Operating Instructions

Digital Video Recorder

Model: DIR-4108H/xx

DIR-4116H/xx

Safety Instructions / Maintenance

- Read these safety instructions and the operation manual first before you install and commission the unit.
- Keep the manual in a safe place for later reference.
- The system may only be commissioned and maintained by personnel authorized to do this and it must only be carried out in accordance with relevant standards and guidelines.
- Never cover the ventilation slots to avoid overheating.
- Never insert metal objects or any other items into the vents. This may permanently damage the unit.
- Protect your unit from contamination with water and humidity to prevent it from permanent damage.
  Never switch the unit on when it gets wet.
  Have it checked at an authorized service center in this case.
- Never operate the units outside of the specifications as this may prevent their functioning.
- Do not operate the unit beyond their specified temperature, humidity or power ratings.
  Operate the unit only at a temperature range of +5°C to +40°C and at a humidity of max. 80%.
- The unit should be protected against excessive heat, dust, damp and vibration.
- Do not place any heavy objects on the unit.
- To disconnect the power cord of the unit, pull it out by the plug. Never pull the cord itself.
- Pay attention when laying the connection cable and observe that the cable is not subject to heavy loads, kinks, or damage and no moisture can get in.
  Do not attempt to disassemble the camera board from the dome.
- Contact your local dealer in case of malfunction.
- The connection cable should only be changed by Videor E. Hartig GmbH.
- The warranty becomes void if repairs are undertaken by unauthorized persons.
  Do not open the housing.
- Installation, maintenance and repair have to be carried out only by authorized service centers.

  Before opening the cover disconnect the unit from mains input.
- Only use original parts and original accessories from Videor E. Hartig GmbH.
- Do not use strong or abrasive detergents when cleaning the dome. Use a dry cloth to clean the dome surface. In case the dirt is hard to remove, use a mild detergent and wipe gently.

NOTE:
This is a class A digital device.
This digital device can cause harmful interference in a residential area; in this case the user may be required to take appropriate corrective action at his/her own expense.

Table of Contents

Chapter 1 — Introduction 3
Features 3
Package Contents 4
Chapter 2 — Installation & Configuration 5
Rear Panel Connectors 5
Front Panel Controls 8
Infrared Remote Control 9
Turning on the Power 11
Main Setup 12
System Setup 13
Record Setup 17
Event Setup 20
Network Setup 25
Device Setup 28
Display Setup 29
Chapter 3 — Operation 32
Live Monitoring 32
Display Menu 34
Event Monitoring 35
Active Cameo Mode 35
PTZ Mode 35
Recording Video 36
Playing Recorded Video 37
Searching Video 38
Search 39
Go To 43
Export 44
WebGuard 45
Web Monitoring 47
Web Search 48
Text-In Search Examples 50
Appendix 52
Factory Default Settings 52
Error Code Notices 55
Troubleshooting 56
Specifications 57

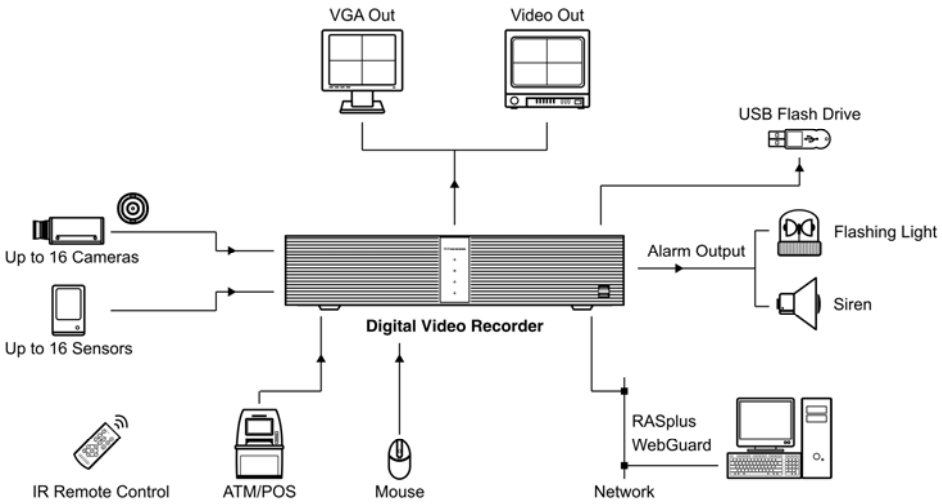
Chapter 1 — Introduction

FEATURES

Your color digital video recorder (DVR) provides recording capabilities for 8 or 16 camera inputs. It provides exceptional picture quality in both live and playback modes, and offers the following features:

- 8 or 16 Composite Input Connectors
- Compatible with Color (NTSC or PAL) and B&W (CCIR and EIA-170) Video Sources
- Auto Detection for NTSC and PAL
- Auto Detection for VGA Monitor
- Dual Codec (H.264 and MPEG-4)
- Records up to 120/100 Images per Second (NTSC/PAL)
- Continuous Recording in Disk Recycle Mode
- Records while Playing Back and Transmitting to Remote Site
- Full Function Infrared Remote Control
- User-friendly Graphical User Interface (GUI) Menu System
- Multiple Recording Modes (Time-lapse, Pre-event, Motion and Alarm)
- Multiple Search Engines (Date/Time, Event, Record Table)
- Text Input for ATM and POS
- Alarm Connections Include: Input, Output and Reset Input
- 2 USB 2.0 Ports
- Built-in Buzzer
- Live or Recorded Video Access via Ethernet
- Self-diagnostics with Automatic Notification including Hard Disk Drive S.M.A.R.T. Protocol

NOTE: This manual covers the 8- and 16-channel digital video recorders. The DVRs are identical except for the number of cameras and alarms 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 16-camera model.

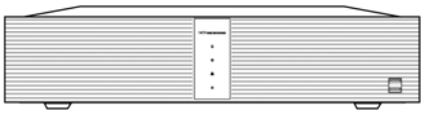


Typical DVR installation

PACKAGE CONTENTS

The package contains the following:

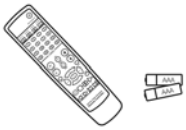
- Digital Video Recorder
- Power Cord
- USB Mouse
- Infrared Remote Control and Batteries
- Rack-mount Kit
- RAS Software CD and Operating Instructions (This document)



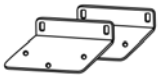
Digital Video Recorder

Power Cord

USB Mouse



IR Remote Control and Batteries (AAA Type)



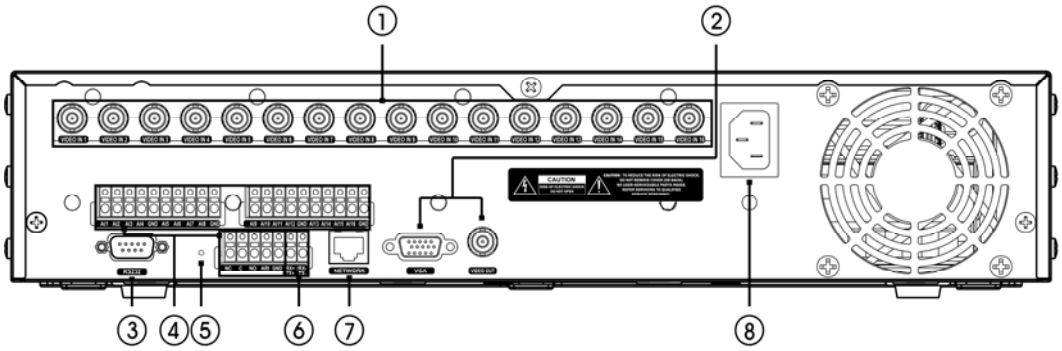
Rack-mount Kit

RAS Software CD and Operating Instructions

Chapter 2 — Installation & Configuration

REAR PANEL CONNECTORS

No special tools are required to install the DVR. Refer to the installation manuals for the other components that make up part of your system. Your DVR should be completely installed before proceeding.



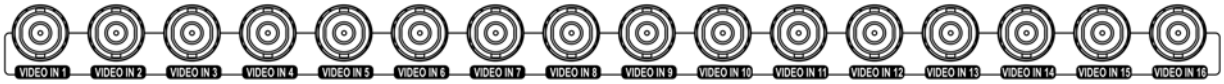
16-Channel DVR rear panel

① Video In	② Video Out	③ RS232C Port	④ Alarm Input/Output
⑤ Factory Reset Switch	⑥ RS-485 Port	⑦ Network Port	⑧ Power Connector

Your DVR can be used with either NTSC or PAL equipment.

NOTE: You cannot mix NTSC and PAL equipment. For example you cannot use a PAL camera and an NTSC monitor.

Connecting the Video Input



Connect the coaxial cables from the video sources to the BNC Video In connectors.

Connecting the Monitor

A VGA connector is provided so that you can use a standard, multi-sync computer monitor as your main monitor. Use the cable supplied with your monitor to connect it to the DVR. The VGA monitor is automatically detected when you connect it.

NOTE: It is possible that the DVR will not automatically detect a VGA monitor if the monitor does not support the auto detect function. In this case, press and hold the *DISPLAY* button on the remote control for 5 seconds or longer to switch the video output to VGA out. Pressing and holding the button for 5 seconds or longer again returns to the composite video output mode.

If you prefer to use a standard CCTV monitor, connect it to the Video Out connector.

NOTE: The DVR does not support simultaneous operation of a CCTV and a VGA monitor.

Connecting to the RS232C Port

The RS232C port can be used to control PTZ (pan, tilt, zoom) cameras.

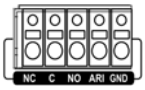
Connecting Alarms

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.

AI 1 to 16 (Alarm-In): You can use external devices to signal the DVR to react to events. Mechanical or electrical switches can be wired to the AI (Alarm-In) and GND (Ground) connectors. The threshold voltage for NC (Normally Closed) is above 4.3V and for NO (Normally Open) is below 0.3V, and it should be stable at least 0.5 seconds to be detected.

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

NOTE: All the connectors marked GND are common.



NC/NO (Normally Closed/Normally Open): Connect the device to the C (Common) and NC (Normally Closed) connectors or C and NO (Normally Open) connectors. NC/NO is a relay output which sinks 2A@125VAC (NC) and 1A@30VDC (NO).

ARI (Alarm Reset In): An external signal to the Alarm Reset In can be used to reset both the Alarm Out signal and the DVR's internal buzzer. Mechanical or electrical switches can be wired to the ARI (Alarm Reset In) and GND (Ground) connectors. The threshold voltage is below 0.3V and should be stable at least 0.5 seconds to be detected. Connect the wires to the ARI (Alarm Reset In) and GND (Ground) connectors.

Connector Pin Outs:

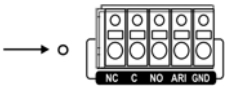
AI (1 to 16)	Alarm Inputs 1 to 16
NC	Alarm Out (Normally Closed)
C	Common
NO	Alarm Out (Normally Open)
ARI	Alarm Reset In
GND	Chassis Ground

Connecting to the Network Port

The DVR can be networked using the 10/100Mb Ethernet connector. Connect a Cat5 cable with an RJ-45 jack to the DVR connector. The DVR can be networked with a computer for remote monitoring, searching, configuration and software upgrades. See the *Network Setup* section in this chapter 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



The DVR has a Factory Reset switch to the left of the Alarm Output connector 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:

Turn the DVR off. → Poke the straightened paperclip in the unlabeled hole to the left of the Alarm Output connector, and turn the DVR on. → Hold the switch until the DVR turns on and the live monitoring screen appears. → Release the reset switch. All of the DVR's settings are now at the original settings it had when it left the factory.

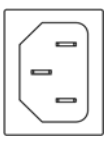
Connecting to the RS-485 Port

The RS-485 connector can be used to control PTZ (pan, tilt, zoom) cameras. Connect TX+/RX+ or TX-/RX- of the control system to the RX+/TX+ or RX-/TX- (respectively) of the DVR. See the *Device Setup* section in this chapter of this manual and the PTZ camera manufacture's manual for configuring the RS-485 connection.

Connector Pin Outs:

Master Unit			Slave Unit
RX+/TX+	→ To →		TX+/RX+
RX-/TX-	→ To →		TX-/RX-

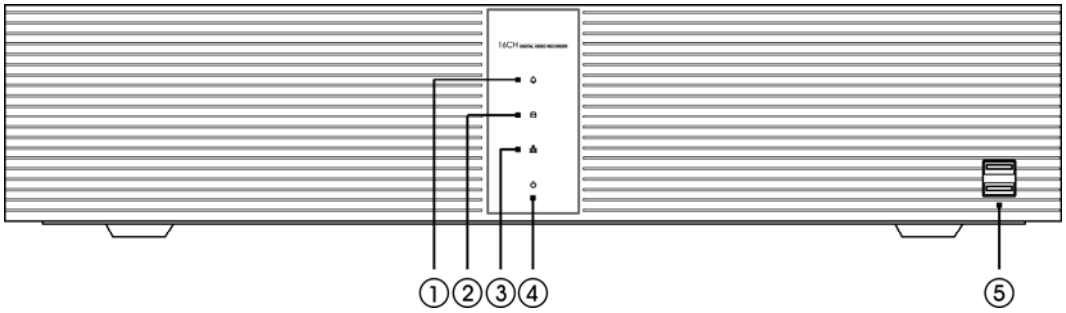
Connecting the Power Cord



Connect the AC power cord to the DVR and then to a 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.

FRONT PANEL CONTROLS



① Alarm LED ② HDD LED ③ LAN LED ④ Power LED ⑤ USB Port

Alarm LED

The Alarm LED is lit when alarm output or internal buzzer is activated.

HDD LED

The HDD LED flickers when the DVR is recording or searching video on the hard disk drive.

LAN LED

The LAN LED is lit when the unit is connected to a network via Ethernet.

Power LED

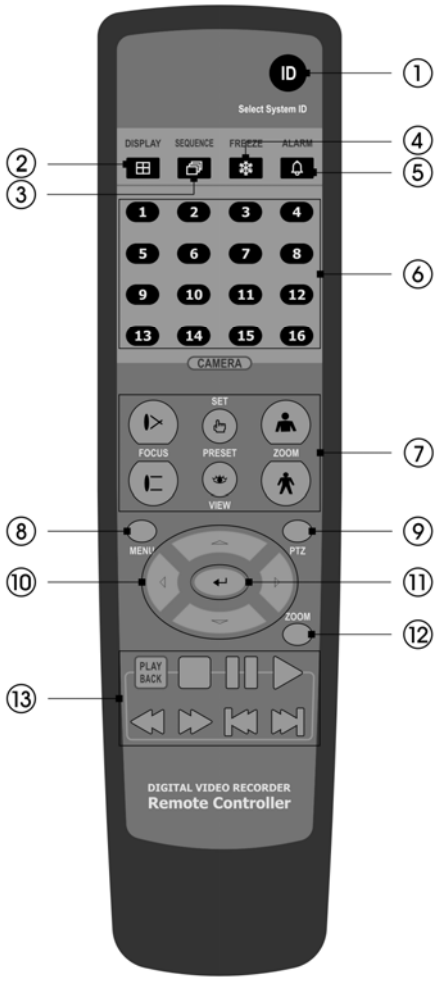
The Power LED is lit when the unit is On.

USB Port

Connect the supplied USB mouse to one of the ports. The USB mouse will be used to access many of the DVR's functions. A USB flash drive can be connected to make video clip copies or for system upgrades. A USB to Serial converter can be connected to the USB port, so multiple text-in devices can be used with a USB to Serial converter.

NOTE: The infrared sensor on the DVR is just to the right of the Power LED. Make certain that nothing blocks the sensor, or the remote control will not function properly.

INFRARED REMOTE CONTROL



① ID Button

② DISPLAY Button

③ SEQUENCE Button

④ FREEZE Button

⑤ ALARM Button

⑥ CAMERA Buttons

⑦ PTZ Control Buttons
(FOCUS, PRESET, ZOOM)

⑧ MENU Button

⑨ PTZ Mode Button

⑩ Arrow Buttons

⑪ Enter Button

⑫ ZOOM Mode Button

⑬ PLAYBACK Buttons
(Stop, Pause, Play, RW, FF, Previous, Next)

ID Button

If a DVR System ID is set to 0, the infrared remote control will control that DVR without any additional entries. (Refer to the *Main Setup* section in this chapter for further information on setting the System ID.) If the DVR system ID is 1 to 16, you must to press the ID button on the remote control followed by the number button (1 to 16) in order to control that DVR. If two or more DVRs have the same ID, those DVRs will react to the infrared remote control at the same time.

DISPLAY Button

Pressing the DISPLAY button toggles between different display formats. The available formats are: full, 4x4, 3x3, 2x2 and PIP.

When the DVR does not detect a VGA monitor automatically, pressing and holding the button for 5 seconds or longer will toggle the video output between the composite video output and VGA out.

SEQUENCE Button

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

FREEZE Button

Pressing the FREEZE button freezes the current live screen.

ALARM Button

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

CAMERA Buttons (1 to 16)

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

PTZ Control Buttons

While in the PTZ mode, the FOCUS buttons are used for Near Focus and Far Focus, the PRESET buttons are used to save Presets and load a Preset View, and the ZOOM buttons are used to Zoom In and Zoom Out.

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.

PTZ Mode Button

Pressing the PTZ button enters the PTZ (Pan/Tilt/Zoom) mode which allows you to control properly configured cameras.

Up, Down, Left, Right Arrow Buttons

These buttons are used to navigate through menus and items displayed in the Live Monitoring or Search screens. They are also used to navigate through menus and GUI during the system setup. You also can use them to change numbers by highlighting a number in a menu and using the Up and Down arrow buttons to increase or decrease the number's value.

The arrow buttons are also used to control Pan and Tilt when in the PTZ mode.

When in the PIP display format, pressing the Up and Down arrow buttons moves the position of the small screen counter-clockwise and clockwise.

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

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 Mode Button

Pressing the ZOOM button zooms the current image on the screen. A PIP with 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.

PLAYBACK Buttons

- Stop: Stops playback and enters the Live Monitoring mode.
- Pause: Pauses the video. ❙❙ displays on the screen when in the Pause mode.
- Play: Plays back images at regular speed. The screen displays ▶ when the DVR is playing back video.
- RW (Rewind): Plays video backward at high speed. Pressing the button again toggles the playback speed from ◀◀, ◀◀◀ and ◀◀◀◀. ◀◀, ◀◀◀ and ◀◀◀◀ displays on the screen respectively.
- FF (Fast Forward): Plays video forward at high speed. Pressing the button again toggles the playback speed from ▶▶, ▶▶▶ and ▶▶▶▶. ▶▶, ▶▶▶ and ▶▶▶▶ displays on the screen respectively.
- Previous: Goes to the previous image.
- Next: Goes to the next image.

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

TURNING ON THE POWER

Connecting the power cord to the DVR turns on the unit. The unit will take approximately 30 seconds to initialize.

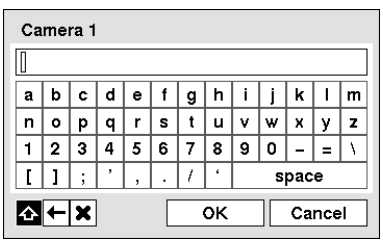
As soon as the DVR's initialization process completes, you might have the DVR's internal buzzer sound if not all cameras (16 and 8 cameras for 16- and 8-channel DVR respectively) are installed to the DVR because the DVR is set to use all camera channels by default. To turn the internal buzzer off, press the ALARM button on the remote control, or move the mouse pointer to the top of the screen and click the (*Alarm Off*) icon.

Before using your DVR for the first time, you will want to establish the initial settings. The following describes how to use the remote control and mouse in the setup screen. Take a minute to review the descriptions.

	Remote Control	Mouse
To enter the setup screen…	In Live Monitoring mode, press the MENU button to display the menu icons at the top of the screen. Select the (*Setup*) icon by pressing the (*Enter*) button.	In the Live Monitoring mode, move the mouse pointer to the top of the screen to display hidden menu icons. Click the (*Setup*) icon with the left button.
To select items…	Move to the desired item by pressing the arrow buttons (, , ,) and select it by pressing the button.	Click the desired item with the left button.
To change values…	Select the desired item and press the Up and Down arrow buttons (,) to increase or decrease the values and then press the button to complete the entry.	Select the desired item with the left button and roll the mouse wheel up and down to increase or decrease the values.
To enter characters…	Select the desired item and press the button to displays a virtual keyboard. Move to the desired character by pressing the arrow buttons, and press the button.	Select the desired item with the left button to displays a virtual keyboard. Click the desired character with the left button.

NOTE: For simplicity, most of the operation explanations in this manual are based on using the Remote Control.

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



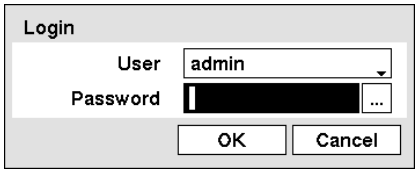
Use the arrow buttons on the remote control to highlight the character you want in the name or title and press the button. That character appears in the title bar and the cursor moves to the next position. Selecting toggles between the upper and lower case keyboards, ← backspaces, and ✖ deletes entered characters. You can use up to 31 characters including spaces in your title.
Special characters can be created using ^ and a capital letter; e.g., ^J for NL (New Line), ^M for CR (Carriage Return). Special characters are commonly used by text input devices and will be useful when performing Text-In Searches.

MAIN SETUP

The Main Setup screen gives you to access to all the DVR's setup screens. Your DVR can be set up using various screens and dialog boxes.

Throughout the screens you will see . Selecting the and pressing the button on the remote control gives you the opportunity to reset that screen to its default settings. You can save your changes by selecting the Save button and pressing the button. Selecting the Cancel button exits the screen without saving the changes.

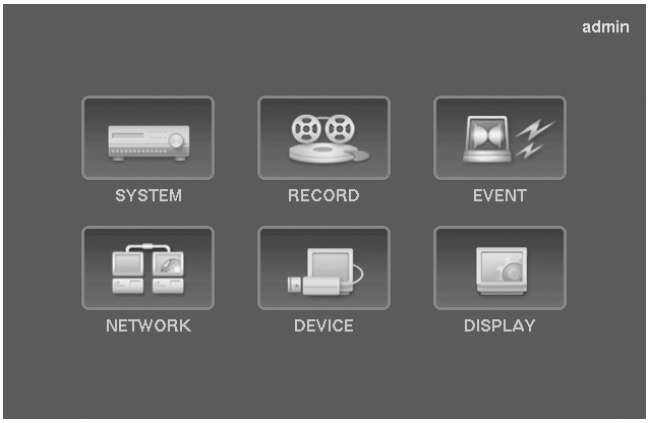
To enter the Main Setup screen, press the MENU button on the remote control. Select the (*Setup*) icon at the top of the screen by pressing the button. The Login screen appears.



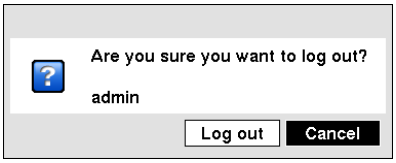
Select a User and enter the password by pressing the appropriate combination of Camera number buttons on the remote control and select the OK button. The following Main Setup screen appears. There is no default password when logging in the admin user for the first time.

NOTE: Setting up a password is strongly recommended to ensure secure management of the system.

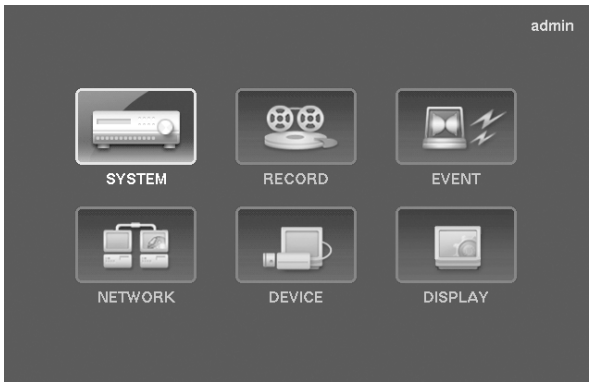
NOTE: To enter a password by using the mouse, click the button, and a virtual keyboard displays. See instructions above for using the virtual keyboard.



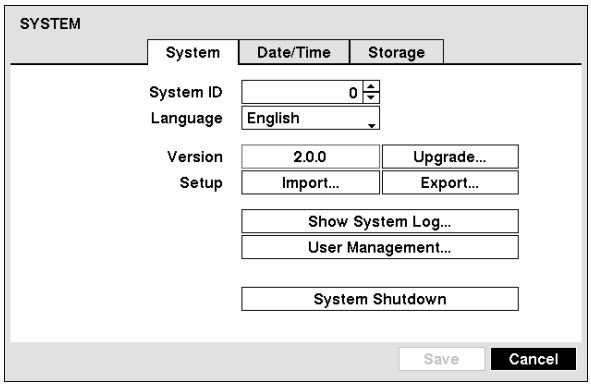
To log the user out of the system, press the MENU button on the remote control or move the mouse pointer to the top of the screen and select the icon. The Logout screen displays asking you to confirm whether or not you want to log out the current user.



SYSTEM SETUP



System Settings (SYSTEM ➔ System Tab)



- System ID: Set the system ID. Use the Up and Down arrow buttons or scroll the mouse wheel to increase or decrease the number.

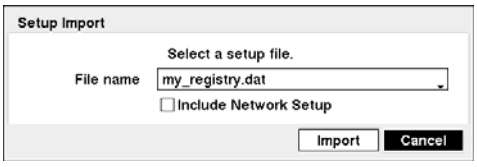
  NOTE: It is possible to have multiple DVRs with the same System ID in the same area. In this case, all DVRs with the same System ID will be controlled at the same time when using the infrared remote control for that ID number.

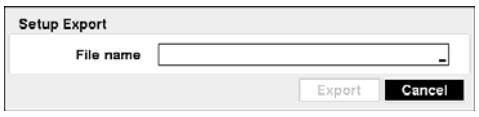
- Language: Select the desired language.
- Version: Displays the software version of the DVR. To upgrade the software, connect a USB flash drive containing the upgrade package file (.rui) to the DVR. Selecting Upgrade… displays the Upgrade screen. Select the desired upgrade file and press the ↵ button. The system restarts automatically after completing the upgrade.

- Setup: Imports saved DVR settings or exports the current DVR settings.

  Import... – To import saved DVR settings, connect a USB flash drive containing the setup file to the DVR and select the desired setup file. Selecting Include Network Setup changes the network settings.

  Export... – To save the current DVR settings in .dat file format, connect a USB flash drive to the DVR and enter a file name for the settings.

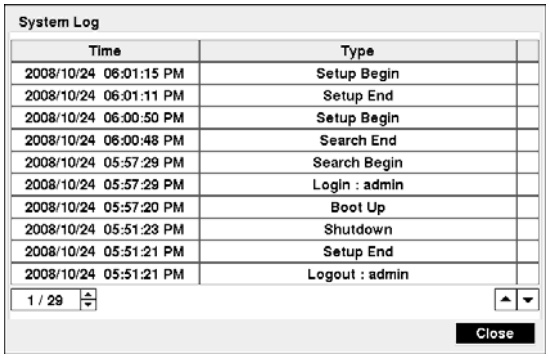




NOTE: Even after changing the DVR settings by importing saved settings, the time-related settings (Date/Time, Time Zone and Daylight Saving Time) will NOT be changed.

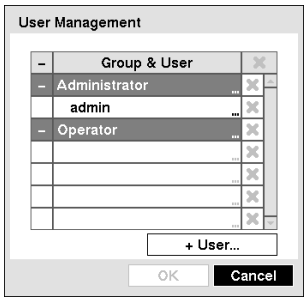
CAUTION: The USB device must be FAT16 or FAT32 format.

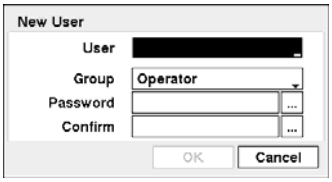
- Show System Log…: Displays the system logs (up to 5,000 from the latest). The icon will be displayed in the last column for system activities of remote sites.



Log Message	Log Message	Log Message
Boot Up	Setup End	DISK# BAD
Shutdown	Setup Imported	Search Begin (Local/Remote)
Restart	Setup Import Fail	Search End (Local/Remote)
Upgrade (Local)	Setup Exported	Clip-Copy Begin (Local/Remote)
Upgrade Failure (Local)	Setup Export Fail	Clip-Copy End (Local/Remote)
Time Change (Local)	Setup Export Cancel	Clip-Copy Cancel (Local/Remote)
Time Zone Change (Local)	Schedule On	Clip-Copy Failure (Local/Remote)
Time Sync	Schedule Off	Clip-Copy User:
Time Sync Failure	Clear All Data (Local)	Clip-Copy From:
Login : (Local/Remote)	Format Disk	Clip-Copy To:
Logout : (Local/Remote)	DISK FULL	Clip-Copy Duration of Video:
Setup Begin	Auto Deletion	Clip-Copy Camera:

- User Management…: Registers users and changes the password, and assign authority levels to the group. Selecting + User… allows you to enter the user name and password. Selecting ✖ allows you to delete a User Name or an entire Group. Selecting the Operator column allows you to assign authority levels to the group.

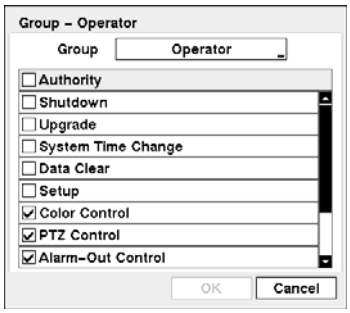




NOTE: Up to five Users can be registered to the Operator group.

NOTE: To enter a password by using the mouse, click the button, and a virtual keyboard displays. See the *Turning On the Power* section above for using the virtual keyboard.

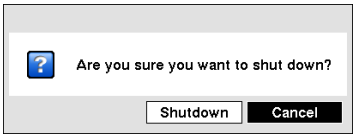
CAUTION: Write down the new password and save it in a secure place. If the password is forgotten, the unit must be reset using the Factory Reset button and all data settings will be lost.



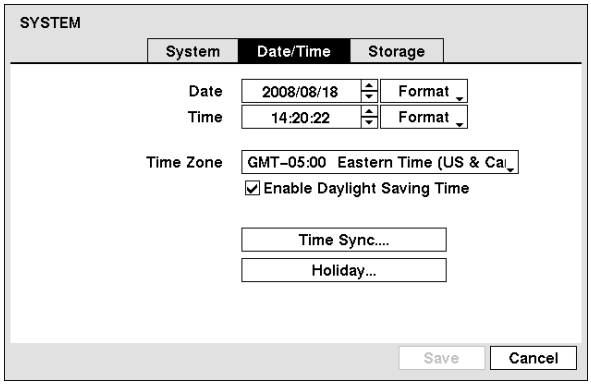
NOTE: Selecting the *Authority* box toggles between all authority levels being turned On an Off. Selecting the individual authority level boxes toggles between that authority level being turned On and Off.

Shut Down – 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.
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.
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.
Color Control – The user can control brightness, contrast, hue and saturation for cameras on a local system or a PC running RAS.
PTZ Control – The user can control the PTZ camera on a local system or a PC running RAS.
Alarm-Out Control – The user can reset the DVR's outputs including the internal buzzer during an alarm by pressing the ALARM 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.
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.
Record Setup – The user can establish all Record settings 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, and save video data in an AVI, bitmap or JPEG file format.
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.
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.

- System Shutdown: Shuts the system down.

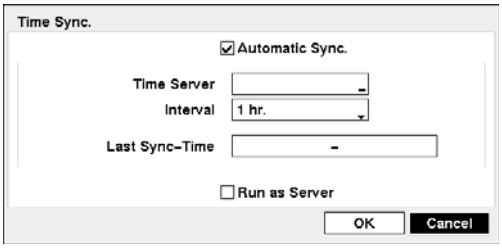


Date/Time Settings (SYSTEM → Date/Time Tab)



- 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.
- Enable Daylight Saving Time: Selecting the box sets the system to enable daylight saving time.
- Time Sync…: Set up the time synchronization between the DVR and standard time servers that are available in most time zones and countries, or between the DVR and another DVR.



Automatic Sync – Selecting the box enables you to set up the automatic time synchronization.
Time Server – Enter the IP address or domain name of the time server.
Interval – Set the time interval for synchronization.
Last Sync-Time – Displays the last time the DVR was synchronized with the time server.
Run as Server – Selecting the box sets the DVR you are setting up to run as a time server.

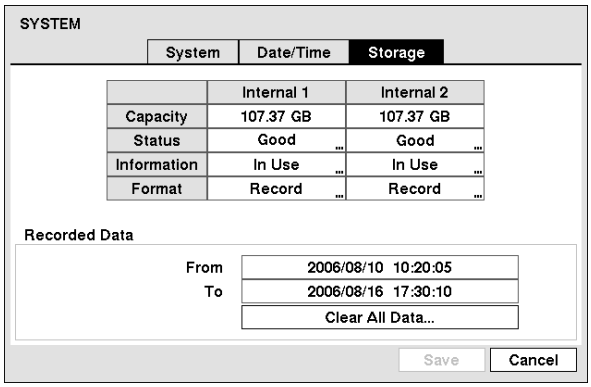
- Holiday…: Set up holidays.

[+] – Displays the current date. Set the date to add for holiday.
✖ – Deletes the selected date from holidays.

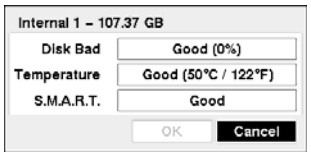
NOTE: Holidays that do not fall on the same date each year should be updated once the current year's holiday has passed.

NOTE: The clock will not start running until you have selecting the Save button.

Storage Settings (SYSTEM → Storage Tab)



- Capacity: Displays the capacity of the storage drive.
- Status: Displays status of the DVR's storage devices. Selecting the column for the desired device displays the Disk Bad, Temperature and S.M.A.R.T. information.



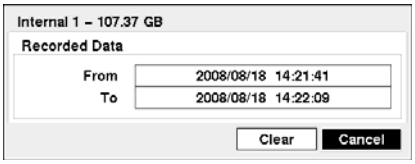
Disk Bad – Displays the damage status of the storage drive. (Not Formatted (The device is not formatted), Good (%) (The device is working properly though some portion (%) of the storage is damaged.) or Bad (More than 90% of the storage is damaged.))

Temperature – Displays the temperature of the storage drive. (N/A (The DVR cannot read the temperature.), Good (The temperature is normal.) or Bad (The temperature is 70°C (158°F) or higher.))

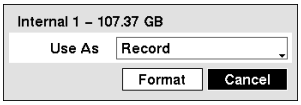
S.M.A.R.T. – Displays S.M.A.R.T. information of the storage. (Good (The storage condition is normal.), Bad (Data cannot be written on or read from the storage drive.) or N/A (The S.M.A.R.T. monitoring is not working or supported.))

NOTE: When the S.M.A.R.T. displays *Bad*, the screen displays a message box. Once the message box appears, replacing the hard disk drive is recommended, usually within 24 hours.

- Information: Displays whether the device is being used or not. "Other" indicates the device has been used for another DVR. Selecting the column for the desired device displays the time information about recorded data.

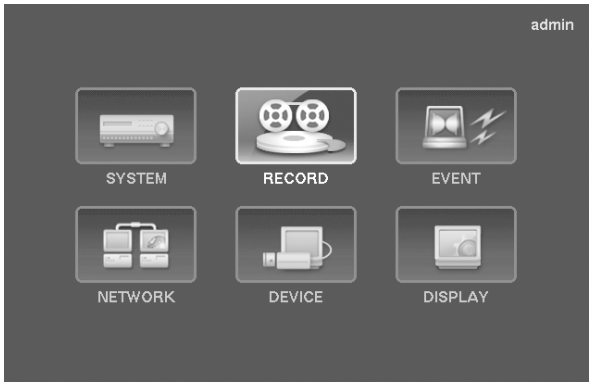


- Format: Displays whether the device is used for recording (Record) or not (Not Using). Selecting the column for the desired device allows you to format the device for recording. When selecting Use As – Not Using and then Format, the device will not be used for recording.

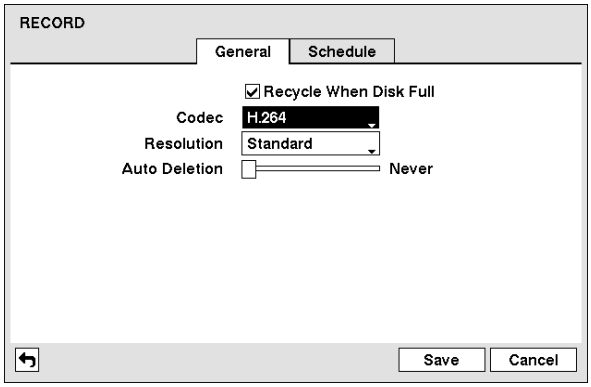


- Recorded Data: Displays the time information about recorded data on the drive. Selecting Clear All Data… will clear all video data except the system log.

RECORD SETUP



General Settings (RECORD → General Tab)



- Recycle When Disk Full: Selecting this box records over the oldest video data once all available storage space has been used. When the box is not checked, the DVR stops recording once all available storage has been used.
- Codec: Select the codec between H.264 and MPEG-4. Selecting the new codec displays a message asking you to confirm whether or not you want to restart the system because the system must be restarted before applying the new codec and you will lose all recording data.

CAUTION: When changing the codec all recording data is deleted before applying the new codec. If you don't want to delete the recording data, back up it using the clip-copy function.

NOTE: The maximum recording and playback speed when using the H.264 codec is as follows.

When the DVR is in the Recording mode and Playback mode at the same time	
Recording Speed	**Playback Speed**
60 ips (50 ips PAL)	**120 ips (100 ips PAL)**

- Resolution: Select the recording resolution.

NOTE: The total ips of all camera channels will be limited to 60 ips (50 ips PAL) when set to *High* resolution and 30 ips (25 ips PAL) when set to *Very High* resolution.

NOTE: When set to *High* or *Very High* resolution, the maximum recording speed of each camera channel decreases by half. However the maximum recording speed of 30 ips (25 ips PAL) will be maintained if the number of cameras that are turned On is two or less.

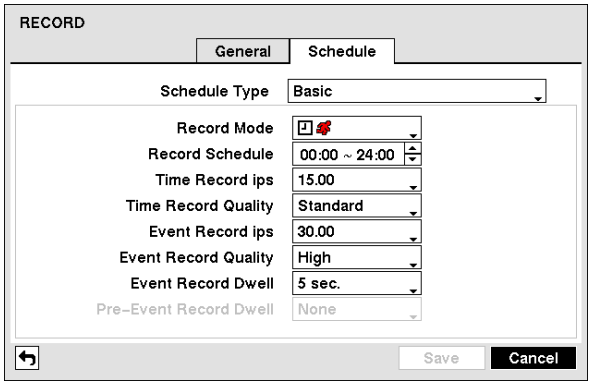
No. of cameras set to *On* and *High* or *Very High* resolution			
0	**1**	**2**	**3 to 16**
—	**30 ips (25 ips PAL)**	**30 ips (25 ips PAL)**	**15 ips (12.5 ips PAL)**

- Auto Deletion: Adjust the length of time recorded data will be kept by using the slide bar. Selecting Never will disable the Auto Deletion function. The DVR 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.

Schedule Settings (RECORD → Schedule Tab)

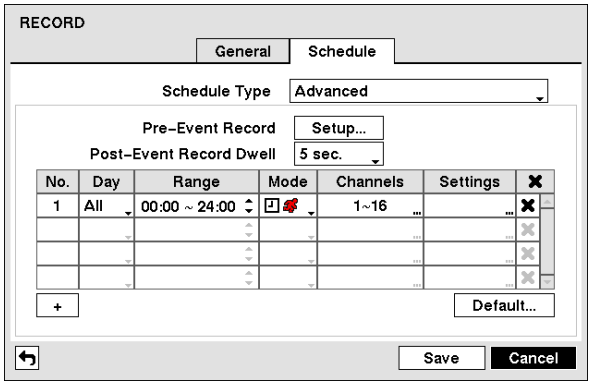
The DVR provides two recording schedule modes: Basic and Advanced. The Basic schedule mode allows you to set recording settings for all camera channels at one time. The Advanced schedule mode allows you to set recording settings for each camera channel.

Setting up the Basic Schedule Mode…



- Schedule Type: Select the Basic schedule mode.
- Record Mode: Select the desired recording mode. (: Time (Time-lapse) recording, : Event recording, : Time & Event recording)
- Record Schedule: Set the recording schedule.
- Time Record ips: Set the images per second for Time recording.
- Time Record Quality: Set the recorded image quality for Time recording.
- Event Record ips: Set the images per second for the pre- and post-event recording.
- Event Record Quality: Set the recorded image quality for the pre- and post-event recording.
- Event Record Dwell: Set the length of time you would like to record for the associated event.
- Pre-Event Record Dwell: Set the length of time you would like to record prior to the associated event. Selecting None will disable the pre-event recording function.

Setting up the Advanced Schedule Mode…



- Schedule Type: Select the Advanced schedule mode.
- Pre-Event Record: Selecting the Setup… button allows you to set up the pre-event recording by setting the ips, Quality and Dwell. Selecting None will disable the pre-event recording function.

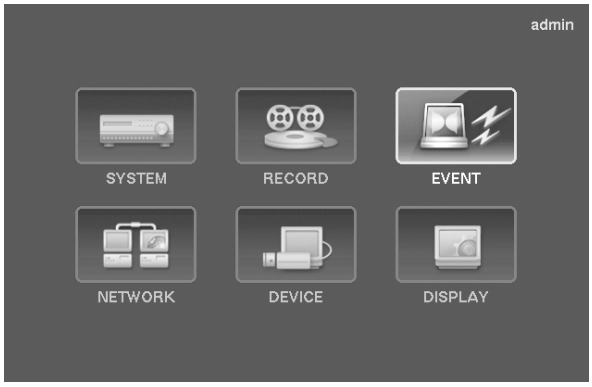
- Post-Event Record Dwell: Set the length of time you would like to record for the associated event.

- [+] : Adds a schedule item. Up to 20 schedules can be registered.

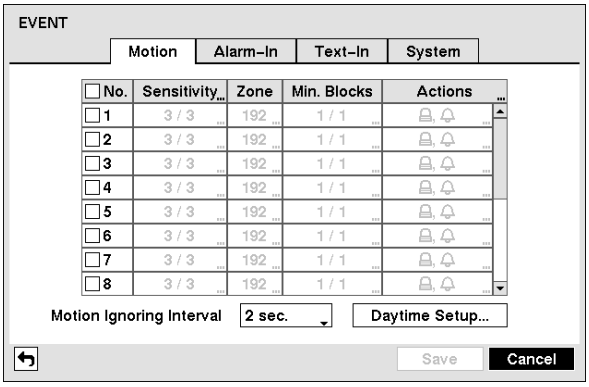
  No. – Indicates a schedule number. The higher the number, the higher its priority.
  Day – Select the days that the recording will take place.
  Range – Set the time range that the recording will take place.
  Mode – Select the recording mode. (: Time (Time-lapse) recording, : Event recording, : Time & Event recording)
  Channels – Select which cameras will be recorded.
  Settings – Set the ips, Quality and Dwell of the recording for the selected recording mode in the Mode column. If you do not set the Settings column, the DVR will follow the default settings. See below for details.
  ✖ – Deletes the recording settings.

- Default: Set the default settings of ips, Quality and Dwell for Time and Event recording.

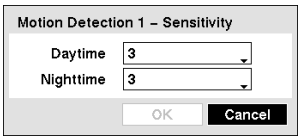
EVENT SETUP



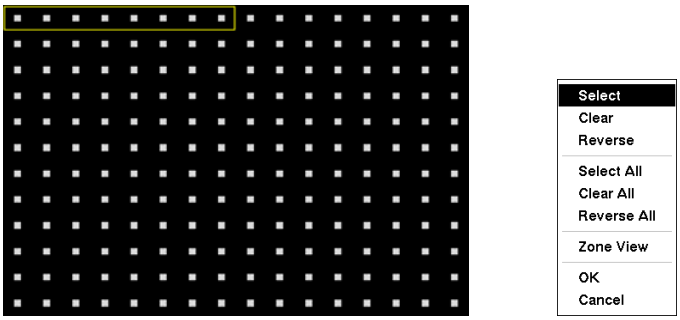
Motion Event Settings (EVENT ➔ Motion Tab)



- No.: Your DVR has built-in motion detection. Selecting the box turns the motion detection On and Off for each camera.
- Sensitivity: Set the DVR's sensitivity to motion for Daytime and Nighttime independently from 1 (the least sensitive) to 5 (the most sensitive).



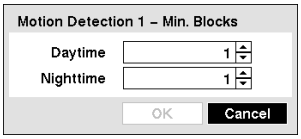
- Zone: Define the area of the image where you want to detect motion; e.g., a doorway. The Motion Detection Zone screen is laid over the video from the selected camera. You can set up motion zones one block at a time in groups of eight individual block groups. A block group is positioned within the image area using the arrow buttons on the remote control, and individual blocks within the block groups are selected or cleared using the camera buttons. You can set up motion detection zones by selecting or clearing blocks. You can select or clear eight individual blocks in a group at a time, and individual blocks within the group are selected or cleared by using the camera buttons on the remote control. Pressing the ↵ button on the remote control or clicking the right mouse button displays the menu screen. Each item in the menu has the following functions;



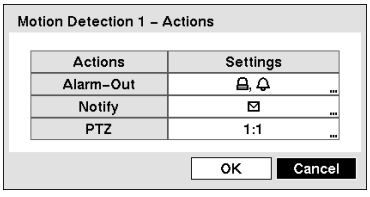
Select/*Select All* – Activates highlighted blocks or all blocks to detect motion.
Clear/*Clear All* – Deactivates highlighted blocks so that they will not detect motion.
Reverse/*Reverse All* – Activates inactive highlighted blocks or all inactive blocks and deactivates active highlighted blocks or all active blocks.
Zone View – Displays any detected motion within the zone in red.
OK – Accepts changes and closes Zone setup.
Cancel – Exits Zone setup without saving changes.

NOTE: You can select the block groups to be selected or cleared by using the mouse. Place the mouse pointer where you want to start the line. Hold down the left mouse button and drag the pointer to where you want to end of the line. Release the mouse button and a group of blocks appears along the line you drew. You can draw lines around shapes by repeating this process.

- Min. Blocks: Set the minimum number of detection blocks that must be activated to trigger a motion alarm for Daytime and Nighttime independently.



- Actions: Set up actions the DVR will take whenever it detects motions for each camera.

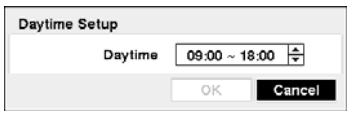


Alarm-Out – Select the alarm-out signals (Alarm-Out and Beep) to be associated with the camera. The DVR will alert you of the event by activating an external alarm or internal buzzer if motion is detected on the selected camera.
Notify – Select Mail if you want to send an e-mail to the address set during *NETWORK – Mail* setup when the DVR detects motion on the selected camera.
PTZ – Select the preset position, where you want PTZ cameras to move to when the DVR detects motion on the selected camera.

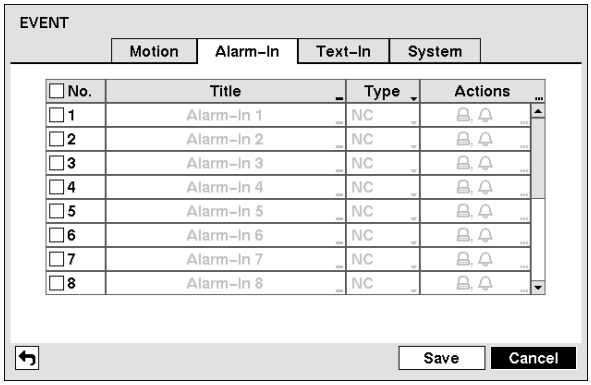
NOTE: For the Notify action to work, the Mail should be enabled in the NETWORK – Mail setup.

- Motion Ignoring Interval: Set the motion ignoring dwell time. You can control excessive event logging and remote notification of motion detected after the motion dwell time by adjusting the motion ignoring dwell intervals. The DVR will not log and notify motion events occurred during the preset interval range. The recording for motion events will not be affected by the Motion Ignoring function.

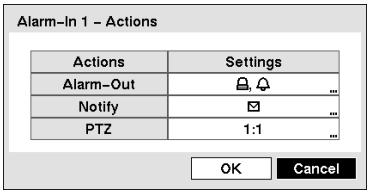
- Daytime Setup…: Select the button and set the Daytime range. The DVR will consider the remaining time range as the nighttime.



Alarm-In Event Settings (EVENT → Alarm-In Tab)



- No.: Selecting the box toggles each alarm input On and Off.
- Title: Change the name of all or each alarm input.
- Type: Set each alarm input as NO (Normally open) or NC (Normally closed).
- Actions: Set up actions the DVR will take whenever it senses an input on one of its alarm input connectors.



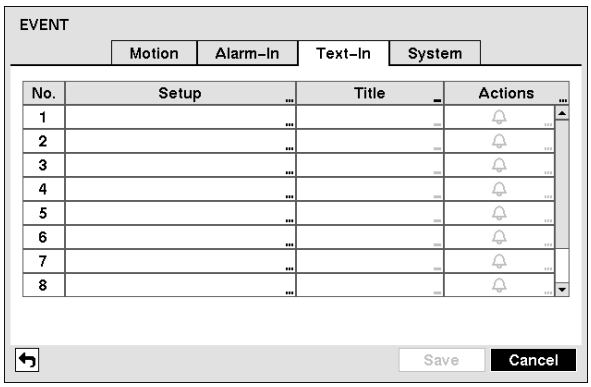
Alarm-Out – Select the alarm-out signals (Alarm-Out and Beep) to be associated with the alarm input. The DVR will alert you of the event by activating an external alarm or internal buzzer when an input is detected on the selected alarm input.

Notify – Select Mail if you want to send an e-mail to the address set during NETWORK – Mail setup when the DVR detects an input on the selected alarm input.

PTZ – Select the preset position, where you want PTZ cameras to move to setup when the DVR detects an input on the selected alarm input.

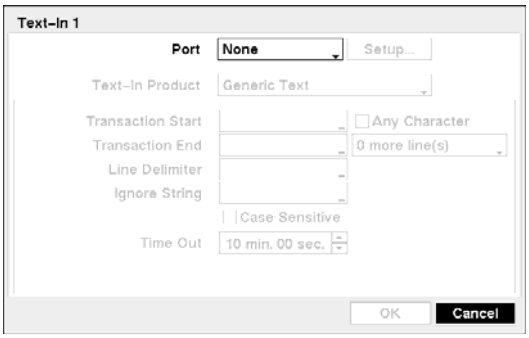
NOTE: For the Notify action to work, the Mail should be enabled in the NETWORK – Mail setup.

Text-In Event Settings (EVENT → Text-In Tab)



- Setup: Change all the parameters excluding Port settings of all the text input channels.

NOTE: The system performance might be affected when a large quantity of text inputs are detected from several channels at the same time.



Port – Select the port from None, RS232, RS485 and USB-Serial (1~8). If you have set the Port as None, you will not be able to make any changes to the screen.

NOTE: When using the USB to serial text-in device, do NOT remove the USB cable from the port while the system is running.

Setup… – Set the port settings. Use the ATM or POS manufacturer's recommended settings when configuring the RS232, RS485 or USB-Serial ports.

Text-In Product – Select your text input device from the list.

Transaction Start – Enter the transaction start string. Refer to the device manufacturer's documentation for the text string that the device first sends when a transaction starts.

Any Character – Check the box to turn it On or Off. If you want the DVR to react to any character sent from the text input device, you will want to turn On Any Character.

Transaction End – Enter the transaction end string. Refer to the device manufacturer's documentation for the text string that the device sends when a transaction ends.

more line(s) – Select the number of additional lines of text that you want the DVR to record.

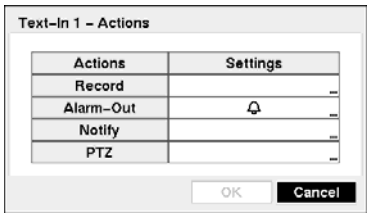
Line Delimiter – Enter the character(s) that the device uses to indicate the end of a line. Special characters can be created using ^ and a capital letter; e.g., ^J for NL (New Line), ^M for CR (Carriage Return). Refer to the device manufacturer's documentation for Line Delimiter character(s).

Ignore String – Enter any strings of text that you want the DVR to ignore. Refer to the device manufacturer's documentation for text strings that the device sends during transactions, so you will know which ones you do not want recorded.

Case Sensitive – Check the box to turn it On or Off. Refer to the device manufacturer's documentation to determine if the text strings are Case Sensitive. If the device distinguishes between upper and lower case letters, make certain the Case Sensitive box is turned On.

Time Out – Set the length of time to wait for the new text string. The DVR will consider a transaction complete if no new text strings are entered between the last text input and the dwell time out.

- Title: Change the name of all or each text input.
- Actions: Set up actions the DVR will take whenever it senses text input.



Record – Select the cameras to be associated with the text input. The DVR starts recording video from all the associated cameras when the DVR detects text input.

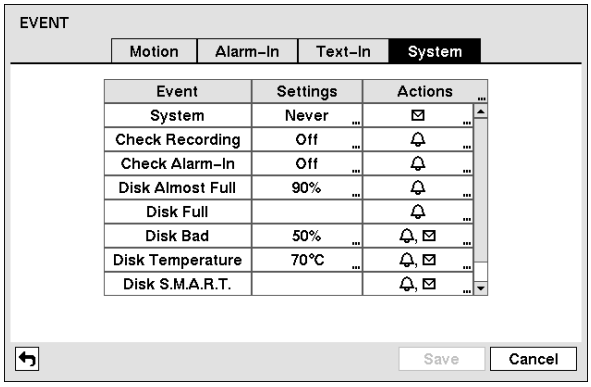
Alarm-Out – Select the alarm-out signals (Alarm-Out and Beep) to be associated with the text input. The DVR will alert you of the event by activating an external alarm or internal buzzer when an input is detected on the selected text input.

Notify – Select Mail if you want to send an e-mail to the address set during NETWORK – Mail setup when the DVR detects an input on the selected text input.

PTZ – Select the preset position, where you want PTZ cameras to move to setup when the DVR detects an input on the selected text input.

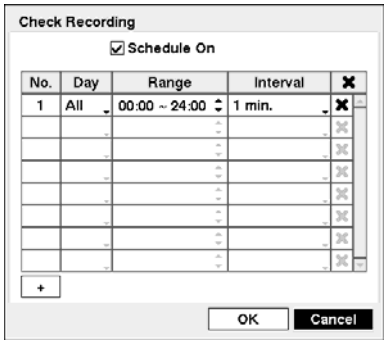
NOTE: For the Notify action to work, the Mail should be enabled in the NETWORK – Mail setup.

System Event Settings (EVENT → System Tab)

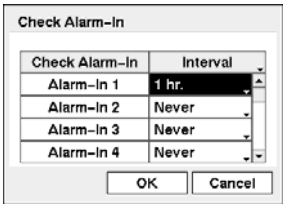


- Settings: Set up the DVR to run self-diagnostics.

  System – Select the interval that you want the DVR to run self-diagnostics on the system.
  Check Recording – Selecting the column allows you to set up the check recording schedule by selecting Schedule On. Selecting + allows you to add a check recording schedule by setting the day, time range and interval that you want the DVR to run self-diagnostics on the recorder. Selecting ✖ allows you to delete a check recording schedule.



  Check Alarm-In – Selecting the column allow you to change interval the DVR to run self-diagnostics on alarm inputs.



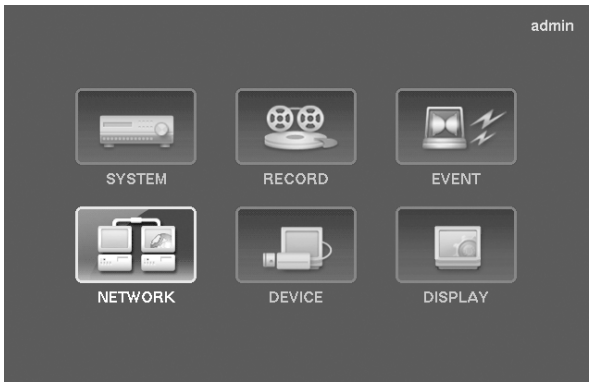
  Disk Almost Full – Select the percentage level of disk usage at which you want the DVR to trigger an alert.
  Disk Bad – Select percentage level of bad disk sectors at which you want the DVR to trigger an alert.
  Disk Temperature – Set the temperature threshold and (ºC (Celsius) or ºF (Fahrenheit)). If the temperature of hard disk drive exceeds the defined threshold, the system triggers an alert.

- Actions: Set up actions the DVR will take whenever it detects system events. System events can sound the DVR's internal buzzer and/or notify a number of different devices.

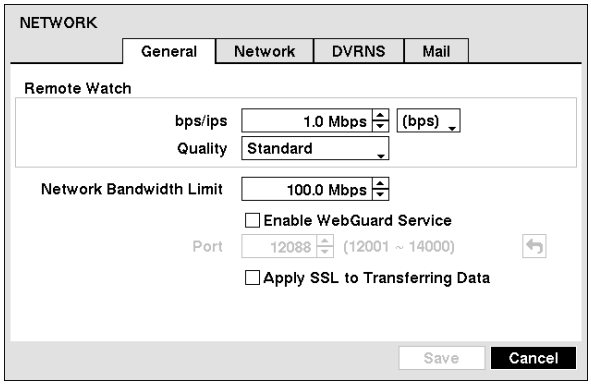
  NOTE: The Beep action cannot be set to *System* event.

  NOTE: For the Notify action to work, the Mail should be enabled in the NETWORK – Mail setup.

NETWORK SETUP



General Settings (NETWORK → General Tab)



- Remote Watch – bps/ips: Set the transfer speed, and select the unit of measure for the transfer speed between bps (bit per second) and ips (image per second).
- Remote Watch – Quality: Select the quality of the transferred image.

  NOTE: The local recording speed might be affected by various network bandwidth (Transfer Speed) conditions.

  NOTE: The higher Quality settings require higher Transfer Speed settings. The transfer speed you set is the maximum speed. Depending on the network environment, this speed may not be achieved.

- Network Bandwidth Limit: Set the desired maximum bandwidth. You can limit the network bandwidth settings so that system does not consume too much network bandwidth.

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

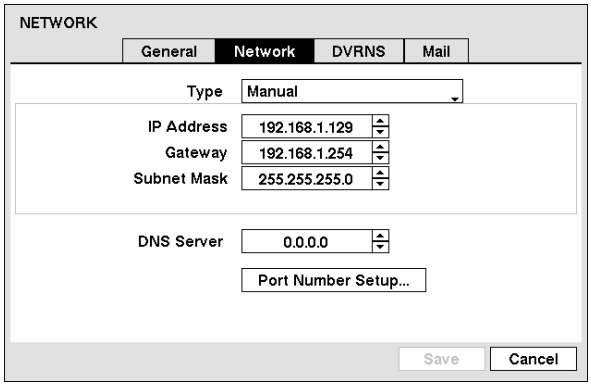
- Enable WebGuard Service: Selecting the box turns the WebGuard service On. Select the port number used when accessing WebGuard. See *Appendix – WebGuard* for details.

- Apply SSL to Transferring Data: Selecting the box turns the SSL (Secure Sockets Layer) authentication On. When it is On, the security of data except video transmitted for remote monitoring or remote recording can be enhanced by using the SSL authentication. When using the SSL function, the DVR 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/).

Network Settings (NETWORK ➔ Network Tab)

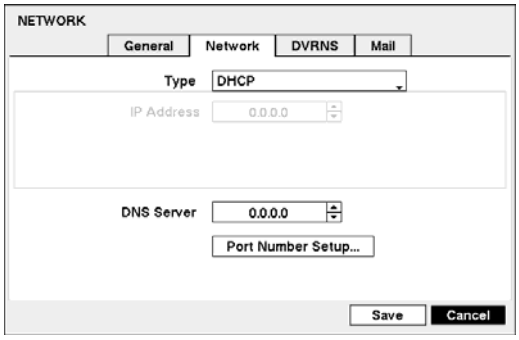


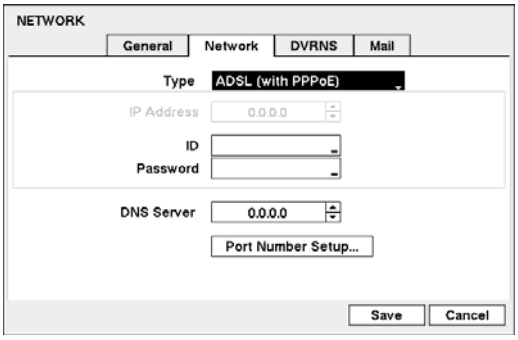
- Type: Select the type of network configuration from: Manual, DHCP and ADSL (with PPPoE).

  Manual – You can select Manual when using a static IP address for network connection. Set up LAN parameters manually. Set the numbers of the IP Address, Gateway and Subnet Mask.

  DHCP – You can select DHCP when the DVR is networked through DHCP (Dynamic Host Configuration Protocol). The DVR reads the IP address from DHCP network when selecting the Save button.

  ADSL – You can select ADSL (with PPPoE) when the DVR is networked through ADSL. Enter the ID and password for ADSL connection, and the DVR receives the IP address when selecting the Save button.

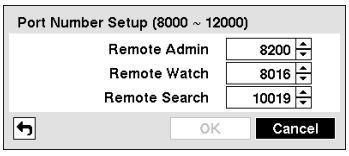




NOTE: Ask your network provider for your network connection type and connection information.

NOTE: If the DVR is configured for DHCP or ADSL, the IP address of the DVR might change whenever the unit is turned on. If you want to use the DVRNS function, you will need to get the IP Address of the DNS Server from the Internet service provider.

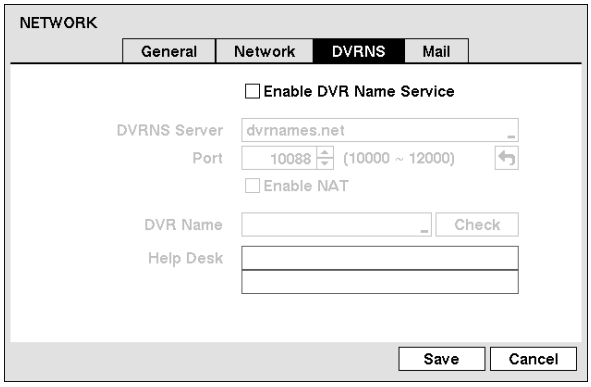
- DNS Server: Set the DNS server IP address obtained from your network administrator. If you set up the DNS Server, the domain name of the DVRNS server or SMTP server instead of the IP address can be used during DVRNS Server or Mail setup.
- Port Number Setup…: Set the port number of each remote software related program.



NOTE: You will need to get the appropriate Port Numbers for each remote software related program from your network administrator. Do NOT use the same port number for two different programs, otherwise, the DVR 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 or WebGuard.

DVRNS Settings (NETWORK → DVRNS Tab)



NOTE: The DVRNS (DVR Name Service) allows you to connect to the DVR remotely with the dynamic IP address or the domain name. When using this feature, you can access your DVR remotely by using the DVR name instead of IP address. To use the DVRNS feature, the DVR should be registered on the DVRNS server, and the DVRNS server settings on your DVR must match the settings on the registered DVRNS server. Any changes to the DVRNS server might cause improper operation.

NOTE: When Network settings have been changed, set up the DVRNS after saving your Network changes by selecting the *Save* button.

- Enable DVR Name Service: Selecting the box enables the DVR Name Service function. You will only be able to change the settings if Enable DVR Name Service is enabled.
- DVRNS Server: Enter the IP address or domain name of the DVRNS server.

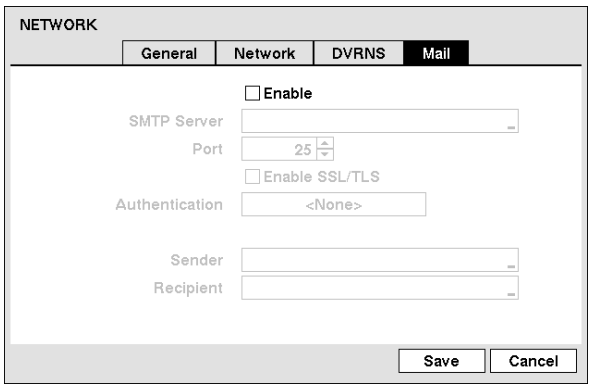
  NOTE: You will need to get the IP address or domain name of the DVRNS server from your network administrator. You can use the domain name instead of IP address if you set up the DNS server during Network setup.

- Port: Set the port number of the DVRNS server.
- Enable NAT: Check the box when using NAT. When using a NAT (Network Address Translation) device, refer to the NAT manufacturer's instructions for the proper network settings.
- DVR Name: Enter the DVR name to be registered on the DVRNS server. Check whether or not the name you entered is available by selecting the Check button.

  NOTE: The DVR name you entered should be checked by selecting the *Check* button, otherwise the DVRNS changes will not be saved. When no name is entered or a name is already registered on the DVRNS server, an error message displays.

- Help Desk: Selecting the Save button registers the DVR on the DVRNS server. Proper DVRNS settings will cause the help desk information of the DVRNS server to display.

Mail Settings (NETWORK → Mail Tab)



- Enable: The DVR can be set up to send an e-mail when an event occurs. Selecting the box enables the Mail function. You will only be able to change the settings if Mail is enabled.
- SMTP Server: Set the SMTP server IP address or domain name obtained from your system administrator.

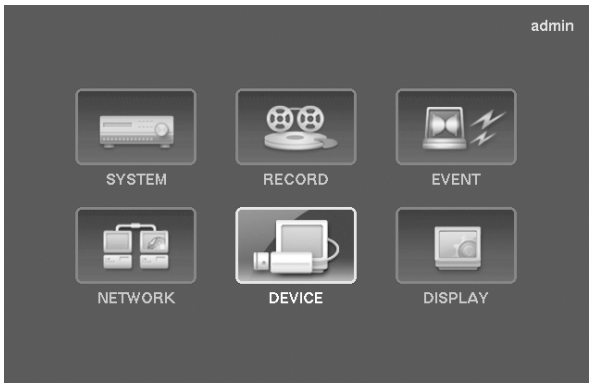
  NOTE: You will need to get the IP address or domain name of the SMTP server from your network administrator. You can use the domain name instead of IP address if you set up the DNS server during Network setup.

- Port: Set the SMTP server port number obtained from your system administrator.
- Enable SSL/TLS: Check the box when sending an e-mail via an SMTP server requiring SSL (Secure Sockets Layer) authentication.
- Authentication: Select the button if the SMTP server needs authentication, and set up the Authentication by selecting the Use box and entering the user ID and password.

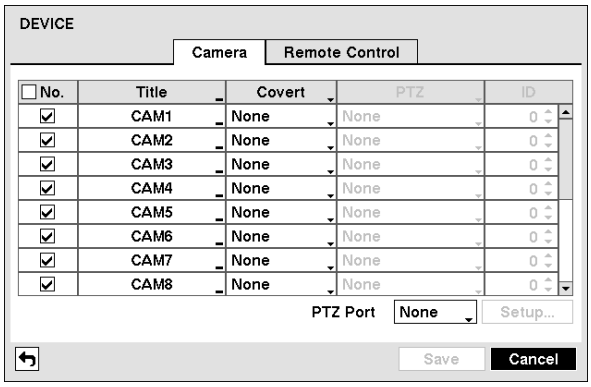
NOTE: This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/).

- Sender/Recipient: Enter the sender's/recipient's e-mail address. The e-mail address must include the "@" character to be a valid address.

DEVICE SETUP



Camera Settings (DEVICE ➔ Camera Tab)

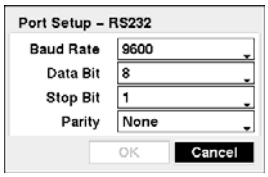


- No.: Selecting the box toggles all or each camera On and Off.
- Title: Change the name of all or each camera.

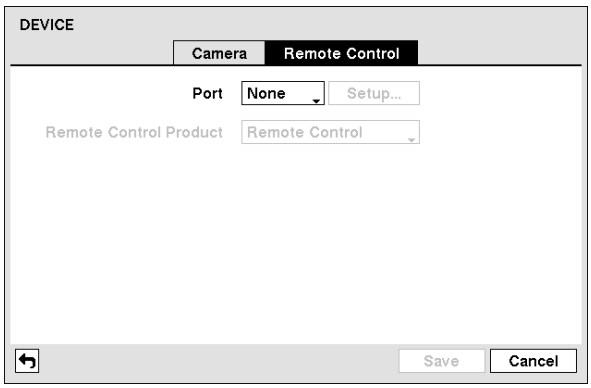
- Covert: Select the camera usage from Normal, Covert 1 or Covert 2 to determine which camera will display on the monitors.

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

- PTZ: Select the PTZ device you wish to configure from the list.
- ID: Set the PTZ ID of each camera.
- PTZ Port: Select the port to communicate with PTZ cameras.
- Setup…: Select the button and set the port's setting according to the PTZ device manufacturer's instructions.

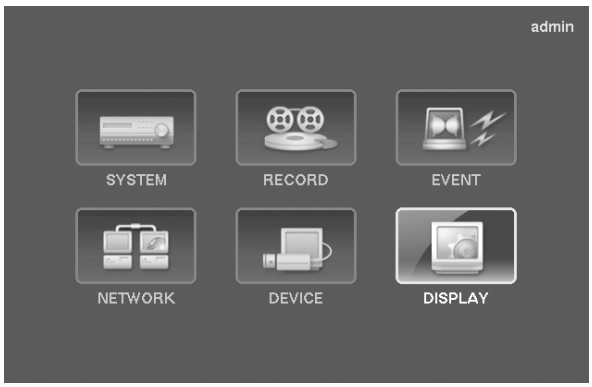


Remote Control Settings (DEVICE → Remote Control Tab)

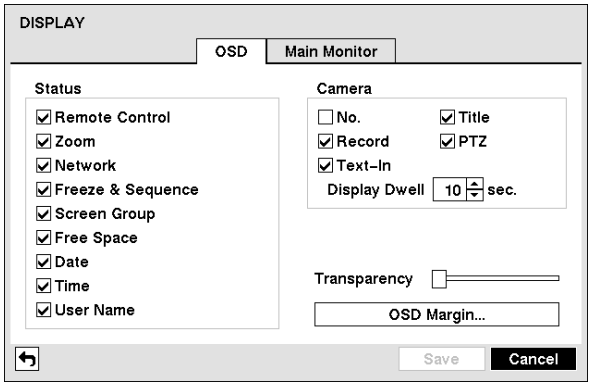


- Port.: Select the port for remote control. If the RS232 port and RS485 port is in use for PTZ control, networking or text input, the remote keyboard cannot be configured. Selecting the Setup… button allows you to set the port settings for the device you are connecting to the DVR.
- Remote Control Product: Select the remote control device from the list.

DISPLAY SETUP



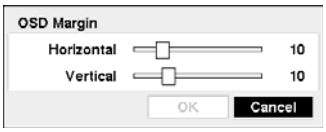
OSD Settings (DISPLAY → OSD Tab)



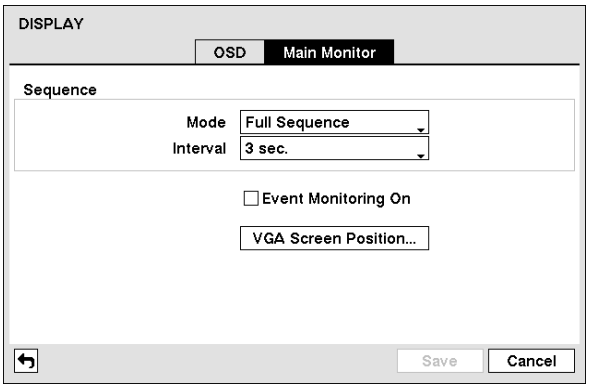
- Status/Camera: Check each OSD item box to turn it On or Off.

  Remote Control – The icon displays when the DVR can be controlled using 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.
  Freeze & Sequence – The icon displays while in the Freeze mode, and the icon displays while in the Sequence mode.
  Screen Group – The screen group number displays when the DVR is in other than the 4x4 display mode for the 16-channel DVR and 3x3 mode for the 8-channel DVR.
  Free Space – The icon displays when the DVR is in the Recycle mode. The percentage of available storage space displays when the DVR 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.
  Camera No. – The camera number displays in the top-left corner of each camera screen.
  Camera Title – The camera title displays in the top-left corner of each camera screen.
  Record – The record related icons display on each camera screen.
  PTZ – The PTZ icon displays on each PTZ camera screen with PTZ capabilities.
  Text-In – The text input strings display on the screen. You can adjust the Display Dwell time (sec.) for the text input strings displayed on the screen.

- Transparency: Adjust the transparency of the setup screens by using the slide bar.
- OSD Margin…: Set the Horizontal and Vertical margins so that text and icons will display within the edges of the monitor.



Main Monitor Settings (DISPLAY → Main Monitor Tab)

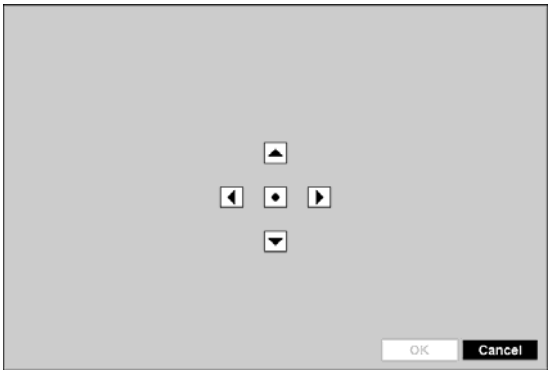


- Sequence – Mode: Select the sequence mode between Full Sequence and Cameo Sequence. (8- and 16-channel Model Only) Selecting the *Sequence* menu icon at the top of the screen or pressing the SEQUENCE button on the remote control causes the DVR to sequence cameras. The DVR can sequence cameras in two modes: "Full" and "Cameo." In the Full mode, the DVR sequences through the cameras with predefined screen layouts. In the Cameo mode, the bottom right window of a multi-screen format sequences through the cameras. See *Chapter 3 – Operation, Live Monitoring* for details.

  NOTE: You can define the screen layout in a variety of formats and set the DVR to sequence through the different screen layouts (pages) so that all the cameras will be displayed. You also can set up the DVR 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 cameo window as a PIP (picture-in-picture), or displaying the cameras in a grid pattern with the bottom right window as the cameo.

  NOTE: Sequence cannot be used in the 4x4 display mode of the 16-channel DVR or 3x3 mode of the 8-channel DVR.

- Sequence – Interval: Select the display dwell time of sequence monitoring.
- Event Monitoring On: Selecting the box turns the Event Monitoring On. When it is On, the DVR will display the camera associated with the event when an event occurs. See *Chapter 3 – Operation, Live Monitoring* for details.
- VGA Screen Position…: Adjust the screen position on the VGA monitor. Use the arrow buttons on the setup screen to move the VGA screen position in the direction you want. Selecting the default button at the center cancels the screen positioning operation and reloads the default position.



Chapter 3 — Operation

NOTE: This chapter assumes your DVR has been installed and configured. If it has not, please refer to *Chapter 2*.

LIVE MONITORING

As soon as the DVR completes its initialization process, it will begin displaying live video on the attached monitor. The default mode is to display all cameras at once. Pressing any camera button on the remote control will cause that camera to display full screen. The DVR continues displaying live video until the user enters another mode.

Press the MENU button on the remote control, and the following menu icons display at the top of the screen. Pressing the MENU button again hides the menu icons. You can navigate through menus and items by pressing the arrow buttons on the remote control.

① Freeze
② Sequence
③ Camera Menu
④ Alarm Off
⑤ Setup
⑥ Search Mode
⑦ Login/Logout

NOTE: The menu icons also can be displayed by moving the mouse pointer to the top of the screen.

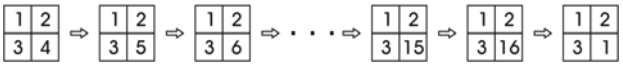
Freeze

Selecting the (*Freeze*) icon will freeze the current image on the screen until you select Freeze again. It is the same as pressing the FREEZE button on the remote control. Selecting the icon again exits the Freeze mode. While in the Freeze mode, the icon displays in bottom-left corner if Freeze is selected in the Display setup screen (OSD tab).

Sequence

Selecting the (*Sequence*) icon causes the cameras to display sequentially. It is the same as pressing the SEQUENCE button on the remote control. When in one of the multiview formats, selecting *Sequence* will cause the DVR 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 the icon in the 2x2 format, the 16-channel DVR changes pages as follows:

Full Sequence



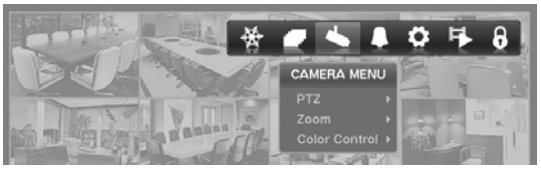
Cameo Sequence

Selecting another display mode or selecting the icon again 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).

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

Camera Menu

Selecting the (*Camera Menu*) icon displays the following Camera Menu.



- **PTZ:** Selecting *PTZ* and choosing the camera number allows you to control the selected camera as long as it has Pan, Tilt and Zoom capabilities. Selecting *PTZ* is the same as pressing the PTZ button on the remote control. See the following *PTZ Mode* section for details.
- **Zoom:** Selecting *Zoom* and choosing the camera number zooms the current image of the selected camera on the screen. Selecting *Zoom* is the same as pressing the ZOOM button on the remote control. For a few seconds after selecting *Zoom*, a PIP displays. Inside the PIP, a rectangle shows the area that is enlarged. You can move the rectangle around using the arrow buttons on the remote control. Pressing the button on the remote control enlarges the area. Selecting the (*Exit*) icon at the top of the screen by pressing the MENU button on the remote control exits the Zoom mode. You also can exit the Zoom mode by pressing the ZOOM button on the remote control. While in the Zoom mode, the icon displays in bottom-left corner if Zoom is selected in the Display setup screen (OSD tab).
- **Color Control:** Selecting *Color Control* and choosing the camera number displays an image adjustment dialog. Selecting *Color Control* and choosing the camera number is the same as pressing and holding a camera button on the remote control for a few seconds. You can control brightness, contrast, hue and saturation for each camera.

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

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

NOTE: The Camera Menu also can be displayed by clicking the right mouse button on each camera screen.

- **Edit Group:** Supports the active cameo function. Select *Edit Group* and choose a camera that you want to change display position (e.g., Camera A). Then, click the right mouse button to display the menu. If you choose another camera in the menu (e.g., Camera B), the screen displays Camera B instead of Camera A. Clicking the right mouse button and selecting *Exit Group Edit* in the menu exits the Active Cameo mode. See the following *Active Cameo Mode* section for details.

Alarm Off

Selecting the (*Alarm Off*) icon resets the DVR's outputs including the internal buzzer during an alarm. Selecting the icon is the same as pressing the ALARM button on the remote control.

Setup

Selecting the (*Setup*) icon enters the Main Setup screen.

Search Mode

Selecting the (*Search Mode*) icon exits the Live Monitoring mode and enters the Search mode.

Login/Logout

Selecting the icon accesses the Login screen, and you will be asked to select a User and enter the password to log into the system. Selecting the icon displays the Logout screen asking you to confirm whether or not you want to log out the current user.

DISPLAY MENU

In the Live Monitoring mode or Search mode, moving the mouse pointer to the left edge of the screen displays the following Display menu icons.

① Full Screen
② PIP
③ 2x2
④ 3x3
⑤ 4x4
⑥ Previous Group
⑦ Next Group
⑧ OSD

Full Screen

Selecting the (*Full Screen*) icon displays the selected camera full screen. Selecting the icon and choosing the camera number is the same as pressing the individual camera buttons on the remote control or clicking the left mouse button on a camera image when in one of the multiview formats (i.e., 2x2, 3x3 or 4x4). Clicking the left mouse button on the screen again returns to the previous display mode.

PIP, 2x2, 3x3, 4x4

Selecting the , , or (*PIP*, *2x2*, *3x3* or *4x4*) icon displays the cameras in the selected multiview screen mode (PIP, 2x2, 3x3 or 4x4). Selecting each display mode is the same as pressing the DISPLAY button on the remote control or scrolling the mouse wheel up and down when in one of the multiview formats (i.e., 2x2, 3x3 or 4x4).

NOTE: The PIP display mode will not be supported in the Search mode.

You can change the location of the PIP (Picture-in-Picture) counterclockwise or clockwise by pressing the Up and Down arrow buttons on the remote control. To change its location and size by using the mouse, select the PIP and then click the right mouse button to display the following menu. Select the options you want.

Previous Group, Next Group

Selecting the or (*Previous Group* or *Next Group*) icon moves to the previous or next page. Selecting the or icon is the same as pressing the Left or Right buttons on the remote control.

OSD

Selecting the (*OSD*) icon toggles OSD On and Off.

EVENT MONITORING

When an event occurs, the DVR will display the camera associated with that event if Event Monitoring On is selected in the Display setup screen (OSD 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 DVR will display that camera full screen. If two to four cameras are associated with the event, the DVR will display the cameras on a 2x2 screen. If five to nine cameras are associated with the event, the DVR will display the cameras on a 3x3 screen. If 10 or more cameras are associated with the event, the DVR will display the cameras on a 4x4 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 on the remote control.

ACTIVE CAMEO MODE

You can enter the Active Cameo mode by pressing the button on the remote control while in any multiview format. A yellow outline surrounding the video indicates the active cameo, and pressing the arrow buttons moves the active cameo. Pressing the button while in the Active Cameo mode exits the Active Cameo mode. You also can exit the Active Cameo mode by selecting the (*Exit*) icon at the top of the screen displayed by moving the mouse pointer to the top of the screen. The active cameo mode will remains in effect for 15 seconds if there is no further operation.

In active cameo mode, press the camera button on the remote control for the camera you want displayed as active cameo. After setting the camera number to active cameo, the DVR moves the active cameo to the next cameo. You can use this method to change the screen layout in this way.

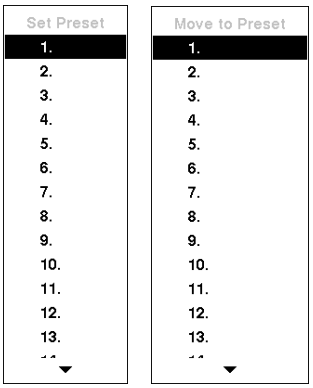
PTZ MODE

In the Live Monitoring mode, press the MENU button on the remote control or move the mouse pointer to the top of the screen to display the (*Camera Menu*) icon on the screen. Selecting *PTZ* and choosing the camera number from the Camera Menu enters the PTZ mode. Only camera numbers that are set up for PTZ control during Device setup can be selected in the list. To exit the PTZ mode, select the (*Exit*) icon at the top of the screen displayed by pressing the MENU button while in the PTZ mode. You also can enter the PTZ mode by pressing the PTZ button and selecting the camera button on the remote control and exit the PTZ mode by pressing the button again. While in the PTZ mode, the PTZ icon flickers on the PTZ camera screen if PTZ is selected in the Display setup screen (OSD tab).

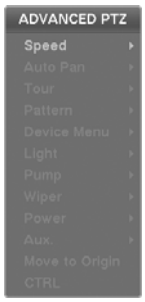
Press the Left and Right arrow buttons on the remote control to pan left and right, and press the Up and Down arrow buttons to tilt the camera up and down. Press the button to zoom in, and the button to zoom out. You can use the and buttons to focus the image.

You can establish preset positions for PTZ cameras. Press the button on the remote control to create or change Presets. You can quickly move PTZ cameras to Preset positions. Press the button to view an established camera Preset position or click the right mouse button on the PTZ camera screen.

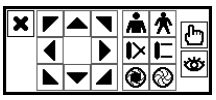
You can save camera position settings as "presets" so that you can go directly to desired views. Once you have the camera at the desired settings, press the button, and the *Set Preset* dialog box will appear. Select the number you want to assign to the preset and press the button on the remote control. Use the virtual keyboard to enter the preset name. Press the button to load the PTZ preset and the *Move to Preset* dialog box will appear. Select the desired preset and press the button on the remote control to load the preset. You also can load the preset using the mouse. Click the right mouse button on the PTZ camera screen and select the desired preset.



While in the PTZ mode, pressing the MENU button on the remote control displays the menu icons at the top of the screen. Selecting the (*Advanced PTZ*) icon displays the following the PTZ menu. Set the feature you wish to control by selecting it from the menu. Refer to the camera's instructions for the proper settings. Depending on the camera specifications, some features may not be supported.



You also can use the mouse for convenient PTZ control. Position the mouse pointer at the bottom of the screen, and the following PTZ toolbar displays.



Clicking on the left side exits the toolbar. If you want to display the toolbar again, position the mouse pointer at the bottom of the screen. Change the toolbar location by clicking the empty space on the left side of the toolbar and dragging it to where you want it located on the screen. Use the arrow buttons on the toolbar to pan or tilt the camera in the direction you want. The other controls on the toolbar perform as described below:

- Zoom In or Out
- Focus Near or Far
- Iris Open or Close
- Set or Load Preset

RECORDING VIDEO

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

Recycle On or Recycle Off. The factory default is Recycle On (Recycle When Disk Full). It does this by recording over the oldest video once the hard disk is full. Setting the DVR to Recycle Off causes it to stop recording once the hard disk is full.

H.264 or MPEG-4. The factory default codec is H.264. When set to H.264, the DVR can record more images by compressing more effectively than using MPEG-4. However, the recording speed might decrease depending on the display option and DVR's operation mode. Refer to the *Chapter 3 — Installation and Configuration, Record Setup* and *Display Setup* for details.

Standard (CIF), High (Half D1) or Very High (D1). The factory default resolution is High. When set to High, the DVR has a maximum recording speed of 60 ips (50 ips PAL). When set to Standard, the DVR has a maximum recording speed of 120 ips (100 ips PAL). When set to Very High, the DVR has a maximum recording speed of 30 ips (25 ips PAL).

Although you will be able to record without changing the unit from its original factory settings, you will want to take advantages of the DVR's many tools. See *Chapter 2 — Installation and Configuration, Record Setup* for detailed descriptions of the recording mode options.

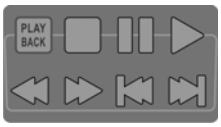
PLAYING RECORDED VIDEO

While in the Live Monitoring, pressing the MENU button on the remote control displays the menu icons on the screen. Selecting the (*Search Mode*) icon at the top of the screen exits the Live Monitoring mode and enters the Search mode.

Once video has been recorded, you can view it by pressing the (*Play*) button on the remote control in the Search mode. When playing video for the first time, the DVR will display the most recent image. When playing video subsequent times, the DVR will start playing video from the last recalled image.

Playback Related Buttons on the Remote Control

- CAMERA Buttons (1 to 16): Pressing the individual camera buttons will cause the selected camera to display full screen.
- PLAYBACK Buttons



(Stop): Stops playback.
(Pause): Pauses the video. The screen displays when in the Pause mode.
(Play): Plays back images at regular speed. The screen displays when the DVR is playing back video.

(Rewind): Plays video backward at high speed. Pressing the button again toggles the playback speed between , and . The screen displays , and respectively.
(Fast Forward): Plays video forward at high speed. Pressing the button again toggles the playback speed between , and . The screen displays , and respectively.
(Next): Goes to the next image.
(Previous): Goes to the previous image.

- ZOOM Button: Pressing the ZOOM button and selecting the camera button on the remote control zooms the current playback image of the selected camera. Pressing the ZOOM button again exits the Zoom mode. While in the Zoom mode, the icon displays on the camera screen if Zoom is selected in the Display setup screen (OSD tab).
- DISPLAY Button: Pressing the button toggles between different display formats. The available formats are: full, 4x4, 3x3, 2x2 and PIP.

You also can use the mouse for convenient playback control. Position the mouse pointer on the playback screen, and the following Record Table Search screen (Compact View mode) will display. Refer to the following *Searching Video – Search Filter* section for information regarding the Record Table Search. The individual controls on the toolbar perform the following functions:

Go to the previous image
Play
Go to the next image
Fast backward play
Fast forward play

SEARCHING VIDEO

While in the Search mode, pressing the MENU button on the remote control displays the following menu icons at the top of the screen. Pressing the MENU button again hides the menu icons.

① Search
② Go To
③ Export
④ Camera Menu
⑤ Alarm Off
⑥ Data Source
⑦ Exit

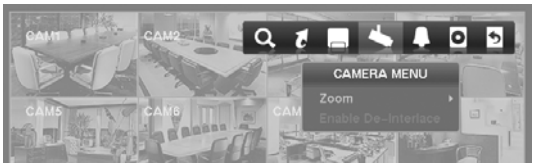
NOTE: The menu icons also can be displayed by moving the mouse pointer to the top of the screen.

Search: Selects video from the event log, searches using a recording table, searches motion events or searches text input strings (see below for more details).

Go To: Displays the first or last recorded image, or searches by date and time (see below for more details).

Export: Copies a video segment and saves it (see below for more details).

Camera Menu



- **Zoom:** Selecting *Zoom* and choosing the camera number zooms the current playback image of the selected camera on the screen. Selecting the (*Exit*) icon at the top of the screen by pressing the MENU button on the remote control or moving the mouse pointer to the top of the screen exits the Zoom mode. While in the Zoom mode, the icon displays on the camera screen if Zoom is selected in the Display setup screen (OSD tab).
- **Enable De-Interlace:** Selecting *Enable De-Interlace* while in the full-screen mode turns the de-interlace filter on.

  NOTE: The video signal has a time difference of 1/60 second between odd and even fields because it is composed of 60 interlaced fields per second. When recording video with Very High (D1) resolution, video is made up of frame units combining two fields – one odd field and one even field. This can cause horizontal scan lines or flashes in areas with motion because of the time difference between the two fields. Turning on the de-interlace filter provides clearer video by eliminating these horizontal scan lines and flashes.

NOTE: The Camera Menu also can be displayed by clicking the right mouse button on each camera screen.

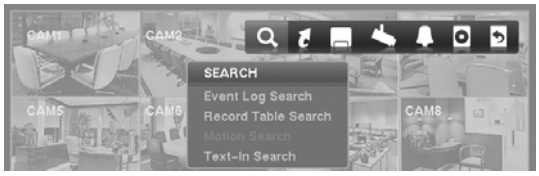
- **Edit Group:** Selecting *Edit Group* supports the active cameo function. Select *Edit Group* and choose a camera that you want to change the display position (e.g., Camera A). Then, click the right mouse button to display the menu. If you choose another camera in the menu (e.g., Camera B), the screen displays Camera B instead of Camera A. Clicking the right mouse button and selecting *Exit Group Edit* in the menu exits the Active Cameo mode.

Alarm Off: Resets the DVR's outputs including the internal buzzer during an alarm. Selecting the icon is the same as pressing the ALARM button on the remote control.

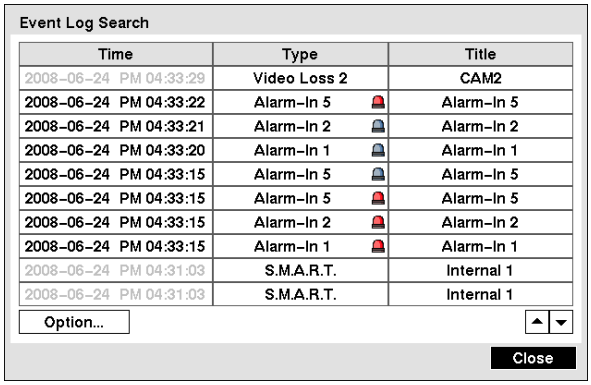
Data Source: Selects the data source to be searched. Selecting Record searches recorded data on primary storage installed in the DVR, and selecting Other searches recorded data on storage used for another DVR then installed in this DVR.

Exit: Exits the Search mode and enters the Live Monitoring mode.

SEARCH



Event Log Search

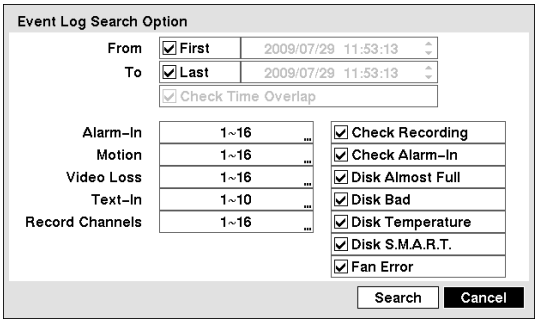


The DVR maintains a log of each time the Alarm Input port is activated. The Event Log Search screen displays this list. Use the arrow buttons to highlight the event for which you would like to see video.

Pressing the ↵ button will select the event video and display the first image of the event. Pressing the ▶ (*Play*) button on the remote control button will start playing the "event" video segment. If you want to return to live monitoring, press the MENU button on the remote control and select the (*Exit*) icon at the top of the screen.

NOTE: It is possible no recorded image displays on the current screen. Press the *DISPLAY* button on the remote control and change the screen mode to 4x4 for the 16-channel DVR and 3x3 for the 8-channel DVR. You will be able to easily see which cameras have recorded video for target time.

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



- From: Pressing the ↵ button toggles 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.

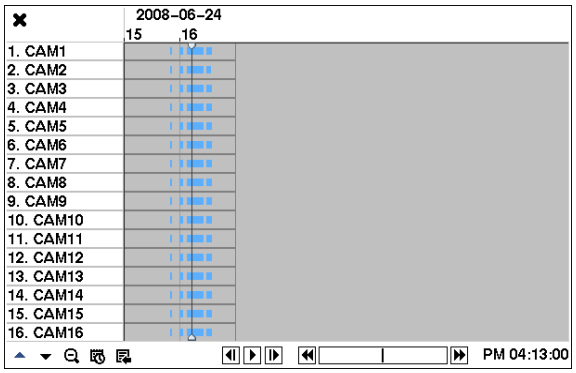
- To: Pressing the ↵ button toggles between On and Off. When set to Off, you can enter a specific Date and Time. When set to On, the search will be to the last recorded image.
- Check Time Overlap: Selecting the box and pressing the ↵ button toggles between On and Off. You will be able to turn the Check Time Overlap on or off only if user-defined date and time have been set in the From and To boxes. If the DVR's date and time have been reset, it is possible for the DVR to have overlapping start and stop times. When set to On, you will be asked to select one of the overlapping start and stop times. When set to Off, the DVR will display search results from all start times to all stop times.
- Alarm-In: Select the alarm inputs that you want to include in your search.
- Motion: Select the cameras for which you want any reports of motion detection.
- Video Loss: Select the cameras for which you want any reports of lost video.
- Text-In: Select the text-in devices which you want any report of text input.
- Record Channels: Select the cameras that you want to search for any reports of event recorded data. The DVR 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 DVR will search events that are not associated with cameras.
- Check Recording, Check Alarm-In, Disk Almost Full, Disk Bad, Disk Temperature, Disk S.M.A.R.T., Fan Error: Pressing the ↵ button toggles between On and Off to include or exclude self-diagnostic events as part of your search.

Once you set your desired search conditions, select 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

Standard View

Compact View



Expanded View

Recording information about video images currently displayed on the screen displays in the recording status bar. A grey vertical line indicates the current search position. To search for specific video, move the vertical line by pressing the Left or Right arrow buttons on the remote control, scrolling the mouse wheel or clicking the mouse on the desired segment.

If the DVR's time and date have been reset to a time that is earlier than some recorded video, it is possible for the DVR 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 to the right of the yellow 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 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.

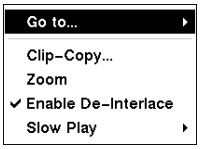
Selecting or located at the bottom zooms the record table. Selecting displays eight hours (1-minute based), and selecting displays 24 hours (3-minute based) at once. To move to earlier or later times that are not shown in the current record table screen, select the arrows located at the end of the times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

NOTE: If the DVR 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: Pre-Event → Event → Time. The color of the bar indicates different recording modes: Yellow for Pre-Event, Purple for Event, and Blue for Time.

Selecting located at the bottom displays the Calendar Search screen.

Days with recorded video display on the calendar with white numbers. You can select the days with recorded video by using the arrow buttons on the remote control. Once you have selected a day, pressing the button displays the first recorded image of the selected date 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. Refer to the *Recording Video – Playing Recorded Video* section of this chapter for information regarding playback controls.

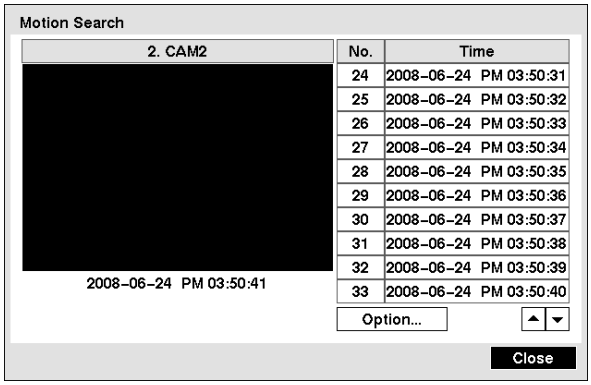
Selecting located at the bottom displays the Search menu.



- Go To: Displays the first or last recorded image, or searches by date and time (see below for more details).
- Clip-Copy: Copies a video segment and saves it (see below for more details).
- Zoom: Zooms the current playback image.
- Enable De-Interlace: Turns the de-interlace filter on (see below for more details).
- Slow Play: Plays video at low speed (x1/2, x1/3, x1/4, x1/6 and x1/8).

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

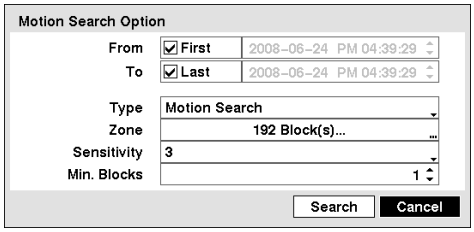
Motion Search



Motion Search can be selected from the Search Filter menu while the DVR 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 button to display the video associated with the selected event in the small search screen.

Selecting Close and pressing the button will extract the video associated with the Motion event and display the first image of the event. Pressing the (*Play*) button on the remote control button will start playing the "event" video segment. If you want to return to live monitoring, press the MENU button on the remote control and select the (*Exit*) icon at the top of the screen.

You also can narrow your event search by selecting Option… and setting up new search conditions.



- From: Pressing the ↵ button toggles 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.
- To: Pressing the ↵ button to toggles 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.
- Type: Select between Motion Search and Museum Search. Motion Search detects motion in the defined area. Museum Search detects if a defined object has moved.
- Zone: Press the ↵ button, and an image from the video appears with a grid overlay. You can turn sensor blocks On and Off to define the area of the picture in which you want to search for motion. The zone should be placed or focused on the centre or, at least, within the outline of targeted object.

  NOTE: Defining the area of the image in which you want to search for motion is nearly identical to setting up the DVR for Motion Detection. Please refer to the *Motion Event Settings* section in *Chapter 2 — Installation & Configuration – Main Setup, Event Setup* for more detailed instructions on setting up the detection blocks.

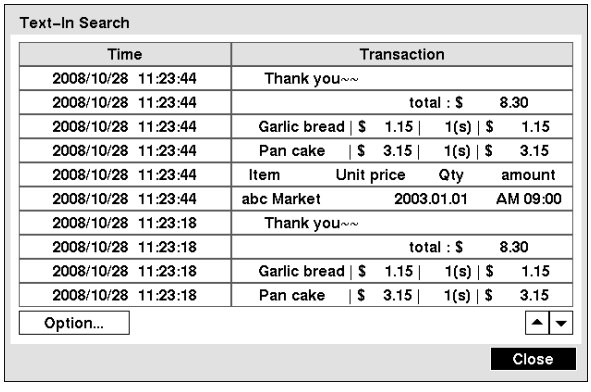
  NOTE: When setting the Museum Search Zone, the zone should be placed inside of the border line of the target object. If the selected block is placed on the border line, the sensitivity of the Museum Search may decrease.

- Sensitivity: Select the sensitivity from 1 (low sensitivity) to 5 (high sensitivity).
- Min. Blocks: Set the number of sensor blocks that must be activated. Setting the Min Blocks will only be available if Motion Search is selected in the Type field.

Once you set your desired search conditions, select Search and press the ↵ 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 for another camera, you will be asked whether or not you want to delete the previous search results from the list.

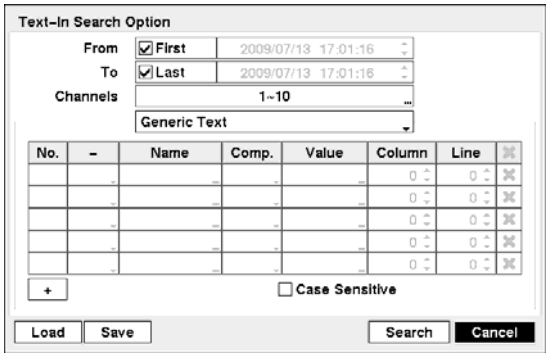
Text-In Search



The DVR maintains a log of each time there is Text Input. The Text-In Search screen displays this list. Use the arrow buttons to highlight the event for which you would like to see video.

Pressing the ↵ button will extract the video associated with the Text Input and display the first image of the event. Pressing the ▶ (*Play*) button on the remote control button will start playing the "event" video segment. If you want to return to live monitoring, press the MENU button on the remote control and select the ↩ (*Exit*) icon at the top of the screen.

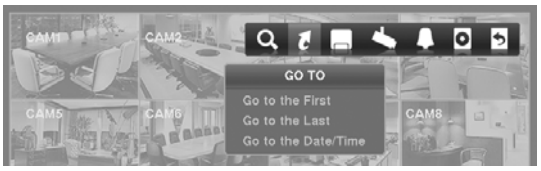
You also can narrow your event search by selecting Option… and setting up new search conditions.



- From: Pressing the ↵ button toggles 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.
- To: Pressing the ↵ button to toggles 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.
- Channel: Select the text-in devices that you want to search for text input.
- Device Box: Select your text input device from the list.
- [+]: Allows you to add a new set of search parameter. Set up the desired search parameter. Refer to *Appendix – Text-In Search Examples* for further information on setting up search parameters. Selecting ✖ allows you to delete a set of search parameter or entire sets of search parameters.
- Case Sensitive: Pressing the ↵ button toggles between On and Off. When this feature is On, the search will find only those text strings in which the case matches.
- Load: Selecting the box loads saved search option settings. Select the desired search option settings.
- Save: Selecting the box saves the current search option settings. A virtual keyboard appears that you can use to enter the search option name.

Once you set your desired search conditions, select Search and press the ↵ button to display the search results in the Text-In Search screen. Selecting Cancel exits the screen without saving the changes.

GO TO



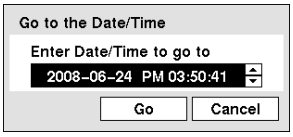
Go to the First

Selecting *Go to the First* displays the first recorded image.

Go to the Last

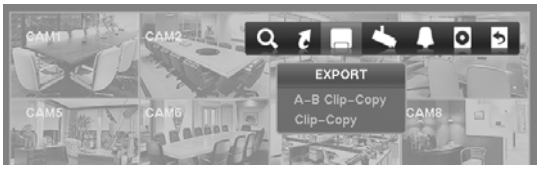
Selecting *Go to the Last* displays the last recorded image.

Go to the Date/Time



You can use the Left and Right arrow buttons on the remote control to select 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, press the ↵ button. Then select Go and press the ↵ button to display the image recorded at the selected time. The Playback buttons on the remote control can now be used to review the surrounding video. (If no video was recorded during the selected time, a message appears alerting you that no image was recorded at that time.)

EXPORT

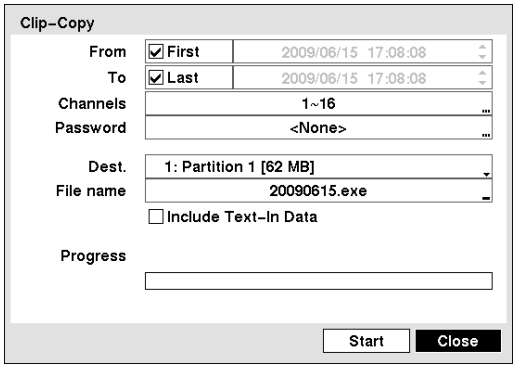


A–B Clip-Copy

Selecting 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.

Clip-Copy

Select Clip-Copy, and the Clip-Copy screen appears to allow clip copy setup.



- From: Pressing the ↵ button toggles between On and Off. When set to Off, you can enter a specific Date and Time. When set to On, the copy will be from the first recorded image.
- To: Pressing the ↵ button toggles between On and Off. When set to Off, you can enter a specific Date and Time. When set to On, the copy will be to the last recorded image.
- Channels: Select the cameras that you would like to include in your video clip.
- Password: Pressing the ↵ button displays a virtual keyboard allowing you to enter a password for reviewing the video clips.
- Dest.: Select 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.

- File name: The DVR automatically assigns a file name to the video clip. However, you can give the video clip file a different name. Pressing the ↵ button displays a virtual keyboard. Enter a file name for the video you are copying and select Close. The DVR will automatically add ".exe" to the file name.

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

- Include Text-In Data: Pressing the ↵ button toggles between On and Off. When this feature is On, you can include text-in data when copying video if the video was recorded with text-in data.

Once you have given the video clip a file name, select Start and press the ↵ button. A confirmation screen displaying data size will appear. When the storage device does not have enough space, the DVR will ask if you want to copy as much of the video clip as possible in the available space. Select Continue and press the ↵ button to continue clip copy.

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

NOTE: The file size for clip copy is limited to 2GB.

You can use other functions on the DVR while video is being copied. To do this, select Close 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 the 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 flash drive from the DVR while copying video clips.

WEBGUARD

WebGuard allows you to access a remote DVR, 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® 2000, Microsoft Windows® XP or Microsoft Windows® Vista
- 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

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

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

NOTE: 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 and enter the appropriate port number of the program. Entering ID and PASSWORD and clicking the [LOGIN] button logs in using the selected mode. Selecting Save ID saves the ID you entered.

You will need to enter the DVR 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 DVR 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: The port numbers for *WEBWATCH* and *WEBSEARCH* should be the same port numbers used for *Remote Watch* and *Remote Search* set during Network setup.

NOTE: 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.

NOTE: 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)

NOTE: When running WebGuard in the Microsoft Windows Vista 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.

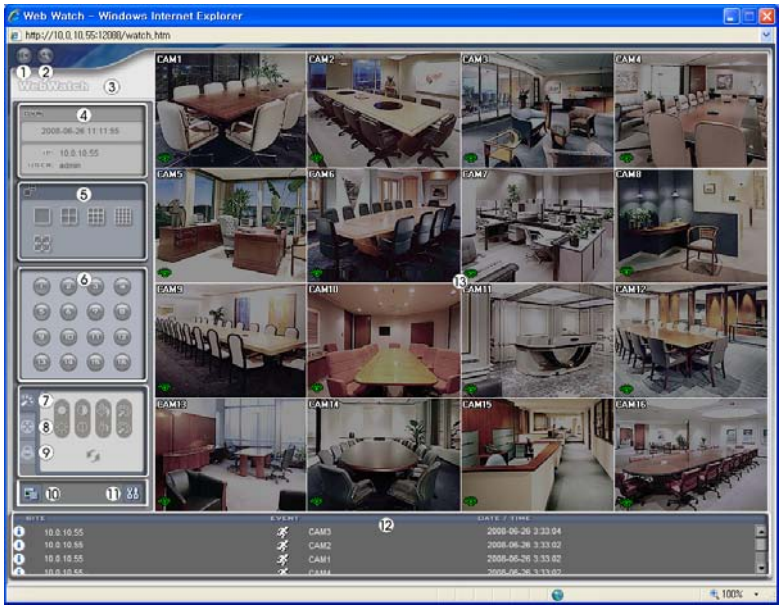
NOTE: There might be a problem with screen display or screen update due to low image transmission speed when using the Microsoft Windows Vista operating system. In this situation, it is recommended that you disable the Auto Tuning capability of your computer.

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 press 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

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



① Click the icon to log out of the WebGuard program

② Click the icon to access the web search mode.

③ Position the mouse pointer on the WebWatch logo to see the version number of the WebGuard program.

④ The DVR information window displays the login information of WebGuard.

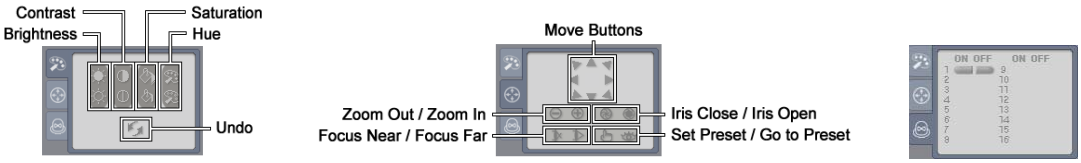
⑤ Click the screen format to select the desired display mode. When changing the screen format, the selected camera on the current screen will be located in the first cell of the new layout.

⑥ Click the camera button (1 to 16) to select the camera to be viewed.

⑦ Click the icon to adjust the brightness, contrast, saturation and hue of the monitored image.

⑧ Click the icon to pan, tilt and zoom the remote site camera.

⑨ Click the icon to control alarm out devices at the remote site.



⑩ Click the icon to save the current image in a bitmap or JPEG file format.

⑪ Click the icon to set up the image drawing mode and OSD. You can adjust the display speed by changing the image drawing mode, and select OSD.

⑫ The event status window at the bottom displays a list of events that were detected at the remote site.

⑬ Selecting a camera on the screen and clicking the right mouse button displays the text menu screen.

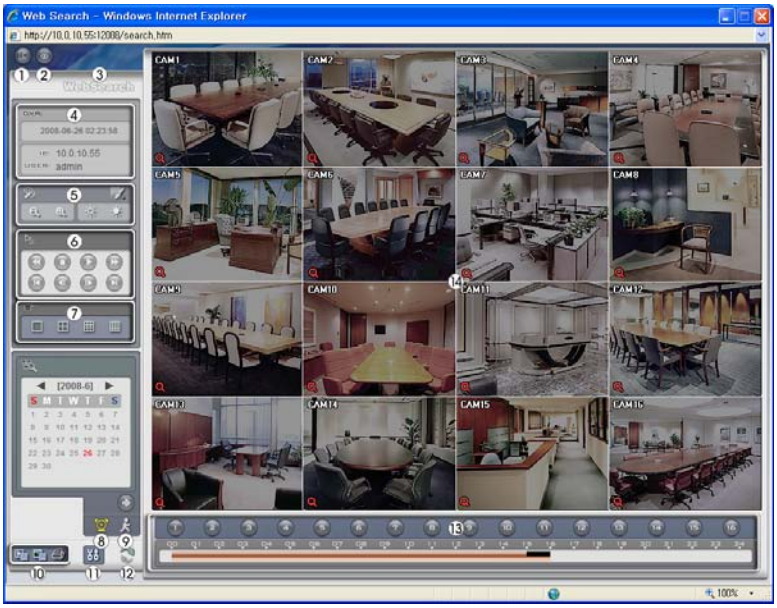
- Change Camera Title: Changes the camera name.
- Aspect Ratio: Changes the image aspect ratio.
- Deinterlacing: Using a deinterlace filter for interlaced video enhances image display quality by eliminating horizontal scan lines and noise in areas with motion.
- Anti-Aliasing Screen: Enhances image display 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.

WEB SEARCH

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

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 icon to log out of the WebGuard program.

② Click the icon to access the web monitoring mode.

③ Position the mouse pointer on the WebSearch logo to see the version of the WebGuard program.

④ The DVR information window displays the time information of recorded data on the remote DVR and login information of WebGuard.

⑤ Click the icon to blur, sharpen, equalize and interpolate playback images. Click the icons to zoom out or zoom in the recorded image. Click the icons 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 got to the last image.

⑦ Click the screen format to select the desired display mode.

⑧ Click the icon 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 there is 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 icon allows you to display an image from a specific time.

⑨ Click the icon 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 icon to save any video clip of recorded data as an executable file, or click the icon to save the current image in a bitmap or JPEG file format. Click the icon to print the current image on a printer connected to your computer.

⑪ Click the icon 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.

⑫ Click the icon to reload the recording data.

⑬ The Timetable displays recorded data of the selected camera by time (in hour segments).

⑭ 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.

TEXT-IN SEARCH EXAMPLES

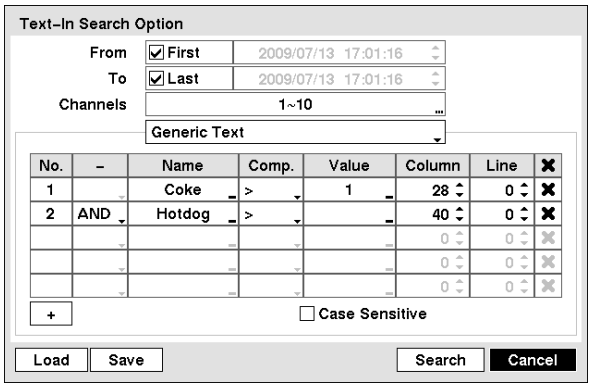
Search Example I

```
        1         2         3         4         5         6
12345678901234567890123456789012345678901234567890123456789012345678901234567890

    Item       Unit price     Qty       amount
================================================
 Coke         | $    2.20 |     1(s) | $      2.20
 Fanta        | $    2.20 |     1(s) | $      2.20
 Hotdog       | $    3.50 |     3(s) | $     10.50
 Pepsi        | $    1.95 |     1(s) | $      1.95
================================================
                           total : $      16.85
Thank you~~
```

In the above text-in data, you can find that the comparison value is located at 17th (Unit price, $ mark will be ignored automatically), 28th (Qty) and 40th (amount) characters (including spaces) from the left. In this case, you can enter "17", "28" and "40" in each Column box.

For example, if you want to search for Coke with a Qty (Quantity) of more than 1 and Hotdog with an amount totaling over $8, the following search condition can be set.



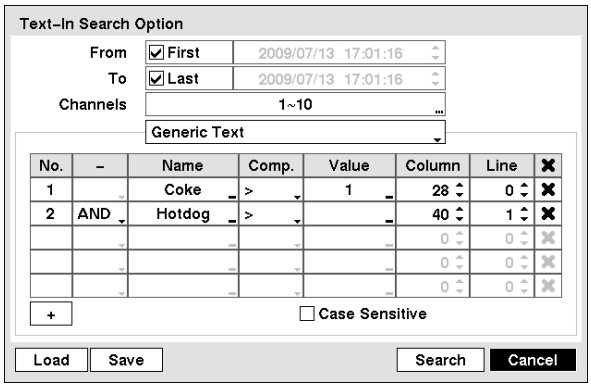
Search Example II

```
         1         2         3         4         5         6
12345678901234567890123456789012345678901234567890123456789 0

    Item       Unit price     Qty       amount
=================================================
 Coke         | $    2.20 |     1(s)
                                       $      2.20
 Fanta        | $    2.20 |     1(s)
                                       $      2.20
 Hotdog       | $    3.50 |     3(s)
                                       $     10.50
 Pepsi        | $    1.95 |     1(s)
                                       $      1.95
=================================================
                             total : $       16.85
Thank you~~
```

In the above text-in data, you can find that the comparison value is located at 17th (Unit price, $ mark will be ignored automatically), 28th (Qty) and 40th (amount) characters (including spaces) from the left, but the value of amount category is located on a different line from Item. In this case, you can enter "17", "28" and "40" in each Column box and enter "1" in the Line box for the next line.

For example, if you want to search for Coke with a Qty (Quantity) of more than 1 and Hotdog with an amount totaling over $8, the following search condition can be set.



Appendix

FACTORY DEFAULT SETTINGS

MENU	ITEM	PARAMETER	DEFAULT SETTING
SYSTEM	System	System ID	0
		Language	English
		User Management	
		Administrator	admin
		Operator	None
	Date/Time	Date Format	YYYY/MM/DD
		Time Format	HH:MM:SS
		Time Zone	GMT-05:00 Eastern Time (US & Canada)
		Enable Daylight Saving Time	On
		Time Sync…	
		Automatic Sync	Off
		Run as Server	Off
		Holiday…	None
RECORD	General	Recycle When Disk Full	On
		Codec	H.264
		Resolution	Standard
		Auto Deletion	Never
	Schedule	Schedule Type	Basic
		Basic Schedule Mode	
		Record Mode	Time & Event
		Record Schedule	00:00 to 24:00
		Time Record ips	15.00
		Time Record Quality	Standard
		Event Record ips	30.00
		Event Record Quality	High
		Event Record Dwell	05 sec
		Pre-Event Record Dwell	None
		Advanced Schedule Mode	
		Pre-Event Record / Setup…	
		Pre-Event Record ips	15.00
		Pre-Event Record Quality	Standard
		Pre-Event Record Dwell	None
		Post-Event Record Dwell	5 sec.
		No.	1 on
		Day	All
		Range	00:00 to 24:00
		Mode	Time & Event
		Channels	1 to 16
		Settings: Time (ips / Quality) Event ((ips / Quality)	15.00 ips / Standard 30.00 ips / High
EVENT	Motion	No.	Off
		Sensitivity…(Daytime/Nighttime)	3 / 3
		Zone	192
		Min. Blocks (Daytime/Nighttime)	1 / 1
		Actions	
		Alarm-Out…	Alarm-Out, Beep
		Notify…	None
		PTZ	None
		Motion Ignoring Interval	2 sec.
		Daytime Setup…	09:00 ~ 18:00

EVENT	Alarm-In	No.	Off
		Title.	Alarm-In 1 to Alarm-In 16
		Type	NC
		Actions	
		Alarm-Out…	Alarm-Out, Beep
		Notify…	None
		PTZ	None
	Text-In	Setup	None
		Title	
		Actions	
		Record	None
		Alarm-Out…	Beep
		Notify…	None
		PTZ	None
	System	Settings	
		System	Never
		Check Recording	Off
		Check Alarm-In	Off
		Disk Almost Full	90%
		Disk Bad	50%
		Disk Temperature	70
		Actions	
		System	Mail
		Check Recording	Beep
		Check Alarm-In	Beep
		Disk Almost Full	Beep
		Disk Full	Beep
		Disk Bad	Beep, Mail
		Disk Temperature	Beep, Mail
		Disk S.M.A.R.T.	Beep, Mail
		Fan Error	Beep, Mail
NETWORK	General	Remote Watch	
		bps/ips	1.0 Mbps
		Quality	Standard
		Network Bandwidth Limit	100.0 Mbps
		Enable WebGuard Service	Off
		Port	12088
		Apply SSL to Transferring Data	Off
	Network	Type	Manual
		IP Address	192.168.1.129
		Gateway	192.168.1.254
		Subnet Mask	255.255.255.0
		DNS Server	0.0.0.0
		Port Number Setup…	
		Remote Admin	8200
		Remote Watch	8016
		Remote Search	10019
	DVRNS	Enable DVR Name Service	Off
		DVRNS Server	dvrnames.net
		Port	10088
		Enable NAT	Off
		DVR Name / Check	Blank
		Help Desk	Blank
	Mail	Enable	Off
		SMTP Server	Blank
		Port	25
		Enable SSL/TLS	Off
		Authentication	None
		Sender	Blank
		Recipient	Blank

DEVICE	Camera	No.	On
		Title	CAM1 to CAM16
		Covert	Normal
		PTZ	None
		ID	0
		PTZ Port	None
		Setup…	
		Baud Rate	9600
		Data Bit	8
		Stop Bit	1
		Parity	None
	Remote Control	Port	None
		Setup…	
		Baud Rate	9600
		Data Bit	8
		Stop Bit	1
		Parity	None
		Remote Control Product	Remote Control
DISPLAY	OSD	Status	
		Remote Control	On
		Zoom	On
		Network	On
		Freeze & Sequence	On
		Screen Group	On
		Free Space	On
		Date	On
		Time	On
		User Name	On
		Camera	
		No.	Off
		Title	On
		Record	On
		PTZ	On
		Text-In	On
		Display Dwell	10 sec.
		Transparency	0 (Left)
		OSD Margin…	
		Horizontal	20
		Vertical	20
	Main Monitor	Sequence	
		Mode	Full Sequence
		Interval	3 sec.
		Event Monitoring On	Off
		VGA Screen Position…	

ERROR CODE NOTICES

SYSTEM UPGRADE RELATED		CLIP COPY RELATED	
No.	Description	No.	Description
0	Unknown error.	0	Unknown error.
1	File version error.	1	Device error.
2	Operating system version error.	2	Mounting failed.
3	Software version error.	5	File already existed.
4	Kernel version error.	6	Not enough space.
100	Upgrade device mounting failed.	7	Creating temporary file failed.
101	Package is not found.	8	Opening disk failed.
102	Extracting package failed.	9	Formatting disk failed.
104	Rebooting failed.	10	Database has been changed.
105	Invalid package.	11	Appending failed.
300	Remote connection failed.	12	Bad sector.
301	Remote network error.	13	No executable file.
302	Remote upgrade is not authorized.	14	Opening executable file failed.
303	Saving remote package failed.	15	Writing executable file failed.
304	Remote upgrade is cancelled by the user.	16	Creating image failed.
400	USB device mounting failed.		
401	Reading upgrade package on the USB device failed.		
402	Copying upgrade package on the USB device failed.		
500	System is busy clip copying.		

TROUBLESHOOTING

PROBLEM	POSSIBLE SOLUTION
No Power	• Check power cord connections. • Confirm that there is power at the outlet.
No Live Video	• Check camera video cable and connections. • Check monitor video cable and connections. • Confirm that the camera has power. • Check camera lens settings.
No Live Video on the VGA Monitor	If the DVR does not detect a VGA monitor automatically, press and hold the DISPLAY button on the remote control for 5 seconds or longer to switch the video output from Video out to VGA out.
DVR has stopped recording.	If hard disk drive is full, you will either need to delete video or set the DVR to the Recycle On (Recycle When Disk Full) Mode. See *Chapter 2 – Installation & Configuration, Main Setup – Record Setup* for details.
The ● icon displays, however, the DVR is not recording.	When the DVR is in the Pre-Event recording mode, the yellow and ● icons display when there is no event, and the DVR is not recording. The red and ● icons display when any event occurs and the DVR starts recording.
IR remote control does not work properly.	• Check the batteries in the remote control. • Check that nothing blocks the infrared sensor on the DVR. • Check the system ID setting for the remote control. See *Chapter 2 – Installation & Configuration, Main Setup – System Setup* for details.

SPECIFICATIONS

Type	DIR-4108H/xx	DIR-4116H/xx
Art. No.	72795, 72829, 72831	72802, 72832, 72833
Series	eneo DIR	
Operation mode	Quadplex	
Video standard	PAL/NTSC (automatic selection)	
Video inputs (amount)	8	16
Video inputs	1Vp-p, (C)VBS, 75ohms, BNC	
Main exits	CVBS, VGA	
Video outputs	1Vp-p, (C)VBS, 75ohms, BNC	
Spot monitor	-	
IP channels	-	
Audio inputs	-	
Alarm inputs	8, selectable between NO and NC	16, selectable between NO and NC
Activity detection	16x12 grid, Sensitivity levels: 5, Discrimination size: 192 levels. Minimum size for detection: 15 levels	
Covert Camera Recording	Available	
Alarm outputs	NO/NC contact	
Alarm notification	E-mail	
Alarm reset input	1x TTL	
Event Logs	No limit for motion, video loss	
System log	up to 5000, user login/out, config. changes, remote access, connects/disconnects and errors, disk read and write errors	
Max. recording resolution	672 x 544	
Resolution	720x576 Pixels (PAL/Display)	
Compression standard	MPEG4, H.264, H.264 (advanced compression engine provides smaller data size without significant picture quality distortion)	
Image size	Low: 2/2.4kB, Standard: 4/4.8kB, High: 8/9.6kB, Very high: 12/14.4kB (NTSC/PAL).	
Max. recording rate	100 B./Sek.	
Recording speed	100 ips at 336x272 Px. / PAL, 50 ips at 672x272 Px. / PAL, 25 ips at 672x544 Px. / PAL	
Digital storage media	SATA hard disk	
Harddisk capacity (internal)	250 GB, 750 GB, 1250 GB (depends on model)	
Max. harddisk capacity (internal)	2000 GB	
Pre-alarm recording	up to 60sec.	
Post-alarm recording	up to 60sec.	
Playback	1, 4, 8 channel Split, PIP	1, 4, 9, 16 channel Split, PIP
Playback speed	100 images/sec. at CIF (336x272 Px. / PAL) and duplex	
Zoom function	2x	
Integrated writer	no	
Archiving	USB (HDD's, CD-RW, Flash drive)	
Secondary Storage	via USB 2.0. Network Data Export: Clip Player, AVI, JPG, BMP	
Control units (external)	Mouse, Remote Control	
Remote control	Wireless remote control enabled	
Remote access	Remote Software, Browser	
Remote Software	For remote administration and search function (RASplus, Webguard, supplied with the unit)	
Time synchronization	Via Network time protocol. Operation as Network time server	
Search function	Date/Time, Record table, Calendar, Event, Motion, Museum	

Type	DIR-4108H/xx	DIR-4116H/xx
Art. No.	**72795, 72829, 72831**	**72802, 72832, 72833**
Menu languages	German, English, Italian, French, Spanish, Polish, Russian, Czech, Hungarian	
Ethernet interface	10Base-T/100-Base-TX, RJ-45	
Network protocols	TCP/IP, ADSL, DHCP, DVRNS	
Transmission rate (Network)	50 ips (CIF), 25 ips (2CIF), PAL	
Remote configuration	via Web browser	
Interfaces external storage	USB, 2x USB 2.0	
Serial interfaces	RS-232, RS-485, RS-485 for telemetry control (proved protocols: eneo Fastrax, Pelco P&D)	
Text insertion interface	RS-232	
Security	User groups access rights programmable for each group	
Supply voltage	100VAC~230VAC, 50/60Hz	
Power consumption	approx. 80watts	
Temperature range (Operation)	+5°C ~ +40°C	
Housing	Steel metal with plastic front, desktop design	
Colour	Antracite	
Dimensions (HxWxD)	88x430x405mm	
Weight	5.3kg	
Parts supplied	Mouse, IR Remote control, Power supply unit, 19" rack mount kit, Remote Viewer Software, Manual	
Certificates	CE	

* CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions. This equipment is indoor use and all the communication wiring are limited to inside of the building.

Optional Accessories

Art. No.	Type	Description
74088	**EDC-KBD1**	System Keyboard with 3-axis Joystick, 12VDC
74149	**KBD-2**	System Keyboard with 3-Axis Joystick and Jog Shuttle, 12VDC
74092	**EDC-KBDM-3**	System Keyboard w. Joystick, 5”Monitor 12VDC, Fastrax Protocol
72665	**HDD-250SATA-H**	Hard Disk Drive 250GB, SATA for DLR1.1, DLR3 (SATA), DIR, DPR and BTR Series *)
72666	**HDD-500SATA-H**	Hard Disk Drive 500GB, SATA for DLR1.1, DLR3 (SATA), DIR, DPR, DTR, BTR Series *)
72875	**HDD-750SATA-S**	Hard Disk Drive 750GB, SATA f. DLR3, DIR DTR-42xx/DTR-61xx, DPR, EMD, BCR Series *)
72929	**HDD-1000SATA-S**	Hard Disk Drive 1000GB, SATA for DTR-42xx, DTR-61xx, BCR, DCR DVRs *)

*) Hard Disks on Demand

Specifications are subject to change without notice.

Technical Specifications: www.videor.com

eneo® is a registered trademark of Videor E. Hartig GmbH
Exclusive distribution through specialised trade channels only.

Videor E. Hartig GmbH
Carl-Zeiss-Straße 8 · 63322 Rödermark, Deutschland
Tel. +49 (0) 6074 / 888-0 · Fax +49 (0) 6074 / 888-100

www.videor.com

V1.2
Technical changes reserved.

© Copyright by VIDEOR E. Hartig GmbH 10/2009