ① Click the [Logout] icon to log out the WebGuard program.
- ② Click the [Search] icon to access to the web search mode.
- ③ Position the mouse pointer on the WebWatch logo to see the version of the WebGuard program.
- ④ The NVR information window displays the login information of WebGuard.
- ⑤ Click the screen format to select the desired display mode. When changing the screen format, the selected camera on the current screen will be located in the first cell of the new layout.
- ⑥ Click the camera button to select the camera to be viewed.
- ⑦ Click the [Adjust] icon to adjust the brightness, contrast, saturation and hue of monitoring image.
- ⑧ Click the [Control] icon to control pan, tilt and zoom of the camera from a remote site.
- ⑨ Click the [Alarm] icon to control alarm out devices at the remote site.




- ⑩ Click the  to set up the image drawing mode, OSD display and beep on/off. You can adjust the display speed by changing the image drawing mode, select OSD information to be displayed on the screen, and turn the NVR's internal buzzer on and off from a remote site.
- ⑪ Click the  to save the current image as a bitmap or JPEG file format.
- ⑫ The event status window at the bottom displays a list of events that were detected from the remote site.
- ⑬ Selecting a camera on the screen and clicking the right mouse button displays the text menu screen.



- **Change Camera Title:** Changes the camera name.
- **Enable Audio:** Enables audio communication with the remote site. When the audio control panel displays, click the  to send audio to the connected remote site and click the button again to stop sending audio. Click the  to monitor live audio from the connected remote site through the attached speaker and click the button again stop monitoring live audio. Clicking both  and  allows two-way communication. Clicking the  disables audio communication.
- **Aspect Ratio:** Changes the image aspect ratio.
- **Deinterlacing:** Using a deinterlace filter for interlaced video enhances image display quality by eliminating horizontal scan lines and noise in areas with motion.
- **Anti-Aliasing Screen:** Enhances image display quality by eliminating stair stepping (aliasing) effects in the enlarged image.

NOTE: A camera name change in the Web Watch mode does not affect the camera name set up on the remote site. Leaving the Camera Title blank causes the camera name set up on the remote site to display.



The  icon will display on each camera screen when audio communication is available between the WebGuard system and a NVR.




Web Search Mode

WebSearch is a remote web search program that allows you to search recorded video on the remote NVR.

NOTE: The remote site connection in the Web Search mode will automatically be disconnected if there is no activity for 30 minutes.











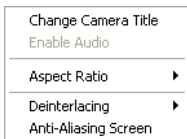
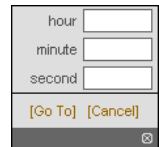
- ① Click the  to log out the WebGuard program.
- ② Click the  to access to the web monitoring mode.

- ③ Position the mouse pointer on the WebSearch logo to see the version of the WebGuard program.
- ④ The NVR information window displays the time information of recorded data on the remote NVR and login information of WebGuard.
- ⑤ Click the  to blur, sharpen, equalize and interpolate playback images. Click the  to zoom out or zoom in the recorded image. Click the  to adjust the brightness of the recorded images.



NOTE: Image processing works only in the pause mode.

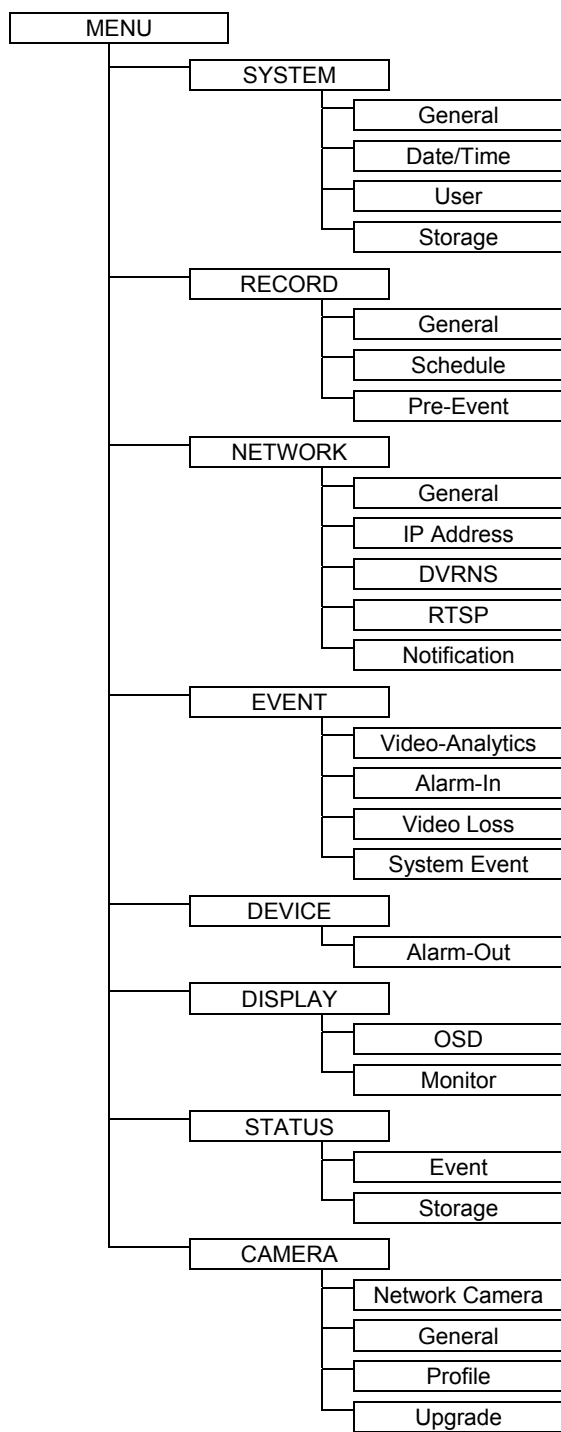
- ⑥ The playback function buttons include fast backward, pause, play, fast forward, go to the first image, go to the previous image, go to the next image, and go to the last image.
- ⑦ Click the screen format to select the desired display mode.
- ⑧ Click the  to enter the time-lapse search mode which allows you to search for recorded data by time and then play back images found within the time parameters. The Timetable window located at the bottom displays the time information for the image of the date selected on the calendar. If more than one video stream in the same time range, you can select the video stream you want to search. Clicking a specific time displays the image recorded at that time on the screen. Selecting the  allows you to display an image from a specific time.
- ⑨ Click the  to enter the event search mode which allows you to search for event log entries using specific conditions and play back the images associated with those event entries.
- ⑩ Click the  to set up the image drawing mode and OSD display. You can adjust the display speed by changing the image drawing mode, and select OSD information to be displayed on the screen.
- ⑪ Click the  to save any video clip of recorded data as an executable file, or click the  to save the current image in a bitmap or JPEG file format.
- ⑫ Click the  to print the current image on a printer connected to your computer.
- ⑬ Click the  to reload the recording data.
- ⑭ The Timetable displays recorded data of the selected camera by time (in hour segments).
- ⑮ Selecting a camera on the screen and clicking the right mouse button displays the text menu screen.








- **Change Camera Title:** Changes the camera name.
- **Enable Audio:** Plays audio while playing back recorded video that has recorded audio. (Single-Screen Layout Only)
- **Aspect Ratio:** Changes the image aspect ratio.
- **Deinterlacing:** Using a deinterlace filter for interlaced video enhances image display quality by eliminating horizontal scan lines and noise in areas with motion.
- **Anti-Aliasing Screen:** Enhances image display quality by eliminating stair stepping (aliasing) effects in the enlarged image.

NOTE: A camera name change in the Web Search mode does not affect the camera name set up on the remote site. Leaving the Camera Title blank causes the camera name set up on the remote site to display.

Map of Screens



Troubleshooting

Problem	Possible Solution
No System Power	<ul style="list-style-type: none"> Check power cord connections. Confirm that there is power at the outlet.
No PoE Power	<ul style="list-style-type: none"> Check power cord connections. Confirm that there is power at the outlet.
No Live Video	<ul style="list-style-type: none"> Check camera video cable and connections. Check monitor video cable and connections. Confirm that the camera has power. Check camera lens settings.
NVR has stopped recording	If hard disk drive is full, you will either need to delete video or set the NVR to the Overwrite Mode.
The icon  displays, however, the NVR is not recording.	When the NVR is in the Pre-Event recording mode, the yellow  and  display when there is no event, and the NVR is not recording. The red  and  display when any event occurs and the NVR starts recording.
While upgrading the system, the NVR keeps rebooting and the upgrade fails.	If the current system version is higher than the upgrade package file version, you should reset the NVR first using the Factory Reset. When using the Factory Reset, you will lose any settings you have saved.

System Log Notices

Boot Up	Setup Imported	Clip-Copy End
Shutdown	Setup Import Failure	Clip-Copy Cancel
Restart	Setup Exported	Clip-Copy Fail
Upgrade	Setup Export Failure	Clip-Copy User:
Upgrade Fail	Setup Export Cancel	Clip-Copy From:
Power Failure	Schedule On	Clip-Copy To:
Time Change	Schedule Off	Clip-Copy Duration of Video:
Time Zone Change	Panic On	Clip-Copy Camera:
Time Sync	Panic Off	Callback Fail
Time Sync Fail	Clear All Data	Factory Reset
Disk Bad	Clear Disk	Camera Upgrade Begin
Login	Format Disk	Camera Upgrade End
Logout	Disk Full	Camera Upgrade Fail
Setup Begin	Auto Deletion	Camera Upgrade User:
Setup End	Search Begin	Camera Upgrade Camera:
Remote Setup Change	Search End	
Remote Setup Failure	Clip-Copy Begin	

Error Code Notices

System Upgrade Related			
No.	Description	No.	Description
0	Unknown error.	301	Remote network error.
1	File version error.	302	Remote upgrade is not authorized.
2	Operating system version error.	303	Saving remote package failed.
3	Software version error.	304	Remote upgrade is cancelled by the user.
4	Kernel version error.	400	USB device mounting failed.
100	Upgrade device mounting failed.	401	Reading upgrade package on the USB device failed.
101	Package is not found.	402	Copying upgrade package on the USB device failed.
102	Extracting package failed.	403	USB device is not connected.
103	LILO failed.	404	USB device is being used.
104	Rebooting failed.	405	Unsupported file system.
105	Invalid package.	500	System is busy clip copying.
300	Remote connection failed.	301	Remote network error.

Clip Copy Related			
No.	Description	No.	Description
0	Unknown error.	12	Bad sector.
1	Device error.	13	No executable file.
2	Mounting failed.	14	Opening executable file failed.
5	File already existed.	15	Writing executable file failed.
6	Not enough space.	16	Creating image failed.
7	Creating temporary file failed.	19	Connecting device failed.
8	Opening disk failed.	20	Device is busy.
9	Formatting disk failed.	21	Unsupported file system.
10	Database has been changed.	22	Verify failed.
11	Appending failed.	23	No Recorded Data

Connection Failure Related			
No.	Description	No.	Description
0	Unknown case.	16	No route to host.
1	Normal logout.	17	Connection aborted.
2	Connection denied – all server channels are in use.	20	Connection has been canceled by user.
3	Invalid product version.	21	Peer host does not respond.
4	Invalid user or password.	22	Network is too noisy.
5	Admin forcibly closed the current connection.	23	Sending queue overflow.
6	Timeout.	24	Invalid OEM number.
7	Post system shutdown.	25	You have no authority for search.
8	Cannot connect – all network channels are in use.	26	Port is already in use.
9	Cannot connect – no server module.	27	SSL connection failed.
11	Network is down.	28	Network timed out.
12	Network is unreachable.	29	Host timed out.
13	Connection timed out.	30	Host cannot support RTP over TCP.
14	Connection reset by peer.	31	Socket error occurred.
15	Host is down.		

Specifications

VIDEO	
Video Input	Ethernet: 4 or 8 cameras
Monitor Outputs	HDMI: 1 HDMI VGA: 1 DB15
Video Resolution	1920x1080, 1280x1024, 1280x720, 1024x768
Record Speed (images per second)	8-ch Model: 240ips @ 1920x1080 (8Mbps), 240ips @ 1280x720 4-ch Model: 120ips @ 1920x1080 (8Mbps), 120ips @ 1280x720
Playback Speed (images per second)	120ips @ 1280x720, 60ips @ 1920x1080

INPUTS/OUTPUTS	
Alarm Input	4 TTL, programmable as NC or NO, 2.4V (NC) or 0.3V (NO) threshold, 5VDC
Alarm Output	1 relay output, 2A@125VAC, 1A@30VDC (NO)
Internal Buzzer	80dB at 10cm
Network Connectivity	10Mbps/100Mbps/1Gbps Ethernet
Audio Input	4 or 8, 10Mbps/100Mbps Ethernet
Audio Output	RCA Output: 1, Line Out

CONNECTORS	
Video Input	Ethernet: 4 or 8 RJ-45
Monitor Output	HDMI: 1 HDMI VGA: 1 DB15
Audio Out	1 RCA connector
Alarm Input/Output	Terminal Blocks
Ethernet Port	RJ-45
IR Port	1 Remote Control
USB Port	2 (USB 2.0)

STORAGE	
Primary Storage	SATA hard disk drive (up to 2)
Secondary Storage	USB hard disk drive or flash drive

GENERAL	
Dimensions (W x H x D)	11.8" x 2.4" x 9.1" (300mm x 62mm x 232mm)
Unit Weight	6.4 lbs. (2.9kg) (8-ch Model) / 6.0 lbs. (2.7kg) (4-ch Model)
Shipping Weight	10.4 lbs. (4.7kg) (8-ch Model) / 9.9 lbs. (4.5kg) (4-ch Model)
Shipping Dimensions (W x H x D)	18.1" x 4.4" x 14.2" (460mm x 113mm x 360mm)
Operating Temperature	41°F to 104°F (5°C to 40°C)
Operating Humidity	0% to 90%
Power	NVR: 12V $\overline{\text{---}}$, 2.0A (Adaptor: 100-240V~, 50/60Hz, 1.5A, 12V $\overline{\text{---}}$, 5A) PSE*: 48V $\overline{\text{---}}$, Max. 1A (Adaptor: 100-240V~, 50/60Hz, Max. 1.4A, 48V $\overline{\text{---}}$, 1.36A)
Power Consumption	NVR: Max. 25W PSE: Max. 48W

* The PSE is designed to connect the network cameras that support the IEEE 802.3af PoE (Power over Ethernet). When the total power of all camera channels is over 1A, it might reduce the PSE lifespan.

Specifications are subject to change without notice.



WARRANTY INFORMATION

Please keep this document in a safe place. **DO NOT** return this document to Pacific Communications.

EQUIPMENT DETAILS

MODEL	SERIAL NUMBER	DATE OF PURCHASE

IMPORTANT INFORMATION

PLEASE RETAIN ALL MANUALS SUPPLIED WITH THE EQUIPMENT AND PROOF OF PURCHASE.

PROOF OF PURCHASE WILL BE REQUIRED IF YOU NEED TO MAKE A WARRANTY CLAIM.

Please ensure that the following instructions are followed when operating the Equipment.

- This is a commercial grade product and should only be installed or serviced by a qualified technician.
- Please read the Owner's Manual before installing the device.
- Never place the Equipment in a confined space (eg bookcase, built-in cabinet) unless proper ventilation is available. It is advised to leave a 10cm space around the unit.
- To prevent fire or shock hazard, do not expose the Equipment to water. Ensure that objects filled with liquid (eg vases) are not placed on or near the Equipment.
- Avoid keeping or using the Equipment in a dusty, wet or electromagnetic environment.
- Before making a warranty claim, ensure that you have read the "Troubleshooting" section of the Owner's Manual.

PACIFIC COMMUNICATIONS

A division of Hills Holdings Limited ACN 007 573 417

Unit 10, 331 Ingles Street

City Link Estate,

PORT MELBOURNE VIC 3207, AUSTRALIA

www.pacom.com.au

WARRANTY TERMS

1. Pacific Communications provides consumers with the following warranty in relation to this Equipment, in addition to complying with the requirements of any relevant legislation, including the *Competition and Consumer Act 2010* (Cth) in Australia and the *Consumer Guarantees Act 1993* in New Zealand (the **Acts**), except where a New Zealand consumer acquires the relevant Product for the purposes of a business.
2. In this warranty, we have used the following definitions:
 - (a) **Pacific Communications, our or we** means Pacific Communications, a division of Hills Holdings Limited ABN 35 007 573 417 of 159 Port Road Hindmarsh South Australia 5007.
 - (b) **Equipment** means the goods described in the table headed "Equipment Details" overleaf.
 - (c) **Material** means a material or component used by Pacific Communications in the manufacture of the Equipment.
 - (d) **Warranty Period** means 24 months from the date of purchase of the Equipment. If the Equipment or part (as the case may be) is repaired or replaced, there will be no extension to the original warranty period. (**Note:** HDD's installed in equipment have a 12 month warranty period)
 - (e) **Workmanship** means the handling, assembly and manufacturing processes performed by or on behalf of Pacific Communications in order to manufacture the Equipment.
3. Pacific Communications warrants that for the duration of the Warranty Period, the Equipment will be free of faults arising from defects in Workmanship or Materials, on the terms and conditions set out in this warranty.
4. Pacific Communications undertakes that if during the Warranty Period, the Equipment, or any part of the Equipment, has failed to operate correctly due to faulty Workmanship or defective Material, it will repair or replace the Equipment or part (as the case may be) free of charge on the following terms:
 - (a) The consumer must retain proof of purchase of the Equipment. Pacific Communications may reject a warranty claim on Equipment where the consumer is unable to substantiate proof of purchase to the reasonable satisfaction of Pacific Communications.
 - (b) The consumer must contact the service provider (installer) who installed the Equipment at first instance, upon becoming aware of a defect to any Equipment. Alternatively, the consumer may contact Pacific Communications on (03) 9676 0222.
 - (c) Following consultation between the service provider and Pacific Communications, Pacific Communications will determine whether there is a defect, and if so Pacific Communications agrees (at Pacific Communications' option) to repair, replace or supply equivalent goods, or pay the cost of any of those remedies to the consumer.
 - (d) If requested by Pacific Communications, the consumer must return the Equipment to Pacific Communications. The consumer will be responsible for the collection and freight costs of returning the Equipment to Pacific Communications or to any designated Pacific Communications Authorised Service Centre for repair or replacement. The consumer will also be responsible for the freight costs to deliver any new or repaired Equipment to the consumer.
 - (e) This warranty does not include, and Pacific Communications will not be responsible for, any costs associated with the inspection or evaluation of the Equipment, nor the removal or re-installation of the Equipment.
 - (f) **Please note** that a service charge will apply if no fault is identified or if any fault does not fall within the conditions of this warranty. For details of the applicable service charge, please discuss this with your service provider prior to making a claim under this warranty.
5. The consumer's right to this warranty will cease to apply where:
 - (a) Security labels, identification numbers or serial numbers are tampered with or removed;
 - (b) The Equipment has not been used in accordance with the instructions provided in the Owner's Manual supplied with the Equipment, or in accordance with usual use for that type of equipment;
 - (c) Alterations, modifications or repairs have been carried out on the Equipment (unless authorised by Pacific Communications);
 - (d) Upgrades (including software upgrades) are not authorised and registered by Pacific Communications.
6. This warranty is in addition to any non-excludable legal rights or remedies conferred on the consumer under any applicable Act and any similar laws. To the extent permitted by law, Pacific Communications' liability for any non-excludable condition or warranty is limited to rectifying any defect at its option, as set out in paragraph 4(c).
7. Subject to the requirements of any applicable Act or legislation and to the extent permitted by law, no liability (whether expressed or implied) of any nature whatsoever, is accepted by Pacific Communications for any consequential loss, damage or injury arising as a result of any fault in the Equipment.
8. This warranty does not extend to damage to Equipment which occurs during transit or transportation, or which is caused by any abuse, accident or improper installation, connection, use, adjustment or repair of goods otherwise than in accordance with instructions issued by Pacific Communications.
9. The following applies to consumers who purchased a relevant Product in Australia:

Our goods come with guarantees that cannot be excluded under the Australian Consumer Law. You are entitled to a replacement or refund for a major failure and compensation for any other reasonably foreseeable loss or damage. You are also entitled to have the goods repaired or replaced if the goods fail to be of acceptable quality and the failure does not amount to a major failure.



www.das.com.au

NSW

Granville (02) 9897 7722
Rosebery (02) 9698 9698
Chatswood (02) 8467 1467
ACT
Fyshwick (02) 6280 9630

QLD

Bowen Hills (07) 3252 5512
Loganholme (07) 3801 7600
VIC
Rowville (03) 9755 6922
Coburg (03) 9383 2066

SA

Torrensville (08) 8150 9400
WA
Balcatta (08) 9241 3100
TAS
Hobart (03) 6272 0211



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Rydalmere (02) 9638 6400
VIC
Port Melbourne (03) 9285 2400
QLD
East Brisbane (07) 3249 6100

SA

St Marys (08) 8276 3455
WA
Balcatta (08) 9240 7730
ACT
Fyshwick (02) 6280 9630

TAS

Hobart (03) 6272 0211



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AUCKLAND

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CHRISTCHURCH

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WELLINGTON

Petone, Lower Hutt 04 939 9355