



# User Manual

## 6 Bay Network Video Recorder

DNR-2060-08P

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# Preface

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## Manual Revisions

Revision	Date	Description
1.0	April 25, 2013	DNR-2060-08P Revision A1 with firmware version 1.00

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# Product Overview

## Package Contents

1. Six SATA Cables
2. Remote Control
3. Power Cord
4. Mounting Kit
5. Software CD
6. Quick Installation Guide
7. Two Batteries for Remote Control
8. 24 Screws



If any of the above items are missing, please contact your reseller.

**Note:** Using a power supply with a different voltage than the one included with your product will cause damage and void the warranty for this product.

## Introduction

The DNR-2060-08P 6-Bay Network Video Recorder is a comprehensive standalone network video display, storage, and management solution providing reliable high-quality remote monitoring for IP-based security systems. The DNR-2060-08P enables simultaneous recording and remote access to recorded video as well as live viewing. Controlling the DNR-2060-08P is exceptionally easy using conventional front panel controls, with an optional keypad and mouse, or remote control handset. High flexibility, simple configuration, and easy management make the DNR-2060-08P a cost-effective upgrade addition to your security and surveillance infrastructure.

Please note that the model you have purchased may appear slightly different from those shown in the illustrations.

## System Requirements

Computer with Microsoft Windows® 7, Vista®, or XP (for CD-ROM Setup Wizard), Mac OS or Linux  
PC with 1.3GHz or above; at least 128MB RAM  
Internet Explorer 7 or above , Firefox 3.5 or above, Safari 4 and Chrome 8.0 or above  
Existing 10/100 Ethernet-based network

## Features

### Comprehensive IP Surveillance Solution

**Total Solution:** The D-Link NVR is a standalone network video recorder capable of 24/7 recording without a PC. The NVR can manage multiple network cameras, providing direct access to view live video and play recorded data through the Internet from anywhere anytime.

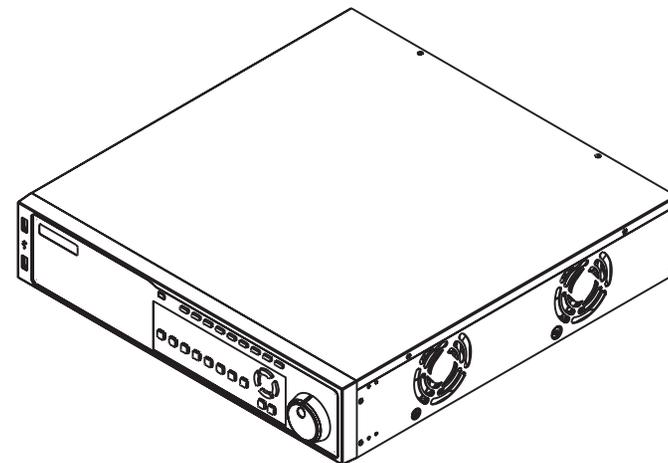
**Easy to Use:** A user-friendly GUI simplifies network and camera setup, allowing users to easily access multiple cameras for viewing, recording, playback, and configuration.

**Centralized Interface for Configuration:** NVR provides a flexible and economic alternative to manage and configure multiple Network cameras on a centralized web interface.

**Megapixel Resolution Support:** The major advantage of digital over analog video is its higher resolution support. The NVR supports high resolution megapixel recording for vivid video with high clarity.

**Integrated 8 Channel PoE Switch:** The DNR-2060-08P can be easily setup for internet access. It supports real-time monitoring and playback from everywhere via IE browser. The recording store in your own HDD with high privacy, not in the cloud.

**Six 3.5" HDD for upto 18TB of storage:** with upto 18TB of local storage you can keep a massive archive of High Definition recording while retaining your privacy instead of relying on the cloud.



### Complete Connectivity

**DDNS Support:** Dynamic DNS is a solution for users without a fixed IP address. With DDNS service, users can connect to the NVR from the Internet using an easy-to-remember domain name.

**NTP Support:** Maintaining an accurate record of time is essential if recorded data is to be used as evidence. To ensure that the time recording is always accurate, the NVR can update the system clock from an Internet server using the Network Time Protocol (NTP).

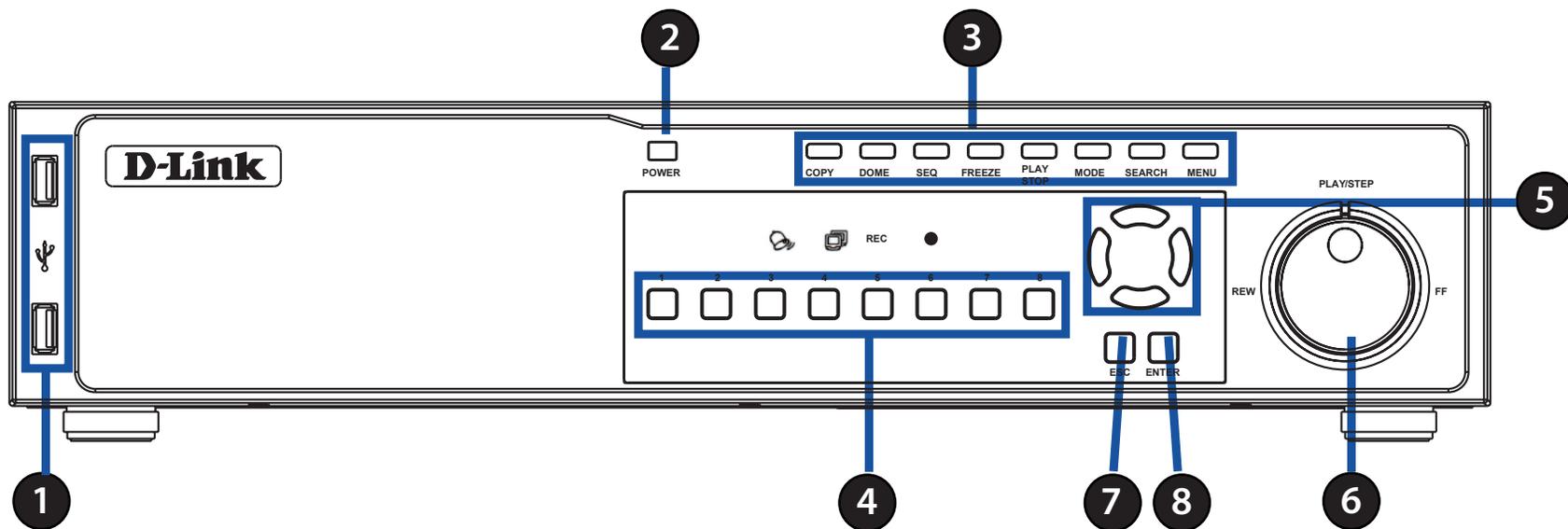
**3 x USB 2.0, and e-SATA:** Convenient connectivity and complete flexibility.

### Fully Functional Recording

**Flexible Recording Schedule:** Once cameras have been set up, a highly configurable scheduling system allows for continuous recording or recording during specifically allotted time frames. Each camera can be set to record independently at preset intervals. It also provides event recording based on specific triggers.

**Recording Automatic Overwrite:** The NVR can be configured to overwrite the oldest data automatically when Hard Disk space runs out, allowing for continuous and uninterrupted recording. Users can specify the number of days the recording should be kept (within the limits of the Hard Disk capacity). For example, if the NVR has the capacity to store 7 days of recording, using the overwrite option, the NVR will record the 8th day and delete the 1st day.

## Hardware Overview Front Panel Function Keys

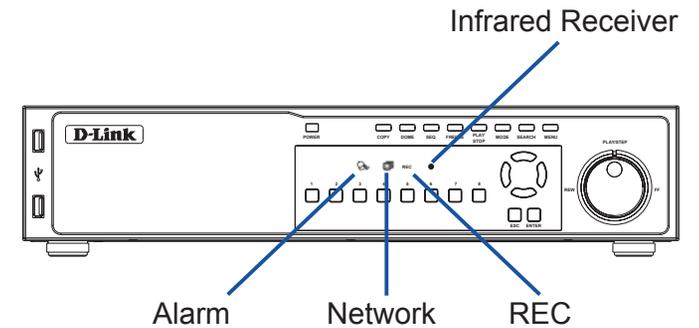


1	<b>USB 2.0 Port</b>	Allows users to connect an external USB device to the unit, such as a USB Drive or a USB mouse.
2	<b>Power</b>	Press this switch to power on the NVR. Press and hold for quick shutdown of the NVR..
3	<b>Function Keys</b>	Allows users to select various functions. See "Function Keys" on page 18
4	<b>Channel Select Button: 1-8</b>	In Live and Playback modes, press any button to view the corresponding video in fullscreen.
5	<b>Arrow Keys</b>	In Zoom mode, these buttons function as direction buttons. In the OSD setup menu, the direction buttons are used to move the cursor to previous or next fields. To change the value in the selected field, press UP/DOWN buttons.
6	<b>Shuttle/Jog</b>	This is used to control playback operations.
7	<b>Esc Button</b>	Press this button to cancel or exit from a control mode.
8	<b>Enter Button</b>	In the OSD menu or selection interface, press this button to make the selection or save settings. In live full-screen viewing mode, press this button to view zoom; press it again to return to normal.

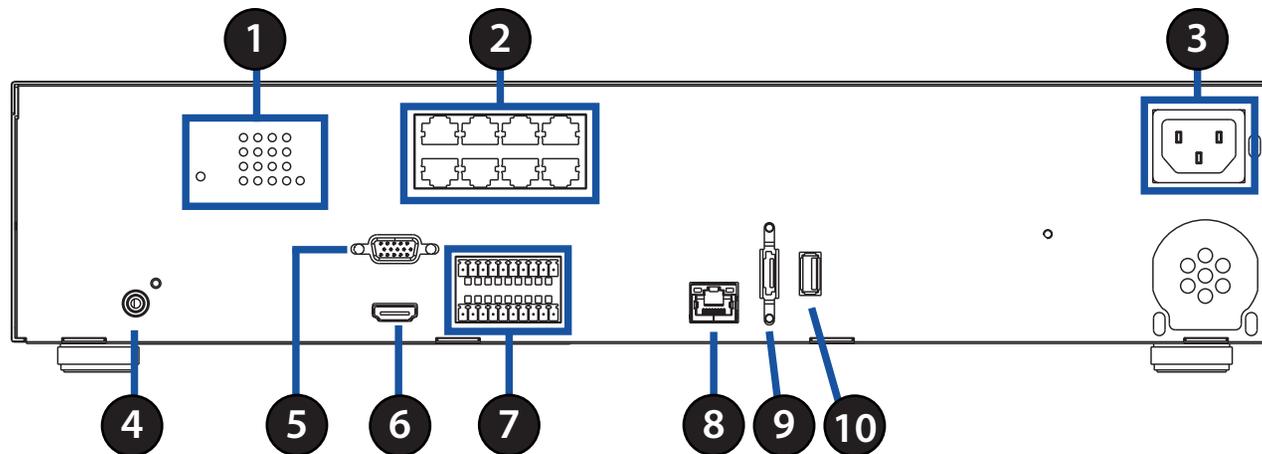
## Front Panel LED Indicators

The LED indicators on the front panel of the NVR function as follows.

	<b>Network</b>	The Network icon lights up when the NVR is connected to a network and blinks when data is being transferred.
REC	<b>REC</b>	The Recording icon blinks while the NVR is recording.
	<b>Alarm</b>	The Alarm icon lights up when an alarm is triggered.
	<b>IR Receiver</b>	The infrared receiver receives signals from the remote control.



## Rear Panel

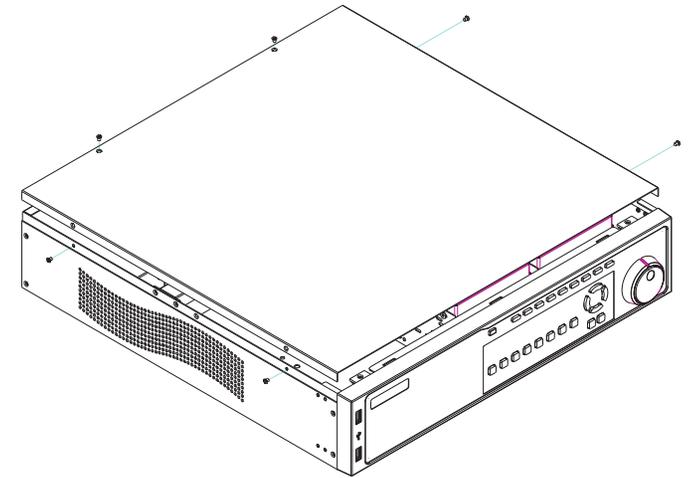


1	<b>PoE/Link Indicators</b>	The lit orange LED signifies that the IP camera is connected and power is supplied via PoE. When the LED is off, either the power is separately connected or the IP camera is not connected. The blinking green LEDs represent data being transmitted from the IP cameras to the NVR. When the LED is not on, that means the IP camera is not connected.
2	<b>PoE Ports</b>	The optional PoE ports offer direct connections to eight IP cameras. The IP cameras can be “plug and play” if the function is enabled in the OSD menu.
3	<b>Power Socket</b>	Connect the power supply cord shipped with the NVR.
4	<b>Main Audio Out</b>	A RCA connector is provided to output audio associated with the main monitor.
5	<b>Main Monitor (VGA)</b>	A VGA output connector is offered for connecting to a VGA monitor.
6	<b>Main Monitor (Digital Output)</b>	A digital output connector is provided for connection to a displaying device that transfers data digitally to show the best video quality.
7	<b>Alarm I/O</b>	The NVR provides alarm I/O that offer users flexibility to connect the unit to other devices.
8	<b>LAN 10/100/1000M (RJ-45)</b>	The NVR is capable of networking and it allows videos to be viewed over the LAN network or the Internet by using Internet Explorer.
9	<b>e-SATA Port</b>	Users can connect an e-SATA storage device via this port.
10	<b>USB 2.0 Port</b>	Allows users to connect an external USB device to the unit, such as a USB Drive or a USB mouse.

## Hard Disk Drive Installation

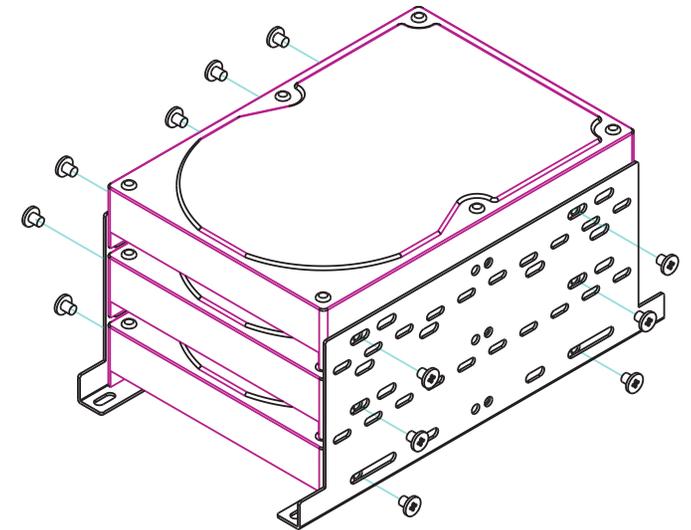
### Step 1

Use a screwdriver to remove the screws from the sides and top of the NVR, then lift the cover.



### Step 2

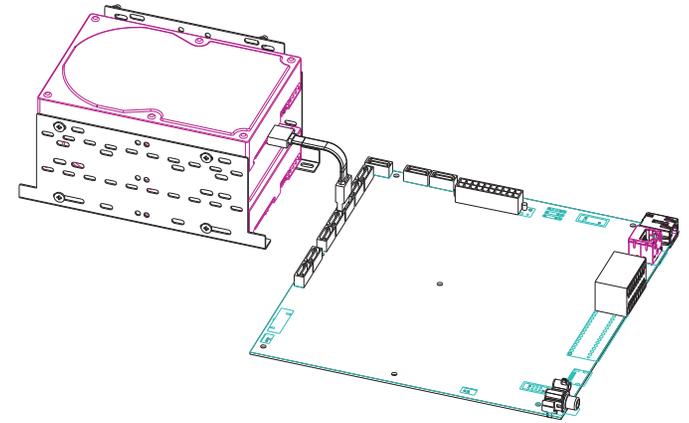
Locate the two 3-bay hard drive racks inside. Select the rack you would like to install your hard drive into, then slide the hard drive into the rack bay.



### Step 3

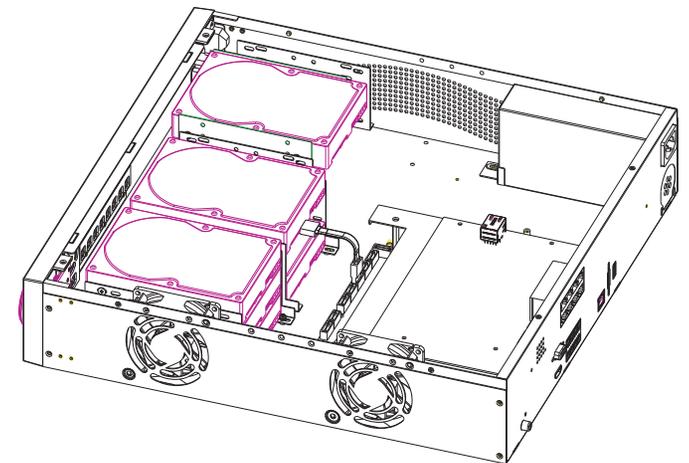
Attach one end of the SATA cable to the rear of the HDD.

Attach the other end of the SATA cable to a free SATA socket on the motherboard of the NVR.



### Step 4

Secure the hard drive in place with screws using the guide holes along the center of the sides.



## Connecting a Power over Ethernet IP Camera

The NVR has a built-in PoE switch accessible via the rear panel. This provides both network connectivity and power for up to eight PoE IP cameras with a single cable.

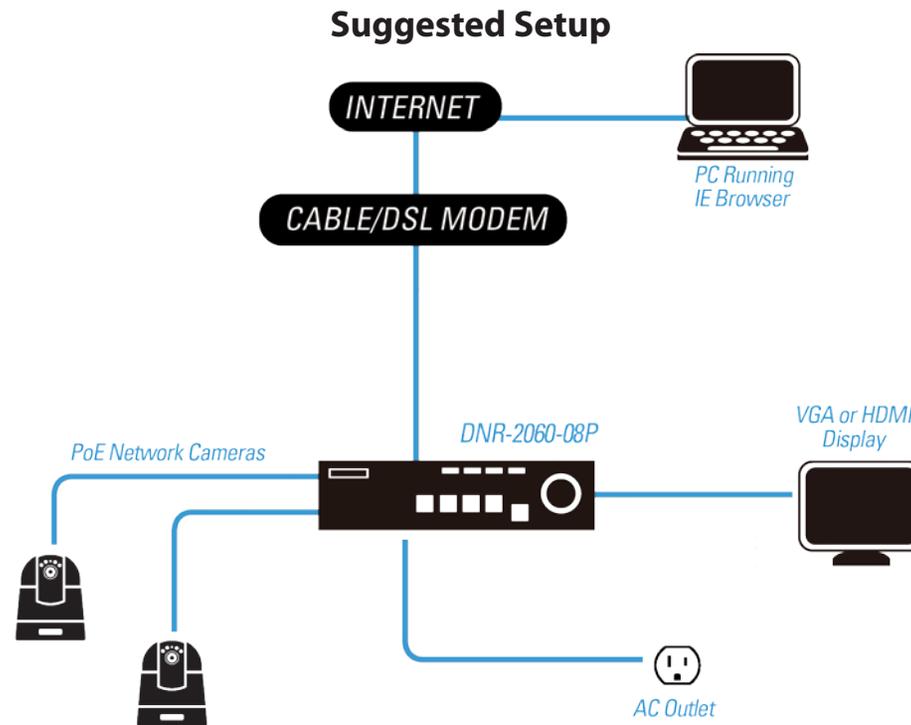
**Note:** The maximum power for all connected devices must not exceed 90 Watts.

### Step 1

Make sure the NVR is connected to a network via a router or a switch, or directly connected to a PC. Plug in cameras using the PoE ports on the rear panel.

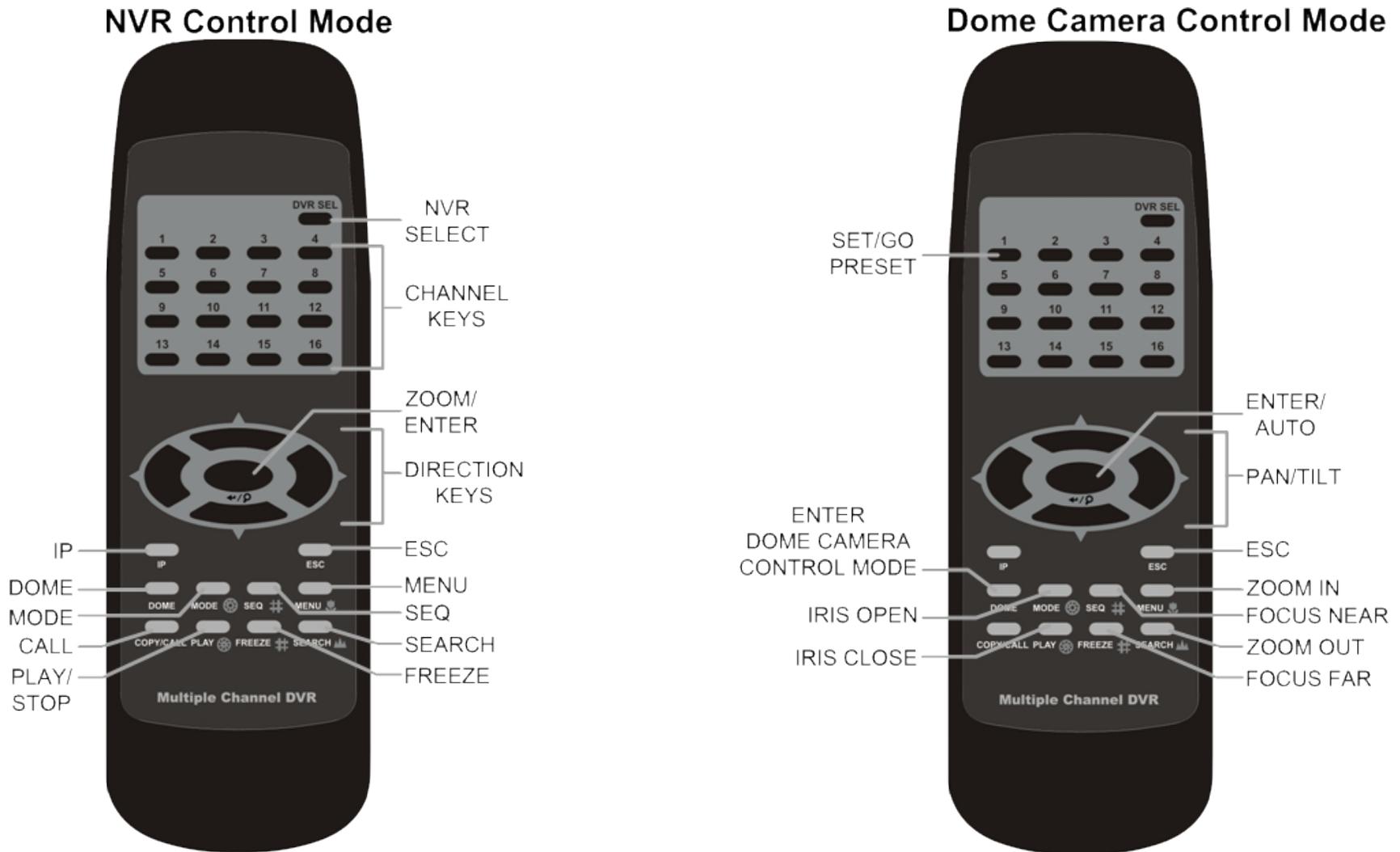
### Step 2

The NVR will boot up and start to record automatically.



## Remote Control Operation

A remote control is provided for the NVR. The operational function keys (on the left) and dome camera control keys (on the right) on the remote control are listed as below figure:



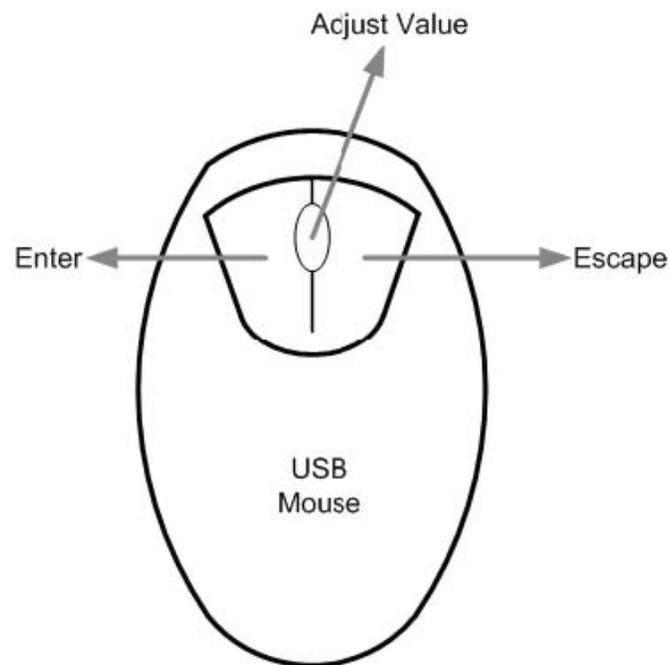
## USB Mouse Operation

Users can attach a USB mouse to control the NVR. To use a USB mouse, plug a USB mouse into any USB port of the NVR.

Move the cursor to the right side of the screen and a Live Panel will be displayed. The icons on the Live Panel are the same as the function keys on the front panel of the NVR.

Clicking the left button operates the same as pressing the **ENTER** key. Clicking the right button operates the same as pressing the **ESC** key. The scroll wheel is used to change values. For example, if users want to change dome camera ID, enter the OSD setup menu with an authorized account and go to the following path: **Camera, Connection Setup, IP Dome ID**.

Left click on **IP Dome ID** and scroll the mouse wheel up or down, the ID number will change as the scroll wheel moves. Stop moving the scroll wheel when the preferred ID number appears, then left click on the **IP Dome ID** to select the ID Number and the ID number will be changed.



### Camera Title Alignment

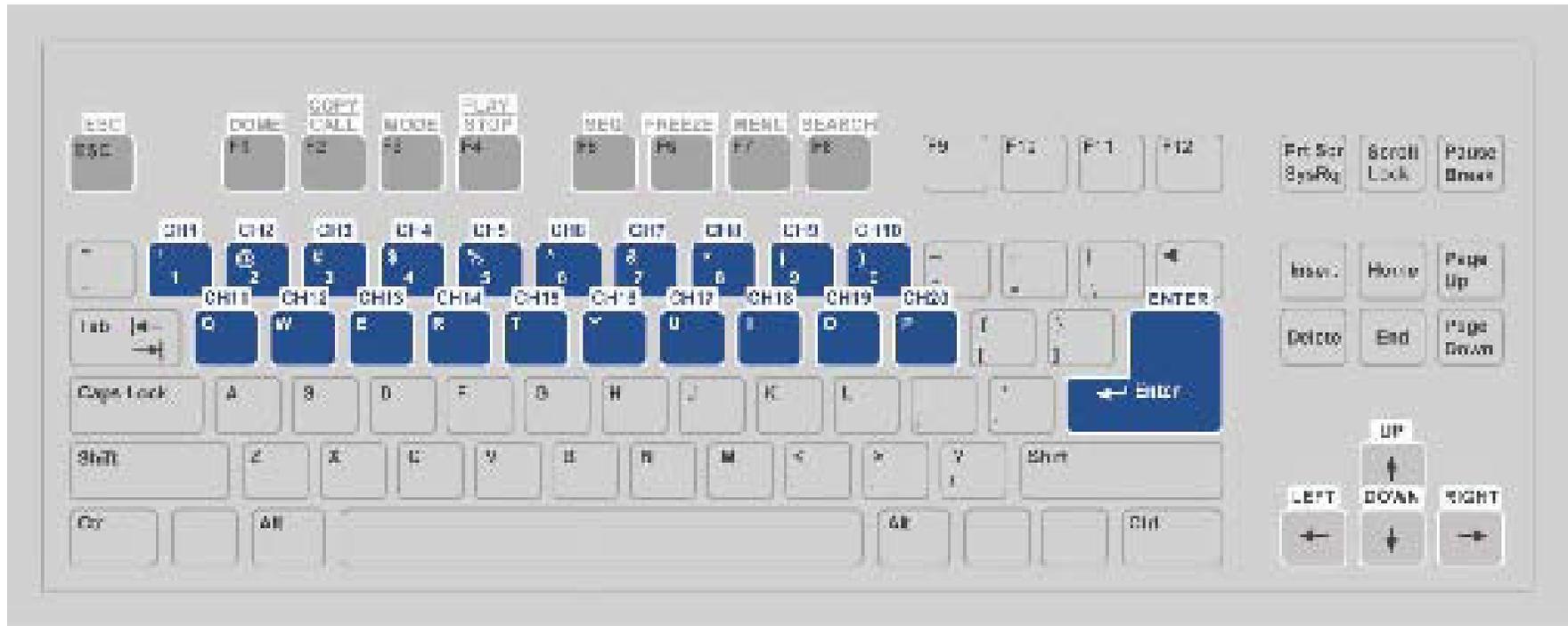
Users can change the display position of camera titles of all channels. To change the camera title position for a single channel, left click on the camera title and drag the title to a preferred position. If users want to set all of the camera titles to the same position that is set for a specific channel, right click on the specific camera title and select Align Here from the pull-down menu.



**Note:** Users can access the OSD menu with an authorized account and go to **Monitor , Mouse Sensitivity** to setup preferred sensitivity level of USB mouse.

## USB Keyboard Operation

The following diagram shows the keys used to access and control the NVR from an attached USB keyboard.



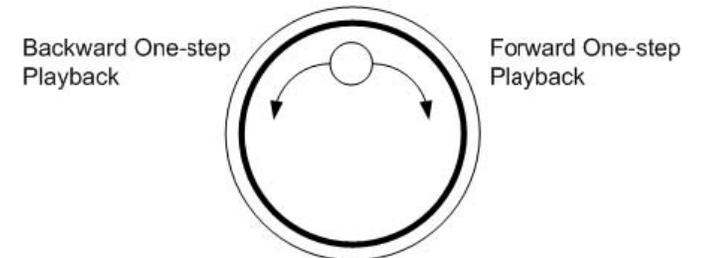
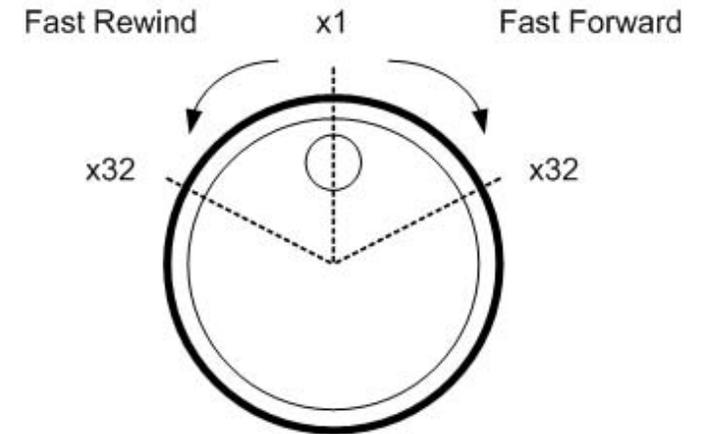
## Jog/Shuttle Control

The jog/shuttle dial is used to provide a wide latitude in playback control. Note that the jog/shuttle dial is active only when the NVR has been in Playback mode.

While playing back recorded video, users can rotate the shuttle ring to select different speed of forward and reverse playback. Rotating the shuttle ring clockwise/ counterclockwise causes the unit to playback faster forward/backward. According to the angle of rotation of the shuttle ring, users can choose a playback speed from 1x, 2x, 4x, 8x, 16x, and 32x, in both forward and reverse directions.

Inside the shuttle ring is the jog disk.

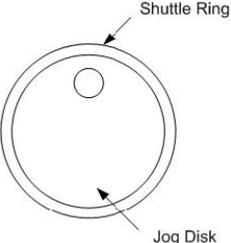
Once the video is paused, users can use the jog disk to playback video frame-by-frame. Clockwise rotation causes a one-step forward playback; and counterclockwise rotation causes a one-step backward playback.



## Function Keys

This section describes the function keys for normal operation, on the front panel of the NVR.

	<b>POWER</b>	After the power cord is correctly connected, press this key to switch power on. Press and hold this key to quick shutdown the NVR.
	<b>CHANNEL</b>	In both Live and Playback modes, press the <b>CHANNEL</b> key to view the corresponding video in full-screen. The number of the <b>CHANNEL</b> keys corresponds to the number of cameras supported by the unit. In Dome Control mode, the key "1" is used to access the <b>Set/Go</b> preset menu; the keys "11" ~ "16" are for quick access of preset points 1~6.
	<b>COPY</b>	In Playback mode, press this key to select the start and end time of the export video. Refer to section Video Export for detailed information.
	<b>DOME</b>	Press the key to enter Dome Control mode. Please refer to Section Dome Control for detailed controlling operation.
	<b>MODE</b>	Press repeatedly to select desired main monitor display format. According to the monitor displaying type, there are several available viewing modes: full-screen, 2-windows, and 8-windows. Refer to section Viewing Modes for detailed information.
	<b>PLAY</b>	Press this key to switch between live image and playback video. <b>Note:</b> The video of latest 5~10 minutes cannot be played back because the video is still saved in the buffer.
	<b>FREEZE</b>	Press <b>FREEZE</b> while viewing live image, the live video will be frozen. The date / time information shown on the monitor will continue updating, as well as the recording of video. Press <b>FREEZE</b> again to return to live mode. Press <b>FREEZE</b> while playing the recorded video, the playback video will be paused. Press <b>LEFT / RIGHT</b> to move the recorded video reverse / forward by single step. Press <b>FREEZE</b> again to continue playing video.
	<b>SEQ (Sequence)</b>	Press to start automatic sequence display of video from all installed cameras.
	<b>SEARCH</b>	In both Playback and Live mode, press <b>SEARCH</b> to enter the Search menu for searching and playing back recorded video by date / time, event, or text.
	<b>MENU</b>	Press this key to enter the OSD setup menu.

	<p><b>Direction Keys</b></p> 	<p>In Zoom mode, these keys function as Direction keys. In the OSD setup menu, the <b>LEFT / RIGHT</b> keys are used to move the cursor to previous or next fields. To change the value in the selected field, press <b>UP / DOWN</b> keys.</p>
	<p><b>ESC</b></p>	<p>Press to cancel or exit from certain mode or OSD setup menu without changing the settings made previously. When password protection is switched off, press <b>ESC</b> for five seconds to lock UP the system. Press <b>ESC</b> for five seconds again to unlock. Note: Enter the OSD menu and go to <b>System User Management</b> to enable or disable the password protection.</p>
	<p><b>ENTER / ZOOM</b></p>	<p>In OSD setup menu or selection interface, press this key to make the selection or save settings. In live full-screen viewing mode, press this key to view a 2x zoom image; press it again to return.</p>
	<p><b>JOG / SHUTTLE</b></p> 	<p>The jog/shuttle knob, is a combination of a shuttle ring with an embedded jog disk. It provides wide latitude in playback control. Note that the jog/shuttle knob is active only when the NVR is in Playback mode. Please refer to Appendix F: Jog / Shuttle Control for further information.</p>

**Note:** If a USB mouse is present you can right click anywhere on screen to access a menu system replicating the features of the front panel function buttons.



# Basic Operation

## Viewing Modes

The NVR has three different viewing modes.

Press a **CHANNEL** button to view the corresponding IP camera in full-screen mode.

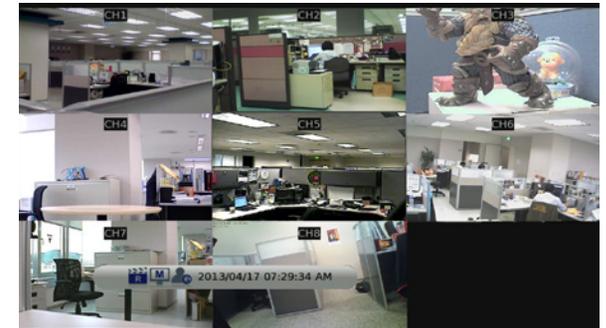
Press the **MODE** button to switch to the next available viewing modes.



1 x 1, Single Channel, Fullscreen View



2 x 2, Four Channel, Grid View



3 x 3 (9 - 1), Eight Channel, Grid View

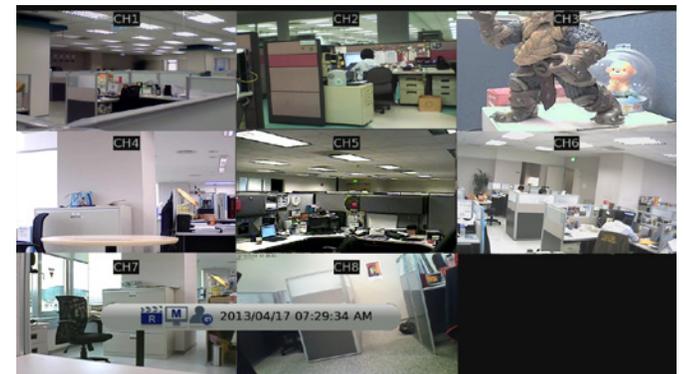
## Section 3: Front Panel Operation

By default the NVR shows the title of the channel at the top-center of the channel feed, both in full-screen mode or in multiple channel mode. To change the placement of the title please see "Camera Title Alignment" on page 15

The current operation status and date/time information will be displayed in the status bar at the bottom of the screen.

An icon displayed on the status bar shows the authority level of the account currently logged-in. If no user is logged in, the icon displayed will be a guest icon. When an account is logged in, its authority level number (1 to 8) will be shown.

Move the cursor to any status bar icon and its description will be displayed.



## Digital Pan and Zoom

Users are able to view a 2× full-screen in both live and playback mode.

To view the 2× full-screen:

- Press a **CHANNEL** key to view the corresponding camera in full-screen.
- Press **ENTER** to view 2× zoomed screen of the selected camera.

A zoom icon will appear on the status bar and a frame will appear in the bottom right of the screen identifying the portion of the view available.

To pan to a specific area within the zoomed screen, use the **Direction** keys to navigate within the frame.

Press **ENTER** again or press **ESC** to leave the Zoom mode.



## Freeze Live Video

Users can freeze the live video at any time. Press the **FREEZE** button while viewing live video and the image will be frozen immediately and a pause icon will appear on the status bar.

**Note:** The date and time information will not pause, the system clock will keep running. Press the **FREEZE** button again to resume Live monitoring in real time.



## View Recorded Video

To view recorded video, users can press the **PLAY** key directly. After pressing the **PLAY** key, the NVR will resume playback of the recorded video from the point where recording was suspended. If it is the first time using the **PLAY** key, the NVR will playback from the beginning of recording.

Alternatively, users can select records from the Search menu to playback specific video. Refer to "Search Recorded Video" on page 24 for further information.



## Key Usage in Playback

The front panel keys operate differently while the NVR is in Playback mode.

### LEFT (Reverse Playback)

Press this key to reverse the recorded video. Press the key repeatedly to increase the speed of reverse playback by 1x, 2x, 4x, 8x, 16x, or 32x.

### RIGHT (Fast Forward Playback)

Press this key to fast forward the recorded video. Press the key repeatedly to increase the speed of fast forward playback by 1x, 2x, 4x, 8x, 16x, or 32x.

### FREEZE

Press **FREEZE** to pause the video playback. When the recorded video is paused, press **LEFT/RIGHT** to single step reverse/forward video playback respectively. Press **FREEZE** again to resume video playback.

### PLAY

Press to start video playback or return to live mode.



## Pause, Playback and Single Step Forward

To pause and resume recorded video:

Press any **CHANNEL** key to view the corresponding camera in full-screen.

Press **FREEZE** to pause the current playback image.

Press **RIGHT/LEFT** Direction keys to move the video single step reverse/forward.

Press and hold **RIGHT/LEFT** keys to repeatedly reverse/forward the video single step.

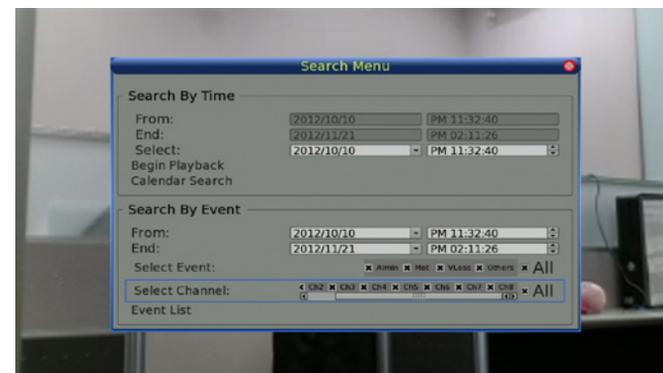
Press **FREEZE** again to resume the playback operation.



## Search Recorded Video

The NVR can search and play back recorded video by date/time, events, or text. To search by time, select a specific date and time of the wanted video or enter Calendar Search. To search by event, select the channels to display in the event list. In Live or Playback mode, press **SEARCH** to enter the Search menu.

**Note: Search By Text** only functions when a POS machine is connected and text data is stored.



## Search by Time

To search video by date and time:

Press **SEARCH** to enter the Search menu.

Move the cursor to **From** and press **ENTER** to specify the start of video playback time.

Move the cursor to **End** and press **ENTER** to specify the end of video playback time.

Move the cursor to **Select** and press the **LEFT/RIGHT** keys to choose date/time. Press **ENTER** and adjust the values by using the **UP/DOWN** keys.

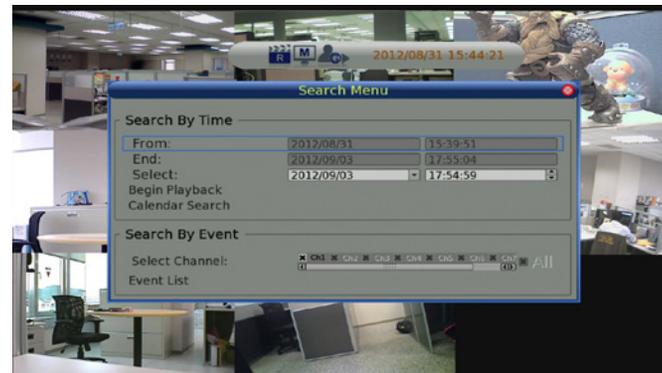
Press **ENTER** to confirm the settings or **ESC** to abort.

Move the cursor to **Begin Playback** and press **ENTER** to start playing back the selected video.

Press **PLAY** again to return to live video.

**Note:** If there is no available recorded video that matches the specified time and date, the unit will playback the next available video.

**Note:** The date/time information will be shown on the screen with a DST icon if the Daylight Saving Time function is enabled. **S** indicates summer time and **W** indicates winter time.



## Calendar Search

To search recorded video via Calendar Search:

Press the **SEARCH** button to enter the Search menu.  
Move the cursor to **Calendar Search** and press **ENTER**.

The Calendar Search window will appear.  
The Calendar Search window has four tabs to filter events **Normal** (all), **Motion**, **Alarmin** and **VLoss** (video loss). Select the appropriate tab for the event type you wish to view.

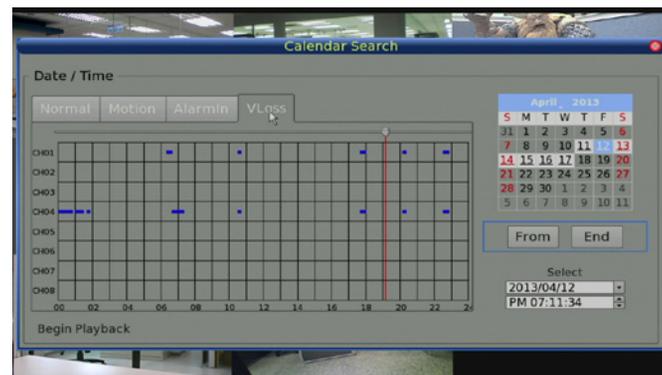
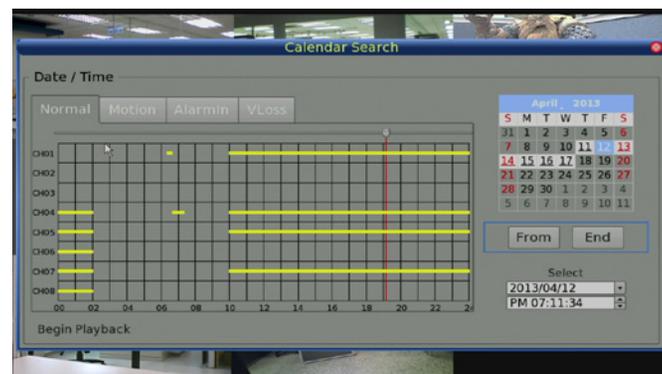
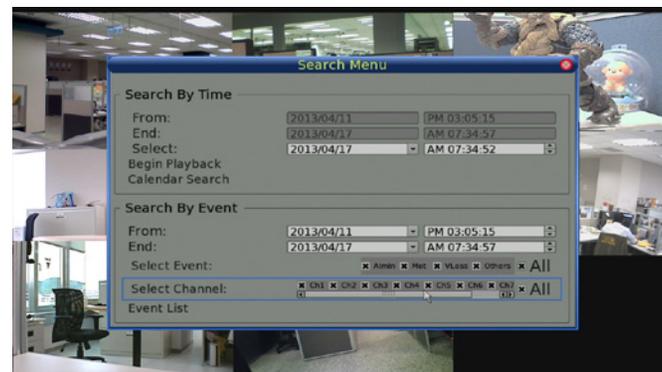
Move the cursor to year/month and press **ENTER** then press the **UP/DOWN** keys to adjust the value and press **ENTER** again to confirm.

Move the cursor and press **ENTER** to select any date shown in bold and underlined font. The bar below the calendar will change according to the recorded data of the selected date.

Select the preferred time from the time bar or alternatively, move the cursor to the time shown at the bottom. Press **ENTER** and adjust the values of hour/minute/second with the **UP/DOWN** keys.

The **From** and **End** buttons allow users to playback video from the beginning or end of the database.

**Note:** Recorded events are displayed by colored time blocks.  
Select **Begin Playback** and press **ENTER** to start playing back selected video.



## Search and Playback with the Event List

The **Event List** allows users to search for video by event. The list displays events by date, time, triggered camera and alarm type. As older events are deleted newer ones are displayed. The latest recorded event video will be listed on the top.

To search for recorded events with the Event List:

Press **SEARCH** to enter the Search menu.

To search for recorded events from a specific camera, use the **LEFT/RIGHT** keys to move the cursor and press **ENTER** to select or de-select a channel.

Move the cursor to the **Event List** and press **ENTER** to list the recorded events of the selected channels.

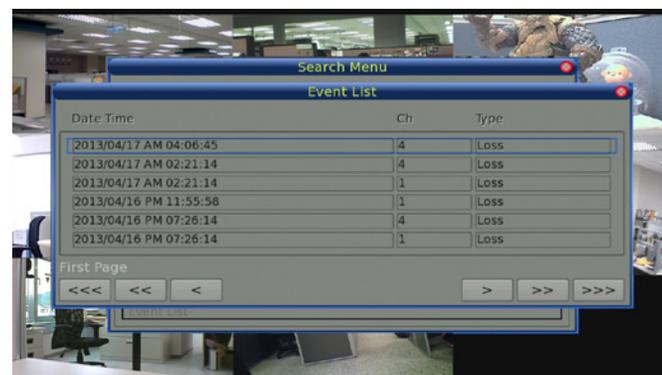
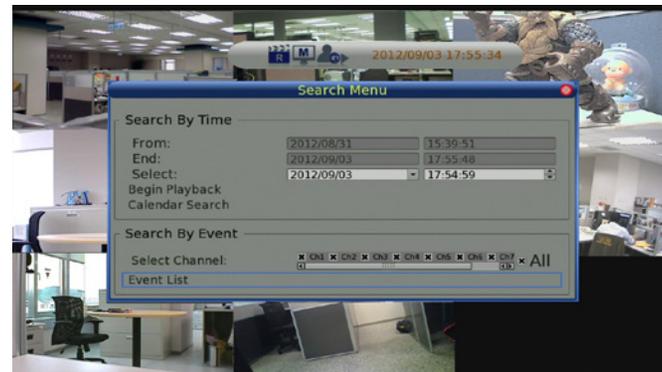
To exit the event list, press **ESC**.

To playback video from the Event List:

Press and hold **UP/DOWN** to select from the Event List.

Press **ENTER** to play back the selected event recording.

Press **PLAY** to return to Live mode.



## Panorama Search

In addition to the various search methods previously outlined, the NVR also provides users a different way to search for video of one specific channel via preview images, called panorama search.

To use panorama search:

Start to playback video of one specific channel in full-screen mode.

Press **FREEZE** and the video will be paused.

Press **MODE** once. Panorama search will start and the preview images will be in 1 second intervals, with 20 preview images displayed.

Press the **LEFT/RIGHT** keys and the previous/next 20 preview images in 1 second intervals will be displayed.

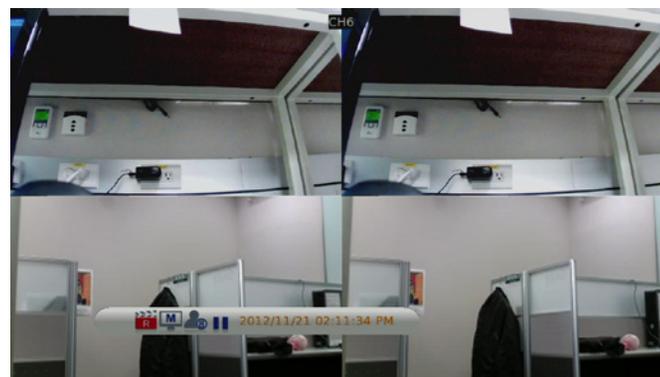
Press the **MODE** key a second time and the panorama search preview will be refreshed in 1 minute intervals.

Press **MODE** a third time and the panorama search preview will be refreshed in 1 hour intervals.

Press **MODE** a fourth time and the panorama search preview will be refreshed in 1 day intervals.

Move the cursor to the preview frame and click on it to start playback the video from the selected frame.

Press **PLAY** to return to Live mode.



## Search by Text

When a POS device is connected to the NVR, users can search for videos with text data.

There are three ways to search: **by text**, **by numerals**, or **by text and numerals**.

Additionally, a date/time and/or channel range can be specified to narrow down the query, enabling faster searches.

### **By Text:**

**Exception:** Search for video with data containing the exception string set in the OSD setup menu.

**OR:** Enter two sets of word strings. Search for videos with data containing either of the word strings.

**AND:** Enter two sets of word strings. Search for videos with data containing both of the word strings.

**Specific:** Specify one set of word string. Search for videos with data containing the specific word string.

### **By Numerals:**

**Outside The Range:** Enter two numbers to specify a range. Search for videos with data containing number(s) out of the range.

**Inside The Range:** Enter two numbers to specify a range. Search for videos with data containing number(s) within the range.

**Less Equal Than:** Enter one number. Search for videos with data containing number(s) less than or equal to the specific number.

**Greater Equal Than:** Enter one number. Search for videos with data containing number(s) greater than or equal to the specific number.

**Specific:** Specify a number. Search for videos with data containing the specific number.

## Dome Control

The NVR allows users to control a dome camera via the function keys on the front panel. In Live mode, users can press a **CHANNEL** key to display the desired dome camera in full-screen. To enter Dome Control mode, press the **DOME** key and a dome control panel will be displayed. To exit the Dome Control mode and return to Live mode, press **ESC** or **DOME**.

The Dome Control Panel buttons are listed below.

- Iris Close:** Adjust the camera's iris to a more closed position.
- Iris Open:** Adjust the camera's iris to a more open position.
- Focus Far:** Adjust the camera's focal point to a more distant point.
- Focus Near:** Adjust the camera's focal point to a nearer point.
- Zoom Out:** Zoom out the lens of selected dome camera. This function enables users to shrink the current image and a larger viewing area can be displayed.
- Zoom In:** Zoom in the lens of selected dome camera. This function enables users to enlarge a certain area.
- Preset:** This key is used to enter the Dome Preset menu to setup a certain position as a preset and go to the predetermined preset positions for viewing.
- Live:** Click on it to exit Dome Control mode and return to live full-screen viewing mode.
- Pan/Tilt Speed:** Users can select preferred pan/tilt speed.



## Section 3: Front Panel Operation

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**Direction Buttons:** Click on the buttons to pan and tilt the lens of selected dome camera.

**Auto Focus:** Click on this button to automatically adjust focus of the dome camera.



**Note:** The front panel keys can also perform the functions listed above. Please refer to "Front Panel Function Keys" on page 8 for further details of function keys.

## Set Preset Points

The NVR allows you to define a path made up of a number of preset positions. The number of preset points on a path is dependent on the dome camera manufacturer.

To set preset points:

Press a **Channel** key to view the corresponding camera in full-screen.

Press **DOME** to enter Dome Control mode. The dome control panel will be displayed.

Use the direction keys to pan/tilt the dome camera to desired position.

Click **Preset** on the dome control panel or press **CH1 key** to access the **Set/Go** Preset function.

The numeric keyboard will be displayed as below.

Input a desired preset number.

Click on the **Set Preset** button to save the position. Now the preset position is set and ready to be called.



## Call Preset Points

To call preset points:

Press a **Channel** key to view the corresponding camera in full-screen.

Then press **DOME** to enter Dome Control mode. The dome control panel will be displayed.

Click **Preset** on the dome control panel or press **CH1 key** to access the **Set/Go** Preset function.

The numeric keyboard will be displayed.

Input a desired preset number.

Click on the **Go Preset** button to call the preset point. The selected dome camera will rotate to the preset position automatically.



## Run Dome Camera Tour

Users can also display dome camera tour setup at the dome camera side.

To run display of dome camera tour:

Press a **Channel** key to view the corresponding camera in full-screen.

Then press **DOM**E to enter Dome Control mode. The dome control panel will be displayed.

Click **Pres**et on the dome control panel or press **CH1** key to access the **Set/Go** Preset function.

The numeric keyboard will be displayed.

Click on the **Run Tour** button to run the display of dome camera tour.

Press any of the **Direction** keys to end the display of dome camera tour.



## Quick Video Export through Front Panel

Using the front panel function buttons, the NVR allows users to easily export video as \*.drv files to an external device such as a USB. To export video to an external device, make sure the device is connected to the NVR.

### Export Event Video

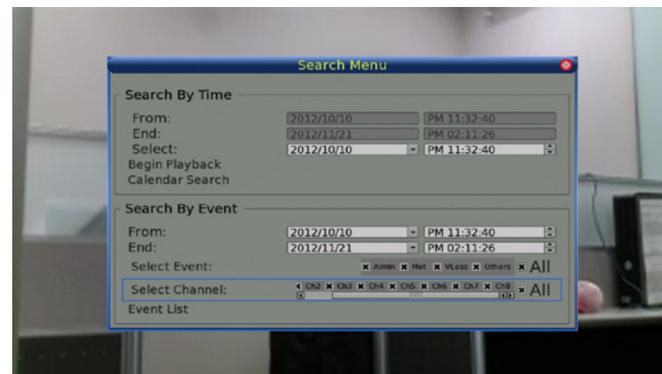
To export event video footage, follow these steps:

Press **SEARCH** and playback wanted event video. To playback event video, refer to "Search Recorded Video" on page 24.

After entering Playback mode, press **COPY**.

Press **ENTER** to start the export of the event video to the connected device; or, press **ESC** to abort.

If there is no exportable device connected to the NVR, then a warning message will be shown on the screen.



# Advanced Operation

## System Menu

The configuration of the NVR can be customized using the intuitive Graphical User Interface (GUI) On Screen Display (OSD) setup menu.

To enter the OSD menu system, press the **MENU** button and select an account to log in to and enter a corresponding password. The preset password for the administrator account **admin** is **1234**.

**Note:** It is strongly suggested to change the preset password to prevent unauthorized access to the unit.



## User Management

The NVR provides the option to create up to seven usernames and passwords with customized authority, excluding the preset admin account.

From the Main Menu, select **System, User Management**

### Password Protection

Select **On** to enable the username and password functions listed in the Authority Setup menu, or select **Off** to allow free access.

### Account Setup

Use this option to setup a customized account, password, and privilege level. The account is case sensitive. The privilege levels rank from level 1 to 8, where level 8 has highest privilege. Alternatively, select **Disable** to stop using the account. A second password can also be specified, if required.

**Note:** The username and privilege level of the preset administrator account **admin** cannot be changed.

### Permission Setup

Use this option to setup the authority level for accessing the functions listed in this menu. The functions include: Playback/Search, Hidden Camera, Dome Control, Export Data, Menu Access, System Setup, Monitor Setup, Camera Setup, Record Setup, Sequence Setup, Event Setup, Database Setup, Configuration, PoE Setup, and Shutdown.

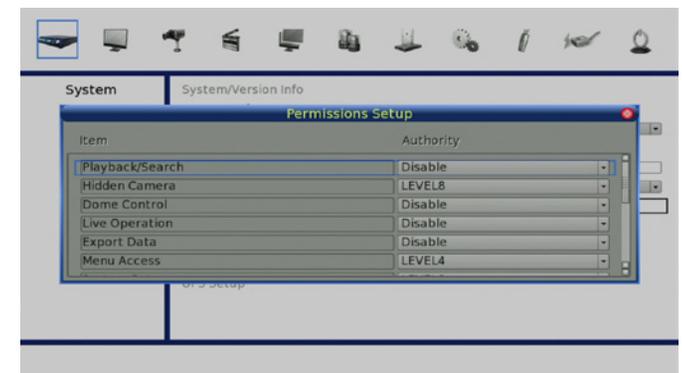
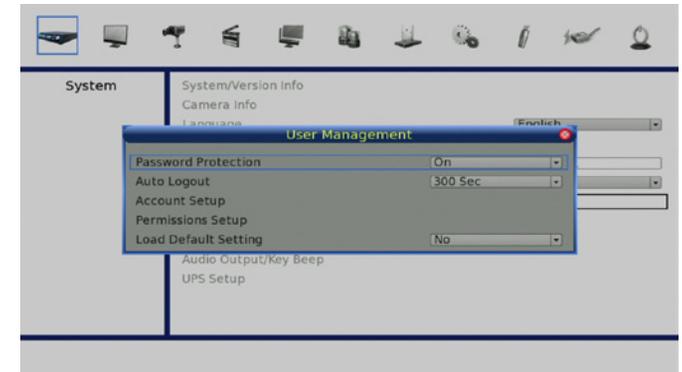
The privilege levels rank from level 1 to 8, where level 8 has highest privilege. Alternatively, select **Disable** to allow free access.

**Note:** The **Menu Access** cannot be set to **Disable**.

When the account does not have authority to access certain functions, an error message will be displayed on the screen.

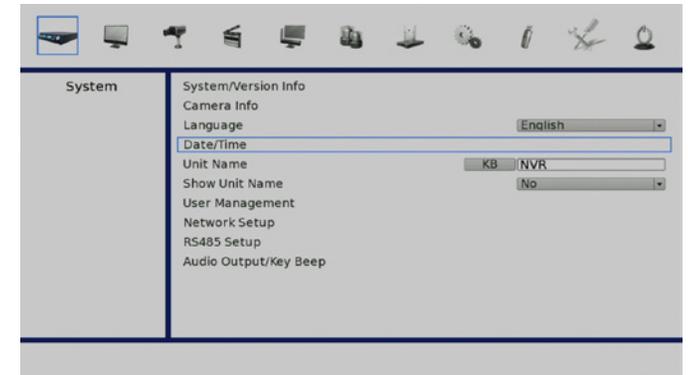
### Load Default Setting

Select **Yes** to restore the default settings.



## System Date / Time Setting

Users can set the current date, time and other OSD parameters in Date/Time menu (under System setup menu). The login account should have authority to access the System setup menu. In OSD setup menu, select **System** and press **ENTER**, then select **Date/Time** to access the Date/Time menu.



## Set Date/Time

### Set Date/Time

Select **Date** or **Time** and press **ENTER** for adjusting the settings. **LEFT/RIGHT** keys are used to move the cursor to previous or next field, **ENTER** is for selecting, and **UP/DOWN** are used to change the value in the selected field.

**Note:** The new date/time setting will only apply to newly recorded video. The date and time of previously recorded video will not be changed.

**Note:** If time settings have to be changed, it is strongly recommended to format the HDDs to avoid database corruption.

### Date/Time Display

You can set the time to be displayed in 1 row or 2 rows. Use the **UP/DOWN** keys to change the setting.

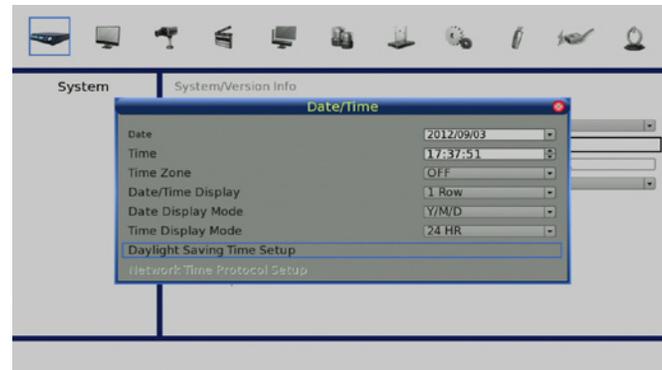
### Date Display Mode

This function allows you to set the display type of the date. There are three options to select from: **Y/M/D**, **M/D/Y**, or **D/M/Y**. **Y** represents **Year**, **M** represents **Month** and **D** represents **Day**.

Move to the date item you wish to change and press **ENTER**, the selected item will start blinking. Use **UP/DOWN** keys to change the setting.

### Time Display Mode

User can set the time format to **12 HR** or **24 HR**. Use the **UP/DOWN** keys to change the format.



## Daylight Saving Time

### Daylight Saving Time

The item is for people who live in regions that observe Daylight Savings Time. Select **On** to enable, or **Off** to disable the function.

If the function is disabled, the **DST Start/End** time and **DST Bias** will be grayed out and cannot be accessed.

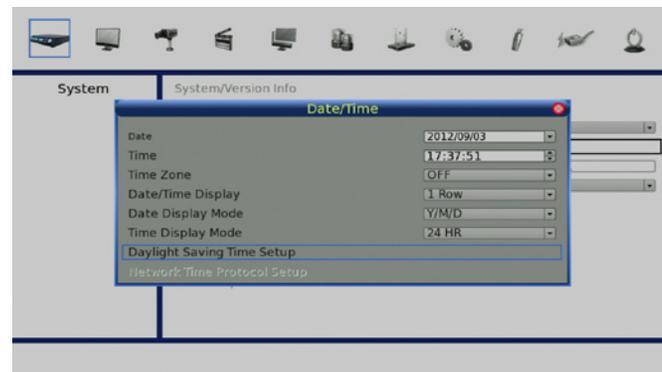
**Note:** If this function is enabled, the date/time information will be shown on the screen with a DST icon when playing back recorded video or searching video in the event list. **S** indicates summer time and **W** indicates wintertime.

### DST Start/End

Use this option to set the daylight saving duration. Use **LEFT/RIGHT** keys to move the cursor to the next or previous field, use **UP/DOWN** to change the settings in the selected field.

### DST Bias

This option enables you to offset the amount of time required for daylight saving time. The available options are in minutes.



## Network Time Protocol Setup

### Time Zone

Select **Time Zone** to enter the time zone. To find out the correct local time zone, please visit [www.greenwichmeantime.com](http://www.greenwichmeantime.com) or refer to the adjacent diagram.

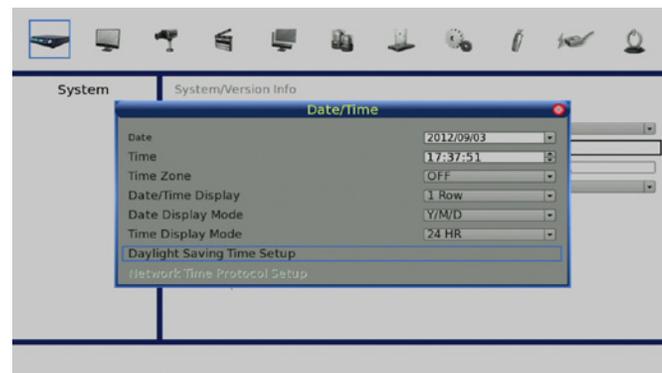
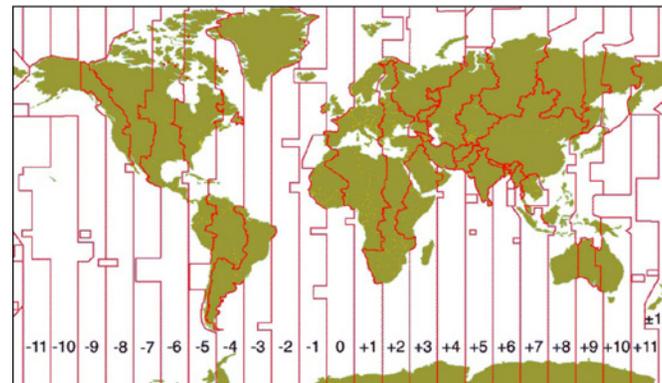
**Note:** The **Time Zone** must be set to the correct local time zone or the **Network Time Protocol Setup** will not be accessible.

### Network Time Protocol Setup

After entering the time zone, the **Network Time Protocol Setup** option will appear. Select the **Network Time Protocol Setup** to set the NTP server. The default NTP server is `time.nist.gov`. A list of alternative IP addresses for NTP servers is listed below.

- 129.6.15.28
- 129.6.15.29
- 132.163.4.101
- 132.163.4.102
- 132.163.4.103
- 128.138.140.44
- 192.43.244.18
- 131.107.1.10
- 69.25.96.13
- 206.246.118.250
- 208.184.49.9
- 64.125.78.85
- 207.200.81.113
- 64.236.96.53
- 68.216.79.113

After the time server is set, select **Yes** for **Manually Time Sync** to sync the time immediately. The time sync can also be updated periodically. Select **On** for **Automatically Time Sync**, and the time will be automatically synced once every hour.



## Network Setup

### Dynamic DNS

Dynamic Domain Name System (DDNS) allows a DNS name to be constantly synchronized with a dynamic IP address. This allows you to use a dynamic IP address while associated to a static domain name so others can connect to it by name.

Enable this option only if you have purchased a domain name and registered with a dynamic DNS service provider. The following parameters are available for configuration:

**Server Address:** Select a dynamic DNS service provider from the pull-down list.

**Host Name:** Enter your host name. For example: myhost.mydomain.net.

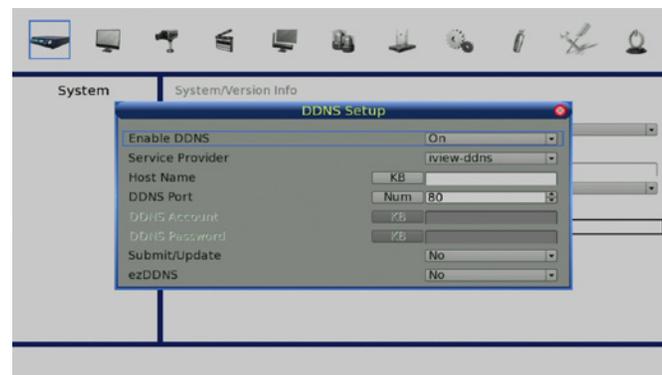
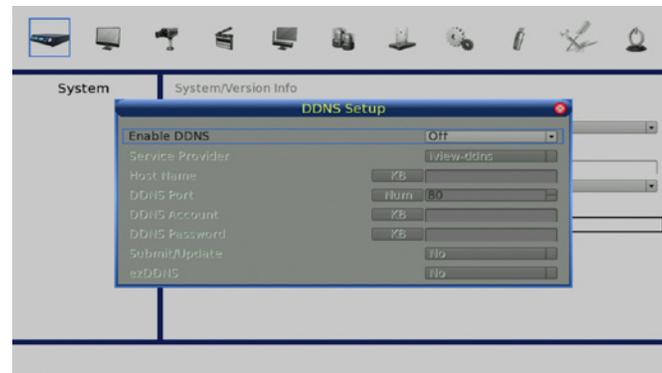
**DDNS Port:** Enter the port for DDNS traffic

**DDNS Username:** Enter the username provided by your service provider.

**DDNS Password:** Enter the password provided by your service provider.

**Submit/Update:** Select yes to submit changes to the DDNS settings.

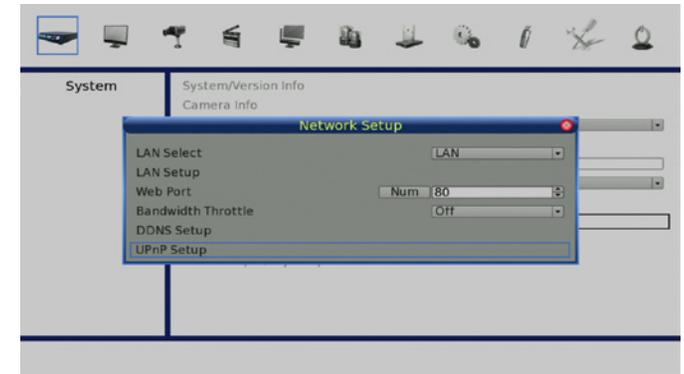
**EZDDNS:** Enables users to register for the host name automatically.



## UPnP Function

UPnP is the abbreviation for Universal Plug and Play, which is a technology that integrates a universal protocol for widespread plug-and-play devices to ease the network implementation. When a PC and the NVR have both installed the UPnP function, the PC can automatically recognize the NVR in the same local area network.

The advantage of this is that PCs can connect to the NVR via the remote control software by directly clicking on the icon representing the NVR in **My Network Places** folder.

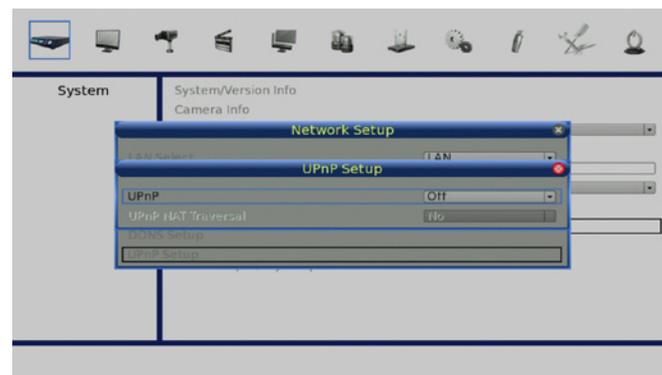
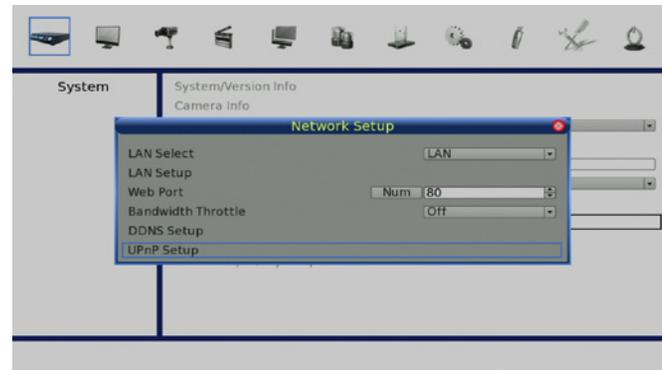


## UPnP NAT Traversal Function

The UPnP NAT traversal function helps to automatically configure router settings where the NVR connects to the internet via a router.

When a PC connects to an NVR in a different local area network, a real IP address and corresponding port number are required. Where the NVR is behind a router, communications between the PC and the NVR will need to be transmitted via the router. The router will need to have port mapping (forwarding) setup before images from the NVR can be remotely viewed on the PC. For each individual NVR, this setting would need to be done on an individual basis.

Fortunately, if the NVR has UPnP NAT traversal function enabled, these settings can be made automatically. Select **Yes** in the UPnP setup menu to allow automatic UPnP NAT traversal.



## Monitor Menu

The Monitor menu allows you to configure how the various display features appear.



**Show Camera Name:** Click on the buttons to pan and tilt the lens of selected dome camera.

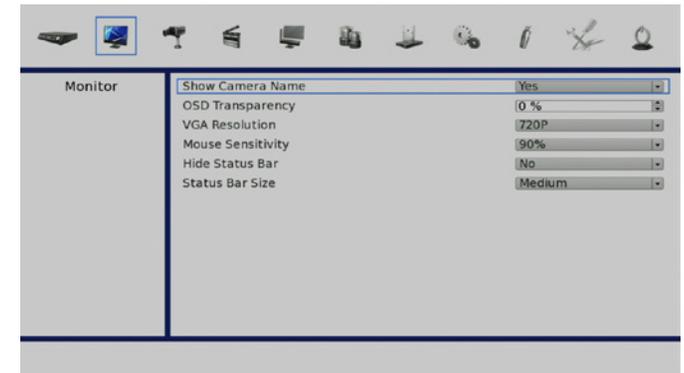
**OSD Transparency:** Choose a percentage value to determine the opacity of the On Screen Display.

**VGA Resolution:** Select the output resolution appropriate for the connected display.

**Mouse Sensitivity:** This setting will adjust the speed which a connected USB mouse cursor will move across the screen.

**Hide Status Bar:** Turn the Status Bar on or Off.

**Status Bar Size:** Select the size of the Status Bar.



## Camera Menu

This section details the options available for connecting and configuring IP cameras.

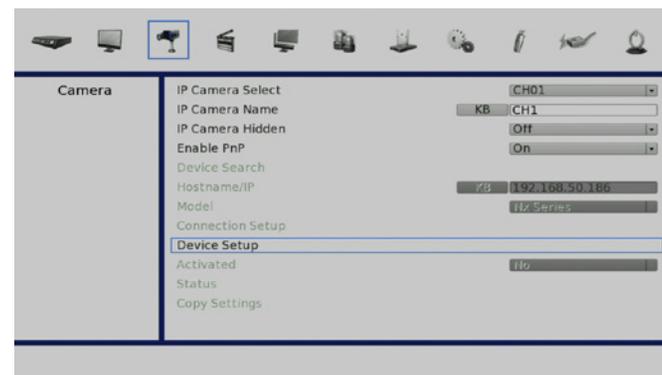


## Section 4: Advanced Configuration

When an IP camera is connected using the PoE ports, settings for that camera will be automatically retrieved if the PoE PnP function is enabled.

**Note:** Go to **PoE Setup PoE PnP** to enable the PoE PnP function.

**Note:** If the IP camera is already activated, the options **Device Search**, **Hostname/IP**, **Connection Setup**, and **Copy Settings** will be grayed out and cannot be accessed.



### IP Camera Name

Use this option to enter the name of the IP camera to be shown on the monitor.

### IP Camera Hidden

If you want to hide the feed from an IP camera, select **On**.

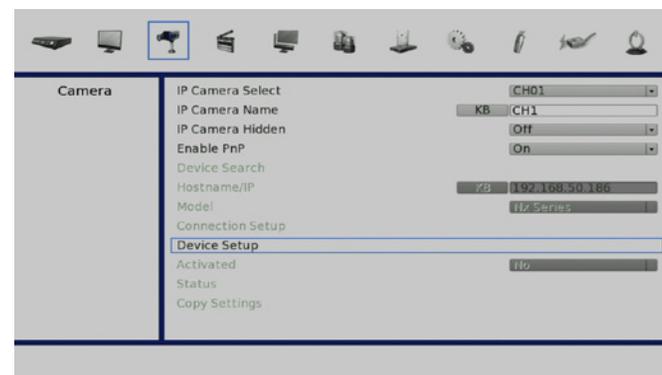
**Note:** the display in the remote monitoring software will also be hidden. Select **Off** to restore the live image to be shown on the monitor.

### Device Search

Select this option and press **ENTER** to automatically search for IP cameras installed on the same LAN as the NVR. If the IP cameras are ONVIF compliant devices, **Brand Name/Onvif** will be shown under the **Brand** column.

### Hostname/IP

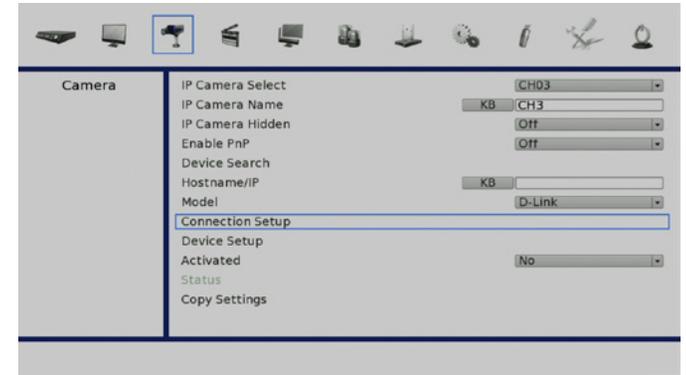
Access this item to enter the hostname or IP address of the IP camera, for example 192.168.1.123.



## Connection Setup

Enter **Connection Setup** to configure the connection and data transmission settings for a connected IP Camera.

**Note:** You will need to set **Enable PnP** to **Off** to access all the configuration options.

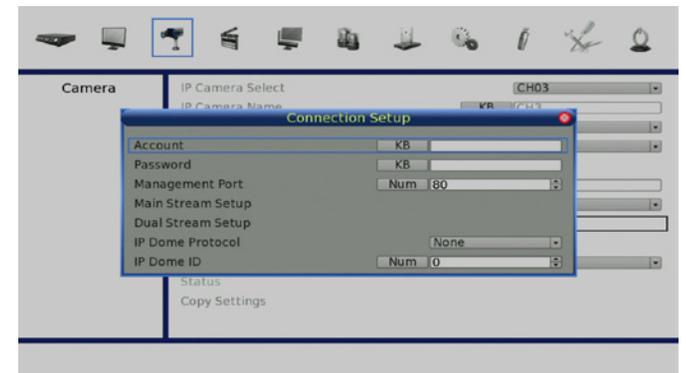


### Account/Password

Use these two options to enter a valid account name and password of the connected IP camera.

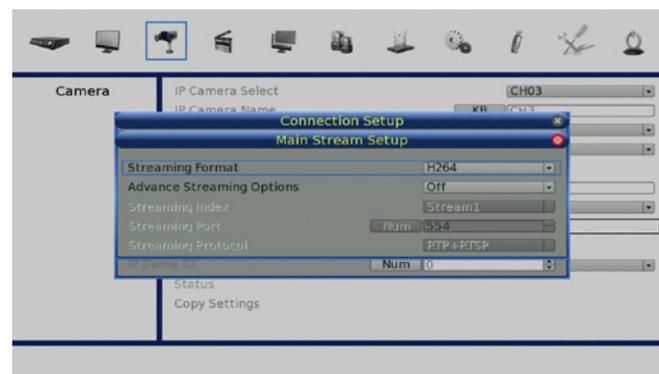
### Management Port

Use this option to set the default port of the IP camera.



### Main Stream Setup

Under this menu, users can setup configuration for the main stream. First choose the streaming format from **H264**, **MJPEG**, or **MPEG4**. If you need to setup a streaming index, port, and protocol manually, set **Advance Streaming Options** to **On** and select your preferred values from the corresponding menu items. Otherwise, leave **Advance Streaming Options** set to **Off** and the NVR will autoconfigure these settings.



### Dual Stream Setup

Under this menu, you can setup configuration for dual streams. First set **Dual Streaming Support** to **Yes** and continue through the rest of the settings. If you wish to record the dual stream, select **Yes** next to **Dual Streaming Recording**. The remaining items are the same as in **Main Stream Setup**.

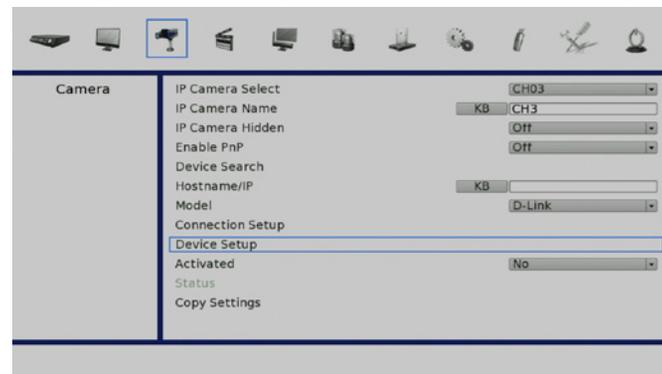
**Note:** If the connected device is an IP DomeCamera, then select an appropriate IP Dome Protocol from the provided options and setup its Dome ID.



## Device Setup

Enter **Device Setup** to configure the basic settings for an IP camera. The basic settings include the IP camera's product name, image quality, and image adjustment. Set the item **Apply** to **Yes** to apply the changes.

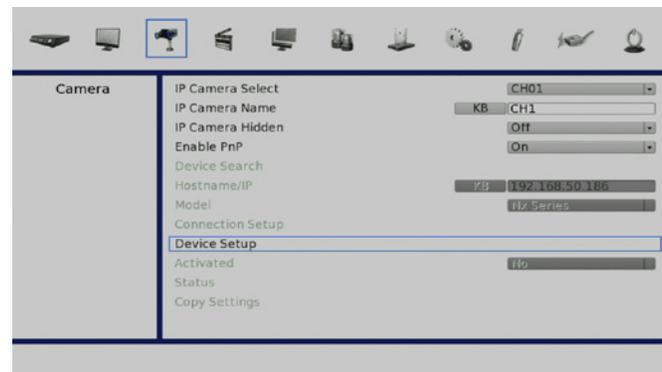
**Note:** The **Device Setup** menu may have fewer or more menu items according to different IP camera models.



## Activated

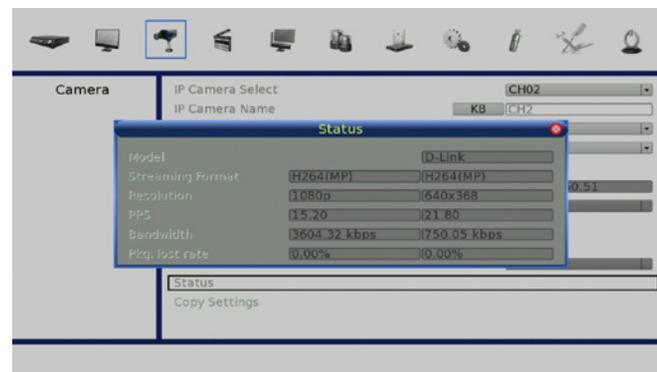
Select **Yes** to activate the connection to the IP camera. To deactivate the connection, select **No**.

**Note:** Once the connection to the IP camera is activated, menu items **Device Search**, **Hostname/IP**, **Connection Setup**, and **Copy Settings** will be grayed out and cannot be accessed.



## Status

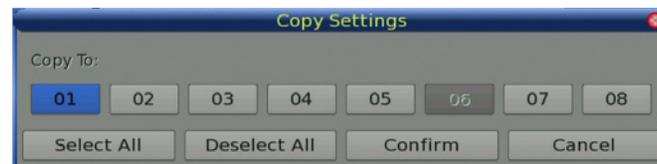
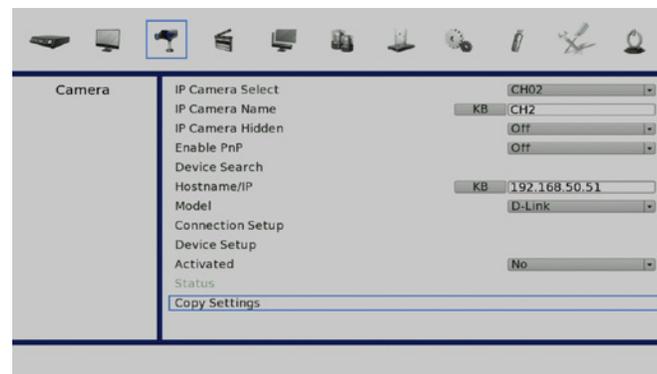
After the connection to the IP camera is activated, users can check the connection status.



## Copy Settings

This item allows users to copy the settings set on the currently selected IP camera to any other IP cameras. Enter this menu and select one or more cameras to copy the settings to. Then select **CONFIRM** to apply the settings.

**Note:** If an IP camera is already activated, it will be greyed out and cannot be selected.



## Record Menu

The Record setup menu allows users to set the recording quality, recording schedules, and other recording parameters. In the Main menu, move the cursor to **Record** and press **ENTER**



## Record Schedule / Quality Setting

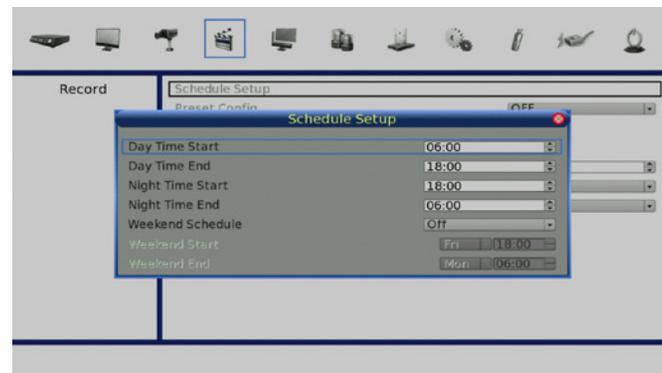
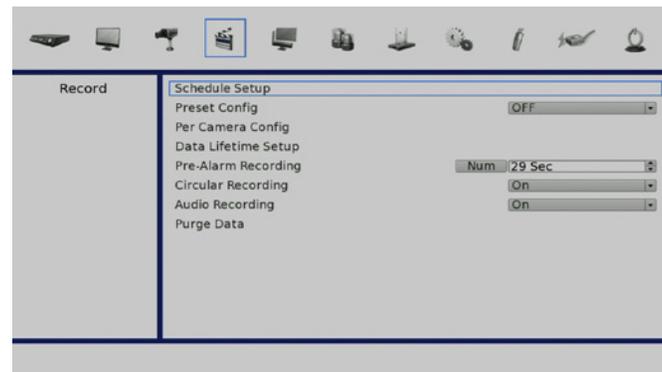
### Schedule Setup

The Schedule Setup is used to set the day time, night time, or weekend recording schedule. Select **Schedule Setup** from the Record setup menu and press **ENTER** to make appropriate changes of the start time of Day and Night Time using Direction keys.

Press **ENTER** to confirm the settings or **ESC** to cancel.

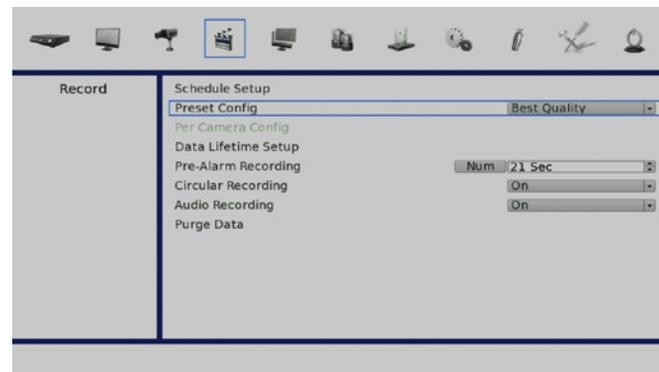
If a weekend recording is required, select **On** to enable the Weekend Schedule in advance and then set the Weekend Start/End time.

Press **ESC** to return to previous page.



## Preset Record Configuration

The **Preset Config** is used to select the preset recording quality and frame rate. In normal circumstances, it is strongly recommended to set the preset configuration as **Best Quality**.



## Per Camera Configuration

This function is used to set the Day/Night/Weekend PPS (Picture per Second) and Quality for each channel. The Preset Configuration must be set to **OFF** for accessing these schedules.

First, select the Camera required for configuration. The image and recording settings from the selected camera will be shown on the screen.

Move the cursor using Direction keys and press **ENTER** to select an item.

Change the value using **UP/DOWN** keys.

Press **ENTER** to confirm the settings or **ESC** to abort.

Press **ESC** to return to Record setup menu.



## Record Event Video Only

If the NVR is required to record only in response to a trigger, follow the steps below:

Enter the OSD setup menu with an account with appropriate authority.

In the OSD setup menu, select Record menu. Move the cursor to the item **Preset Config**, and select **Event only**.

Refer to "Preset Record Configuration" on page 54, Section Preset Record Configuration for further information.



## Data Lifetime Setup

Data Lifetime indicates the duration that a video is saved and recallable in the HDD. Only video recorded within Data Lifetime will be displayed on the screen and played back. Video recorded outside of Data Lifetime will be hidden and cannot be retrieved for playback.

**Note:** To play back a video exceeding the data lifetime, please extend the duration until the recording data/time of the video is included.

### Data Lifetime Mode

This item allows the user to choose preferred data lifetime mode. There are three types of data lifetime mode: General, By Day, and By Channel. When a specific mode is selected, further settings of the other two items below will be grayed out and cannot be accessed.

### Data Lifetime

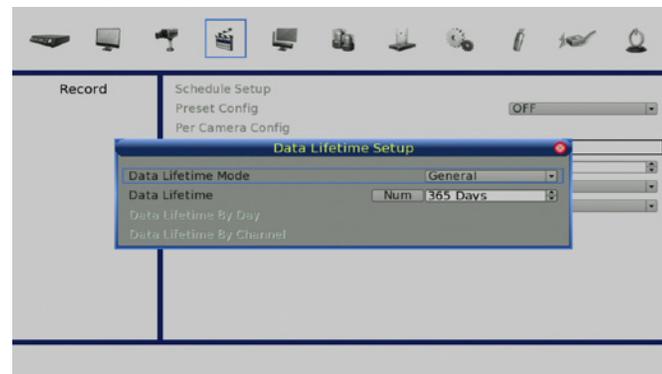
When data lifetime mode is set to **General**, this item will be accessible. Press **ENTER** to select this item and press **UP / DOWN** keys to set the data lifetime. The value ranges from **1** to **365** days. Alternatively, select **0** to disable this function.

### Data Lifetime By Day

When data lifetime mode is set to **By Day**, this item will be accessible. Enter this menu and users can setup data lifetime of each weekday independently. The value ranges from **1** to **365** days. Alternatively, select **0** to disable this function.

### Data Lifetime By Channel

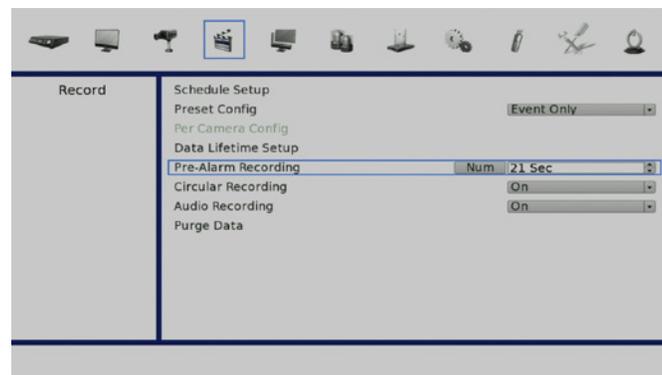
When data lifetime mode is set to **By Channel**, this item will be accessible. Enter this menu and users can setup data lifetime of each channel independently. The value ranges from **1** to **365** days. Alternatively, select **0** to disable this function.



## Pre-Alarm Recording

This options enables the setting of a recording duration before an alarm trigger is received. The pre-alarm recording function aims to allow users to playback video of a complete event. This enables you to playback video recorded from immediately before the alarm is triggered.

When an event is triggered while normal recording is in effect, the unit will start copying the pre-alarm and the post-alarm video to the event video. The pre-alarm duration can be set from 0 to 70 seconds. The quality of the pre-alarm video is the same as the quality setting for normal record video; and the quality of the post-alarm video is the same as the quality setting for event record video.

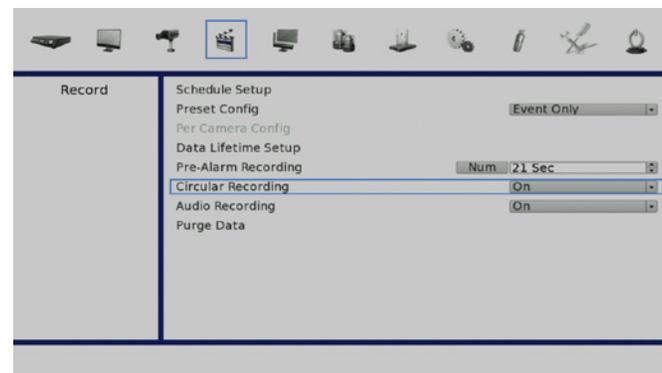


## Circular Recording

You can choose to record video in either a circular mode or in a linear mode. If circular mode is selected, the NVR will store new video overwriting the oldest recordings.

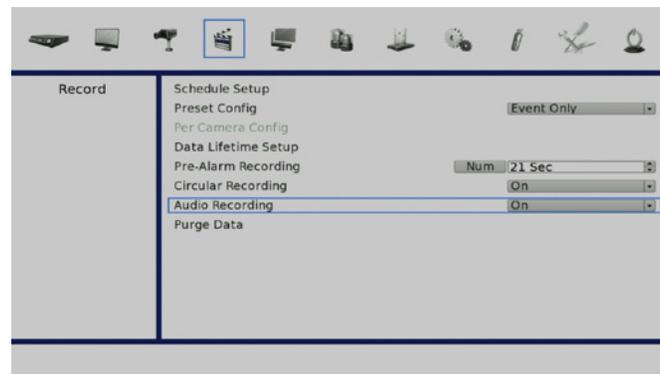
Alternatively, if linear mode is selected, the NVR will stop recording when the HDD is full. In the meantime, the internal buzzer will start beeping and an alert icon will be shown on the status bar to inform users that the disk is full.

From the Record setup menu, move the cursor to **Circular Recording** and press **ENTER**, then select **ON/OFF** using the **UP/DOWN** keys.



## Audio Recording

This option allows you to enable or disable the Audio recording function of the unit. When it is set to **On**, audio input is recorded and saved with the video. When it is set to **Off**, audio is not recorded.



## Purge Data

This option is used to delete the Normal or Event video recordings. In Record setup menu, move the cursor to Purge Data and press **ENTER**.

### Purge All Event Data

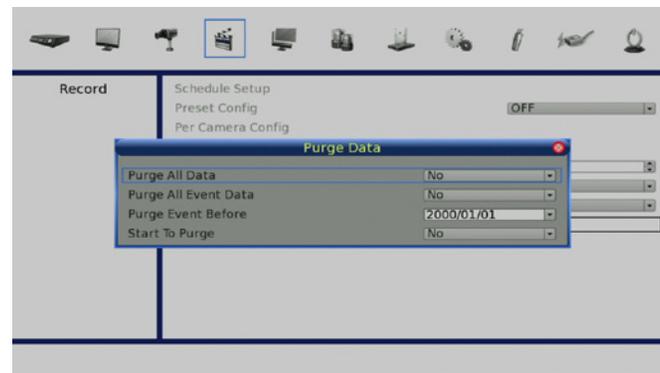
Use this option to delete all video events from the database(s). Use the **UP/DOWN** keys to select **Yes** and start the deletion by setting **Start To Purge** to **Yes**.

### Purge Event Before

Use this option to delete video events from before a specific date. Use the **LEFT/RIGHT** keys to move the cursor to next or previous field, **ENTER** to select the item and **UP/DOWN** to adjust the value.

### Start To Purge

After the videos to be deleted are selected, set this item to **Yes** to start the deletion or choose **No** to cancel.



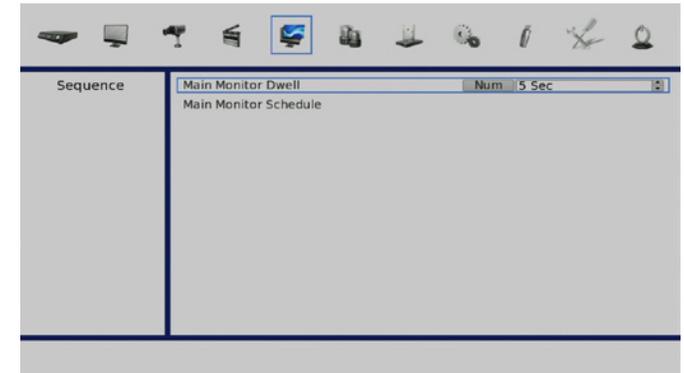
## Sequence Menu

This section describes sequence mode using the Main Monitor. The sequence functions can avoid manual backtracking and provides more flexibility while monitoring recordings. Automatic sequence functions can be used in any of the viewing modes. Select a viewing mode and press **SEQ** to toggle the automatic sequence. Press **SEQ** again to stop.



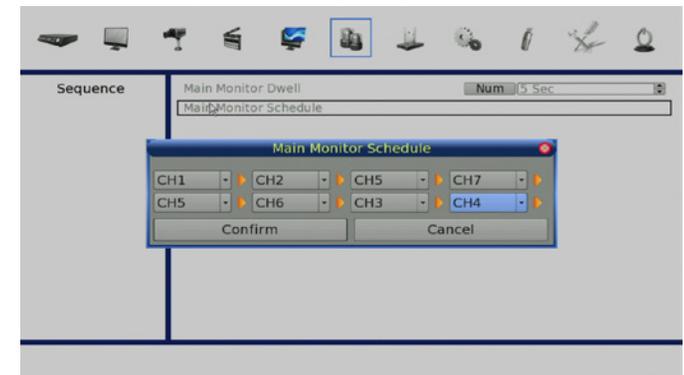
### Main Monitor Dwell

Use this option to determine how long a camera will rest at a pre-determined position. Use the **UP/DOWN** keys to select a value and press **ENTER** to confirm the selection.



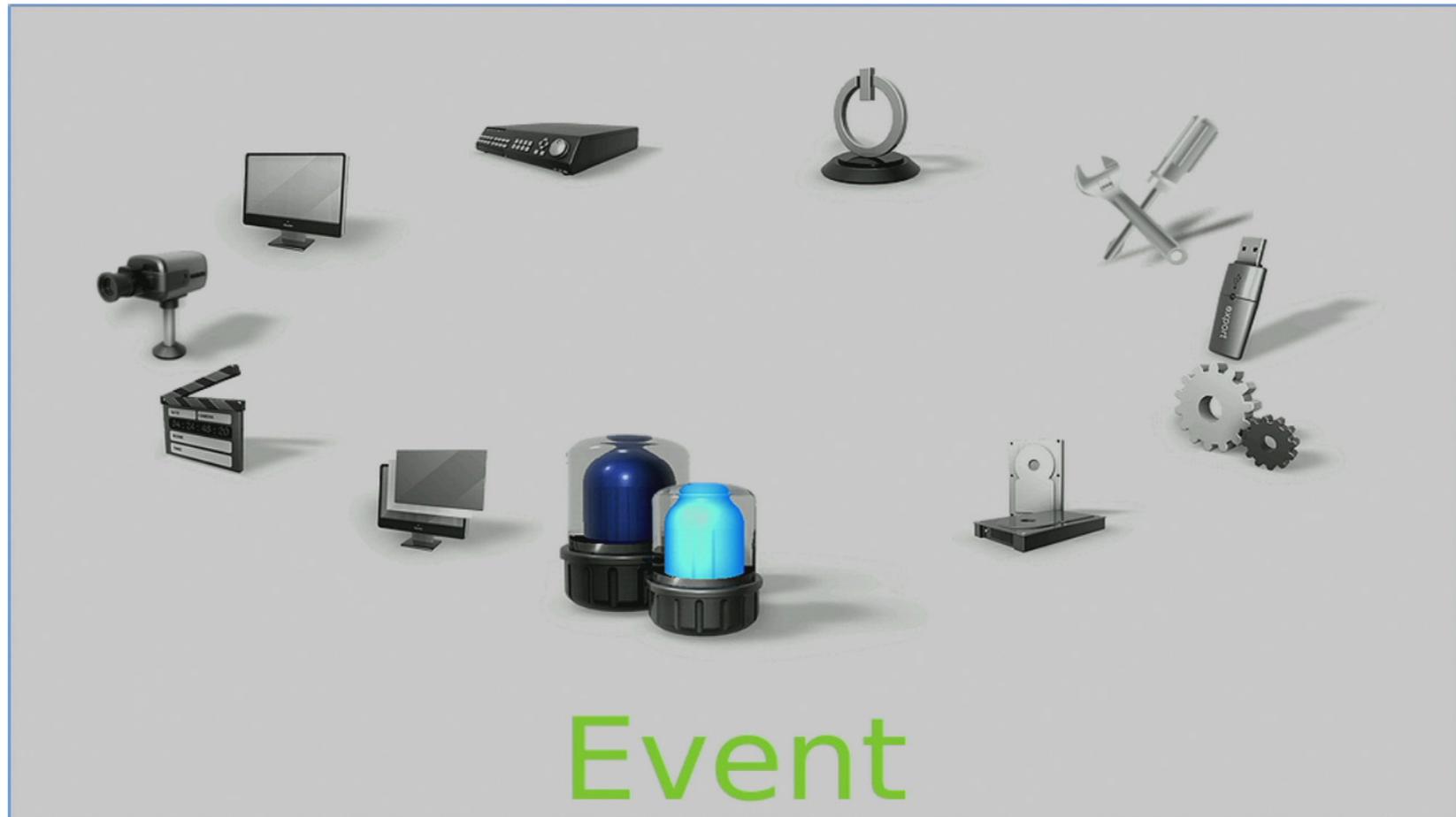
### Main Monitor Schedule

Use this option to determine the order in which the main monitor will display the camera channels. The channel at the left of the top row is the first to be displayed. The channel on the right of the bottom row is the last.



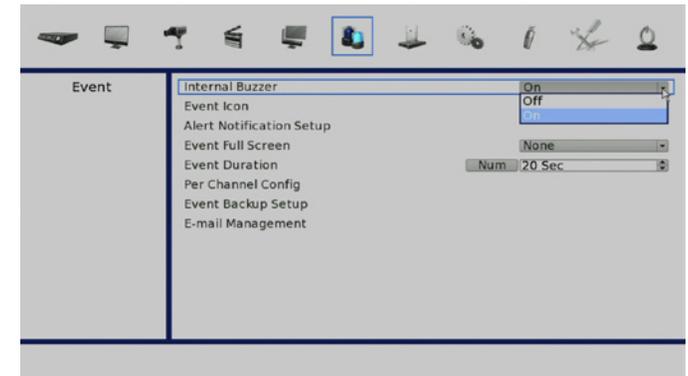
## Event Menu

This section outlines the options of for event based recording, you can create up to 3 event sets with their own settings.



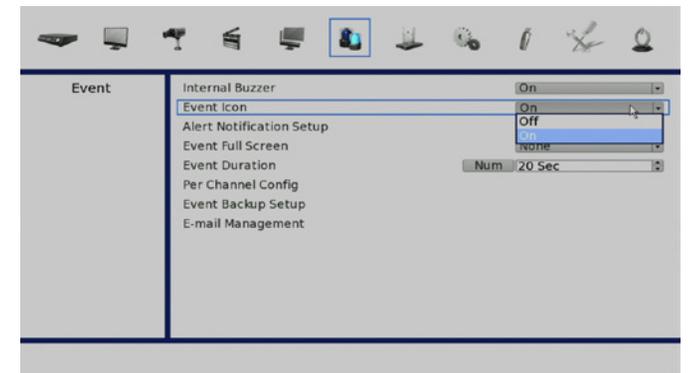
### Internal Buzzer

Use this option to toggle the NVR's internal Buzzer On or Off.



### Event Icon

Use this option to toggle the Event Icon notification on the Status Bar On or Off.



### Alert Notification Setup

Use this option to configure the Event Notification parameters.

The Configurable parameters are:

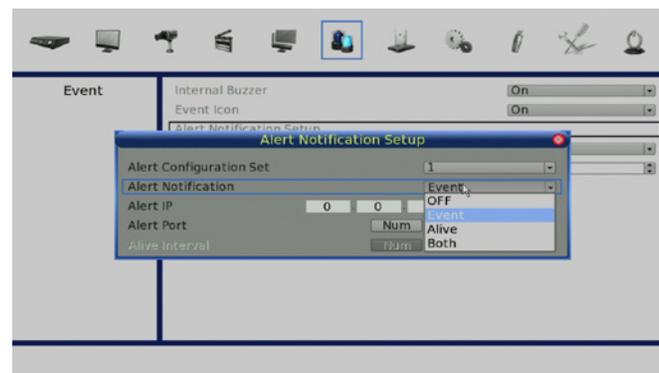
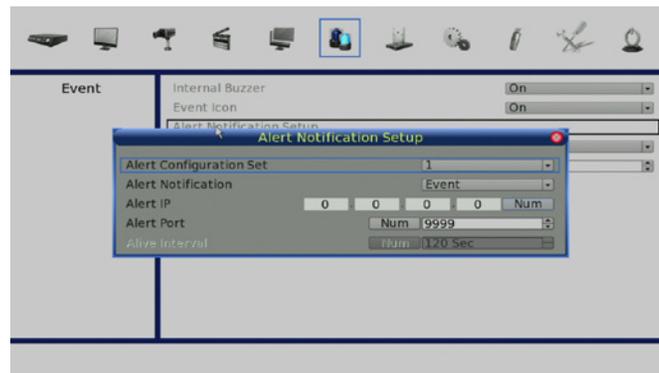
**Alert Configuration Set:** Create up to 3 sets of event which will trigger notification.

**Alert Notification:** Select the type of events which will trigger notification.

**Alert IP:** Enter the IP address which will receive the event notification alert.

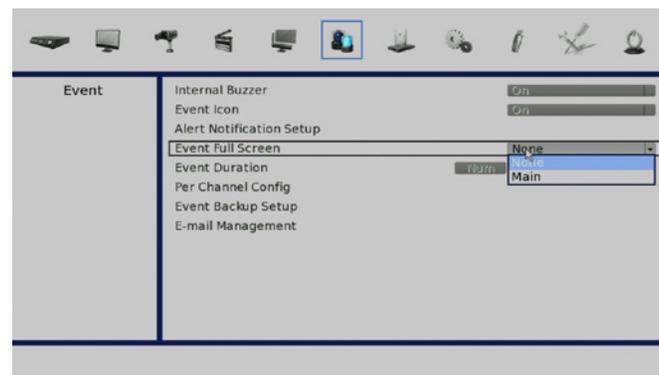
**Alert Port:** Enter the Port at the IP address which will receive the event notification alert.

**Alive Interval:** Use this option to determine how long a notification should remain active.



### Event Full Screen

Use this option to determine if an event should be shown on the Main Display.

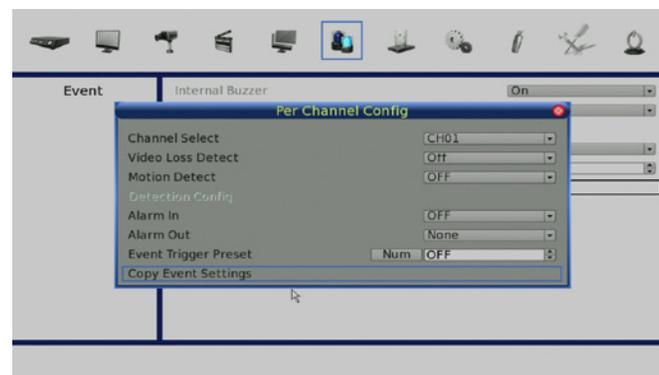


### Event Duration

Use this option to determine how long an event should be recorded.

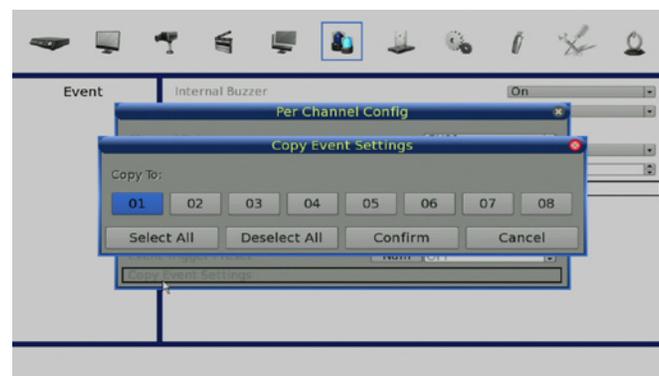
### Per Channel Config

This option enables a user to specify parameters for event notifications in a granular fashion on an individual channel basis.



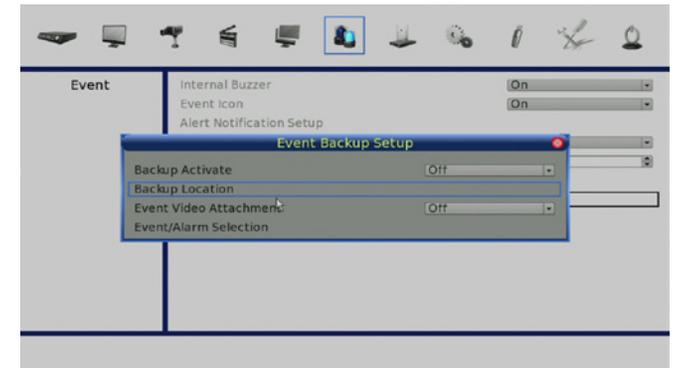
### Copy Event Settings

This option enables a user to copy the settings previously configured to another.



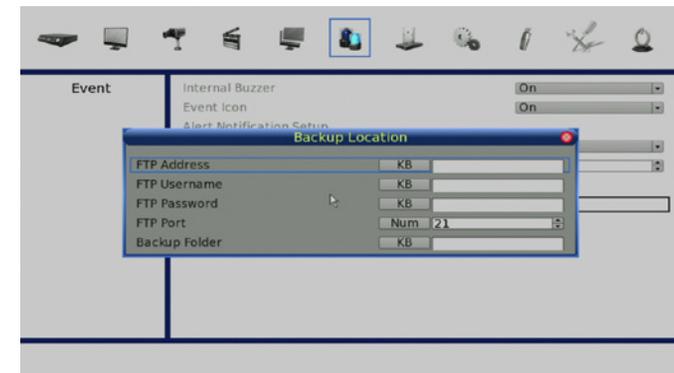
### Event Backup Setup

Use this option to configure the Event Back up parameters.



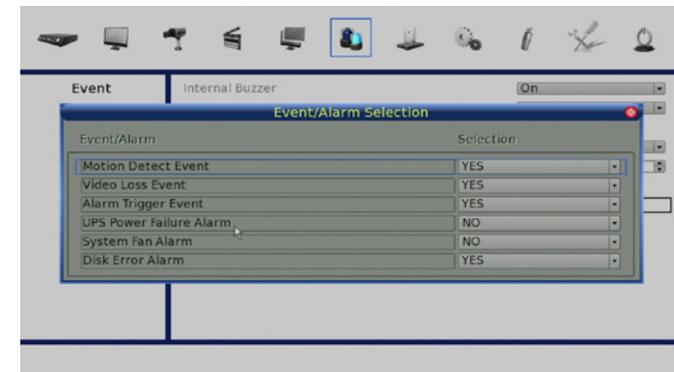
### Backup Location

This feature enables you to configure automatic back up of recorded video to an FTP site.



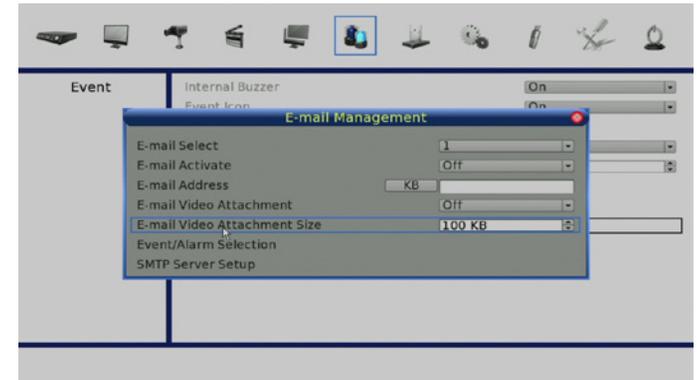
### Event/Alarm Selection

This option enables a user to which type of events and alarms will be recorded to back up.



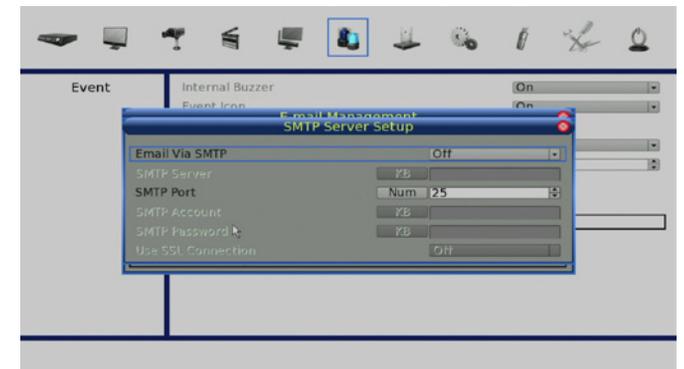
### E-mail Management

This feature enables you to configure the parameters for automatic E-mail notification.



### SMTP Server Setup

Enter the configuration for the target e-mail server account.



## Database Menu

This section outlines the user configurable options for the NVR's Disk and Data management.



**Total Size:** Displays the total size of the Internal Hard Disk(s)

**Free Size:** Displays the disk space available for recording, and the recording mode.

**Avail. Rec. Time:** Displays the amount of time left in the space available for recording.

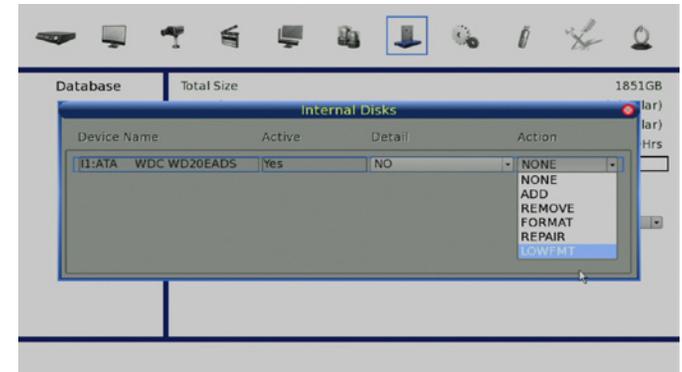
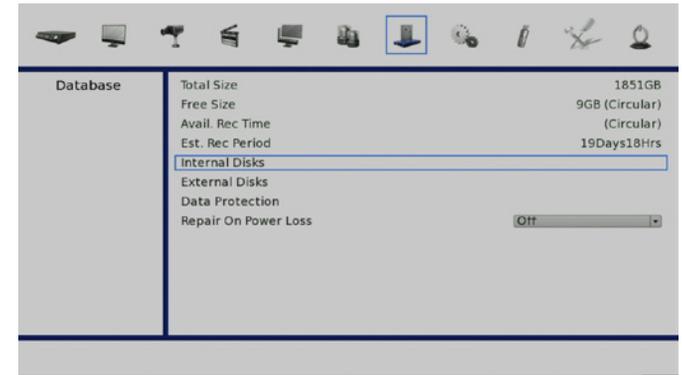
**Est. Rec. Period:** This is an estimate of the total amount time that can be recorded on the space given.

**Internal Disks:** This option allows the user to add, remove, format, repair and low level format internally installed disks.

**External Disks:** This option allows the user to manage externally attached disks.

**Data Protection:** This option enables the user to manage the stored data records individually.

**Repair on Power Loss:** See "Repair on Power Loss" on page 68 for more detail on this function.



## Repair on Power Loss

If the NVR finds a file system error while recording, the NVR will reboot and an HDD auto scan will be initiated. If the auto scan fails, the HDD will need to be formatted.

**Note:** If you wish to initiate HDD auto scan function following an abnormal power loss, enter the OSD setup menu via an authorized account and access **Database** to set **Repair On Power Loss** to **On**. An HDD auto scan will be initiated every time the NVR powers on following a power loss or if there is file system error.

The following options are available for the auto scan process.

**Skip Auto Scan:** During the scanning process, users can press any key to skip the process.

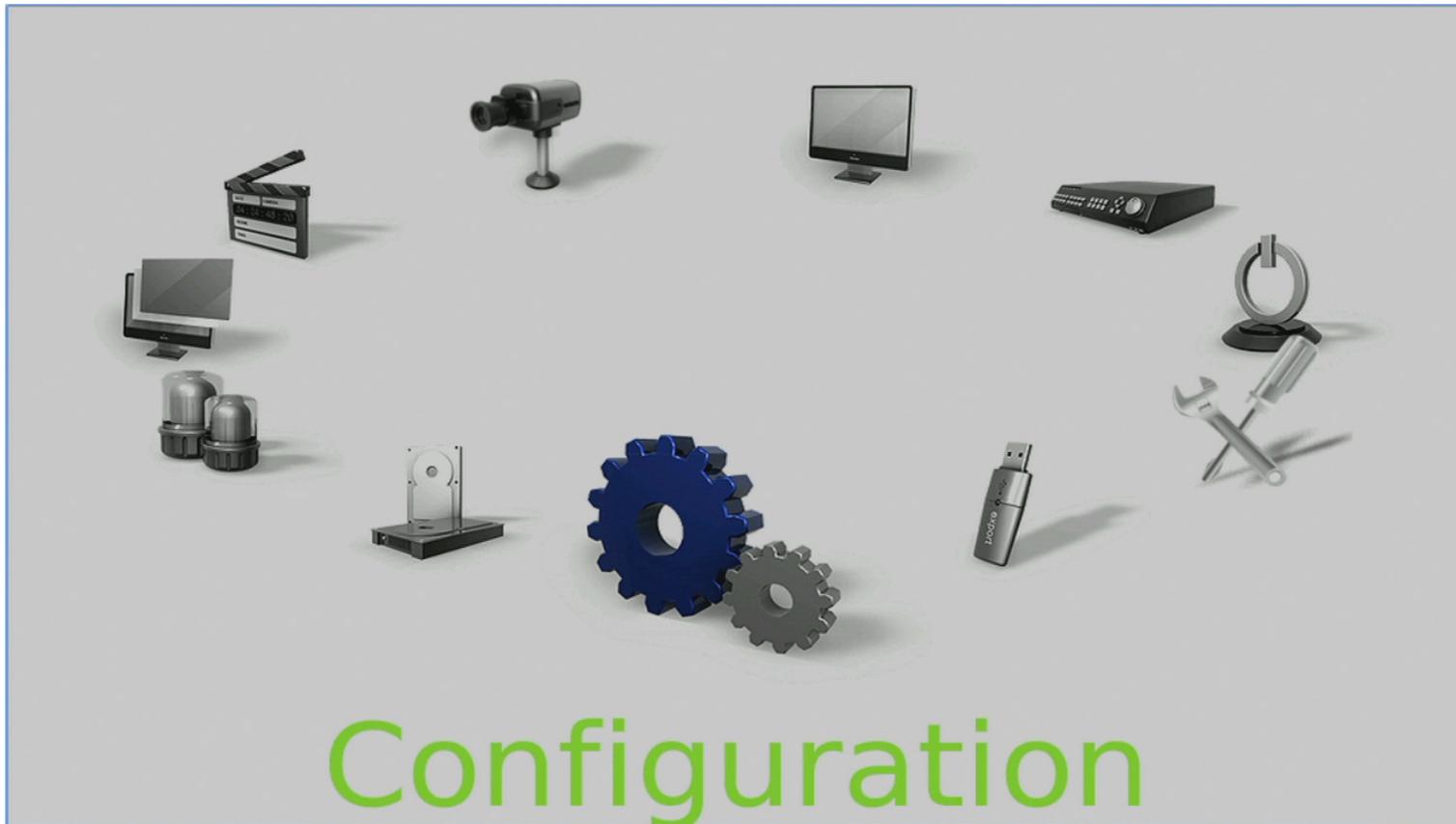
**Time Expired:** If the scanning exceeds a predetermined period of time (3hrs for 1TB HDD, 6hrs for 2TB HDD, etc), the scanning process is treated as failed and is automatically terminated. The NVR will reboot.

**Format HDD:** If the scanning process has failed, users will be prompted to confirm a format of the HDD marking the bad sectors. After confirmation, login of an authorized account is required if password protection is enabled. If users select cancel or do not respond within 5 minutes, the HDD with the error will be marked as a NG HDD. A NG HDD will not be counted as a part of the NVR's database and will sit idle.

**Recover NG HDD:** Enter the OSD setup menu via an authorized account and access **Database**. Then select **Internal Disks** and find the NG HDD from the list. Under **Action** column, select **Format** to format the NG HDD. Then select **Add** to add the formatted HDD to the database.

## Configuration Menu

The Configuration setup menu enables you to review you current configuration and import or export settings as required.



### Load Factory Default

This option will reset the NVR to its factory preset condition.

### Import Config, Export Config

Importing & Exporting configuration settings can help you configure multiple NVRs quickly or help to quickly reconfigure a unit that has been reset to factory defaults.

### System Log, Operation Log

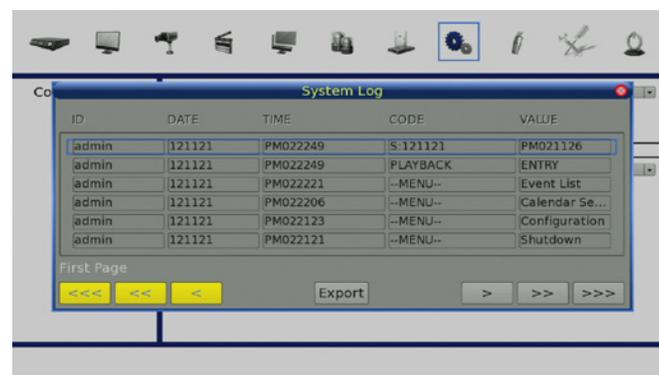
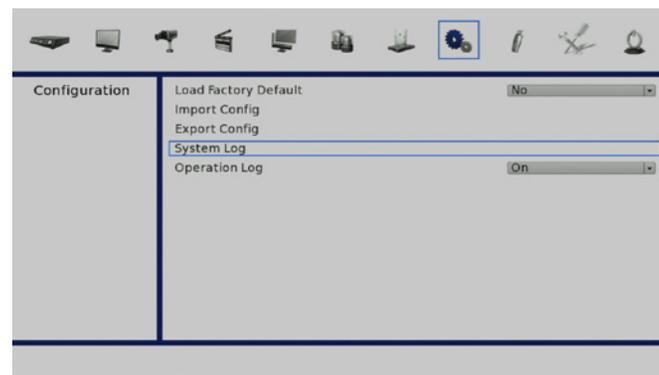
Select **System Log** or **Operation Log** and a list of system, operation logs will be displayed on the screen. You can export the log as a data file to an external storage device.

Connect a USB storage device and click on **Export** (or press **COPY** key) to export the system log file to the USB storage device.

**Note:** a digital signature file will also be exported.

Also under the Configuration setup menu, set Operation Log to **On** and operation logs will begin to be recorded in the system log. Alternatively, set to **Off** and operation logs will not be part of the system log.

**Note:** External disks must be formatted as FAT32.



## Export Menu

The following section will explain how to export video through the OSD setup menu and through the function keys on the front panel, respectively.  
**Note:** that the system log will keep records of all video exported, including duration, start time, and end time.



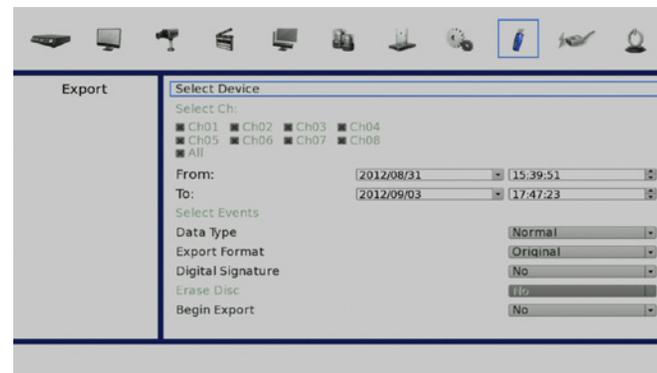
## Export Video

Make sure an external storage device is available and connected to the appropriate port for video export.

From the Main menu, select **Video Export** and press **ENTER**.

The exported video will be named by the exporting date and time, and classified by event type. Recorded video will be exported into four files if a digital signature is required (\*.pgg, \*.avi (or \*.drv), \*.sig and readme.txt)

**Note:** The Video Export menu will only allow authorized accounts to export video with a digital signature.



## Select the External Device

The available external devices for exporting video will be listed by name and free size in the Select Device menu. The NVR only supports the EXT3 file system. If an external HDD will be connected to the unit, ensure the format of the HDD is EXT3.

### Device Name

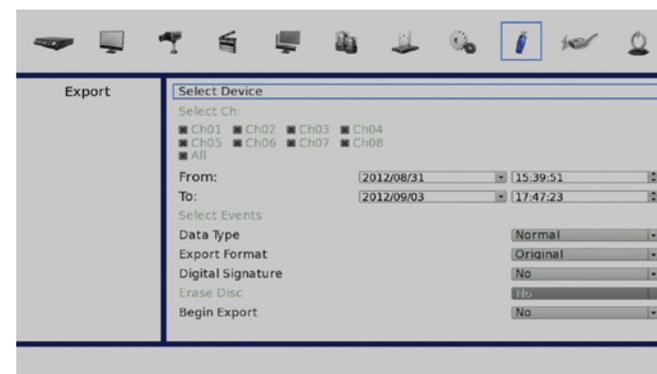
Shows the name of the available device.

### Available

Shows the free space of the available device.

### Select

Select **Yes** to set it as an export destination, or **No** to cancel.



## Select Video for Exporting

Select video from desired channel(s) with specific date / time and/or event(s), and set the item **Begin Export** to **Yes** to start exporting. Following are the items for selecting video.

### Select Channel

Select the channel to export. Move the cursor to the desired channel using **LEFT / RIGHT** keys, select or de-select a channel by pressing **ENTER**.

### From / To Time

The items are used to set the time which data export begins and ends. Move the cursor using **LEFT / RIGHT** keys, and press **ENTER** to select the date /time items; adjust the selected date and time value by **UP / DOWN** keys.

### Select Events

Select this item to display the event list. Move the cursor to scroll through the event list and press **ENTER** to select event(s) to be exported.

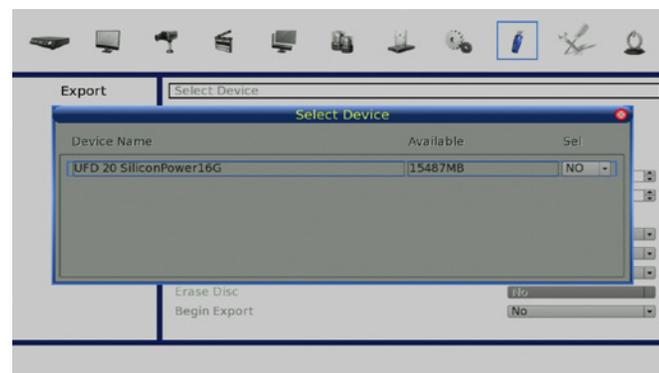
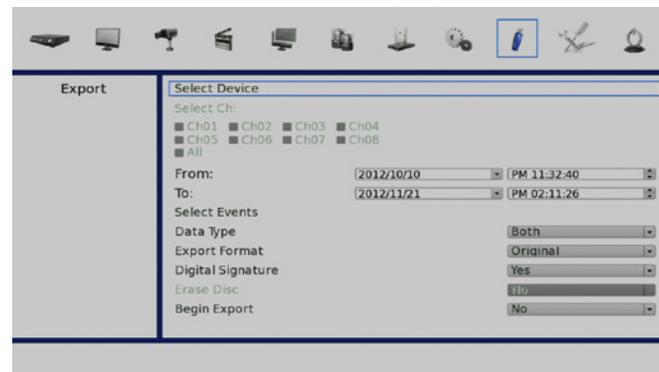
### Data Type

The item is used to select exporting video type. The options are **Normal**(export normal video only), **Event** (export event video only) and **Both** (export both normal and event video).

### Export Format

This item is for selecting exporting video format. The options are **DRV,AVI**, and **Original**. The DRV and AVI files are compressed video files while the original files are raw data of the unit's recorded video.

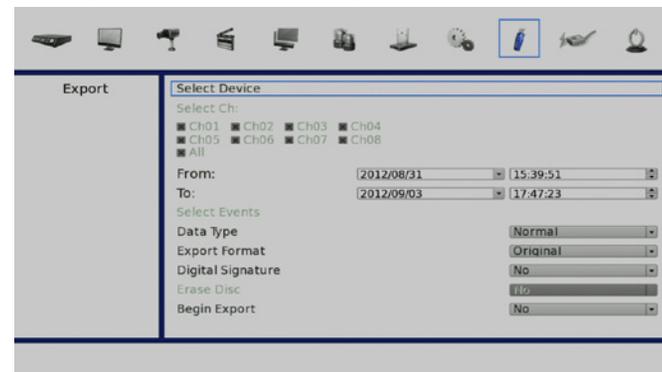
The DRV and original files can only be played back with the remote monitoring software and playback software, and multiple cameras video can be played back from one file. The AVI files can be played back with Windows Media Player. Note that if multiple channels are exported for AVI files, each channel is exported to a separate file.



## Digital Signature

Users can export video with or without a digital signature. Set this item to **Yes** to export with the signature file, or **No** to export without it. Each recorded video with digital signature will be exported into four files, including \*.gpg, \*.avi (or \*.drv), \*.sig and readme.txt. The \*.gpg file name is as the last eight MAC (Media Access Control) address of the unit.

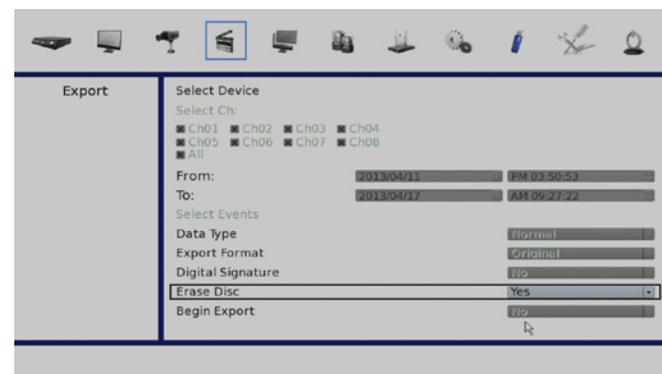
Make sure that an external storage device, such as a USB Hard Drive is available and connected to the appropriate port for export. For more information on verifying a digital signature, see "Verify Digital Signature" on page 91.



## Erase Disc

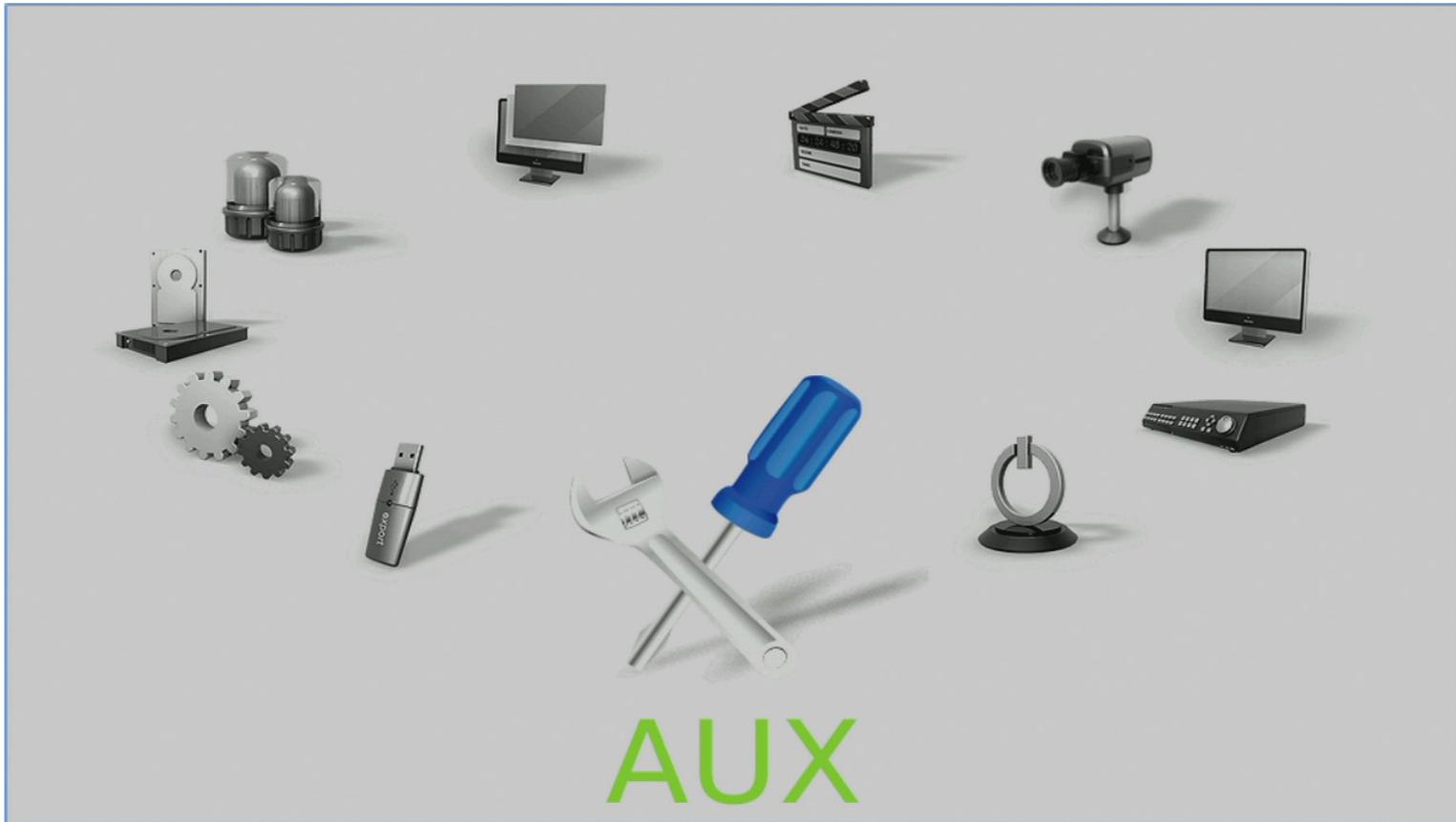
This function is used to remove data found on a DVD+RW disk prior to exporting new information to the drive. Select **Yes** and press **ENTER** to start deleting data.

**Note:** this option is only available when a re-writable DVD drive is attached.



## Aux Menu

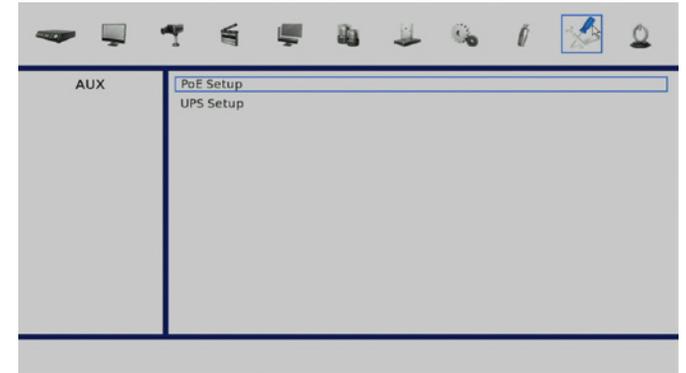
The Aux menu enables user to configure PoE and UPS settings.



### PoE Setup

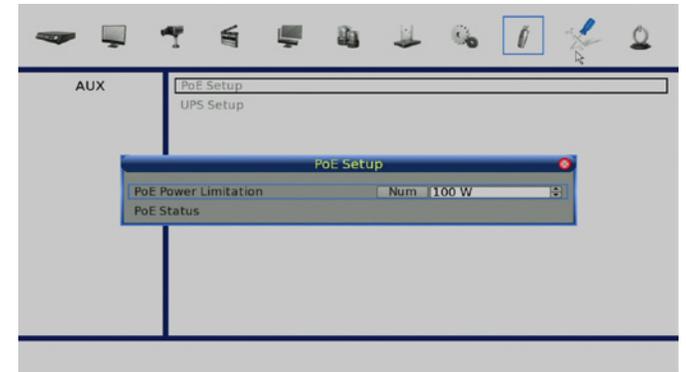
Use this option to view and configure the NVR's PoE settings.

**Note:** Setting the PoE Limitation too high or too low will result in unreliable performance.



### UPS Setup

Use this option to configure the settings for your UPS.



## Shutdown Menu

If the NVR must be shutdown for any reason, please follow the proper shutdown and power on procedures to avoid damaging the NVR.



### To Power On the Unit:

Check the type of power source before plugging in the power cord to the NVR (the acceptable power input is between AC110V~AC240V), and power on the unit using the power key on the front panel.

The color bar and system checking information will be shown on the monitor and then disappear when the unit has been completely powered up.

### To Restart / Shutdown the Unit:

Press **MENU** and input the username and password to access the OSD setup menu. Select **Shutdown** in Main Menu and press **ENTER** to enter the Shutdown menu.

#### Power Off

Select this item to shut down the unit. Do not remove the power during shut down until the message **You can safely turn off NVR now!** displays.

#### Reboot

Select this item to reboot the unit. The color bar and system checking information are displayed on the monitor until the unit is completely restarted.

#### Power Key Privilege

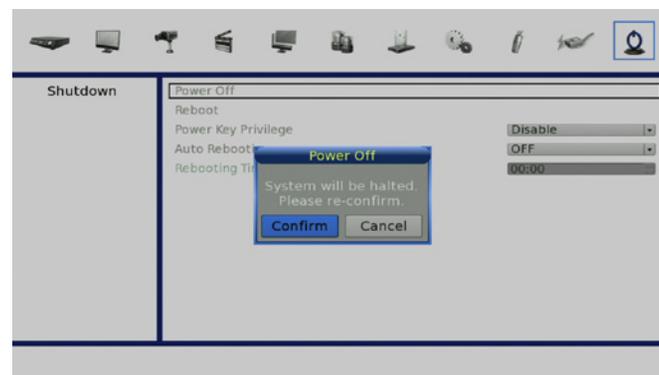
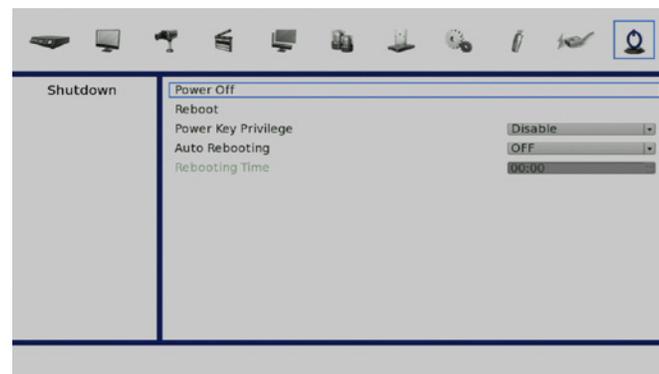
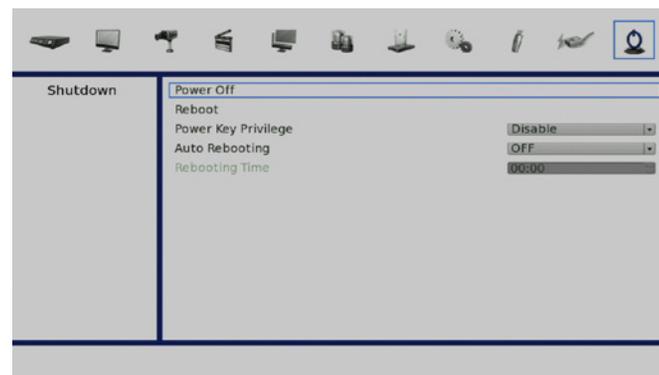
This option allows users to define quick shutdown actions following a long press of the Power key. **Auth** will require login of authorized account when enabled, **Confirm** will require confirmation before quick shutdown, **Direct** will directly shutdown the NVR, and **Disable** will disable quick shutdown function.

#### Auto Rebooting

The NVR can be set to reboot automatically once a day/week at predetermined time for routine maintenance. Select **Off** to disable the auto rebooting function

#### Rebooting Time

If the auto rebooting function is enabled, select a desired time to perform the auto rebooting function.



# Using the Web Interface

The NVR's built-in Web UI utility is designed to allow you to easily access and configure your NVR. The software is a browser-based application. Using this utility, users can view live and recorded video, and to configure the NVR remotely via a LAN, WAN or Internet using any personal computer. The connected PC will automatically download the browser plug-ins from the NVR. Simply enter the NVR's IP address in the address bar in to a browser. See "Change Internet Settings" on page 80 for more information.

The main categories for configuration are located on the menu tabs at the top of the page. These categories include:

- Live Video - Shows the live video of network cameras and controls PTZ functions.
- Playback - Displays recorded video and exports snapshots or video.
- Setup - Contains the NVR setup wizard, as well as the LAN configuration settings, camera search, camera settings, recording schedule, auto backup, event settings, time and system settings, and device settings.
- Maintenance - Contains the Administrator account configuration options, Hard Disk management options and RAID configuration options. System configuration, backup, and restore functions are also available.
- Status - Contains system, NVR, and event logs.

**Note:** The Menu function allows users to remotely access the NVR's OSD setup menu functionality, with some limitations. Refer to the previous sections for instructions on configuring the NVR.

## Web UI System Requirements

### Minimum Requirements

Personal Computer	Intel® Core™ Duo 2.4GHz
RAM	1GB
Hard Disk Drive	20 MB for software installation
Operating System	Windows XP
Web Browser	Internet Explorer version 8.0
Monitor	1024x768 with 16-bit color
Network Card	10/100 Mbps

### Suggested Specification

Personal Computer	Intel® Core™ i7-2600 3.4GHZ
RAM	4GB
Network Card	10/100/1000 Mbps

# Web UI Setup

## Change Internet Settings

Before using the Web UI, please check the IP address of the NVR. To check the IP address, press **MENU** key on the unit and enter username and password to access the OSD setup menu. Select **System, Network Setup**, then **LAN Setup** to check the IP.

Start Internet Explorer by clicking on the desktop icon, or by using the Start menu to access it.



The PC needs to be set to accept ActiveX plug-ins. Please follow the steps to set the Internet security settings appropriately.

### Note:

Internet Explorer provides the ActiveX component that is required when using the remote monitoring software.

Select **Tools** from the main menu of the browser, then **Internet Options**, and then click the **Security** tab.

Select **Trusted sites** and click **Sites** to specify its security setting.

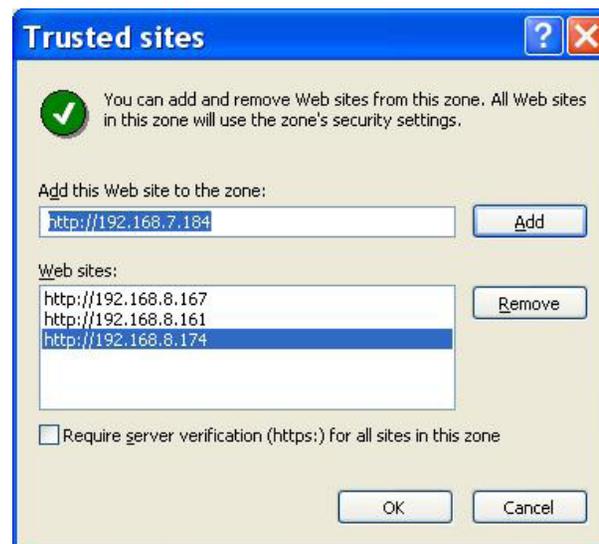


In the Trusted sites dialog:

Uncheck **Require server verification (https:) for all sites in this zone.**

Type the IP address of the NVR unit to be configured and click **Add** to add this web site to the zone

Click **OK** to confirm the setting and close Trusted sites dialog.



In the Security Level area, click **Custom Level.**

Under **ActiveX controls and plug-ins**, set all items to **Enable** or **Prompt**.

Click **OK** to apply the setting and close the **Security Settings** screen.

Click **OK** to close Internet Options dialog.

Now the installation can continue to the next step.



## Install Web UI Browser Plugins

Start Internet Explorer by clicking on the desktop icon, or by using the Start menu to access it. Enter the IP address of the NVR in the address bar at the top of the browser.

This will initiate the installation of the browser plugins required for the Web UI. The IP address of the NVR can be saved as a Favorites item in the Internet Explorer to enable easy access in the future.

The ActiveX controls and plug-ins dialog will show twice for confirmation; click **Yes** to accept ActiveX plug-ins.

The Web UI plug-ins will be downloaded and installed on the PC automatically when the connection is successfully made.

**Note:** Do not enter any leading "0" characters in the address, for example, "192.068.080.006" should be entered as "192.68.80.6". If the default trigger port 80 is changed into another one, take port 81 for example, the IP address should be entered as "192.68.80.6:81".

A version check starts to verify whether the Web UI software was installed already, and also check if the version is the same as that stored in that particular NVR. This process may take up to 30 seconds.

When the browser plugins are completely downloaded and installed, the Login Screen will be displayed.



## Log in/Log off

Log in using the same account details previously setup in "User Management" on page 36.

One preset account admin and up to four other accounts can access a NVR at the same time.

**Note:** if the admin account is currently accessing the NVR's OSD setup menu via front panel of the NVR, then the admin account at the remote monitoring site cannot change the settings at the same time. The admin account at the NVR side has priority.

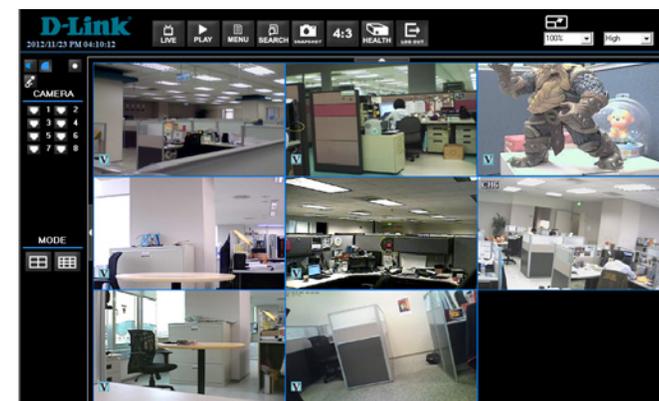
The following steps demonstrate procedures to connect and login to the NVR.

Start the remote monitoring software by entering the IP Address of the NVR in the Address bar of the browser. Alternatively, click on the Favorite entry for the unit (if the IP address of the unit has been set).

Enter the Username and password. The login username and password can be saved to ease future logins. The default username and password is **admin/1234**.

Click **OK** to log in to the NVR. The process may take a few seconds.

When the connection is made successfully, the main window will display live video of the attached cameras. When the web browser is closed, the remote system is logged out and disconnected from the NVR at the same time.



## Firmware Upgrades

If a new version of the Web UI firmware is available on the NVR, the user will be prompted while accessing the unit. Click **Yes** to accept the upgrade and follow the on screen instructions.

Start Internet Explorer again and enter the IP address of the NVR in the Address bar of the browser; or if the unit address is set as a Favorite site, click the Favorites entry for the unit.

When the software is completely downloaded and installed, the Login Screen will be displayed.

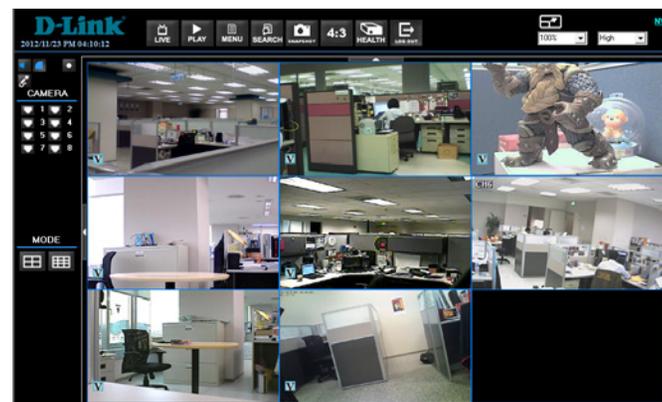


## Web UI Basic Operation

When a NVR is successfully connected, the main window of the Web UI will be displayed. Please reference "Basic Operation" on page 20 for an overview of the features available. Functions specific to the Web UI will be described in the following sections.

## Live Video

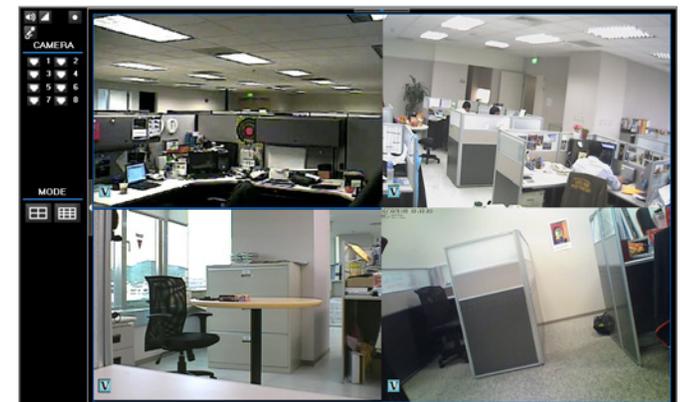
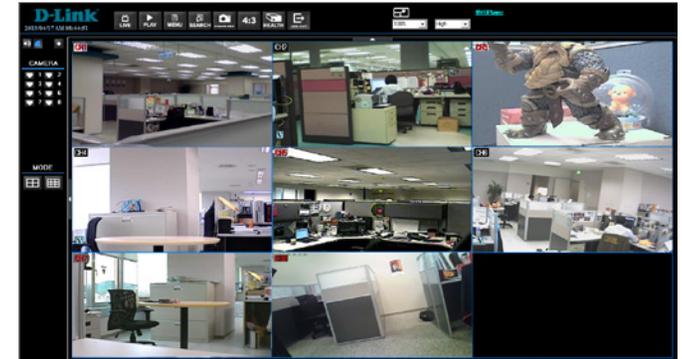
View live video from the cameras attached to the NVR by clicking the **Live** button on the main window toolbar. Choose a desired display mode – full-screen, 4-windows, 9-windows, 16-windows, and 20-windows – after the live images of the NVR are displayed on the main window. When a dome camera is connected and viewed in single channel full-screen mode, the dome camera control operation can be accessed. To choose desired display mode and to operate dome camera control, refer to the following sections.



## Select Display Mode

To choose the number of camera feeds to be displayed in the main window, click one of the display buttons in the **MODE** section of the left toolbar. Available selections are **4**, and **8 (9-1)** camera display grids. To view a specific feed in full-screen, either double-click on the preferred grid, or click on the corresponding **CAMERA** button in the left toolbar.

**Note:** To maximize the video viewing area the main/top toolbar, and the left/side tool bar can be hidden.



## Operate Cameras with Dome Control

**Auto Focus (A.F.):** Click on it and the focus of the camera will be automatically adjusted to show a clearer image.

**Set/Go Preset & Run Tour:** The remote monitoring software allows its users to store up to 255 preset points according to the allowance of the supported dome cameras.

Use **Direction** buttons to pan/tilt dome camera to an appropriate position. Then click this button, select **Set Preset** and choose a preferred number from the pull-down list. The preset point is named as the selected number.

Click this button, select **Go Preset** and choose a preferred number from the pull-down list to call the preset point for viewing.

Click this button, select **Run Tour** and the dome camera will start the tour set previously at the dome camera side.

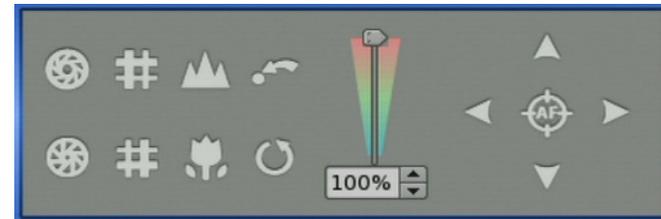
**Dome ID (ID):** Click for changing the dome ID and protocol. Proper authority is required to access this function.

**Focus +/-:** Use to adjust the camera lens to focus on objects for a clear view. Click on **Focus +** to focus near or **Focus -** to focus far.

**Iris +/-:** This item is used to open and close the iris to let more or less light into the camera. Click on **Iris +** to open iris or **Iris -** to close iris.

**Zoom +/-:** Users are able to zoom-in or zoom-out using the adjusting buttons. Zoom-in to enlarge a certain area and zoom-out to view more area.

**Direction Button:** This button is used to pan and/or tilt the dome camera. Click the arrows in the directions to be viewed.



## Digital Zoom of Camera Display

Users can view the camera zoom-in images via the digital zoom function.

**Right click** on any preferred camera grid, in any kind of display mode, and select the digital zoom item to switch on the function. Users then can easily control zoom in/out via mouse scroll wheel.

Move the scroll wheel away from users to zoom in and move toward the users to zoom out. On the upper left-hand corner will show zoom-in magnification.

The maximum magnification is x7. Also on the lower Right-hand corner will display the position of current viewing area (shown as an inner white rectangle) comparing with the original screen (shown as an outer rectangle frame). In addition, the viewing area can be dragged and moved by **LEFT clicking** and holding the mouse while moving.

**Note:** This function will use up a lot of CPU resources. It is recommended not to open too many programs at the same time to avoid crash of CPU.

## Manually Trigger Relay Output Devices

The Web UI allows users to manually trigger relay output devices while monitoring at the remote site. **RIGHT** click on any camera grid and select relay out A, B, or C to manually trigger any of them. This is especially convenient when users wishes to trigger any relay output devices while monitoring at the remote site.

## Instant Recording

Instant Recording function allows users to record video to the PC by one click.

**Note:** The Audio function is set to OFF as the default setting.

## Record Video Instantly

Follow the steps to start recording instantly:

Click on the **Instant Recording** button.

Select the destination folder to save the video.

Click on the **Instant Recording** button again to stop recording.

**Note:** The instant recording video will be saved as \*.drv file.

## Playback Instant Recorded Video

Follow the steps to playback a video recorded by **Instant Recording**.

Click **Play** on main window toolbar and click **Local Playback** tab.

Click **Open** to choose a recorded file.

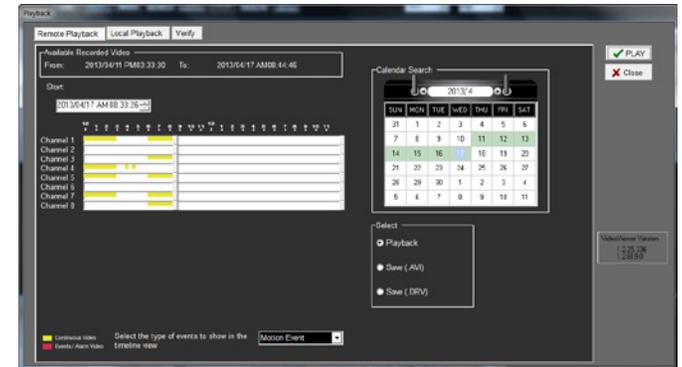
Click **OK** to start playing the recorded video.

# Playback Video

The remote monitoring software allows users to either view recorded video from the NVR, or from the hard disk drive of the PC.

To access the Playback screen, click **Play** button on the main window toolbar.

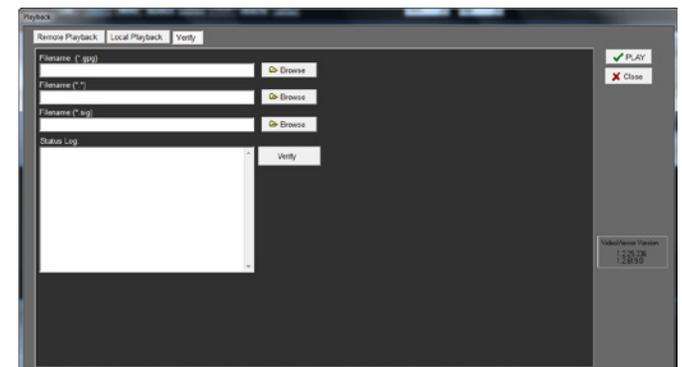
There are three tabs in the Playback screen: **Remote Playback**, **Local Playback**, and the **Verify** tab. **Remote Playback** allows users to playback from the NVR. **Local Playback** enables users to playback a recorded video file stored on the hard disk drive of the PC. **Verify** is provided for users to authenticate if the exported video is altered. During either remote playback or local playback the NVR can simultaneously record while displaying from the PC.



# Remote Playback

The remote monitoring software allows users to either view recorded video from the NVR, or from the hard disk drive of the PC.

To access the Playback screen, click the **Play** button on the main window toolbar.



## Playback Local \*.drv Files

The **Local Playback** tab allows users to playback \*.drv video files stored in the PC's hard drive.

To playback a downloaded \*.drv file from the Web UI:

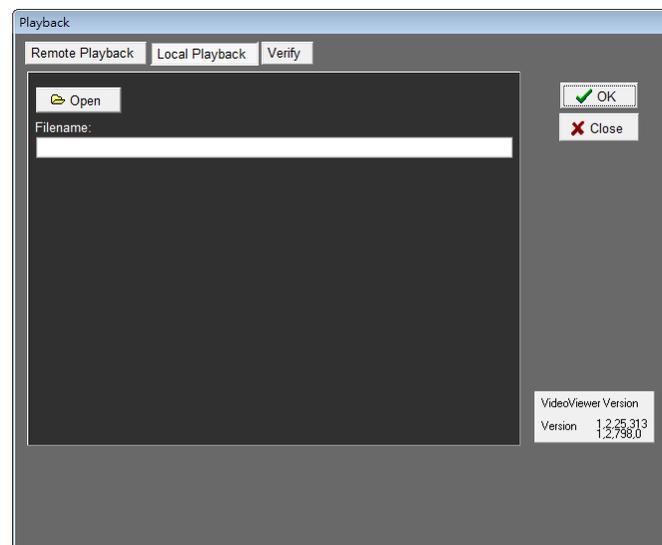
Click **Open** and the file selection screen is displayed.

Select the \*.drv video file for playback and click **OK**.

Click **OK** in the Local Playback Screen to start the playback, or click Cancel to abort.

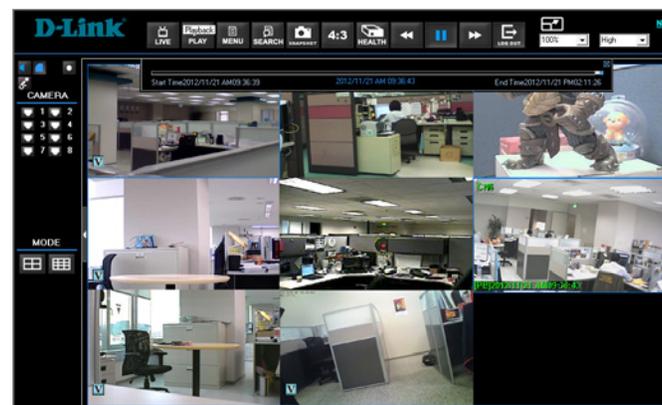
View the video playback using the Playback controls.

To end the playback, click **Live** to return to live video.



## Playback Controls

When the local or remote video is being played, the Web UI is in Playback Mode. The playback controls toolbar will appear in the main window. The Playback controls are described in "Key Usage in Playback" on page 23.



## Verify Digital Signature

The digital signature aims to authenticate a video file exported from the NVR.

To verify the digital signature.

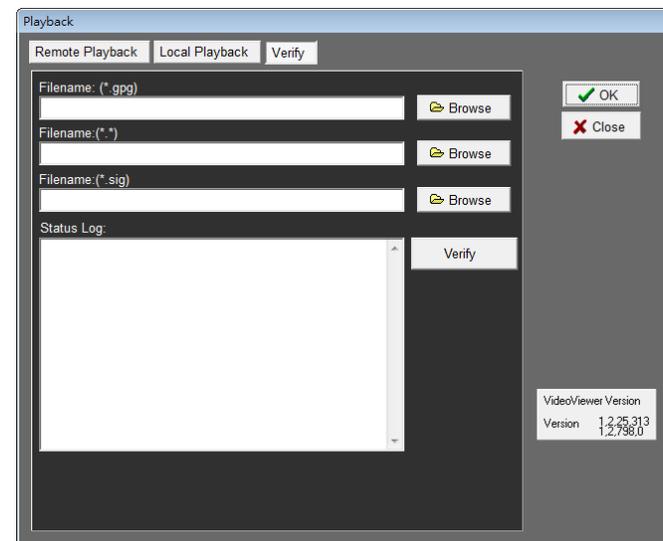
Click **Play** on the main window toolbar.

Click the **Verify** tab to display the Verify window.

Click **Browse** to select the \*.gpg, \*.avi, \*.sig files respectively, which belong to the exported video to be authenticated.

Click **Verify** to start verifying digital signature.

The result of the verification will be sent to the **Status Log** field as a **GOOD** or **BAD** signature result. A **GOOD** signature indicates the exported clip has not been altered.



## Search from Event List

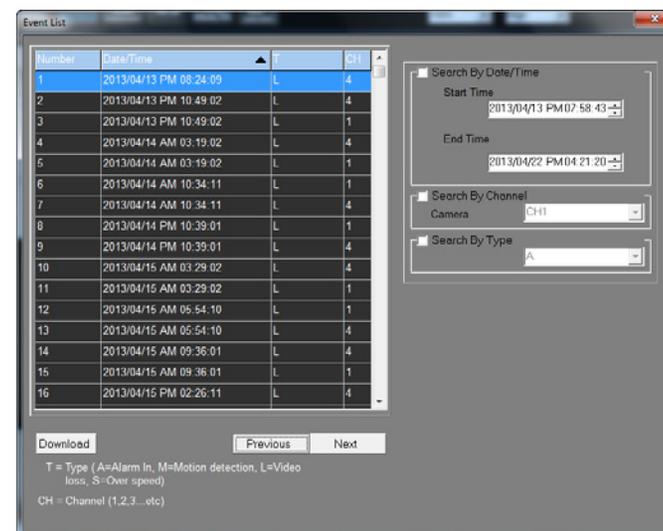
Click **SEARCH**, the Event List appears. The list contains information about the alarm events that the unit recorded and saved. Up to 1024 events can be listed in the Event List. The Event List displays each event by its number, the date and time of the event, the type of the event (including Alarm In, Motion Detection, and Video Loss), and the camera channel where the event occurred.

To view an event video, follow these steps:

Click **SEARCH** button positioned in the main window toolbar. The Event List appears.

Scroll through the Event List and highlight the interested events.

Double-click on the desired event to view the event video.



## Take a Snapshot

Snapshot is a simple screen capture tool. When users click on the **SNAPSHOT** button, it will capture the screenshot of the window that is currently showing on the screen. Each click captures one screenshot to be saved as a JPEG file on the desktop. The snapshot file will be named as **Snapshot-\***.

## Health Status of HDD

This function verifies HDD status of the NVR. The information items shown in the chart are described as below:

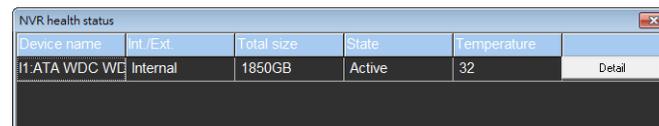
**Device Name:** This item shows the model name of the HDD.

**Int./Ext.:** This item indicates whether the HDD is an internal or external device.

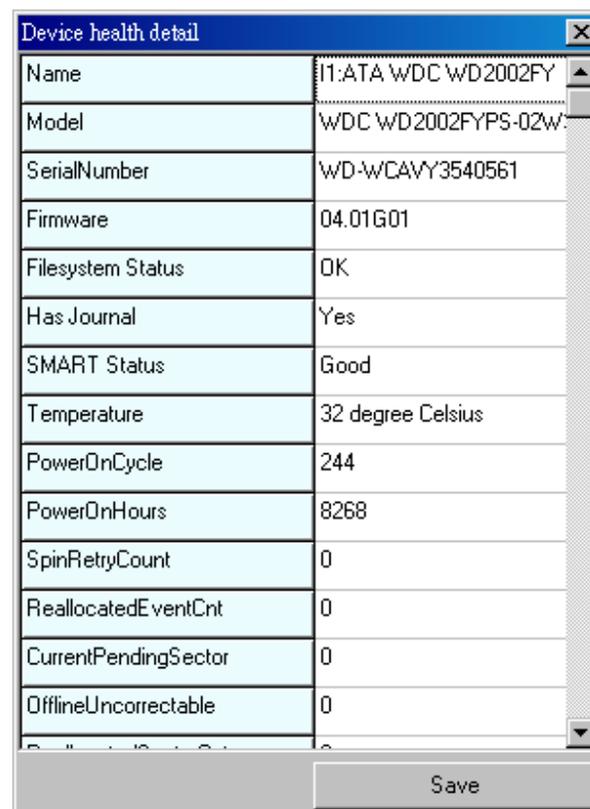
**Total Size:** This item indicates the total size of the HDD.

**State:** This item indicates whether the HDD is active or non-active.

**Temperature:** This item indicates the current temperature of the HDD in Celsius degree.



Device name	Int./Ext.	Total size	State	Temperature	Detail
11:ATA WDC WD	Internal	1850GB	Active	32	Detail



Device health detail	
Name	11:ATA WDC WD2002FY
Model	WDC WD2002FYPS-02W
SerialNumber	WD-WCAVY3540561
Firmware	04.01G01
Filesystem Status	OK
Has Journal	Yes
SMART Status	Good
Temperature	32 degree Celsius
PowerOnCycle	244
PowerOnHours	8268
SpinRetryCount	0
ReallocatedEventCnt	0
CurrentPendingSector	0
OfflineUncorrectable	0

Save

## Normal and Dual Streaming

For different networks with different bandwidths, two streaming options are provided – normal and dual streaming. The preset is normal streaming. Users who are using high-speed networks, normal streaming will be a recommended choice. Depending on the HDD capacity and network usage, set the remote monitoring software to occupy high or low bandwidths.

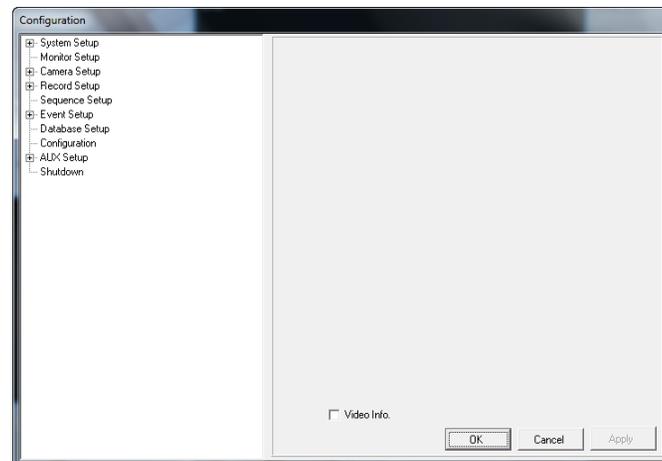
For networks with limited bandwidth, dual streaming will be a better choice. It enables coexistence of high quality streaming at local NVR site and lower quality streaming but faster transmission for the remote monitoring site. To select dual streaming, click on the bandwidth icon and the icon will change color. Then users can furthermore choose different bit rates to adjust for the best displaying quality.

## Web UI Advanced Operation

Users can remotely access the full functionality of the NVR using the **Menu** button on the Web UI.

Click on the Menu button and the Configuration panel will appear.

Refer to the relevant earlier sections of this manual for detailed explanations of the functions.

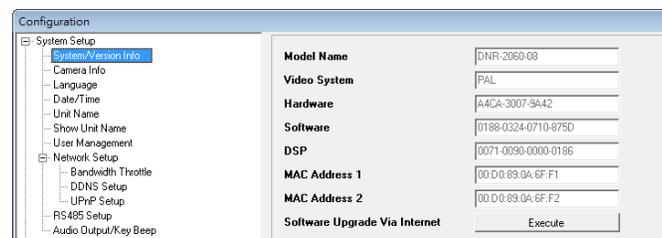


## Remote Firmware Upgrade/Remote NVR Reboot

Users can remotely perform a firmware upgrade or reboot the connected NVR.

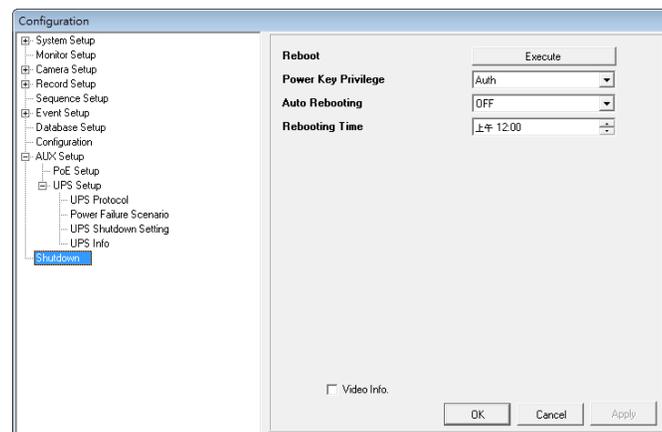
### Software Upgrade via Internet

Click the **MENU** button in the main window toolbar. A Configuration window will be displayed. Go to **System Setup System/Version Info** and the menu is as shown below. Then click on the Execute button and locate the upgrade file "\*.tar" or files "\*.tgz & \*.md5" to start remote software upgrade.



### Remotely Reboot

Also from the **Configuration** window, access the **Shutdown** menu as shown below. Then click on the **Execute** button to remotely reboot the NVR.



## Firmware Troubleshooting

If the server requests to upgrade the firmware every time the NVR is connected follow the steps below to delete the temporary internet files.

Select **Tools** from the main menu of the web browser, then Internet Options, and then click the **General** tab.

Click the **Delete Files** button in the **Temporary Internet Files** field; the **Delete Files** screen displays as below.

Check the **Delete all offline content** box and click **OK**.

Enter the IP address of the NVR to make the connection again.

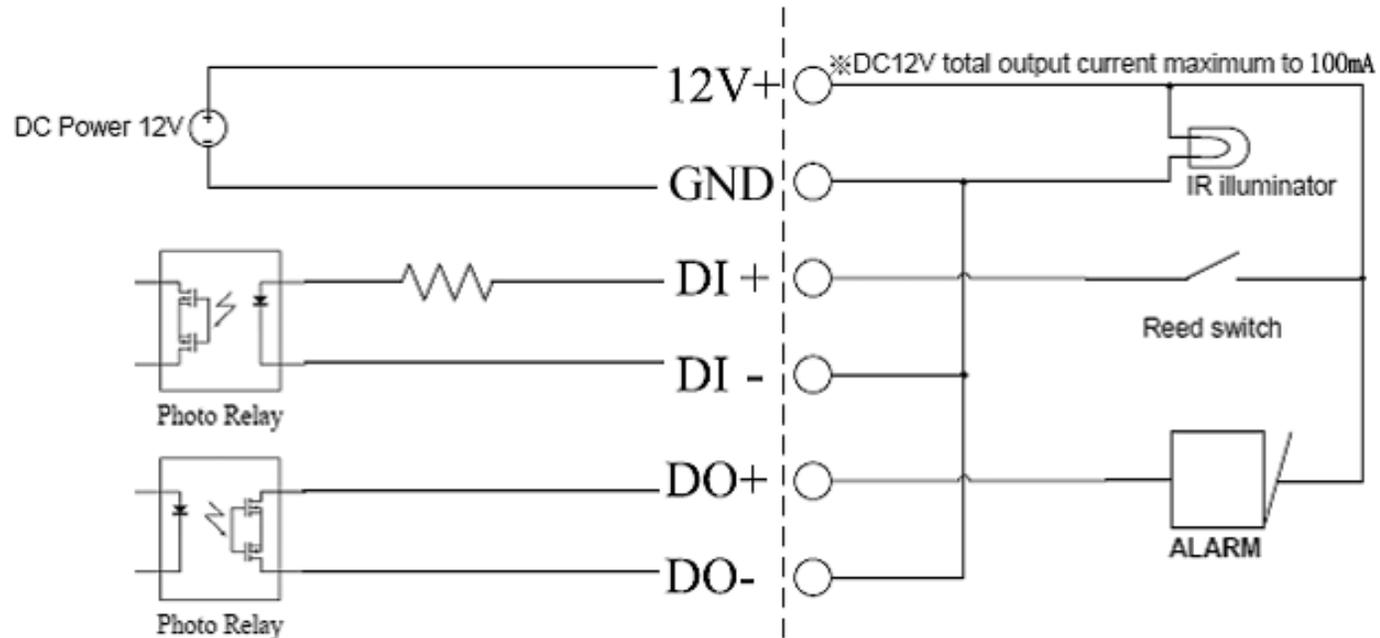


## Appendix A: Recommended HDDs

Brand	Model Name	Model Number	Size
WD	Caviar Blue	WD10EALX	1.0TB

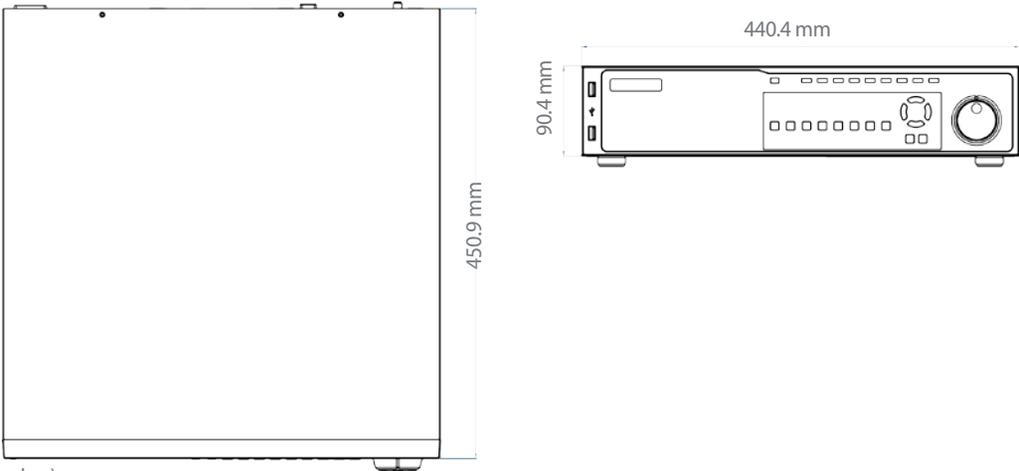
**NOTE:** After a HDD is successfully installed, users will see a number shown in front of the device name when retrieving internal disks information in the OSD setup menu via **Database, Internal Disks**. The number represents the SATA port that the HDD is connected to.

# DI/DO Specifications



# Technical Specifications

General		
Backup	<ul style="list-style-type: none"> <li>• USB Storage Backup via NVR USB Port</li> </ul>	<ul style="list-style-type: none"> <li>• Remote Archive via Client Software</li> </ul>
Playback and Recording Performance	Playback: <ul style="list-style-type: none"> <li>• NTSC: 60pps at 1080P, 120pps at 720P, 240pps at 480P (camera dependent)</li> <li>• PAL: 50pps at 1080P, 100pps at 720P &amp; 200pps at 480P (camera dependent)</li> </ul>	Record: <b>UP</b> to 8 channels <ul style="list-style-type: none"> <li>• NTSC: 240pps at 1080P, 720P, 480P (camera dependent)</li> <li>• Pal: 200pps at 1080P, 720P, 480P (camera dependent)</li> </ul>
Playback Search	<ul style="list-style-type: none"> <li>• Forward, reverse, step-by-step and different speed play/calendar, event &amp; panorama</li> </ul>	<ul style="list-style-type: none"> <li>• Front panel/keyboard and mouse via usb port/remote control handset</li> </ul>
Video Compression	<ul style="list-style-type: none"> <li>• H.264/MJPEG codec , JPEG for still image</li> <li>• Multicast streaming</li> </ul>	<ul style="list-style-type: none"> <li>• Simultaneous playback/record/live view</li> </ul>
Standalone Video Output	<ul style="list-style-type: none"> <li>• HDMI and VGA at 1024 x 768, 1280 x 1024, 720p, 1080p</li> </ul>	
Audio Support	<ul style="list-style-type: none"> <li>• PCM</li> </ul>	<ul style="list-style-type: none"> <li>• G.711</li> </ul>
External Device Interface	<ul style="list-style-type: none"> <li>• RJ45 port (auto MDI/MDIX) Gigabit Lan</li> <li>• Eight RJ45 port with PoE (IEEE 802.3at)</li> <li>• VGA</li> <li>• HDMI</li> <li>• DC-in jack</li> </ul>	<ul style="list-style-type: none"> <li>• e-SATA</li> <li>• Eight alarm I/O</li> <li>• Eight DI/DO</li> <li>• Audio out</li> </ul>
HDD	<ul style="list-style-type: none"> <li>• Six internal bays</li> </ul>	<ul style="list-style-type: none"> <li>• SATA I,II</li> </ul>
Network		
Ports	<ul style="list-style-type: none"> <li>• Eight 10/100 TX IEEE 802.3at PoE Ethernet</li> </ul>	<ul style="list-style-type: none"> <li>• Auto MDIX Gigabit Ethernet Lan</li> </ul>
Network Protocols	<ul style="list-style-type: none"> <li>• IPV4, ARP, TCP, UDP, ICMP</li> <li>• DHCP Client</li> <li>• DNS Client</li> <li>• SMTP Client (SSMTP support)</li> </ul>	<ul style="list-style-type: none"> <li>• HTTP Server</li> <li>• PPPoE</li> <li>• RTP</li> <li>• RTSP</li> </ul>
Security	<ul style="list-style-type: none"> <li>• Administrator and user group protection</li> </ul>	<ul style="list-style-type: none"> <li>• Password authentication</li> </ul>

System Management		
Remote Management	<ul style="list-style-type: none"> <li>Take snapshots/video clips via web browser</li> </ul>	<ul style="list-style-type: none"> <li>Configuration interface accessible via web browser</li> </ul>
Event Management	<ul style="list-style-type: none"> <li>Motion detection</li> <li>Event notification and upload snapshots/video clips via SMTP or FTP</li> </ul>	<ul style="list-style-type: none"> <li>Multiple SMTP servers.</li> <li>Multiple event notification</li> </ul>
System Requirements	<ul style="list-style-type: none"> <li>Operating System: Microsoft Windows 7/Vista/XP</li> </ul>	<ul style="list-style-type: none"> <li>Web Browser: Internet Explorer 7 or higher</li> </ul>
Mobile Support	<ul style="list-style-type: none"> <li>iOS</li> </ul>	<ul style="list-style-type: none"> <li>Android</li> </ul>
Physical		
Weight	<ul style="list-style-type: none"> <li>9.02 kilograms (19.9 lbs)</li> </ul>	
Power	<ul style="list-style-type: none"> <li>Input: AC 100 to 240V at 50/60 Hz</li> </ul>	<ul style="list-style-type: none"> <li>Output: 5 V DC, 750 mA (via USB port)</li> </ul>
Temperature	<ul style="list-style-type: none"> <li>Operating: 0 to 40 °C (32 to 104 °F)</li> </ul>	<ul style="list-style-type: none"> <li>Storage: -20 to 70 °C (-4 to 158 °F)</li> </ul>
Humidity	<ul style="list-style-type: none"> <li>Operating: 10% to 90% non-condensing</li> </ul>	<ul style="list-style-type: none"> <li>Storage: 5% to 95% non-condensing</li> </ul>
Certifications	<ul style="list-style-type: none"> <li>CE</li> <li>CE LVD</li> </ul>	<ul style="list-style-type: none"> <li>FCC</li> <li>C-Tick</li> </ul>
Dimensions	 <p> <ul style="list-style-type: none"> <li>(H) 90.4 mm (3.56 inches)</li> <li>(w) 440.4 mm (17.34 inches)</li> <li>(D) 450.9 mm (17.75 inches)</li> </ul> </p>	