Honeywell

Embedded Network Video Recorder

HEN04111(X)
HEN04121(X)

User Guide

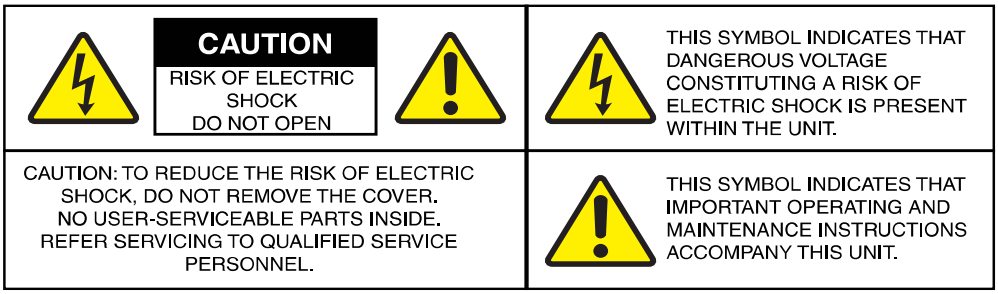
Document 800-18160 – Rev A – 06/2014

User Guide

Revisions

Issue	Date	Revisions
A	06/2014	New document.

Cautions and Warnings



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

WARNING **Use only with the supplied power converters. The Ethernet connection is not intended to be connected to an exposed (outside plant) network.**

CAUTION **There is a risk of explosion if the battery is replaced by an incorrect type. Dispose of used batteries in accordance to local laws.**

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

Regulatory Statements

FCC Compliance Statement

Information to the User: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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

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

Manufacturer's Declaration of Conformance

[North America

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

Europe

The manufacturer declares that the equipment supplied is compliant with the essential protection requirements of the EMC directive 2004/108/EC and the Low Voltage Directive (LVD) 2006/95/EC, conforming to the requirements of standards EN 55022 for emissions, EN 50130-4 for immunity, and EN 60950 for electrical equipment safety.

Waste Electrical and Electronic Equipment (WEEE)

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

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

Safety Instructions

BEFORE OPERATING OR INSTALLING THE UNIT, READ AND FOLLOW ALL INSTRUCTIONS.
AFTER INSTALLATION, retain the safety and operating instructions for future reference

1. **HEED WARNINGS** - Adhere to all warnings on the unit and in the operating instructions.
2. **INSTALLATION**
   - Install in accordance with the manufacturer's instructions.
   - Installation and servicing should be performed only by qualified and experienced technicians to conform to all local codes and to maintain your warranty.
   - Do not install the unit in an extremely hot or humid location, or in a place subject to dust or mechanical vibration. The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.
   - Any wall or ceiling mounting of the product should follow the manufacturer's instructions and use a mounting kit approved or recommended by the manufacturer.
3. **POWER SOURCES** - This product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied to your facility, consult your product dealer or local power company.
4. **HEAT** - Situate away from items that produce heat or are heat sources such as radiators, heat registers, stoves, or other products (including amplifiers).
5. **WATER AND MOISTURE** - Do not use this unit near water or in an unprotected outdoor installation, or any area classified as a wet location.
6. **MOUNTING SYSTEM -** Use only with a mounting system recommended by the manufacturer, or sold with the product.
7. **ATTACHMENTS** - Do not use attachments not recommended by the product manufacturer as they may result in the risk of fire, electric shock, or injury to persons.
8. **ACCESSORIES** - Only use accessories specified by the manufacturer.
9. **CLEANING** - Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
10. **SERVICING** - Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.
11. **REPLACEMENT PARTS** - When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock or other hazards.

Warranty and Service

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

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

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

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

Contents

Figures

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About This Document

This document introduces the Honeywell Embedded Network Video Recorder. It explains how to install and operate the Embedded Network Video Recorder.

This document is intended for installers and users.

Overview of Contents

This document contains the following chapters and appendixes:

- *Chapter 1, Introduction*, introduces the Embedded Network Video Recorder, including descriptions of their features and illustrations showing the cameras' dimensions.
- *Chapter 2, Installation*, describes how to install and connect the NVR, including alarm and bi-directional audio connections.
- *Chapter 3, NVR Configurations*, describes how to configure your NVR, including how to log into your NVR, and how to configure your NVR's settings.
- *Chapter 4, Honeywell Configuration Tool*, describes how to install and use the Quick Configuration tool for configuring your NVR.
- *Chapter 5, Web Operation*, describes how to connect to your camera over the internet, the user interface, and how to remotely configure and operate your camera.
- *Appendix A, Troubleshooting*, describes possible problems and their solutions.
- *Appendix B, Daily Maintenance*, describes how to care for your NVR.
- *Appendix C, Compatible SATA HDD*, lists the manufacturers and models of compatible SATA HDD.
- *Appendix D, Compatible USB 2.0 Devices*, lists the manufacturers and models of USB 2.0 storage devices.
- *Appendix E, Compatible Monitors*, lists the manufacturers and models of compatible monitors.
- *Appendix F, Specifications*, provides the NVR's specifications.
- The *Index*, provides a searchable list for easy access to the document.

Related Documents

This document is a necessary prerequisite for understanding the Embedded Network Video Recorder. For more information, please refer to the following documents:

Document title	Part number	Description
Embedded NVR Quick Installation Guide	800-16860	Visually describes how to connect and start up an Embedded NVR.
Embedded NVR Quick Networking Guide	800-16861	Visually describes how to configure network connections, including the mobile application.
H2D2PR1 1080p True Day/Night IR Ball IP Camera Quick Installation Guide	800-17073	Describes the physical setup of a H2D2PR1 ball camera.
HBD2PR1 1080p True Day/Night IR Bullet IP Camera Quick Installation Guide	800-17077	Describes the physical setup of a HBD2PR1 ball camera.
Performance Series IP Cameras User Guide	800-18161	Describes the Performance Series IP Cameras, how to install them, how to configure them, and how to operate them.

Typographical Conventions

This document uses the following typographical conventions:

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

Font	What it represents	Example
Italic	Placeholders: words that vary depending on the situation	Enter your *user name*.
	Cross-reference to external source	Refer to the *Embedded NVR Quick Installation Guide*.
	Cross-reference within document	See *Chapter 2, Configuration*.

1

Introduction

This chapter covers:

- An overview of the Embedded Network Video Recorder and its features.
- An overview of the USB mouse.

Overview of the Embedded NVR Bundle IP Cameras

The Embedded Network Video Recorder is a high-performance network video recorder. It supports:

- Local preview
- Multiple-window display
- Local recorded file storage
- Remote control and mouse shortcut menu operation
- Remote management
- Control

The Embedded Network Video Recorder also features multiple storage options:

- Central storage
- Front-end storage
- Client-end storage

Because of the flexibility of its design, the Embedded Network Video Recorder can be used in a variety of applications, such as public security, water conservancy, transportation, and education.

Features of the Embedded Network Video Recorder

Table 1-1 Embedded Network Video Recorder Features

Category	Features
User Management	• Different user rights for each group; each user belongs to a specific group. • User rights cannot exceed Group rights.
Storage	• Supports central server backup that follows your configuration and setup in Alarm or Schedule settings. • Supports recording through the Internet. The recorded files are stored on the client's PC. • Supports network storage, such as FTP.
Alarm	• Responds to external alarms almost instantly (within 200 milliseconds), based on your pre-defined relay setup. You can also configure a visual and/or noise prompt (if supported by a pre-recorded noise) upon alarm detection. • Supports central alarm server setup, so that alarm information can automatically and remotely notify users. The alarm input can be derived from various connected peripheral devices.
Network Monitor	• The NVR supports the transmission of audio/video data that is compressed by an IP camera, which is then decoded for display. The delay time is less than 500 ms (sufficient network bandwidth support is required). • Supports a maximum of 10 connections. • Compatible to broadcast audio/video with the following transmission protocols: HTTP, TCP, UDP, MULTICAST, RTP/RTCP. • Transmits some alarm data or alarm information through SMTP. • Supports Internet access through the WAN.
Window Split	• Video compression plus a digital process allows the NVR to split the monitor screen to show four video channels at the same time.
Recording	• Supports a schedule for recording. The recorded files can be saved in the HDD, on the client's PC, or on a network storage server. You can search and view the recorded video that is stored locally or through the Internet connection.
Backup	• Supports backing up video, through the network, to a USB 2.0 device. The recorded files can be saved on the network storage server, on a peripheral USB 2.0 device, or to a burner, for example.

Table 1-1 Embedded Network Video Recorder Features

Category	Features
Network Management	• Supports NVR configuration and management through the Ethernet. • Supports device management through the Internet.
Peripheral Equipment Management	• Supports peripheral equipment management such as protocol setup and port connection. • Supports transparent data transmission such as RS232 (RS-422) and RS485 (RS-485).
Auxiliary	• Supports switching between NTSC and PAL. • Supports viewing real-time system resources information and running statistics display. • Supports log file. • Supports local GUI output and shortcut menu operation with a computer mouse. • Supports IR control using shortcut menu operation with a computer mouse. • Supports IP camera remote video preview and control.

Network Video Recorder Components

For camera specifications, please see *Appendix F* on *page 227*.

Figure 1-1 NVR Front Panel

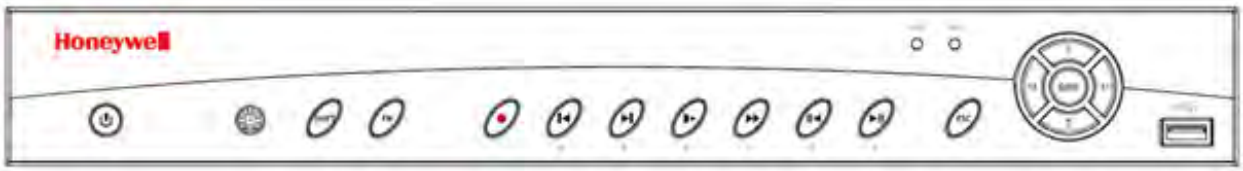


Table 1-2 NVR Front Panel Components

Component Name	Icon	Function
Power Button		Power button. Press this button for three seconds to boot up or shut down the NVR.
IR Receiver		Receives the signal from the remote control.
Shift	**SHIFT**	• When the cursor is in a textbox, click this button to switch between numbers and letters (lower case/upper case). • Enable/disable a tour.

Table 1-2 NVR Front Panel Components

Component Name	Icon	Function
Assistant	**Fn**	• **Single window monitor mode**: Click this button to display the Assistant function; to start PTZ control; and to configure the image color. • **Backspace function**: When entering letters or numbers, press and hold for 1.5 seconds to delete the last-entered character. • **Motion detection**: Use in conjunction with the direction keys. • **Text mode**: When entering characters, click to switch between numbers and letters (uppercase/lowercase). • **HDD management**: Click to switch the HDD recording information and other information. (Menu prompt.) • Other special functions.
Play Previous	◀I	In playback mode, play the previous video.
Play Next	▶I	In playback mode, play the next video.
Slow Play	I▸	Click to adjust the playback speed. Various slow playback speeds are available.
Fast Play	▶▶	Click to adjust the playback speed. Various fast playback speeds are available.
Reverse/Pause	II◀	• **Normal playback**: Click to reverse playback. • **Reverse playback**: Click to pause playback.
Play/Pause	▶II	• **Reverse playback or pause mode**: Click to return to normal playback mode. • **Normal playback**: Click to pause playback. • **Pause mode**: Click to resume playback. • **Real-time monitor mode**: Click to enter the **Search** interface.
ESC	**ESC**	• Go to the previous menu or cancel the current operation. • **Playback**: Click to go back to the real-time monitor mode.
Up/Down	▲ ▼	• Activate the current control, modify setup, and then move up and/or down. • Increase or decrease the current number. • Assistant function such as the PTZ menu.
Left/Right	◀ ▶	• Shift the currently active control, then move left or right. • **Playback mode**: Click to control the playback bar.
Enter	**ENTER**	• Confirm the current operation. • Go to the **Default** button. • Go to the **Menu**.

Table 1-2 NVR Front Panel Components

Component Name	Icon	Function
USB 2.0 Port		Connect to a USB 2.0 storage device, USB 2.0 mouse or CD/DVD burner.
HDD Abnormal Indication Light	**HDD**	Lights **RED** to indicate an HDD error or when the HDD capacity is below the specified threshold.
Network Abnormal Indication Light	**Net**	Lights **RED** to indicate that a network error has occurred or that there is no network connection.

Note The 4-channel NVR is shown in this User Guide.

Figure 1-2 NVR Back Panel

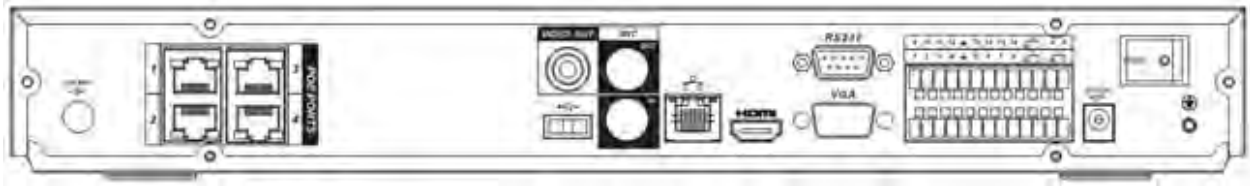


Table 1-3 NVR Back Panel Components

Icon/Marker	Port/Component Name	Connection	Function
	USB 2.0 Port		Connect a USB 2.0 mouse.
	Network Port		10 M / 100 M / 1000 Mbps self-adaptive Ethernet port. Connect to a network cable.
RS232 (RS-422)	**232 Debug COM**		For general COM debugging, to configure the IP address or to transfer transparent COM data.
HDMI	**High Definition Media Interface**		High definition audio and video signal output port. It transmits uncompressed high-definition video and multiple-channel data to the display device's HDMI port.
VGA	**VGA Video Output Port**	VGA	VGA video output port. Outputs the analog video signal. It can connect to the monitor for viewing analog video.

Table 1-3 NVR Back Panel Components

Icon/Marker	Port/Component Name	Connection	Function
1-4	**Alarm Input Port**	I/O Port	• Receives the signals from the external alarm sources. Two types: NO (normally open), NC (normally closed). • When your alarm input device is using external power, please make sure the device and the NVR have the same ground.
⏚	**Alarm Input Port Ground End**		Alarm input ground end.
NO1 to NO3 **C1 to C3**	**3-channel Alarm Output Port**		• Three groups of alarm output ports. (Group 1: port NO1 ~ C1; Group 2: port NO2 ~ C2; Group 3: port NO3 ~ C3). Output alarm signal to the alarm device. Please make sure there is power to the external alarm device. • NO: Normally open alarm output port. • C: Alarm output public end.
A **B**	**RS485 (RS-485) Communication Port**		**RS485_A port**: Cable end A. You can connect to controlled devices such as a speed dome PTZ. **RS485_B port**: Cable end B. You can connect to controlled devices such as a speed dome PTZ.
DC 12V	**Power Input Port**		Input 12 V DC.
Power Button			Power On/Off button.
PoE Ports			The built-in switch supports PoE function. It also supports up to 48 V / 50 W.
DC 48V	**Power Input Port**		Switch power port. Input 48 V DC.
VIDEO OUT	**Video Output Port**		CVBS output.
MIC IN	**Audio Input Port**		Bi-directional communication input port. It receives the analog audio signal output from devices such as a microphone pickup.
MIC OUT	**Audio Output Port**		Audio output port. It outputs the analog audio signal to devices such as an alarm. • Bi-directional communication output. • Audio output on a 1-window video monitor. • Audio output on a 1-window video playback.

USB 2.0 Mouse Components and Functions

Single-click the Left Mouse Button

Table 1-4 Single-click Left Mouse Button Functions

View menu content when you have selected a menu item.	
Modify a checkbox or motion detection status.	
Pop up a dropdown list.	
Input box: Select an input method for an input box. Left-click the corresponding button on the panel to enter a number or letter (uppercase/lowercase). In this mode, ⟵ is the backspace button, and _ is the space button. **English input mode**: ⟵ is the "delete previous character" button, and _ is the backspace space button. **Number input mode**: ⟵ is the "delete previous number" button, and _ is the clear button.	

Double-click the Left Mouse Button

Table 1-5 Double-click Left Mouse Button Functions

Start a special control operation such as double-clicking an item in the file list to play the video.	
Multiple window view mode: Double click the left mouse button on one channel to view it in full window mode. Double click the window again to go back to the previous multiple window view again.	

Single-click the Right Mouse Button

Table 1-6 Single-click Right Mouse Button Functions

When in real time monitoring mode, single-clicking the right mouse button opens the popup shortcut menu.	
Click to exit the currently open menu without saving any changes.	

Click the Mouse Wheel

Table 1-7 Mouse Wheel Functions

Number input mode: Increase or decrease the number's value.	
Enable/disable a check box.	
Page up or down.	

Other Mouse Functions

- Move the mouse to select the current control or move control.
- Define a motion detection zone.
- Define a privacy mask zone.

2

Installation

This chapter includes:

- An overview of connections for alarms and bi-directional communication.
- Instructions for HDD installation.
- Network connections.

Alarm Connection

1. Connect the alarm input device to the alarm input port.
2. Connect the alarm output device to the alarm output port. The NO and NC alarm output device can connect to the NO/C/NC port.
   - For the NO alarm device, please connect to the NO/C ports.
   - For the NC alarm device, please connect to the NC/C ports.

Note The NO/C ports are for NO alarm devices only.

Alarm Configuration

1. Open the web client, login, and go to the **Alarm** setup interface to set the alarm input and output (*Configuring Alarms on page 90*). The alarm setting **01** corresponds to the device's first channel I/O port (and so on).
2. Set the NO/NC type according to the high/low level the alarm input device generates when an alarm occurred. See *Figure 3-47* on *page 91*.
3. Set the alarm output on the web client. See *Configuring Alarm Output on page 154*. The alarm output setting **01** corresponds to the first group of the alarm output port.

Bi-Directional Communication Connection

Audio Output Device to a PC

Connect:

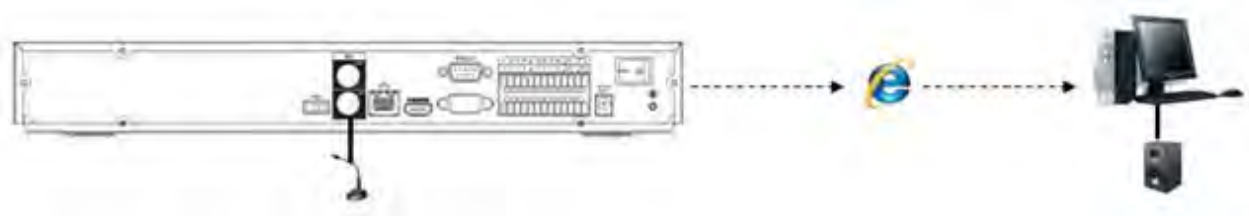
1. Connect a speaker or pickup to the first audio input port on the NVR's rear panel.
2. Connect the earphone or the sound box to the audio output port on your PC.
3. Open the web client and log in.
4. Enable the desired channel in the web client's live view monitor.

Figure 2-1 Enabling Bi-Directional Communication

Configuring to Hear Audio From the NVR

At the NVR end, speak through the microphone or the pickup. Then you can get the audio from the speaker or earphone from the PC end.

Figure 2-2 Configuring to Hear from the NVR



PC to an Audio Input Device

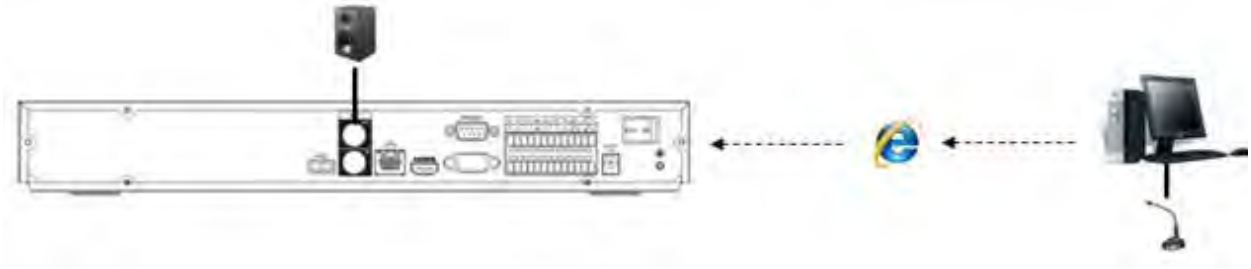
Connect:

1. Connect the microphone or the pickup to the audio output port in the PC
2. Connect the earphone or the sound box to the audio output port on your PC.
3. Open web client and log in.
4. Enable the desired channel in the web client's live view monitor.
5. See *Figure 2-1* for enabling bi-directional communication.

Configuring to Hear Audio from the PC

At the PC end, speak through the microphone or the pickup. Then you can get the audio from the speaker or earphone from the NVR.

Figure 2-3 Configuring to Hear from the PC



Hard Disk Drive Installation

CAUTION **Disconnect power if your NVR is connected to a power source.**

Note The images in this section are for reference only. Your hard disk drive might be different from the one shown.

Hard Disk Drive Recommendations

- See *Compatible SATA HDD on page 219* for a list of recommended Hard Disk Drive (HDD) brands and models.
- Please use a HDD of 7200 rpm or higher.
- Do not use a PC HDD.

Installing a HDD

1. Loosen the screws on the upper cover and side panel of the NVR.

Figure 2-4 Removing the NVR Cover

2. Loosen four screws in the HDD.

Figure 2-5 Loosening the Four Screws in the HDD Housing

3. Align the HDD with the four holes in the bottom of the NVR housing.

Figure 2-6 Placing the HDD

4. Turn the NVR upside down, and then turn the screws to firmly attach the HDD to the NVR housing.

Figure 2-7 Securing the HDD to the NVR Housing

5. Connect the HDD cable and power cable.

Figure 2-8 Connecting the HDD and the Power Cable

6. Replace the NVR cover.

Figure 2-9 Replacing the NVR Cover

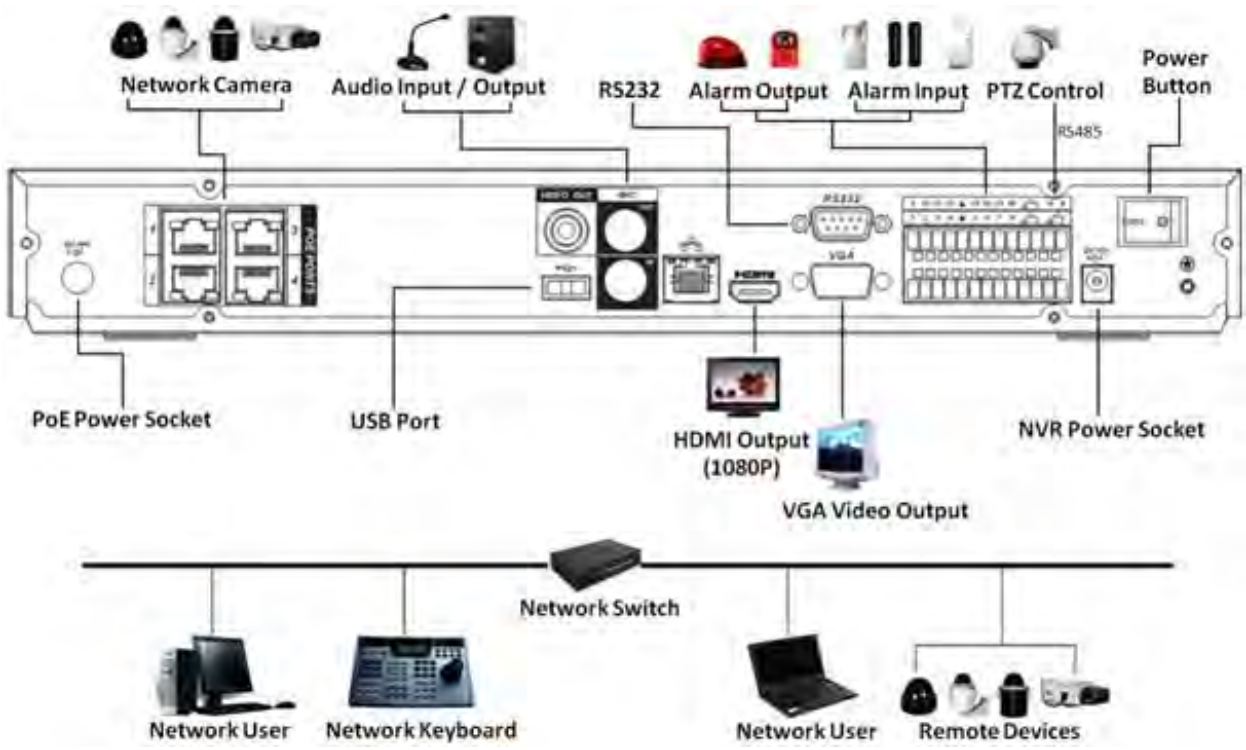
7. Secure the NVR cover in place by turning the screws in the rear and side panels.

Figure 2-10 Securing the NVR Cover

Network Connection

Follow this diagram to connect your NVR to the network.

Figure 2-11 Network Connections



3

NVR Configurations

This chapter includes:

- Logging into the NVR.
- An overview of the NVR GUI, including live viewing, searching, and playing back.
- Instructions on configuring the NVR.

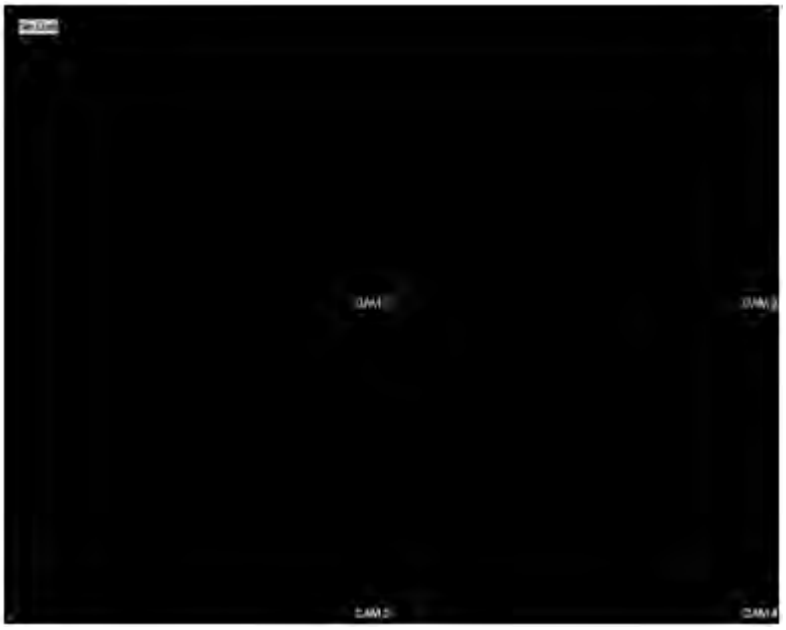
Logging In to Your NVR

Before you can open the GUI for your NVR, you must do the following:

1. Connect your NVR to a monitor.
2. Connect the mouse and power cable to the NVR.
3. Click the power button on the NVR's rear panel to turn on the NVR.

   The NVR will boot up and you will see the GUI, which is in multiple-channel display mode, and the default mode.

Figure 3-1 Multiple-channel Display Mode



Use the mouse to navigate and enter.

Each channel displays its channel recording and alarm status information.

Table 3-1 Channel Recording and Alarm Status Icons

Icon	Status	Icon	Status
	Recording status		Video loss
	Motion detection		Camera lock

Logging In

1. Left-click anywhere on the GUI.

   The **System Login** window appears.

Figure 3-2 System Login Window

2. Click to select the **Password** field.

   An electronic keyboard appears.

Figure 3-3 Electronic Keyboard

3. Enter a password by using the mouse to select characters on the GUI keyboard.

   Click to 123 switch between numbers, letters (uppercase/lowercase), and punctuation/symbols.

   The NVR has four default accounts.

Table 3-2 Default Accounts

Username	Password	Profile
admin	1234	Administrator; local; network
88i8888	888888	Administrator, local only
666666	666666	Lower authority user who can only monitor live and video, play back, backup video
default	default	Hidden user

4. Click **Enter** on the electronic keyboard, and then **OK** on the login window.

   The **Main Menu** appears.

Figure 3-4 Main Menu

Note For your security, we recommend that you modify your password after first login.

CAUTION **If you fail three times at logging within 30 minutes, you will receive a system alarm. If you fail five times at logging within 30 minutes, you will be locked out of your account. Restart the NVR to unlock it.**

Live View

Preview Control

With the preview control, you can do the following:

Preview Playback

- While in the preview desktop, the NVR can play back the previous 5 to 60 minutes of recorded video from the current channel. Go to the **Main Menu ➤ Setting ➤ General** to configure the real-time playback settings. See *Configuring the General Settings on page 60*.
- Supports drag-and-play function. You can use your mouse to select any playback start time.
- Supports playback, pause, and exit functions.
- Will support slow playback (both forward and reverse) in the future.

Digital Zoom

Real-time Backup

Preview Control Interface

Move the mouse to the top center of the current channel's video, and the preview control interface appears.

Figure 3-5 Preview Control Interface

If your mouse hovers in this position for more than 6 seconds without any further action, the control bar automatically disappears.

Table 3-3 Preview Controls

Icon	Name	Function
	**Real-time playback**	Click to play back the previous 5 to 60 minutes of recorded video from the current channel. Go to the **Main Menu ➤ Setting ➤ General** to configure the real-time playback settings. See *Configuring the General Settings on page 60*. You might see a popup window if there is no video recorded for the current channel.
	**Digital zoom**	Click to digitally zoom on a specific area of live video for the current channel. You can also use digital zoom on multiple channels or in multiple-channel view. This icon  indicates the area of video that is enlarged; this icon  indicates the "free" area.
	**Real-time backup**	Use to back up video from the current channel to a USB 2.0 device. The NVR can not back up video from multiple channels at the same time. This icon  indicates the currently selected backup channel. This icon  indicates a free channel. This icon  indicates a free channel when the backup procedure has begun.

Table 3-3 Preview Controls

Icon	Name	Function
	Manual snapshot	Click to manually take a snapshot of the current live video.
	Remote device add shortcut	Click to open the remote device connection interface.
	Bi-directional talk	Click to begin bi-directional communication with the front-end device (camera).
	Exit	

Playback Control

The **Playback Control** supports play, pause, exit, and drag timeline functions.

While playing back video, you can not see the channel title and recording status for the current channel. The channel title and recording status reappear after you leave the playback mode.

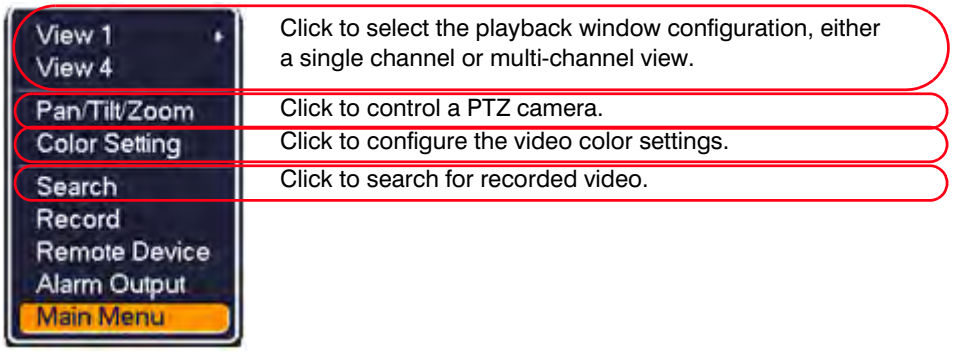
While playing back video, you can not change channels or change the current display mode or configuration.

Note The Tour function has higher priority than Preview Playback. The NVR automatically exits Preview Playback and its interface when a Tour is started. You can not control Preview Playback until the Tour has ended.

Right-Click Menu

After you have logged in to the NVR, right-click the mouse and the right-cut menu appears.

Figure 3-6 Right-cut Menu



Main Menu

After you have logged in to the NVR, the NVR's main menu appears.

Figure 3-7 Main Menu

Search and Playback

Click  to open the **Search** interface.

Figure 3-8 Search Interface

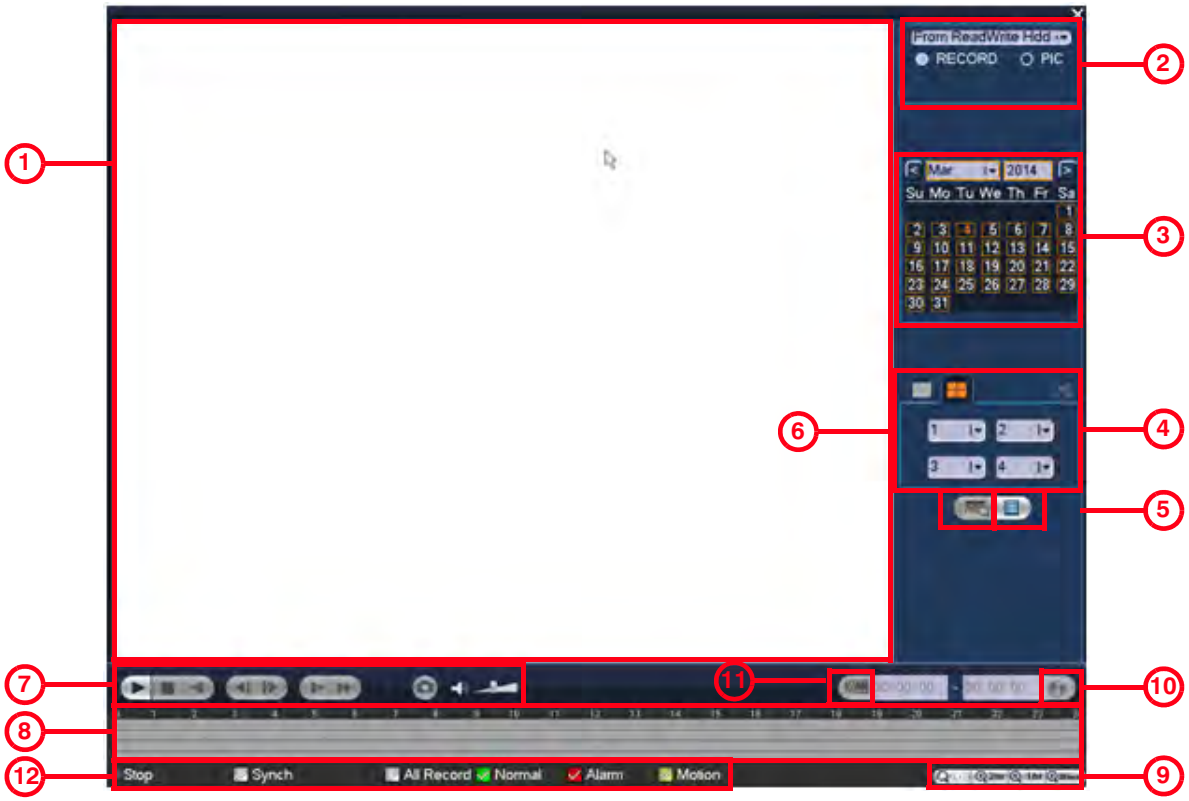


Table 3-4 Search GUI

Number	Name	Function
1	**Display Window**	View the found video or snapshot. Supports 1/4/8-window playback.
2	**Search Type**	Search for recorded video or a saved snapshot. Select to play from the read-write HDD, from a peripheral device, or from a redundancy HDD. Before you can play video from a peripheral device, please remember to connect to that device. You can view all of the recorded files on the root directory of that peripheral device. Click **Browse** to find and select the file you want to play. **Note** The redundancy HDD does not support snapshot backup. It supports picture playback. You can select to play from the redundancy HDD if there are snapshots saved to the redundancy HDD.
3	**Calendar**	If the date is highlighted in orange, that means that there is a picture or file recorded for that date. While in any playback mode, click on the date you want to see. You will see the recorded file that corresponds with that date on the time bar.
4	**Playback Mode and Channel Selection Pane**	Playback mode: 1/4 In the single-window playback mode, you can select one channel from the four available. In the 4-channel playback mode, you can select whatever four channels you require. The time bar changes when you modify the playback mode or the channel option.

Table 3-4 Search GUI

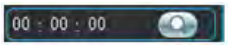
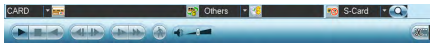
Number	Name	Function
5	**File List Switch Button**	Double-click to view the snapshot/recorded file for the currently selected day. The file displays the recorded file for the first channel. The system can display up to 128 files at a time. Use the▲/▼ or the mouse to select the file. Select a file, then double-click the mouse or click **ENTER** to begin playback. Use the following interface for entering a time period to search for recorded video or a snapshot.  **File types**: **R**=regular recording; **A**=external alarm recording; **M**=motion detection recording. **Lock file**: Click the file you want to lock, then click  to lock the file. **Search locked file**: Click  to view the locked file. **Return**: Click  to return to the calendar and channel setup interface. **Note** The system can lock up to 16 files. The size of the locked file must be less than 25% of the HDD total space. The first 16 G of each partition cannot be locked. The system can lock only one file at a time, and cannot lock the extra streaming file. You cannot lock a file that is currently writing or overwriting.
6	**Card Number Search**	
7	**Playback Control Panel**	See *Table 3-5* on *page 49* for more about the Playback Control interface.
8	**Time Bar**	Displays the recording type and its period in the current search criteria. In the 4-channel playback mode, there are four corresponding time bars. In the single-channel playback mode, there is only one time bar. Use the mouse to click and select a color zone in the time bar for playback. The NVR starts playing that recorded video. The time bar begins at 00:00 when you are setting the configuration. The time bar displays the time period for the video that is playing, plus a range of time before and after. **Green**=regular recorded file; **Red**=external alarm recorded file; **Yellow**=motion detection recorded file.

Table 3-4 Search GUI

Number	Name	Function
9	**Time Bar Unit**	Select from: **24H**, **12H**, **1H**, and **30M**. The smaller the unit, the more magnified the time bar. The time bar allows you to select a more accurate time for playback. The time bar begins at 00:00 when you are setting the configuration. The time bar displays the time period for the video that is playing, plus a range of time before and after.
10	**Backup**	1. From the **File** list, select the file(s) that you want to back up. The system allows you to select up to four channels. 2. Click the **Backup** button. The Backup menu appears. 3. Click **Start** to begin backing up the file(s). Check the file again to cancel the current selection. The NVR can display up to 32 files from one channel.
11	**Clip**	The **Clip** button is used to edit files. 1. While playing the file you want to edit, click **Clip** when you want to edit that file. A slide bar appears that corresponds to the channel for the recorded video. 2. Adjust the time slide bar or enter a specific time for the recorded file end time. 3. Click **Clip** again, and then save the current file as a new file.
12	**Record Type**	While in any playback mode, the time bar changes if you modify the **Search** type.
OTHER FUNCTIONS		
14	**Other Channel Synchronization Switch to Play When Playing Back**	When playing a video file, click a channel number button to switch to video from another channel that was recorded at that time.
15	**Digital Zoom**	1. When in full-screen playback, left-click your mouse on the screen. 2. Drag your mouse across the screen to select a region, then left-click the mouse to open Digital Zoom. Right-click your mouse to exit Digital Zoom.
16	**Manually Switch Channel When Playing Back**	When in full-screen playback, you can switch to another channel either by using the drop-down list or by **scrolling** your mouse. This function is not available if there is no recorded file or if the NVR is conducting a Smart Search.

Figure 3-9 Card Number Search Interface

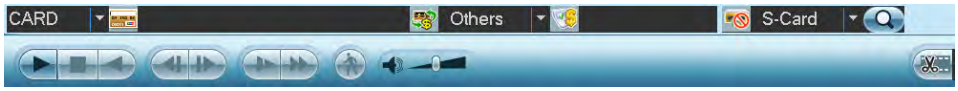


Table 3-5 Playback Controls

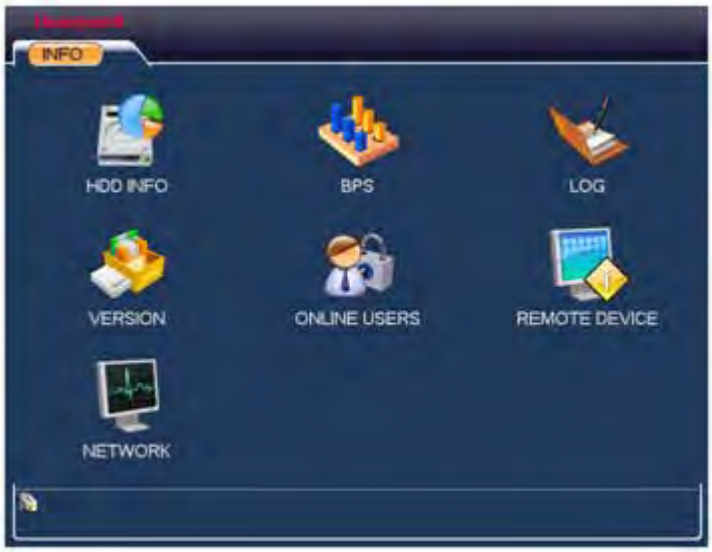
Button	Name	Function
▶/⏸	**Play/Pause**	There are three ways to begin playback: • Click ▶, the play button. • Double-click a time on the time bar. • Double-click a file in the file list. In **Slow Play** mode, click to switch between **Play** and **Pause**.
■	**Stop**	
◀	**Reverse Play**	In **Normal Play** mode, click ◀ to begin playback in reverse. Click it again to pause the current playback. In reverse **Playback** mode, click ▶/⏸ to return to **Normal Playback**.
⏮ ⏭		In **Playback** mode, click to play the next or previous section or file. You can click continuously when you are watching files from the same channel. In **Normal Play** mode, when you pause the currently playing file, click ⏮ or ⏭ to begin **Frame-by-frame Playback**. In frame-by-frame playback, click ▶/⏸ to return to **Normal Playback**.
▶	**Slow Play**	In **Playback Mode**, click ▶ to start **Slow Playback**. Click again to adjust the slow playback speed.
▶▶	**Fast Forward**	In **Playback** mode, click ▶▶ to start **Fast Forward Playback**. Click again to adjust the fast forward playback speed.
Note	The actual playback speed is affected by the software version.	
	Volume	Adjust the volume of the playback video.
	Snapshot Button	Click in the full-screen mode, and the NVR takes one snapshot per second. You can configure the save path for snapshots. If you want to save to a peripheral device: 1. Insert a USB memory stick into the NVR. 2. Playback the desired video in full-screen mode (double-click the playback video to enter full-screen mode). 3. Click in the full-screen mode to create the snapshot and save it to the USB storage device.

Information

You can view the following information on the Information tab:

- HDD INFO (hard disk information)
- BPS (data stream statistics)
- Log
- Version
- Online Users
- Remote Device
- Network

Figure 3-10 Information Tab



HDD Information

Figure 3-11 HDD Information Tab

This page shows the hard disk type, the total space, the free/available space, and the status of the HDD. You can have up to two HDDs.

Table 3-6 HDD Drive Status Symbols

Symbol	Meaning
o	The currently selected HDD is normal.
-	There is no HDD.
?	The disk is damaged.

Note If the disk is damaged, you will see ? in the Status column. Remove the broken disk before adding a new one.

Viewing the HDD Recording Time Information

Click **View recording time** in the **HDD INFO** interface. The HDD recording time interface for the selected HDD appears.

Figure 3-12 HDD Recording Time Information Interface

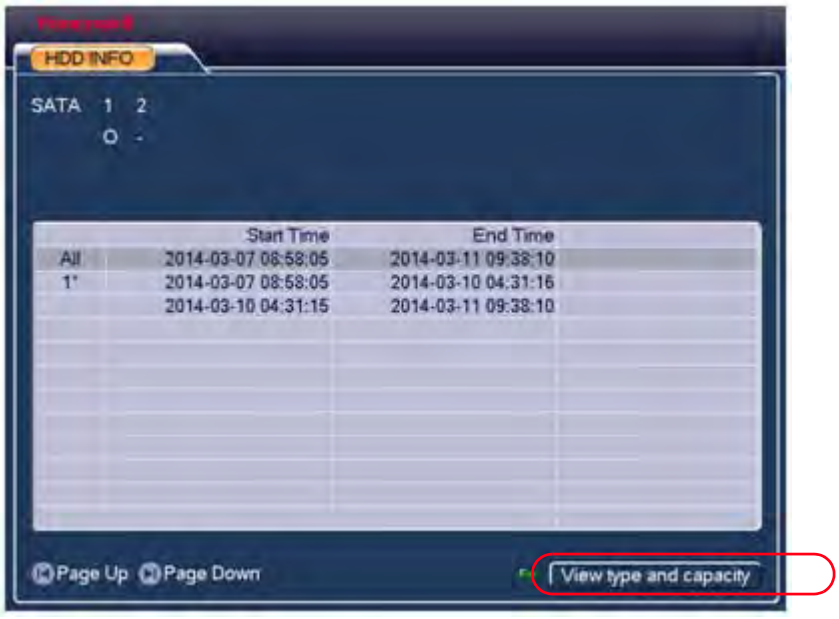


Table 3-7 HDD Recording Time Information

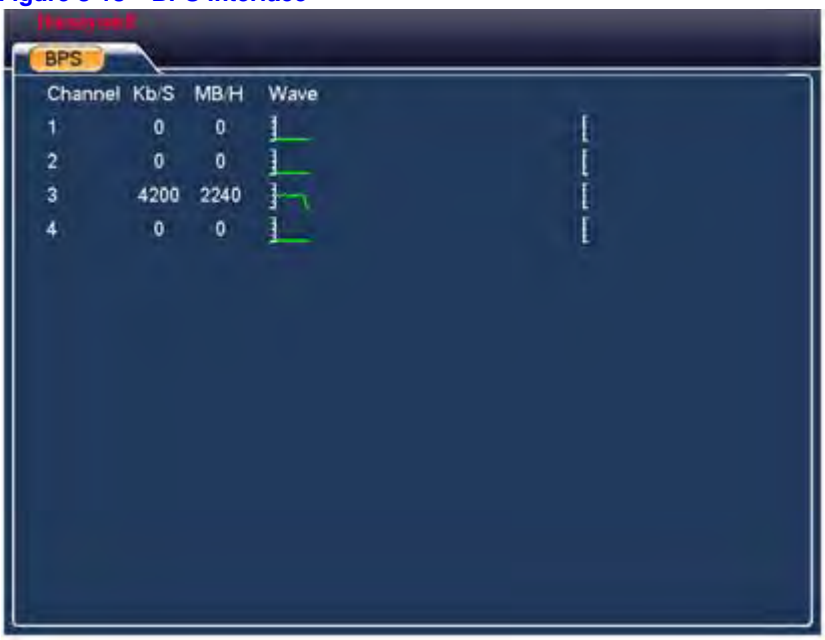
Parameter	Function
SATA	You can connect up to two HDDs, which are shown here. When the connected HDD is working properly. you see **o**. When there is no HDD, you see **-**.
SN	View the size of the HDD drive that is connected to your NVR. When the second HDD is the currently working HDD, you see *****.
Type	The type of the connected HDD.
Total Space	The total capacity of the connected HDD.
Free Space	The total free capacity of the connected HDD.
Status	Indicates if the HDD is working correctly or not.
Bad Track	Indicates that there is a bad track.
Page Up	Click to view the previous page.
Page Down	Click to view the next page.
View Recording Time	Click to view the HDD recording information, such as the file start time and file end time.
View HDD Type and Capacity	Click to view the HDD properties such as status, type, total space, free space, and S.M.A.R.T.

BPS

Click **BPS** 

in the **INFO** tab to open the **BPS** interface.

Figure 3-13 BPS Interface



View the current video data stream (in KB/s) and the stored hard disk storage (MB/h).

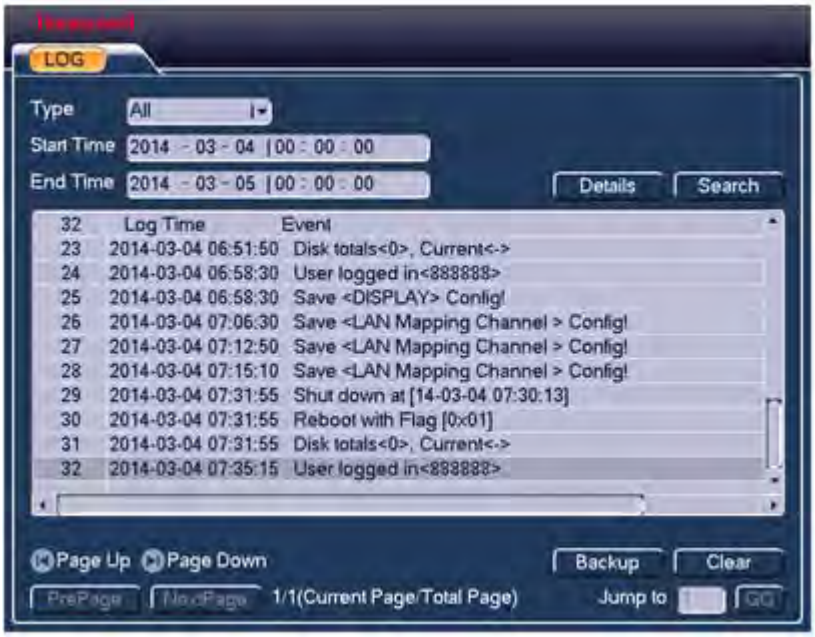
Log

Click **LOG** 

in the **INFO** tab to open the **LOG** interface.

The **LOG** tab displays system log information.

Figure 3-14 Log Tab



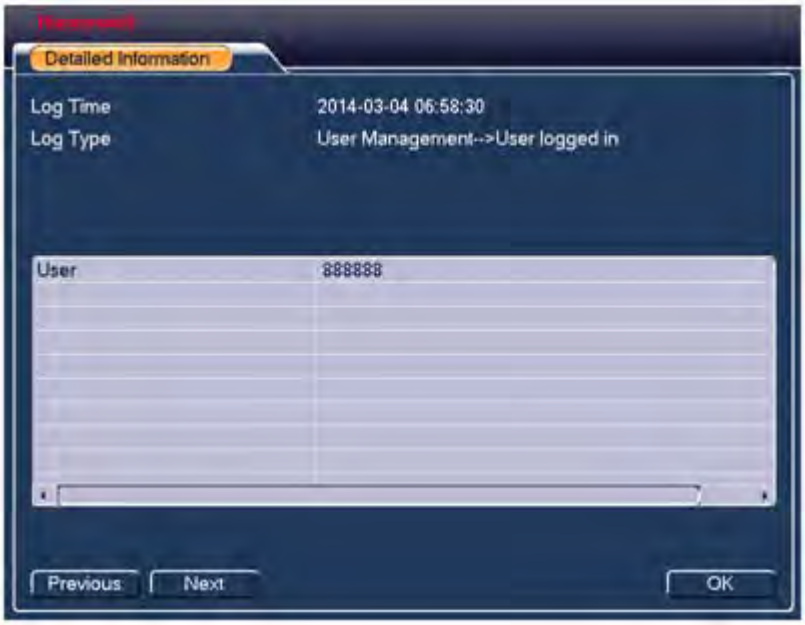
Log types: Select from **All**, **System operation**, **Configuration operation**, **Data management**, **Alarm event**, **Recording operation**, and **Log clear**.

Start/End Time: Select the Start and End time for the log search, then click **Search**.

Backup: Select the folder you want to save, then click **Backup** to save the log file. When the file has been saved, the folder is named **Log_time** on the save path. Double-click the folder to see the file.

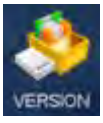
Details: Click the **Details** button or double-click the log item to view detailed information about that file.

Figure 3-15 Detailed Information About a Log File



Use the rolling bar at the bottom to scroll through information about the file. Use **Previous**/**Next** to view other log information. For alarm events such as video loss, you can click the **Playback** button at the bottom right corner to play the alarm event-recorded video.

Version

Click **VERSION** 

in the **INFO** tab to open the **VERSION** interface.

Figure 3-16 Version Tab

On the **Version** tab, you can see the following information about your NVR:

- The channel
- Alarm in
- Alarm out
- System version
- Build date
- Web client software build number
- Serial number

Online Users

Click **ONLINE USERS** 

in the **INFO** tab to open the **ONLINE USERS** interface.

On the **Online Users** interface, you can see the users who are connected to the local NVR.

Figure 3-17 Online Users Tab

On this tab, you can disconnect or block a user, if you have Administrator rights.

Remote Device Information Tab

Click **REMOTE DEVICE** 

in the **INFO** tab to open the **REMOTE DEVICE** interface.

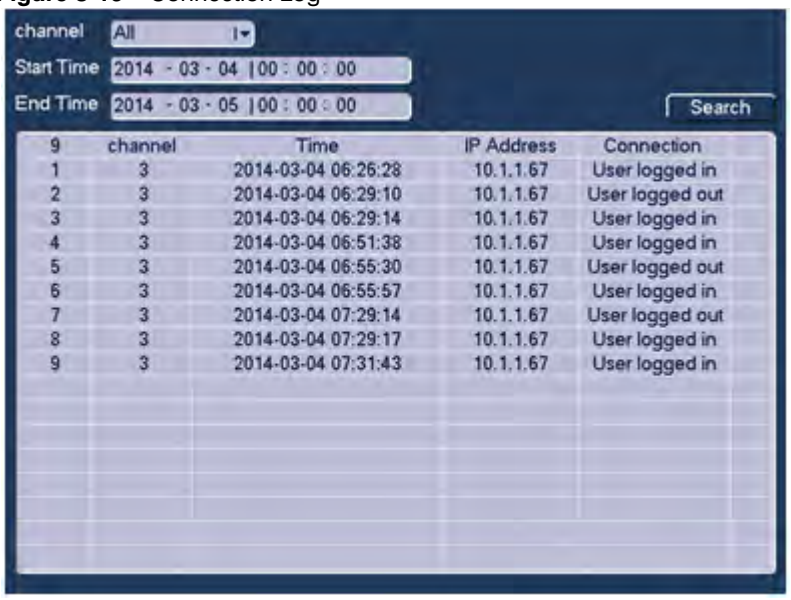
On this tab, you can view the channel status of the remote device, the connection log, etc.

Channel Status: View the IP camera (IPC) status for the corresponding channel, such as motion detection, video loss, camera masking, and alarms.

Figure 3-18 Channel/Device Status

Connection Log: Search the IP camera log information for the corresponding channel. This includes the IP cameras that are online and offline.

Figure 3-19 Connection Log



Network Information

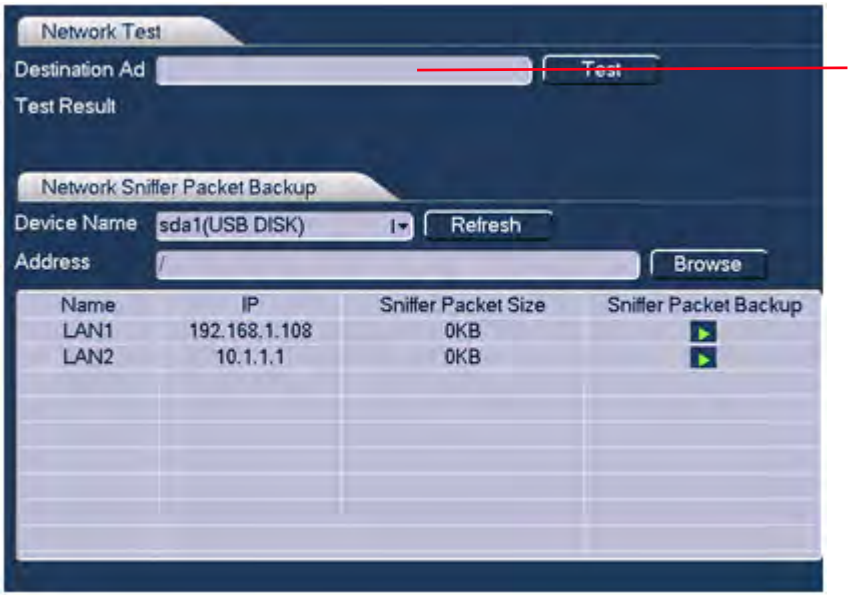
Click **NETWORK** 

in the **INFO** tab to open the **NETWORK** interface.

In the **Network Test** tab, you can test your network connection, and see the average delay and packet loss rate. In the **Network Load** tab, you can see the network information for all connected network adapters, including connection status, send rate, and receive rate.

Network Test Tab

Figure 3-20 Network Test Tab



Network Test

1. Enter an IP address in the Destination Ad field.
2. Click **Test**.

   The test results will show if the network connection is good, as well as the average delay and packet loss rate.

Network Sniffer Packet Backup

1. Insert a USB 2.0 device into the USB port on the front panel of your NVR. See *Figure Note* on *page 29*.
2. Click **Refresh**, then find your USB 2.0 device in the **Device Name** field. See *Figure 3-20*. You might need to use the drop-down menu to find your device.
3. Click **Browse** to select the save path.
4. Click the **Begin Sniffer** button  in the column on the right to start the **Sniffer**.

   All connected adapter names appear in the found network adapters table. Adapter names can include Ethernet, PPPoE, WIFI, and 3G.

   To stop the Sniffer, click the gray **Stop** button.

Note You can not Sniff several network adapters at the same time.

While the Sniffer is working in the background, you can perform other network operations, such as logging into the Web and monitoring. Click  to stop the Sniffer and return to the Sniffer interface. The NVR/system will save the packets to the specified path. The file name is **`Network adapter name+time`**.

Opening the Packets Use software such as Wireshark to open the packets on the PC so that a professional engineer can solve the problem.

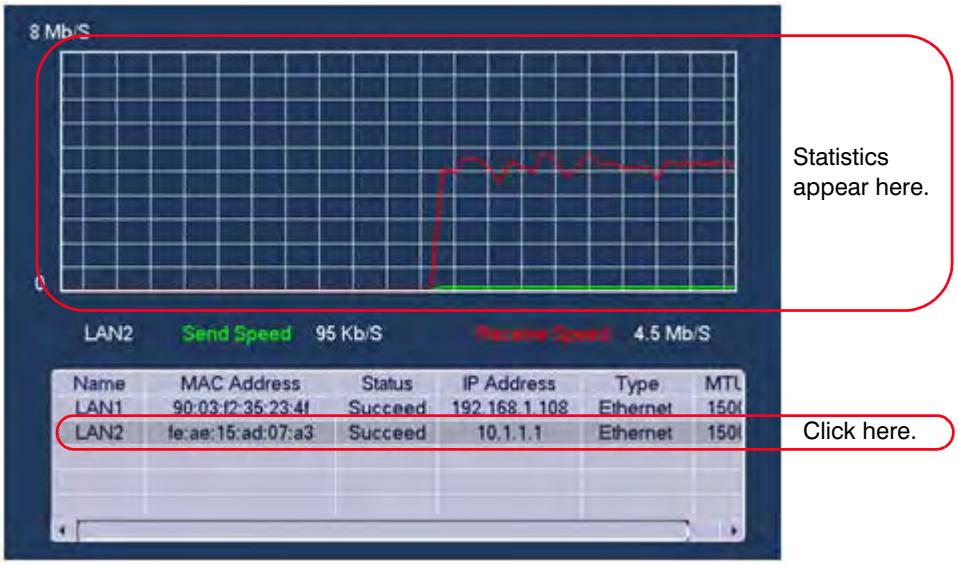
Network Load

Click the **NET LOAD** on the **Network Information** configuration interface.

View and follow the statistics for the device's network adapter.

Click to select a network adapter in the found network adapters table.

Figure 3-21 Network Load Interface



The flow statistics such as send rate and receive rate appear in the top panel.

Settings

In the **Main Menu**, highlight the **Setting** icon, and double-click your mouse. The **Setting** interface appears.

Figure 3-22 Setting Interface

Note You need to have the proper rights to configure the Settings.

Configuring the General Settings

Click the **GENERAL** icon 

to open the General Settings interface.

Figure 3-23 General Settings Interface

Table 3-8 General Settings

Setting	Description
System time	Configure the system time.
Date format	Select from three formats: **YYYY-MM-DD**, **MM-DD-YYYY**, or **DD-MM-YYYY**.
Date separation format	Select from three formats: dot (.), hyphen (-), or slash (/).
Daylight Saving Time (DST)	Configure the DST time and date. 1. Enable DST, then click **Set**. The DST interface appears.  2. Configure the **Start** time and **End** time by either configuring the Week setup, as shown above. Or by configuring the date setup, as shown below.  3. Click **OK** to save the new settings.

Table 3-8 General Settings

Setting	Description
Time format	Select from either **24-hour** mode or **12-hour** mode.
Language	Your NVR supports 12 languages: **Arabic**, **Czechoslovakian**, **Dutch**, **English**, **French**, **German**, **Italian**, **Polish**, **Portuguese**, **Russian**, **Spanish**, and **Turkish**.
HDD full setting	Configure what happens when the HDD is full. Select from **Stop Recording** and **Rewrite**. **Stop Recording**: If the currently working HDD is overwritten or is full while the next HDD is not empty, then the system stops recording. **Rewrite**: If the currently working HDD is full and the next HDD is not empty, then the system overwrites the files saved on the HDD.
Pack duration	Configure how long the NVR records. Select from **60** to **120** minutes. The default is **60** minutes.
Device No.	Used when you are using one remote control to control several NVRs. Assign a device number for each NVR.
Video standard	Select from **NTSC** or **PAL**.
Realtime play	Configure the playback time for Preview. Select from **5** to **60** minutes.
Device ID	Enter a device name.
Holiday setting	Click **Setup** on the **General** setting interface to open the **Holiday Setting** interface.  Go to the **Holidays Period** interface to set the holiday recording setup. See *Holiday Settings on page 197*. **Note** When you enable Holiday settings and a schedule at the same time, the Holiday settings has priority. This means that if a selected day is a holiday, then the NVR follows the holiday setting and ignores the schedule setting. But if the selected day is not a holiday, then the NVR follows the schedule setting. See *Holiday Settings on page 197*. **Note** There is no year setup on the Holiday setting. This might be confusing for holidays that do not fall on the same date each year. For example, if you set a holiday for October 30, 2014, October 30th will be considered a holiday for every year after.

Table 3-8 General Settings

Setting	Description
Mouse properties	Click **MouseSet** to open the mouse setup interface.  You can configure the mouse double-click speed. Click **Default** to restore the mouse settings to the default setup.
Startup wizard	If you check to enable the Startup wizard, then the next time the NVR restarts, it will open to the Startup wizard. If you do not check to enable the Startup wizard, the NVR opens to the login interface.
Auto logout	Configure how long the user can be inactive before the NVR automatically logs out the inactive user. Select from **0** to **60** minutes.
Navigation bar	Check to enable the navigation bar, and it appears on the GUI.
IPC Time Sync	Configure an interval for synchronizing the NVR's time with the IP camera time.

Configuring the Encoding Settings

Click the **Encode** icon  in the **Setting** interface to open the **Encode** interface.

Figure 3-24 Encode Interface

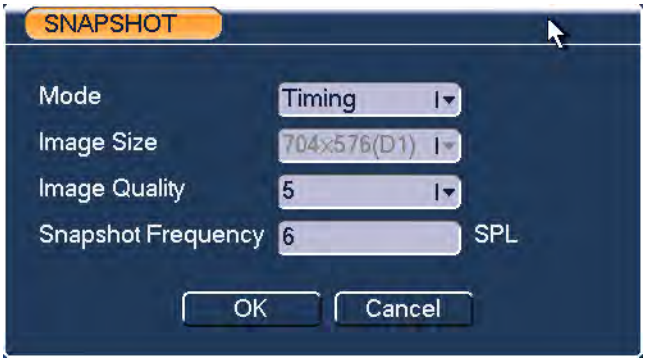
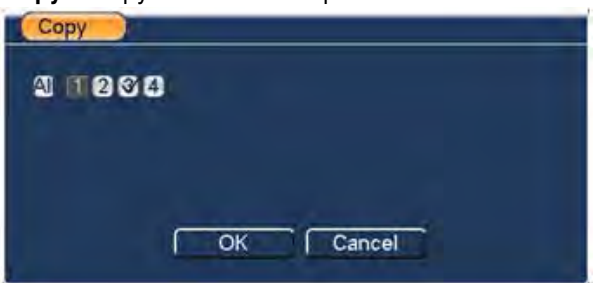
Table 3-9 Encode Configurations

Setting	Description
Channel	Select a channel.
Type	Select an encoding type from the drop-down list. Select from: **Regular**, **Motion Detect**, and **Alarm**. You can select the various encoding parameters for the different recording types.
Compression	The NVR supports **H.264**, **MPEG4**, and **MJPEG**.
Resolution	The mainstream resolution type is IP camera's encoding configuration. Select from **1080p**, **720p**, **D1**, **SXGA**, **1280x960**.
Frame Rate	Select from 1 f/s to 25 f/s in NTSC mode; 1 f/s to 30 f/s in PAL mode.
Bit Rate Type	Select from **CBR** and **VBR**. If you select **VBR**, then you can configure the video quality.
Bit Rate	Select from **4096**, **6144**, **8192**, or customize the Bit Rate setting. If you choose **Customize**, you must enter a bit rate value.
Audio/video	Enable or disable the audio/video.

Table 3-9 Encode Configurations

Setting	Description
Overlay	Click **Overlay** to open the **Overlay** interface.  **Cover area (privacy mask)**: Configure the privacy mask to block certain areas of the video. Drag the mouse to select the area. When in 1-channel mode, the NVR supports up to 4 privacy mask zones. **Preview**/**monitor**: The privacy masks have two types: **Preview** and **Monitor**. If you select **Preview** for a privacy mask zone, then when the NVR is in Preview status, the privacy mask zone can not be viewed by users. If you select **Monitor** for a privacy mask zone, then when the NVR is in Monitor status, the privacy mask zone can not be viewed by users. **Time display**: Select whether the NVR displays the time during playback. Click **Set**, and then drag the time display to the desired position on the video. **Channel display**: Select whether the NVR displays the channel during playback. Click **Set**, and then drag the channel display to the desired position on the video.

Table 3-9 Encode Configurations

Setting	Description
Snapshot	Click **SNAPSHOT** in the **General** settings interface to open the **SNAPSHOT** interface.  **Media**: Choose from **Timing** or **Trigger**. If you choose **Timing**, then the snapshot is taken according to a scheduled time. If you choose **Trigger**, then the snapshot is taken in response to an internal and/or external alarm trigger. **Image Size**: Choose an image size. **Image Quality**: Choose from **1** to **6**. The higher the number, the higher the quality of the snapshot. **Snapshot Frequency**: Choose from **1** to **7 SPP** (seconds per picture).
Copy	After you have finished configuring the current channel, you can click **Copy** to copy the current setup to other channels.  The currently selected channel is in gray. Click to select channels to which you want to copy the setup, or click to select **All**. Click **OK** twice (once in the **Copy** interface, once in the **Encode** interface) to save the settings and complete the setup.

Configuring the Schedule

Click the **Schedule** icon  in the **Setting** interface to open the **Schedule** interface.

Figure 3-25 Schedule Interface

Table 3-10 Schedule Configurations

Parameter	Function
Channel	Select a channel number. Select **All** for all channels.
Week day	Select a day of the week, or **All**.
Pre-record	The NVR has a buffer that allows it to "record" video that happens before an event occurs. Select from **1** to **30** seconds, depending on the bit stream.
Redundancy	You can configure the NVR to backup recorded files onto two different HDDs. Click to enable. **Note** Before you can enable this function, you must configure at least one HDD as redundant. Go to **Main Menu ➤ Advanced ➤ HDD Management**). **Note** This function is not available if there is only one HDD.
Snapshot	Click to enable the **Snapshot** function, which takes a snapshot when an alarm occurs.
Record type	Select from: **Regular**, **Motion Detection (MD)**, **Alarm**, **MD&Alarm**.
Holiday	Click to enable the holiday settings you configured in the General interface. See *Configuring the General Settings on page 60*.

Click the corresponding box ☐ to enable each function. Click **OK** to save the settings and return to the previous menu.

Note If you have configure the NVR to record when motion detection and alarms occur (**MD&Ala**), then the NVR will not record if it detects only motion detection or an alarm.

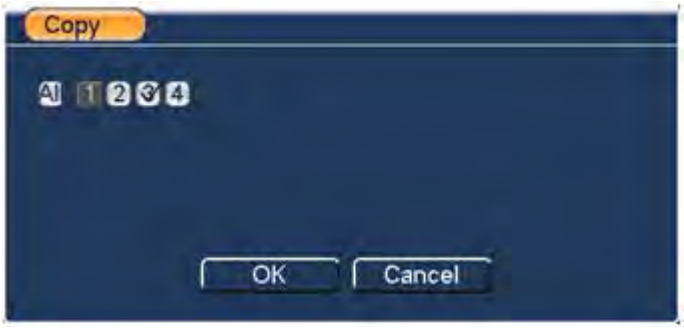
Quick Setup

The **Copy** button allows you to copy one channel's setup to other channels.

1. Click **Copy** after configuring a channel.

   The **Copy** interface appears.

Figure 3-26 Copy Interface



The currently selected channel is highlighted in gray.

2. Click to select the channel or channels to which you want to copy the settings. Click **All** to select all channels.
3. Click **OK** in the **Copy** interface, then click **OK** again in the **Encode**/**Schedule** interface to complete the copy function.

Note If you select **All**, then the recording setup for all channels is the same, and then the Copy button disappears.

Configuring RS232

Click the **RS232** icon 

in the **Setting** interface to open the **RS232** configuration interface.

RS232 Configuration Interface

Table 3-11 RS232 Configurations

Parameter	Function
Function	Select from six devices. **Console**: Use the COM or mini-end software to upgrade or debug the program. **Control Keyboard**: Use the special keyboard to control the NVR. **Transparent COM** (adapter): Connect to the PC to directly transfer data. **Protocol COM**: Used for card overlay. **Network Keyboard**: Use the special keyboard to control the NVR. **PTZ Matrix**: Use to connect to the peripheral matrix control. The default setting is: **Console**.
Baudrate	Select an appropriate baud rate. The default setting is **115200**.
Data Bits	Select an appropriate data bit. Select from **5** to **8**. The default setting is **8**.
Stop Bits	Select from: **1**, **1.5**, or **2**. The default setting is **1**.
Parity	Select from: **None**, **Odd**, **Even**, **Space Mark**. The default is **N one**.

Click **Save** to save the new configuration. The NVR will return to the previous menu.

Configuring the Network

Click the **Network** icon 

in the **Setting** interface to open the Network configuration interface.

Figure 3-27 Network Interface

IPv4

IPv6

Table 3-12 Network Configurations

Parameter	Function
IP Version	Select either **IPv4** or **IPv6**. Both formats are supported.
MAC Address	Each NVR gets a unique MAC address. You can use the MAC address to connect to the NVR in the LAN. The MAC address is not configurable; it is read-only.
IP Address	Use the Up/Down arrows (▲/▼) to select an IP address, or use the keyboard to enter an IP address. Then configure the corresponding subnet mask for the default gateway.
Subnet Prefix	Select from **0** to **128**. Used to mark a specified network MAC address.
Default Gateway	Enter the default gateway. **Note** The system needs to check the validity of all IPv6 addresses. The IP address and the default gateway must be in the same IP section. The specified length of the subnet prefix must have the same string.

Table 3-12 Network Configurations

Parameter	Function
DHCP	Used to automatically search for the IP address. When the DHCP function is enabled, you can not modify the IP address, Subnet mask, or Gateway. If you have not enabled DHCP, the IP address, Subnet mask, and Gateway are all **0** by default. To view the current the IP information, you must turn off DHCP. You can not modify the IP address, Subnet mask, or Gateway if you are using PPPoE.
TCP Port	Default is **37777**. This value is configurable.
UDP Port	Default is **37778**. This value is configurable.
HTTP Port	Default is **80**.
RTSP Port	Default is **554**.
Note If you change and any of the above port settings, you must reboot your NVR to activate those saved settings. Please ensure that the these port settings do not conflict.	
Max Connection	The NVR can support up to 20 users. **0** means that this NVR can not connect to any PC or other device.
MTU	Configure the MTU value for the network adapter. Select from **1280** to **7200** bytes. The default is **1500** bytes. **Note** MTU modification can affect the current network service. Click **OK** to confirm a reboot, or click **Cancel** to cancel the modifications. **Note** Before configuring the MTU for the NVR, check the gateway's MTU. The NVR's MTU should be the same or lower than the MTU's gateway. This helps to reduce the number of packets and increases network transmission efficiency.
MTU Values (reference only)	**1500**: The Ethernet information packet maximum value. This is also the default value, especially where there is no PPPoE or VPN. This is also the default setup for some routers, switches, or the network adapter. **1492**: The recommended value for PPPoE. **1468**: The recommended value for DHCP. Please ensure that the MTU port does not conflict with other ports.
Preferred DNS Server	Enter the preferred DNS server IP address.
Alternate DNS Server	Enter an alternate DNS server IP address.
Transfer Mode	Select a priority, either **Fluency** or **Video Quality**.
LAN Download	If you enable this function, the NVR can process the downloaded data first. Select a download speed, either **1.5x** or **2.0x** the normal speed.

Note For IPv6 IP addresses, the Default Gateway, Preferred DNS, and Alternate DNS should be a 128-digit number. Do not leave these fields blank.

You must click **Save** after configuring the Network. The system returns to the previous menu.

Configuring Network Settings

Click **NETWORK SETTING** 

on the Network configuration interface. The **Network Setting** configuration interface opens.

Figure 3-28 Network Setting Configuration Interface

Click to enable a network setting configuration.

Double-click to a configuration window for each network setting configuration.

Configuring the IP Filter

Figure 3-29 IP Filter Configuration Interface

You can add safe ID addresses which the NVR can safely access. You can add up to 64 IP addresses.

Note The NVR needs to check the validity of all IPv6 addresses.

If you enable **Trusted Sites**, then only the IP addresses that are listed can access the NVR. If you enabled **Blocked Sites**, then the listed IP addresses can not access the NVR.

Table 3-13 IP Filter Configurations

Parameter	Function
Enable	Click to enable either **Trusted Sites** or **Blocked Sites**. The Trusted Sites/Blocked Sites drop-down menu is available only if those functions have been enabled here.
Type	Select either **Trusted Sites** or **Blocked Sites**. When you select either **Trusted Sites** or **Blocked Sites**, the IP address list for that selection appears in the table.
IP Start address/IP End address	1. Select a list **Type**. 2. Enter start and end IP addresses. 3. Click in the field, and enter the IP address. • Newly added IP addresses are enabled by default. Click to disable and remove the IP address from the list. • The NVR supports up to 64 IP addresses. • The NVR supports both IPv4 and IVp6 address formats. If you are using an IPv6 address, the NVR can optimize that address. For example, aa:0000: 00: 00aa: 00aa: 00aa: 00aa: 00aa as aa:: aa: aa: aa: aa: aa: aa. • The NVR automatically removes spaces if there are spaces before or after the newly added IP address. • If you add an IP address, the NVR checks the start address only. If you add an IP address section, and the end address is greater than the start address, then the NVR check both the start and the end address. • The NVR checks if the newly added IP address exists. The NVR will not accept the new IP address if it does not exist.
Delete	Click to remove the selected item.
Edit	Click to edit the start address and/or the end address. After editing the IP address, the NVR can again check for the new IP address' validity, and implement IPv6 optimization.

Configuring the NTP Setup

Before you can use NTP, you must first install an SNTP server (such as Absolute Time Server) in your PC. In Windows XP OS, you can use **`command net start 232 time`** to boot up an NTP service.

Figure 3-30 NTP Configuration Interface

Table 3-14 NTP Configurations

Parameter	Function
Host IP	Enter your PC's IP address.
Port	This NVR supports TCP transmission only. The default port value is **123**.
Update Period	The minimum value is **1**. The maximum value is **65535**. (Units=minute)
Time Zone	Select the time zone here.
Manual Update	This allows you to manually synchronize the time with the server.

Table 3-15 Time Zones

City/Region Name	Time Zone
London	GMT + 0
Berlin	GMT + 1
Cairo	GMT + 2
Moscow	GMT + 3
New Delhi	GMT + 5
Bangkok	GMT + 7
Beijing (Hong Kong)	GMT + 8
Tokyo	GMT + 9
Sydney	GMT + 10
Hawaii	GMT - 10
Alaska	GMT - 9
Pacific Time (PT)	GMT - 8
American Mountain Time (MT)	GMT - 7
American Central Time (CT)	GMT - 6

Table 3-15 Time Zones

City/Region Name	Time Zone
American Eastern Time (ET)	GMT - 5
Atlantic Time	GMT - 4
Brazil	GMT - 3
Middle Atlantic Time	GMT - 2

Configuring the Multicast Settings

You can configure a multiple cast (Multicast) group.

Figure 3-31 Multicast Configuration Interface

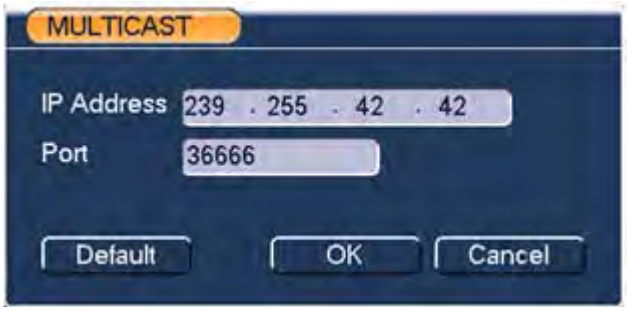


Table 3-16 Multicast Configurations Special IP Addresses

Parameter	Description
IP multiple cast group address	Enter a value between 224.0.0.0 to 239.255.255.255.
Reserved local multiple cast group address	Enter a value between 224.0.0.0 to 224.0.0.255. TTL = 1 when sending out a telegraph. For example: **224.0.0.1** All systems in the sub-net. **224.0.0.2** All routers in the sub-net. **224.0.0.4** DVMRP router. **224.0.0.5** OSPF router **224.0.0.13** PIMv2 router.
Administrative scoped addresses	Enter a value between 239.0.0.0 to 239.255.255.255. • Like the single broadcast address of RVC1918 • Cannot be used in Internet transmission • Use for multiple cast broadcast in limited space

You can use any IP address except for the IP addresses mentioned in *Table 3-16*.

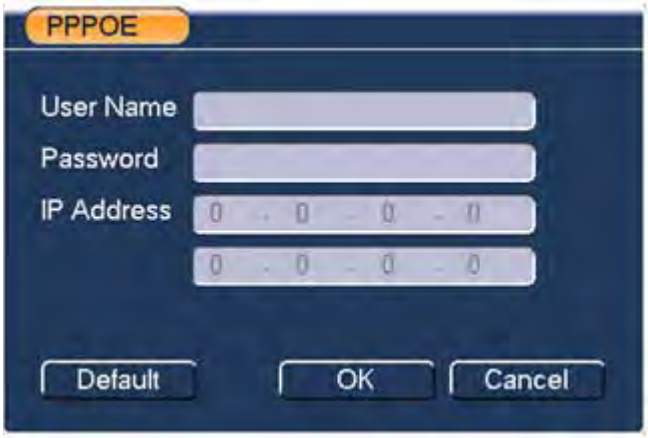
For example, you can use the following:

- Multiple cast IP: 235.8.8.36
- Multiple cast port: 3666

After you have logged onto the web client, the web client can automatically get the multiple cast address, and add it to the multiple cast groups. You can enable the real-time monitor function to view the view.

Configuring the PPPoE Settings

Figure 3-32 PPPoE Configuration Interface



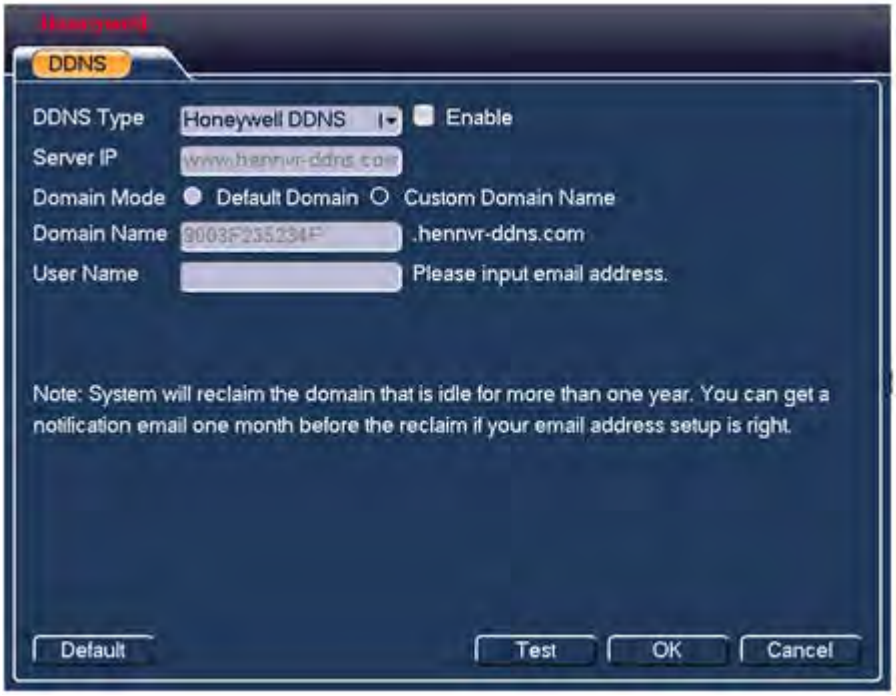
1. Enter the **PPPoE name** and **password** that you received from your Internet Service Provider (ISP).
2. Click **OK**.
3. Reboot your NVR to activate the new settings.

   After you reboot, the NVR will automatically connect to the internet. The IP address that appears is the dynamic IP address for the NVR.

Note You can access the NVR through this dynamic IP address. Just enter it in the address field of a browser.

Configuring the DDNS Settings

Figure 3-33 DDNS Configuration Interface



Before you begin configuring DDNS:

- Ensure that your PC has a fixed IP address.
- Ensure that your PC is running the DDNS software.

In other words, ensure that your PC is a DNS (domain name server).

Configuring DDNS

Table 3-17 DDNS Configurations

Parameter	Description
DDNS Type	You can select the DDNS protocol from the drop-down list, and then enable the **DDNS** function. Select the Honeywell DDNS server (which is free) to enable the DDNS function.
Server IP	This is the DDNS server IP address. Under **Honeywell DDNS**, the default server address is ***www.hennvr-ddns.com***.
Mode	Select **Auto** or **Manual**. The default is **Auto**. If you select **Manual**, then you must enter a domain name.
Domain Name	Auto and self-defined domain names are both ***MAC address.hennvr-ddns.com***. You can define the prefix.
Username	The user name you enter to log in the server (Optional).

Note The NNDS type can include: Honeywell DDNS, CN99 DDNS, NO-IP DDNS, Quick DDNS, and Dyndns DDNS. All of these types of DDNS can be valid at the same time. Select which one you need.

Note Do not register frequently. You need to wait at least 60 seconds between registration requests. Too many registration requests might leave your server vulnerable to attacks.

Configuring the UPnP Settings

The UPnP protocol establishes a mapping relationship between the LAN and the WAN. Double-click **UPNP** in *Figure 3-28*, *Network Setting Configuration Interface*, to open the **UPNP** configuration interface.

Figure 3-34 UPNP Configuration Interface

Table 3-18 UPnP Configurations

Parameter	Function
UPnP On/Off	Turn **On** or **Off** the UPnP function.
Status	Displays **Unknown** when the UPnP is offline. Displays **Success** when the UPnP is working.
Router LAN IP	The router IP in the LAN.

Table 3-18 UPnP Configurations

Parameter	Function
WAN IP	The router IP in the WAN.
Port Mapping list (PAT Table)	This is the one-to-one relationship with the router's port mapping setting.
Enable Switch	A check mark ✓in the box ❒ indicates that port mapping is enabled for this port.
List	**Service Name**: Defined by the user. **Protocol**: The protocol type. **Internal port**: The port that has been mapped in the router. **External port**: The port that has been mapped locally.
Default	Click to restore the UPnP default port settings, which is the HTTP, TCP, and UDP for the NVR.
Add to the List	Click to add the mapping relationship.
Delete	Click to remove a mapping item.

Double-click the UPnP item in the list to configure it. A configuration window appears.

Figure 3-35 Port Info Configuration Interface

Configuring the WIFI Settings

The **Network Settings** interface shows the WIFI connection status. The interface shows the current connection status and the IP address, if there is a connection.

Figure 3-36 WIFI Connection Status

Double-click **WIFI Setting** to open the **WIFI Setting** interface.

Figure 3-37 WIFI Setting Interface

Table 3-19 WIFI Setting Functions/Control

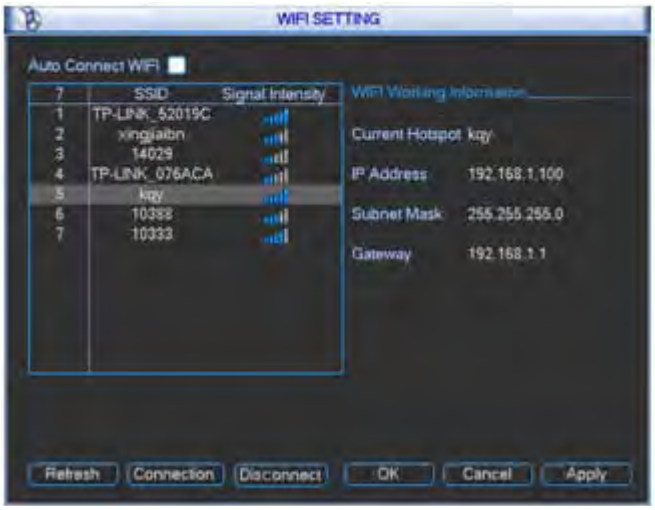
Button/Control	Description
Auto Connect WIFI	Check to enable **Auto Connect WIFI**. The NVR automatically connects to the previous hotspot.
Refresh	Click to refresh the list of found hotspots. When the list is refreshed, the system automatically adds any previously configured information such as a password.

Table 3-19 WIFI Setting Functions/Control

Button/Control	Description
Disconnect	Click to disconnect from the hotspot.
Connection	Click to connect to the hotspot. The NVR needs to turn off the current connection and then connect to a new hotspot, if you have selected a new one. The **WIFI Connection** interface appears. WIFI Connection interface, no connection.  WIFI Connection interface, showing a connection. 
Connection Status	Shows the connection status. After successfully connecting, the WIFI icon appears in the top right corner of the preview interface. When the hotspot Verification Type is WEP, the NVR displays **AUTO**, because the device can not detect its encryption type. The NVR does not support verification of types WPA and WPA2. The display might become abnormal for the verification type and the encryption type.

When the NVR has successfully connected to the WIFI, the hotspot name, IP address, subnet mask, default gateway are all visible.

Figure 3-38 Viewing WIFI Settings



Configuring the Email Settings

Figure 3-39 Email Configurations Interface

Table 3-20 Email Configurations

Parameter	Description
SMTP server	Enter the email SMTP server IP.
Port	Enter the corresponding port.
User Name	Enter the user name for logging in to the sender's email box.
Password	Enter the login password here.
Sender	Enter the sender's email address.
Title	Enter an email subject. You can use up to 32 letters or numbers.

Table 3-20 Email Configurations

Parameter	Description
Receiver	Enter the receiver's email address. You can enter up to 3 email addresses.
SSL enable	The NVR supports an SSL encryption box.
Event Interval	The interval for sending ranges from **0** to **3600** seconds. **0** means that there is no interval.
Health email enable	Click to enable the email health check. The NVR sends a test email to check the network connection.
Interval	After enabling Health Enable, you can configure how frequently the NVR sends out emails to test the network connection. Click **Test** to send a test email. A popup message appears to indicate the state of the network connection. 

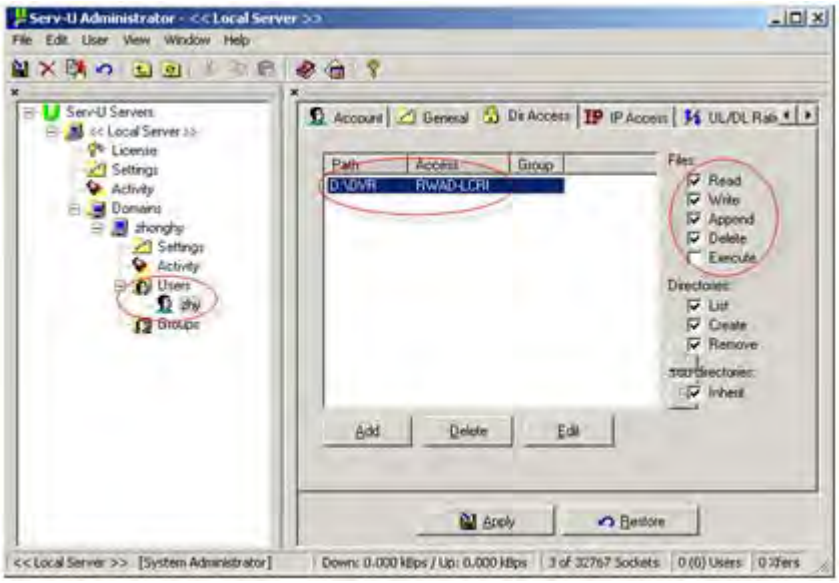
Configuring the FTP Settings

You need to download or buy an FTP service tool (such as Ser-U FTP SERVER, used as an example below) to have FTP service.

Installing the FTP service tool

1. Go to **Start ➤ Program ➤ Serv-U FTP SERVER ➤ Serv-U Administrator**.

Figure 3-40 Configuring FTP



2. Configure the password and the FTP folder.

Note You need to grant the FTP upload user the right to write to the FTP server.

3. Use your PC or the FTP login tool to test the setup.

   For example, you can log in user ZHY to FTP://10.10.7.7, and then test to see if you can modify or delete folders.

Figure 3-41 Testing the FTP Setup

Uploading Multiple NVRs onto an FTP Server

The system FTP server also supports uploading to multiple NVRs on one FTP server. You can create multiple folders under this FTP.

1. Double-click **FTP** in the **Network Setting** configuration window.

Figure 3-42 Network Setting Configuration Interface

The FTP configuration interface appears.

Figure 3-43 FTP Configuration Interface

2. Click to enable the **FTP** function.
3. Enter an FTP server address, port, and remote directory.

Table 3-21 FTP Configurations

Parameter	Description
User Name	The same user name that you used for logging in to the FTP.
Password	The same password that you used for logging in to the FTP.
File Length	This is the upload file length. When the setup is larger than the actual file length, then the system will upload the whole file. When the setup is smaller than the actual file length, the system uploads only the set length, and then ignores whatever exceeds that length. When the interval value is **0**, then the system uploads all corresponding files.

Note When the remote directory is null, the system automatically creates folders according to the IP, time, and channel.

4. Select a **Channel** and **Weekday**, then configure up to two **Time Periods**.
5. Click **Test** to test the network connection.

   A popup message appears to indicate the state of the network connection.

Figure 3-44 Message Indication FTP Connection Failure

Alarm Center

Not functional at this time.

Configuring SNMP

Simple Network Management Protocol (SNMP) provides the basic network management frame for the network management system. SNMP is widely used in many environments, in many network devices, software, and systems.

Note Use the corresponding software tool (MIB Builder and MG-SOFT MIB Browser, plus two MIB files: BASE-SNMP-MIB, and NVR-SNMP-MIB) to connect to the NVR.

The corresponding device configuration information appears after you have successfully connected.

1. Double-click SNMP in the **Network Setting** configuration window. The SNMP configuration interface appears.

Figure 3-45 SNMP Configuration Interface

2. Click to enable **SNMP**.
3. Enter in the **Trap Address** field the IP address for the PC that is running the software.

   You can use the default settings for the other items.
4. Compile the two MIB files. See the note on *page 88*.
5. Run the **MG-SOFT MIB Browser** to load the files through the software MIB Builder.
6. Enter the IP for the device you want to manage in the MG-SOFT MIB Browser. Make a note for your future reference.
7. Open the tree list in the **MG-SOFT MIB Browser** where you can get the device configuration. You can see the following information for the device: the number of video channels, the number of audio channels, the version number, for example.

Configuring Auto Register Settings

The **Auto Register** function allows the device to automatically register to the proxy that you have specified. This means that you can use the client-end to access the NVR through the proxy. The proxy has a switch function. The device supports server either IPv4 or domain server addresses.

Follow these steps to set the proxy server address, the port, and the sub-device name at the device end.

1. Double-click **Auto Register** in the **Network Setting** configuration window. The **Auto Register** configuration interface appears.

Figure 3-46 Auto Register Configuration Interface

Note Do not enter a TCP port number for the network default port.

2. Click to **Enable** automatic registration to the proxy server.
3. Open the proxy server software that was developed from the SDK, then enter the global setup.

   Ensure that the auto connection port here is the same as the port you set in *step 2*.
4. Add the device. Do not enter the default port number such as the TCP port in the mapping port number. The device ID should be the same as the ID you entered in *Figure 3-46*.
5. Click **Save** to complete the setup.
6. Boot up the proxy server. If you see that the network status is **Y**, then you correctly registered your device. You will be able to see the proxy server when the device is online.

Note The server IP address can also be the domain. However, you need to register the domain name before you can run the proxy device server.

Configuring Alarms

Click the **Alarms** icon 

in the **Setting** interface to open the **Alarms** configuration interface.

Figure 3-47 Alarms Configuration Interface

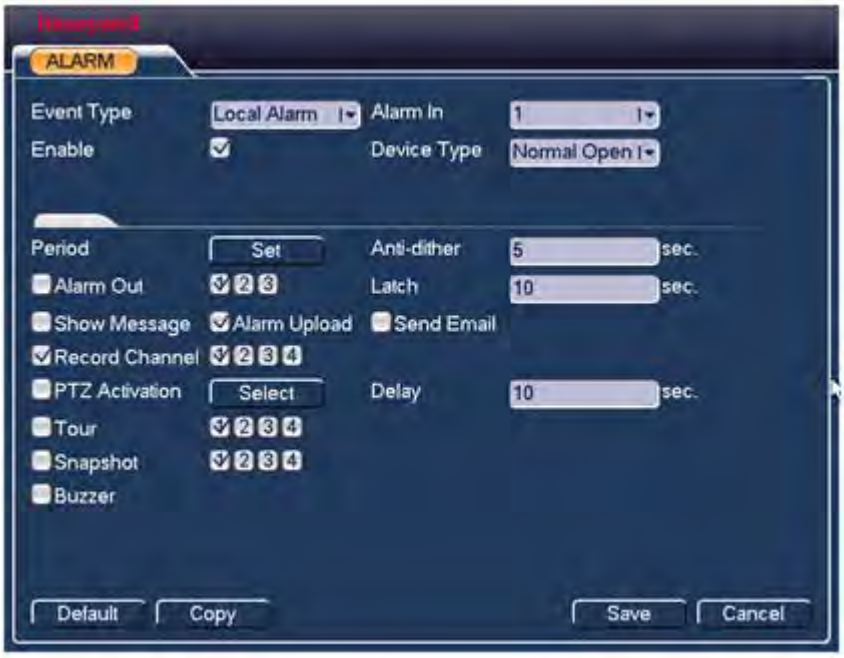


Table 3-22 Alarm Configurations

Parameter	Description
Event Type	Select from four types: **Local input alarm**: The alarm signal system detects from the alarm input port. **Network input alarm**: An alarm signal from the network. **IPC external alarm**: The on/off alarm signal from the camera, which activates the local NVR to receive the IP camera's alarm if there is an alarm occurring at the camera. **IPC offline alarm**: When enabled, the system generates an alarm when the front end IP camera disconnects from the local NVR. The alarm can activate recording, PTZ control, or taking a snapshot, for example. The alarm can last until the camera and the NVR connection resumes.
Alarm In	Select a channel.
Enable	Click to enable the this alarm configuration.
Device Type	Select either **Normally Open** or **Normal Closed**.

Table 3-22 Alarm Configurations

Parameter	Description
Period	Configure when the local alarm period is active. 1. Click **Set**. The **Set** configuration interface appears.  2. Select a a day of the week, or **Work Day** or **Free Day**. **Note** If you select **Work Day** or **Free Day,** a **Set** button appears so you can configure which days are **Work Days** and which days are **Free Days.** Click **Set**, select the Work Days and the Free Days, then click **Save**.  3. Enter a time range for the alarm, then click the check box to select that time range. **Note** Newer configurations override previous configurations. For example, if you configure Work Days with an alarm period from 8:30 to 17:30, and then Configure a Monday alarm period for 7:10 to 18:00, the Monday alarm period overrides the Work Day alarm period. So on Mondays, the alarm period will be 7:10 to 18:00.

Table 3-22 Alarm Configurations

Parameter	Description
Anti-dither	Select an anti-dither time, from **5s** to **600s**. The anti-dither time starts when a second alarm is detected, and it determines what happens when a second alarm is detected. It determines if a second alarm will trigger another alarm action such as showing a screen alert, sending an email, starting a buzzer, flashing a light, activating a PTZ tour, taking a snapshot, or recording video. During the anti-dither time, if the system detects another alarm, the system will not be activated. If you set the Anti-dither time for 10 seconds, then each activated alarm action will last for 10 seconds. But if the alarm is triggered again 5 seconds after the anti-dither time began, then alarm actions such as a buzzer, PTZ tour, PTZ activation, snapshot, and recording will reset and last another 10 seconds from that second alarm trigger time. There will not be another screen prompt or alarm upload, nor will another email be sent. After the 10 seconds is over, if the system detects another alarm after the anti-dither time is over, it will generate another alarm. The stay time here does not include the latch time.
Alarm Out	Select the device output port, from **1** to **3**. Select the corresponding port(s) so the system can activate the corresponding alarm devices when an alarm occurs.
Latch	When the anti-dither time has ended, the channel alarm you have selected will last this period. Select from **1s** to **300s**. Latch does not work with other alarm activation operations. Latch is still valid even if you directly disable the alarm event function. The system can delay the alarm output for a specified time after an alarm ends. The value ranges from **1s** to **300s**.
Show Message	Click to enable a pop-up message on your local host PC screen to let you know an alarm has occurred.
Alarm Upload	Click to enable the system to upload the alarm signal to the network (including an alarm center and the web client). The system uploads only the alarm channel status. Go to the **Web** operation, and then go to the **Alarm** interface to set the alarm event and alarm operation. See *Enabling and Disabling Alarms on page 157* and *Configuring Alarms on page 184*.
Send Email	The system can send an email when an alarm is detected. When you have enabled the **Snapshot** function, the system can also send an image attached to the email. Go to **Main Menu ➤ Setting ➤ Network ➤ Email** to configure the email settings. See *Configuring the Email Settings on page 84*.
Record Channel	Select a recording channel. See *How to Record on page 94* for more about recording.

Table 3-22 Alarm Configurations

Parameter	Description
PTZ Activation	When PTZ activation is configured, the system can activate PTZ operation when an alarm is detected. The PTZ activation lasts the anti-dither period. See *Configuring PTZ Activation on page 95*.
Delay	The system can delay recording for a specified amount of time after an alarm has ended. Select from **10s** to **300s**.
Tour	Click to enable a tour to be triggered by an alarm. The system supports 1/8-window tour. Go to*Configuring Display Settings on page 110* for tour interval setup. **Note** Tours setup here have higher priority than tours setup in the **Display** interface. If there is no alarm, the system implements the tour setup in the **Display** interface.
Snapshot	Click to enable the **Snapshot** function. A snapshot will be taken when an alarm occurs.
Buzzer	Click to enable the **Buzzer** function. The buzzer beeps when an alarm occurs.

Note You must click **Save** after configuring the settings to save them.

How to Record

1. In the **Record** interface, set the alarm record mode to **Schedule**.

   Go to **Main Menu ➤ Advanced ➤ Record**.

Note If you select **Manual** recording, that mode has the highest priority. So the system will record all the time instead of because of an alarm trigger.

2. Set the recording type, corresponding channel, week, and date.
   - Go to **Main Menu ➤ Setting ➤ Schedule**.
   - For the recording type, select from **Regular**, **MD**, **Alarm**, **MD&Alarm**.

Note You can not select **MD&Alarm** and **MD** (or **Alarm**) at the same time.

3. Set the alarm record and encoder parameters.
   - Go to **Main Menu ➤ Setting ➤ Encode**.
4. Set the alarm input as the local alarm, and then select the recording channel. The NVR will record this channel when an alarm is detected.

Note The system begins the alarm-triggered recording instead of motion detection-triggered recording if the local alarm and the motion detection event occur at the same time.

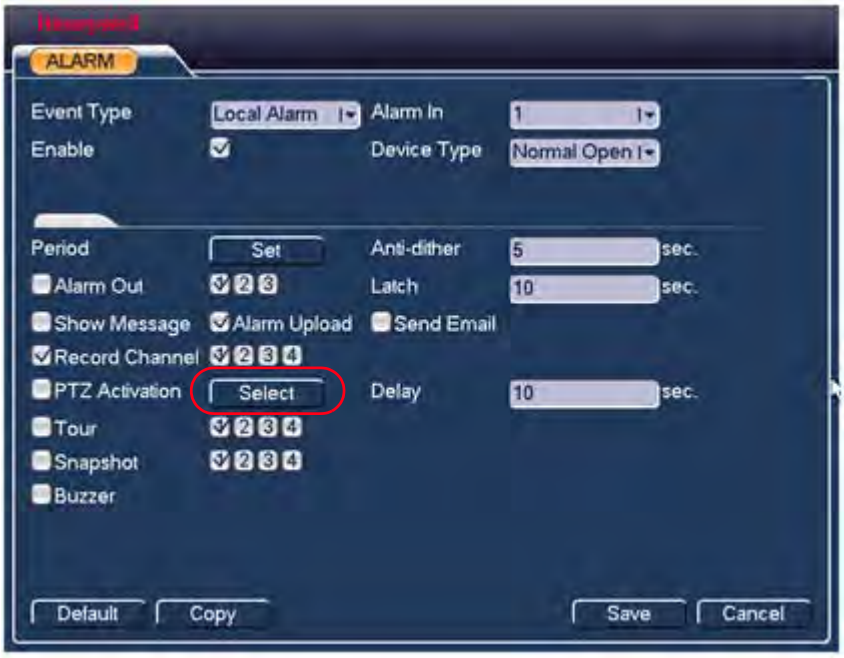
Configuring PTZ Activation

1. Set the video channel, speed dome protocol, and other parameters in the Pan/Tilt/Zoom configuration interface.

   Go to **Main Menu ➤ Setting ➤ Pan/Tilt/Zoom**.

2. Select the channel of the current PTZ for viewing in the monitor, then right-click to open the Pan/Tilt/Zoom menu.
3. Set a tour pattern.
4. Click **Select** in the **Alarm** configuration interface.

Figure 3-48 Alarm Configuration Interface



The PTZ Activation configuration interface appears.

Figure 3-49 PTZ Activation Configuration Interface

5. Select the PTZ activation operation from the drop-down menu. Select from **Preset Tour** or **Pattern**, then click **OK**.

Configuring Detection Settings

In the **Detect** configuration interface, you can configure the event detection settings. There are three types of detection:

- Motion Detection
- Video Loss Detection
- Camera Masking Detection

Note You can not configure a detection region or sensitivity for **Video Loss**. You can not configure a detection region for **Camera Masking**.

Note The **Motion Detection** icon appears only if the currently viewed channel has an enabled motion detection alarm.

Note When selecting the event detection region, you can drag the mouse to configure the motion detection region without clicking the **FN** button on the NVR's front panel. Click **OK** to save the currently selected region. Right-click the mouse to exit the current interface.

Click the **Detect** icon 

in the **Setting** interface to open the **Detect** configuration interface.

Configuring Motion Detection Settings

Select **Motion Detection** from the **Event Type** drop-down list.

Figure 3-50 Detect Configuration Interface

Table 3-23 Motion Detection Configurations

Configuration	Description
Event Type	Select the event detection type. Select from **Motion Detection**, **Video Loss**, or **Camera Masking**.
Channel	Select a channel.
Enable	Click to enable event detection.

Table 3-23 Motion Detection Configurations

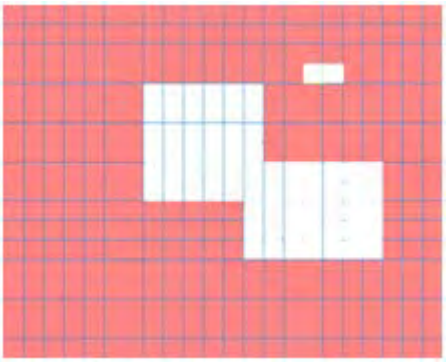
Configuration	Description
Region	Configure the event detection region. 1. Click **Select**. The area selection window opens.  There are 396 (PAL) or 330 (NTSC) small zones. **Green**: Indicates the current cursor position. **Grey**: Indicates the event detection zone. **Black**: Indicates a disarmed zone. 2. Select the event detection area by either clicking and dragging the mouse or using the direction arrows on the NVR's front panel. **Note** Use the **FN** button on the NVR's front panel to switch the cursor between selecting and deselecting. 3. Click **ENTER** on the NVR's front panel to save the configuration, or click **ESC** to exit the area selection interface without saving the configuration.
Sensitivity	Select from 6 levels. Level 6 is the highest sensitivity.

Table 3-23 Motion Detection Configurations

Configuration	Description
Period	Configure when the event detection area is active. 1. Click **Set**. The **Set** configuration interface appears.  2. Select a day of the week, or **Work Day** or **Free Day**. **Note** If you select **Work Day** or **Free Day,** a **Set** button appears so you can configure which days are **Work Days** and which days are **Free Days.** Click **Set**, select the Work Days and the Free Days, then click **OK**.  3. Configure a time range for when the event detection area is active, then click the check box to select that time range. **Note** You can configure up to 6 time periods within one day. **Note** Newer configurations override previous configurations. For example, if you configure Work Days with an event detection area active period from 8:30 to 17:30, and then Configure a Monday alarm period for 7:10 to 18:00, the Monday event detection area active period overrides the Work Day event detection area active period. So on Mondays, the event detection area active period will be 7:10 to 18:00. 4. Click **OK**.
Alarm Out	Select the device output port, from **1** to **3**. Select the corresponding port(s) so the system can activate the corresponding alarm devices when an alarm occurs.

Table 3-23 Motion Detection Configurations

Configuration	Description
Latch	When a motion detection event is complete, the system automatically delays, for a specified time, the NVR from detecting new motion detection events.
Show message	Configure the system to automatically pop up a message in the local view screen when an alarm occurs.
Alarm upload	Click to enable the system to upload the alarm signal to the network (including an alarm center and the web client). The system uploads only the alarm channel status. Go to the **Web** operation, and then go to the **Alarm** interface to set the alarm event and alarm operation. See *Enabling and Disabling Alarms on page 157* and *Configuring Alarms on page 184*.
Send email	The system can send an email when an alarm is detected. When you have enabled the **Snapshot** function, the system can also send an image attached to the email. Go to **Main Menu ➤ Setting ➤ Network ➤ Email** to configure the email settings. See *Configuring the Email Settings on page 84*.
Record channel	Select a recording channel. See *How to Record on page 94* for more about recording.
PTZ activation	When PTZ activation is configured, the system can activate PTZ operation when an alarm is detected. The PTZ activation lasts the anti-dither period. See *Configuring PTZ Activation on page 95*.
Record delay	The system can delay recording for a specified amount of time after an alarm has ended. Select from **10s** to **300s**.
Tour	Click to enable a tour to be triggered by an alarm. The system supports 1/8-window tour. Go to *Configuring Display Settings on page 110* for tour interval setup. **Note** Tours setup here have higher priority than tours setup in the Display interface. If there is no alarm, the system implements the tour setup in the Display interface.
Snapshot	Click to enable the **Snapshot** function. A snapshot will be taken when an event occurs.

Note You must click **Save** after configuring the settings to save them.

Note In the **Detection** interface, the copy-and-paste function is only valid for the same type of event detection. You can not copy a channel setup in video loss mode to camera masking mode.

Configuring Video Loss Settings

The **Video Loss** function allows you to be informed when video loss has occurred.

TIP! You can enable an alarm output channel, and then enable the **Show Message** function.

Select **Video Loss** from the **Event Type** drop-down list.

Figure 3-51 Video Loss Configuration Interface

Table 3-24 Video Loss Detection Configurations

Configuration	Description
Event Type	Select the event detection type. Select from **Motion Detection**, **Video Loss**, or **Camera Masking**.
Channel	Select a channel.
Enable	Click to enable event detection.

Table 3-24 Video Loss Detection Configurations

Configuration	Description
Period	Configure when the event detection area is active. 1. Click **Set**. The **Set** configuration interface appears.  2. Select a day of the week, or **Work Day** or **Free Day**. **Note** If you select **Work Day** or **Free Day,** a **Set** button appears so you can configure which days are **Work Days** and which days are **Free Days.** Click **Set**, select the Work Days and the Free Days, then click **OK**.  3. Configure a time range for when the event detection area is active, then click the check box to select that time range. **Note** Newer configurations override previous configurations. For example, if you configure Work Days with an event detection area active period from 8:30 to 17:30, and then Configure a Monday alarm period for 7:10 to 18:00, the Monday event detection area active period overrides the Work Day event detection area active period. So on Mondays, the event detection area active period will be 7:10 to 18:00.
Alarm Out	Select the device output port, from **1** to **3**. Select the corresponding port(s) so the system can activate the corresponding alarm devices when an alarm occurs.
Latch	When a video loss event is complete, the system automatically delays, for a specified time, the NVR from detecting new video loss detection events.

Table 3-24 Video Loss Detection Configurations

Configuration	Description
Show message	Configure the system to automatically pop up a message in the local view screen when an alarm occurs.
Alarm upload	Click to enable the system to upload the alarm signal to the network (including an alarm center and the web client). The system uploads only the alarm channel status. Go to the **Web** operation, and then go to the **Alarm** interface to set the alarm event and alarm operation. See *Enabling and Disabling Alarms on page 157* and *Configuring Alarms on page 184*.
Send email	The system can send an email when an alarm is detected. When you have enabled the **Snapshot** function, the system can also send an image attached to the email. Go to **Main Menu ➤ Setting ➤ Network ➤ Email** to configure the email settings. See *Configuring the Email Settings on page 84*.
Record channel	Select a recording channel. See *How to Record on page 94* for more about recording.
PTZ activation	When PTZ activation is configured, the system can activate PTZ operation when an alarm is detected. The PTZ activation lasts the anti-dither period. See *Configuring PTZ Activation on page 95*.
Record delay	The system can delay recording for a specified amount of time after an alarm has ended. Select from **10s** to **300s**.
Tour	Click to enable a tour to be triggered by an alarm. The system supports 1/8-window tour. Go to *Configuring Display Settings on page 110* for tour interval setup. **Note** Tours setup here have higher priority than tours setup in the Display interface. If there is no alarm, the system implements the tour setup in the **Display** interface.
Snapshot	Click to enable the **Snapshot** function. A snapshot will be taken when an event occurs.

Note You must click **Save** after configuring the settings to save them.

Note In the **Detection** interface, the copy-and-paste function is only valid for the same type of event detection. You can not copy a channel setup in video loss mode to camera masking mode.

TIP! You can enable a preset, tour, or pattern activation for when video loss occurs.

Configuring Camera Masking Settings

If something masks or blocks part of the camera lens, or if the output video turns to one color due to a change in the environment's lighting, the system can alert you to guarantee video continuity.

Select **Camera Masking** from the **Event Type** drop-down list.

Figure 3-52 Camera Masking Configuration Interface

Table 3-25 Camera Masking Detection Configurations

Configuration	Description
Event Type	Select the event detection type. Select from **Motion Detection**, **Video Loss**, or **Camera Masking**.
Channel	Select a channel.
Enable	Click to enable event detection.

Table 3-25 Camera Masking Detection Configurations

Configuration	Description
Period	Configure when the event detection area is active. 1. Click **Set**. The **Set** configuration interface appears.  2. Select a day of the week, or **Work Day** or **Free Day**. **Note** If you select **Work Day** or **Free Day,** a **Set** button appears so you can configure which days are **Work Days** and which days are **Free Days.** Click **Set**, select the Work Days and the Free Days, then click **OK**.  3. Configure a time range for when the event detection area is active, then click the check box to select that time range. **Note** Newer configurations override previous configurations. For example, if you configure Work Days with an event detection area active period from 8:30 to 17:30, and then Configure a Monday alarm period for 7:10 to 18:00, the Monday event detection area active period overrides the Work Day event detection area active period. So on Mondays, the event detection area active period will be 7:10 to 18:00.
Alarm Out	Select the device output port, from **1** to **3**. Select the corresponding port(s) so the system can activate the corresponding alarm devices when an alarm occurs.
Latch	When a motion detection event is complete, the system automatically delays, for a specified time, the NVR from detecting new video loss detection events.

Table 3-25 Camera Masking Detection Configurations

Configuration	Description
Show message	Configure the system to automatically pop up a message in the local view screen when an alarm occurs.
Alarm upload	Click to enable the system to upload the alarm signal to the network (including an alarm center and the web client). The system uploads only the alarm channel status. Go to the **Web** operation, and then go to the **Alarm** interface to set the alarm event and alarm operation. See *Enabling and Disabling Alarms on page 157* and *Configuring Alarms on page 184*.
Send email	The system can send an email when an alarm is detected. When you have enabled the **Snapshot** function, the system can also send an image attached to the email. Go to **Main Menu ➤ Setting ➤ Network ➤ Email** to configure the email settings. See *Configuring the Email Settings on page 84*.
Record channel	Select a recording channel. See *How to Record on page 94* for more about recording.
PTZ activation	When PTZ activation is configured, the system can activate PTZ operation when an alarm is detected. The PTZ activation lasts the anti-dither period. See *Configuring PTZ Activation on page 95*.
Record delay	The system can delay recording for a specified amount of time after an alarm has ended. Select from **10s** to **300s**.
Tour	Click to enable a tour to be triggered by an alarm. The system supports 1/8-window tour. Go to *Configuring Display Settings on page 110* for tour interval setup. **Note** Tours setup here have higher priority than tours setup in the **Display** interface. If there is no alarm, the system implements the tour setup in the **Display** interface.
Snapshot	Click to enable the **Snapshot** function. A snapshot will be taken when an event occurs.

Note You must click **Save** after configuring the settings to save them.

Note In the **Detection** interface, the copy-and-paste function is only valid for the same type of event detection. You can not copy a channel setup in video loss mode to camera masking mode.

Configuring PTZ Settings

Note All the operations here are based on the PELCOD protocol. For other protocols, there might be slight differences.

Cable Connection Before You Begin

Ensure that the following are connected:

- Connect the camera's RS485 port to the NVR's 485 port.
- Connect the camera's video output cable to the NVR's video input port.
- Connect the power adapter to the camera.

Before You Begin PTZ Configuration

Ensure that:

- The PTZ and decoder connection is correct, and that the decoder address configuration is correct.
- The decoder's A (B) line connects with the NVR's A (B) line.

Note The camera video should be in the current screen for configuring Pan/Tilt/Zoom settings.

Configuring PTZ Settings

1. Click the **PAN/TILT/ZOOM** icon 

in the **Setting** interface to open the Pan/Tilt/Zoom configuration interface.

Figure 3-53 Pan/Tilt/Zoom Configuration Interface - Local

Table 3-26 Pan/Tilt/Zoom Configurations

Configuration	Description
Channel	Select the camera channel.
PTZ Type	Select from **Local** or **Remote**.
Protocol	Select a PTZ protocol (such as PELCOD).
Address	The default address is **1**.
Baudrate	Select a baud rate. The default is **9600**.
Data Bits	The default is **8**.
Stop Bits	The default is **1**.
Check	Select from **Odd**, **Even**, or **None**. The default is **None**.

Note The above configurations are available only if you choose **Local** for the PTZ type. If you choose **Remote**, you can only select the channel. See *Figure 3-54*.

Figure 3-54 PTZ Configuration Interface - Remote

Note You must click **Save** after configuring the settings to save them.

Controlling PTZ Cameras

1. Go to the single window viewing mode.
2. Open the PTZ camera controller by:
   - Right-clicking in the window.
   - Pressing the **FN** button on the NVR's front panel.
   - Pressing the **Fn** button on the remote control.

   The PTZ control interface opens.

Figure 3-55 Pan/Tilt/Zoom Control Interface

Click, then enter a PTZ camera speed.

Click to adjust the Zoom, Focus, and Iris of the PTZ camera.

Click to adjust the PTZ camera's position.

Table 3-27 PTZ Controls

Control	Function Key	Function	Shortcut Key	Function Key	Function	Shortcut Key
Zoom		Wide			Far	
Focus		Near			Far	
Iris		Close			Open	

Configuring Display Settings

Click the **DISPLAY** icon 

in the **Setting** interface to open the **Display** configuration interface.

Figure 3-56 Display Configuration Interface

Table 3-28 Display Configurations

Configuration	Description
Transparency	Adjust the transparency of the GUI overlay. Select from **128** to **255**.
Channel Name	Customize the channel name. You can enter up to 31 characters. Changes here apply only to the NVR local end. 1. Click **Modify**. The **Channel Name** configuration interface opens.  2. Enter camera names in the editable fields. 3. Click **Save**. **Note** Modifications here apply only to the local end only. You need to open the web client to refresh the channel name.
Time Display	Turn time display **On** or **Off** for playback.
Channel Display	Turn channel display **On** or **Off** for playback.

Table 3-28 Display Configurations

Configuration	Description
Resolution	Select from four options: **1920x1080** (default), **1280x1024**, **1280x720**, and **1024x768**.
Image Enhance	Click to enable.
Enable Tour	Click to enable.
Interval	The system supports a 1/4-window tour. Enter a time interval for switching from one channel to the next in a tour. Select from **5** to **120** seconds. If enabled here, your NVR will automatically start Interval view when the display is switched to single-channel mode. While in a tour, you can use the mouse or click **Shift** to turn on the window switch function.  is the icon for the opening switch function,  is the icon for the closing switch function.
Monitor Tour Type	The system supports 1/8-window tour.
Alarm Tour Type	The system supports 1/8-window tour.

Note You must click **Save** after configuring the settings to save them.

Configuring Default Settings

Click the **DEFAULT** icon 

in the **Setting** interface to open the **Default** configuration interface.

In the **Default** interface, you can click to select what parameters are returned to their default settings. Choose from:

- Select All
- General
- Remote Device
- Schedule
- RS232
- Network
- Alarm
- Detect
- Pan/Tilt/Zoom
- Display
- Channel Name

Note You must click **Save** to save the new settings.

Note The system menu color, language, time display mode, video format, IP address, and user account will not keep any custom settings if you default the NVR.

Connecting to and Configuring the Remote Devices/Cameras

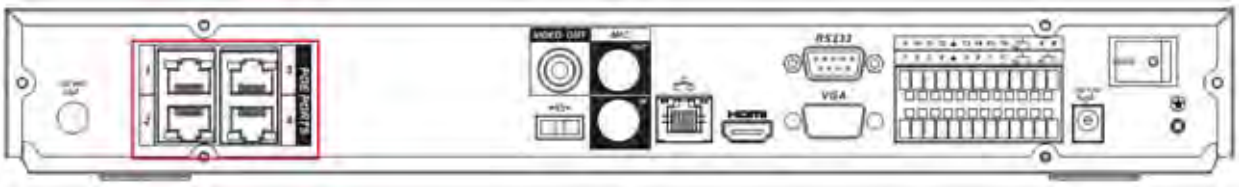
Note Do NOT connect the switch to the PoE port. If you do, then the connection might fail.

Depending on your model, your NVR can support up to 16 channels, with a transmission rate of 8Mbps. It supports 100/120 @ 1080p. The delay time for each channel is below 500 ms.

Your NVR supports IP cameras from many popular manufacturers such as Honeywell, Sony, Hitachi, Dynacolor, Axis, Samsung, Arecont, Dahua, and Onvif. Just enter the camera's URL address, user name, and password to log in to the camera.

Connect the cameras to the PoE ports on the NVR's rear panel.

Figure 3-57 NVR Real Panel - PoE Ports



The NVR automatically searches for and connects to the network cameras.

Note The four-channel NVR back panel is shown here as an example. The back panel of the eight-channel and 16-channel NVRs will be slightly different.

Configuring the Built-in Switch Setup

1. Open the **Switch Settings** configuration interface.

   On the **Main Menu** interface, click **Setting ➤ Network ➤ Network Setting**, then double-click **Switch Setting**.

Figure 3-58 Switch Settings Configuration Interface

2. Enter values for the **IP Address**, **Subnet Mask**, and **Gateway**.
3. Click **OK** to save these settings.

Configuring the Remote Device/Camera

Click the **REMOTE DEVICE** icon 

in the **Main Menu** to open the **Remote Device** configuration interface.

Figure 3-59 Remote Device Configuration Interface

Table 3-29 Remote Device Configurations

Configuration	Description
IP Search	Click to search for an IP address.
Add	Click to connect to the selected, found IP device (camera), and add it to the Added device list. **Note** You can batch add more than one device.
Show Filter	Displays the specified devices from the added device.
Delete	Select a device in the Added device list, and then click **Delete** to remove it.
Manual Add	Click to manually add a camera. The port number is **37777**. The default user name is **admin**, and the default password is **1234**.

Adding a Remote Device/Camera

1. Click **Manual Add** in the **Remote Device** configuration interface. The **Manual Add** configuration interface appears.

Figure 3-60 Manual Add Configuration Interface

2. Select a connection mode: **Auto**, **TCP** (default), or **UDP**.

Shortcut Menu

If there is no IP camera connected, the GUI shows *Figure 3-61*.

Figure 3-61 Short-cut to Remote Device Configuration Interface

Click the + in the center of the **Preview** interface for the channel which is not connected to an IP camera.

The **Remote Device** configuration interface appears.

Figure 3-62 Remote Device Configuration Interface

Advanced Configurations

Click the **ADVANCED** icon 

in the **Main Menu** to open the **ADVANCED** configuration interface.

The **ADVANCED** configuration interface appears.

Figure 3-63 Advanced Configuration Interface

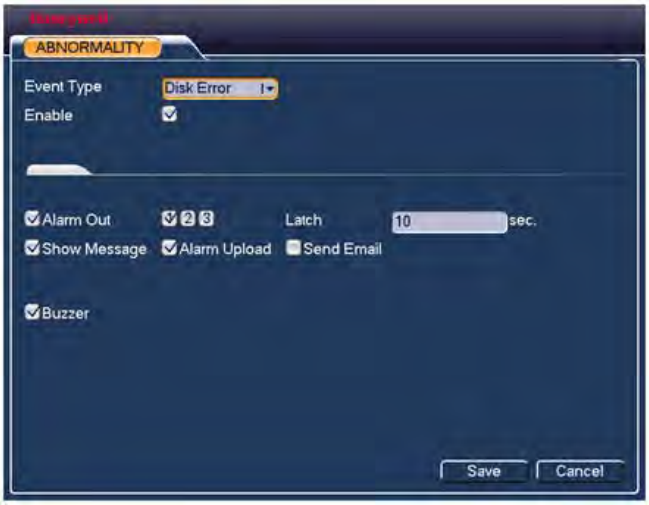
Configuring HDD Management

In the **HDD MANAGE** configuration window, you manage the Hard Disk Drive and view its current HDD type, status, capacity, and record time.

Figure 3-64 HDD MANAGE Configuration Interface

When the HDD is working properly, you see an **O**. When an HDD error has occurred, you see an **X**.

Table 3-30 HDD MANAGE Configurations

Configuration	Description
Alarm Set	Click **Alarm Set**. The **Alarm Set** configuration interface appears. This interface looks just like the **Abnormality** configuration interface. See *Configuring for Abnormalities on page 189*. 
HDD Setting	Select the **HDD** mode from the dropdown list. Select from **Read-only** or you can erase all the data on the HDD. **Note** The system needs to reboot to activate the new configurations.

Note For setting up HDD group operation:

- Each channel's records can be stored in the specified HDD Group.
- Each HDD Group can correspond to several hard disks. But a HDD can belong to only one group. Each channel can correspond to only one hard disk. But one HDD Group can store records from several channels.
- HDD Groups are available for read-write HDDs and self-defined disks. Other types of hard disks can not be set as a HDD Group.

Note The current software version can set only the HDD Group operation of the read-write HDDs. It is not for the redundancy HDD.

Configuring HDD Group Settings

1. Click **HDD Setting** on the **HDD MANAGE** configuration interface.

The **HDD Setting** configuration interface appears.

Figure 3-65 HDD Setting Configuration Interface

The **HDD No.** column shows the maximum number of HDD you can install.

If the serial number is highlighted, then you can connect to that HDD.

If the serial number is not highlighted, then you can not connect to that HDD.

2. Select a HDD group name from the **HDD Group** drop-down list.

   The **HDD Group** column shows the **HDD Group** number of the current hard disk.

3. Click **OK** to save these new settings.

Note A HDD can belong to only one group. But one group can contain many HDDs. The **HDD No**. corresponds to the HDD port. The **HDD Group No**. can change if you change the HDD.

Note When you change the **HDD Group** settings, the system will save the recorded video and snapshots, then reboot.

Configuring HDD Channels

1. Click **HDD Channel** on the **HDD MANAGE** configuration interface. The **Channel Settings** configuration interface appears.

Figure 3-66 Channel Settings Configuration Interface

2. Configure the HDDs for the main stream, the extra stream, and for snapshots as well. The main and extra stream configurations for one channel can be saved to different groups.

   Channel: Displays the actual channel number for the current NVR.

HDD Group: The **SN** of the **HDD Group** management. See *Configuring HDD Group Settings on page 119*.

Note Ensure that you have set the **HDD Group** for each channel. If you fail to set the **HDD Group** for a channel, then you will not be able to save the current setup.

Note When you change the **HDD Group** settings, the system will save the recorded video and snapshots, then reboot.

TIPS! There is an easy way to test whether or not the recordings from the corresponding channel are saved in the specified HDD. Remove the HDD and then check to see if the channel can record. The channel should not record, and you should not be able to search the previous recordings.

Configuring Abnormality Settings

Click **ABNORMALITY** in the **ADVANCED** configuration interface. The **ABNORMALITY** configuration interface appears.

Figure 3-67 Abnormality Configuration Interface

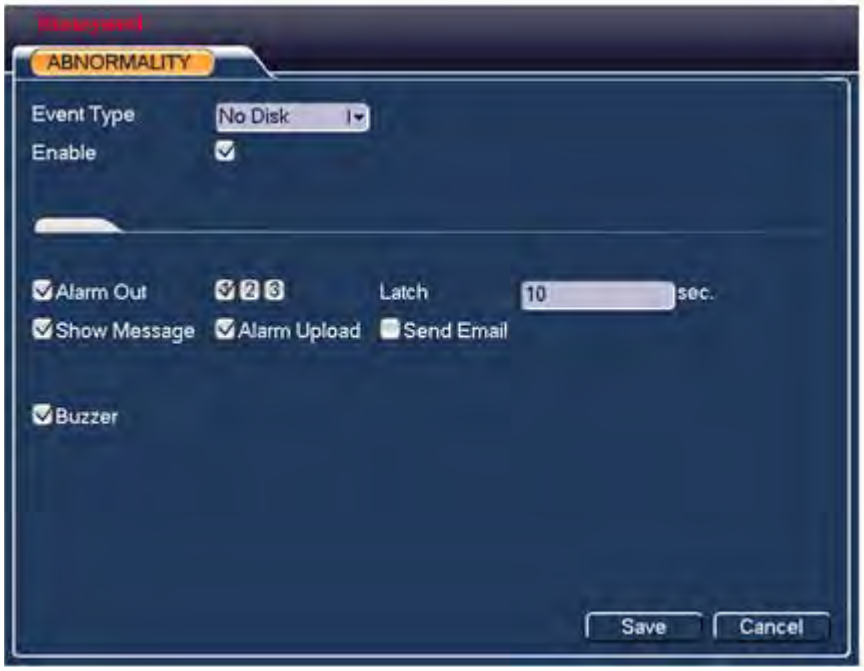


Table 3-31 Abnormality Configurations

Configuration	Description
Event Type	Select from **No Disk**, **Disk Error**, **Disk No Space**, **Net Disconnection**, **IP Conflict**, or **MAC Conflict**.
Enable	Click to enable the **Abnormality** function.
Alarm Out	Select an alarm activation output port.
Latch	When an event is complete, the system automatically delays, for a specified time, the NVR from detecting new events.
Show Message	Click to enable a popup message to alert you when an alarm occurs.
Alarm Upload	Click to enable the system to upload the alarm signal to the network (including an alarm center and the web client). The system uploads only the alarm channel status. Go to the **Web** operation, and then go to the **Alarm** interface to set the alarm event and alarm operation. See *Enabling and Disabling Alarms on page 157* and *Configuring Alarms on page 184*.
Send Email	The system can send an email when an alarm is detected. When you have enabled the **Snapshot** function, the system can also send an image attached to the email. Go to **Main Menu ➤ Setting ➤ Network ➤ Email** to configure the email settings. See *Configuring the Email Settings on page 84*.
Buzzer	Click to enable the **Buzzer** function. When an alarm occurs, the buzzer beeps.

Configuring Alarm Output

1. Click **ALARM OUTPUT** in the **ADVANCED** configuration interface. The **ALARM OUTPUT** configuration interface appears.

Figure 3-68 ALARM OUTPUT Configuration Interface

2. Click to make your selections, and then click **OK** to save the changes.

Configuring Manual Recording Settings

Note You must have proper rights to configure the **Recording** settings. Also, ensure that the HDD has been properly installed.

1. Click **RECORD** in the **ADVANCED** configuration interface.

   OR

   Right-click the mouse to open the shortcut menu, then click **Record**.

   The **RECORD** configuration interface appears.

Figure 3-69 RECORD Configuration Interface

2. Select a recording status for each channel, and then click **OK** to save the changes.

Note Select **All** to select the same setting for all channels.

Table 3-32 Manual Recording Configurations

Configuration	Description
Manual	The highest priority. Selecting **Manual** means that the channels begin ordinary recording. If you select **All** for Manual recording, the schedules for the individual channels will not work, and the system records manually. The front panel light indicates that the system is manually recording.
Schedule	Recording follows the schedule you have configured. See *Configuring the Schedule on page 66*. If you select **All** for Schedule recording, all channels will record following the schedules you have previously set for each channel. The front panel light indicates that the system is recording according to the schedule.
Stop	All channels stop recording. If you select **All** for Stop recording, all channels will not record.
○	Indicates that the channel is not activated for this recording status.
●	Indicates that the channel is activated for this recording status.

Configuring Account Settings

In the **ACCOUNT** configuration interface, you can do the following:

- Add a new user
- Modify a user
- Add a group
- Modify a group
- Modify a password

Click **ACCOUNT** in the **ADVANCED** configuration interface. The **ACCOUNT** configuration interface appears.

Figure 3-70 ACCOUNT Configuration Interface

Account Naming Conventions The maximum length for the account name and user name is 6 bytes. There cannot be a space at the beginning or the end of the name string. But there can be a space in the middle. You can use letters, numbers, underline, subtraction/hyphen, and a period in the name.

Account Management The system account adopts a two-level management: group and user. There is no limit to the number of groups or users.

Group or User Management For group or user management, there are two levels: admin and user.

User and Group Naming Conventions The maximum length for a user or group name is 8 bytes. There are four default users: **admin**, **888888**, and **666666**, plus a hidden user **default**. All default users except **666666** have administrator rights.

Hidden Default User The hidden user, **default**, is for internal system use only, and can not be deleted. When logging in without a user name, the system automatically uses the hidden user. You can configure some rights for the hidden user, such as the right to monitor video, so that you can view video channels without logging in.

User Limitations Users can belong to only one group. User rights can not exceed the rights of the group to which it belongs.

Reusable Function Click to enable the **Reuseable** function, which allows multiple users to use the same account for logging in.

Adding or Modifying a Group

The procedures for adding a group and modifying a group are similar. The **Add Group** configuration interface is shown in this example.

1. Click **Add Group** or **Modify Group** in the **ACCOUNT** configuration interface. The **Add Group** or **Modify Group** configuration interface opens.

Figure 3-71 Add Group Configuration Interface

2. Enter a group **Name**. Entering **Memo** information is optional.
3. Click to enable privileges in the list. There are 60 from which to choose.
4. Click **Save** to save the new settings.

Adding or Modifying a User

The procedures for adding a user and modifying a user are similar. The **Add User** configuration interface is shown in this example.

1. Click **Add User** or **Modify User** in the **ACCOUNT** configuration interface. The **Add User** or **Modify User** configuration interface opens.

Figure 3-72 Add User Configuration Interface

2. Enter a **User** name, a **Password** (twice), and **Memo** information, if required.
3. Click **Reuseable** to enable the **Reuseable** function. See *Reusable Function on page 125*.
4. Click to enable privileges for this user.

TIP! We recommend that general user account rights are less than administrator account user rights.

5. Click **Save** to save the new settings.

Modifying a Password

1. Click **Modify Password** in the **ACCOUNT** configuration interface. The **Modify Password** configuration interface opens.

Figure 3-73 Modifying Password Configuration Interface

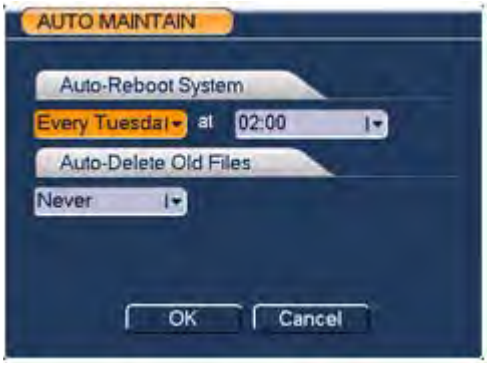
2. Select the user account from the drop-down menu.
3. Enter the old password, then enter the new password twice.
4. Click **Save** to save the new settings.

Configuring Automatic Maintenance Settings

The **AUTO MAINTAIN** function allows you to automatically reboot the time and automatically delete old file setups. You can set the system to delete the files for the specified days.

1. Click **AUTO MAINTAIN** in the **ADVANCED** configuration interface. The **AUTO MAINTAIN** configuration interface appears.

Figure 3-74 AUTO MAINTAIN Configuration Interface



2. Select from the drop-down lists a day and time for automatically rebooting the system. Select from **Never**, **Every day**, **Every Sunday**, **Every Monday**, **Every Tuesday**, **Every Wednesday**, **Every Thursday**, **Every Friday**, or **Every Saturday.**

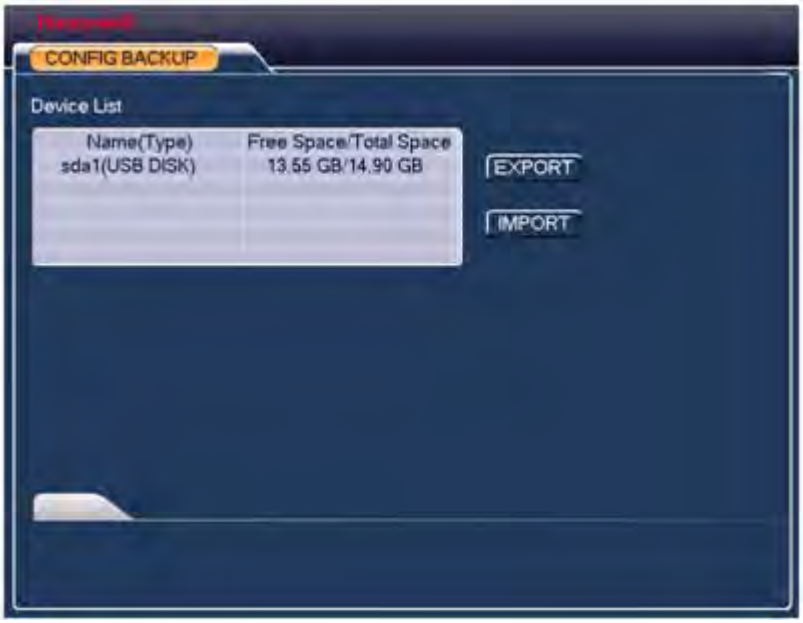
3. Select from the drop-down lists when the system automatically deletes the old files. Select either **Never** or **Customized**. If you select **Customized**, then you can enter how many days until the system next automatically deletes the old files.
4. Click **OK** to save the new settings.

Configuring Backup

With the **CONFIG BACKUP** function, you can copy the current system configuration to other devices. It also supports importing, creating new folders and, deleting folders.

1. Click **BACKUP** in the **ADVANCED** configuration interface. The **CONFIG BACKUP** configuration interface appears.

Figure 3-75 BACKUP Configuration Interface



2. Click to select a device, and then click **Export** or **Import**.

Shutting Down the NVR

1. Click **SHUTDOWN** in the **ADVANCED** configuration interface. The **SHUTDOWN** dialog box appears.

Figure 3-76 SHUTDOWN Dialog Box

2. Select from the drop-down menu.

Table 3-33 SHUTDOWN Selections

Selection	Description
Logout	Log out of the NVR. The next time you log in, you will need to enter a password.
Shutdown	The NVR shuts down and turns off the power.
Restart system	Reboots the system.
Switch user	Use another user account for logging in.

Note If you shut down the device, a process bar appears for your reference. The system waits for 3 seconds and then shuts down. You can not cancel the shut down sequence after it has begun.

Note You might need to enter your password to shut down the NVR.

4

Honeywell Configuration Tool

This chapter includes:

- Installing the Honeywell Configuration Tool.
- Opening the Honeywell Configuration Tool, and then using it to search for online IP devices.

Note The Honeywell Configuration Tool applies only to IP addresses that are in the same segment.

Starting the Honeywell Configuration Tool

You must install the Honeywell Configuration Tool before you can use it to discover IP devices.

Installing the Honeywell Configuration Tool

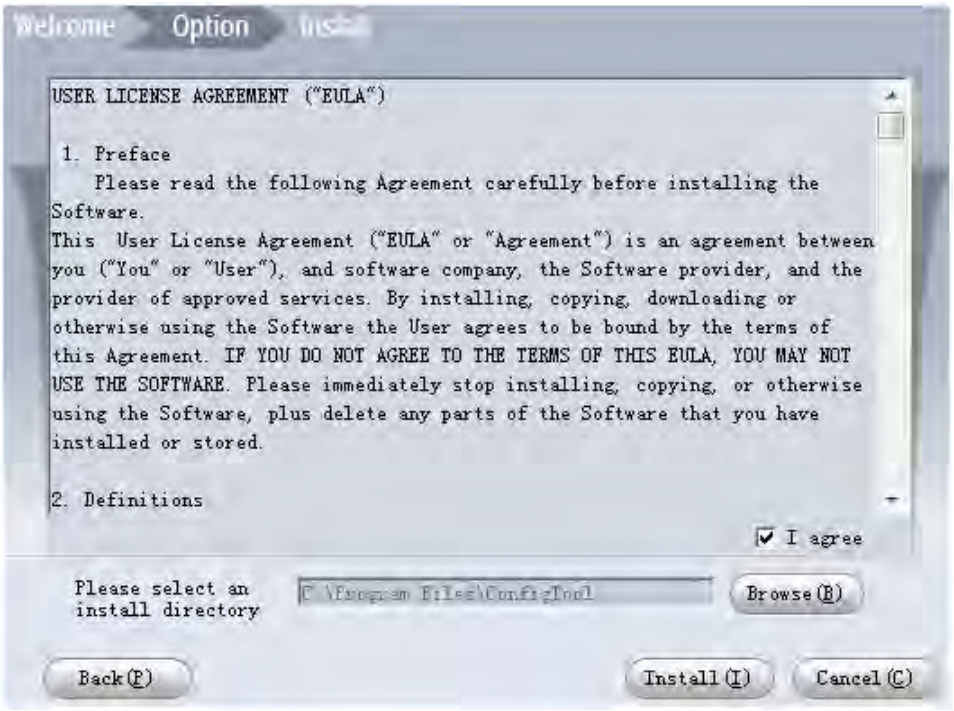
1. Insert the Software CD that came with your NVR into your PC. Navigate to and double-click **Honeywell Config Tool** to install the configuration tool software.

   The **Honeywell Config Tool** installation wizard opens.

Figure 4-1 Honeywell Config Tool Wizard

2. Click **Next** to begin the installation. The **User License Agreement** page appears.

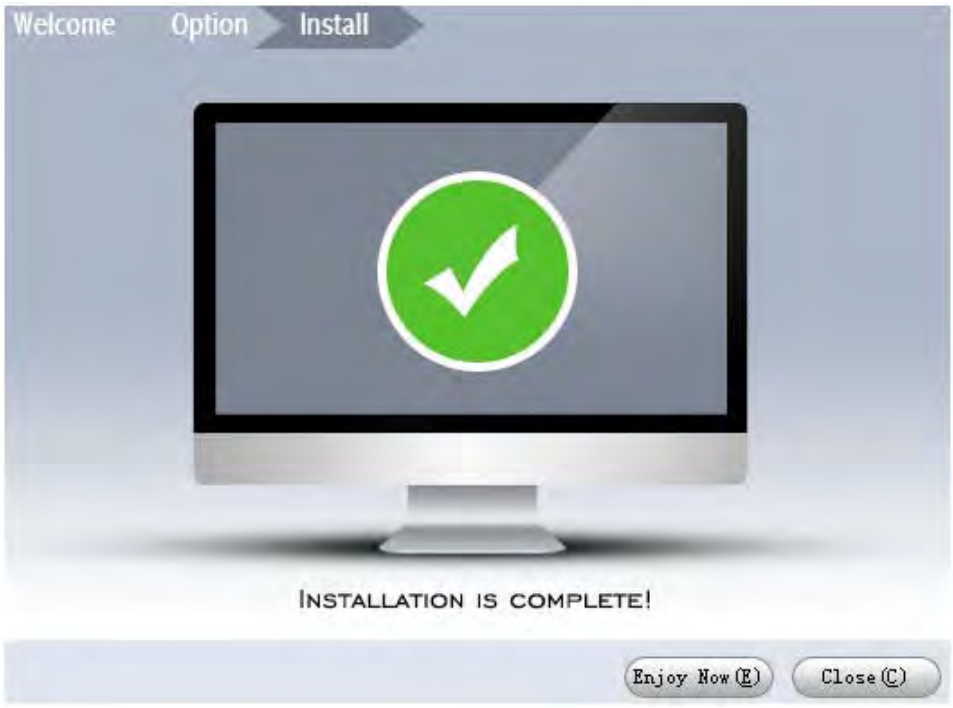
Figure 4-2 User License Agreement Page



3. Click to select **I agree**, and then click **Install** to install the software.

   The **Installation is Complete** page appears has been successful.

Figure 4-3 Installation is Complete Page



4. Click **Enjoy Now** to open and use the **Config Tool**.

Opening the Honeywell Configuration Tool, Searching for Devices, and Opening a Web Client

In the **Config Tool**, you will find the IP addresses for the IP devices (NVRs and IP cameras).

1. Click to 

open the **Config Tool**.

Figure 4-4 Configtool Interface

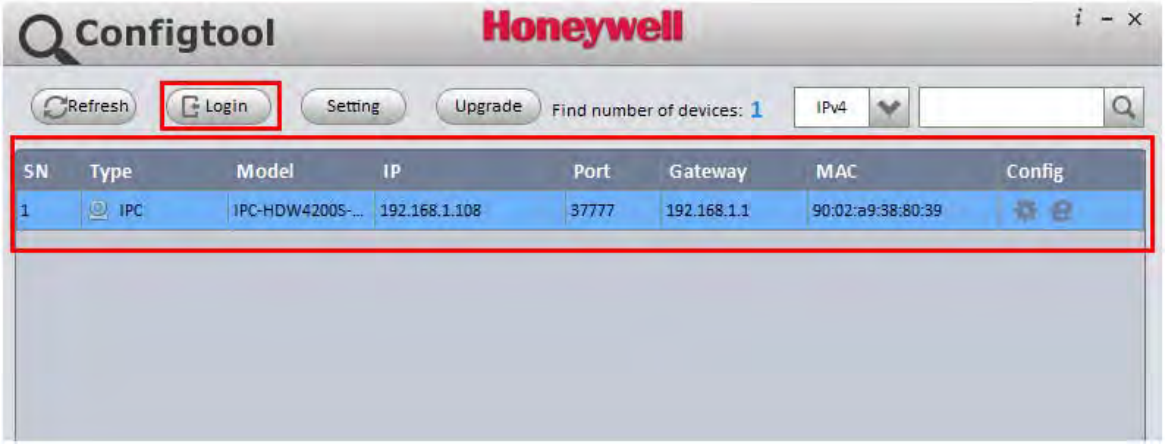
2. Click e in the **Config** column for a device to open a **Web Client** for that device.

Upgrading a Single Device (IP Camera or NVR)

Note For the following, examples of upgrading an IP camera are shown. The procedures for upgrading an NVR are similar.

1. Open the **ConfigTool** software.

Figure 4-5 ConfigTool Login



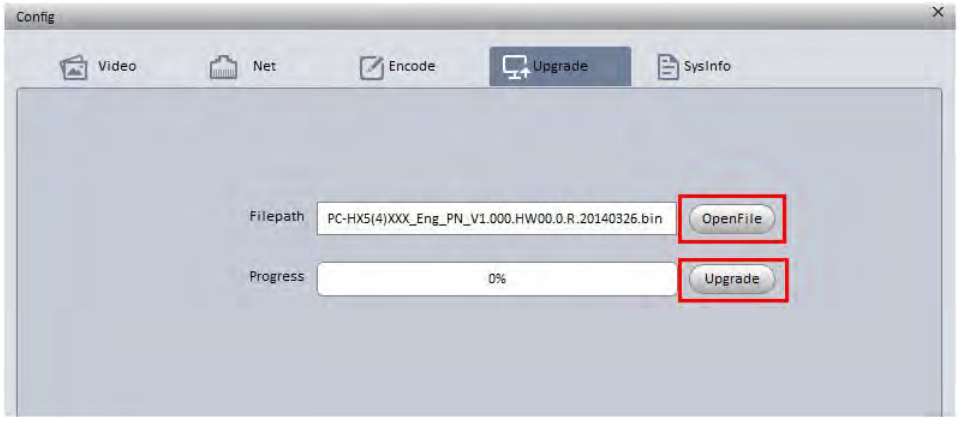
2. Select from the list the device you want to upgrade.
3. Click **Login** to log in to the device.

Note If you do not select a device before clicking **Login**, you will get a **`Connection Error`** message.

Figure 4-6 Device Upgrade Login Interface

4. Click **OK**. The **Config Upgrade** interface appears.

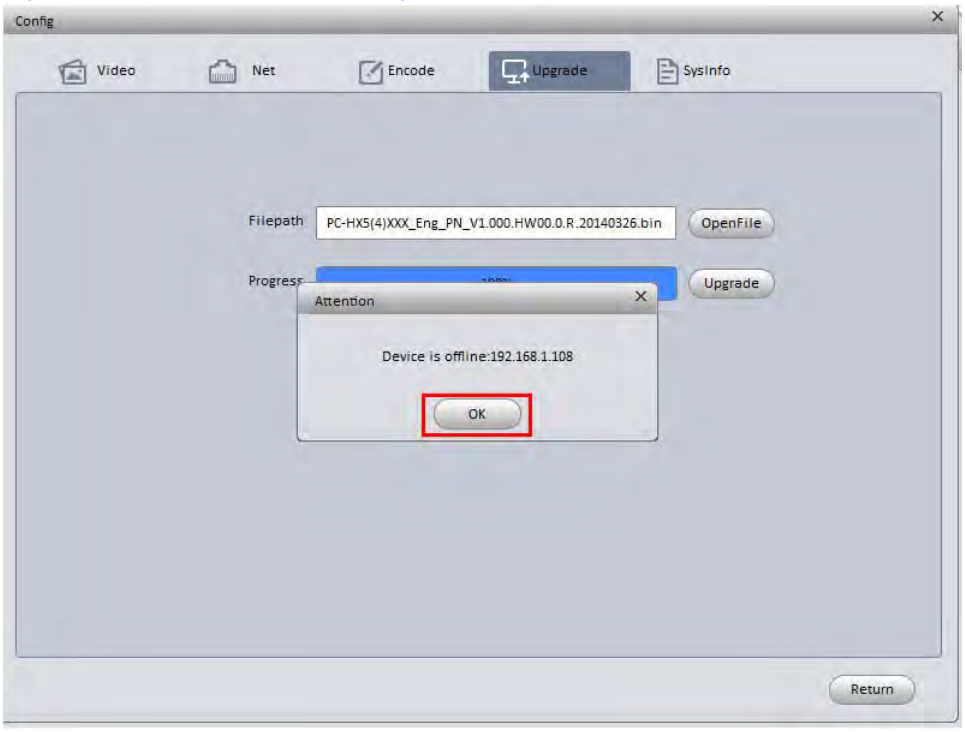
Figure 4-7 Config Upgrade Interface



5. Click **OpenFile** to select the upgrade file, and then click **Upgrade** to begin the upgrade.

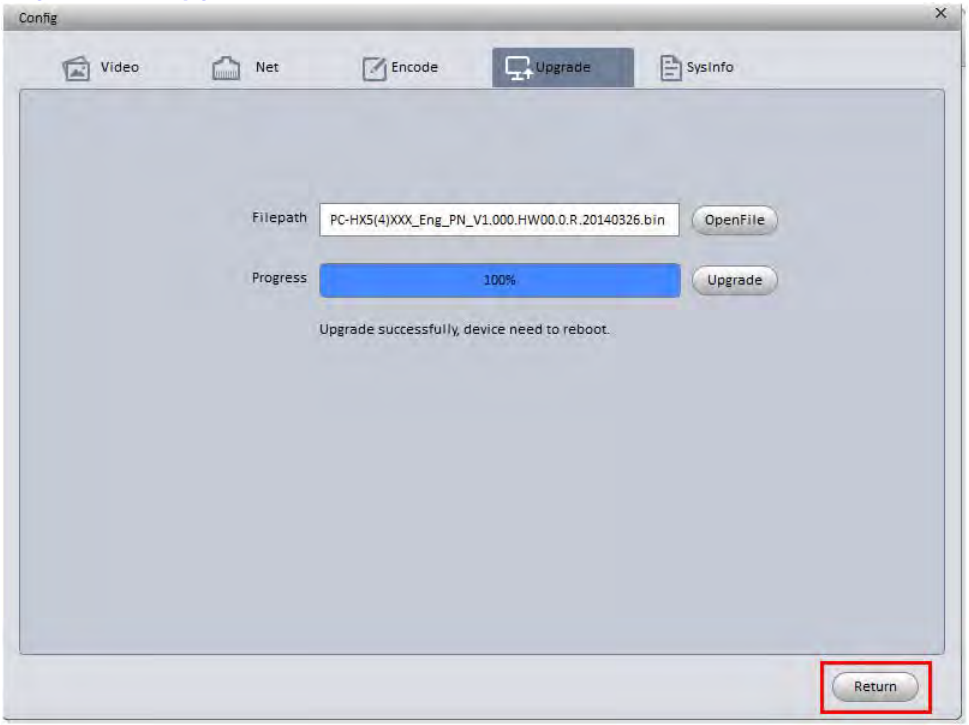
   When the upgrade is complete, and the device is rebooting a **`Device is offline: [device IP address]`** message appears.

Figure 4-8 Device Offline Message



6. Click **OK** to close the **Device Offline** warning message, and to return to the **Upgrade** interface.

Figure 4-9 Upgrade Interface



7. Log into the device again.

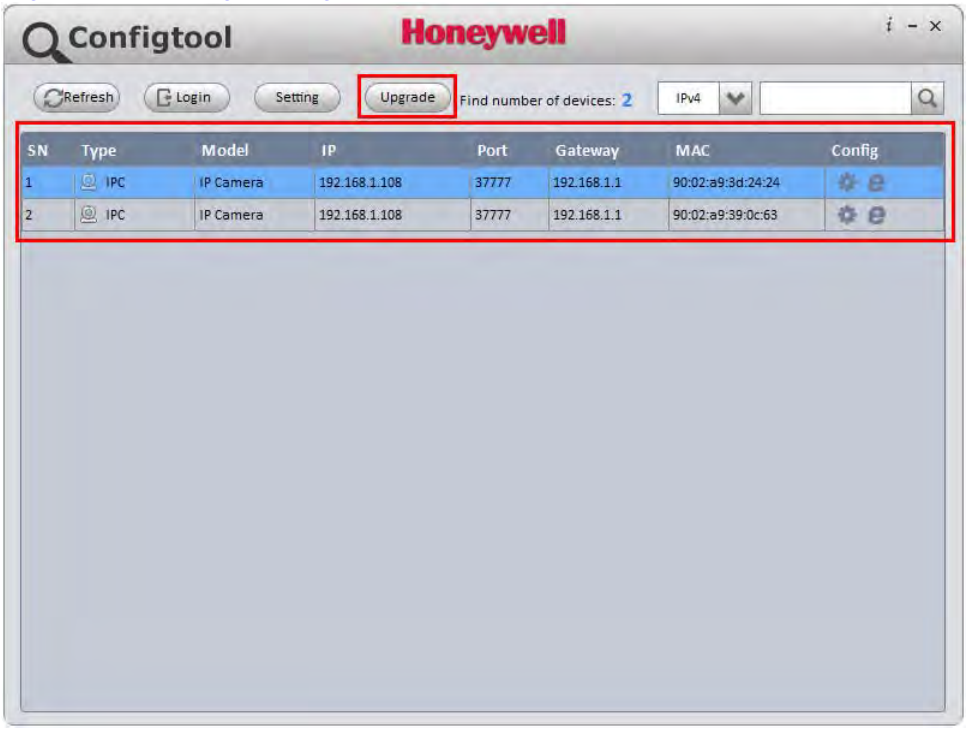
Note If you do not select a device before clicking **Login**, you will get a **Connection Error**.

Upgrading the IP Devices (Batch Upgrade)

Note For the following, examples of upgrading an IP camera are shown. The procedures for upgrading an NVR are similar.

1. Open the **ConfigTool** software if it is not already open.

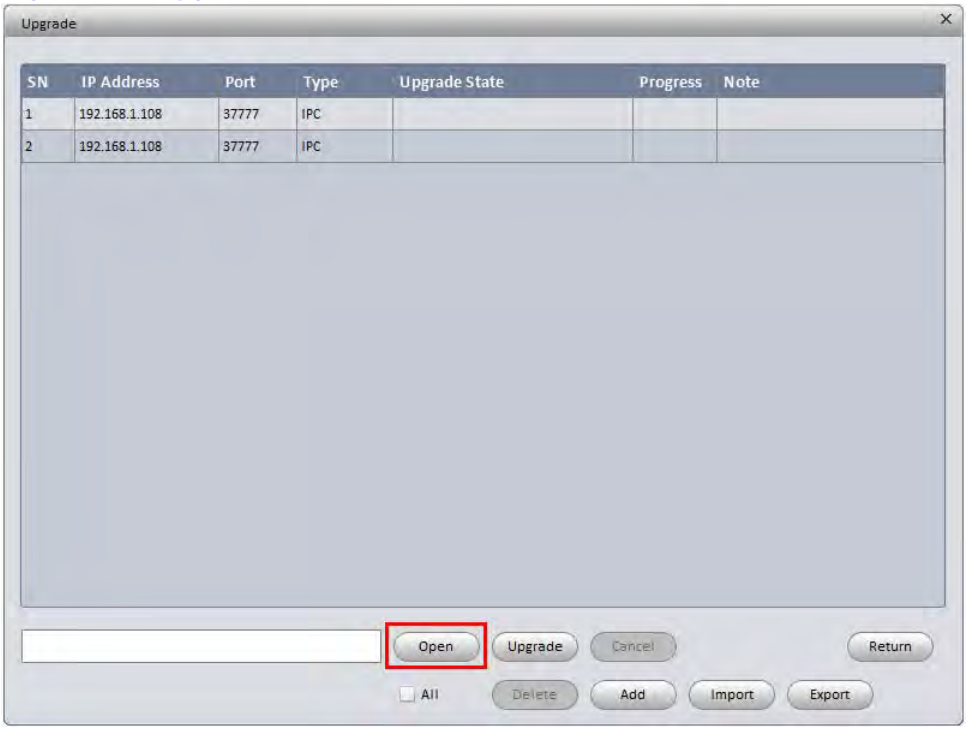
Figure 4-10 ConfigTool Login



2. Click **Upgrade** to begin the batch upgrading process.

   The **Upgrade** interface appears.

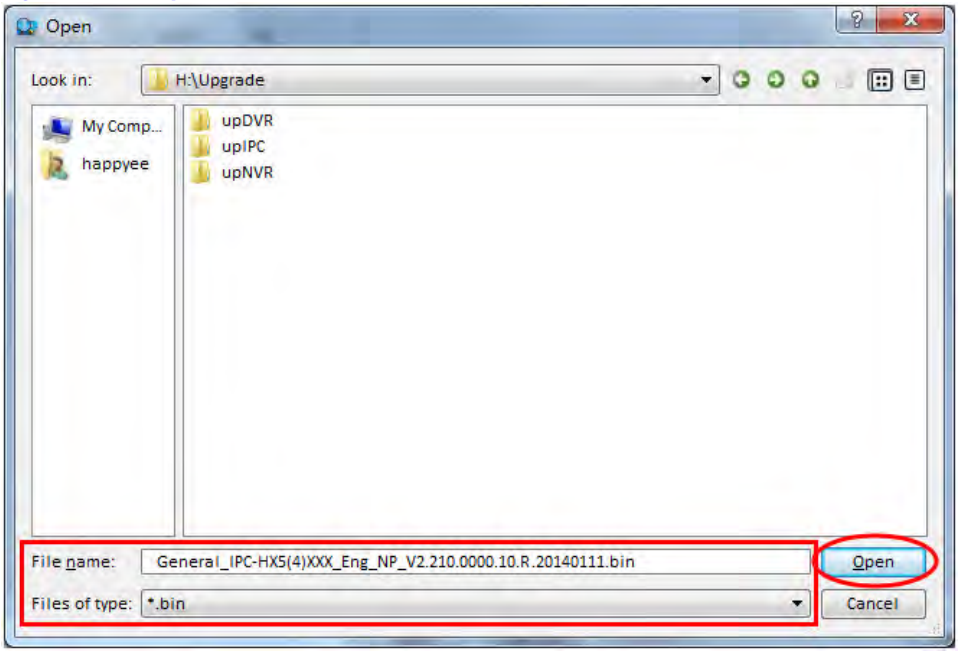
Figure 4-11 Upgrade Interface



3. Click **Open** to find and select the upgrade file.

   The **Open** interface appears.

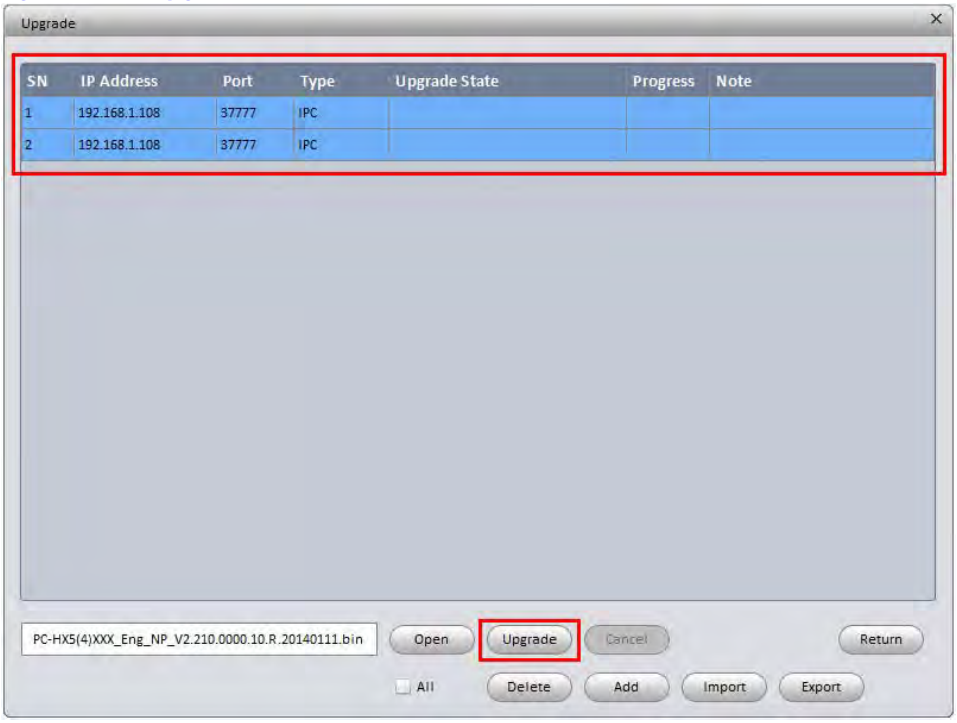
Figure 4-12 Open Interface



4. Select the upgrade firmware, and then click **Open** or double-click the file to open it.

   The **Open** interface closes and you return to the **Upgrade** interface.

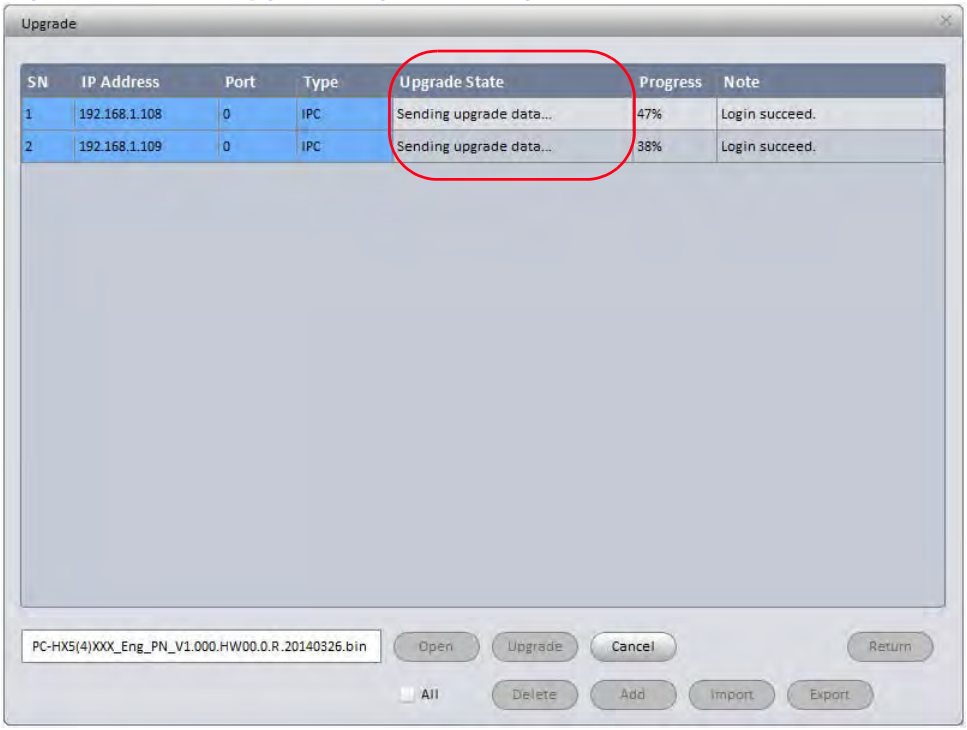
Figure 4-13 Upgrade Interface



5. Click to select the devices you want to upgrade. Their row turns blue when selected.
6. Click **Upgrade** to begin the batch upgrade.

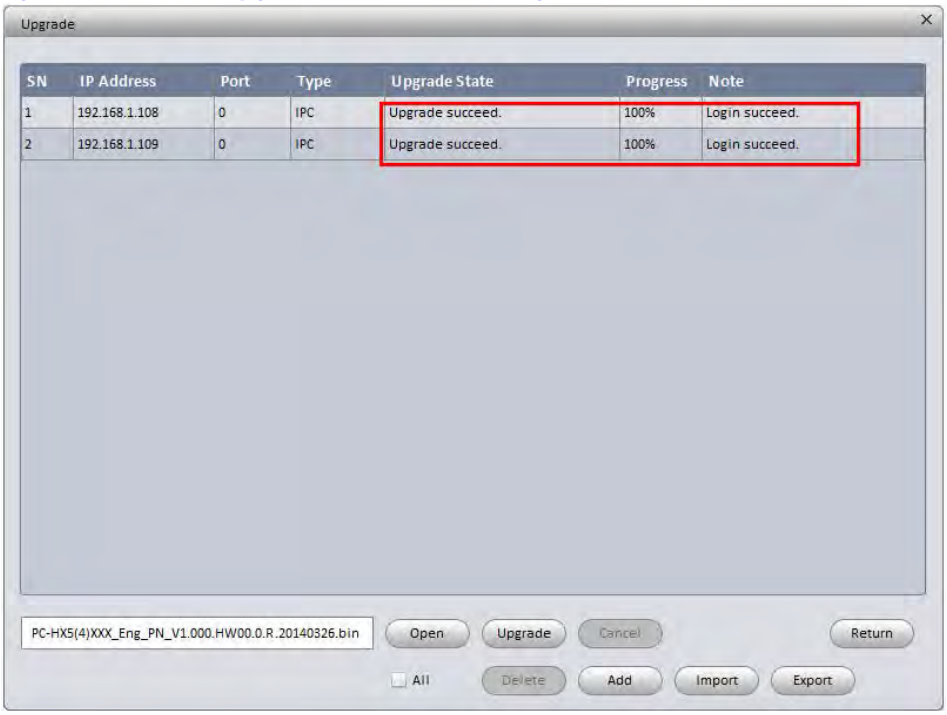
   A message appears in the **Upgrade State** fields for each selected IP camera to show the batch upgrade progress.

Figure 4-14 Batch Upgrade Progress Message



A message appears to show that the batch upgrade procedure is successful.

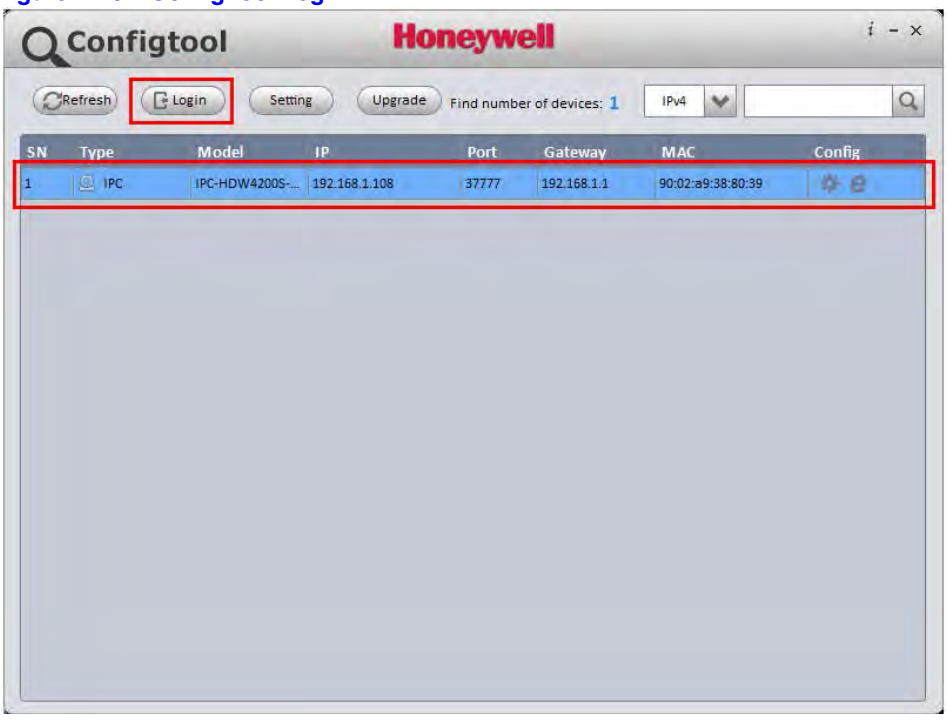
Figure 4-15 Batch Upgrade Successful Message



Modifying the IP Address

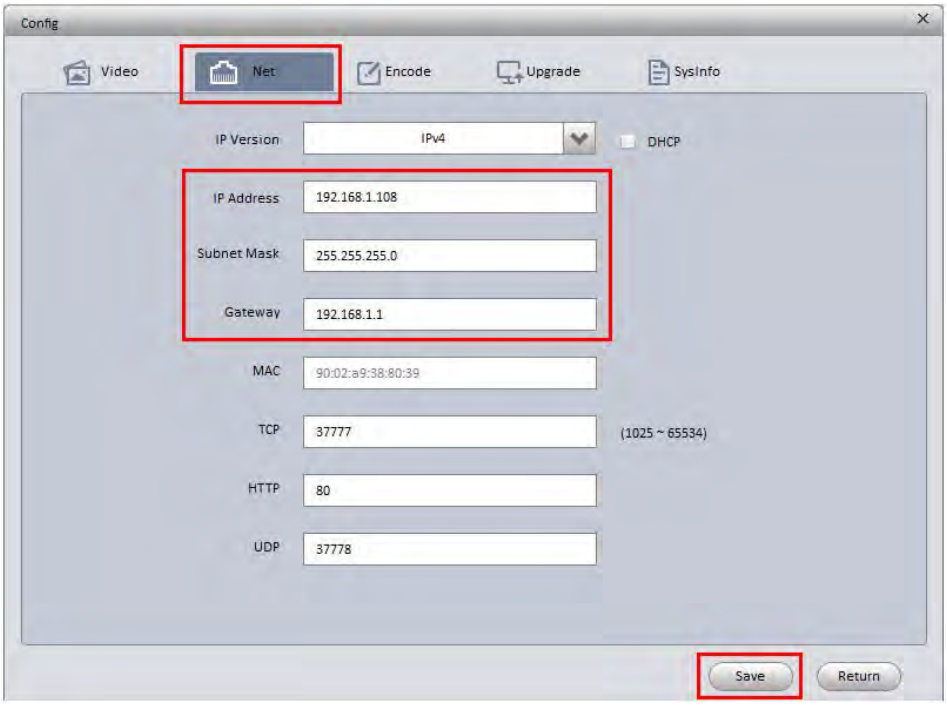
1. Open the **ConfigTool** software if it is not already open.

Figure 4-16 ConfigTool Login



2. Select from the list the device you want to modify.
3. Click **Login** to log in to the device.

Figure 4-17 Selecting Net in the ConfigTool



4. Click **Net** to open the Net tab.
5. Enter the new **IP Address**, and the corresponding **Subnet Mask** and **Gateway**.
6. Click **Save** to save these new settings.

5

Web Operation

This chapter includes:

- A description of the NVR web client.
- Descriptions about setting up and operating the NVR web client.

Preparing to Use the Device Web Client

PC Requirements

Table 5-1 PC Requirements

Component	Minimum Requirement
Processor	Quad core
System memory (RAM)	2G pr higher
Non-integrated video card	256M or higher

Before You Log In

Ensure that the following conditions are met:

- Ensure that the network connection is good.
- Ensure that the NVR and PC network setup is correct. See the network setup: **Main Menu ➤ Setting ➤ Network.**
- Ping to ensure that the network connection is good. Ping *** *** *** *** (where *** *** *** *** is the NVR's IP address). The return TTL should be less than 225.
- Open an IE browser and then enter the NVR's IP address.
- The system can automatically download the latest ActiveX web control. The new version can overwrite the previous one.
- If you want to un-install the web control, then run **`uninstall webrec2.0.bat`**. Or, you can go to **C:\Program Files\webrec** to remove the single folder.

Note Before you uninstall the web control, close all web pages. If you do not, then the uninstallation procedure might result in an error.

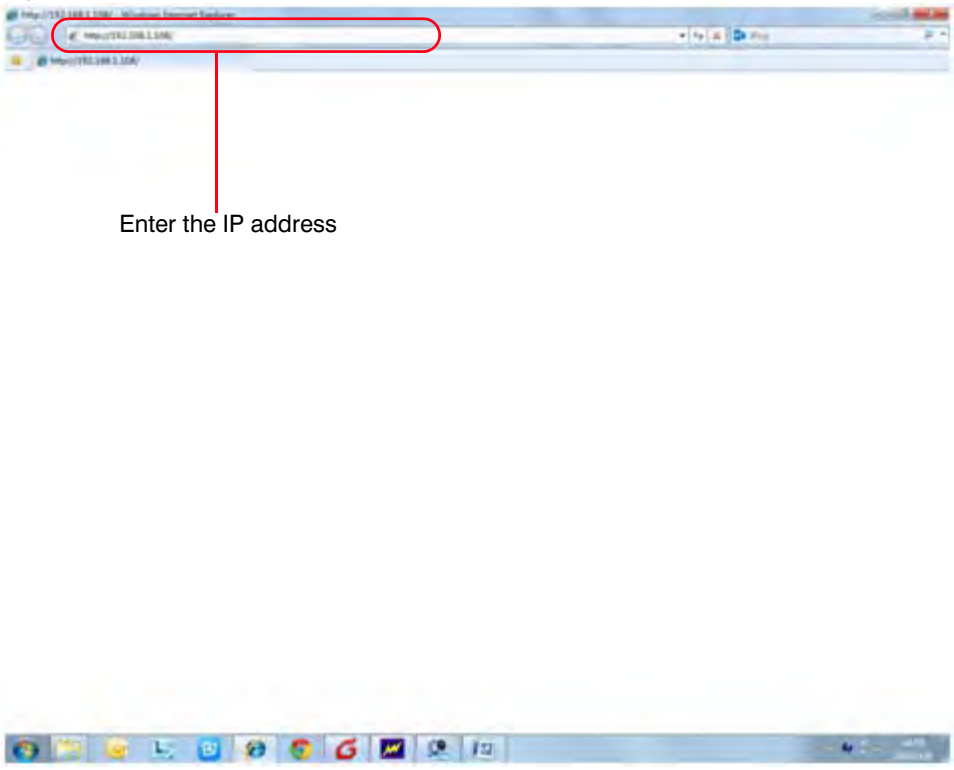
- The current NVR supports various browsers such as Apple Safari, Mozilla Firefox, and Google Chrome. The NVR supports only 1-channel monitoring on an Apple PC.

Logging In

1. Open a Web browser window.

Note These instructions were created using IE. You can use Internet Explorer (IE), Safari, Chrome, or FireFox.

Figure 5-1 IE Window



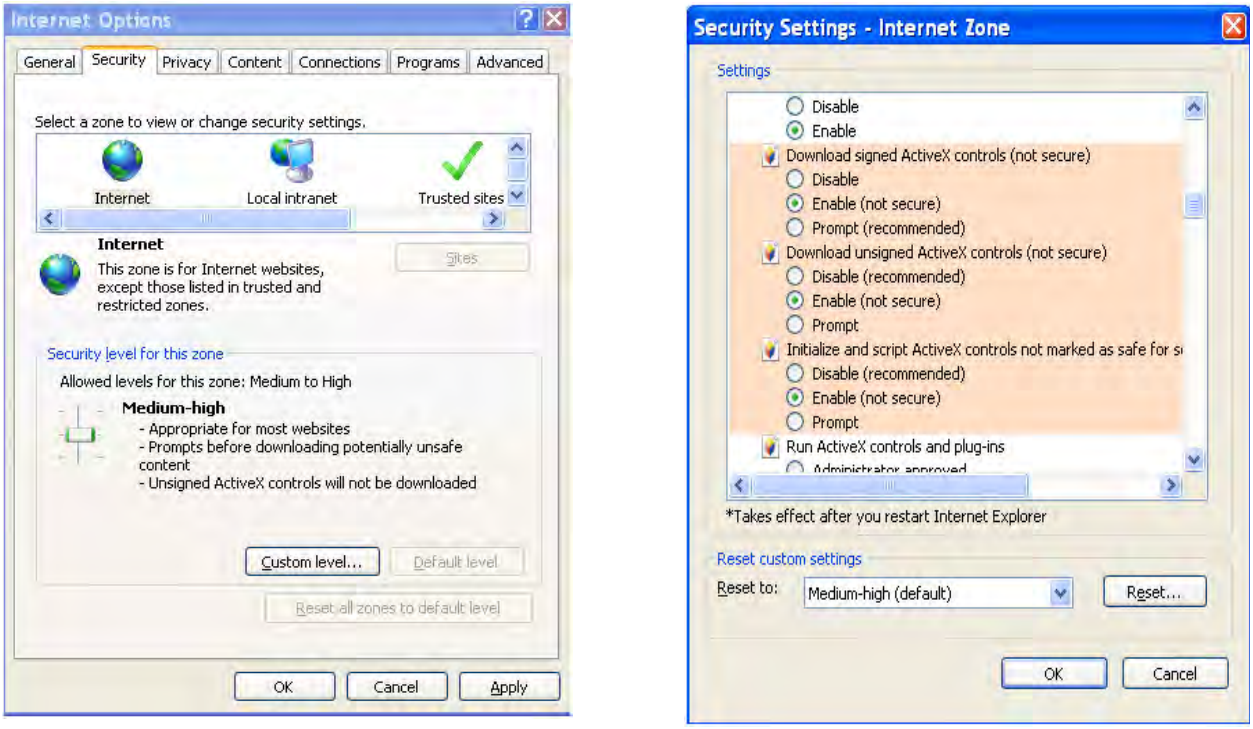
2. Enter the NVR IP address in the address field.

   For example, if your NVR's IP address is **192.168.1.108**, then enter **`http://192.168.1.108`** in the address field.

   A message pops up asking if you want to install **`webrec.cab`** control.

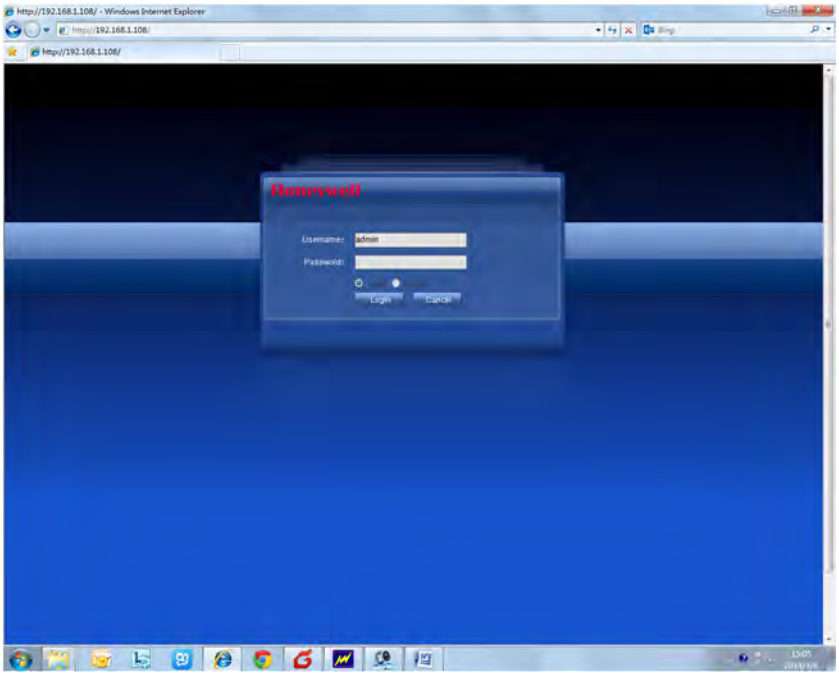
3. Click **Yes** to install **`webrec.cab`** control.
4. Configure the ActiveX control settings if you can not download the ActiveX files.

Figure 5-2 Configuring the ActiveX Controls



When installation is successful, the login interface appears.

Figure 5-3 Login Interface



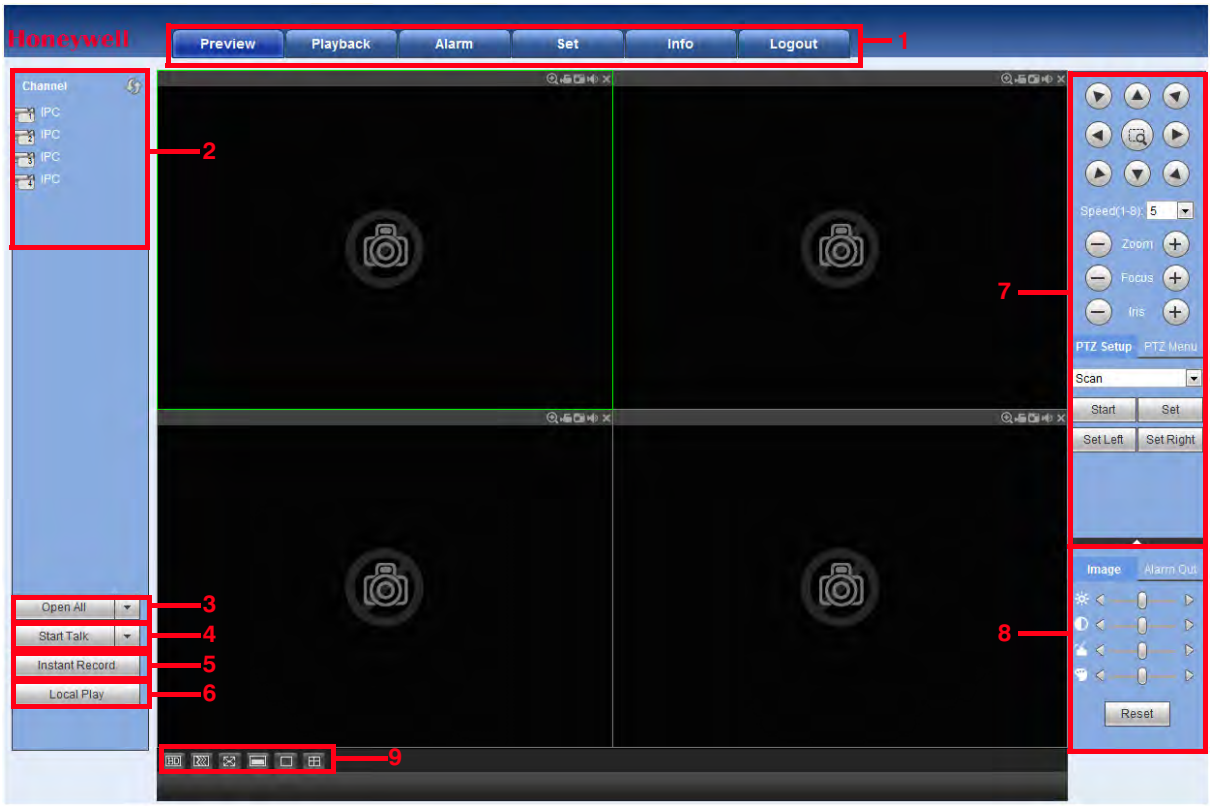
5. Enter your username (default: **admin**) and password (default: **1234**).

Note For security, we recommend that you modify your password on your first log in.

LAN Mode

The LAN main window, which is divided into 9 main sections.

Figure 5-4 LAN Mode Main Window



Section 1: Function Buttons

Figure 5-5 LAN Main Window Function Buttons

There are six function tabs:

- **Preview**: You are currently in the Preview mode, where you can see all these tabs.
- **Playback**: See *Playing Back Recorded Video on page 154*
- **Alarm**: See *Enabling and Disabling Alarms on page 157*
- **Set**: See *Configuring Settings on page 159*
- **Information**: See *Configuring System Information on page 208*
- **Logout**: See *Logging Out on page 211*

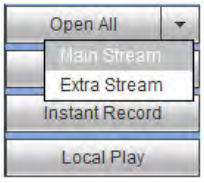
Section 2: Monitor Channels

Figure 5-6 Monitor Channels Section

The Monitor Channels section displays monitor channels that are successfully connected to the NVR. Left-click to select a channel for viewing.

Section 3: Open All Button

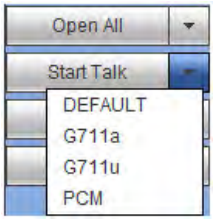
Figure 5-7 Open All Button



The **Open All** button enables/disables all channels in the real-time monitor. You can also select the **Main Stream** or **Extra Stream**.

Section 4: Start Talk Button

Figure 5-8 Start Talk Button



Click to enable communication. Click ▼in the control panel on the right to select the bi-directional communication mode. There are four options for the communication mode: **DEFAULT**, **G711a**, **G711u**, and **PCM**.

After you enable bi-directional communication, the system will not encode the audio data from that one channel. See ***Bi-Directional Communication Connection on page 34*** for the audio connections.

Section 5: Instant Record Button

Figure 5-9 Instant Record Button

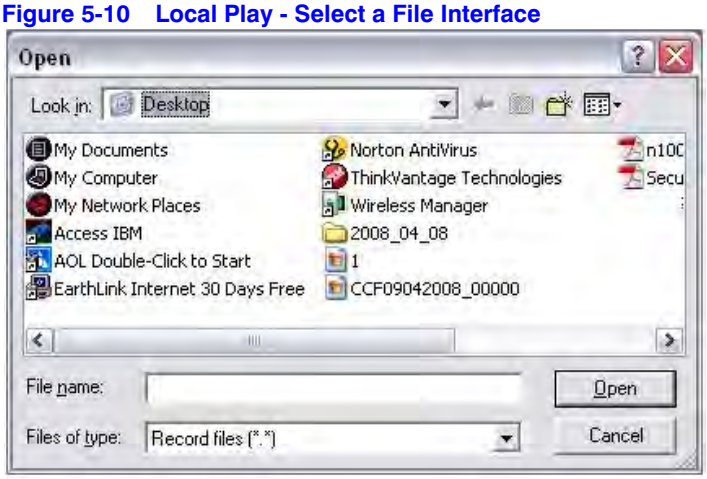
Click **Instant Record**, and the button turns blue. The NVR begins manual recording. Click **Instant Record** again to restore the NVR to the previous recording mode.

Section 6: Local Play Button

The NVR can play back saved files (in the `.dav` format) in the PC.

1. Click **Local Play**, and an interface appears for selecting the playback file.

Figure 5-10 Local Play - Select a File Interface



2. Select a file, then click **Open**. A media player opens and plays the selected video.

Section 7: PTZ Control Panel

See *Controlling PTZ Camera on page 151* for more information.

Section 8: Image and Alarm Configuration Panels

See *Configuring Image/Alarm Out Settings on page 153* for more information.

Section 9: Viewer Configuration Controls

Table 5-2 Viewer Configuration Controls

Button	Name	Description
	Video Quality	Click to select the video quality. Select either **High** quality or **Low** quality.
	Fluency	Click to configure the fluency. Select from **Fluency Level 1**, **Fluency Level 2**, **Fluency Level 3**, **Middle level**, **Latency Level 1**, **Latency Level 2**, and **Latency Level 3**.
	Full Screen	Click to switch the viewer to show video full screen. Click **Esc** (on your PC) to quit full screen.
	Vertical Synchronization	Click to configure vertical synchronization.
	Single-channel Window	Click to switch to single channel viewing.
	Four-channel Window	Click to switch to switch to four channel viewing.

Real-Time Monitoring

Left-click a channel name in Section 2, the **Monitors Channel** section, to select that channel for viewing.

The video window shows statistics about the video.

Figure 5-11 Live View Video Window

Table 5-3 Live View Video Window Controls

Table 5-4 Live View Video Window Controls

Control	Description
Display Device Information	Shows the following information about the video: • IP address • Channel number • Bit rate • Decoding mode: Select either **M** for Main stream or **S** for sub stream.
Digital Zoom	Click this button and then left drag the mouse in the zone to zoom in. Right-click the mouse to return to the original viewing status.
Local Record	When you click the **Local Record** button, the system/NVR begins recording. The recorded file is saved to the default system folder: **RecordDownload**.
Snapshot	Click to take a snapshot of the currently viewed video. All images are saved to the default system folder: **picture download**.
Audio	Turn audio **On** or **Off**. **Note** This control has nothing to do with the system audio setup.
Close Window	Close video in the current window.

Controlling PTZ Camera

Before attempting to control a PTZ camera, ensure that you have properly set the PTZ protocols. See *Configuring PTZ Settings on page 107*.

Click the 3D intelligent positioning key (see *Figure 5-12*), and the system goes back to the Single screen mode. Drag the mouse in the screen to adjust the section size.

Figure 5-12 PTZ Controls

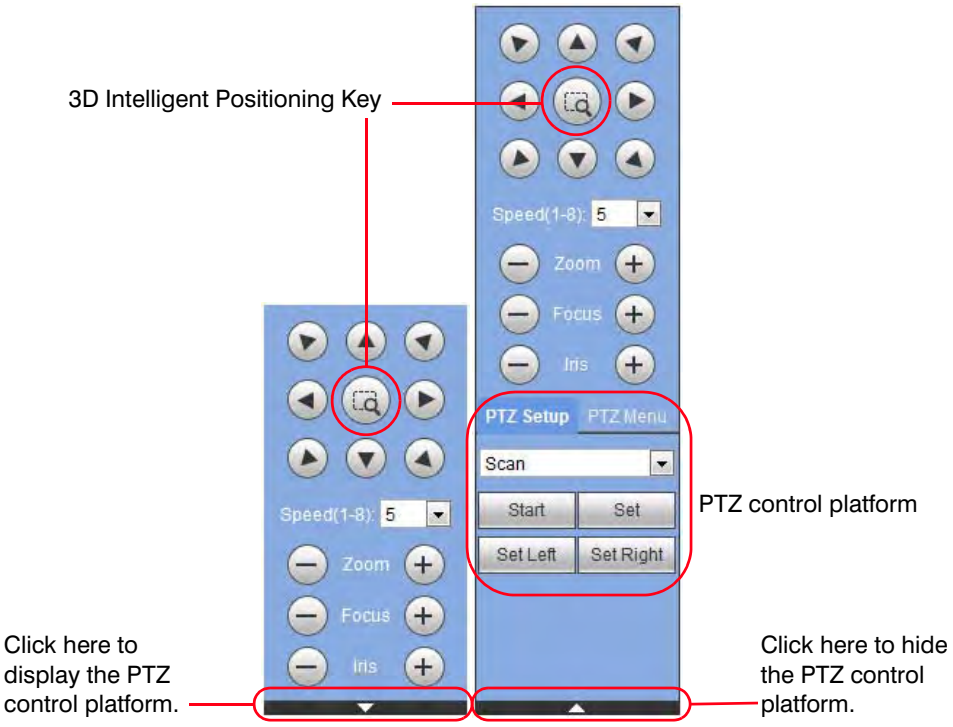


Table 5-5 PTZ Setup Configurations

Control	Description
Scan	1. Select **Scan** from the drop-down list. 2. Click **Set**. You can set the scan left and scan right limit. 3. Use the direction buttons to move the camera to the desired location, then click the **Set Left** button. 4. Move the camera again, then click the **Set Right** button to set the right limit.
Preset	1. Select **Preset** from the drop-down list. 2. Position the camera, and enter a Preset number. The **Add** button appears. 3. Click **Add** to add the preset.
Tour	1. Select **Tour** from the drop-down list. 2. Enter a preset value. The **Add** button appears. 3. Click **Add Preset** button, and the new preset is added to the tour. 4. Repeat for all the presets you want to include in the tour. To remove a preset from the tour, click the **Delete preset** button.

Table 5-5 PTZ Setup Configurations

Control	Description
Pattern	1. Select **Pattern** from the drop-down list. 2. Enter a pattern value, and then click **Start** to begin PTZ movement. PTZ movement includes zooming in, focusing, adjusting the iris, and changing the camera field of view. 3. Click **Add** to set the pattern.
Pan	1. Select **Tour** from the drop-down list. 2. Click **Start** to start panning.
Light Wiper	Click to turn **On**/**Off** the light wiper.
Flip	1. Select **Tour** from the drop-down list. 2. Click **Start** to start the flip function.
Reset	Click to reset the camera to its default position.

Configuring Image/Alarm Out Settings

Select a monitor channel for video, and then click the Image button in section 9 of *Figure 5-4*.

Configuring Image Settings

In the **Image** settings, you can adjust the brightness, contrast, hue, and saturation.

Figure 5-13 Image Settings

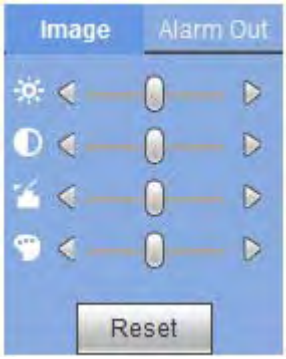


Table 5-6 Image Settings

Setting	Description
	Adjusts the monitor's video brightness.
	Adjusts the monitor's video contrast.
	Adjusts the monitor's video hue.
	Adjusts the monitor's video saturation.
	Restores the system to its defaults value.

Note All of these configurations apply only to the Web viewer.

Configuring Alarm Output

1. Click to open the **Alarm Out** configuration interface.

Figure 5-14 Alarm Out Configuration Interface

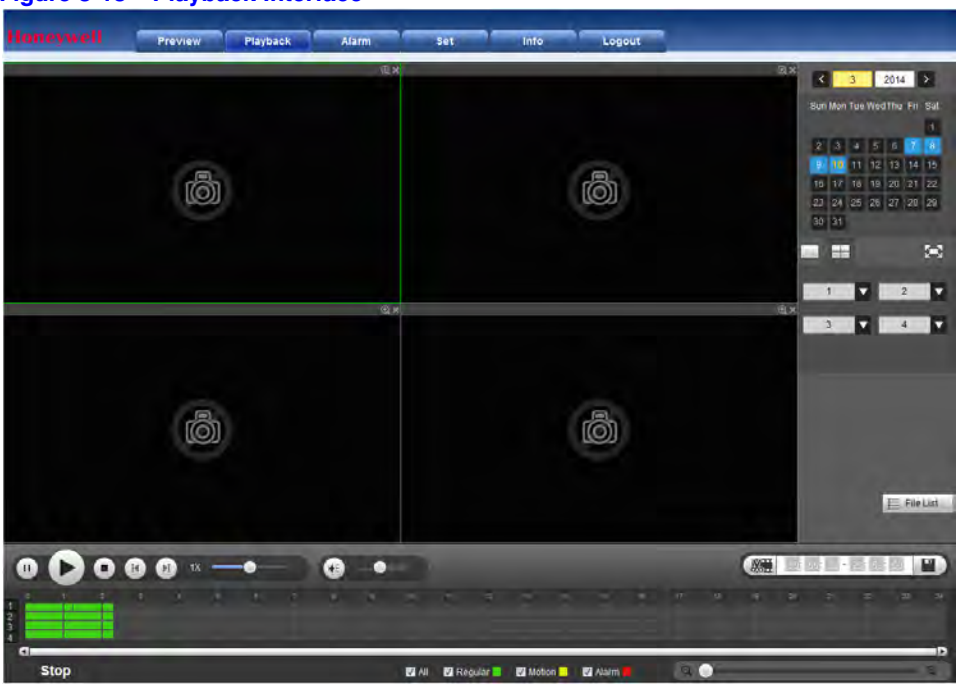
2. Disable/enable the alarm signal for the corresponding port.

Playing Back Recorded Video

1. Click the **Playback** tab at the top of the **Main** window.

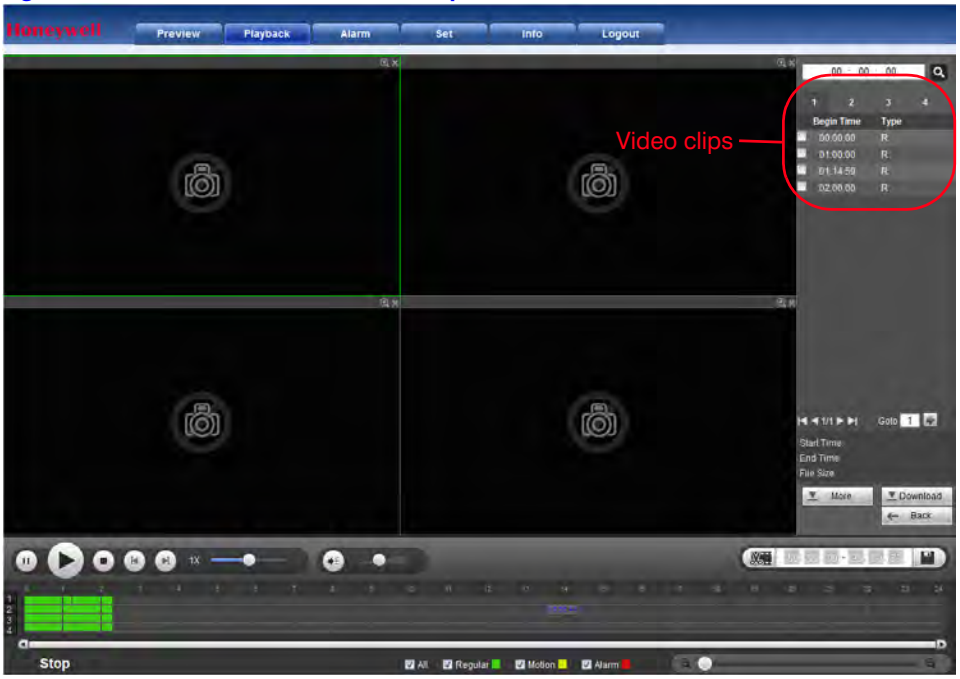
   The **Playback** interface appears.

Figure 5-15 Playback Interface



2. Select a recording type, recording date, window display mode, and channel name to select video for playback.
3. Click **File List**, and the system displays a list of recorded video clips that match the search criteria from *step 2*.

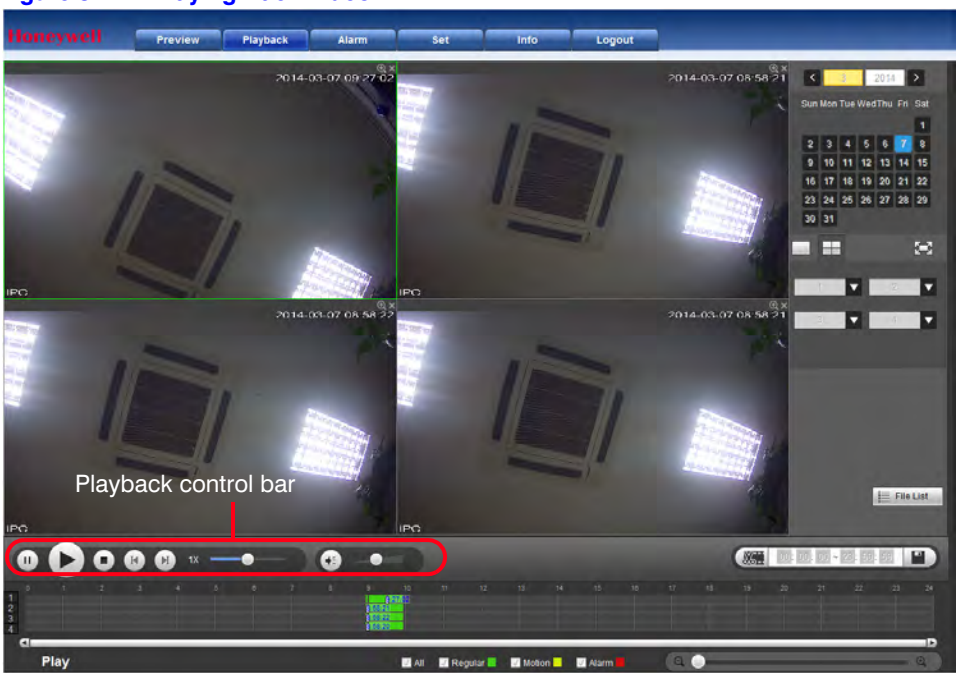
Figure 5-16 List of Recorded Video Clips



4. Select a file for playback, then click **Play** (▶). You can play back in full screen mode.

   Use the playback control bar to control playback.

Figure 5-17 Playing Back Video



Note For one-channel playback, the system can not play back and download at the same time.

Downloading Video

After generating a list of recorded video clips by clicking **File List** (see *Playing Back Recorded Video on page 154*), select the files you want to download, then click Download (▼).

Figure 5-18 Downloading Recorded Video

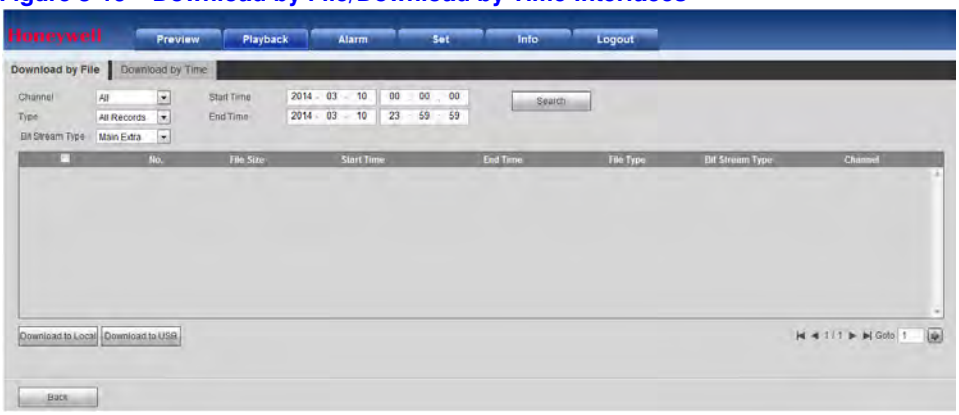
The **Download** button becomes the **Stop** button, and it indicates the downloading progress (in a percentage).

Go to your default **Saved Path** file to view the downloaded files. See *Configuring the Save Path on page 164*.

Loading More

Click **More** in *Figure 5-18*, and the **Download by File**/**Download by Time** interfaces appear.

Figure 5-19 Download by File/Download by Time Interfaces



In this window, you can search for recordings or snapshots. Select the channel, recording type, and the recording time.

Enabling and Disabling Alarms

Click the **Alarm** tab at the top of the **Main** window. The **Alarm** configuration interface appears.

Note For information about configuring alarms, see *Configuring Alarms on page 184*.

Figure 5-20 Alarm Configuration Interface

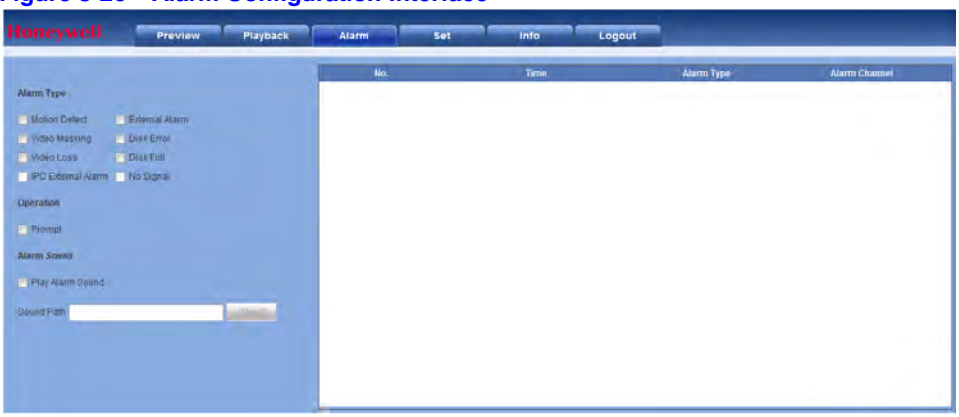


Table 5-7 Alarm Configurations

Configuration Type	Configuration	Description
Alarm Type	**Motion Detection**	Click to enable **Motion Detection**. The system will then trigger an alarm when motion is detected under the specified circumstances.
	Video Masking	Click to enable **Video Masking**. The system triggers an alarm when camera masking occurs.
	Video Loss	Click to enable **Video Loss**. The system then an alarm when video loss occurs.
	External Alarm	Click to enable the camera's **External Alarm**, the On/Off signal from the network camera. It activates the NVR to locally activate.
	Disk Error	Click to enable the **Disk Error** alarm. The system triggers an alarm when a disk error occurs.
	Disk Full	Click to enable the **Disk Full** alarm. The system triggers an alarm when the disk is full.
	No Signal	Click to enable the **No Signal** alarm. The system triggers an alarm when the network camera and the NVR are disconnected.
Prompt	**Prompt**	Click to enable the **Prompt**. Then the system automatically pops up an alarm icon on the **Alarm** button on the **Main** interface when there is an alarm.
Alarm Sound	**Alarm Sound**	Click to enable the **Alarm Sound**. Then the system triggers an alarm sound when an alarm occurs. You can choose the sound.
	Sound Path	Select the sound file.

Configuring Settings

Click the **Set** tab at the top of the **Main** window. The **Set** configuration interface appears.

In the Set configuration interface, you can configure the following:

- Remote settings
- Audio and video encoding settings
- The save path
- Snapshot settings
- Video overlay settings
- Network settings, including wifi and 3G
- Email settings
- UPnP settings
- Automatic registration settings

Configuring Remote Settings

Remotely Adding a Device/Camera

1. Click the arrow beside **REMOTE** to expand the **REMOTE** selection tree.
2. Click **Add Device** to open the **Add Device** configuration interface.

Figure 5-21 Remotely Adding a Device Configuration Window

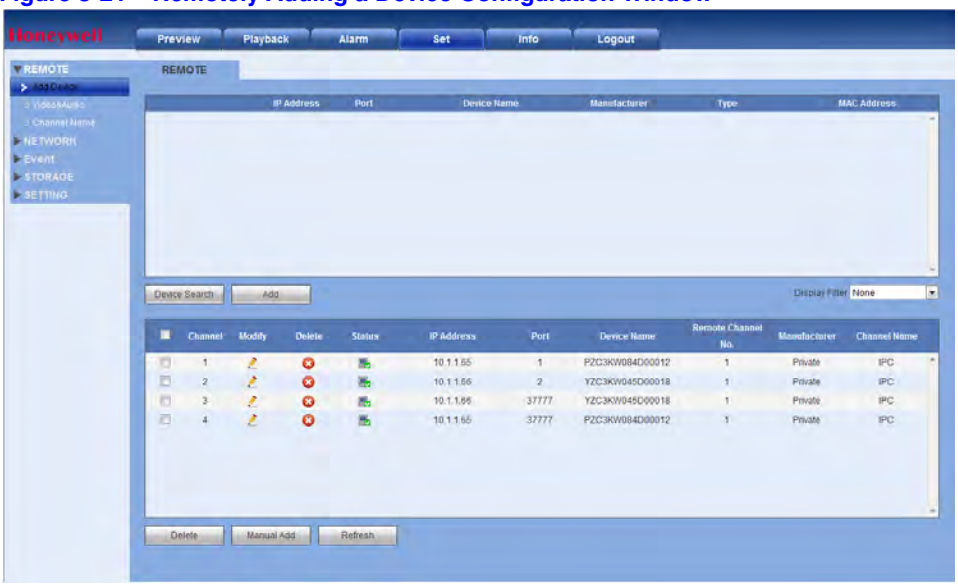


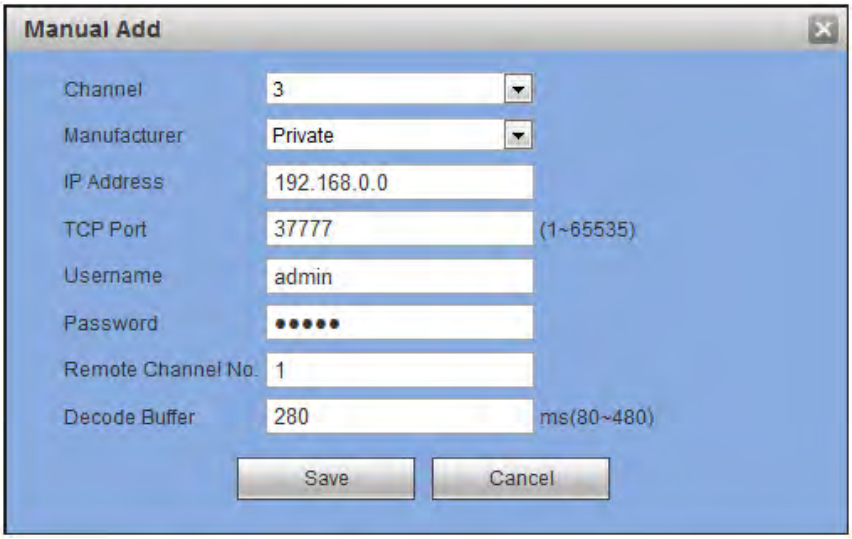
Table 5-8 Remote - Add Device Configurations

Configuration	Description
Device Search	Click **Device Search**, and you can view the device information for all found devices. You can see the camera's IP address, port, device name, manufacturer, and type.
Add	Select a device in the list, and then click **Add** to automatically connect to the camera and add it to the **Added** device list. Or you can double-click a camera in the list to add it to the **Added** device list.
Modify	Click or any camera in the **Added** device list to open a configuration window to change the corresponding channel setup.
Delete	Click to delete the remote connection for the corresponding channel.
Connection Status	indicates that the connection was successful. indicates that the connection was not successful.

Table 5-8 Remote - Add Device Configurations

Configuration	Description
Delete	Select a camera in the **Added** device list, and then click **Delete**. The system disconnects from the camera and removes it from the **Added** device list.
Manual Add	1. Click **Manual Add**, and the **Manual Add** configuration interface appears. See *Figure 5-22*. 2. Select a channel from the drop-down list. Only disconnected channels are shown. **Note** The NVR supports cameras from Honeywell, Panasonic, Sony, Dynacolor, Samsung, AXIS, Arecont, Dahua, and cameras with ONVIF-standard protocol. **Note** If you do not enter an IP address, the system uses the default IP address **192.168.0.0**, and the system does not connect to this IP address. **Note** You can not add two devices at the same time. If you click **OK**, the system connects only to the camera for the currently selected channel.

Figure 5-22 Manual Add Configuration Window



Remotely Configuring Video and Audio

Configuring Encoding for Video and Audio

Click **Video&Audio** in the **REMOTE** configuration interface to open the **Video&Audio** configuration interface.

Figure 5-23 Video&Audio Configuration Interface

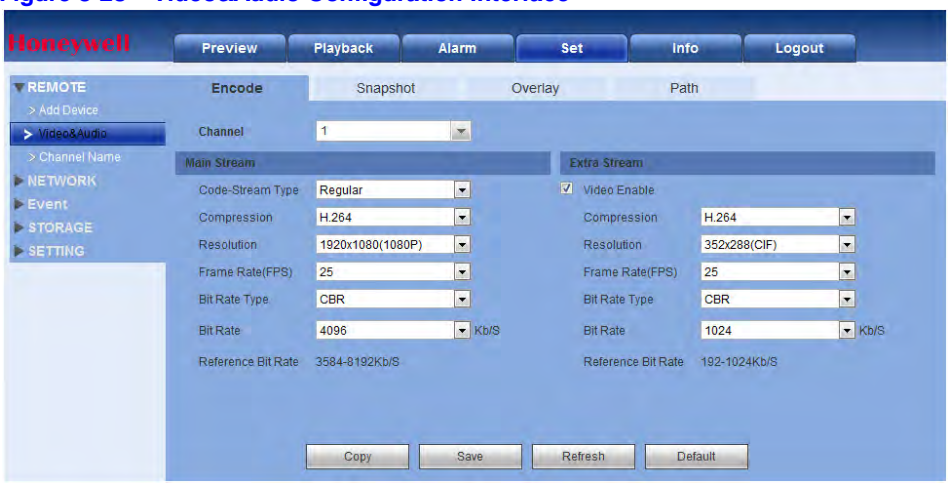


Table 5-9 Video&Audio Configuration Interface

Configuration	Description
Channel	Select a channel from the drop-down list.
Code Stream Type	• Select from **Regular**, **Motion**, and **Alarm**. You can select a different encoder frame rates for different recorded events. • The system supports the active control frame function (ACF). It allows you to record in different frame rates. • For example, you can use a high frame rate to record important events and a lower frame rate to record schedule events. The system allows you to set different frame rates for recording motion detection and recording alarms.
Video Enable	Check to enable the extra video stream. This is enabled by default.
Compression	The main bit stream supports H.264. The secondary stream supports H.264 or MJPG.
Resolution	This value refers to the capability of the network camera.
Frame Rate	PAL: 1–25 fps; NTSC: 1–30 fps
Bit Rate Type	Select either **CBR** or **VBR**.
Bit Rate	**Main stream**: Select a bit rate to change the video quality. The larger the bit rate, the better the quality. Please see the **Referenced Bit Rate** below. **Extra stream**: When in **CBR** mode, the bit rate here is the maximum value. When there is movement in the scene, the system needs to reduce the frame rate or video quality to maintain the bit rate. This is not available in **VBR** mode.
Reference Bit Rate	The recommended bit rate value based on your settings for the resolution and the frame rate.

Configuring Snapshot Settings

Click the **Snapshot** tab on the **Video&Audio** configuration interface to open the **Snapshot** configuration interface.

Figure 5-24 Snapshot Configuration Interface

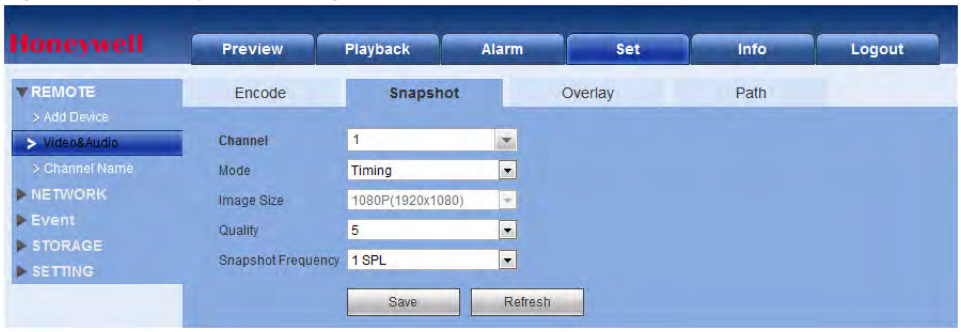


Table 5-10 Snapshot Configurations

Configuration	Description
Channel	Select a channel from the drop-down list.
Mode	There are two modes: **Timing** (schedule) and **Trigger**. **Timing**: The snapshot function is valid during the specified time period. **Trigger**: The snapshot function is only available as a result of an alarm, such as motion detection, tampering, or local activation.
Image Size	This matches the resolution of the main stream.
Quality	Select from six levels of image quality.
Snapshot Frequency	Set the snapshot frequency, from **1 snapshot per second (SPL)** to **7 SPL**.

Configuring Video Overlay

Click **Overlay** in the **Video&Audio** configuration interface to open the **Video Overlay** configuration interface.

Figure 5-25 Video Overlay Configuration Interface

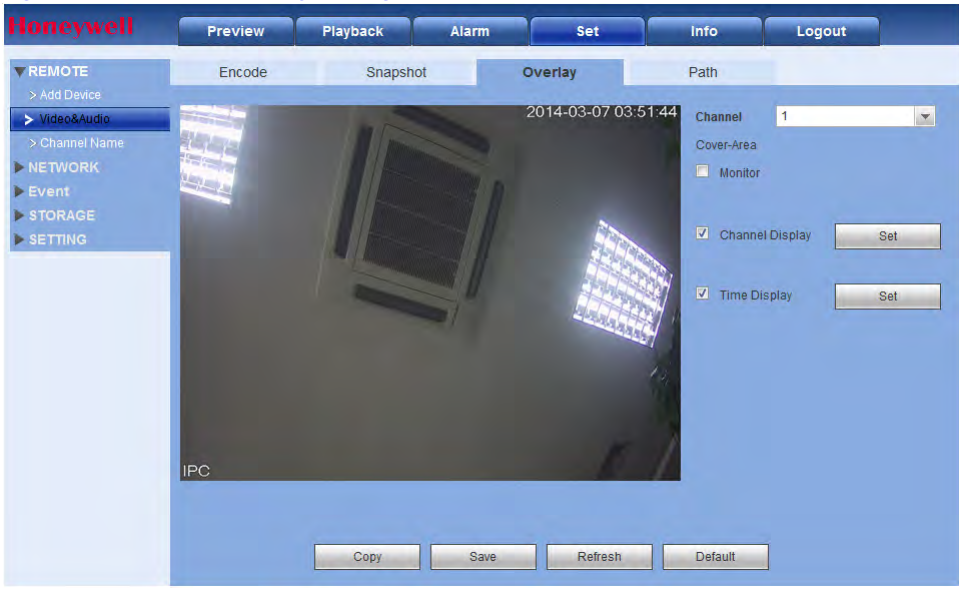


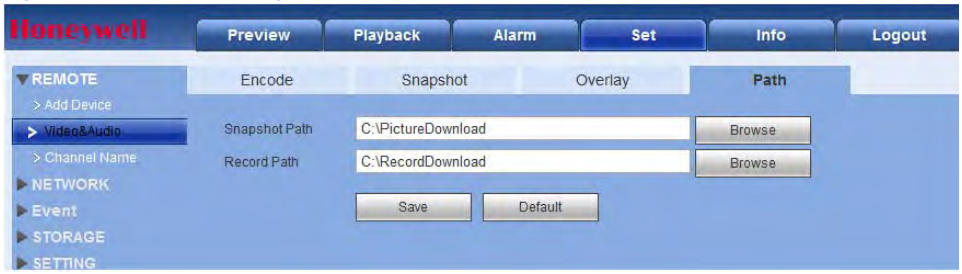
Table 5-11 Video Overlay Configurations

Configuration	Description
Channel	Select a channel from the drop-down list.
Cover-Area	Click to enable the **Monitor**. Click **Set** to configure a privacy mask for the **Preview** or **Monitor**. The system supports up to four privacy mask zones.
Channel Display	Enable this function to overlay channel information on the video window. Use the mouse to drag the channel title to the desired position. View the channel title on the live web client video or the playback video.
Time Display	Enable this function to overlay time information on the video window. Use the mouse to drag the time display to the desired position. View the time display on the live web client video or the playback video.

Configuring the Save Path

Click **Path** in the **Video&Audio** configuration interface to open the **Path** configuration interface.

Figure 5-26 Path Configuration Interface



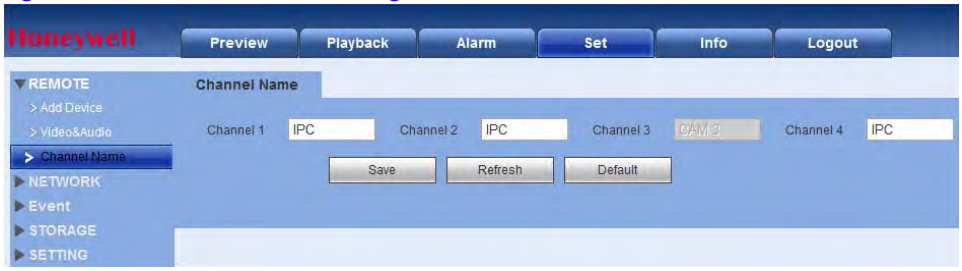
Click **Browse** to configure a new save path for snapshots or recorded video. The default locations are **C:\PictureDownload** and **C:\RecordDownload**.

Click **Save** to save any changes.

Configuring the Channel Name

Click **Channel Name** in the **Video&Audio** configuration interface to open the **Channel Name** configuration interface.

Figure 5-27 Channel Name Configuration Interface



Click **Browse** to select the upgrade file. Or use the filter to select several network cameras for upgrading at the same time.

Configuring Network Settings

Click the **Network** arrow to expand the **Network** selection tree.

Configuring TCP/IP Settings

Click **TCP/IP** in the **Network** configuration interface to open the **TCP/IP** configuration interface.

Figure 5-28 TCP/IP Configuration Interface

Table 5-12 TCP/IP Configurations

Configuration	Description
Mode	There are two modes: **Static** and **DHCP**. • The IP address, submask, and gateway is inactive and not configurable when you select the **DHCP** mode to automatically search for the IP address. • If you select **Static** mode, then you need to manually configure the IP address, submask, and gateway. • If you select **DHCP** mode, then you can only view the IP address, submask, and gateway. You can not configure these values. • If you switch from the **DHCP** mode to the static mode, then you need to reset the IP parameters. • The IP address, submask, gateway, and DHCP are read-only values when the PPPoE dial is **OK**.
MAC Address	Displays the MAC address. This field is not configurable.
IP Version	Select the IP version, either **IPv4** or **IPv6**. You can use either version to access the camera's IP address.
IP Address	1. Use your PC's keyboard to enter the **IP address**. 2. Set the **Subnet** mask and **Default** gateway.
Preferred DNS	Enter the DSN IP address.
Alternate DNS	Enter an alternate DSN IP address.
Note For the IPv6 version IP address, the Preferred DNS and Alternate DNS shall be no more the 128 digits. They also can not be left blank.	
LAN Download	Enable this function so that the system can process the downloaded data first. The download speed is **1.5X** or **2.0X** of the normal speed.

Configuring the Network Connection

Click **Connection** in the **Network** configuration interface to open the **Connection** configuration interface.

Figure 5-29 Connection Configuration Interface

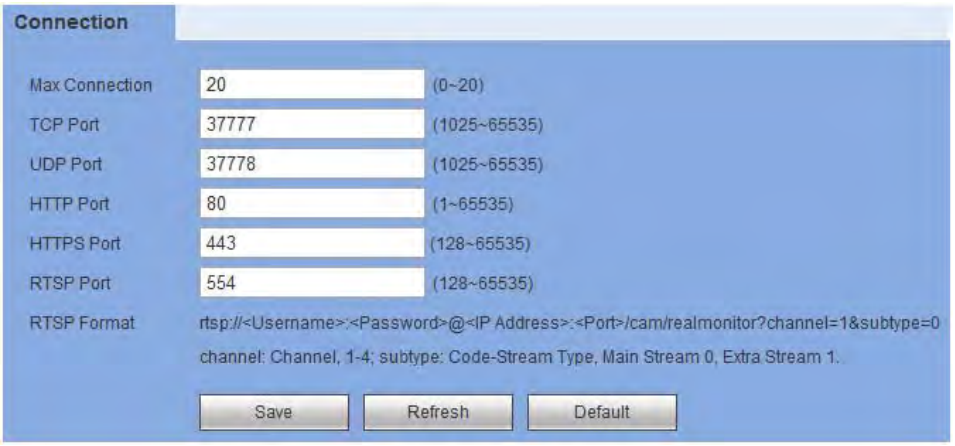


Table 5-13 Network Connection Configurations

Configuration	Description
Max Connection	The maximum Web connection for the same NVR. The value ranges from **1** to **120**. The default is **120**.
TCP Port	The default is **37777**. You can enter the actual port number, if necessary.
UDP Port	The default is **37778**. You can enter the actual port number, if necessary.
HTTP Port	The default is **80**. You can enter the actual port number, if necessary.
HTTPS Port	The default is **443**. You can enter the actual port number, if necessary.
RTSP Port	The default is **554**.

Configuring Wifi

Note This section applies only to devices with Wifi capability, such as tablet computers, smartphones, and laptop computers.

1. Click **Wifi** in the **Network** configuration interface to open the **Wifi** configuration interface.

Figure 5-30 Wifi Configuration Interface

2. Click to enable **Wifi**.
3. Click **Search SSID** to generate a list of all the wireless network information.
4. Double-click the name of a wireless device to connect to it.

Note Click **Refresh** to update the list of wireless network information.

Configuring CDMA/GPRS for 3G

1. Click **3G** in the **Network** configuration interface to open the **3G** configuration interface.
2. Click the **CDMA/GPRS** tab to open the **CDMA/GPRS** configuration interface.

Figure 5-31 CDMA/GPRS Configuration Interface

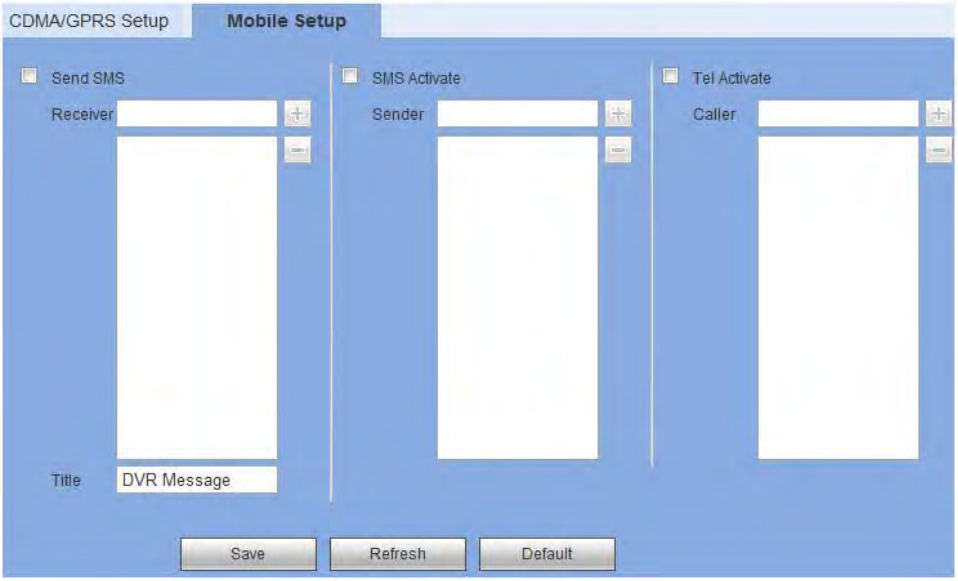
Table 5-14 CDMA/GPRS Configurations

Configuration	Description
WLAN Type	Select a 3G network type to distinguish this 3G module from different ISPs. Choose from **WCDMA**, **CDMA1x**, for example.
APN & Dial No.	**APN** and the **Dial No.** are important PPPoE parameters. The APN (Access Point Name) and the Dial No. are automatically received by the NVR after connecting to a 3G module.
AUTH	Authorization. Choose from **PAP**, **CHAP**, or **NO_AUTH**.
Pulse Interval	Configure a time for ending the 3G connection after you close the extra stream monitor. For example, if you select **60** here, the NVR ends the 3G connection 60 seconds after you close the extra stream monitor.
Note	If the Pulse Interval is **0**, then the system does not end the 3G connection after you close the extra stream monitor.
Note	The Pulse Interval here is for the extra stream only. This field is inactive if you are using a main stream monitor.

Configuring the Mobile Setup for 3G

Click the **Mobile Setup** tab in the **Network Configuration** interface to open the **Mobile Setup** configuration interface.

Figure 5-32 Mobile Setup Configuration Interface

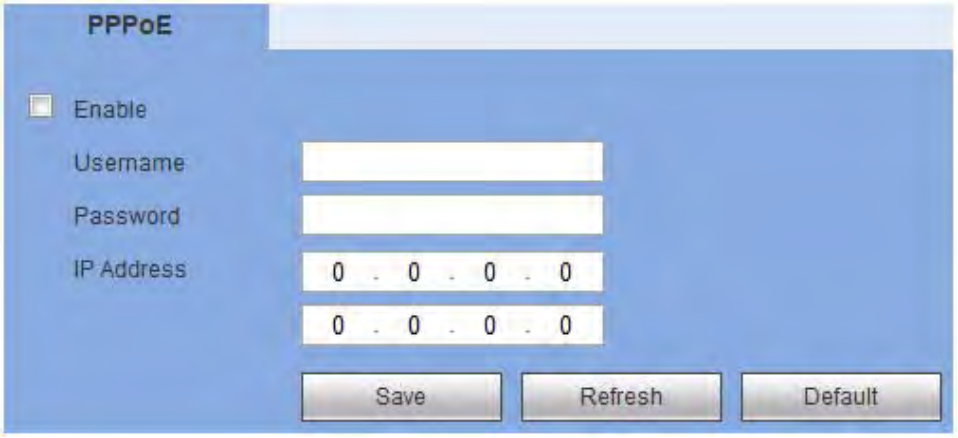


Activate/deactivate 3G connected phones or mobile phones, or the phone you configured to get alarm messages.

Configuring PPPoE

1. Click **PPPoE** in the **Network** configuration interface to open the **PPPoE** configuration interface.

Figure 5-33 PPPoE Configuration Interface



2. Enter the **PPPoE User name** and **Password**, which you receive from your Internet Service Provider (ISP).
3. Enable the **PPPoE** function.
4. Click **Save** to save the changes.
5. **Reboot** the device to activate these changes.

   After rebooting, the device should connect to the Internet through the PPPoE connection.

   The IP address is found in the WAN from the IP address column.

Note You need to use the previous IP address in the LAN to log into the device. Go to the IP address field, which is found in the device's current device information. You can access the NVR through this new address.

Configuring DDNS

Use DDNS to connect the various servers so that you can access the system through the server.

1. Go to the corresponding service website to apply for a domain name.
2. Access the system through that domain name.

Note This works even if your IP address has changed.

3. Select **DDNS** from the drop-down list.

Table 5-15 DDNS Configuration Options

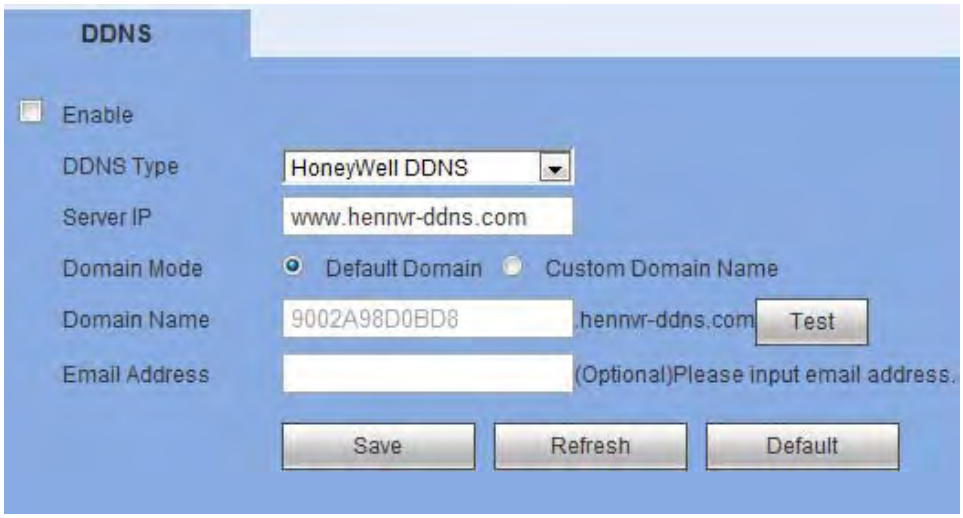
Configuration	Description
DDNS Type	Select the DDNS protocol from the drop-down list, then enable the DDNS function.
Server IP	The DDNS server IP address.
Domain Mode	The DDNS server port.
Domain Name	Your self-defined domain name.
Email Address	Server email address.

Honeywell DDNS

The Honeywell DDNS function works with a special DDNS server and special Professional Surveillance Software (PSS).

Click **DDNS** in the **Network** configuration interface to open the **PPPoE** configuration interface.

Figure 5-34 DDNS Configuration Interface



Operation Before you can use Honeywell DDNS, you need to enable this service and configure the proper server address, port value, and domain name.

Table 5-16 DDNS Configurations

Parameter	Description
DDNS Type	You can select the DDNS protocol from the drop-down list, and then enable the **DDNS** function. Select the Honeywell DDNS server (which is free) to enable the DDNS function.
Server IP	This is the DDNS server IP address. Under **Honeywell DDNS**, the default server address is ***www.hennvr-ddns.com***.
Domain Mode	Select **Default Domain** or **Custom Domain Name**. The default is **Default Domain**. If you select **Custom Domain Name**, then you must enter a domain name.
Domain Name	The default domain name is ***MAC address.hennvr-ddns.com***. You can define the prefix.
Username	The user name you enter to log in the server (Optional).

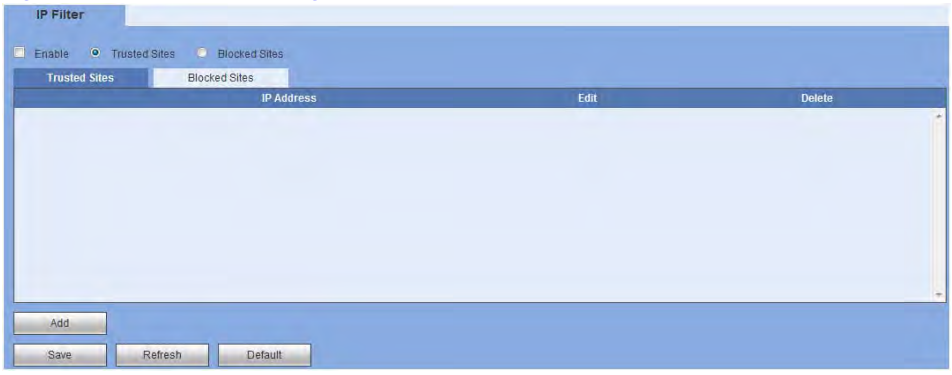
Note Do not register frequently. You need to wait at least 60 seconds between registration requests. Too many registration requests might leave your server vulnerable to attacks.

Note The system DDNS server might take back a domain name that is idle for one year. If you configure your email address in the DDNS configuration, you will get a notification email before the domain name is taken back**.**

Configuring the IP Filter

1. Click **IP Filter** in the **Network** configuration interface to open the **IP Filter** configuration interface.

Figure 5-35 IP Filter Configuration Interface



2. Click to enable **Trusted Sites**, and only the listed IP addresses can access the current NVR.

   OR

   Click to enable **Blocked Sites**, and the listed IP addresses can not access the current NVR.

Configuring Email Settings

Click **Email** in the **Network** configuration interface to open the **Email** configuration interface.

Figure 5-36 Email Configuration Interface.

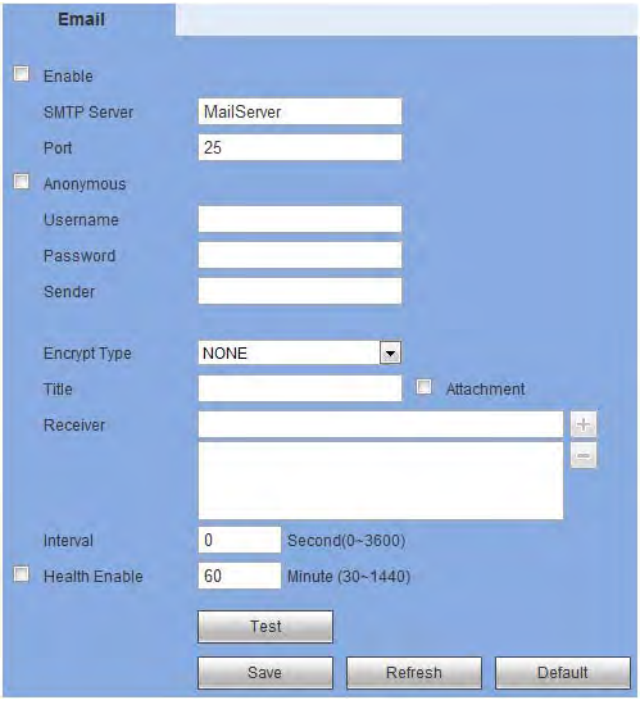


Table 5-17 Email Configurations

Parameter	Description
Enable	Click to enable the email function.
SMTP server	Enter the email SMTP server IP.
Port	Enter the corresponding port.
Anonymous	Only available if the server supports the anonymity function. This function allows you to automatically log in anonymously, so you do not need to enter your user name, password, or sender's information.
User Name	Enter the user name for logging in to the sender's email box.
Password	Enter the login password here.
Sender	Enter the sender's email address.
Encrypt Type	Select from **NONE**, **TLS**, or **SSL**.
Title	Enter an email subject. You can use up to 32 letters or numbers.
Attachment	Click to enable so that a snapshot can be attached to the email.
Receiver	Enter the receiver's email address. You can enter up to 3 email boxes.

Table 5-17 Email Configurations

Parameter	Description
Interval	The interval for sending ranges from **0** to **3600** seconds. **0** means that there is no interval. **Note** The system will not send an email immediately when the alarm occurs. When an alarm, motion detection, or video abnormality triggers an email, the system sends out the email according to the interval that is specified here. This function is very useful when there are too many emails activated by events, which might result in an overload for the email server.
Health email enable	Click to enable the email health check. The NVR sends a test email to check the network connection. After enabling **Health Enable**, you can configure how frequently the NVR sends out emails to test the network connection.
Test	Click **Test** to send a test email. A popup message appears to indicate the state of the network connection.

Configuring UPnP

UPnP allows you to establish the mapping relationship between the LAN and the public network. Here you can also add, modify, or remove a UPnP item.

Preparing for UPnP

1. In the Windows OS, click **Start** ➤ **Control Panel** ➤ **Add or remove programs**.
2. Click **Add**/**Remove Windows Components**, and then select **Network Services** from the **Windows Component Wizard**.
3. Click **Details**, then check **Internet Gateway Device Discovery and Control client** and **UPnP User Interface**. Then click **OK** to begin the installation.
4. Enable **UPnP** from the internet. If your UPnP is enabled in the Windows OS, then the NVR can automatically detect it through the **My Network Places**.
5. Click **UPnP** in the **Network** configuration interface to open the **UPnP** configuration interface.

Configuring UPnP

Figure 5-37 UPnP Configuration Interface

Configuring SNMP

SNMP allows the communication between the network management work station software and the proxy of the managed device. It is reserved for a third party developer.

Click **SNMP** in the **Network** configuration interface to open the **SNMP** configuration interface.

Figure 5-38 SNMP Configuration Interface

Table 5-18 SNMP Configurations

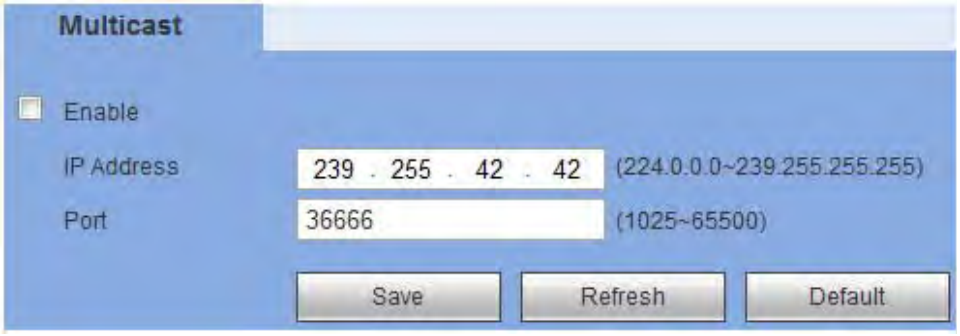
Configuration	Description
SNMP Port	The listening port of the proxy program of the NVR. It is a UDP port, not a TCP port. This value ranges from **1** to **65535**. The default is **161**.
Read Community	This is a string, and it is a command between the managing processes and the proxy process. Read Community defines the authentication, the access control, and the management relationship between one proxy and one managers' group. Ensure that the device and the proxy are the same. The Read Community reads all the objects the SNMP supports in the specified name. The default is **Public**.
Write Community	This is a string, and it is a command between the managing processes and the proxy process. It defines the authentication, the access control, and the management relationship between one proxy and one manager's group. Ensure that the device and the proxy are the same. The Write Community reads, writes, and/or accesses all of the objects the SNMP supports in the specified name. The default is **Write**.
Trap Address	The Trap information destination address from the device's proxy program.
Trap Port	The Trap information destination port from the device's proxy program. The Trap port allows the gateway device and the client-end PC in the LAN to exchange information.
SNMP Version	If you check **V1**, the system processes only the V1 information. If you check **V2**, the system processes only the V2 information.

Configuring Multicast

Multicast is a transmission mode for data packets. When there are multiple hosts to receive the same data packets, multiple cast is the best option for reducing the bandwidth and the CPU load. The source host can send out just one data for transit. This function also depends on the relationship of the group member and the router group.

Click **Multicast** in the **Network** configuration interface to open the **Multicast** configuration interface.

Figure 5-39 Multicast Configuration Interface

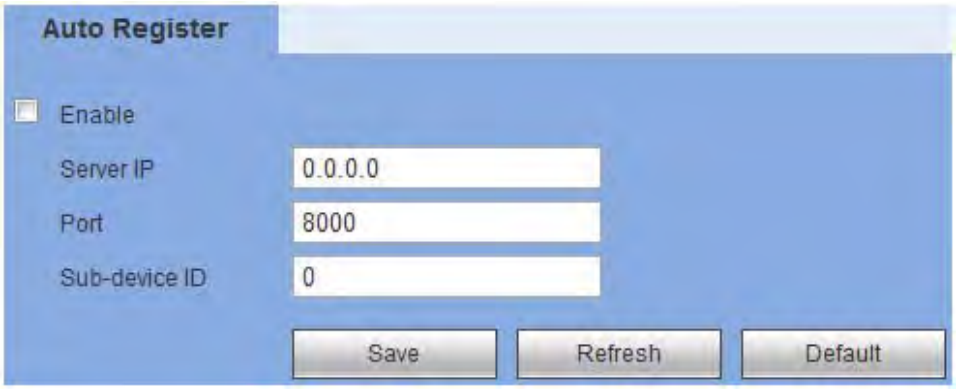


Configuring Auto Registration Settings

Auto Register allows the device to automatically register to the proxy you have specified. This allows you to use the client-end to access the NVR through the proxy. The proxy acts as a switch. In network service, the device supports IPv4 server addresses or domains.

Click **Auto Register** in the **Network** configuration interface to open the **Auto Register** configuration interface.

Figure 5-40 Auto Register Configuration Interface



Configuring Events

Click the **Event** arrow to expand the **Event** selection tree.

Configuring Detection Settings

Configuring for Motion Detection

You can configure the system to generate a motion detection alarm when the minimum amount of motion (as defined by you) is detected in the video.

Click **Detect** in the **Event** configuration interface to open the **Detect** configuration interface.

Figure 5-41 Detect Configuration Interface

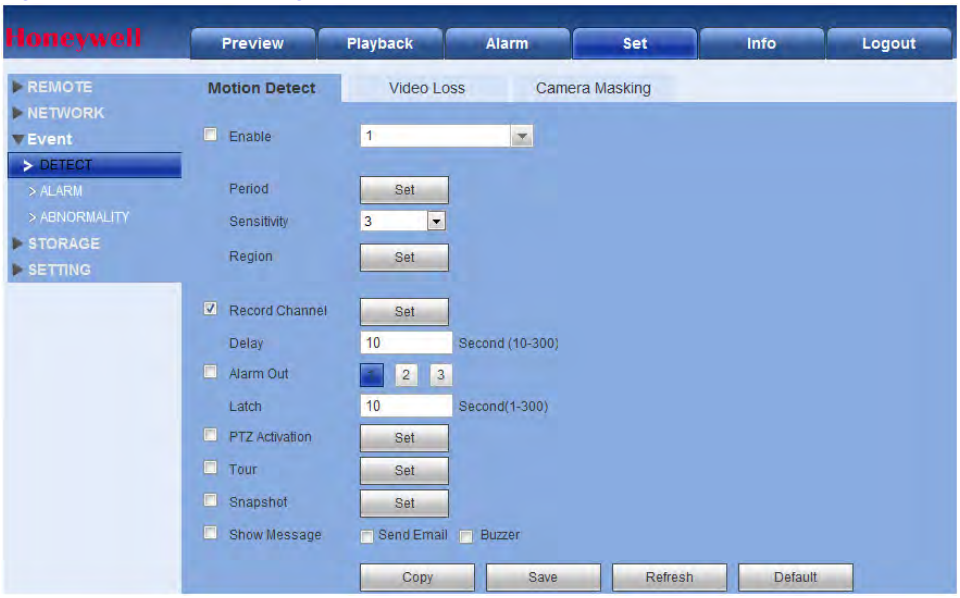


Table 5-19 Motion Detection Configurations

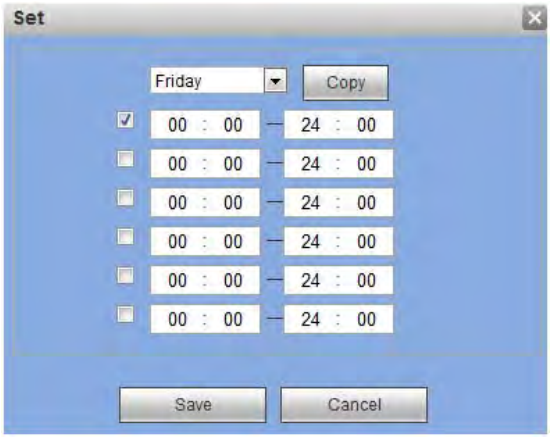
Configuration	Description
Enable	Click to enable motion detection. Select a channel from the drop-down list.
Period	Define a period during which motion detection is active. 1. Click **Set**. The **Set** configuration interface appears.  2. Select a day of the week from the drop-down menu. Select from a day of the **week**, **Work Day**, or **Free Day**. **Note** If you select **Work Day** or **Free Day,** a **Set** button appears so you can configure which days are **Work Days** and which days are **Free Days.** Click **Set**, select the Work Days and the Free Days, then click **OK**. **Note** You can configure up to 6 periods within one day. 3. Configure a time range for when the event detection area is active, then click the check box to select that time range. 4. Click **Save**.
Sensitivity	Select from six levels of sensitivity. The higher the number, the higher the sensitivity.

Table 5-19 Motion Detection Configurations

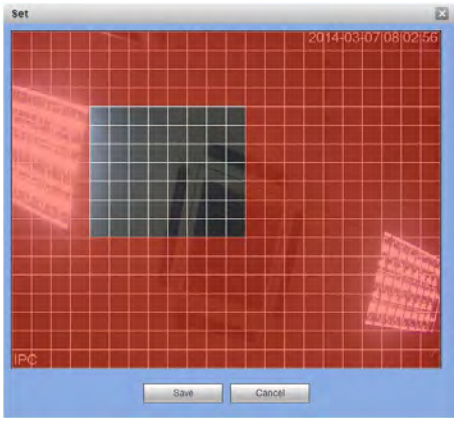
Configuration	Description
Region	1. Select a motion detection type. 2. Click **Set**. The **Motion Detection Set** configuration interface appears.  3. Select the event detection area by left-clicking and dragging the mouse. There are 396 (PAL) or 330 (NTSC) small zones. **Green**: Indicates the current cursor position. **Grey**: Indicates the event detection zone. **Black**: Indicates a disarmed zone. **Note** Use the **FN** button on the NVR's front panel to switch the cursor between selecting and deselecting. **Note** When the alarm is armed, you can use the directional buttons on the NVR to move the green motion detection rectangle. 4. Click **Save** to save the configurations. Click **Esc** to exit the setup without saving the changes.
Record Channel	The system automatically starts recording selected channels when a motion detection alarm occurs. **Note** You need to set the motion detection recording period. Go to **Storage ➤ Schedule** to configure the current channel for scheduled recording. See *Configuring Local Storage for Schedules on page 192*.
Delay	The system can delay recording for a specified amount of time after an alarm has ended. Select from **10s** to **300s**.
Alarm Out	Select the device output port, from **1** to **3**. Select the corresponding port(s) so the system can activate the corresponding alarm devices when an alarm occurs.
Latch	The system can delay the alarm output for a specified time after an alarm ends. The value ranges from **1s** to **300s**.

Table 5-19 Motion Detection Configurations

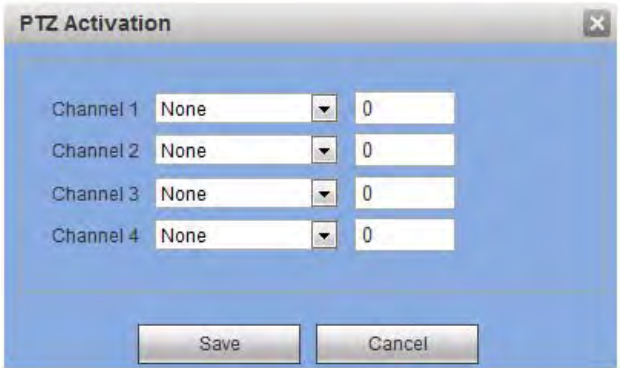
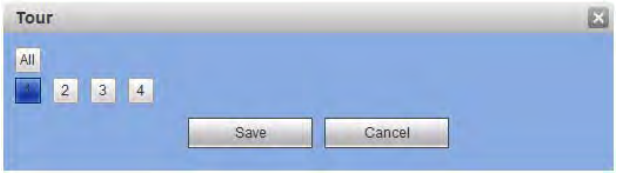
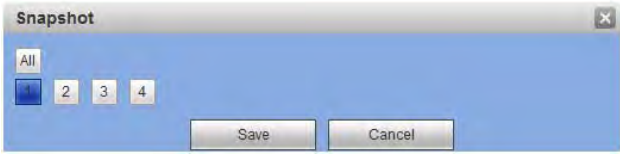
Configuration	Description
PTZ Activation	When PTZ activation is configured, the system can activate PTZ operation when an alarm is detected. 1. Click **Set** to open the **PTZ Activation** configuration interface.  2. Select a preset, tour, or pattern from the drop-down menu. 3. Click **Save**.
Tour	Click to enable a tour to be triggered by an alarm. The system supports 1/8-window tour. See *Configuring Display Settings on page 203* for tour interval setup. On the **Display Settings** tab, when there are two tours enabled by default, you can configure the system so an alarm triggers the system to enable the alarm tours you configured here. If there is no alarm, then the system uses the tour setup that was configured in the **Display** interface. 1. Click **Setup** to select a tour channel. The system begins a 1-window or multiple-window tour display showing the channels you've set to record when an alarm occurs.  2. Click to select a channel, or **All**, then click **Save**.
Snapshot	Click to enable the **Snapshot** function. A snapshot will be taken when an alarm occurs. 1. Click **Set** to open the Snapshot Configuration interface.  2. Click to select a channel, or **All**, then click **Save**.

Table 5-19 Motion Detection Configurations

Configuration	Description
Show Message	Click to enable a pop-up message on your local host PC screen to let you know an alarm has occurred.
Send Email	The system can send an email when an alarm is detected. When you have enabled the **Snapshot** function, the system can also send an image attached to the email. Go to **Main Menu ➤ Setting ➤ Network ➤ Email** to configure the email settings. See *Configuring Email Settings on page 173*.
Buzzer	Click to enable the **Buzzer** function. When an alarm occurs, the buzzer beeps.

Configuring for Video Loss Detection

You can configure the system to generate a video loss alarm when the minimum amount of video loss (as defined by you) is detected in the video.

Note Video loss does not support anti-dither, sensitivity, or region setup.

Click **Video Loss** in the **Event** configuration interface to open the **Video Loss** configuration interface.

Figure 5-42 Video Loss Configuration Interface

The configuration for **Video Loss Detection** is very similar to the configuration for **Motion Detection**. Please see *Configuring for Motion Detection on page 179* for more information.

Configuring for Camera Masking

You can configure the system to generate a camera masking alarm when the minimum amount of masking (as defined by you) is detected in the video.

Click **Camera Masking** in the **Event** configuration interface to open the **Camera Masking** configuration interface.

Figure 5-43 Camera Masking Configuration Interface

The configuration for **Camera Masking Detection** is very similar to the configuration for **Motion Detection**. Please see *Configuring for Motion Detection on page 179* for more information.

Configuring Alarms

Before configuring alarms, ensure that you have properly connected alarm devices such as a buzzer. You can configure local and network alarms.

Click **Alarm** in the **Event** configuration interface to open the **Alarm** configuration interface.

Configuring Local Alarms

Click **Local Alarm** in the **Alarm** configuration interface to open the **Local Alarm** configuration interface.

Figure 5-44 Local Alarm Configuration Interface

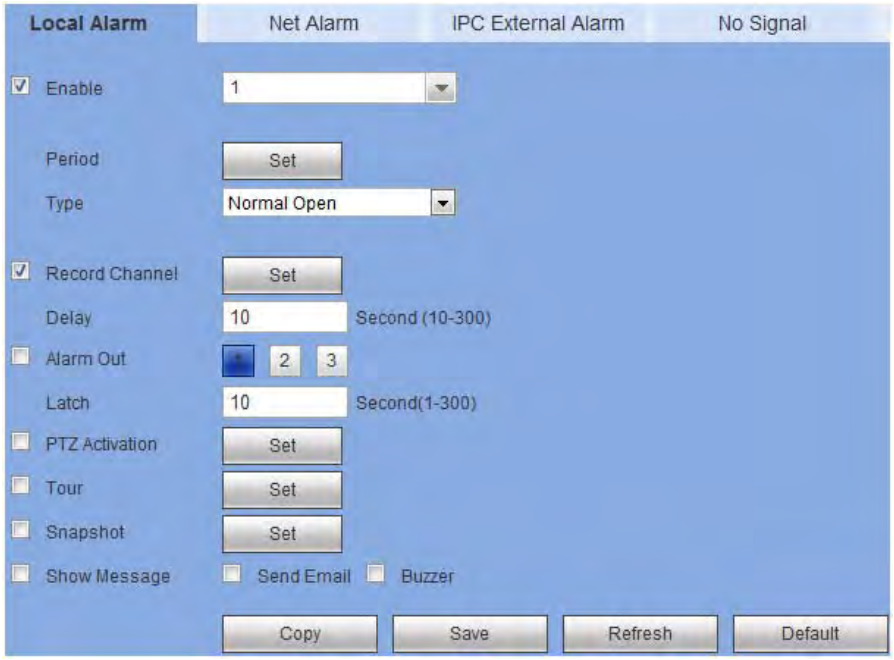


Table 5-20 Local Alarm Configurations

Configuration	Description
Enable	Click to enable local alarms. Select a channel from the drop-down list.
Period	Define a period during which local alarms are active. 1. Click **Set**. The **Set** configuration interface appears. 2. Select a time period. **Note** You can configure up to 6 periods within one day. 3. Select a date. If you do not select a date, the current setup will apply to today only. **Note** You can select **All Week** if you want these settings to apply to the whole week. 4. Click **OK**, then click **Save**.
Type	Select from **NO** or **NC**.
Record Channel	When an alarm occurs, the system automatically records motion detection channels. **Note** You need to set the motion detection recording period. Go to **Storage ➤ Schedule** to configure the current channel for scheduled recording. See *Configuring Local Storage for Schedules on page 192*.
Delay	The system can delay recording for a specified amount of time after an alarm has ended. Select from **10s** to **300s**.

Table 5-20 Local Alarm Configurations

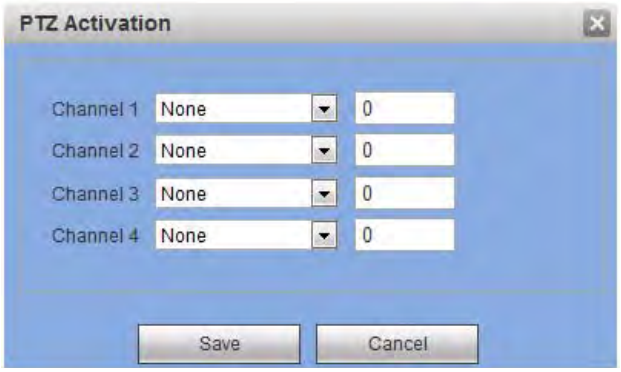
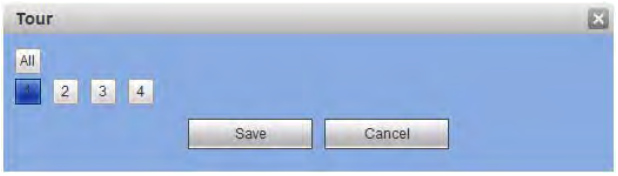
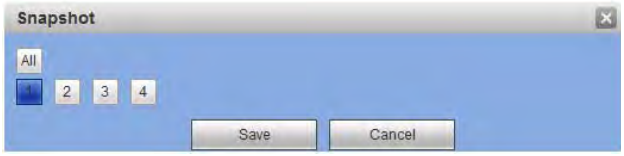
Configuration	Description
Alarm Out	Select the device output port, from **1** to **3**. Select the corresponding port(s) so the system can activate the corresponding alarm devices when an alarm occurs.
Latch	The system can delay the alarm output for a specified time after an alarm ends. The value ranges from **1s** to **300s**.
PTZ Activation	When PTZ activation is configured, the system can activate PTZ operation when an alarm is detected. 1. Click **Set** to open the **PTZ Activation** configuration interface.  2. Select a preset, tour, or pattern from the drop-down menu. 3. Click **Save**.
Tour	Click to enable a tour to be triggered by an alarm. The system supports 1/8-window tour. See *Configuring Display Settings on page 203* for tour interval setup. On the **Display Settings** tab, when there are two tours enabled by default, you can configure the system so an alarm triggers the system to enable the alarm tours you configured here. If there is no alarm, then the system uses the tour setup that was configured in the **Display** interface. 1. Click **Setup** to select a tour channel. The system begins a 1-window or multiple-window tour display showing the channels you've set to record when an alarm occurs.  2. Click to select a channel, or **All**, then click **Save**.

Table 5-20 Local Alarm Configurations

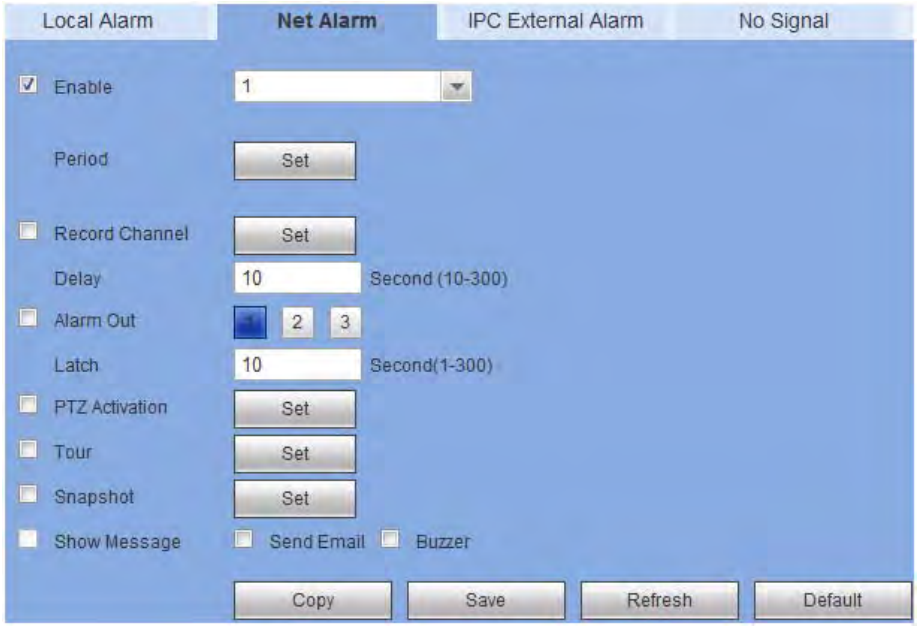
Configuration	Description
Snapshot	Click to enable the **Snapshot** function. A snapshot will be taken when an alarm occurs. 1. Click **Set** to open the Snapshot Configuration interface.  2. Click to select a channel, or **All**, then click **Save**.
Show Message	Click to enable a pop-up message on your local host PC screen to let you know an alarm has occurred.
Send Email	The system can send an email when an alarm is detected. When you have enabled the **Snapshot** function, the system can also send an image attached to the email. Go to **Main Menu ➤ Setting ➤ Network ➤ Email** to configure the email settings. See *Configuring Email Settings on page 173*.
Buzzer	Click to enable the **Buzzer** function. When an alarm occurs, the buzzer beeps.

Configuring Net Alarms

Configure **Network Alarms** so that the NVR can detect alarm signals from the network. The system does not support anti-dither and sensor type setup.

Click **Net Alarm** in the **Alarm** configuration interface to open the **Net Alarm** configuration interface.

Figure 5-45 Net Alarm Configuration Interface



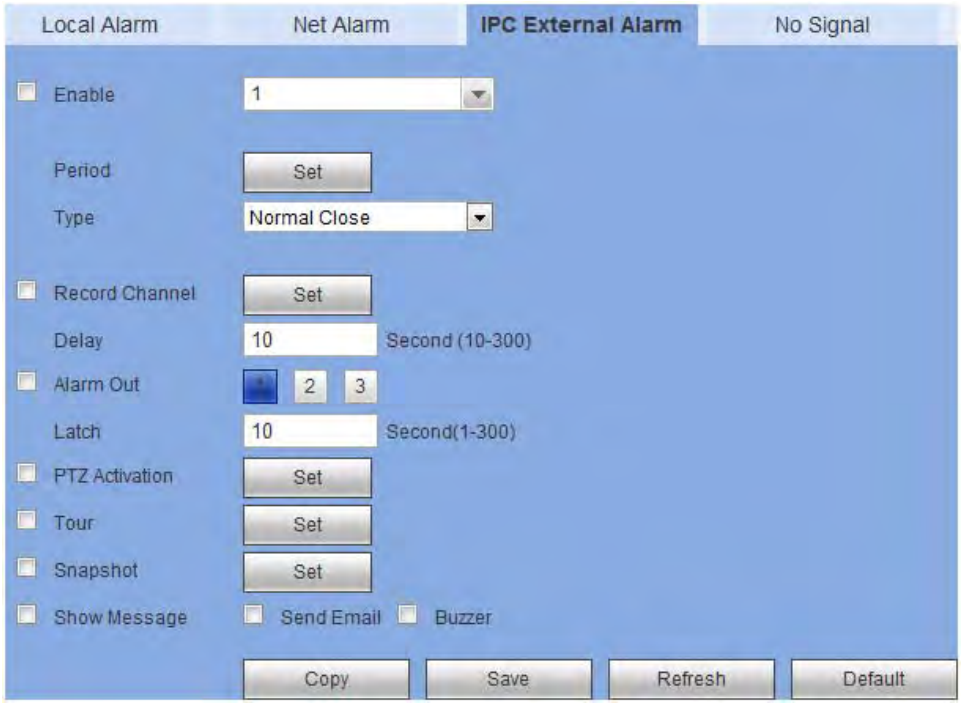
The configuration for **Net Alarms** is very similar to the configuration for **Local Alarms**. Please see *Configuring Local Alarms on page 184* for more information.

Configuring External Alarms

Configure the **External Alarms** so that the NVR can detect alarm signals from the IP cameras. The system does not support anti-dither and sensor type setup.

Click **IPC External Alarm** in the **Alarm** configuration interface to open the **IPC External Alarm** configuration interface.

Figure 5-46 IPC External Alarm Configuration Interface



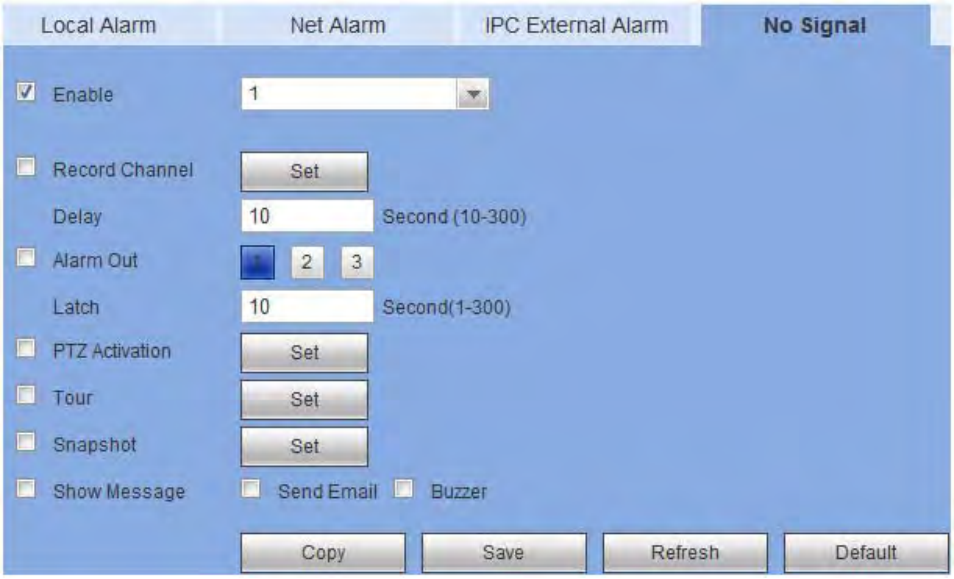
The configuration for **IPC External Alarms** is very similar to the configuration for **Local Alarms**. Please see *Configuring Local Alarms on page 184* for more information.

Configuring for No Signal

The system can generate an alarm if the network camera goes offline.

Click **No Signal** in the **Alarm** configuration interface to open the **No Signal** configuration interface.

Figure 5-47 No Signal Configuration Interface



The configuration for **No Signal Alarms** is very similar to the configuration for **Local Alarms**. Please see *Configuring Local Alarms on page 184* for more information.

Configuring for Abnormalities

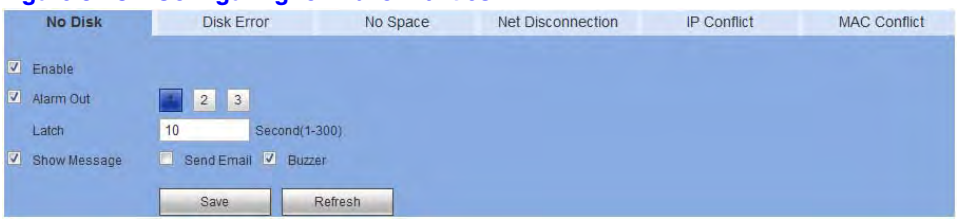
Click **Abnormality** in the **Event** configuration interface to open the **Abnormality** configuration interface.

There are six types of abnormalities:

- No Disk
- Disk Error
- No Space
- Net Disconnection
- IP Conflict
- MAC Conflict

You can configure how the system responds to each kind of abnormality. The configuration is similar for each type.

Figure 5-48 Configuring for Abnormalities



Note The **No Disk** configuration interface is shown here as an example. The other configuration interfaces, and the configuration does on the interfaces, are similar.

Table 5-21 Configuring for Abnormalities

Configuration	Description
Event Type	Select from **No Disk**, **Disk Error**, **Disk No Space**, **Net Disconnection**, **IP Conflict**, and **MAC Conflict**. **Less Than**: (For **No Space** configuration only) Configure the minimum percentage of free space on the disk. An alarm lets you know when the disk capacity is low. You need to click to enable this function.
Enable	Click to enable this function.
Alarm Out	Select the device output port, from **1** to **3**. Select the corresponding port(s) so the system can activate the corresponding alarm devices when an alarm occurs.
Latch	The system can delay the alarm output for a specified time after an alarm ends. The value ranges from **1s** to **300s**.
Show Message	Click to enable a pop-up message on your local host PC screen to let you know an alarm has occurred.
Alarm Upload	The system can upload the alarm signal to the center (including the alarm center).
Send Email	The system can send an email when an alarm is detected. When you have enabled the **Snapshot** function, the system can also send an image attached to the email. Go to **Main Menu ➤ Setting ➤ Network ➤ Email** to configure the email settings. See *Configuring Email Settings on page 173*.
Buzzer	Click to enable the **Buzzer** function. When an alarm occurs, the buzzer beeps.

Configuring Storage

Click the **Storage** arrow to expand the **Storage** selection tree.

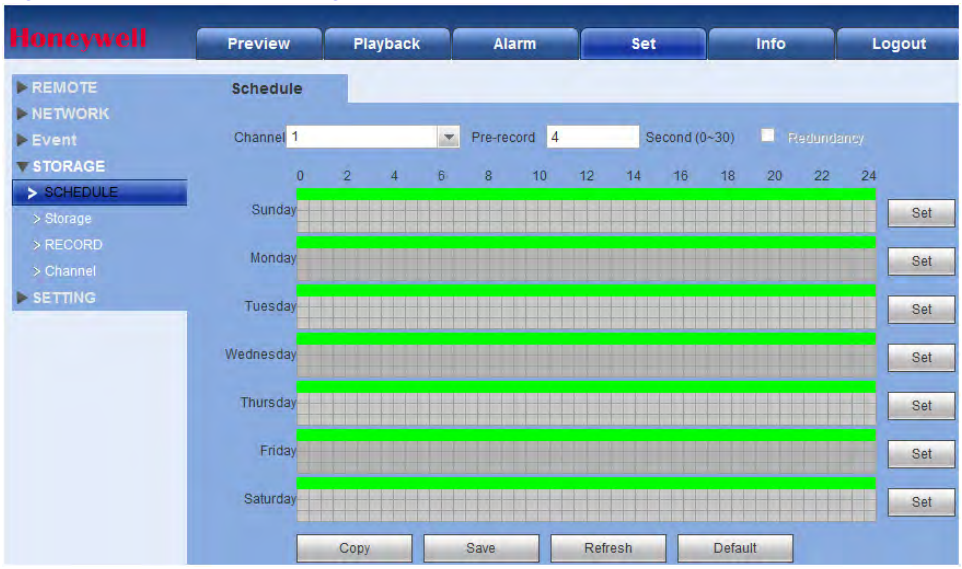
Configuring Schedules for Storage

You can add or remove schedules for recording.

There are four recording modes: **General** (auto), **Motion Detect**, **Alarm**, and **MD&Alarm**.

1. Click **Schedule** in the **Storage** selection tree to open the **Schedule** configuration interface.

Figure 5-49 Schedule Configuration Interface

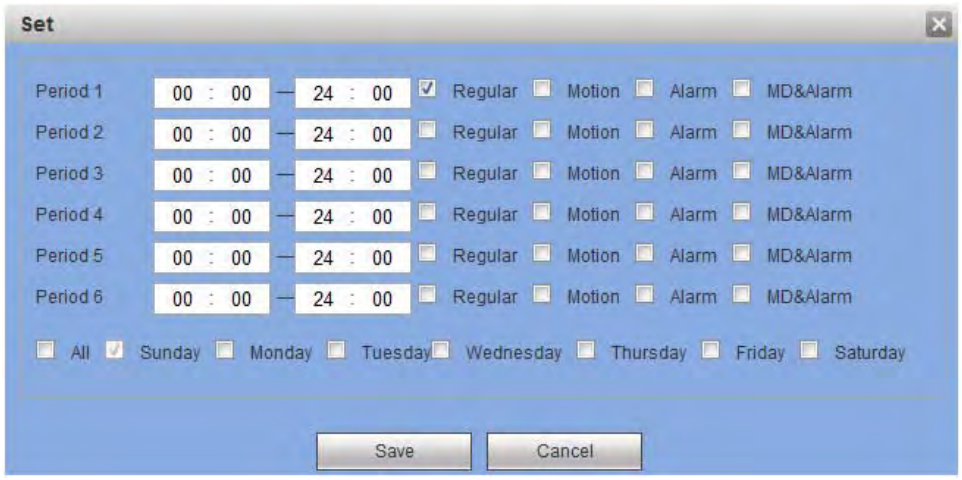


The schedules are color-coded by type:

- **Green**: General recording/snapshot.
- **Yellow**: Motion detection recording/snapshot.
- **Red**: Alarm recording/snapshot.
- **Blue**: MD&Alarm recording/snapshot.

2. Click **Set**. The **Set** configuration interface opens.

Figure 5-50 Set Configuration Interface



3. Configure the schedule, then click **Save**.

Table 5-22 Schedule Configurations

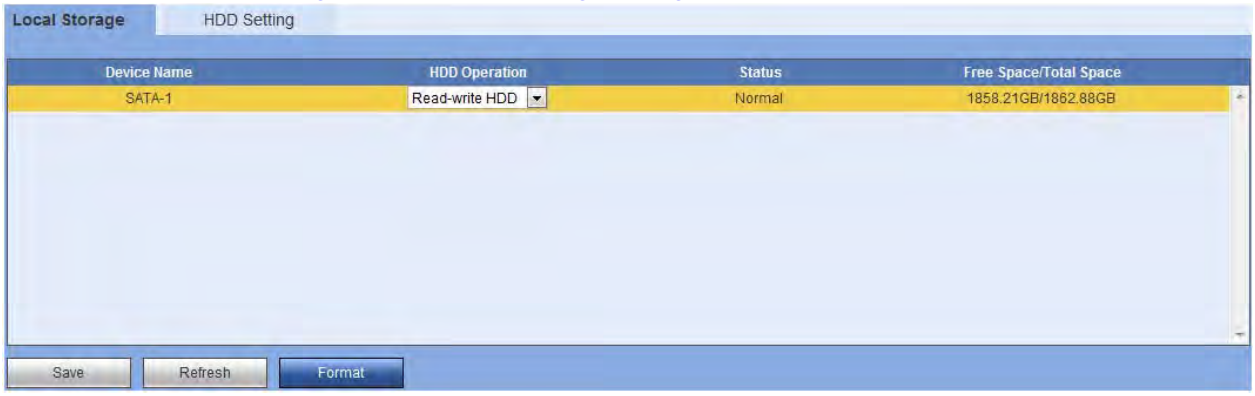
Configuration	Description
Channel	Select a channel from the drop-down list.
Regular	Check to enable the **Regular** schedule mode.
Motion	Check to enable the **Motion Detection** schedule mode.
Alarm	Check to enable the **Alarm** mode.
MD&Alarm	Check to enable the **MD&Alarm** mode.

4. Click **Save** to save the settings, and then click **Save** to save the **Schedule** configuration.

Configuring Local Storage for Schedules

Click **Local Storage** in the **Schedule** configuration interface to open the **Local Storage** configuration interface.

Figure 5-51 Local Storage Configuration Interface for Schedules

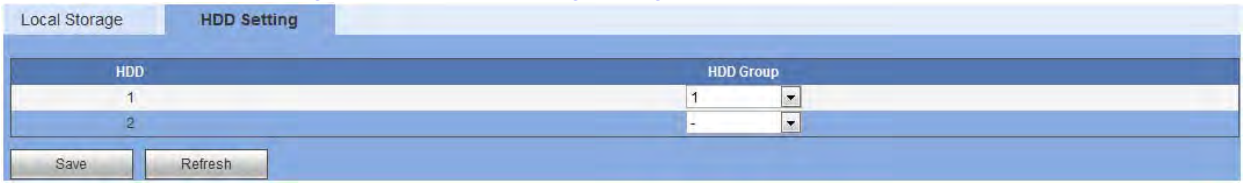


You can see the HDD information, and you can select the read-only / write-only redundancy (if there is more than one HDD), and formatting.

Configuring the HDD Group Settings

Click **HDD Setting** in the **Schedule** configuration interface to open the **HDD Setting** configuration interface.

Figure 5-52 HDD Setting Configuration Interface



Select the HDD group in which you want to save the recording.

Configuring Recording Settings

Click **Record** in the **Schedule** configuration interface to open the **Record** configuration interface.

Figure 5-53 Record Configuration Interface for Storage Settings

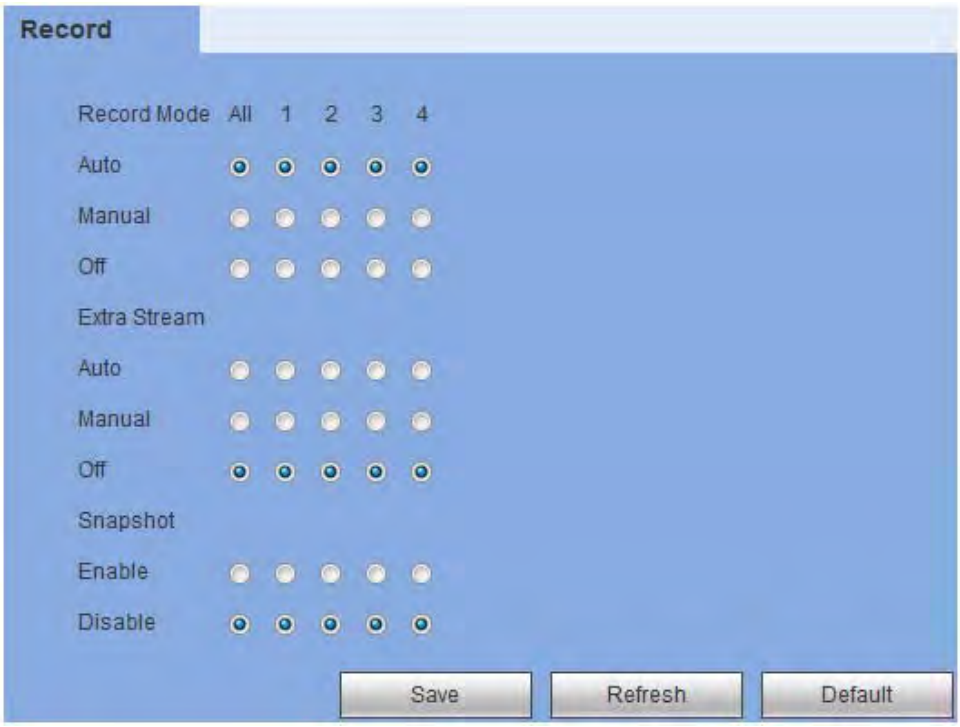


Table 5-23 Recording Configurations for Storage

Configuration	Description
Channel	View the channel number. The number displayed here is the maximum number of channels for your NVR.
Status	Select a status: **Auto**, **Manual**, or **Off**.
Auto	The system enables the automatic recording function, which you have set in the **Recording Schedule** setup (such as general, motion detection, and alarm settings). See *Configuring the General Settings on page 60*, *Configuring Detection Settings on page 179*, and *Configuring Alarms on page 184*.
Manual	This is the highest priority setting. Enable the corresponding channel to record, no matter the period that was configured in the **Recording** setup.
Off	Stop the corresponding channel from recording, no matter the period that was configured in the **Recording** setup.

Configuring the Channel for Schedules

Click **Channel** in the **Schedule** configuration interface to open the **Channel** configuration interface.

Figure 5-54 Channel Configuration Interface

Configuring the Main Stream Channel

Select an **HDD Group** from the drop-down menu, then click **Save**. See *Figure 5-54*.

Configuring the Extra Stream Channel

You can select the corresponding HDD group for the sub stream.

1. Click the **Extra Stream** tab to open the **Extra Stream** configuration interface.

Figure 5-55 Extra Stream Configuration Interface

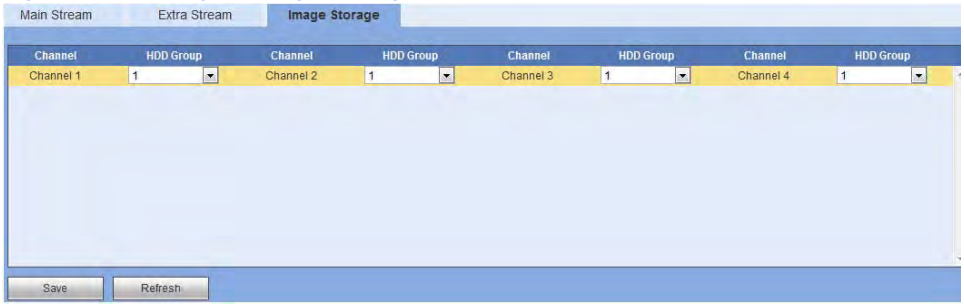
2. Select an **HDD Group** from the drop-down menu, then click **Save**.

Configuring the Image Storage Channel

You can select the corresponding HDD group for saving snapshots.

1. Click the **Image Storage** tab to open the **Image Storage** configuration interface.

Figure 5-56 Image Storage Configuration Interface



2. Select an **HDD Group** from the drop-down menu, then click **Save**.

Configuring Settings

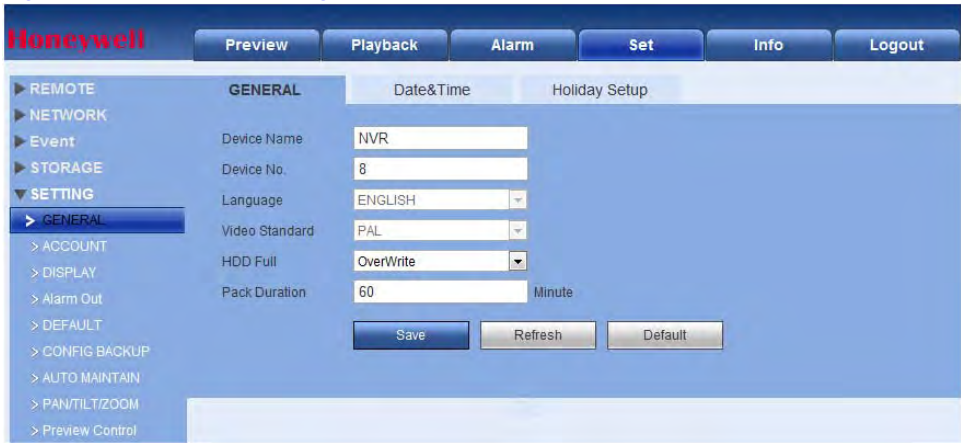
In the **Settings** configuration interface, you can configure:

- **General** settings such as the device's name, number, language, video standard, date and time settings, and holidays. See *Configuring General Settings on page 195*.
- **Account** settings for different users, including privileges, passwords, and groups. See *Configuring Account Settings on page 198*.
- **Display** settings such as the GUI settings, monitor settings, tour settings, and zero-channel encoding. See *Configuring Display Settings on page 203*.
- **Alarm Out** settings such as the alarm output mode (auto/manual/stop). See *Enabling and Disabling Alarm Out Settings on page 204*.
- **Default** settings for the network, events, storage, the system configuration, and cameras. See *Returning to Default Settings on page 205*.
- **Configuration Backup** settings for importing and exporting the configuration files. See *Configuring Backup Settings on page 205*.
- **Automatic Maintenance** settings such as automatic rebooting and automatically deleting files. See *Configuring Automatic Maintenance Settings on page 206*.
- **Pan/Tilt/Zoom** settings such as PTZ encoding, channel, type, and bit rates. See *Configuring Pan/Tilt/Zoom Settings on page 207*.
- **Preview Control** settings such as single channel view or multiple channel view. See *Configuring Preview Control Settings on page 208*.

Configuring General Settings

Click the **General** arrow to expand the **General** selection tree.

Figure 5-57 General Settings



General Settings

Table 5-24 General Settings Configurations

Configuration	Description
Device Name	Enter a device name.
Device No.	Enter a channel number.
Language	Select a GUI language from the drop-down list. **Note** You need to reboot the device/NVR to activate this change.
Video Standard	Select the video standard, either **NTSC** or **PAL**.
HDD Full	Select what happens when the NVR's storage is full. Select either **Stop Recording** or **OverWrite**. **Stop Recording:** If the HDD is full, the NVR stops recording. **OverWrite:** If the currently working HDD is full and the next HDD is also full, the NVR overwrites the previous files.
Pack Duration	Select the recording duration. Select from **1** to **120** minutes. The default is **60** minutes.

Date & Time Settings

Click the **Date & Time** tab in the **General** settings configuration interface to open the **Date & Time** configuration interface.

Figure 5-58 Date & Time Configuration Interface

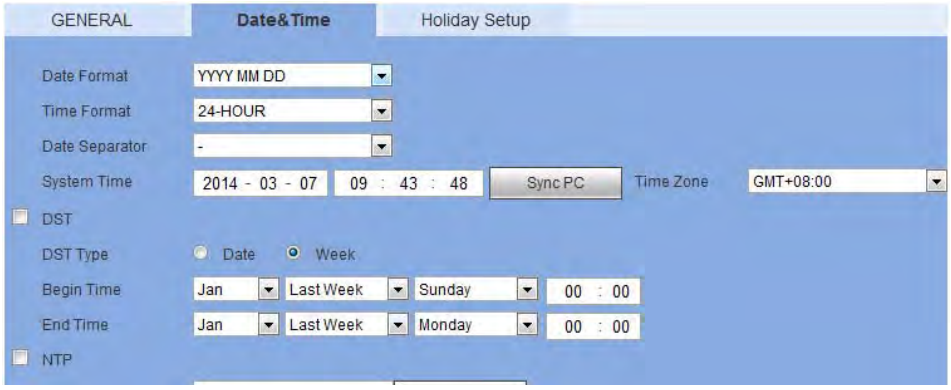


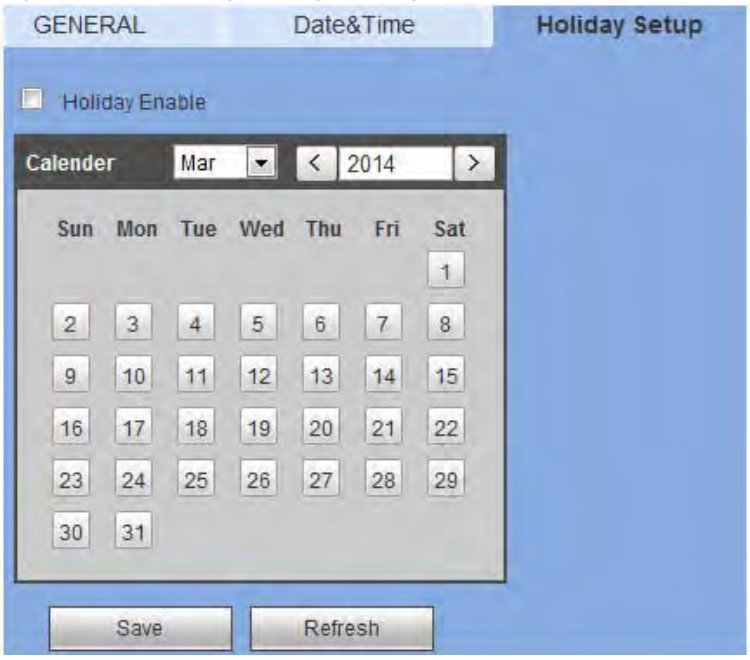
Table 5-25 Date & Time Configurations

Configuration	Description
Date Format	Select the date format from the drop-down list.
Time Format	Select from either **24 hour** or **12 hour**.
Date Separator	Select from a period (**.**), a hyphen (**-**), or a slash (/).
System Time	Set the NVR's time. You have to **Save** to activate this setting.
Sync PC	Click to synchronize your NVR's time with your PC's time.
Time Zone	Select a Time Zone for the NVR.
DST	Click to enable Daylight Saving Time (**DST**). Click to select a type, either **Date** or **Week**. Then configure a date and time when DST begins and ends.
NTP	Click to enable the **NTP** server.
NTP Server	Enter the NTP time server address.
Port	Enter the NTP time server port.
Upgrade Period	Configure the synchronization period between the NVR and the NTP time server.

Holiday Settings

1. Click the **Holiday Settings** tab in the **General** settings configuration interface to open the **Holiday Settings** configuration interface.

Figure 5-59 Holiday Settings Configuration Interface



2. Click on a date to add a holiday, then click **Save**.

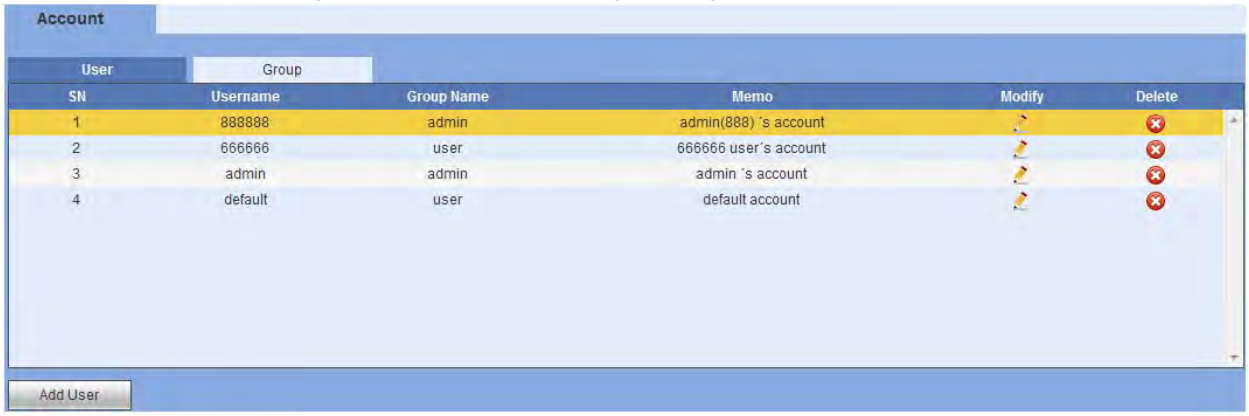
Configuring Account Settings

Some Basic User and Group Rules

- You can use up to 6 characters for user names and group names. You can not use a space at the beginning or end of a name. You can use characters, numbers, and an underline (_).
- You can add up to 64 users and 20 groups (these are also the default settings). The default setting includes two group levels: **user** and **admin**. Configure the Group privileges, and then assign users to their groups according to the privileges those users require.
- User management involves assigning privileges to groups, and users to groups. User names can not be the same as group names; user names and group names must be unique. Users can belong to only one group.

Click **Account** in the **General** settings configuration interface to open the **Account** settings configuration interface.

Figure 5-60 Account Settings Configuration Interface



Configuring User Settings

There are four default users:

- admin
- 888888
- 666666
- a hidden user

All except default user 666666 have administrator rights. User 666666 has only monitor rights.

The hidden default user is for internal use only, and can not be deleted. If users log in without selecting a login user, the hidden default user is automatically used. You can configure some rights for the default hidden user, such as monitor rights so that the user can view channels without logging in.

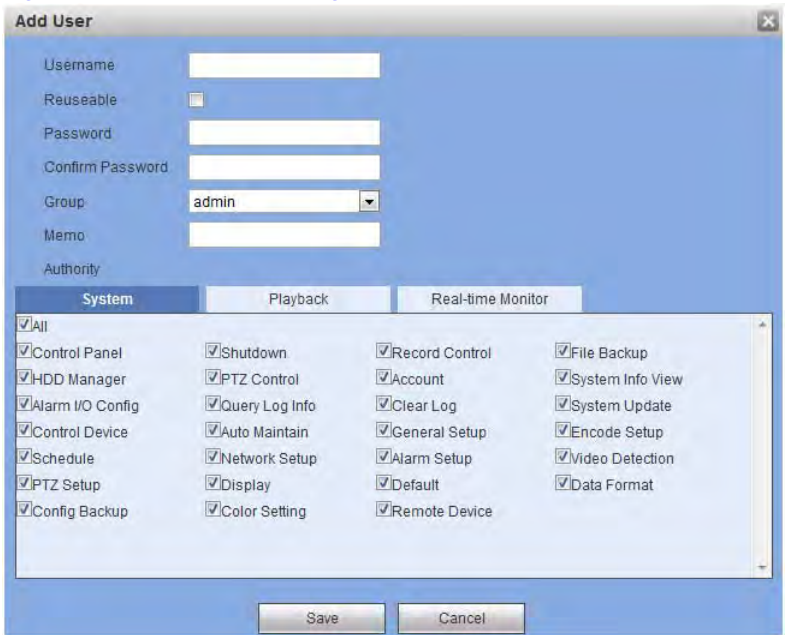
Note User rights can not exceed group rights.

TIP! General users should have fewer rights than administrators.

Adding a User

1. Click **Add User**. The **Add User** configuration interface opens.

Figure 5-61 Add User Configuration Interface



2. Enter a **Username** and a **Password**. Re-enter the Password to confirm it.
3. Select a **Group**.
4. Select **System**, **Playback**, and **Real-Time Monitor** privileges.
5. Click **Save** to save these new settings.

Modifying a User

1. Click  under **Modify** to open the **Modify User** configuration interface.

Figure 5-62 Modify User Configuration Interface

2. Change the settings, then click **Save**.

Modifying a Password

1. Click **Modify Password** in the **Modify User** configuration interface.
2. Enter the old **Password**, then enter the new **Password** twice.
3. Click **OK** to save the new password.

Note Passwords can have up to 6 characters, numbers only. Users with admin rights can modify the password of other users.

Configuring Group Settings

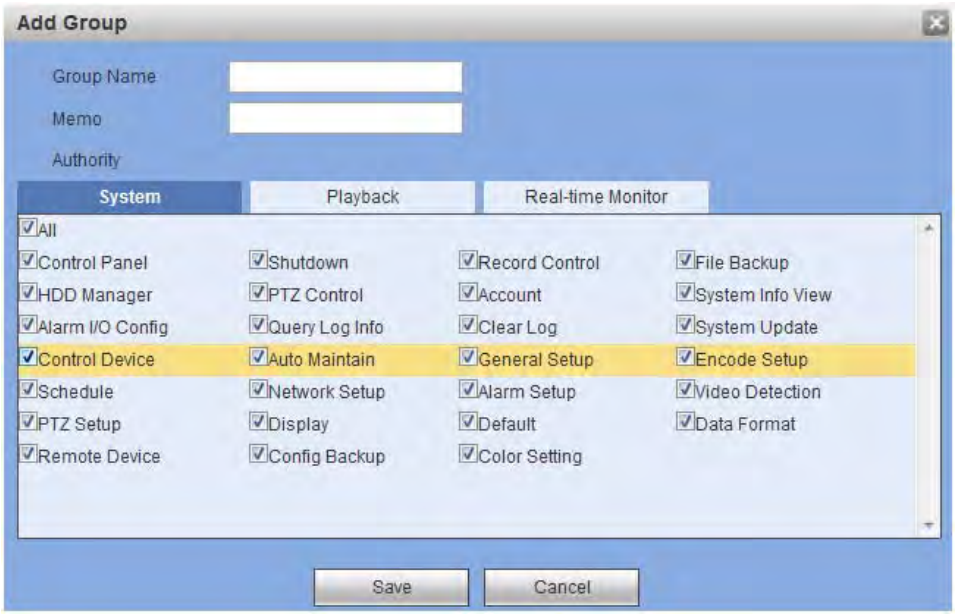
Click the **Group** tab in the **Account** configuration interface to open the **Group** configuration interface.

Figure 5-63 Group Configuration Interface

Adding a Group

1. Click **Add Group** in the **Group Account** configuration interface.

Figure 5-64 Add Group Configuration Interface

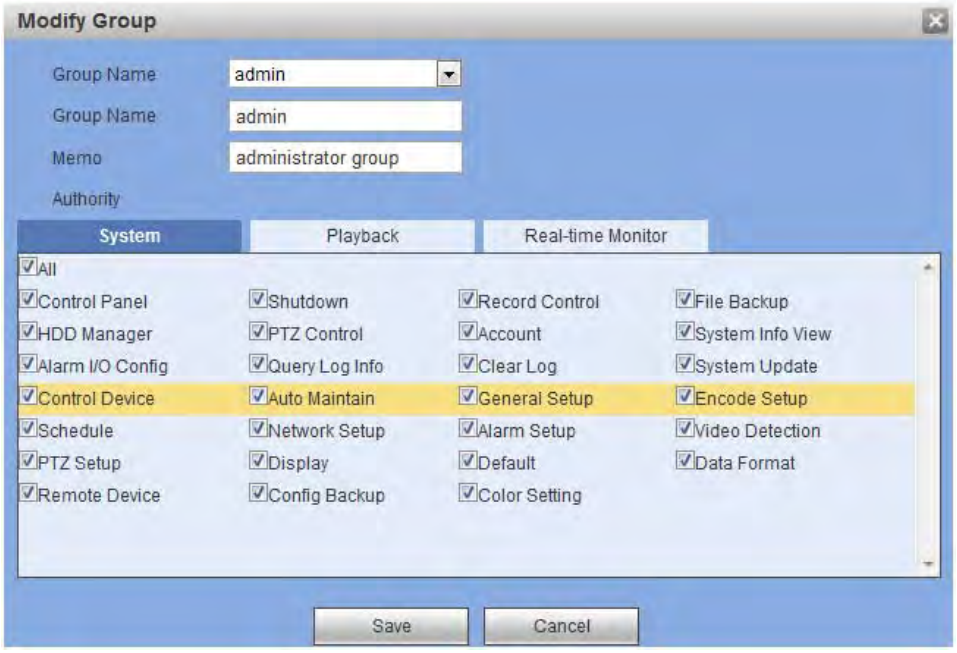


2. Enter a **Group** name.
3. Select **System**, **Playback**, and **Real-time Monitor** privileges.
4. Click **Save** to save these new settings.

Modifying a Group

1. Click  under **Modify** to open the **Modify Group** configuration interface.

Figure 5-65 Modify Group Configuration Interface



2. Modify the **Group** privileges, then click **Save** to save the changes.

Configuring Display Settings

Click **Display** in the **General** settings configuration interface to open the **GUI** settings configuration interface.

Figure 5-66 GUI Configuration Interface

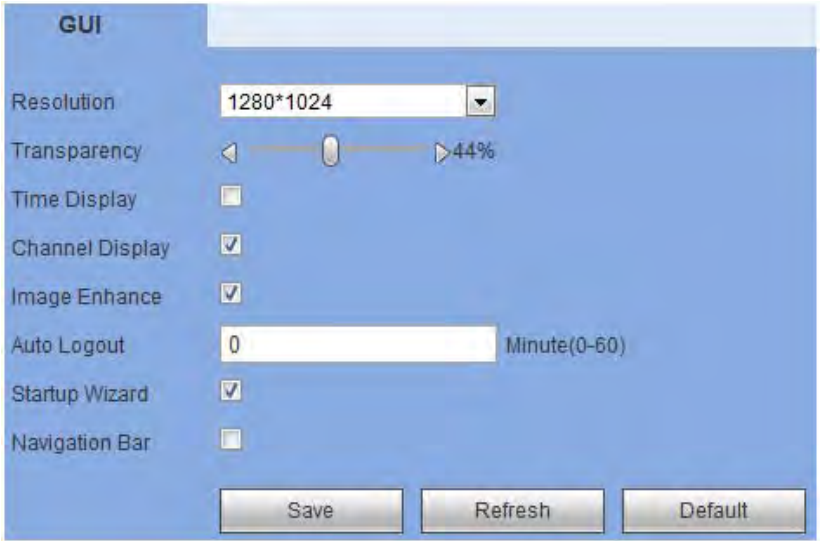


Table 5-26 GUI Configurations

Configuration	Description
Resolution	Select from four options: **1920x1080**, **1280x1024** (default), **1280x720**, and **1024x768**. **Note** You need to reboot the NVR to activate changes to the resolution.
Transparency	Configure the transparency of the GUI display. Select from **128** to **255**.
Time Display/**Channel Display**	Click to enable these functions, which display the time and channel on the video monitor.
Image Enhance	Check to enable **Image Enhance**, to optimize the preview video.

Enabling and Disabling Alarm Out Settings

Click **Alarm Out** in the **General** settings configuration interface to open the **Alarm Out** settings configuration interface.

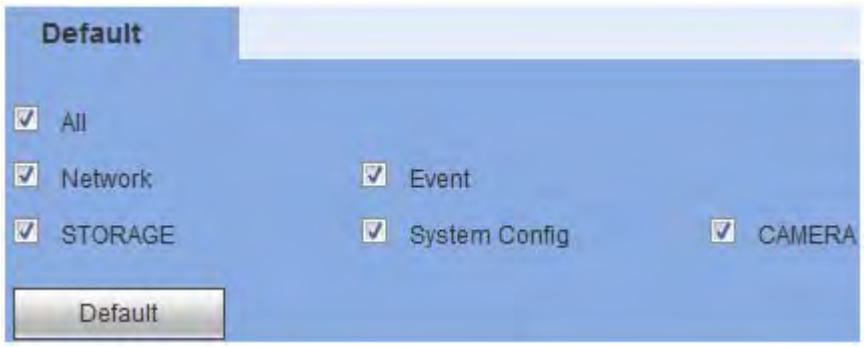
Figure 5-67 Alarm Out Configuration Interface

Click to enable alarm types for each or all of the alarm outputs.

Returning to Default Settings

Click **Default** in the **General** settings configuration interface to open the **Default** settings interface.

Figure 5-68 Default Settings Interface



Click to enable the **Default** settings, then click **Default**.

Configuring Backup Settings

Click **Config Backup** in the **General** settings configuration interface to open the **Import&Export** settings interface.

Figure 5-69 Import&Export Interface

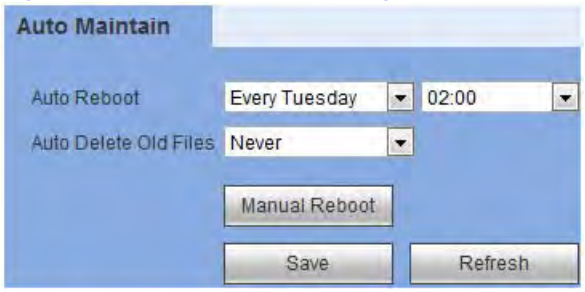
Table 5-27 Configuration Backup/Import&Export Interface

Configuration	Description
Browse	Click to select a file for importing.
Config Import	Click to import the local setup files to the NVR.
Config Export	Click to export the corresponding web client setup to your PC.

Configuring Automatic Maintenance Settings

1. Click **Auto Maintain** in the **General** settings configuration interface to open the **Auto Maintain** settings configuration interface.

Figure 5-70 Auto Maintain Configuration Interface



2. Select when the NVR automatically reboots, both day and time.
3. Select when the NVR automatically deletes old files.
4. Click **Save** to save the new settings.

Note Click **Manual Reboot** to manually reboot the NVR.

Configuring Pan/Tilt/Zoom Settings

Before Configuring PTZ Settings

Please ensure that the following connections are correct before configuring the PTZ settings.

- Ensure that the PTZ and decoder connections are correct, and that the decoder address setup is correct. See *Configuring PTZ Settings on page 107*.
- Ensure that the Decoder A line connects to the NVR A line, and that the B lines are also connected correctly.

Click **Pan/Tilt/Zoom** in the **General** settings configuration interface to open the **Pan/Tilt/Zoom** settings configuration interface.

Figure 5-71 Pan/Tilt/Zoom Local Configurations Interface

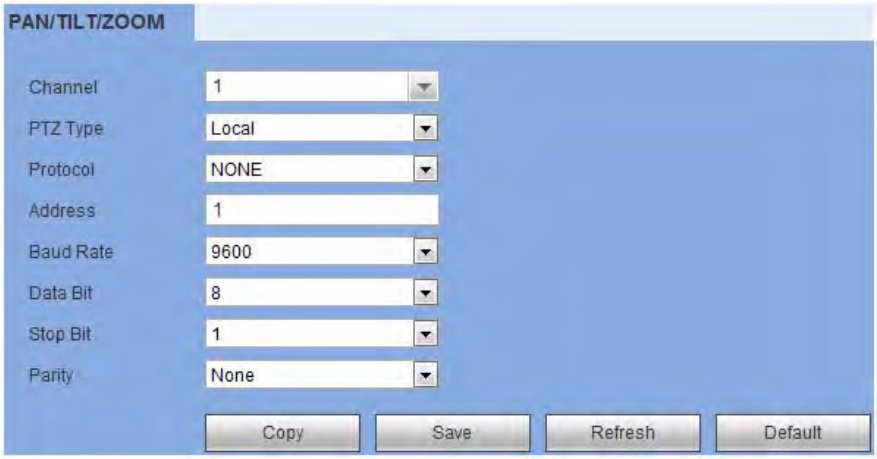


Figure 5-72 Pan/Tilt/Zoom Remote Configurations Interface

Table 5-28 PTZ Configurations

Configuration	Description
Channel	Select a channel for the PTZ dome camera.
PTZ Type	Select from **Local** or **Remote**, if you are connecting to the network PTZ.
Protocol	Select a PTZ dome camera protocol, such as PELCOD.

Table 5-28 PTZ Configurations

Configuration	Description
Address	Configure an IP address for the PTZ dome camera. The default is **1**. **Note** Your configurations here should match the configurations on the PTZ dome camera. If not, you will not be able to control the PTZ dome camera.
Baud Rate	Select a Baud Rate for the PTZ dome camera. The default is **9600**.
Data Bit	Select a Data Bit rate for the PTZ dome camera. This value should match the setting on the PTZ dome camera. The default is **8**.
Stop Bit	Select a Stop Bit rate for the PTZ dome camera. This value should match the setting on the PTZ dome camera. The default is **1**.
Parity	Select a Parity rate for the PTZ dome camera. This value should match the setting on the PTZ dome camera. The default is **None**.

Configuring Preview Control Settings

Click **Preview Control** in the **General** settings configuration interface to open the **Preview Control** settings configuration interface.

Figure 5-73 Preview Control Configuration Interface

If you select **View 1**, you have to select a Preview Channel.

If you select **View 4**, you have to select all channels for previewing.

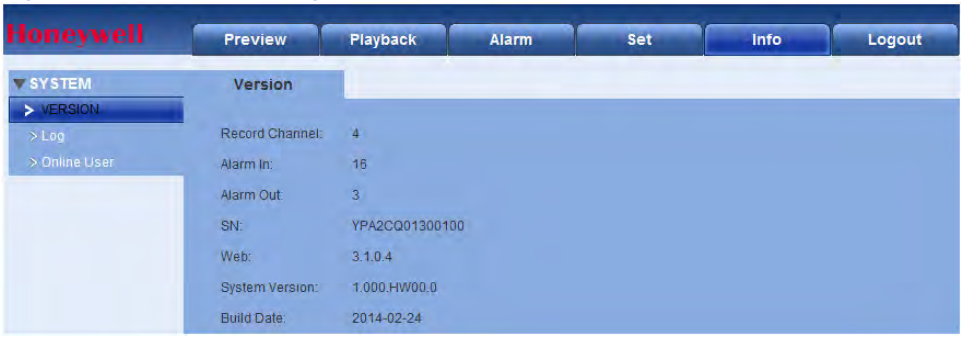
Configuring System Information

Click the **Info** tab on the **Main Menu** to open the **Info** configuration interface.

Viewing the Version

1. Click the arrow next to **System** to expand the **System** menu tree.
2. Click **Version** to open the **Version** configuration interface.

Figure 5-74 Version Configuration Interface



Here you can view the recording channel, the alarm input/output information, the software version, and the release date. None of these values can be changed; they are viewable only.

Configuring the Log

Click **Log** in the **System** menu to open the **Log** configuration interface.

Figure 5-75 Log Configuration Interface

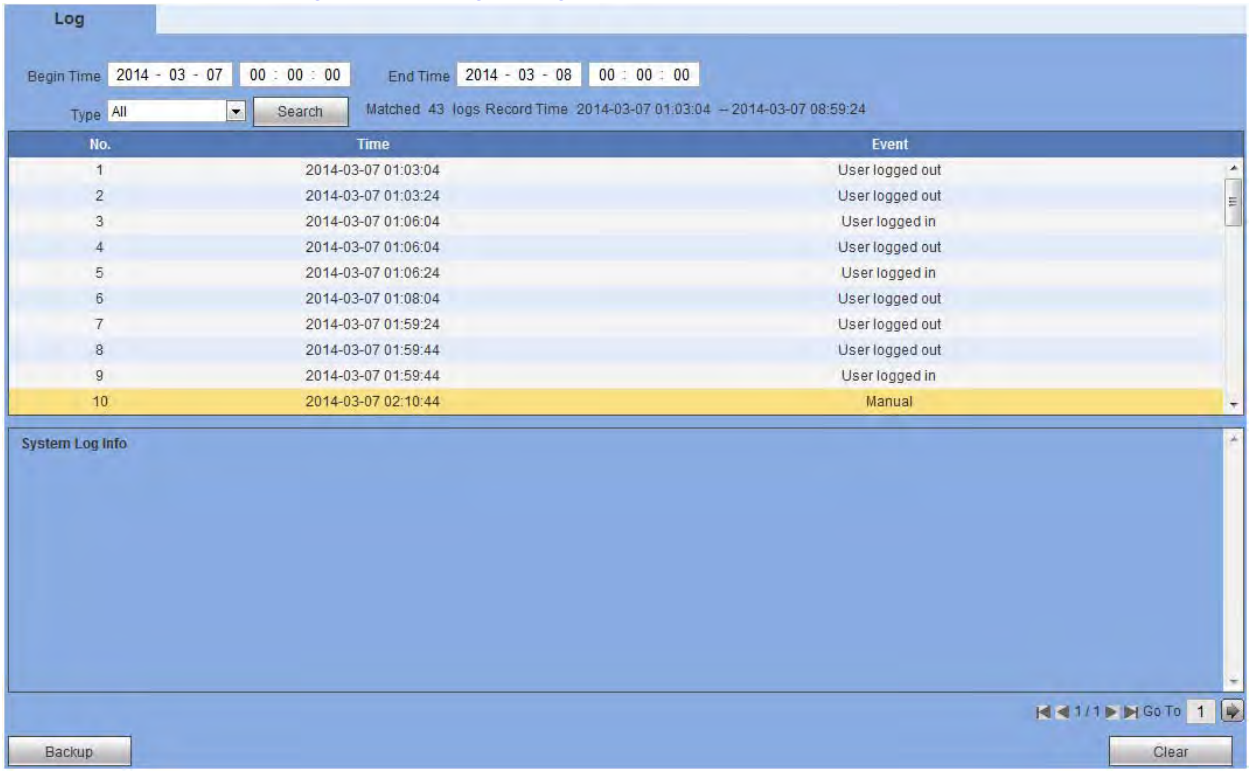


Table 5-29 Log Configurations

Configuration	Description
Begin Time	Set a start time for the log.
End Time	Set an end time for the log.
Type	Select from **System Operation**, **Configuration Operation**, **Data Operation**, **Event Operation**, **Record Operation**, **User Management**, **Log Clear**, and **All**.
Search	Click **Search** to find a log or logs that fit the search requirements (Begin time, End time, and Type). You can click **Stop** to terminate the current search.
Detailed Information	Select one item to see its detailed information.
Clear	Click to clear the found log files. **Note** You can not clear by log file.
Backup	Click to backup the currently selected files to the selected PC.

Viewing the Online Users

Click **Online User** in the System menu to open the **Online User** interface.

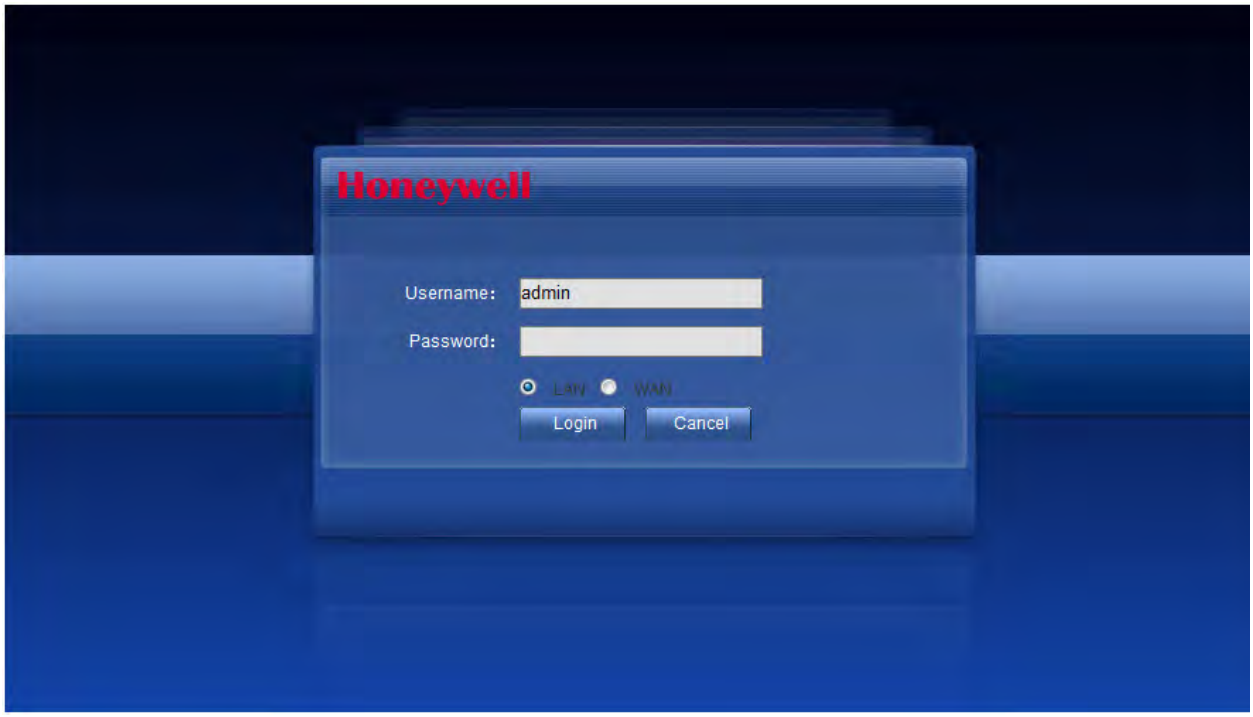
Figure 5-76 Online User Configuration Interface

You can view what users are currently online.

Logging Out

Click the **Logout** tab in the **Main Menu**. The NVR returns to the Login interface.

Figure 5-77 Login Interface



A

Troubleshooting

Prior to calling Honeywell technical support, refer to the following topics for possible solutions to problems with your ONVIF camera. To contact the Honeywell Video Systems technical support team, call 1-800-323-4576 (North America only) or send an e-mail to *https://www.honeywellsystems.com/ss/techsupp/index.html*. See the back cover for international contact information.

Any equipment returned to Honeywell Video Systems for warranty or service repair must have a Return Merchandise Authorization (RMA) number. The RMA number must be clearly marked on all return packages and internal paperwork.

Problem: The NVR does not boot up properly

Possible Solutions:

- Ensure that the input power is correct.
- Ensure that the power connection is connected.
- Check the upgraded software. It might be incorrect and require another upgrade.
- Check the HDD and HDD ribbon. They might be damaged and require replacement.
- Upgrade to the latest software version for Seagate DB35.1 / DB35.2 / SV35, or Maxtor 17-g to resolve compatibility problem.

Problem: The NVR cannot detect the hard disk

Possible solutions:

- Check the HDD cable connection.
- Check the HDD and HDD ribbon. They might be damaged and require replacement.
- Replace the Main board SATA port.

Problem: The real-time video color is distorted

Possible solutions:

- Check the NTSC and PAL setup when using the BNC output. If this setup is incorrect, the real-time video appears black and white.
- Check the compatibility of the resistance between the NVR and the monitor.
- Check the video transmission. The clip might be too long or there is a lot of file degradation.
- Check the NVR's color and/or brightness settings.

Problem: Motion detection does not work

Possible solutions:

- Check that the period setup is correct. [Motion detection active period?] See *Configuring the Schedule on page 66*.
- Check the motion detection zone setup.
- Check that the motion sensitivity level is not too low.

Problem: You can not log into the NVR or web client

Possible solutions:

- Upgrade to Windows 2000 SP4 from Windows 98 or Windows ME if you are using them on your system. Or you can install a client-end software of a lower version.

Note The NVR is not compatible with Windows VISTA.

- Check the ActiveX settings. ActiveX might have been disabled. See *Figure 5-2* on *page 146*.
- The display card driver might be inadequate (lower than dx8.1). Upgrade the display card driver.
- Check the network connection. There might be a network connection error.
- Check the network setup. There might be a network setup error.
- Check that you have entered the correct username and password.
- Your client-end computer might not be compatible with the NVR's software.

Problem: The remote control does not work

Possible solutions:

- Check and correct the remote control's address.
- Move closer to the NVR. The transmission distance might be too far. Change your position. The angle might be too small.
- Check the remote control's battery.

Problem: You have forgotten the local menu operation password or network password

Possible solution:

Contact your local service engineer or sales engineer for help.

Problem: There is no video; the screen is black

Possible solutions:

- Check and correct the IP camera's IP address.
- Check and correct the IP camera's port number.
- Check and correct the IP camera's account user name and password.
- Check the physical connections.

Problem: When viewing multiple channels in the client end, the video is not smooth

Possible solutions:

- Check the network bandwidth, as it needs to be at least 100M or higher for monitoring multiple channels. Increase the bandwidth or reduce the number of channels for viewing.
- Ensure that your PC meets the minimum requirements:

Table A-1 PC Requirements

Component	Minimum Requirement
Processor	Quad core
System memory (RAM)	2G pr higher
Non-integrated video card	256M or higher

B

Daily Maintenance

- Please use a brush to clean the board, socket connector and the chassis regularly.
- Carefully ground the NVR to protect from audio/video disturbances. Keep the NVR away from static voltage or induced voltage.
- Please unplug the power cable when you remove the audio/video signal cable, RS232, or RS485 cable.
- Always properly shut down the device. Please press the power button in the front panel for at least three seconds to shut down the device. If you don't, you might experience an HDD malfunction.
- Please make sure the device is away from the direct sunlight or other sources of heat. Ensure that the NVR is properly ventilated.
- Please check and maintain the device regularly.

C

Compatible SATA HDD

Table C-1 Compatible SATA HDD

Manufacturer	Series	Model	Capacity	Port Mode
Seagate	Seagate SV35.1	ST3250824SV	250G	SATA
Seagate	Seagate SV35.1	ST3500641SV	500G	SATA
Seagate	Seagate SV35.2	ST3250820SV	250G	SATA
Seagate	Seagate SV35.2	ST3320620SV	320G	SATA
Seagate	Seagate SV35.2	ST3500630SV	500G	SATA
Seagate	Seagate SV35.2	ST3750640SV	750G	SATA
Seagate	Seagate SV35.3	ST3250310SV	250G	SATA
Seagate	Seagate SV35.3	ST3500320SV	500G	SATA
Seagate	Seagate SV35.3	ST3750330SV	750G	SATA
Seagate	Seagate SV35.3	ST31000340SV	1T	SATA
Seagate	Seagate SV35.4	ST3320410SV	320G	SATA
Seagate	Seagate SV35.4	ST3250311SV	250G	SATA
Seagate	Seagate SV35.5	ST3500410SV	500G	SATA
Seagate	Seagate SV35.5	ST3500411SV	500G	SATA
Seagate	Seagate SV35.5	ST31000525SV	1T	SATA
Seagate	Seagate SV35.5	ST31000526SV	1T	SATA
Seagate	Seagate SV35.5	ST1000VX000	1T	SATA
Seagate	Seagate SV35.5	ST2000VX003	2T	SATA
Seagate	Seagate SV35.5	ST2000VX002	2T	SATA
Seagate	Seagate SV35.5	ST2000VX000	2T	SATA
Seagate	Seagate SV35.5	ST3000VX000	3T	SATA
Seagate	Seagate Pipeline HD	ST3320410CS	320G	SATA
Seagate	Seagate Pipeline HD	ST3320310CS	320G	SATA

Table C-1 Compatible SATA HDD

Manufacturer	Series	Model	Capacity	Port Mode
Seagate	Seagate Pipeline HD	ST3500422CS	500G	SATA
Seagate	Seagate Pipeline HD	ST3500321CS	500G	SATA
Seagate	Seagate Pipeline HD2	ST3250412CS	250G	SATA
Seagate	Seagate Pipeline HD2	ST3320311CS	250G	SATA
Seagate	Seagate Pipeline HD2	ST3500414CS	500G	SATA
Seagate	Seagate Pipeline HD2	ST3500312CS	500G	SATA
Seagate	Seagate Pipeline HD2	ST31000424CS	1T	SATA
Seagate	Seagate Pipeline HD2	ST31000322CS	1T	SATA
Seagate	Seagate Pipeline HD2	ST1000VM002	1T	SATA
Seagate	Seagate Pipeline HD2	ST1500VM002		
Seagate	Seagate Pipeline HD2	ST2000VM002	2T	SATA
Seagate	Seagate Pipeline HD2	ST2000VM003	2T	SATA
Seagate	Seagate Constellation ES	ST3500514NS	500G	SATA
Seagate	Seagate Constellation ES	ST31000524NS	1T	SATA
Seagate	Seagate Constellation ES	ST32000644NS	2T	SATA
Seagate	Seagate Constellation ES	ST2000NM0011	2T	SATA
Seagate	Seagate Constellation ES	ST1000NM0011	1T	SATA
Seagate	Seagate Constellation ES	ST500NM0011	500G	SATA
Seagate	Seagate Constellation ES	ST2000NM0031	2T	SATA
Seagate	Seagate Constellation ES	ST1000NM0031	1T	SATA
Seagate	Seagate Constellation ES	ST500NM0031	500G	SATA
Seagate	Seagate Constellation ES	ST2000NM0051	2T	SATA
Seagate	Seagate Constellation ES	ST1000NM0051	1T	SATA
Seagate	Seagate Constellation ES	ST500NM0051	500G	SATA
Seagate	Seagate Constellation ES.2	ST33000650NS	3T	SATA
Seagate	Seagate Constellation ES.2	ST32000645NS	2T	SATA
Seagate	Seagate Constellation ES.2	ST33000651NS	3T	SATA
Seagate	Seagate Constellation ES.2	ST32000646NS	2T	SATA
Seagate	Seagate Constellation ES.2	ST33000652NS	3T	SATA
Seagate	Seagate Constellation ES.2	ST32000647NS	2T	SATA
Western Digital	Cariar SE	WD3200JD	320G	SATA
Western Digital	Cariar SE	WD3000JD	300G	SATA

Table C-1 Compatible SATA HDD

Manufacturer	Series	Model	Capacity	Port Mode
Western Digital	Cariar SE	WD2500JS	250G	SATA
Western Digital	Cariar SE 16	WD7500KS	750G	SATA
Western Digital	Cariar SE 16	WD5000KS	500G	SATA
Western Digital	Cariar SE 16	WD4000KD	400G	SATA
Western Digital	Cariar SE 16	WD3200KS	320G	SATA
Western Digital	Cariar SE 16	WD2500KS	250G	SATA
Western Digital	WD Caviar SE16	WD2500YS-01SHB0	250G	SATA
Western Digital	WD Caviar RE16	WD3200YS-01PGB0	320G	SATA
Western Digital	WD Caviar RE2	WD5000YS-01MPB0	500G	SATA
Western Digital	WD AV−AVJS	WD2500AVJS-63WDA0	500G	SATA
Western Digital	WD AV−AVJS	WD3200AVJS-63WDA0	320G	SATA
Western Digital	WD AV−AVJS	WD5000AVJS-63YJA0	500G	SATA
Western Digital	WDAV-GP−AVCS	WD5000AVCS-63H1B1	500G	SATA
Western Digital	WDAV-GP−AVCS	WD7500AVCS-63ZLB0	750G	SATA
Western Digital	WDAV-GP−AVCS	WD3200AVCS	320G	SATA
Western Digital	WDAV-GP−AVCS	WD2500AVCS	250G	SATA
Western Digital	WDAV-GP−EVCS	WD10EVCS-63ZLB0	1T	SATA
Western Digital	WDAV-GP−EVCS	WD20EVCS-63ZLB0	2T	SATA
Western Digital	WDAV-GP−AVVS	WD3200AVVS-63L2B0	320G	SATA
Western Digital	WDAV-GP−AVVS	WD5000AVVS-63ZWB0	500G	SATA
Western Digital	WDAV-GP−AVVS	WD7500AVVS-63E1B1	750G	SATA
Western Digital	WDAV-GP−AVVS	WD7500AVVS-63E1B1	750G	SATA
Western Digital	WDAV-GP−EVVS	WD10EVVS-63E1B1	1T	SATA

Table C-1 Compatible SATA HDD

Manufacturer	Series	Model	Capacity	Port Mode
Western Digital	WDAV-GP–EVDS	WD10EVDS-63N 5B1	1T	SATA
Western Digital	WDAV-GP–EVDS	WD15EVDS-63V 9B0	1.5T	SATA
Western Digital	WDAV-GP–EVDS	WD20EVDS-63T 3B0	2T	SATA
Western Digital	WDAV-GP–AVDS	WD5000AVDS-6 3U7B0	500G	SATA
Western Digital	WD AV-GP	WD30EURS	3T	SATA
Western Digital	WD AV-GP	WD25EURS	2.5T	SATA
Western Digital	WD AV-GP	WD20EURS	2T	SATA
Western Digital	WD AV-GP	WD15EURS	1.5T	SATA
Western Digital	WD AV-GP	WD10EURS	1T	SATA
Western Digital	WD AV-GP	WD10EURX	1T	SATA
Western Digital	WD AV-GP	WD7500AURS	750G	SATA
Western Digital	WD AV-GP	WD7500AVDS	500G	SATA
Western Digital	WD AV-GP	WD500AVDS	500G	SATA
Western Digital	WD AV-GP	WD10EUCX	1T	SATA
Samsung	Samsung-HA	HA500LJ/CE	500G	SATA
Samsung	Samsung-HA	HA751LJ	750G	SATA
Samsung	Samsung-HA	HA101UJ/CE	1T	SATA
Samsung	Samsung-HD	HD502HI/CEC	500G	SATA
Samsung	Samsung-HD	HD103SI/CEC	1T	SATA
Samsung	Samsung-HD	HD154UI/CE	1.5T	SATA
Hitachi	Hitachi CinemaStar™ 5K500	HCP725050GLA 380	500G	SATA
Hitachi	Hitachi CinemaStar™ 7K1000.B	HCT721050SLA 360	500G	SATA
Hitachi	Hitachi CinemaStar™ 7K1000.B	HCT721075SLA 360	750G	SATA
Hitachi	Hitachi CinemaStar™ 7K1000.B	HCT721010SLA 360	1T	SATA
Maxtor	DiamondMax 20	STM3320820AS	320G	SATA
Maxtor	DiamondMax 20	STM3250820AS	250G	SATA

D

Compatible USB 2.0 Devices

Table D-1 Compatible USB 2.0 Devices

Manufacturer	Model	Capacity
Sandisk	Cruzer Micro	512M
Sandisk	Cruzer Micro	1G
Sandisk	Cruzer Micro	2G
Sandisk	Cruzer Freedom	256M
Sandisk	Cruzer Freedom	512M
Sandisk	Cruzer Freedom	1G
Sandisk	Cruzer Freedom	2G
Kingston	Data Traveler II	1G
Kingston	Data Traveler II	2G
Kingston	Data Traveler	1G
Kingston	Data Traveler	2G
Maxell	USB 2.0 Flash Stick	128M
Maxell	USB 2.0 Flash Stick	256M
Maxell	USB 2.0 Flash Stick	512M
Maxell	USB 2.0 Flash Stick	1G
Maxell	USB 2.0 Flash Stick	2G
Kingax	Super Stick	128M
Kingax	Super Stick	256M
Kingax	Super Stick	512M
Kingax	Super Stick	1G
Kingax	Super Stick	2G
Netac	U210	128M
Netac	U210	256M

Table D-1 Compatible USB 2.0 Devices

Manufacturer	Model	Capacity
Netac	U210	512M
Netac	U210	1G
Netac	U210	2G
Teclast	Ti Cool	128M
Teclast	Ti Cool	256M
Teclast	Ti Cool	512M
Teclast	Ti Cool	1G
Teclast	Ti Cool	2G

E

Compatible Monitors

Table E-1 Compatible Monitors

Manufacturer	Model	Screen Size
BenQ (LCD)	ET-0007-TA	19-inch (wide screen)
Dell (LCD)	E178FPc	17-inch
BenQ (LCD)	Q7T4	17-inch
BenQ (LCD)	Q7T3	17-inch
Lenovo (LCD)	LXB-L17C	17-inch
Samsung (LCD)	225bw	22-inch (wide screen)
Lenovo (CRT)	LXB-FD17069HB	17-inch
Lenovo (CRT)	LXB-HF769A	17-inch
Lenovo (CRT)	LX-GJ556D	17-inch
Samsung (LCD)	2494HS	24-inch
Samsung (LCD)	P2350	23-inch
Samsung (LCD)	P2250	22-inch
Samsung (LCD)	P2370G	23-inch
Samsung (LCD)	2043	20-inch
Samsung (LCD)	2243EW	22-inch
LG (LCD)	W1942SP	19-inch
LG (LCD)	W2243S	22-inch
LG (LCD)	W2343T	23-inch
BenQ (LCD)	G900HD	18.5-inch
BenQ (LCD)	G2220HD	22-inch
Philips (LCD)	230E	23-inch

Table E-1 Compatible Monitors

Manufacturer	Model	Screen Size
Philips (LCD)	220CW9	23-inch
Philips (LCD)	220BW9	24-inch
Philips (LCD)	220EW9	25-inch

F

Specifications

Table F-1 Specifications

System	
Main Processor	Dual-core embedded processor
Operating System	Embedded LINUX
Video	
IP Camera Inputs	4 channels
Two-way Talking	1 channel input; 1 channel output; BNC
Display	
Interface	1 HDMI, 1 VGA
Resolution	1920 x 1080; 1280 x 1024; 1280 x 720; 1024 x 768
Display Split	1/4
OSD	Camera title; Time; Video loss; Camera lock; Motion detection; Recording
Recording	
Compression	H.264 / MJPEG
Resolution	**1080p** (1920 x 1080); **720p** (1280 x 720); **D1** (704 x 576 / 704 x 480); **SXGA** (800 x 600); **1.3 MP** (1280 x 1024)
Recording Rate	100/120 fps @ 1080p; 100/120 fps @ 720p; 100/120 fps @ D1; 100/120 fps @ SXGA; 100/120 fps @ 1.3MP
Bit Rate	256 to 8192 kbps
Recording Mode	Manual; Schedule (Regular[Continuous]; Motion Detection; Alarm; Motion Detection+Alarm); Stop
Recording Interval	1 to 120 minutes (default: 60 minutes); Pre-recording: 1 to 30 seconds
Video Detection and Alarms	
Trigger Events	Recording; Tour; Alarm; Email; FTP; Buzzer; Screen Tips
Video Detection	Motion Detection; Motion Detection Zones (396: 22 x 18); Video Loss and Camera Blank

Table F-1 Specifications

Alarm Input	16 channels
Relay Output	3 channels
Playback and Backup	
Sync Playback	1/4
Search Mode	Time/Date; Alarm; Motion Detection; Exact Search (accurate to a second)
Playback Function	Play; Pause; Stop; Rewind; Fast play; Slow Play; Full Screen; Backup
Backup Mode Compatibility	USB Device; Network
Network	
Ethernet	1 RJ-45 port (10/100/1000Mbps)
PoE	4 ports (IEEE802.3af)
Network Function	HTTP, TCP/IP, IPv4/IPv6, UPNP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPOE, DDNS, FTP, Alarm Server, IP Search
Maximum number of users	20 users
Smart Phone compatibility	IOS; Android
Storage	
Internal Storage	2 SATA ports: up to 8 TB; RAID (redundancy)
Auxiliary Interface	
USB	2 ports (1 on rear panel); USB 2.0
RS232	1 port, for PC communication and keyboard
RS485	1 port, for PTZ control
Electrical	
Power Supply (NVR)	12 V DC; 5 A
Power Supply (PoE)	48 V DC; 1.04 A
Power Consumption (NVR)	20 W (without HDD)
Power Consumption (PoE)	Maximum 15 W each
Environmental	
Operating Temperature	14° F to 131°F (-10°C to 55°C)
Humidity	10% to 90%

Table F-1 Specifications

Physical	
Dimensions	14.8 x 11.2 x 2.0 inches (375 x 285 x 50 mm)
Weight (without HDD)	5.07 pounds (2.3 kg)

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Document 800-18160 – Rev A – 06/2014