Honeywell

Focus 4K Embedded Network Video Recorder

HEN081*4	**HEN162*4**	**HEN163*4**
HEN161*4	**HEN322*4**	**HEN323*4**
HEN321*4	**HEN642*4**	**HEN643*4**

(***** = Storage in TB)

User Guide

User Guide

Revisions

Issue	Date	Revisions
A	02/2017	New document based on 800-21090V3.

Cautions and Warnings

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

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.**

List of Symbols

The following is a list of symbols that might appear on the NVR.

Table 1-1   List of Symbols
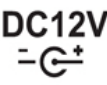
Symbol	Explanation
	The WEEE symbol. This symbol indicates that when the end-user wishes to discard this product, it must be sent to separate collection facilities for recovery and recycling. By separating this product from other household-type waste, the volume of waste sent to incinerators or landfills will be reduced, and thus natural resources will be conserved.
	The UL compliance logo. This logo indicates that the product has been tested and is listed by the Underwriters Laboratories.
	The FCC compliance logo. This logo indicates that the product conforms to Federal Communication's Commission compliance standards.
	The direct current symbol. This symbol indicates that the power input/output for the product is direct current.
	The alternating current symbol. This symbol indicates that the power input/output for the product is alternating current.
	The LDPE symbol. This symbol indicates that this product is made of Low-Density Polyethylene (LDPE).
	The Direct Current symbol. This symbol indicates that the product operates from a 12 V direct current.

Table 1-1   List of Symbols

Symbol	Explanation
	The Lead-free symbol. This symbol indicates that the product does not contain lead (Pb).
	The CCC compliance logo. This logo indicates that the product conforms with the China Compulsory Certification guidelines.
	The Environment Friendly Use-period symbol. This symbol indicates the length of time that this electronic product can used without harming the environment.
	The RCM Compliance symbol. This symbol indicates that the product conforms with the Australian RCM guidelines.
	The TVU Lab symbol. This symbol indicates that the product has been safety tested by the TUV Lab.
	The Direct Current symbol. This Direct Current symbol indicates that the product operates direct current.
	This symbol indicates that the product is to be used indoors.
	The CE Compliance logo. This logo indicates that the product conforms to the relevant guidelines/standards for the European Union harmonization legislation.
	The Protective Earth symbol. This symbol indicates that the marked terminal is intended for connection to the protective earth/grounding conductor.

Table 1-1　　List of Symbols

Symbol	Explanation
	This symbol is used to direct attention to important information.
	This symbol warns that the corresponding action could result in an electric shock.
	This symbol indicates On/Standby functionality of the corresponding control/button/switch.

Contents

About This Document

This document introduces the Honeywell Focus 4K Embedded Network Video Recorder. It explains how to install and operate the Focus 4K 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*, describes the front and rear panel layout of the NVR, and mouse and remote control functions.

- *Chapter 2, Getting Started*, describes how to connect the NVR and log on to its user interface.

- *Chapter 3, Viewing Live Video*, describes the NVR's real-time monitoring mode and associated NVR operations, including controlling a PTZ camera (if connected).

- *Chapter 4, Recording Video*, describes how to manually record a video clip and how to set up automatic recording.

- *Chapter 5, Playing Back Video*, describes how to search for and play back recorded video and snapshots, and how to save recorded files to an external storage device.

- *Chapter 6, Configuring Camera Settings*, describes how to configure camera image settings, encoder settings, snapshot settings, privacy mask settings, camera name settings, and channel type settings.

- *Chapter 7, Configuring Network Settings*, describes how to configure the NVR's network settings, including connection settings, email settings, FTP settings, registration settings, and alarm center settings.

- *Chapter 8, Configuring Event Settings*, describes how to configure the NVR's alarm settings, including settings for motion detection, video loss, camera tampering, and system events.

- *Chapter 9, Configuring Storage Settings*, describes how to configure the NVR's storage settings, including recording settings and HDD management settings.

- *Chapter 10, Configuring System Settings*, describes how to configure NVR system settings, display settings, and user accounts; export and import configuration settings to and from other NVRs; restore default settings; and upgrade the system firmware.

- *Chapter 11, Viewing Information*, describes how to view system, event, network, and log information.

- *Chapter 12, Troubleshooting*, lists troubleshooting steps for resolving errors that you may encounter when operating the NVR.

- *Appendix A, Connecting Alarm Input/Outputs*, provides guidelines for connecting alarm inputs and outputs.

- *Appendix B, Installing Hard Drives*, lists the manufacturers and models of compatible HDDs, including SATA HDDs and portable HDDs, and provides instructions for installing an additional HDD.

- *Appendix C, MAXPRO® Cloud*, explains how to switch the NVR for MAXPRO Cloud mode.

- *Appendix D, Specifications*, lists the NVRs' specifications.

Related Documents

This document is a necessary prerequisite for understanding the Focus 4K Embedded Network Video Recorder. For more information, please refer to the following documents:

Document title	Part number	Description
Embedded NVR Quick Installation Guide	800-21088	Visually describes how to connect and start up an Network Video Recorder.
Embedded NVR Quick Networking Guide	800-21089	Visually describes how to configure network connections, including the mobile application.
HED8PR1 4K True Day/Night IR Ball IP Camera Quick Installation Guide	800-22752	Describes the physical setup of a HED8PR1 ball camera.
HBD8PR1 4K True Day/Night IR Bullet IP Camera Quick Installation Guide	800-22751	Describes the physical setup of a HBD8PR1 bullet camera.
H4D8PR1 4K True Day/Night IR Minidome IP Camera Quick Installation Guide	800-22749	Describes the physical setup of a H4D8PR1 bullet camera.
Performance Series 4K IP Cameras User Guide	800-22748	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 Syntax	The message `Unauthorized` displays. `(object) entered`
Swiss721 BT Bold	Words or characters that you must type. The word "enter" is used if you must type text and then press the Enter or Return key.	Enter the **password**.
	Menu titles and other items you select	Double-click **Open** from the **File** menu.
	Buttons you click to perform actions	Click **Exit** to close the program.
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 7, Configuring Network Settings*.

1

Introduction

This chapter covers:

Overview of the Network Video Recorder

The Focus 4K 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 Focus 4K Embedded Network Video Recorder also features multiple storage options:

- Central storage: 3rd party storage, such as network storage
- Front-end storage: The NVR's HDD storage
- Client-end storage: Storage on the client's computer

Because of the flexibility of its design, the Focus 4K Embedded Network Video Recorder can be used in a variety of applications, such as public security, water conservancy, transportation, and education.

Features of the Network Video Recorder

Table 1-1   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   Network Video Recorder Features (cont'd)

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 NVR specifications, please see .

Figure 1-1   NVR Front Panel
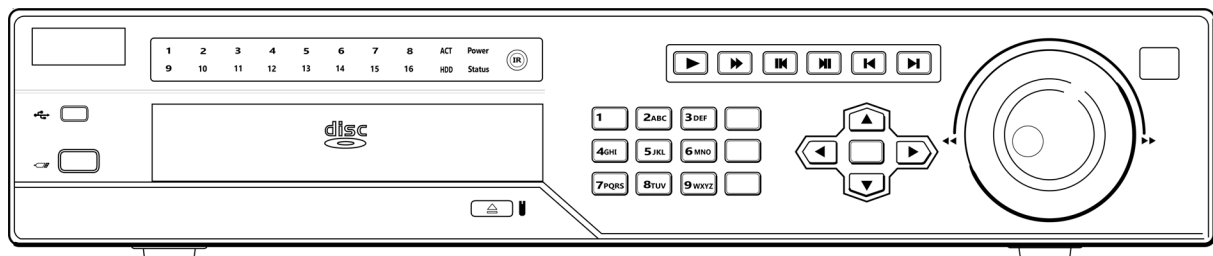
Note   HEN163*4 / HEN323*4 / HEN643*4 NVR front panel is shown here.

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.
Assistant	Fn	• **Single window monitor mode**: Click this button to display the Assistant function; to start PTZ control (not supported); 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	◀❘	In playback mode, play the previous video.
Play Next	▶❘	In playback mode, play the next video.
Slow Play	❘▸	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	❙❙◀	• **Normal playback**: Click to reverse playback. • **Reverse playback**: Click to pause playback.
Play/Pause	▶❙❙	• **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.
Record	Rec	• Click to start/stop manual recording.

Table 1-2   NVR Front Panel Components

Component Name	Icon	Function
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 (not supported).
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**.
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 **BLUE** to indicate an HDD error or when the HDD capacity is below the specified threshold.
Network Abnormal Indication Light	Net	Lights **BLUE** to indicate that a network error has occurred or that there is no network connection.

Figure 1-2   NVR Back Panel

HEN081*4 NVR
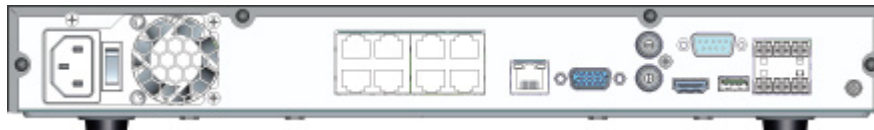
HEN161*4 / HEN321*4 NVR

HEN162*4 / HEN322*4 / HEN642*4 / HEN163*4 / HEN323*4 / HEN643*4 NVR

Note   * = storage in TB.

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.
1-4	Alarm Input 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	I/O Port	Alarm input ground end.
NO1 to NO2 C1 to C2	2 channel Alarm Output Port		• Two groups of alarm output ports. (Group 1: port NO1 ~ C1; Group 2: port NO2 ~ C2). 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.
Power Button			Power On/Off button.
PoE Ports			The built-in switch supports PoE function. It also supports up to 48 V / 50 W.
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.
eSATA	External eSATA		External storage devices.

Mouse Operation

Your Network Video Recorder is optimized for mouse navigation. Use the supplied mouse to set up the DVR.

Figure 1-3   Mouse

	Button	Action
1	Left	• Click to select a menu option. • Click in a text field to display the on-screen keyboard. • Click on the on-screen keyboard to input letters/numbers. • In multi-screen view, double-click to view the channel full screen. Double-click again to exit the full-screen mode. • Double-click video filename to play video.
2	Right	• Click to close the menu window without saving the changes. • Click to exit the main menu to return to the live view screen. • Click to open the shortcut menu from the live view screen.
3	Wheel	• Scroll up/down.

Using the On-screen Keyboard

1. To display the on-screen keyboard, click in a text box. The keyboard appears directly below the text box.

Figure 1-4   On-screen Keyboard

2. Click the key corresponding to the letter/number/special character that you want to input in the text box.

   • To switch between lowercase and uppercase letters, click **Shift**.

   • To delete the previous character, click the ⟵ key.

   • To insert a space, click the ⎵ key.

3. Click **Enter** to close the on-screen keyboard.

Remote Control Operation

It is strongly recommended to use a mouse to operate the NVR. However, you can also use the supplied IR remote control. The following table describes basic remote control operations.

Figure 1-5 Remote Control Functions:
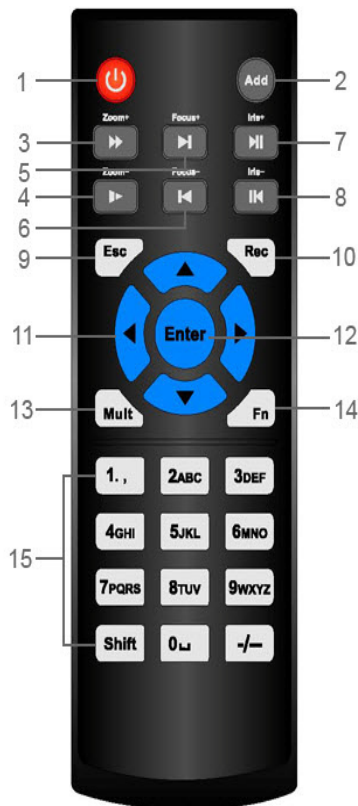
	Button	Action
1	Power	Turn the NVR on/off.
2	Add (Address)	Enter the number of the device that you want to control.
3	Forward	Increase the forward playback speed.
4	Slow Play	Decrease the forward playback speed.
5	Next Record	Select the next video for playback.
6	Previous Record	Select the previous video for playback.
7	Play/Pause	Pause/resume forward playback. In the live view mode, enter the video search mode.
8	Reverse/Pause	Pause/resume reverse playback.
9	Esc	Return to the previous menu or cancel the current operation.
10	Rec	Manually start/stop recording. While in the recording interface, use the direction buttons to select the recording channel. Press and hold the record button to enter the manual recording interface.
11	Direction Keys	Use the left/right keys to switch the currently activated control. While in playback mode, use the up/down buttons to change the playback channel.
12	Enter	Go to the default. Go to the menu.
13	Mult	Switch between the multi-channel view and the single-channel view.
14	Fn	In the single-monitor mode, use the popup assistant function, control PTZ cameras or adjust video color. In PTZ control mode, switch the PTZ control menu. In text mode, press and hold the button to delete the last character.
15	Alphanumeric Keys	Enter passwords or switch channels. Press **Shift** to switch the input method.

2

Getting Started

This chapter includes the following sections:

Unpacking the NVR

Before you set up the NVR, make sure that you have received the following items:

- Quick Installation Guide (800-22745)
- Quick Networking Guide (800-22746)
- Software CD
- Power adapter and cable
- Mouse

- Remote control
- CAT5e network cable
- Terminal block connectors (×2)
- Screws (×10)
- Serial ATA (SATA) cable*

If any of the items listed above are missing or damaged, contact your Honeywell dealer immediately.

Connecting External Devices

Step 1: Connect the cameras

Connect the coaxial cables from the cameras to the VIDEO IN connectors (1 *V*p-p, 75 ohm).

Step 2: Connect the monitor

Connect a VGA cable (not supplied) to the VGA interface and/or an HDMI cable (not supplied) to the HDMI interface. Connect the other end to a monitor (do not use a TV). Simultaneous VGA and HDMI output is supported.

Step 3: Connect the mouse

Connect the supplied USB mouse to the USB 2.0 interface.

Step 4: Connect the Ethernet cable

Connect the supplied CAT5e Ethernet cable to the network port. Connect the other end to a router on your network.

Step 5: Connect audio devices (if applicable)

To record audio, connect the audio sources to the AUDIO IN connectors. To play audio, connect an audio output device (low-impedance headphones, speaker, or amplifier) to the AUDIO OUT connector (200 mV / 1 kilohm).

Step 6: Connect alarm devices (if applicable)

Connect alarm devices to the alarm in/out interface. If the alarm inputs use external power, the device must have the same ground as the NVR. See *Appendix A, Connecting Alarm Input/Outputs* for additional information.

Step 7: Connect a PTZ camera (if applicable)

Your embedded NVR communicates with PTZ cameras through the Network. Ensure that you camera is correctly connected to the Network.

Step 8: Connect the power cable

Connect the supplied 12 V DC power adapter to the power input. Use of an uninterruptible power supply (UPS) is strongly recommended.

Typical NVR Installation

The following diagram shows a typical NVR installation:

Figure 2-1   Typical NVR Installation

HEN081*4

Note:
* = storage in TB.

1. Power
2. IP Cameras
3. Router/Switch (Not included)
4. Monitor (Not included) *Please see note on page 2
5. Mouse

ON
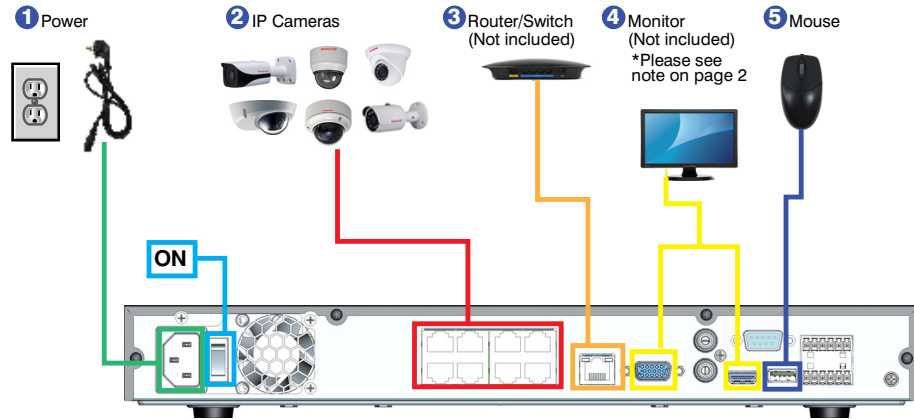
HEN161*4 / HEN321*4

Note:
* = storage in TB.

1. Power
2. IP Cameras
3. Monitor (Not included) *Please see note on page 2
4. Mouse
5. Router/Switch (Not included)

ON
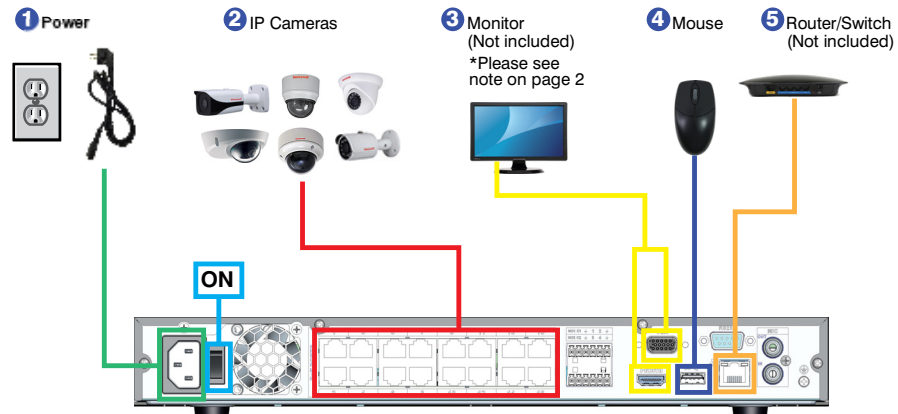
HEN162*4 / HEN322*4 / HEN642*4 / HEN163*4 / HEN323*4 / HEN643*4

Note:
* = storage in TB.

1. Power
2. IP Cameras
3. Router/Switch (Not included)
4. Mouse
5. Monitor (Not included) *Please see note on page 2

ON

eSATA
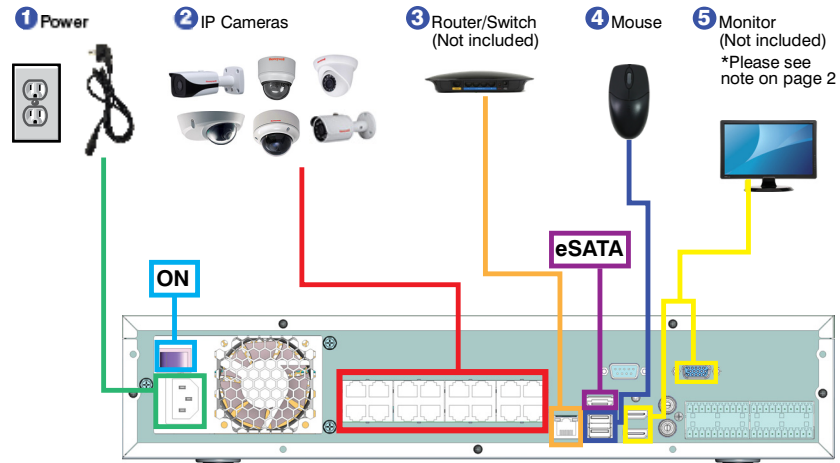
Starting and Shutting Down the NVR

Starting the NVR

1. Verify that the NVR is connected to an appropriate power source.

2. Turn on the power switch on the rear panel to start the NVR.

Note   The beep at startup is normal.

Shutting Down the NVR

Note   To shut down the NVR, you must be logged in as the admin user or have shutdown privileges assigned to you. See *Configuring Account Settings on page 130*.

To prevent damage to the hard drive, follow these steps to shut down the NVR:

1. In live view mode, click anywhere on the screen to display the shortcut menu, and then click **Main Menu**.

2. In the **Main Menu** window, click **Shutdown**.

3. In the **Shutdown** window, click **Shutdown** or **Reboot**.

4. Enter the admin password (the default password is **1234**), and then click **OK**.

Setting Up the NVR with the Startup Wizard

The Startup Wizard opens by default when you turn on the NVR.

Figure 2-2   Startup Wizard

Using the wizard, you can:

- Configure general settings (device name, number, language, video standard)
- Set the date and time
- Configure video encoding settings
- Set up a recording schedule
- Configure recording settings
- Configure network settings

Note   If you want to bypass the wizard and go directly to live view, click **Cancel**. To prevent Startup Wizard from opening the next time you start the NVR, de-select the **Startup** check box.

Using the Startup Wizard

1. Click **Next Step** to go to the **SYSTEM LOGIN** window.

Figure 2-3   System Login
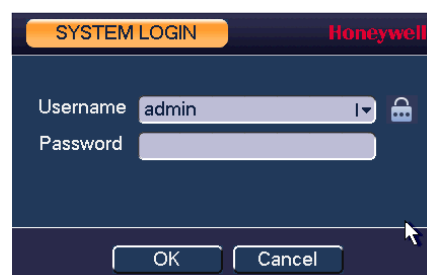
2. Click inside the **Password** box to display the on-screen keyboard, click the numbers **1**, **2**, **3**, and **4** on the on-screen keyboard (**1234** is the default admin password), and then click **Enter**. You will be asked to change the default password to a more complex password.

3. Click **OK** to go to the **GENERAL** window.

Figure 2-4   Startup Wizard - GENERAL

For more information about configuring settings in the **GENERAL** window, see *Configuring General System Settings on page 117*.

4. Click **Next Step** to go to the **TCP/IP** window.

Figure 2-5   Startup Wizard - TCP/IP Window

For more information about configuring settings in the **TCP/IP** window, see *Configuring TCP/IP and Port Settings on page 73*.

5. Click **Next Step** to go to the **Camera Registration** window.

Figure 2-6   Startup Wizard - Camera Registration Window

For more information about configuring settings in the **Camera Registration** window, see *Adding a Camera on page 63*.

6. Click **Next Step** to go to the **SCHEDULE** window.

Figure 2-7   Setup Wizard - SCHEDULE Window

For more information about configuring settings in the **SCHEDULE** window, see *Configuring the Video Recording Schedule on page 51* or *Configuring Storage Settings on page 109*.

7. Click **Finished**. The message "`Wizard is Finished`" appears.

Figure 2-8   Setup Wizard Finished
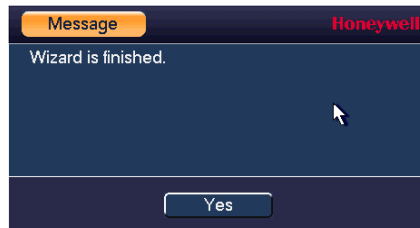
8. Click **OK** to close the wizard.

Setting Up Bi-Directional Communication Connection

Audio Output Device to a PC

Connect:

1. Connect a microphone 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 2-9   Enabling Bi-Directional Communication
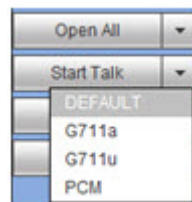
Configuring to Hear Audio From the NVR

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 2-10   Configuring to Hear Audio from the NVR
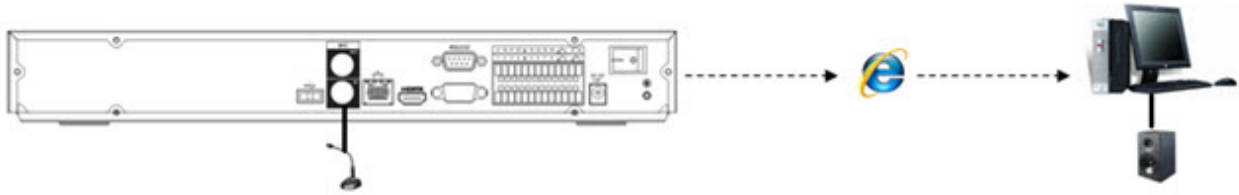
PC to an Audio Input Device

Connect:

1. Connect the microphone or the pickup to the audio input 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 2-9 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 2-11   Configuring to Hear Audio from the PC

3
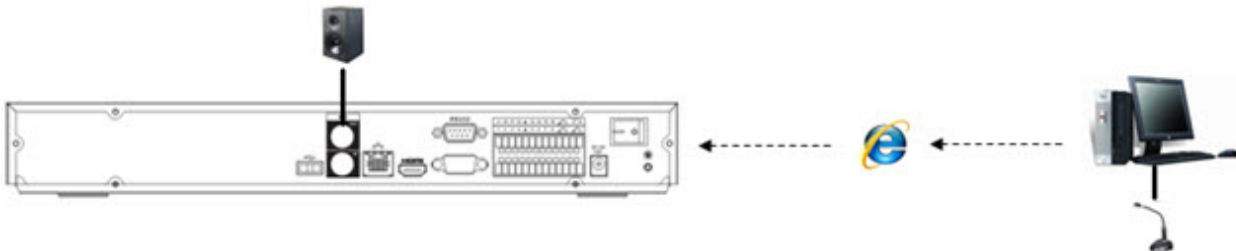
Viewing Live Video

This chapter includes the following sections:

About Live View

Live view is the NVR's default mode. When you start the NVR, live video from the connected cameras is displayed on the screen in a multi-channel layout (the number of channels displayed depends on whether you are using a 4-channel, 8-channel, or 16-channel NVR).

Figure 3-1   Live View

Channel

System date and time

2017-01-23 06:56:51

Camera name, status, channel number

1	2	3	4	5	6
7	8	9	10	11	12
13	14	15	16	17	18
19	20	21	22	23	24
25	26	27	28	29	30
31	32				
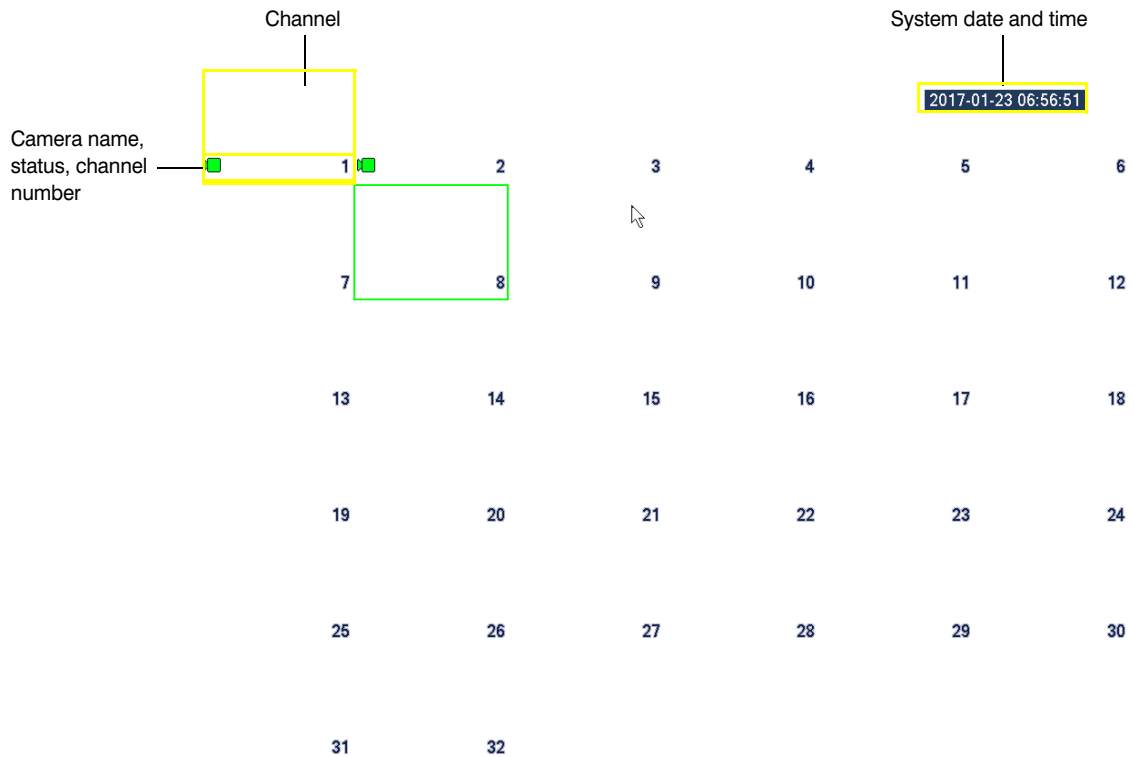
Camera Status

Camera status icons appear at the bottom of the channel window.

	Video is being recorded		No video signal
	Motion detected in scene		Camera locked

Camera Toolbar

A camera toolbar is located at the top of each channel window. To display the toolbar, move the mouse pointer to the top of the channel window.

Figure 3-2   Live View - Camera Toolbar

Table 3-1   Live View - Camera Toolbar

	Digital Zoom/Enlarge	Enlarge a specific area of the image. Click the button to enable digital zoom and then drag the mouse in the channel window to select the area that you want to enlarge. Right-click to undo digital zoom.

	Realtime Backup	Save a clip to a USB storage device. Click the button to start recording. Click again to stop recording. The clip is automatically saved to the connected USB storage device.
	Snapshot	Save a screen capture to the hard drive or to a connected USB storage device. To view the captured image, go to **Main Menu > Operation > Search** and click the **File List** button.
	Talk	Click to enable or disable bi-directional communication with an IP camera that is equipped with both a microphone and speaker. **Note** The bi-directional communication button only works in single-channel view.
	Remote Device	Add and configure a remote device (ie camera).
	Switch Stream	Switch the camera stream between the main and sub streams.

Live View Toolbar

If enabled, the live view toolbar appears along the bottom of the live view screen.

Figure 3-3   Live View Toolbar

The toolbar is disabled by default. To enable it, right-click and go to **Main Menu > SETTING > SYSTEM > GENERAL > General** and select the **Navigation** check box. Right-click twice to return to the live view screen. Click anywhere on the screen to display the toolbar.

Table 3-2   Live View Toolbar

	Main Menu	Open **Main Menu**.
	Screen Layout	Select screen layout format.
	Tour Control	Enables a tour (automatically cycles through channel views). See *Configuring Tour Settings* on page 123.
	Pan/Tilt/Zoom	Open the PTZ control panel. See *Controlling PTZ Cameras* on page 41.
	Image	Open the **Image** setting window. See *Adding a Camera* on page 63.
	Search	Open the playback interface. See *Playing Back Video* on page 55.
	Multicast	Open the Voice Broadcast interface. See *Configuring Broadcast Settings* on page 127.
	Event	Open the **Event** information window.

	Channel Info	Open the **Channel Info** window.
	Remote Device	Add and configure a remote device (camera). See either *Using the Startup Wizard* on page 31 or *Adding a Camera* on page 63.
	Network	Open the **Network** window. See *Configuring TCP/IP and Port Settings* on page 73.
	HDD Manage	Open the **HDD Manage** window. See *Configuring HDD Management Settings* on page 112.
	USB Manage	Open the **USB Manage** window.

Shortcut Menu

The shortcut menu is displayed by right-clicking anywhere on the screen in live view mode.

Figure 3-4   Shortcut Menu

Note Shortcut menu for a 32-channel NVR shown.

Configuring Live View

Setting the Screen Layout

The live view interface is configurable as a single-channel or multi-channel display.

To change the screen display format using the shortcut menu

1. Right-click anywhere on the screen to display the shortcut menu.

2. Point to the View you want (**View 1** is a single-channel layout, the others are multi-channel layouts), and then click the channel(s) that you want to display.

To change the screen display format using the live view toolbar

•   Click a screen layout button on the live view toolbar.

To change the screen display format using the mouse

•   Rotate the mouse wheel button.

To move a channel to a different location in the multi-channel grid

•   Drag the channel to a new location in the multi-channel grid.

    For example, to move channel 2 to the top left position occupied by channel 1, click channel 2, drag it to channel 1's position, then release the mouse button.

Controlling PTZ Cameras

This section describes how to do the following:

•   Access the PTZ control panel
•   Configure PTZ connection settings
•   Configure and call PTZ presets, tours, and patterns

Working with the PTZ Control Panel

You can control a PTZ camera connected to the NVR through a network connection using the on-screen PTZ control panel.

Basic PTZ Control Panel

Figure 3-5 PTZ Control Panel
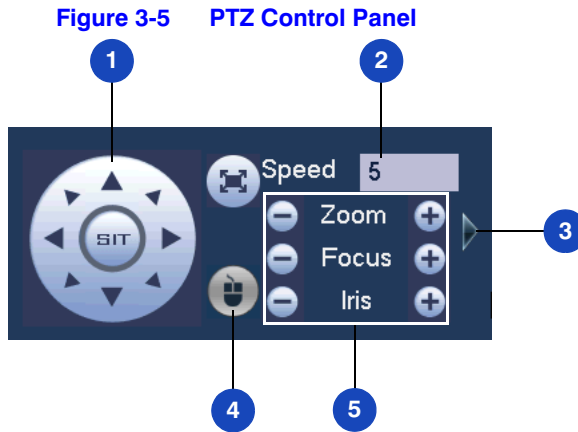
Table 3-3 PTZ Controls

#	Name	Function
1	Direction keys	Direct camera movement.
2	Speed	Adjust the camera speed. Select a value between **1** and **8**.
3	Expand Arrow	Expand the control panel to display additional options.
4	PTZ Trace	Direct camera movement by dragging the mouse. Zoom in and out by rotating the wheel button.
5	Zoom, Focus, Iris	Adjust the camera's zoom, focus, and iris settings: • Decrease zoom (–), increase zoom (+) • Focus near (–), focus far (+) • Iris close (–), iris open (+)

Expanded PTZ Control Panel

Figure 3-6 Expanded PTZ Control Panel
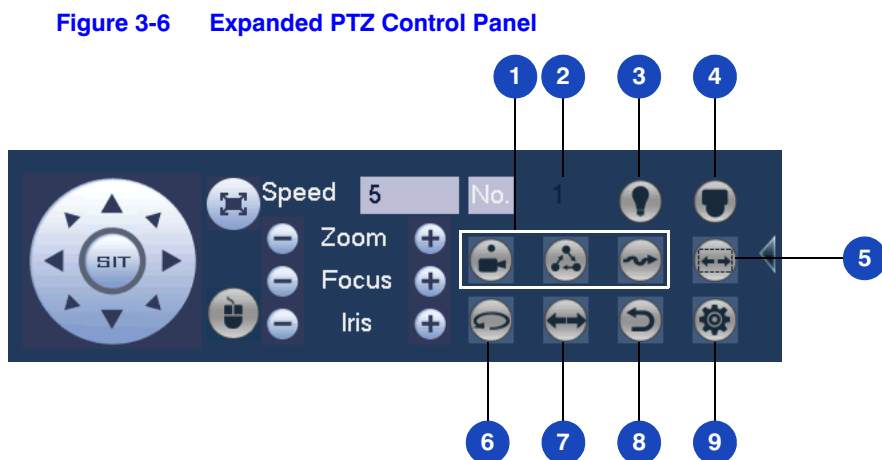
Table 3-4   Expanded PTZ Control Panel

#	Name	Function
1	**Preset, Tour, Pattern**	Configure/call PTZ functions.
2	**No.**	Enter number of PTZ function to call.
3	**Aux**	Call auxiliary functions.
4	**Enter Menu**	Enable up-the-coax OSD menu configuration for non-PTZ camera.
5	**AutoScan**	Cause camera to continually pan between two points that you have defined.
6	**AutoPan**	Cause camera to continually rotate 360 degrees.
7	**Flip**	Cause camera image to flip 180 degrees.
8	**Reset**	Restore default settings.
9	**Aux Config**	Configure auxiliary functions.

To display the PTZ control panel

1. Right-click anywhere on the screen to display the shortcut menu.

2. Click **Pan**/**Tilt**/**Zoom**. The PTZ control panel opens.
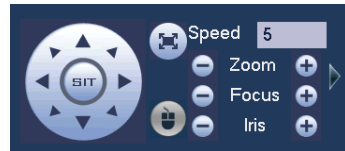
3. To expand the PTZ control panel, click the arrow at the right side of the panel.
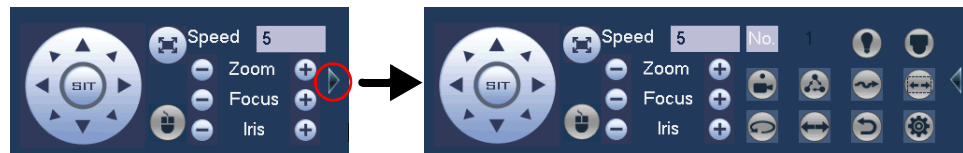
Configuring PTZ Connection Settings

Before you can control a PTZ camera with the NVR, you must configure the PTZ connection settings.

To configure the PTZ connection settings

1. Go to **Main Menu > SETTING > SYSTEM**.

2. In the left navigation pane, click **PAN/TILT/ZOOM**.

Figure 3-7   System Setting - PTZ
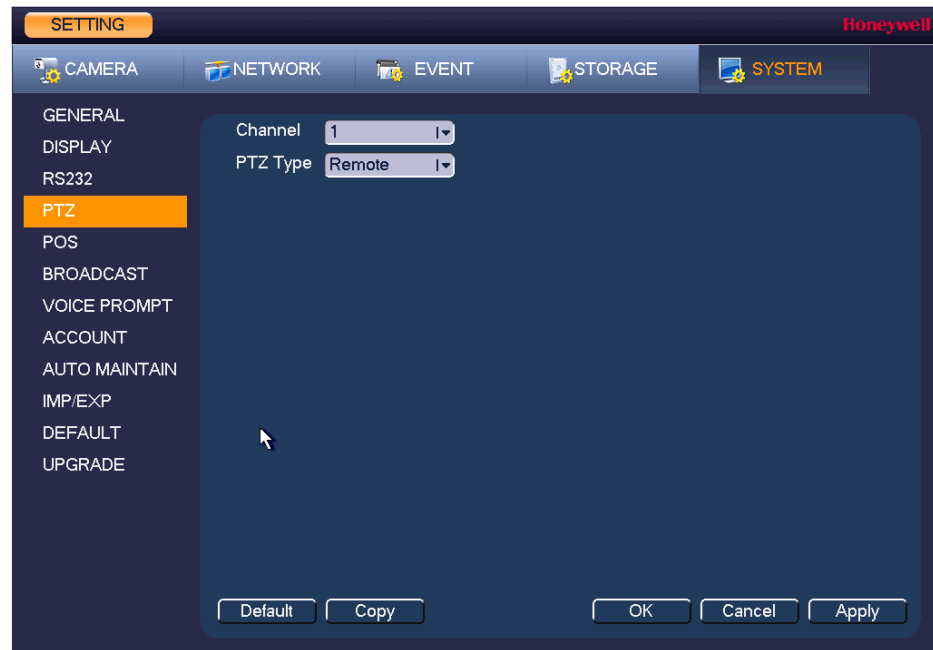
3. Configure the following settings:

    •   **Channel**   Select the channel (camera) for which you want to configure PTZ
                           settings.
    •   **PTZ Type**   Select **Remote** for the PTZ type. A remotely connected IP camera is
                           connected through the network.

4. Click **Apply**, and then click **OK** to save your settings and exit.

Configuring PTZ Functions

You can configure presets, tours, patterns, and borders using the PTZ control panel.

Configuring PTZ Presets

You can program preset positions for the PTZ camera. For example, you can point the camera
at a specific location, such as a doorway, when an alarm event occurs.

1. On the expanded PTZ control panel, click the **PTZ Setting** button.
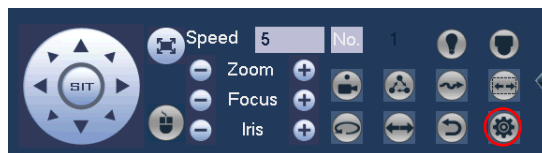
The Pan/Tilt/Zoom window opens.

2.   Use the direction arrows to point the camera where you want to set as the preset.

3.   In the **Preset** box, enter a number for the preset, and then click **Set** to save your settings.

•   To program additional presets, repeat steps 1 through 3.

•   To delete a preset, enter the number of the preset that you want to delete in the **Preset** box, and then click **Del Preset**.

Note   Some protocols do not support the **Del Preset** function.

Configuring PTZ Tours

You can set up the PTZ camera to go from preset to preset in a specific order, or tour.

1.   On the expanded PTZ control panel, click the **PTZ Setting** button.
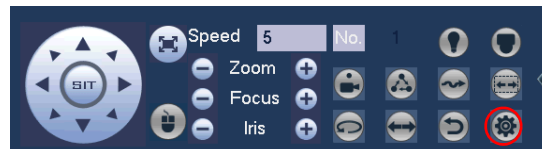
2.   Select the **Tour** tab for Tour setting options.

3.   In the **Preset** box, enter the number of the first preset that you want to add to the tour.

4.   In the **Patrol No.** box, enter a number for the tour.

5.   Click **Add Preset** to add the preset to the tour.

6. Repeat steps 1 through 5 to add additional presets to the tour.

• To delete a preset, enter the number of the preset that you want to delete in the **Preset** box, and then click **Del Preset**.

• To delete a tour, enter the number of the tour that you want to delete in the **Patrol No.** box, and then click **Del Tour**.

Note Some protocols do not support the **Del Preset** function.

Configuring PTZ Patterns

You can record a series of PTZ movements as a pattern. When you call the pattern in live view mode, the PTZ camera automatically moves along the path you have defined.

1. On the expanded PTZ control panel, click the **PTZ Setting** button.
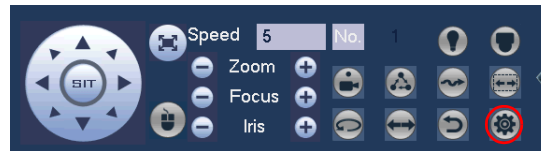
2. Select the **Pattern** tab for Pattern setting options.

3. In the **Pattern** box, enter a number for the pattern.
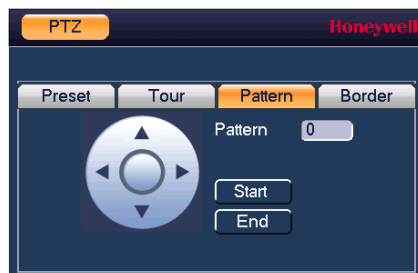
4. Click **Start**, and then use the direction arrows to direct the camera.

5. When you have finished directing the camera pattern, click **End**.

Configuring PTZ Borders

You can define the left and right borders of the PTZ camera's pan movement, or scan.

1. On the expanded PTZ control panel, click the **PTZ Setting** button.
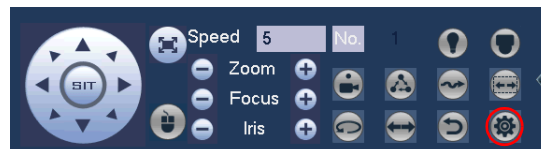
2. Select the **Border** tab for Border setting options.
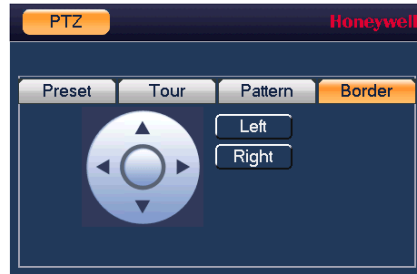
3. Use the direction arrows to move to the auto scan's leftmost limit, then click **Left**.

4. Use the direction arrows to move to the auto scan's rightmost limit, then click **Right**.

Calling Presets, Tours, and Patterns

To call a preset

1. On the expanded PTZ control panel, in the **No.** box, enter the number of the preset that you want to call, and then click the **Preset** button.
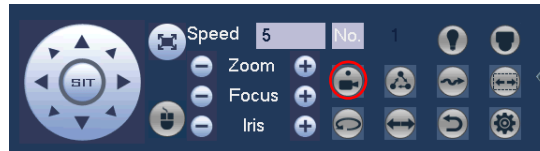
2. Click the **Preset** button again to stop calling the preset.

To call a tour

1. On the expanded PTZ control panel, in the **No.** box, enter the number of the tour that you want to call, and then click the **Tour** button.
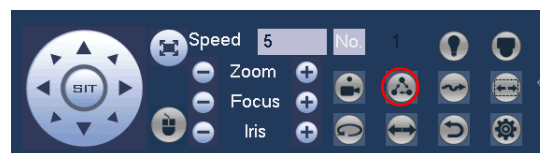
2. Click the **Tour** button again to stop calling the tour.

To call a pattern

1. On the expanded PTZ control panel, in the **No.** box, enter the number of the pattern that you want to call, and then click the **Pattern** button.
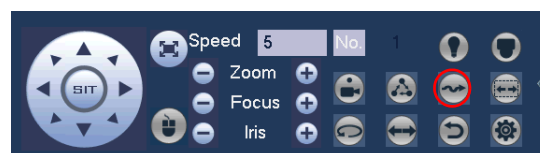
2. Click the **Pattern** button again to stop calling the pattern.

Configuring Auxiliary Settings

Refer to the user guide of your PTZ camera for details on configuring auxiliary settings.

4

Recording Video

This chapter contains the following sections:

- *Manual Recording Settings, page 49*
- *Automatic Recording Settings, page 50*

Manual Recording Settings

In live view mode, you can manually record a clip directly to a connected USB storage device.

Note   To back up recorded video to a connected USB storage device, please see *Backing Up Video and Snapshots* on page 59.

To record a video clip in live view mode

1. Connect a USB storage device (such as a USB flash drive) to one of the USB ports on the NVR.

   The **Find USB device** dialog box opens automatically.

2. Right-click to close the window.

3. In live view mode, move the mouse pointer to the top of the channel window to display the camera toolbar (see *Camera Toolbar* on page 38).

4. On the camera toolbar, click the **Realtime Backup** button to start recording. The button changes to green while the NVR is recording.

5. Click the **Realtime Backup** button again to stop recording.

   The video clip is saved automatically to the connected USB storage device. The file name uses the following format: [*NVR name*]_[*channel*]_[*video stream*]_[*recording start time*]_[*recording end time*]).dav.

Automatic Recording Settings

The NVR supports independent real-time recording of each channel, even while searching and playing recorded video.

To set the NVR to automatically record, you must do two things:

1. Configure the **General Recording Settings** to enable automatic or scheduled recording.
2. Configure the **Video Recording Schedule**.

Configuring the General Recording Settings

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

• Select **Auto**/**Schedule** recording for the main and extra streams
• Select **Manual** recording for the main and extra streams
• Enable and disable the **Snapshot** function

To configure the general recording settings

1. In the **SETTING** field in the **Main Menu**, go to **STORAGE > RECORD**.

Figure 4-1   Storage Recording Settings
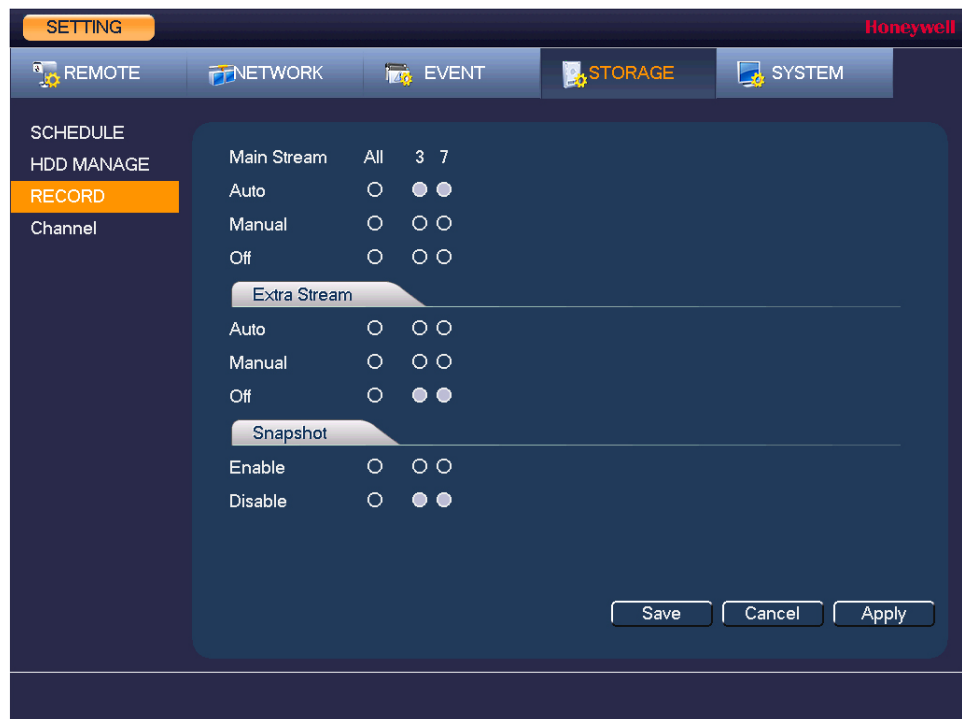
2. On the **Record** page, select the recording type (**Auto**, **Manual**, **Stop**) that you want to enable on each channel, for both the main stream and secondary stream.

3. Under **Snapshot**, enable snapshot recording on the desired channels.

4. Click **Apply**, and then click **Save**.

Configuring the Video Recording Schedule

To configure the video recording schedule

1. In the **SETTING** field in the **Main Menu**, go to **STORAGE** > **SCHEDULE** > **Rec**.

Figure 4-2   Storage Schedule Settings

2. On the **Record** tab, in the **Channel** box, select the channel (camera) for which you want to configure a recording schedule.

3. In the **PreRecord** box, enter a time between **0** and **30** seconds. The default setting is **4** seconds. The pre-record time sets how long the NVR records before the scheduled recording start time.

4. If the NVR has two HDDs, select the **Redundancy** check box to enable redundant recording on the second HDD. This HDD must first be configured on the **HDD Manage** page (see *Configuring HDD Management Settings* on page 112).

5. At the top of the scheduling table, select the check box(es) of the recording type(s) that you want to schedule:

   • **Regular**   The regular recording schedule is indicated by a green bar.
   • **Motion**   The motion detection recording schedule is indicated by a yellow bar.
   • **Alarm**   The alarm recording schedule is indicated by a red bar.
   • **MD&Alarm**   The motion detection and alarm schedule is indicated by a blue bar.
   • **Analytics**   The video analytics schedule is indicated by an orange bar.

6. At the left of the scheduling table, select the day(s) of the week for which you want to configure a recording schedule. To configure the same recording schedule for all of the days at the same time, select **All**.

7. Click or drag the mouse in the scheduling table to set the recording period. To erase a recording period, click the eraser icon ( ) at the right of the table. Alternatively, for the day of the week that you want to configure, click the gear icon at the right of the table. In the **Period** window, set up to six recording periods. To copy the settings to additional days, select the appropriate check box(es) under **Copy**, and then click **OK**.

8. Click **Apply** to save your settings.

9. To copy the recording schedule settings to additional channels, click **Copy**, select the channels to which you want to copy the settings, and then click **OK**.

Configuring the Snapshot Recording Schedule

Follow these steps to configure the snapshot recording function. When enabled, the NVR can take snapshots when a motion detection, video loss, video tampering, or other alarm event occurs. See *Chapter 8, Configuring Event Settings* for detailed instructions.

To configure the snapshot recording schedule

1. In the **SETTING** field in the **Main Menu**, go to **STORAGE > SCHEDULE > Snapshot**.

Figure 4-3   Snapshot Schedule Settings

2. On the **Snapshot** tab, in the **Channel** box, select the channel (camera) for which you want to configure a snapshot schedule.

3. At the top of the scheduling table, select the check box(es) of the recording type(s) that you want to schedule:

   • **Regular**   The regular recording schedule is indicated by a green bar.
   • **Motion**   The motion detection recording schedule is indicated by a yellow bar.

- **Alarm**   The alarm recording schedule is indicated by a red bar.
- **MD&Alarm**   The motion detection and alarm schedule is indicated by a blue bar.
- **Analytics**   The video analytics schedule is indicated by an orange bar.

4. At the left of the scheduling table, select the day(s) of the week for which you want to configure a recording schedule. To configure the same recording schedule for all of the days at the same time, select **All**.

5. Click or drag the mouse in the scheduling table to set the recording period. To erase a recording period, click the eraser icon at the right of the table. Alternatively, for the day of the week that you want to configure, click the gear icon at the right of the table. In the **Period** window, set up to six recording periods. To copy the settings to additional days, select the appropriate check box(es) under **Copy**, and then click **OK** to copy the settings and exit.

6. Click **Apply** to save your settings.

7. If you want to save your settings and exit the **SETTING** menu, click **OK**.

8. To copy the record schedule settings to additional channels, click **Copy**, select the channels to which you want to copy the settings, and then click **OK**.

To configure snapshot recording settings

1. In the **SETTING** field in the **Main Menu**, go to **CAMERA > Encode > Snapshot**.

   Figure 4-4   Camera Snapshot Settings
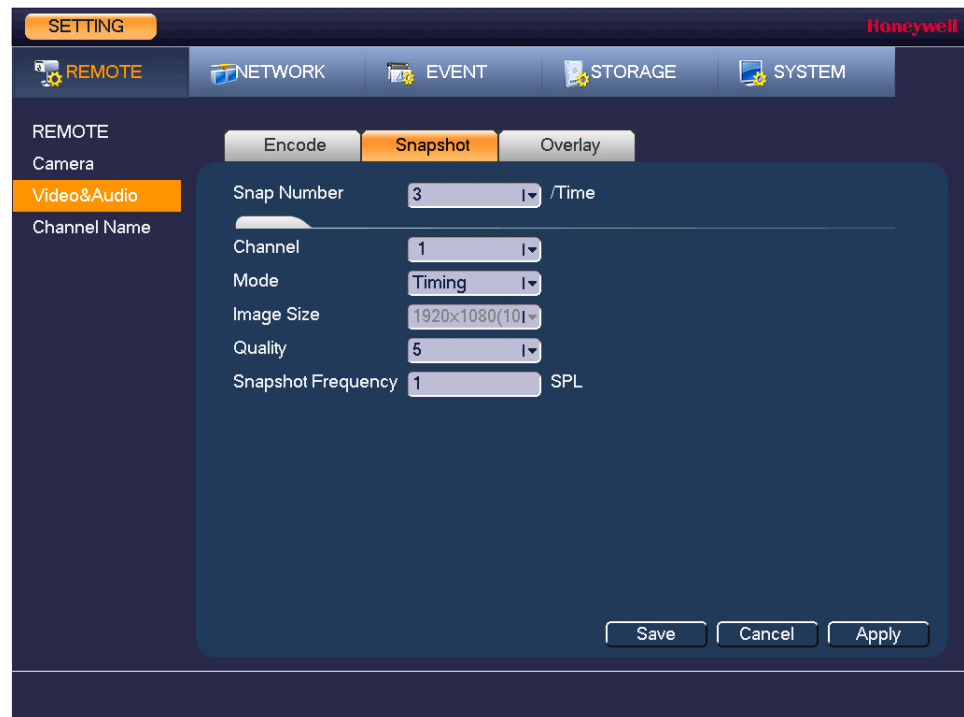
2. On the **Snapshot** tab, configure the following settings:

- **Manual Snap**   Select the number of snapshots to take at a time.
- **Channel**   Select the channel for which you want to configure the settings.
- **Mode**   Select **Timing** to take snapshots according to a schedule.
                      Select **Trigger** to take snapshots when a motion detection, video loss, video tampering, or alarm event occurs.

- • **Image Size**   The size is automatically selected, based on the resolution of the camera.
- • **Image Quality**   Select a value between **1** and **6**, with **6** being the highest quality.
- • **Interval**   Select a value between **1 SPL** (second per picture) and **7 SPL** or click **Customized** to enter your own setting.

3. Click **Apply** to save your settings.

4. To copy the settings to additional channels, click **Copy**, select the channels to which you want to copy the settings, and then click **Save**.

Note   The NVR assigns event-activated snapshots a higher priority than schedule-activated snapshots. If you have enabled both of these types of snapshots, then the system activates an activation snapshot when an alarm occurs. If there is no alarm, then the NVR takes snapshots according to the schedule setup.

5

Playing Back Video

This chapter includes the following sections:

Playing Back Video

Searching For and Playing Back Video

1. In the **Operation** field in the **Main Menu**, go to **Search**. The playback interface opens (see *Figure 5-1*).

2. On the right panel of the playback interface, in the calendar area, click the date(s) that you want to search. Dates with recorded video are solid orange.

3. Below the calendar, select the screen layout that you want to use, and then select the channel(s) that you want to search.

Figure 5-1   Search Playback Interface
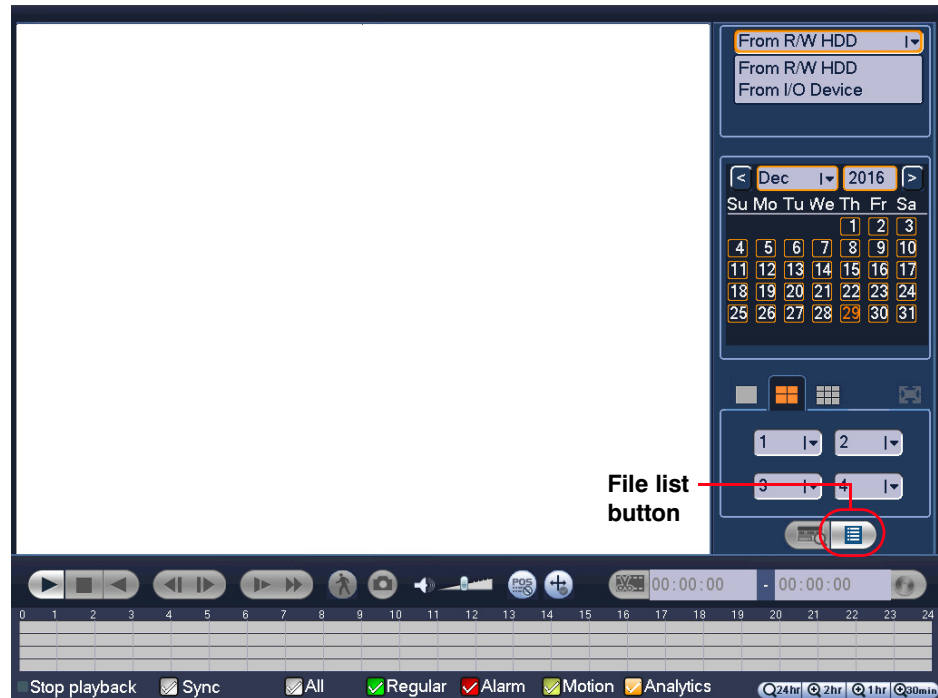
4. At the bottom of the screen, select the recording type(s) that you want to search (**Regular**, **Alarm**, **Motion**, **Analytics**) or select **All** to search all recording types.

5. Click the **File List** button to display the list of search results.

6. From the list of search results, double-click the recorded video file that you want to play back. The video begins playing in the playback window.

7. Use the playback controls at the bottom of the screen to control playback. Playback modes include slow play, fast play, reverse play, and frame-by-frame playback.

8. To jump forward or backward in the video, click the time bar at the desired time. To zoom in or out on the time bar, click one of the options in the lower right corner of the screen: **24 h**, **12 h**, **1 h**, or **30 min**.

Smart Search

Note   IP cameras support Smart Search through a private protocol.

Note   You must do the following in the IP camera before you can do a Smart Search with your NVR:

- Enable the VMD (Video Motion Detection) function in your IP camera.
- Configure the VMD region for your IP camera. See *Configuring Motion Detection Settings* on page 89 for more about VMD settings.

To quickly locate activity using Smart Search

1. During video playback, click the **Smart Search** button. A grid is superimposed over the playback window.

2. Drag the mouse over the area that you want to search for activity.
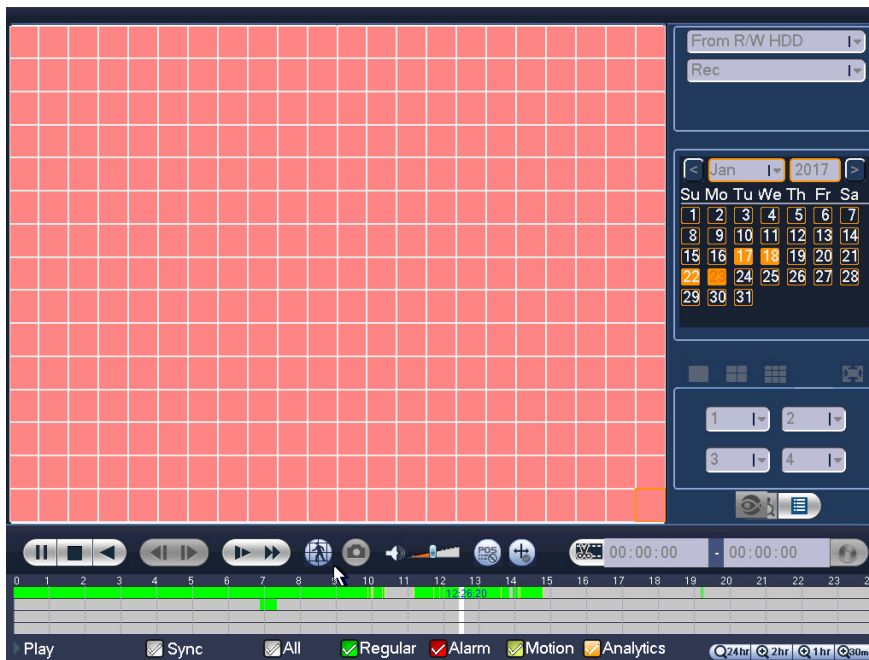
3. Click the **Smart Search** button again. Playback jumps to all the parts of the video where there is activity in that area.

4. To exit Smart Search, click the **Smart Search** button again. The message "**Are you sure to exit smart search now?**" appears. Click **OK**.

Smart Player Playback

The Smart Player can be used to search for video related to analytics type events, such as face detection.

1. In the **Operation** field in the **Main Menu**, go to **SMART PLAY**. The Smart Player interface opens (see *Figure 5-2*).

   Figure 5-2   Smart Player Options Screen
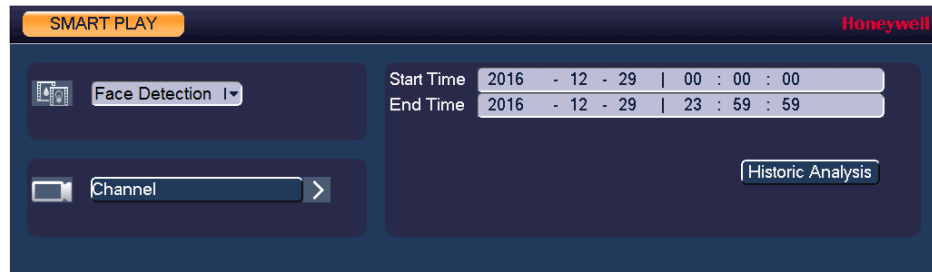
2. Select the type of event to search through in the Smart Player in the event drop-down list. In the example here, face detection is selected.

3. Select the Channel to search through in the Channel drop-down list.

4. Enter the **Start Time** and **End Time** for the Smart Player to include and click **Historic Analysis**.

5. The Smart Player screen will open with a list of the event types that have occurred on the selected channel and within the time frame. Select one of the event instances to call up the video from the event.

Playing Back Snapshots

1. In the **Operation** field in the **Main Menu**, go to **Search**. The playback interface opens (see *Figure 5-1*).

2. On the right panel, below the search type box at the top of the panel, select **PIC**.

3. In the **Interval** box, enter the playback interval in seconds. Enter a time between **1** and **60** seconds. The default setting is **1** second.

4. In the calendar area, click the date(s) that you want to search. Dates with saved snapshots are solid orange.

5. Below the calendar, select the screen layout that you want to use, and then select the channel(s) that you want to search.

6. Click the **File List** button to display the list of search results.

7. In the list of search results, double-click the snapshot file that you want to play back. The snapshot appears in the playback window.

8. Playback cycles through all of the snapshot files in the file list at the interval you specified in the **Interval** box. To pause playback, click the **Pause** button in the control panel below the playback window. To go to the next snapshot, click the **Next Frame** button. To go to the previous snapshot, click the **Prev Frame** button.

> **Note** The green time bar in the snapshot playback interface only shows approximately when snapshots were taken. Click **File List** to do an accurate search.

Backing Up Video and Snapshots

To back up from inside the playback interface

1. Insert a USB storage device (such as a USB flash drive) into one of the USB ports on the NVR.

2. Search for the recorded video or snapshot file(s) that you want to back up (see *Playing Back Video* on page 55 and *Playing Back Snapshots* on page 58).

3. Click the **File List** button to display the list of search results.

4. In the list of search results, select the check box(es) of the file(s) that you want to back up.

Figure 5-3   Search Results

Alternatively, during video playback, in the video clip time field, enter the desired start time and end time, and then click the **Save** button.

Figure 5-4   Playback Save/Backup Button
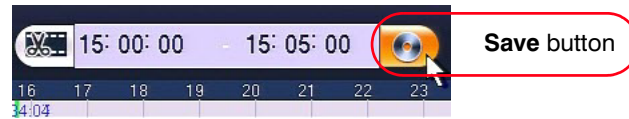
5. The **Backup** window opens, displaying the selected video file/clip.

6. In the **Backup** window, click **Backup**.

Figure 5-5   Backup Window

The **Browse** window of the USB storage device opens (see *Figure 5-6*).

Figure 5-6   Backup - Browse USB Storage Window
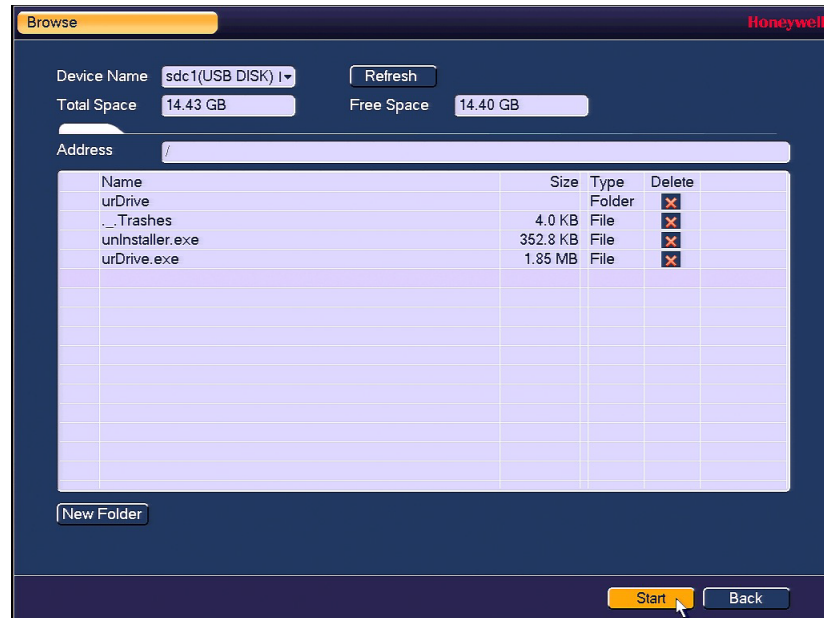
7.   Click **Start** to back up the file(s). If the backup is successful, the message "Backup finished" appears.

To back up from outside of the playback interface

1.   Insert a USB storage device (such as a USB flash drive) into one of the USB ports on the NVR. The **Find USB device** dialog box opens.

Figure 5-7   Find USB Storage Device Window
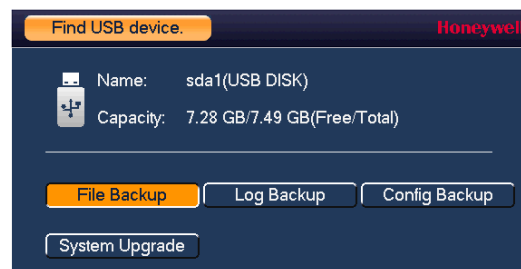
2.   In the **Find USB device** dialog box, click **File Backup**.

Figure 5-8   File Back to USB Device Window
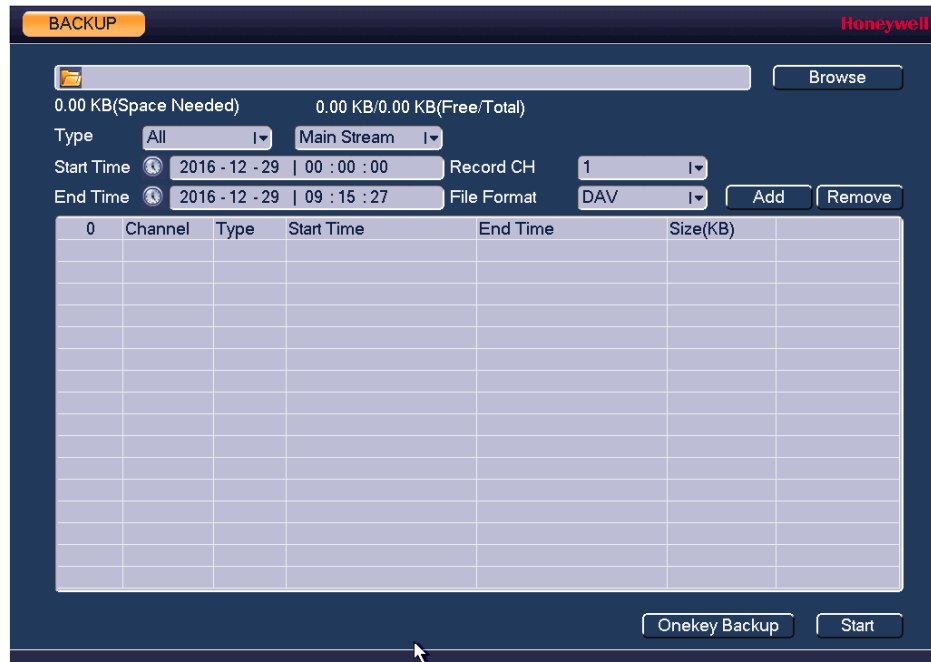
3. In the **Backup** window, configure the following settings:

    - **Type**   Select the file type for which you want to search.

                              Note   To search for snapshots, select **PIC**, as **All** means all
                                         video files (excluding snapshots).

    - **Start Time**   Enter the start time of the search.

    - **End Time**   Enter the end time of the search.

    - **Record CH**   Select a specific channel to search or select **All** to search all
                              channels.

    - **File Format**   Select **DAV** or **ASF** as the video file format.

4. Click **Add** to display the search results in the file list.

Note   If there are too many files in the selected time, only the first 1024 files in the
             search period will be displayed. Refine the **Start Time** and **End Time** to find the
             desired files for backup.

---

5. Select the check box(es) of the file(s) that you want to back up, and then click **Backup**.
    The **Browse** window of the USB storage device opens.

6. Click **OK** to back up the file(s).

6

Configuring Camera Settings

This chapter contains the following sections:

Adding a Camera

1. In the **SETTING** field in the **Main Menu**, go to **CAMERA > Registration**.

Figure 6-1   Adding a Camera Device
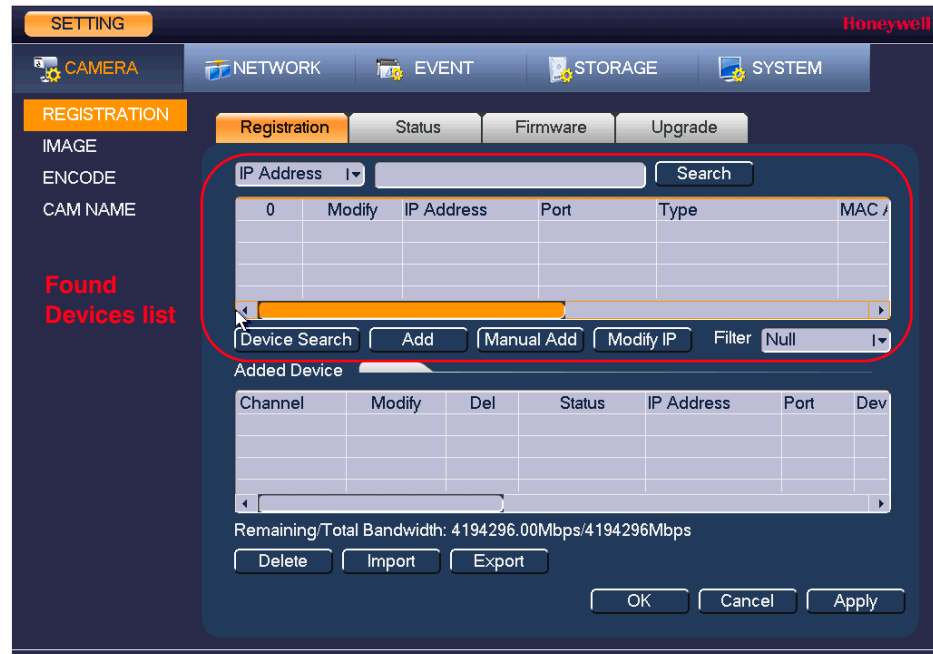
2. Either click **Device Search** to automatically find IP cameras.

    a. Click to select the found camera.

    b. Click **Add** to add the found device to the **Added Device** list.

Note   If the NVR fails to display the model name of a found device, click **Device Search** to rediscover the online devices. The model name should appear in the **Found Devices** list.

OR

Click **Manual Add**.

a. Manually configure the following settings:

  - **Channel**   Select from the drop-down menu of options.
  - **Manufacturer**   Select the manufacturer that applies to your camera from the list.
  - **IP Address**   Enter the IP address for the camera.
  - **TCP Port**   Enter the TCP port for the camera. (Optional)
  - **Username**   Enter a username.
  - **Password**   Enter a password.
  - **Decode Buffer**   Select a decode buffer, from **Default**, **Real Time**, or **Fluent**.
  - **Remote Channel Number**   Select a video stream, or multiple video streams, from a device.

b. Click **Save**. The newly added camera appears in the **Added Device** list.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Camera Image Settings

> **Note**   You can configure camera settings only if you have connected your IP cameras via a Private Protocol. If you have connected via a Private Protocol, then the Camera settings will be available. If you have connected your IP cameras via other protocols, then the Camera settings will not be available.

1. In the **SETTING** field in the **Main Menu**, go to **CAMERA > Image**.

    Figure 6-2   Camera Image Settings Tab
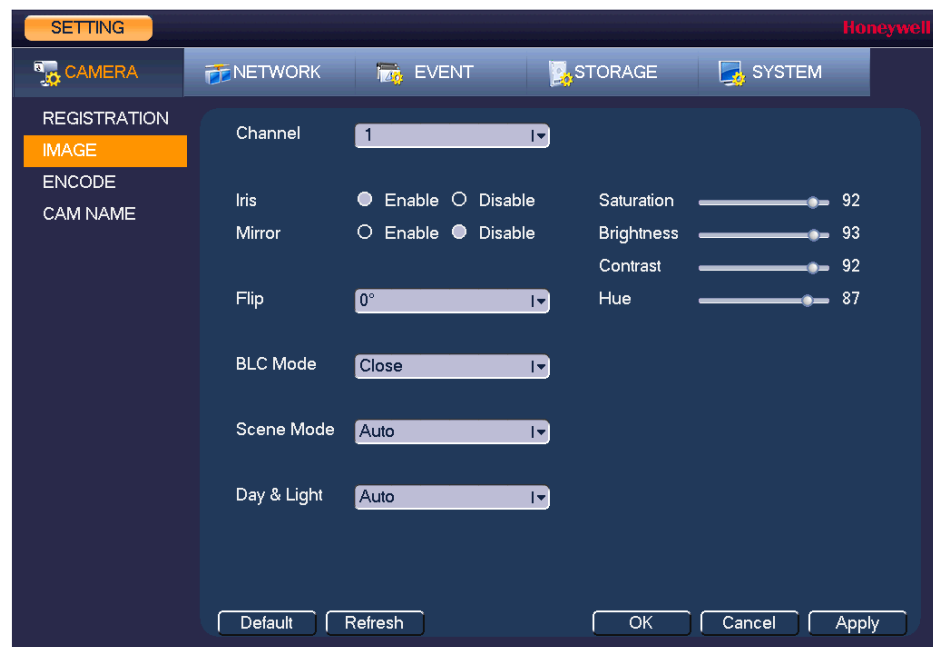
2. Configure the following settings:

    - **Channel**   Select a channel from the drop-down list.
    - **Saturation**   Adjusts monitor color saturation. Choosing a higher value increases the color saturation/strength. This value has no effect on the general brightness of the video. Select from **0** to **100**. The recommended range is between **40** and **60**. The default value is **50**.
    - **Hue**   Adjusts the monitor color hue from **0** to **100**. The recommended range is between **40** and **60**. The default value is **50**.
    - **Brightness**   Adjusts monitor brightness. Choosing a higher value increases the video brightness. Adjustments to this value affects the brightness of the video. Select from **0** to **100**. The recommended range is between **40** and **60**. The default value is **50**.

        > **Note**   If this value is too high, then the video can become hazy.

•	**Contrast**	Adjusts monitor contrast. Choosing a higher value increases the contrast. Select from **0** to **100**. The recommended range is between **40** and **60**. The default value is **50**.

> **Note** If this value is too low, then the video can become hazy. If this value is too high, then the dark parts of the video could lose details, and the bright parts of the video could become overexposed.

•	**Iris**	**Iris** controls the aperture and automatically controls the amount of light that is let into the camera. Iris is set to **Enable** by default.
•	**Mirror**	Reverses the video image, so that they left side becomes the right side, and the right side becomes the left. Disabled by default.
•	**Flip**	The default setting is **Normal**. Choose from **180°**, which flips the video 180°; **90°**, which rotates the video by 90°; and **270°**, which rotates the video by 270°.
•	**Day & Light**	Sets the camera color and the B/W mode switch.

> **Day&Light Modes:**
> **Colorful:** The camera outputs video in color.
> **Auto:** The camera switches from Color to Black & White according to the conditions, such as if the scene is generally bright, or if IR illumination is required.
> **B/W:** The camera outputs black and white video.

•	**BLC Mode**	Sets the camera backlight compensation mode.

> **BLC Modes**:
> **Close**: BLC function is disabled. This is the default setting.
> **BLC Mode**: The camera auto exposures according to the environment so that the darkest area of video is clear.
> **WDR**: The camera lowers the brightest areas and enhances the darkest areas so both areas can be clearly viewed at the same time. Set the WDR value from 1 to 100.
> **HLC**: The camera lowers the brightness of the brightest area according to the HLC control level (from 1 to 100).

•	**Config File**	Select from **Config1**, **Config2**, and **Config3**.
•	**Scene Mode (White Balance)**	This is the white balance. You can select different scene modes such as **Auto**, **Outdoor**, **Natural**, **Street Lamp** or **Manual**, to achieve the best quality video.

> **Scene Modes:**
> **Auto:** Auto white balance is on. The system automatically adjusts the color temperature to ensure that the video color is correct.
> **Outdoor:** The white balance threshold is set to outdoor mode.
> **Natural:** The white balance threshold is set to natural mode.
> **Street Lamp:** The white balance threshold is set to street lamp mode.
> **Manual:** You can manually set the gain for the red/blue channel. The value ranges from **0** to **100**.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Encoding Settings

1. In the **SETTING** field in the **Main Menu**, go to **CAMERA > Encode > Encode**.

Figure 6-3   Camera Encoding Settings Tab

2. On the **Encode** tab, in the **Channel** box, select the camera that you want to configure.

Note   If the NVR fails to retrieve the configuration information for your selected camera/channel, then you should navigate to a different window (such as **Snapshot** or **Overlay**), then navigate back to the **Encode** window.

3. Configure the following settings for the primary stream and secondary stream:

- **Code Stream Type**   Set the primary stream type as **Continuous**, **MD** (Motion Detection), or **Alarm**. The sub stream(s) type is not configurable.
- **Compression**   *This setting is not configurable.*
- **Smart Codec**   Set the Smart Codec as either **Close** (default) or **Enable**.
- **Resolution**   Set the primary stream resolution to one of the following options in the drop-down list. Set the sub stream(s) resolution to one of the available resolutions.

  Note   The resolution options available depend on the camera that is connected.

- **Frame Rate(FPS)**   Select a value between **1** and **30** (NTSC) or **1** and **25** (PAL).
- **Bit Rate Type**   Set to **CBR** (constant bit rate) or **VBR** (variable bit rate).

- **Quality**   If the bit rate type is set to **VBR**, select a value between **1** and **6**.

  > **Note** If your device is connected to the NVR through ONVIF, then you can not select **VBR**. If your device is connected to the NVR through a private protocol, then you can select either **CBR** or **VBR**.

- **Bit Rate**   Set to a value within the **Reference Bit Rate** range. To enter a bit rate that does not appear on the list, click **Customized**.

- **Audio**/**Video** Select or clear the check boxes to enable or disable audio and/or video.

- **Audio Encode**   Select the Audio Encode mode for the main and sub streams from either **G.711A** or **G.711Mu**. G.711A is the default setting.
  The Encode Mode setting applies to both the audio output and bidirectional talk modes.

- **Sampling Rate**   Select the Sampling Rate for the camera from **8K** or **16K**.

4. Click **Apply** to save your settings.

5. To copy the settings to one or more additional cameras, follow these steps:

   a. Click **Copy**.

   b. Click the specific camera(s) to which you want to copy the settings, or click **All** to select all the cameras, and then click **OK**.

6. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Snapshot Settings

1. In the **SETTING** field in the **Main Menu**, go to **CAMERA > Encode > Snapshot**.

Figure 6-4   Camera Snapshot Settings Tab
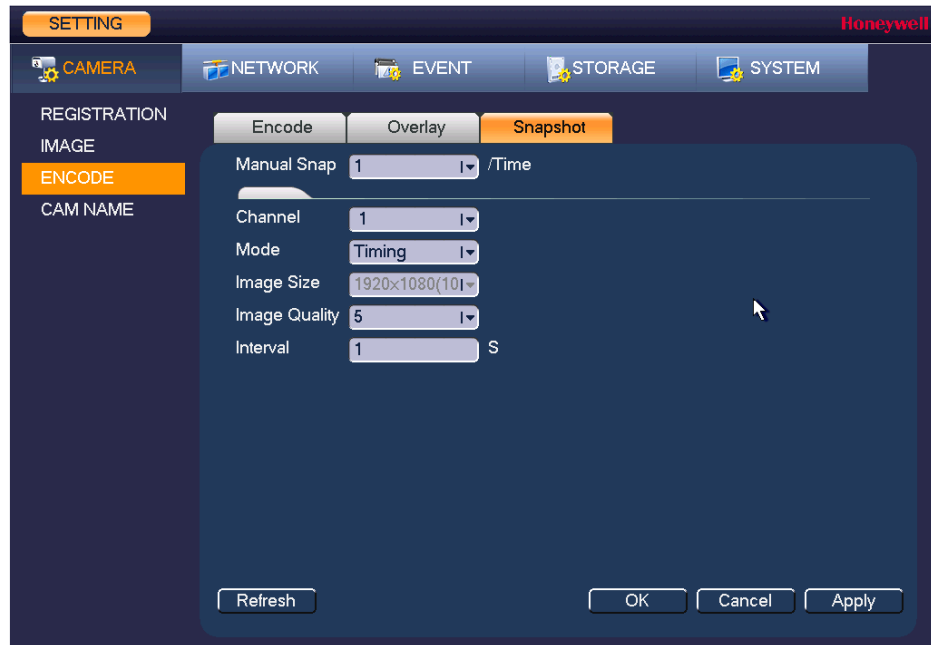
2. In the **Channel** box, select the camera that you want to configure.

- **Manual Snap**   Select the maximum number of snapshots that can be taken at a time.

- **Channel**   Select a channel from the drop-down list.

- **Mode**   There are two modes: **Timing** and **Trigger**. If you set **Timing** mode, then you need to set the snapshot Interval. If you set Trigger mode, then you need to enable snapshots in Event Settings. Please see *To set up motion detection event actions* on page 92, for example.

- **Image Size**   Select a snapshot size.

- **Image Quality**   Select a snapshot quality. Select from **1** to **6**, with 6 being the highest quality setting.

- **Interval**   Set how frequently the snapshot is taken.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring the Text Overlay

1. In the **SETTING** field in the **Main Menu**, go to **CAMERA > Encode > Overlay**.

Figure 6-5   Camera Text Overlay Setting Tab
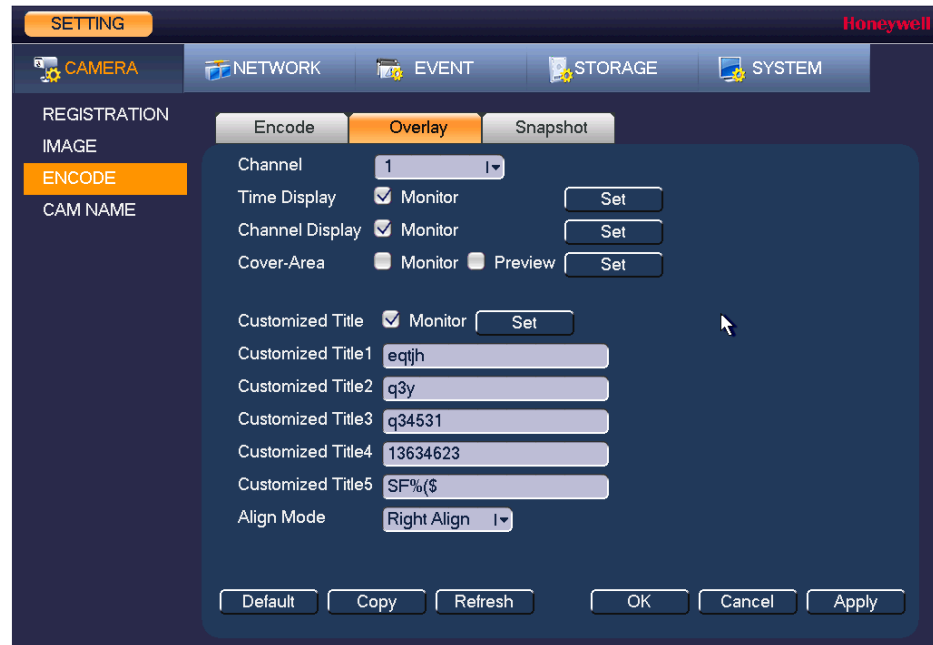
2. In the **Channel** box, select the camera that you want to configure.

3. To set the time display, next to **Time Display**, select the **Monitor** check box, and then click **Set**. Drag the time display to the desired position on the screen. Right-click to save the position and return to the Overlay screen.

4. To set the channel display, next to **Channel Display**, select the **Monitor** check box, and then click **Set**. Drag the channel display to the desired position on the screen. Right-click to save the position and return to the Overlay screen.

5. To set a privacy zone, next to **Cover-area**, select the **Monitor** check box, select one of four zones to configure, and then click **Set**. Drag and resize the privacy zone so it covers the sensitive area on the screen. Right-click to save the position and return to the Overlay screen. Configure other privacy zones, as necessary.

6. To set the customized title display, enter the customized title text in the lines that apply, next to **Customized Title**, select the **Monitor** check box, and then click **Set**. Drag the title text to the desired position on the screen. Right-click to save the position and return to the Overlay screen.

7. Click **Apply** to save your settings.

8. To copy the settings to one or more additional cameras, follow these steps:

   a. Click **Copy**.

   b. Click the specific camera(s) to which you want to copy the settings, or click **All** to select all the cameras, and then click **OK**.

9. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Changing a Camera Name

By default, the cameras are named "CAM 1", "CAM 2," "CAM 3," and so on. You can assign each camera a descriptive name specific to your application (for example, "Front Entrance").

1. In the **SETTING** field in the **Main Menu**, go to **CAMERA > Cam Name**.

Figure 6-6   Camera Name Settings Window

2. Click the text box of the camera that you want to rename and enter the new camera name.

3. Click **Apply** to save your settings.

7

Configuring Network Settings

This chapter contains the following sections:

Configuring TCP/IP and Port Settings

Configuring TCP/IP Settings

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > TCP/IP**.

Figure 7-1   Network TCP/IP Settings Window

2. On the **TCP/IP** page, use the default **MTU** (maximum transmission unit) value.

3. In the **IP Version** box, select **IPv4** or **IPv6**, depending on the Internet protocol that you want to use.

4. Select **DHCP** to assign the NVR with a dynamic IP address. Click to deselect **DHCP** to assign the NVR a static IP address.

5. If you selected **Static**, manually enter the **IP Address**, **Subnet Mask**, and **Gateway** information. (The IP address, subnet mask, and gateway are not configurable when **DHCP** is enabled).

6. If you want, enter **Preferred DNS** and **Alternate DNS** addresses.

7. To enable faster downloading over the local area network (LAN), select the **LAN Download** check box.

8. Click **Apply** to save your settings.

9. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Port Settings

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > Port**.
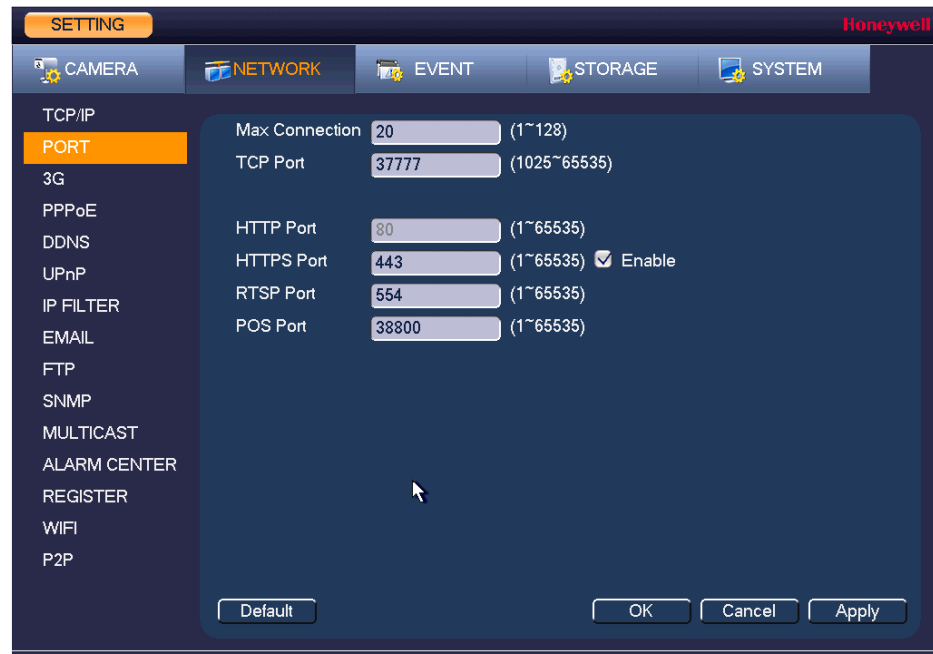
2.   On the **Connection** page, you can configure the following settings:

- **Max Connection**   Select a value between **1** and **128**. The default setting is **20**.
- **TCP Port**   Select a value between **1025** and **65535**. The default setting is **37777**.
- **HTTP Port**   Select a value between **1** and **65535**. The default setting is **80**.
- **HTTPS Port**   Select a value between **1** and **65535**. The default setting is **443**.
- **RTSP Port**   Select a value between **1** and **65535**. The default setting is **554**.
- **POS Port**   Select a value between **1** and **65535**. The default setting is **38800**.

3.   Click **Apply** to save your settings.

4.   If you want to save your settings and exit the **SETTING** menu, click **OK**.

Note   You must restart the NVR to apply any changes to the NVR's port settings. Ensure that the port settings do not conflict with each other.

Configuring Wireless Connection Settings

To manage Wi-Fi connections

1.   In the **SETTING** field in the **Main Menu**, go to **NETWORK > WIFI**.

Figure 7-3   Network WIFI Settings Window
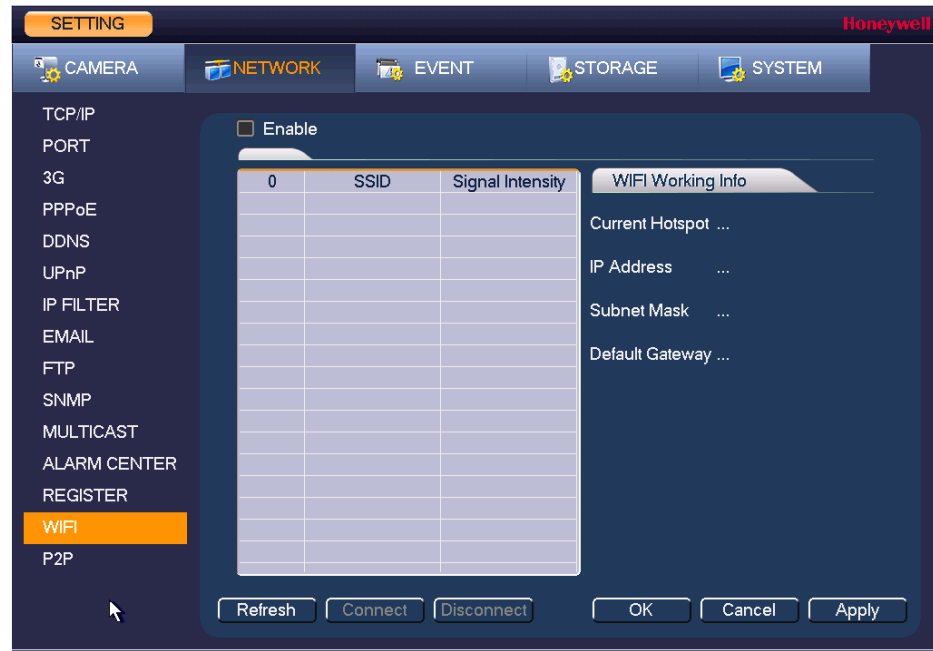
2.   On the **WIFI** setting page, you can do one or more of the following:

   • To enable automatic connections to Wi-Fi hotspots, select the **Enable** check box.

   • To disable automatic connections to Wi-Fi hotspots, clear the **Enable** check box.

   • To search for Wi-Fi hotspots, click **Refresh**.

   • To manually connect to a Wi-Fi hotspot, click **Connect**.

   • To disconnect from a Wi-Fi hotspot, click **Disconnect**.

   If a Wi-Fi connection is successfully established, the Wi-Fi hotspot name and connection details are displayed in the **WIFI Working Info** area.

3.   Click **Apply** to save your settings.

4.   If you want to save your settings and exit the **SETTING** menu, click **OK**.

Note   The system does not support WPA and WPA 2 verification types.

To configure 3G wireless connections

1.   In the **SETTING** field in the **Main Menu**, go to **NETWORK > 3G**.

Figure 7-4   Network 3G Window

2. On the **3G** page, you can configure the following settings:

Enable	Select or clear the check box to enable or disable 3G wireless connection using the selected wireless network adapter.
3G Network	Select the wireless network adapter name.
Network Type	Select the network type that meets your requirements.
APN	Select the wireless connection server that you want to use to access the wireless network.
AUTH	Select the authentication mode that you want to use to access the wireless network: **PAP** or **CHAP**.
Dial No.	Enter the 3G network dial-up number that you received from your Internet service provider.
User Name	Enter a user name for logging on to the 3G network.
User Password	Enter a password for logging on to the 3G network.
Pulse Interval	Enter the time, in seconds, of the 3G connection when the extra stream is disabled. For example, if you enter 5 seconds, the 3G connection lasts for 5 seconds and then the device automatically disconnects. If there is no extra stream, there is no restriction on the connection time.
Dial	Click **Dial** to manually enable or disable the 3G network connection.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Advanced Network Settings

This section describes how to configure PPPoE, DDNS, SMTP, FTP, UPnP, SNMP, and multicast settings.

Configuring PPPoE Settings

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > PPPoE**.

Figure 7-5   Network PPPoE Settings Window
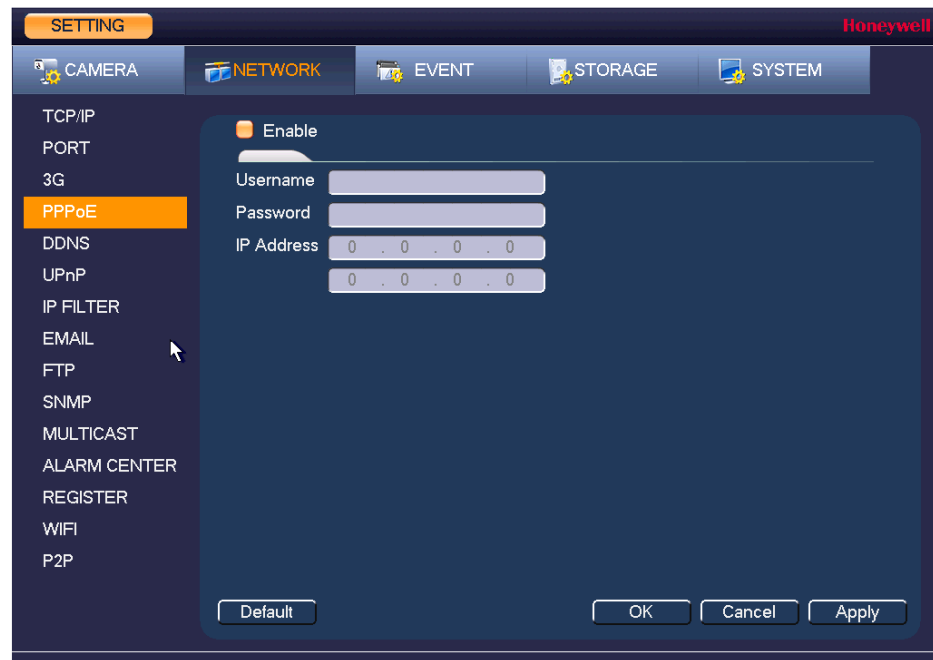
2. On the **PPPOE** page, select the **Enable** check box to enable a PPPoE network connection.

3. In the **Username** and **Password** boxes, enter the user name and password provided by your Internet service provider for PPPoE access.

4. Click **Apply** to save your settings.

5. If you want to save your settings and exit the **SETTING** menu, click **OK**.

6. Restart the NVR for the new network connection settings to take effect.

    The NVR's new IP address appears on the **PPPoE** page. Use this address when accessing the NVR remotely.

Configuring DDNS Settings

To enable a Dynamic DNS (DDNS) network connection

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > DDNS**.

Figure 7-6   Network DDNS Settings Window
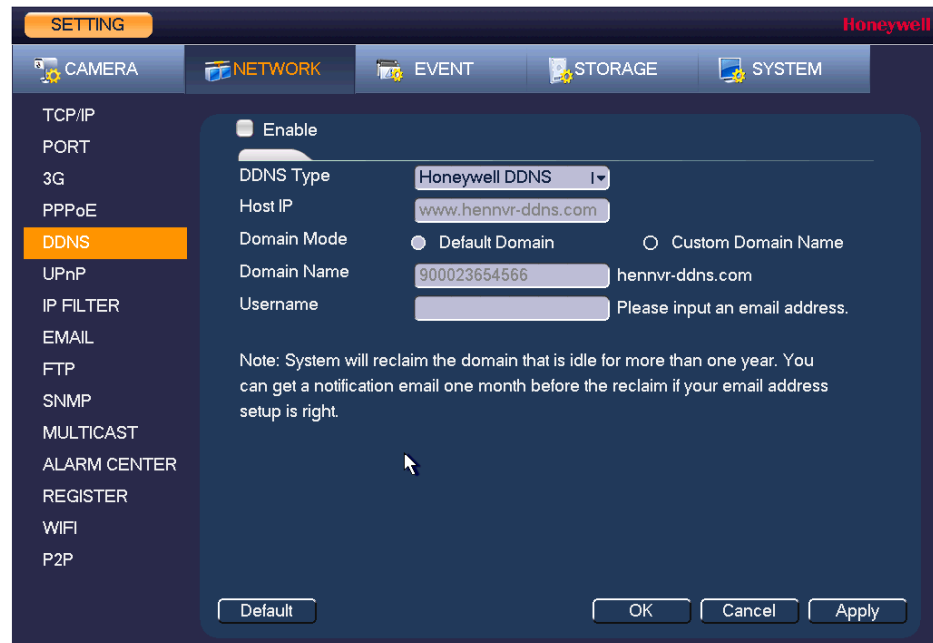
2. On the **DDNS** page, select the **Enable** check box to enable a DDNS network connection.

3. In the **DDNS Type** box, select the DDNS service that you want to use.

4. Depending on the DDNS Type you select, you may need to enter the following details:

Host IP	The address appears automatically unless **DDNS Type** is set to **Private DDNS**. In that case, enter the server IP address of your DDNS service provider.
Domain Mode	If **DDNS Type** is set to **Honeywell DDNS**, click **Default Domain** to use the default domain name or click **Custom Domain Name** to create your own domain name.
Domain Name	Enter a domain name (if you are not using a default domain name). You can obtain this from your DDNS service provider.
User Name	If applicable, enter a user name to access your DDNS service.

5. Click **Apply** to save your settings.

6. If you want to save your settings and exit the **SETTING** menu, click **OK**.

7. Restart the NVR for the new network connection settings to take effect.

8. To test the settings, on the **DDNS** page, click **Test**.

Configuring IP Filter Settings

To allow specific sites to access the NVR

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > IP Filter**.

Figure 7-7   Network IP Filter Settings Window
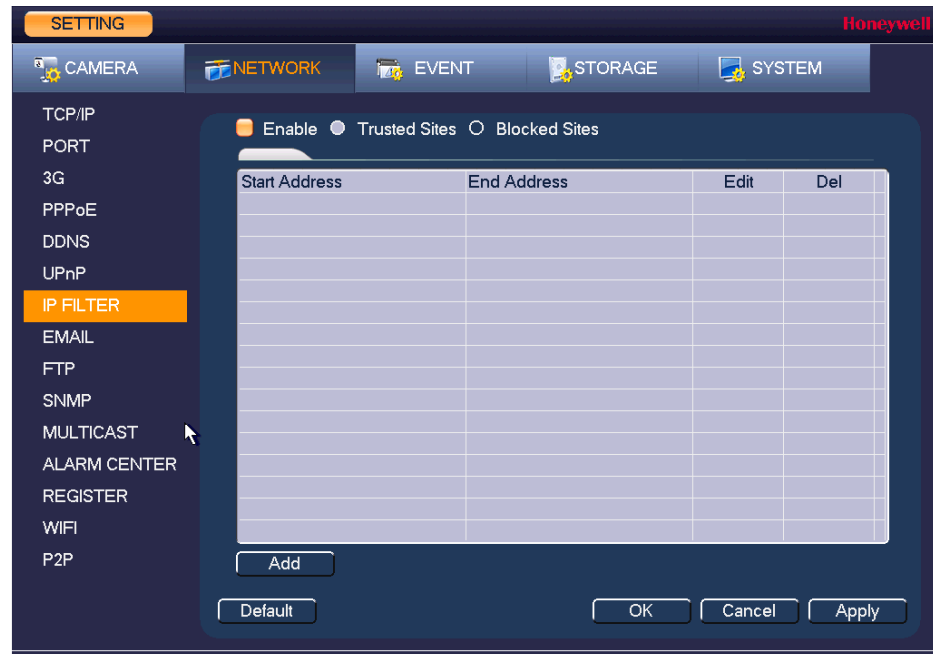
2. On the **IP Filter** page, select the **Enable** check box to enable IP filtering.

3. Next to the **Enable** check box, click **Trusted Sites**.

4. Click **Add**.

5. To add a single IP address, select **IP Address** from the drop-down list and enter the IP address of the site that you want to allow and click **OK**.
To add a range of IP addresses, select IP Section from the drop-down list and enter the starting address in the upper IP address field and the ending address in the lower field, and then click **OK**. Both IPv4 and IPv6 address are supported.
To add a specific machine, select **MAC Address** from drop-down list and enter the MAC address of the machine you want to allow and click **OK**.

6. Click **Apply** to save your settings.

7. If you want to save your settings and exit the **SETTING** menu, click **OK**.

To block specific sites from accessing the NVR

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > IP Filter**.

2. On the **IP Filter** page, select the **Enable** check box to enable IP filtering.

3. Next to the **Enable** check box, click **Blocked Sites**.

4. Click **Add**.

5. To add a single IP address, select **IP Address** from the drop-down list and enter the IP address of the site that you want to block and click **OK**.
To add a range of IP addresses, select IP Section from the drop-down list and enter the starting address in the upper IP address field and the ending address in the lower field, and then click **OK**. Both IPv4 and IPv6 address are supported.

6. Click **Apply** to save your settings.

7. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Email Settings

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > Email**.
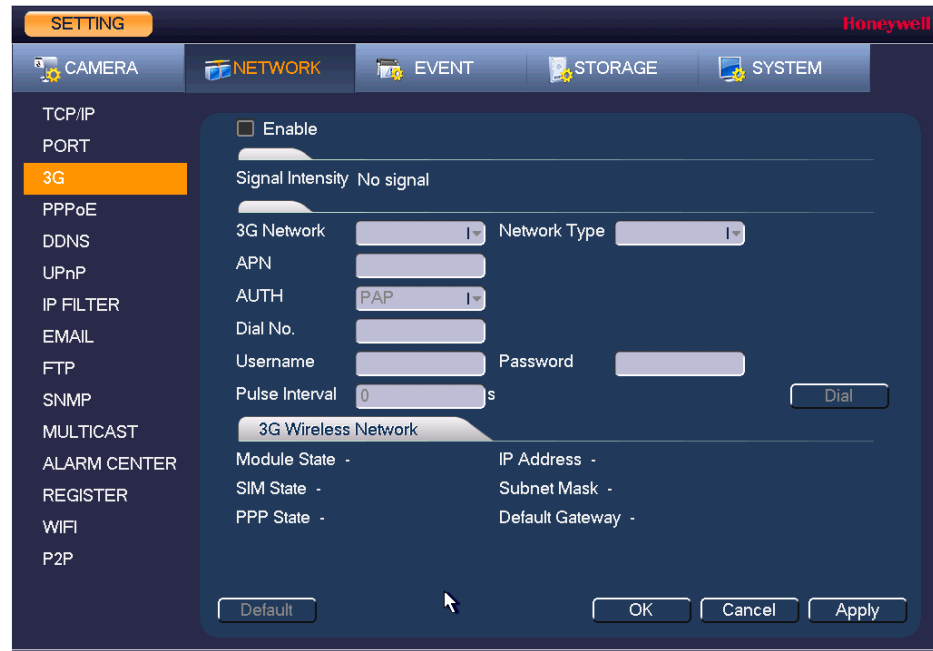
Figure 7-8   Network Email Settings Window

2. On the **EMAIL** page, select the **Enable** check box to enable email notifications for alarm events.

3. Configure the following settings:

- **SMTP Server**   Enter the SMTP server address of the sender's email account.
- **Port**   The default TCP/IP port used for SMTP is **25**.
- **Anonymous**   Select the check box to hide the sender's address in sent emails.
- **Username**   Enter the user name of the sender's email account.
- **Password**   Enter the password of the sender's email account.
- **Receiver**   Enter the email address where you want to send the notification. You can enter up to three email addresses.
- **Sender**   Enter the sender's email address.
- **Subject**   Enter the email subject line.
- **Attachment**   Select the check box to enable sending an image attachment with the email.
- **Encryption Type**   Select an encryption type: **None**, **SSL**, or **TLS**.
- **Interval**   This is the interval for sending emails. Enter a time between **0** and **3600** seconds. **0** means that there is no interval.
- **Health Enable**   Select the check box to enable a health check. The system sends a test email to check the connection.
- **Health Interval**   This is the interval the NVR waits between sending out health email checks. Enter a time between **30** and **1440** minutes. **30** is the default interval.

4. Click **Apply** to save your settings. To test the email settings, click **Test**.

5. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring FTP Settings

You can configure an FTP connection to upload image files at regular intervals to an FTP server.

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > FTP**.

    Figure 7-9   Network FTP Window

2. On the **FTP** page, click the **Enable** check box to enable uploading images to an FTP server.

3. Configure the following settings:

    *   **Host IP**   Enter the address of the FTP server.
    *   **Port**   Enter the port of the FTP server.
    *   **Username**   Enter the user name for logging on to the FTP server.
    *   **Password**   Enter the password for logging on to the FTP server.
    *   **Anonymous**   Select the check box to hide user name when logged on to the FTP server.
    *   **Remote Directory** Enter a name for the remote directory. If this is left blank, the NVR will automatically create folder names.
    *   **File Length**   This is the maximum size for image files being uploaded to the FTP server. Enter a value between **0** and **65535** MB.
    *   **Image Upload Interval**   This is the interval for uploading images to the FTP server. Enter a time between **1** and **600** seconds.
    *   **Channel**   Select a channel to upload images from, or select **All** to select all channels.
    *   **Weekday**   Select a day of the week to upload images on, or select **All** to upload images every day.
    *   **Time Periods**   You can configure up to two time periods for uploading images. For each period, select either **Alarm&Analytics**, **Motion**, or **Regular** images.

4. Click **Apply** to save your settings. To test the FTP connection, click **Test**.

5. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring UPnP Settings

The Universal Plug and Play (UPnP) protocol is used to map the relationship between the LAN and the WAN.

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > UPnP**.

Figure 7-10   Network UPnP Settings Window

2. On the **UPnP** page, configure the following settings:

    - **PAT**   Click to enable or disable PAT.
    - **UPNP VAV Reporting**   Click to enable UPnP VAV reporting. When you enable this feature you will be asked to enter a password.
    - **Status**   Displays the status of the UPnP connection.
    - **LAN IP**   Enter the NVR's IP address from the **TCP**/**IP** page.
    - **WAN IP**   Enter the router IP address.

3. If you want, you can edit a mapping relationship from the **Port Mapping List**. Double-click the mapping relationship that you want to edit, and then, in the **Port Info** dialog box, edit the **Service Name**, **Protocol**, **Internal Port**, and/or **External Port** details, and then click **OK**. Avoid using ports 1 to 255 or 256 to 1023.

4. Click **Apply** to save your settings.

5. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring SNMP Settings

You can use Simple Network Management Protocol (SNMP) to receive information from the NVR remotely. You will need to install SNMP software on a PC to receive information from the NVR via SNMP.

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > SNMP**.

Figure 7-11   Network SNMP Settings Window

2. On the **SNMP** page, select the **Enable** check box to enable SNMP.

3. Configure the following settings:

- **Version** — Select the check boxes of the SNMP version that you are using.
- **SNMP Port** — The default setting is **161**.
- **Read Community** — The default setting is **public**.
- **Write Community** — The default setting is **private**.
- **Trap Access** — Enter the IP address of the computer running SNMP software.
- **Trap Port** — The default setting is **162**.

4. If SNMP Version **V3** is selected, the following settings are also configurable:

- **ReadOnly User** — The default setting is **public**.
- **Read/Write User** — The default setting is **private**.
- **Authorize Type** — Select the authorization type, **MD5** or **SHA**, for both the ReadOnly and Read/Write users. The default setting is **MD5**.
- **Password** — Enter the authorization passwords for both the ReadOnly and Read/Write users.
- **Encryption Type** — Select the encryption type for both the ReadOnly and Read/Write users. The default setting is **CBC-DES** and is currently the only encryption option.
- **Password** — Enter the encryption passwords for both the ReadOnly and Read/Write users.

5. Click **Apply** to save your settings.

6. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Multicast Settings

Multicast allows for simultaneous real-time monitoring of live video from the NVR at multiple remote locations over the network.

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > Multicast**.

Figure 7-12   Network Multicast Settings Window
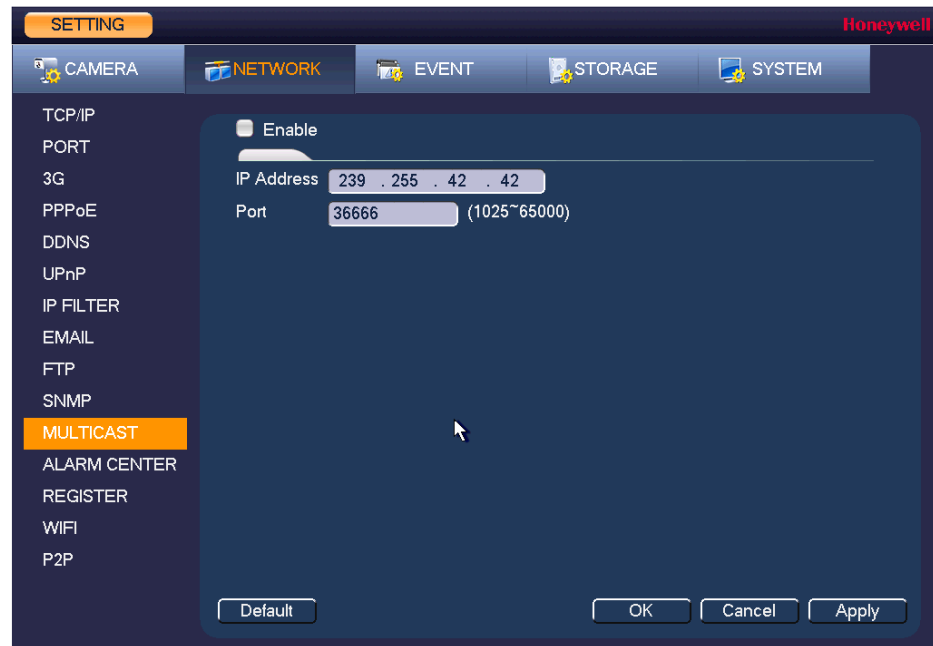
2. On the **Multicast** page, select the **Enable** check box to enable multicast.

3. In the **IP Address** box, enter a multicast IP address. The address must be valid for multicasting and should be in the range 224.0.0.0 to 239.255.255.255 for IPv4 or have the prefix ff00::/8. An address in the range 239.252.0.0 to 239.255.255.255 is recommended.

4. In the **Port** box, enter a multicast port number or use the default setting (**36666**).

5. Click **Apply** to save your settings.

6. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Registration Settings

Automatic Registration 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, where the proxy has a switch function. In the network service, the device supports the server address of the IPv4.

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > Register**.

1. Configure the proxy Host IP address, port, and sub-device ID at the device end.

Note   The proxy server generates a serial number for the sub-device ID.

---

2. Enable the auto register function in the NVR.

The NVR should now be able to automatically register to the proxy server.

Configuring Alarm Center Settings

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > Alarm Center**.

Figure 7-13   Network Alarm Center Settings Window
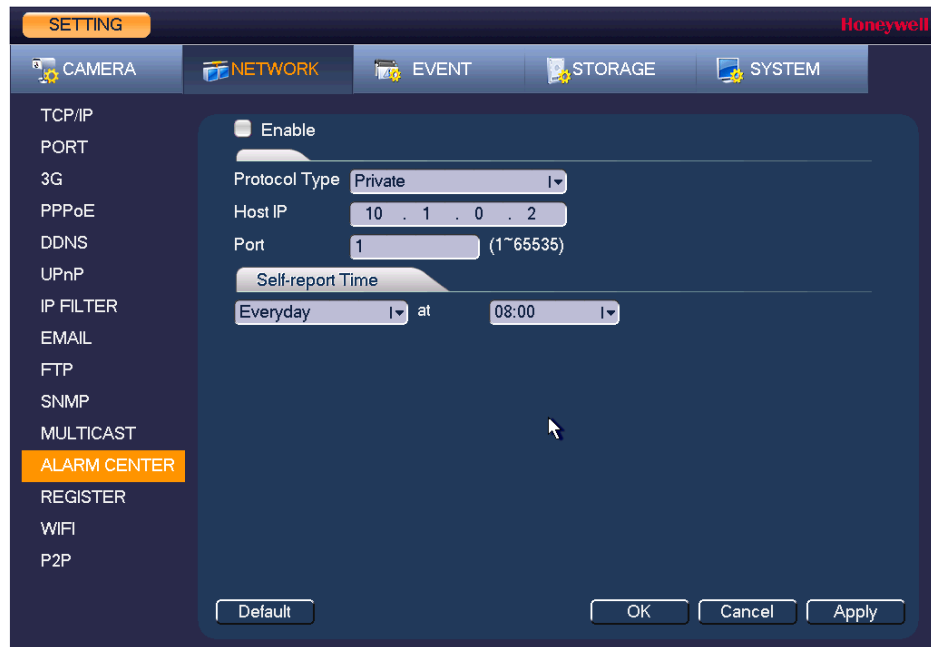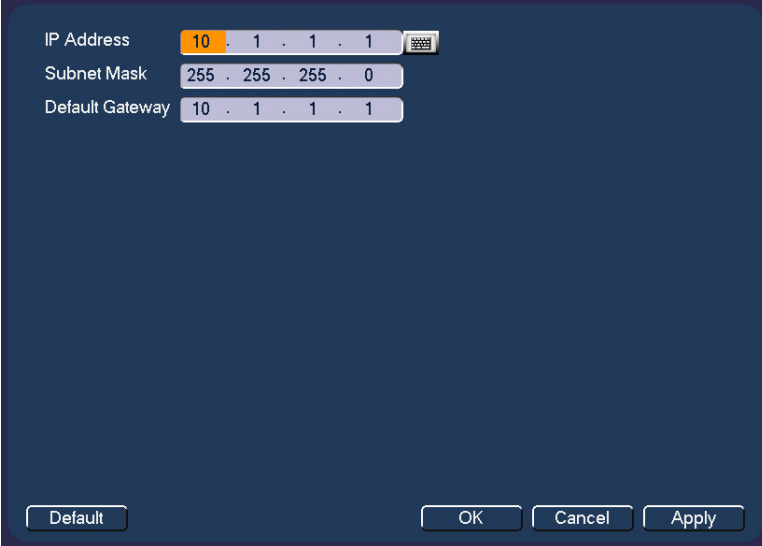
2. On the **Alarm Center** page, select the **Enable** check box to enable the alarm center function.

3. Configure the following settings:

   • **Protocol Type**   Select **Private**.
   • **Host IP**   Enter the host address of your alarm platform.
   • **Port**   Enter the port of your alarm platform.

4. Set the **Self-report Time** (everyday or a specific day of the week at a specific time, or never).

5. Click **Apply** to save your settings.

6. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Switch Settings

You can change the IP Address, Subnet Mask, and Default Gateway for setting the PoE switch settings.

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > Switch**.

Figure 7-14   Network Switch Settings Window

2. Configure the following settings:

  • **IP Address**   Enter a new IP address.
  • **Subnet Mask**   Enter a new subnet mask.
  • **Default Gateway**   Enter a new default gateway.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring P2P Settings

You can easily connect to the unit using a mobile device with the HonView Touch app using the P2P screen. To use this option you will need the HonView Touch app downloaded, installed, and have registered/created an account. When the app is setup, select to add a device and use the camera to view the QR code on the P2P screen (as shown in *Figure 7-15*). The device's information and connection will automatically be downloaded to the HonView Touch app and you can now connect to the NVR using your mobile device.

1. In the **SETTING** field in the **Main Menu**, go to **NETWORK > P2P**.

Figure 7-15   Network P2P Settings Window
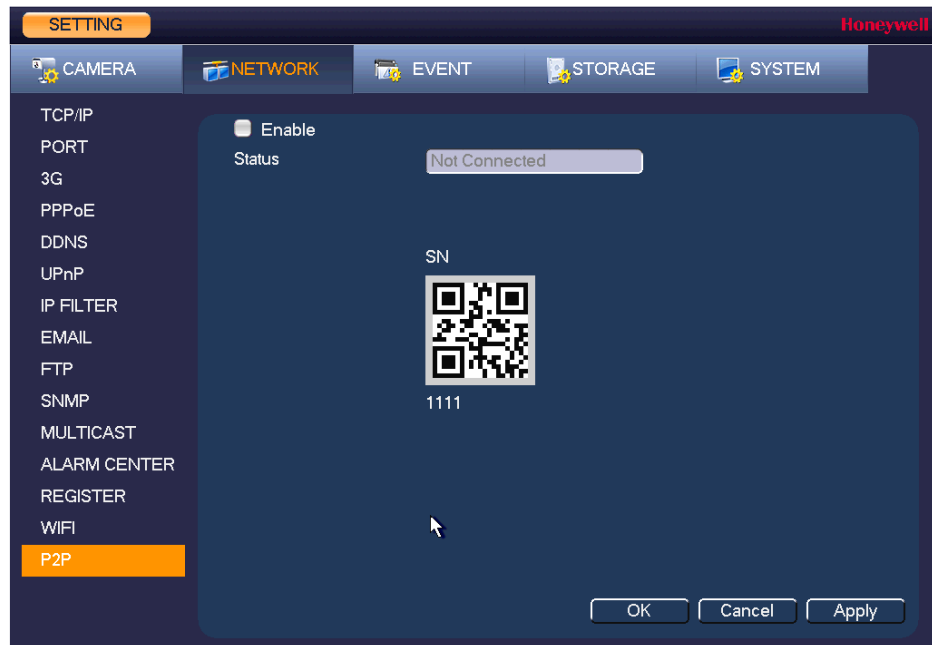
2. Check the **Enable** check box.

3. Using a mobile device running the HonView Touch app, select to add a device.

4. Use the mobile device's camera to view the QR code on the P2P screen.

5. The HonView Touch app will automatically download the NVR information and establish a connection.

8

Configuring Event Settings

This chapter contains the following sections:

Configuring Motion Detection Settings

To set up motion detection regions

1. Go to **Main Menu** > **SETTING** > **EVENT** > **VIDEO DETECTION** > **Motion Detection**.

Figure 8-1   Motion Detection Settings Tab
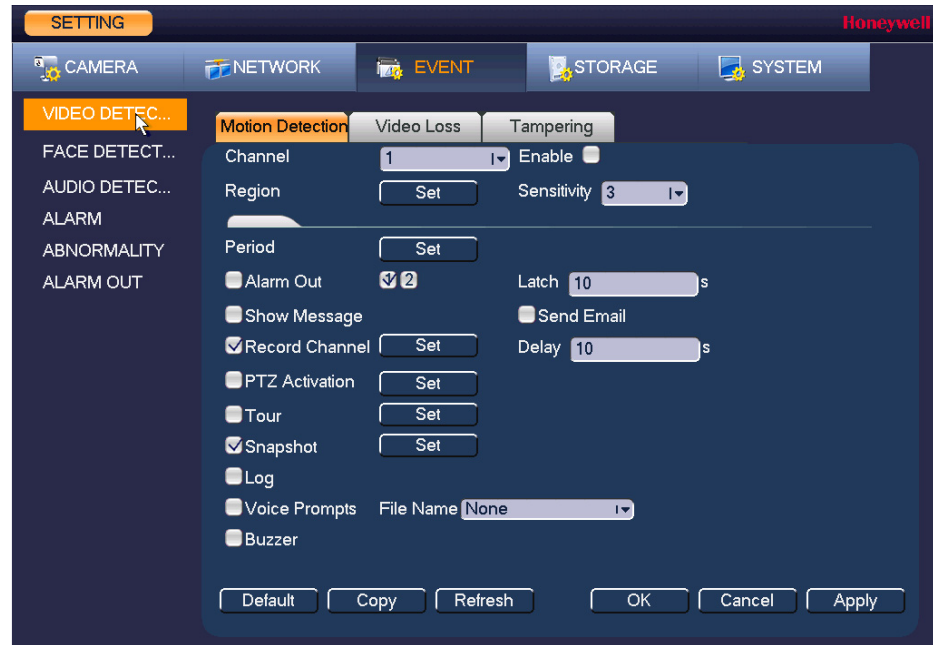
2. On the **Motion Detection** tab, in the **Channel** box, select the channel (camera) to configure for motion detection.

3. Select the **Enable** check box to enable motion detection for the selected channel.

4. Next to **Region**, click **Set** to define the motion detection region. A grid appears over the live view screen and the motion detection region dialog box (*Figure 8-2*) appears.

Figure 8-2   Motion Detection - Region Configuration Window

Select the region to configure
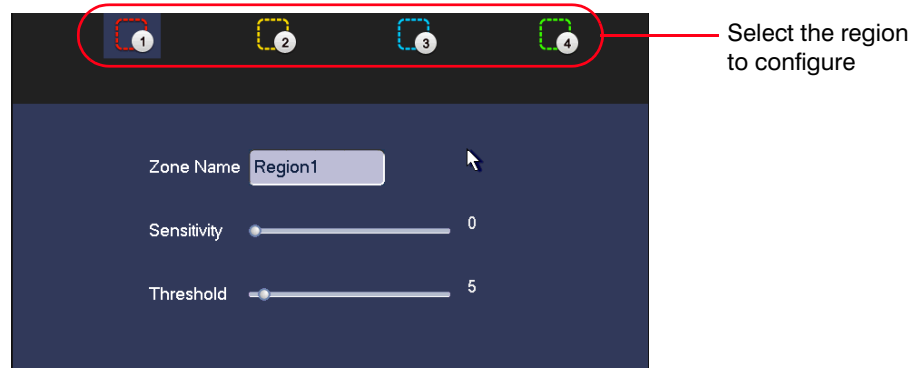
5. Set the **Sensitivity** level (0–100) and **Threshold** level (0–100) for the region(s) you want to configure. Select from region 1-4 with the icons at the top of the dialog.

Sensitivity refers to the amount of change (as a percentage) in the image pixels between frames. Moving the **Sensitivity** slider to the left decreases the sensitivity of the motion detection and therefore more movement is required to trigger a motion detection event.

Threshold is the amount of motion required to trigger an event notification.

> **Note** The best way to configure motion detection is to experiment with the sensitivity and threshold settings while someone is walking in front of the camera.

6. By default, motion detection **Region1** covers the whole screen.

   • To disable motion detection in part of the image, drag the mouse over the area of the image that you want to exclude. The areas *not* covered by red boxes are *not* sensitive to motion.

   • To change the threshold level in part of the image, select a different motion detection region (**Region2**, **Region3**, or **Region4**), set the **Threshold** level for that region, and then drag the mouse to define the region.

   • Each region is represented by a different color. Red=Region1, Yellow=Region2, Blue=Region3, Green=Region4. If the grid is clear of color, then no motion detection is set for that area. Test the motion detection areas to make sure motion is not triggered too much when not needed, such as by wind and background movement.

   • To change the name of a region, enter a new name for it in the **Zone Name** field.

7. Right-click to return to the **SETTING** menu.

8. Click **Apply** to save your settings.

9. If you want to save your settings and exit the **SETTING** menu, click **OK**.

To set up motion detection periods

1. On the **Motion Detection** tab, next to **Period**, click **Set**. The **Set** window opens.

   Figure 8-3   Motion Detection Schedule Configuration Window
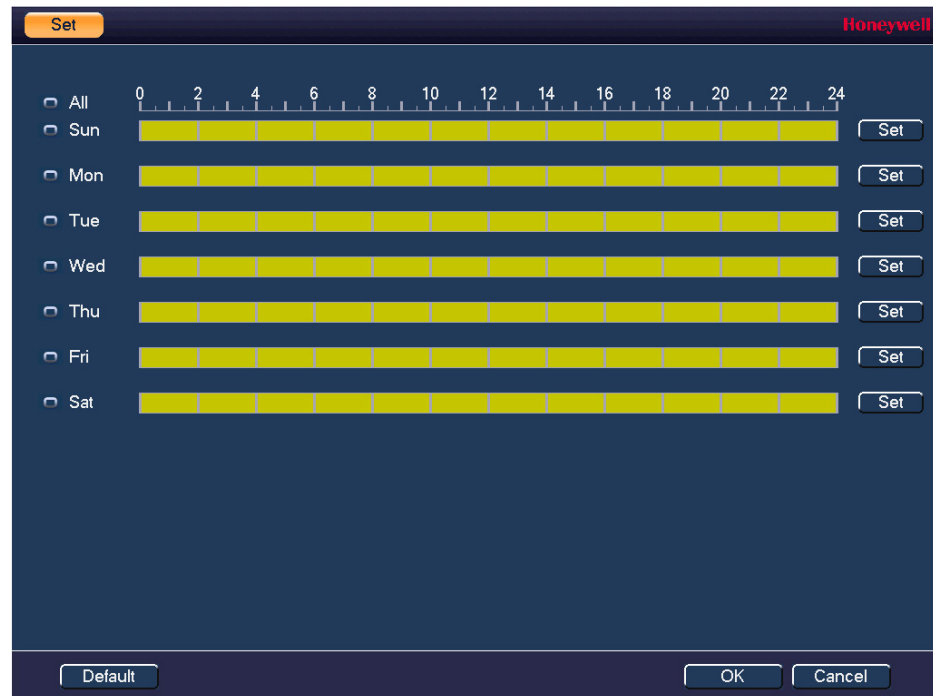
2.   By default, when motion detection is enabled, it is active all the time. To modify the periods when motion detection is active for the selected channel, on each day's timeline, click the half-hour blocks when you want motion detection to be *disabled*.

3.   Alternatively, for the day of the week that you want to configure, click **Set**. The **Period** window opens (see *Figure 8-4*).

Figure 8-4   Motion Detection Period Configuration Window

a.   Set up to six periods in the day when you want the motion detection settings for the selected channel to be active.

b.   Select the check box next to each configured period to enable it.

c.   To copy the settings to additional days, select the appropriate check box(es) under **Copy**.

d.   Click **OK** to return to the previous window.

4.   After you have finished setting up the motion detection periods, click **OK**.

To set up motion detection event actions

1.   Go to **Main Menu > SETTING > EVENT > VIDEO DETECTION > Motion Detection**.

Figure 8-5   Motion Detection Configuration Tab
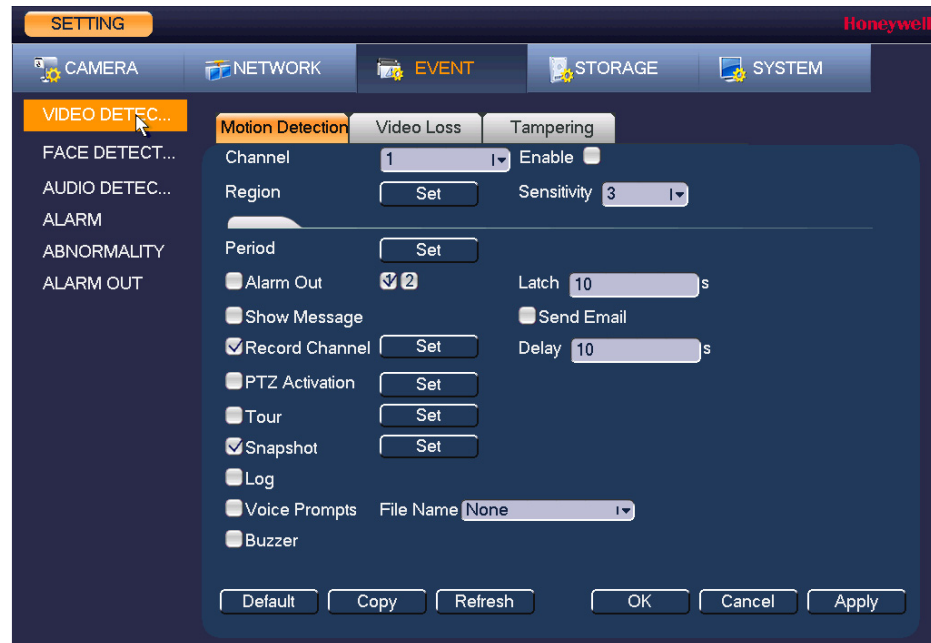
2. On the **Motion Detection** tab, select the actions that you want the system to initiate when a motion detection event occurs:

- **Alarm Out**   Select the alarm output(s) (**1** or **2**) to activate when motion is detected. In the **Latch** box, specify the amount of time (0–300 s) to delay the alarm output signal after a motion detection event is triggered.

- **Show Message**   Select the check box to enable a pop-up message on your local host PC.

- **Send Email**   Select the check box to enable the system to send an email notification. If the **Snapshot** function is enabled, an image can be attached to the email. Email settings must be configured to use this option (see *Configuring Email Settings* on page 81).

- **Record Channel**   Select the channel(s) that you want to record when motion is detected. In the **Delay** box, specify the amount of time (10–300 s) to delay recording after a motion detection event is triggered.

  > **Note**   You also need to set the motion detection recording period. Go to **Storage > Schedule > Rec** to configure the current channel for motion recording. See *Configuring the Video Recording Schedule* on page 51.

- **PTZ Activation**   Select the check box to activate PTZ functions, and then click **Set**. In the **PTZ Activation** window, for each PTZ camera, select the preset, tour, or pattern that you want to be called when a motion detection event occurs, and then click **OK**.

- **Tour**   Select the check box to enable a tour of the selected channels.

- **Snapshot**   Select the check box to take a snaphot of selected channels.

- **Log**   Select the check box to enable logging of motion detected events.

- **Voice Prompts**   Select the check box to enable the playing of a voice prompt audio file when motion is detected. Use the **File Name** drop-down arrow to select the audio file to play when motion is detected.

- **Buzzer**   Select the check box to activate a buzzer noise at the NVR.

3. Click **Apply** to save your settings.

4. To copy the motion detection settings to additional channels, click **Copy**, select the channels to which you want to copy the settings, and then click **OK**.

Configuring Video Loss Settings

1. Go to **Main Menu > SETTING > EVENT > VIDEO DETECTION > Video Loss**.

Figure 8-6   Video Loss Configuration Tab
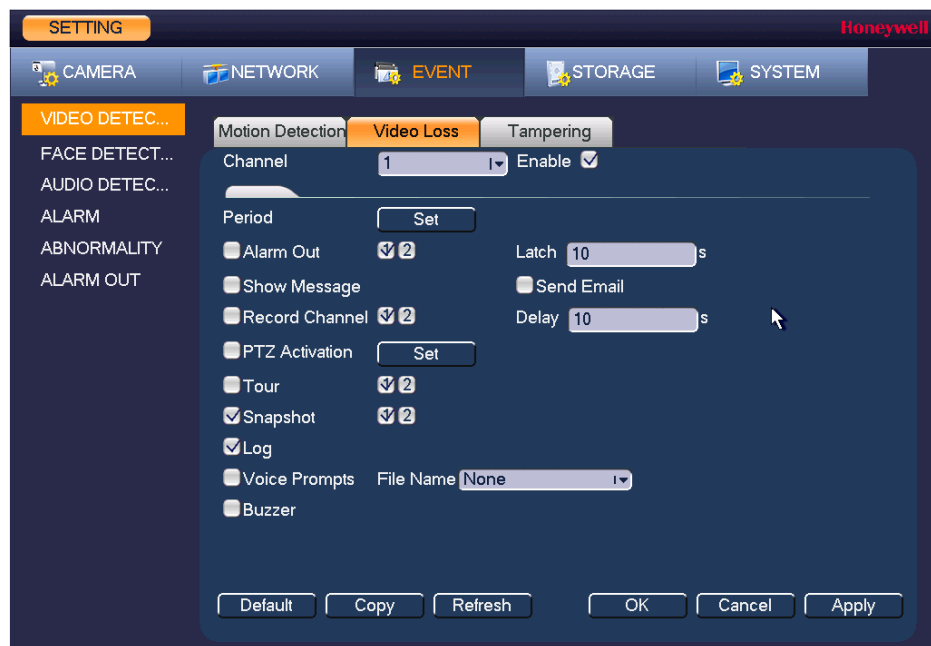
2. On the **Video Loss** tab, in the **Channel** box, select the channel (camera) for which you want to configure video loss detection settings.

3. Select the **Enable** check box to enable video loss detection for the selected channel.

4. To set the periods when video loss detection is active, next to **Period**, click **Set**, and then follow the steps listed in *To set up motion detection periods* on page 91.

5. To set the actions that you want the system to initiate when a video loss event occurs, follow the steps listed in *To set up motion detection event actions* on page 92.

6. Click **Apply** to save your settings.

7. To copy the settings to additional channels, click **Copy**, select the channels to which you want to copy the settings, and then click **OK**.

Configuring Video Tampering Settings

1. Go to **Main Menu > SETTING > EVENT > VIDEO DETECTION > Tampering**.

Figure 8-7   Video Tampering Configuration Tab

2. On the **Tampering** tab, in the **Channel** box, select the channel (camera) for which you want to configure video tampering detection settings.

3. Select the **Enable** check box to enable video tampering detection for the selected channel.

4. To set the periods when video tampering detection is active, next to **Period**, click **Set**, and then follow the steps listed in *To set up motion detection periods* on page 91.

5. To set the actions that you want the system to initiate when a video tampering event occurs, follow the steps listed in *To set up motion detection event actions* on page 92.

6. Click **Apply** to save your settings.

7. To copy the settings to additional channels, click **Copy**, select the channels to which you want to copy the settings, and then click **OK**.

Configuring System Abnormality Event Settings

There are two types of system events: HDD errors (no HDD, HDD error, no space) and network errors (disconnect, IP conflict, MAC conflict).

Configuring HDD Event Settings

1. Go to **Main Menu > SETTING > EVENT > ABNORMALITY > HDD**.

Figure 8-8   HDD Abnormality Configuration Tab
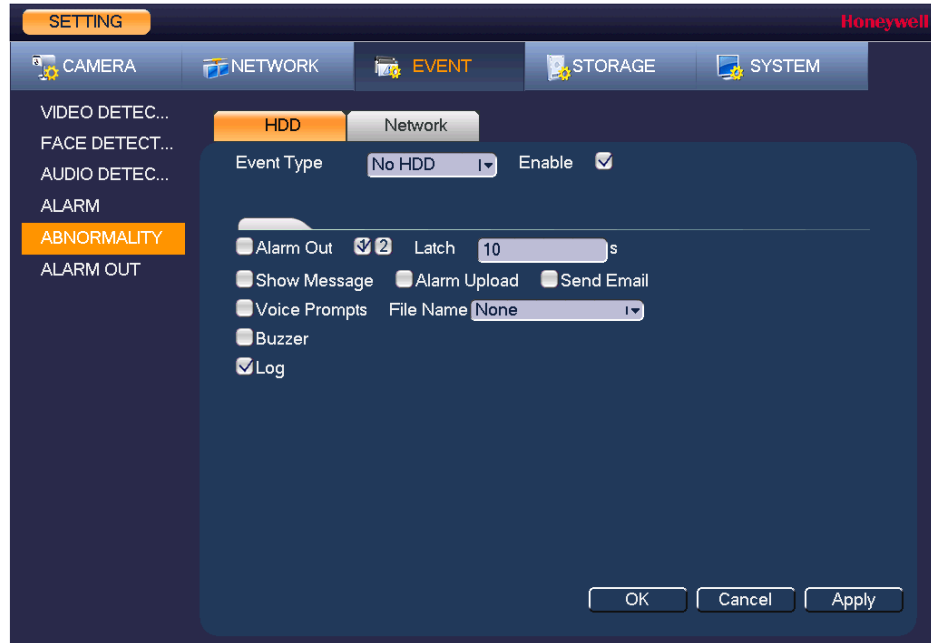
2. On the **HDD** tab, in the **Event Type** box, select the event type that you want to configure settings for: **No HDD**, **HDD Error**, **No Space**. If you select the **No Space** event, you can specify how low the HDD space will get before triggering the event in the **Less Than** field.

3. Select the **Enable** check box to enable HDD event detection for the event type selected.

4. Select the actions that you want the system to initiate when the selected event occurs:

   - **Alarm Out**   Select the alarm output(s) (**1** or **2**) that you want to activate. In the **Latch** box, specify the amount of time (0–300 s) to delay the alarm output signal after the HDD event is triggered.

   - **Show Message**   Select the check box to enable a pop-up message on your local host PC.

   - **Alarm Upload**   Select the check box to enable the system to upload an alarm signal to the network (including to an alarm center and/or web client).

   - **Send Email**   Select the check box to enable the system to send an email notification. To set up Email settings, see *Configuring Email Settings* on page 81.

   - **Voice Prompts**   Select the check box to enable the playing of a voice prompt audio file when an HDD event is triggered. Use the **File Name** drop-down arrow to select the audio file to play for HDD events.

   - **Buzzer**   Select the check box to activate a buzzer noise at the NVR.

   - **Log**   Select the check box to enable logging of HDD events.

5. Click **Apply** to save your settings.

Configuring Network Event Settings

1. Go to **Main Menu > SETTING > EVENT > ABNORMALITY > Network**.

Figure 8-9   Network Abnormality Configuration Tab
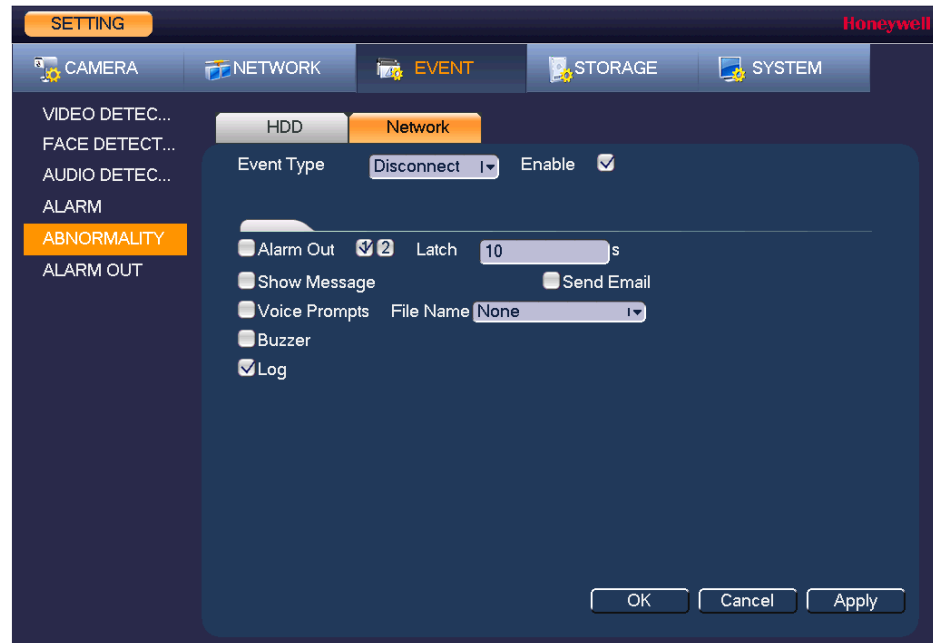
2. On the **Network** tab, in the **Event Type** box, select the event type for which you want to configure settings: **Disconnect**, **IP Conflict**, **MAC Conflict**.

3. Select the **Enable** check box to enable network error detection for the selected event type.

4. Select the actions that you want the system to initiate when the selected event occurs:

- **Alarm Out**   Select the check box to activate the selected alarm output(s) (**1** or **2**). In the **Latch** box, specify the amount of time (0–300 s) to delay the alarm output signal after the network event is triggered.

- **Show Message**   Select the check box to enable a pop-up message on your local host PC.

- **Send Email**   Select the check box to enable the system to send an email notification. To set up Email settings, see *Configuring Email Settings* on page 81.

- **Voice Prompts**   Select the check box to enable the playing of a voice prompt audio file when a network event is triggered. Use the **File Name** drop-down arrow to select the audio file to play for network events.

- **Buzzer**   Select the check box to activate a buzzer noise at the NVR.

- **Log**   Select the check box to enable logging of network events.

5. Click **Apply** to save your settings.

Configuring Alarm Input Settings

Configuring IPC External Alarms

To configure IPC external alarms

1. Go to **Main Menu** > **SETTING** > **EVENT** > **ALARM** > **IPC Ext**.

   Figure 8-10   IPC External Alarm Configuration Tab
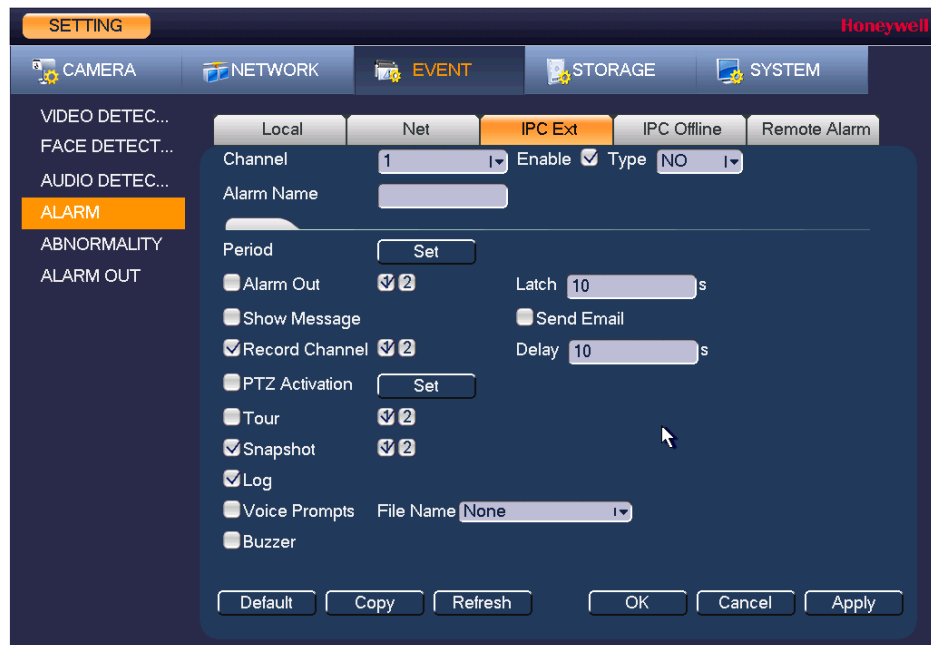
2. On the **IPC Ext** tab, select the channel to configure the external alarm settings from the drop-down menu.

3. Select the **Enable** check box to enable alarm detection of the selected alarm input.

4. In the **Type** box, select the alarm input type: **NC** (Normal Close) or **NO** (Normal Open).

5. Enter a name for the alarm in the **Alarm Name** field.

To set up alarm input detection periods

1. On the **Alarm** tab, next to **Period**, click **Set**. The **Set** window opens.
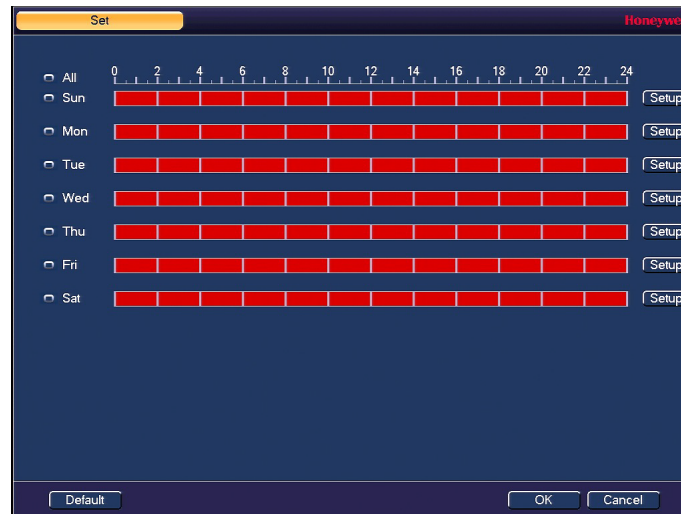
2. By default, when alarm detection is enabled, it is active all the time. To modify the periods when alarm detection is active, on each day's timeline, click the half-hour blocks when you want alarm detection for the selected alarm input to be *disabled*.

3. Alternatively, for the day of the week that you want to configure, click **Set**. The **Period** window opens.

   a. Set up to six periods in the day when you want alarm detection for the selected alarm input to be active.

   b. Select the check box next to each configured period to enable it.

   c. To copy the settings to additional days, select the appropriate check box(es) under **Copy**.

   d. Click **OK** to return to the previous window.

4. After you have finished setting up the alarm detection periods, click **OK**.

To set up alarm input event actions

1. On the **Alarm** tab, select the actions that you want the system to initiate when an alarm input trigger occurs:

   - **Alarm Out**   Select the check box to activate the selected alarm output(s) (**1** or **2**). In the **Latch** box, specify the amount of time (0–300 s) to delay the alarm output signal after an alarm event is triggered.

   - **Show Message**   Select the check box to enable a pop-up message on your local host PC.

   - **Send Email**   Select the check box to enable the system to send an email notification. If the **Snapshot** function is enabled, an image can be attached to the email. To set up Email, see *Configuring Email Settings* on page 81.

   - **Record Channel**   Select the channel(s) that you want to record when the alarm is triggered. In the **Delay** box, specify the amount of time (10–300 s) to delay recording after an alarm event is triggered.

       > **Note**   You also need to set the alarm recording period. Go to **Storage** > **Schedule** to configure the current channel for scheduled alarm recording. See *Configuring the Video Recording Schedule* on page 51.

   - **PTZ Activation**   Select the check box to activate PTZ functions, and then click **Set**. In the **PTZ Activation** window, for each PTZ camera, select the preset, tour, or pattern that you want to be called when the alarm event occurs, and then click **OK**.

   - **Tour**   Select the check box to enable a tour of the selected channels.

   - **Snapshot**   Select the check box to take a snapshot of selected channels.

   - **Log**   Select the check box to enable logging of the alarm input event.

   - **Voice Prompts**   Select the check box to enable the playing of a voice prompt audio file when an alarm input event is triggered. Use the **File Name** drop-down arrow to select the audio file to play for the alarm events.

   - **Buzzer**   Select the check box to activate a buzzer noise at the NVR.

2. Click **Apply** to save your settings.

3. To copy the alarm event settings to additional channels, click **Copy**, select the channels to which you want to copy the settings, and then click **OK**.

Configuring IPC Offline Alarm Events

Go to **Main Menu** > **SETTING** > **EVENT** > **ALARM** > **IPC Offline**.

Figure 8-11 IPC Offline Alarm Configuration Tab
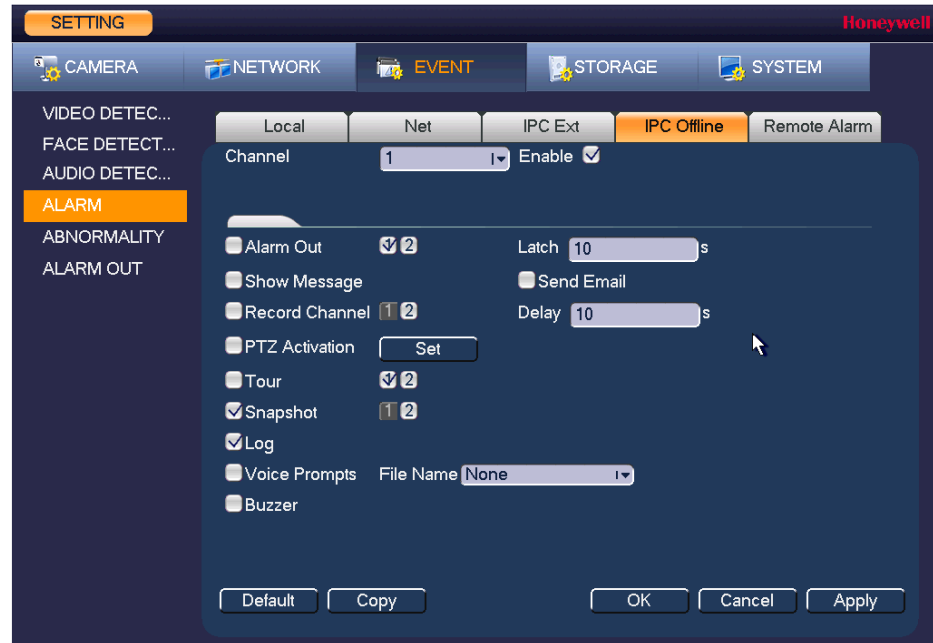
To configure for alarms for no IP camera signal, select the channel (camera) to set an alarm if the camera signal goes offline and follow the same steps as for configuring IPC External Alarm inputs event actions, on *page 100*.

Configuring Local Alarm Inputs

A local alarm is an alarm signal from a local device connected to the NVR.

Go to **Main Menu** > **SETTING** > **EVENT** > **ALARM** > **Local**.

Figure 8-12   Local Alarm Configuration Tab
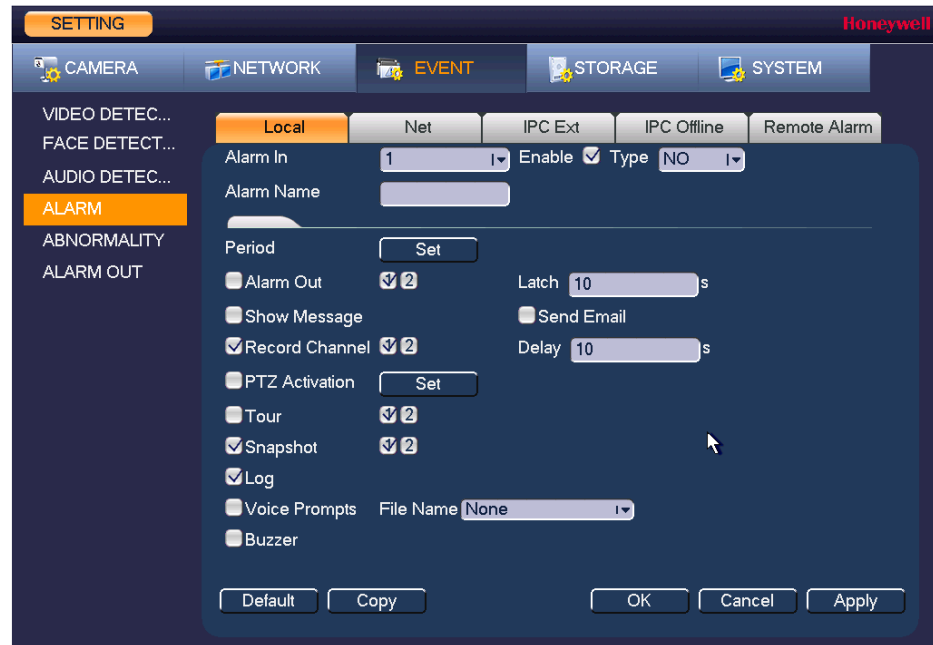
To configure local alarm inputs, follow the same steps as for configuring IPC External Alarm inputs, on *page 98*.

Configuring Network Alarm Inputs

Network alarms are alarm signals from the network.

Go to **Main Menu** > **SETTING** > **EVENT** > **ALARM** > **Net**.

Figure 8-13   Net Alarm Configuration Tab

A network alarm is an alarm signal originating from the TCP/IP network connection. You can use NET SDK protocol to activate the network alarm.

To configure network alarm input actions, follow the same steps as for configuring IPC External Alarm inputs event actions, on *page 100*.

Configuring Remote Alarm Inputs

A remote alarm is an alarm signal from a remote site connected to the NVR.

Go to **Main Menu** > **SETTING** > **EVENT** > **ALARM** > **Remote Alarm**.

Figure 8-14 Remote Alarm Configuration Tab
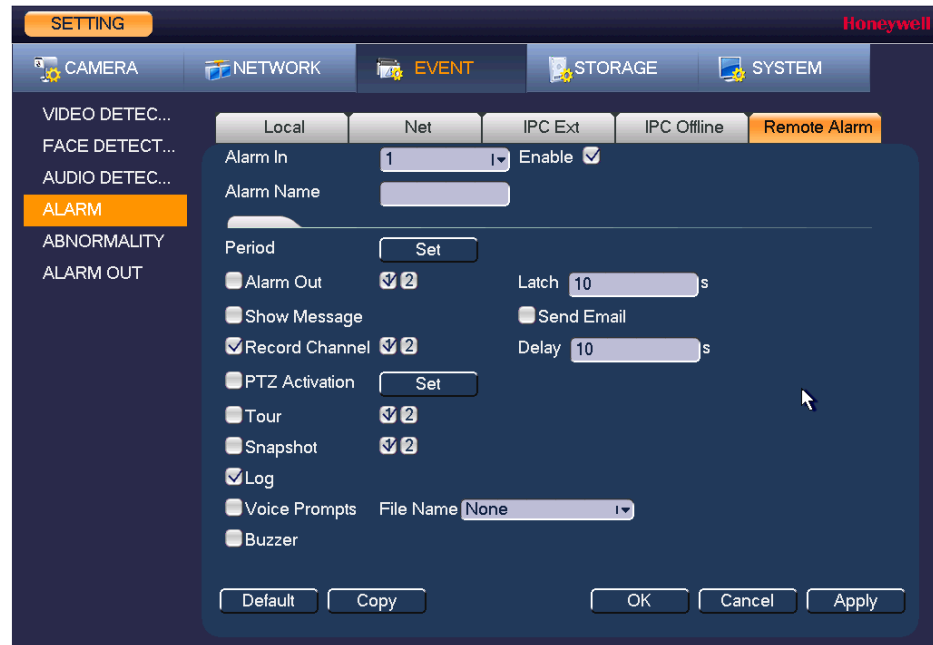
To configure remote alarm input actions, follow the same steps as for configuring IPC External Alarm inputs event actions, on *page 100*.

Configuring Face Detection Settings

The face detection feature analyzes the video to detect if there are any human faces appearing in the video. If a face appears it will capture the face with either snapshots, recordings, or alarms so it can be processed or analyzed further.

1. Go to **Main Menu > SETTING > EVENT > Face Detection**.

2. Select the **Channel** to configure for face detection from the drop-down menu and check the **Enable** check box.

3. Check the **Face ROI** (region of interest) check box if you want a region of interest showing the detected face to be displayed when an event occurs.

4. Click **RULE** to open a video image to set the **Min Size** and **Max Size** of a face that will trigger face detection. Use the mouse to drag and resize the Min and Max size boxes in the video image.

5. To set the periods when face detection is active, next to **Period**, click **Set**, and then follow the steps listed in *To set up motion detection periods* on page 91.

Figure 8-15   Face Detection Configuration Screen
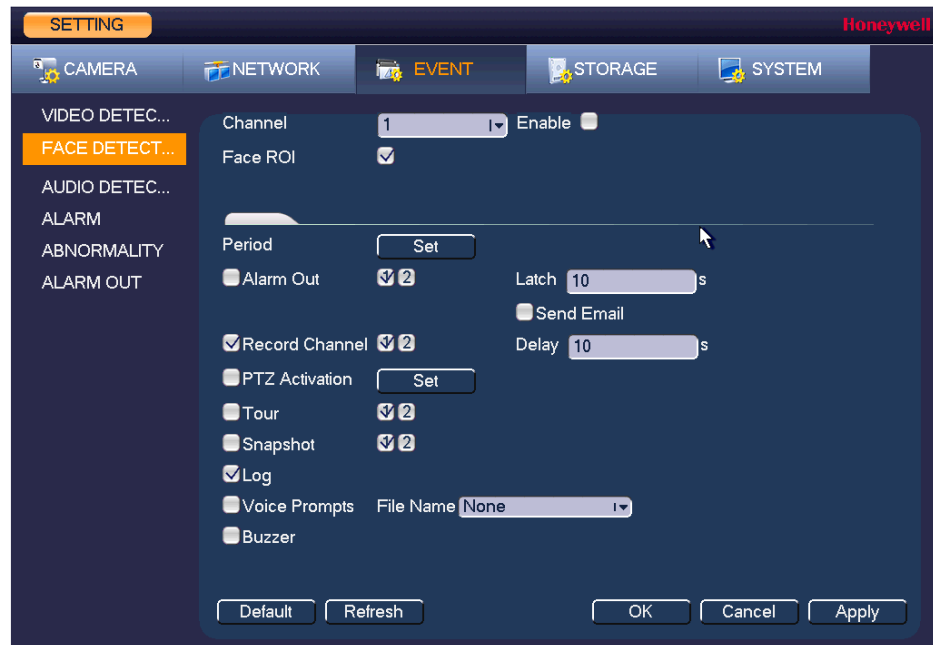
6. Select the action(s) that you want the system to initiate when a face detection event occurs:

- **Alarm Out**   Select the check box to activate the selected alarm output(s) (**1** or **2**). In the **Latch** box, specify the amount of time (0–300 s) to delay the alarm output signal after a face detection event is triggered.

- **Send Email**   Select the check box to enable the system to send an email notification. If the **Snapshot** function is enabled, an image can be attached to the email. To set up Email, see *Configuring Email Settings* on page 81.

- **Record Channel** Select the channel(s) that you want to record when the alarm is triggered. In the **Delay** box, specify the amount of time (10–300 s) to delay recording after a face detection event is triggered.

    > **Note**   You also need to set the alarm recording period. Go to **Storage** > **Schedule** to configure the current channel for scheduled alarm recording. See *Configuring the Video Recording Schedule* on page 51.

- **PTZ Activation**   Select the check box to activate PTZ functions, and then click **Set**. In the **PTZ Activation** window, for each PTZ camera, select the preset, tour, or pattern that you want to be called when the face detection event occurs, and then click **OK**.

- **Tour**   Select the check box to enable a tour of the selected channels.

- **Snapshot**   Select the check box to take a snapshot of selected channels.

- **Log**   Select the check box to enable logging of the face detection event.

- **Voice Prompts**   Select the check box to enable the playing of a voice prompt audio file when a face detection event is triggered. Use the **File Name** drop-down arrow to select the audio file to play for the events.

- **Buzzer**   Select the check box to activate a buzzer noise at the NVR.

7. Click **Apply** to save your settings. To return to the main menu, click **OK**.

Configuring Audio Detection Settings

The audio detection feature detects audio changes in the camera scene that can generate events and corresponding actions.

1. Go to **Main Menu** > **SETTING** > **EVENT** > **Audio Detection**.

2. Select the **Channel** to configure for audio detection from the drop-down menu and check one or both of the **Input Abnormal** and **Intensity Change** check boxes.

   • **Input Abnormal**: Detects if the audio input changes from the "normal" audio that is typically generated at the site.

   • **Intensity Change**: Detects if the audio intensity changes, meaning the volume level becomes stronger than the typical levels.

3. Set the **Sensitivity** level (1–100) and **Threshold** level (1–100) for the audio detection.

   Sensitivity refers to the audio recognition sensitivity (as a percentage). Moving the **Sensitivity** slider to a higher sensitivity setting increases the audio detection sensitivity which will detect more events.

   Threshold is the intensity change threshold, or the amount of audio required to trigger an event notification. The smaller the Threshold value, the more events will be detected.

   Note   The best way to configure audio detection is to experiment with the sensitivity and threshold settings while someone is generating sound in front of the camera.

4. To set the periods when audio detection is active, next to **Period**, click **Set**, and then follow the steps listed in *To set up motion detection periods* on page 91.

Figure 8-16   Audio Detection Configuration Screen
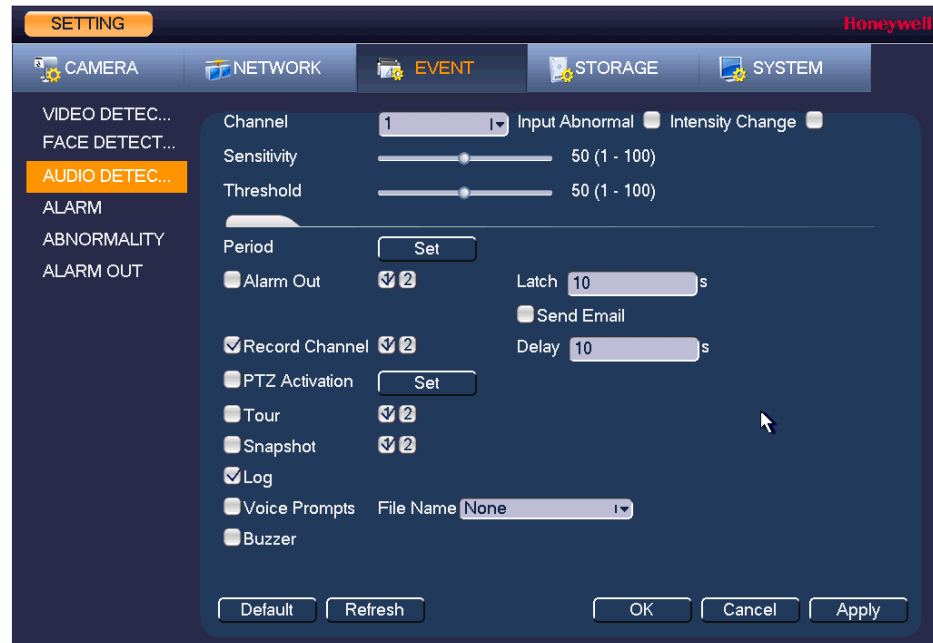
5. Select the action(s) that you want the system to initiate when an audio detection event occurs:

- **Alarm Out**   Select the check box to activate the selected alarm output(s) (**1** or **2**). In the **Latch** box, specify the amount of time (0–300 s) to delay the alarm output signal after an audio detection event is triggered.

- **Send Email**   Select the check box to enable the system to send an email notification. If the **Snapshot** function is enabled, an image can be attached to the email. To set up Email, see *Configuring Email Settings* on page 81.

- **Record Channel**   Select the channel(s) that you want to record when the alarm is triggered. In the **Delay** box, specify the amount of time (10–300 s) to delay recording after an audio detection event is triggered.

  > **Note**   You also need to set the alarm recording period. Go to **Storage > Schedule** to configure the current channel for scheduled alarm recording. See *Configuring the Video Recording Schedule* on page 51.

- **PTZ Activation**   Select the check box to activate PTZ functions, and then click **Set**. In the **PTZ Activation** window, for each PTZ camera, select the preset, tour, or pattern that you want to be called when the audio detection event occurs, and then click **OK**.

- **Tour**   Select the check box to enable a tour of the selected channels.

- **Snapshot**   Select the check box to take a snapshot of selected channels.

- **Log**   Select the check box to enable logging of the audio detection event.

- **Voice Prompts**   Select the check box to enable the playing of a voice prompt audio file when an audio detection event is triggered. Use the **File Name** drop-down arrow to select the audio file to play for the events.

- **Buzzer**   Select the check box to activate a buzzer noise at the NVR.

6. Click **Apply** to save your settings. To return to the main menu, click **OK**.

Configuring Alarm Outputs

1. Go to **Main Menu** > **SETTING** > **EVENT** > **Alarm Out**.

Figure 8-17 Alarm Output Configuration Screen
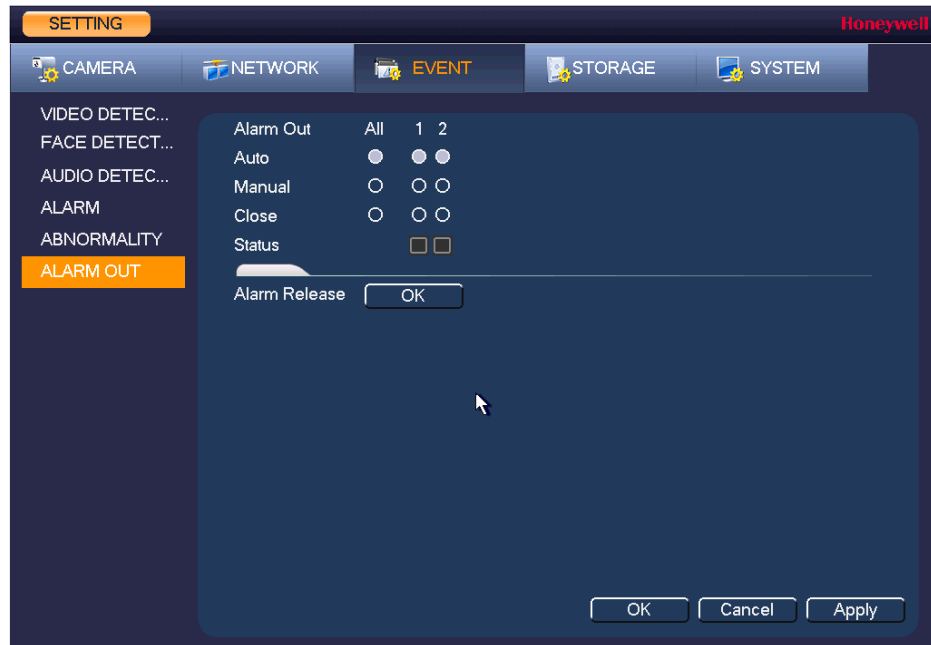
2. On the **Alarm Output** page, set the alarm type for each alarm output:

   - **Auto**   Select the alarm output(s) that you want to apply the recording schedule settings to. For more details, see *Configuring the Video Recording Schedule* on page 51 and *Configuring the Snapshot Recording Schedule* on page 52.
   - **Manual**   Select the alarm output(s) that you want to enable for all channels.
   - **Stop**   Select the alarm output(s) that you want to disable for all channels.

3. To turn off triggered alarm outputs, next to **Alarm Release**, click **OK**.

4. Click **Apply** to save your changes, and then click **OK**.

9

Configuring Storage Settings

This chapter contains the following sections:

Configuring the Recording Schedule

Configuring the Video Recording Schedule

1. Go to **Main Menu** > **SETTING** > **STORAGE** > **SCHEDULE** > **Rec**.

Figure 9-1   Recording Schedule Configuration Tab
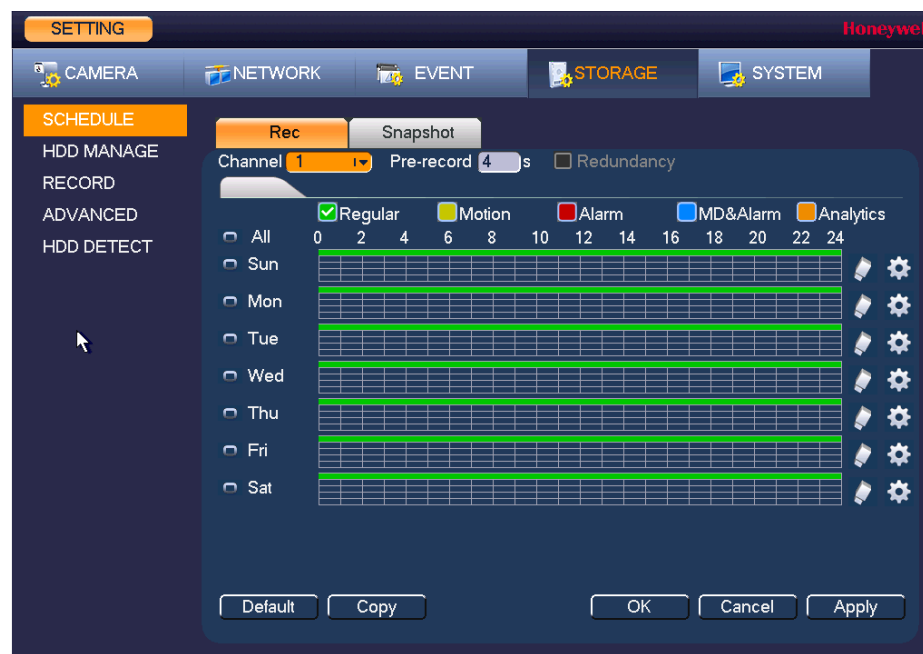
2. On the **Rec** tab, in the **Channel** box, select the channel (camera) for which you want to configure a recording schedule.

3. In the **PreRecord** box, enter a time between **0** and **30** seconds. The default setting is **4** seconds. The pre-record time sets how long the NVR records before the scheduled recording start time. For example, if the NVR is scheduled to start recording at 12:00 and the pre-record time is set to 4 seconds, the NVR will start recording at 11:59:56.

4. If the NVR has two HDDs, select the **Redundancy** check box to enable redundant recording on the second HDD. This HDD must first be configured as redundant on the **HDD Manage** page (see *Configuring HDD Management Settings* on page 112).

5. At the top of the scheduling table, select the check box(es) of the recording type(s) that you want to schedule:
   - **Regular** — The regular recording schedule is indicated by a green bar.
   - **Motion** — The motion detection recording schedule is indicated by a yellow bar.
   - **Alarm** — The alarm recording schedule is indicated by a red bar.
   - **MD&Alarm** — The motion detection and alarm schedule is indicated by a blue bar.
   - **Analytics** — The video analytics schedule is indicated by an orange bar.

6. At the left of the scheduling table, select the day(s) of the week for which you want to configure a recording schedule. To configure the same recording schedule for all of the days at the same time, select **All**.

7. Click or drag the mouse in the scheduling table to set the recording period. To erase a recording period, click the eraser icon (　) at the right of the table. Alternatively, for the day of the week that you want to configure, click the gear icon at the right of the table. In the **Period** window, set up to six recording periods. To copy the settings to additional days, select the appropriate check box(es) under **Copy**, and then click **Save**.

8. Click **Apply** to save your settings.

9. To copy the settings to additional channels, click **Copy**, select the channels to which you want to copy the settings, and then click **OK**.

Configuring the Snapshot Recording Schedule

Follow these steps to configure the snapshot recording function. When enabled, the NVR can take snapshots when a motion detection, video loss, video tampering, or other alarm event occurs. See *Chapter 8, Configuring Event Settings* for detailed instructions.

1. Go to **Main Menu > SETTING > STORAGE > SCHEDULE > Snapshot**.

   Figure 9-2   Snapshot Schedule Settings

2. On the **Snapshot** tab, in the **Channel** box, select the channel (camera) for which you want to configure a snapshot schedule.

3. At the top of the scheduling table, select the check box(es) of the recording type(s) that you want to schedule:

   - **Regular**   The regular recording schedule is indicated by a green bar.
   - **Motion**   The motion detection recording schedule is indicated by a yellow bar.
   - **Alarm**   The alarm recording schedule is indicated by a red bar.
   - **MD&Alarm**   The motion detection and alarm schedule is indicated by a blue bar.
   - **Analytics**   The video analytics schedule is indicated by an orange bar.

4. At the left of the scheduling table, select the day(s) of the week for which you want to configure a snapshot schedule. To configure the same schedule for all of the days at the same time, select **All**.

5. Click or drag the mouse in the scheduling table to set the recording period. To erase a recording period, click the eraser icon at the right of the table. Alternatively, for the day of the week that you want to configure, click the gear icon at the right of the table. In the **Period** window, set up to six snapshot recording periods. To copy the settings to additional days, select the appropriate check box(es) under **Copy**, and then click **Save**.

6. Click **Apply** to save your settings.

7. To copy the settings to additional channels, click **Copy**, select the channels to which you want to copy the settings, and then click **OK**.

Configuring HDD Management Settings

1. Go to **Main Menu** > **SETTING** > **STORAGE** > **HDD MANAGE.**

    Figure 9-3   HDD Management Window
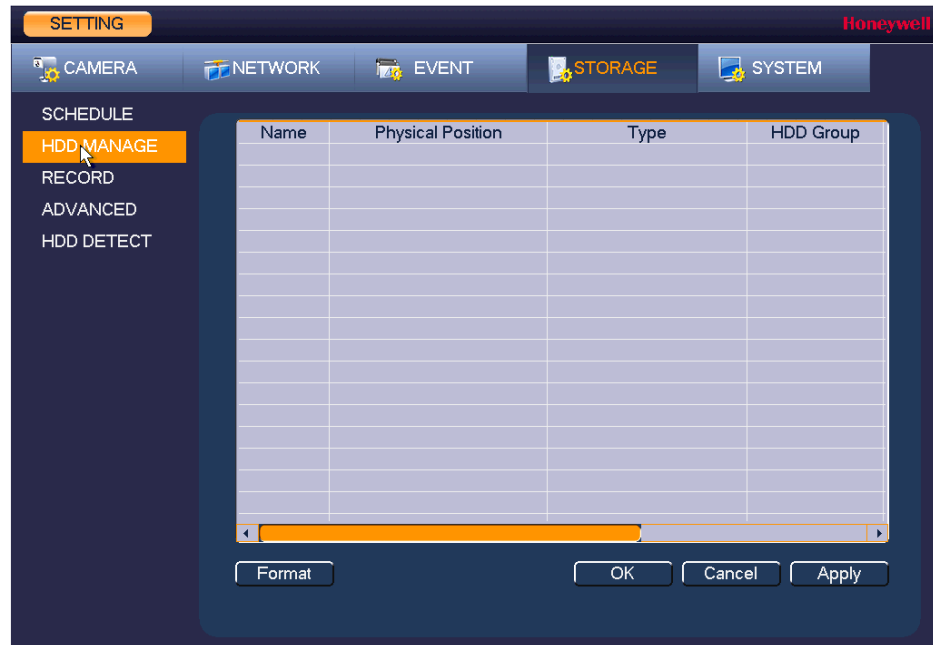
Name	The HDD name.
Physical Position	Indicates which hard drive slot the HDD currently occupies.
Type	The HDD type (read-write or read-only).
HDD Group	The HDD group that the hard drive belongs to.
Status	The current operating status of the HDD.
Free Space/ **Total Space**	The amount of free space remaining on the HDD/ The total capacity of the HDD.

2. The HDD is configured as read-write by default. To change the HDD type to read-only, in the **Type** column, select **Read-only HDD**.

    Note   The NVR restarts to apply the new setting.

3. To erase all the data from a HDD, select it and click **Format**. A confirmation message appears: "`Confirm format on the selected device?`" Click **OK** to continue.

Configuring HDD Advanced Settings

Configuring Main Stream Settings

Here, you can assign the main stream to a particular HDD group.

1. Go to **Main Menu > SETTING > STORAGE > Advanced > Main Stream**.

Figure 9-4   Main Stream Storage Configuration Tab

2. You can set the HDD group for all channels or set each channel individually:
    *   Select a HDD group from the drop-down **Set All Channels** menu. Click **All** to apply the parameter settings to all channels.
    *   Select an HDD group from the drop-down menu for each channel, as required.
3. Click **Apply** to save your settings.

Configuring Sub Stream Settings

Configuring the sub stream channel settings is the same as for the main stream (see *Configuring Main Stream Settings* on page 113).

Configuring Snapshot Storage Settings

1. Go to **Main Menu > SETTING > STORAGE > Advanced > Snapshot**.

Figure 9-5   Snapshot Storage Configuration Tab
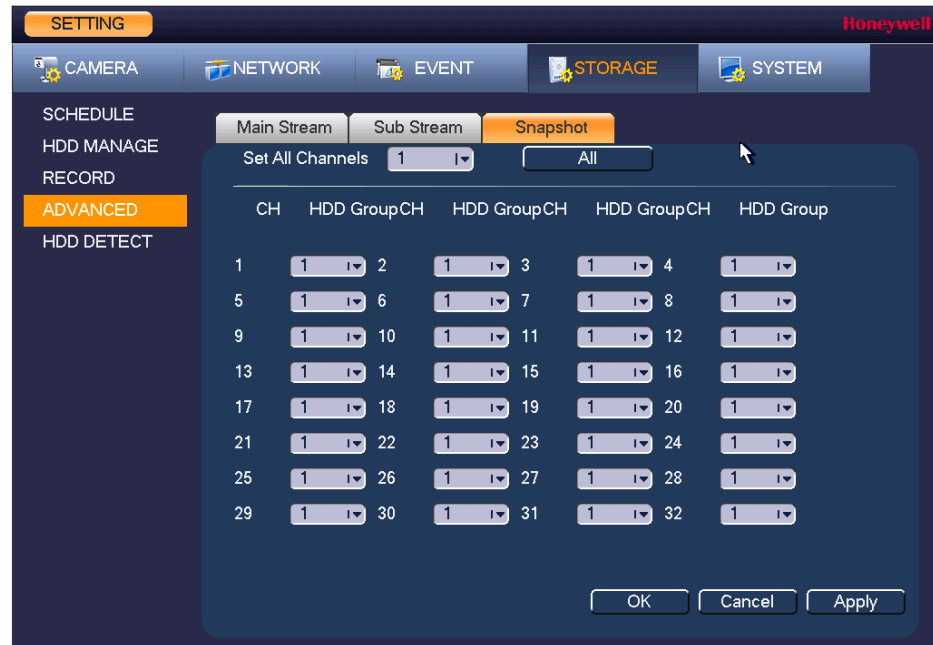
2. You can set the HDD group for all channels or set each channel individually:

    • Select a HDD group from the drop-down **Set All Channels** menu. Click **All** to apply the parameter settings to all channels.

    • Select an HDD group from the drop-down menu for each channel, as required.

3. Click **Apply** to save your settings.

Configuring Record Settings

1. Go to **Main Menu** > **SETTING** > **STORAGE** > **RECORD**.

Figure 9-6   Recording Storage Configuration Window
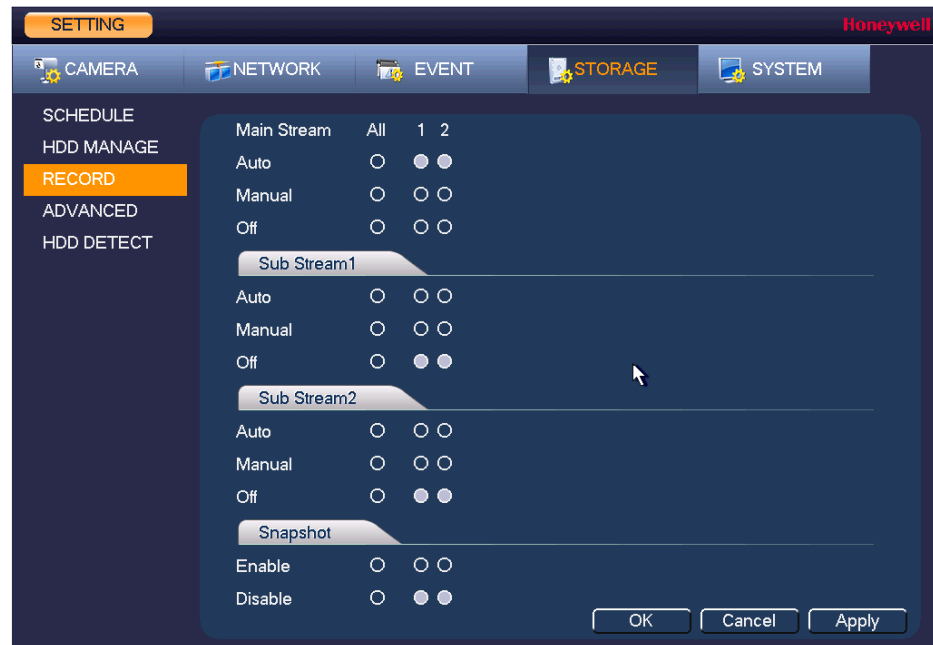
2. On the **Record** window, select the record types (**Auto**, **Manual**, **Off**) that you want to enable on each channel for both the main stream and secondary streams.

3. Under **Snapshot**, enable or disable snapshot recording on each channel.

4. Click **Apply** to save your settings.

Configuring HDD Detect Settings

HDD Manual Detection

Hard Disk Drives can be detected and scanned for total space and errors with a Quick Detect or Global Detect function.

1. Go to **Main Menu** > **SETTING** > **STORAGE** > **HDD Detect** > **Manual Detect**.

2. Select the hard drive to use the detection on from the **HDD** drop-down list.

3. Select the **Type** of detection to use, either **Global Detect** or **Quick Detect** and click **Start Detect**.

4. Click **Stop Detect** at any time to stop the detection process.

   Once complete, the hard drive detection results will display in the table below, indicating hard drive details such as good, bad and blocked sectors, and total space.

Figure 9-7   HDD Manual Detection Screen
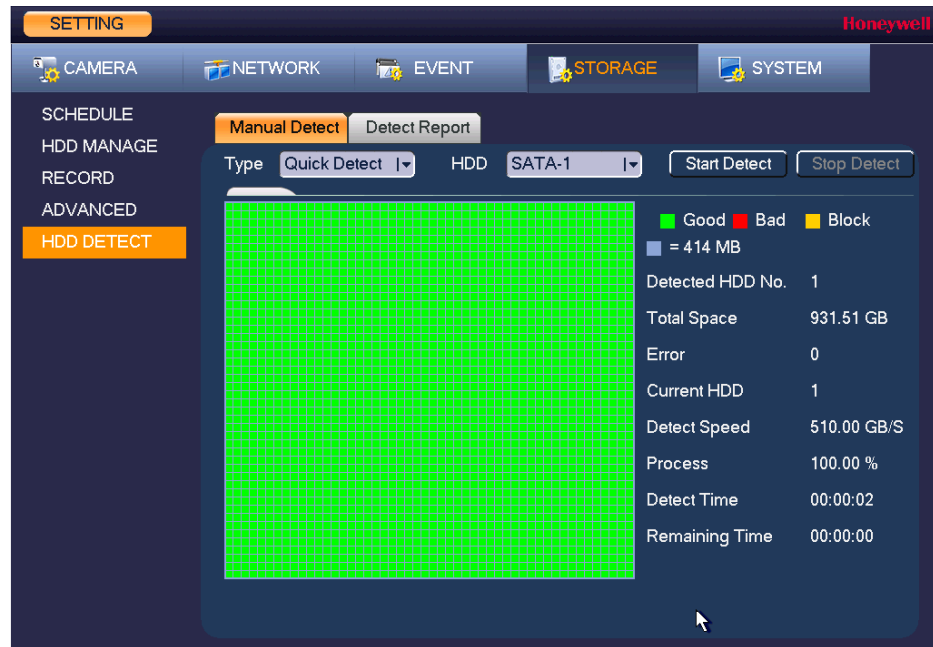
HDD Detection Reporting

Hard Disk Drives detection results are compiled on the detect report screen for easy reference.

1. Go to **Main Menu > SETTING > STORAGE > HDD Detect > Detect Report**.

Figure 9-8   HDD Detection Report Screen
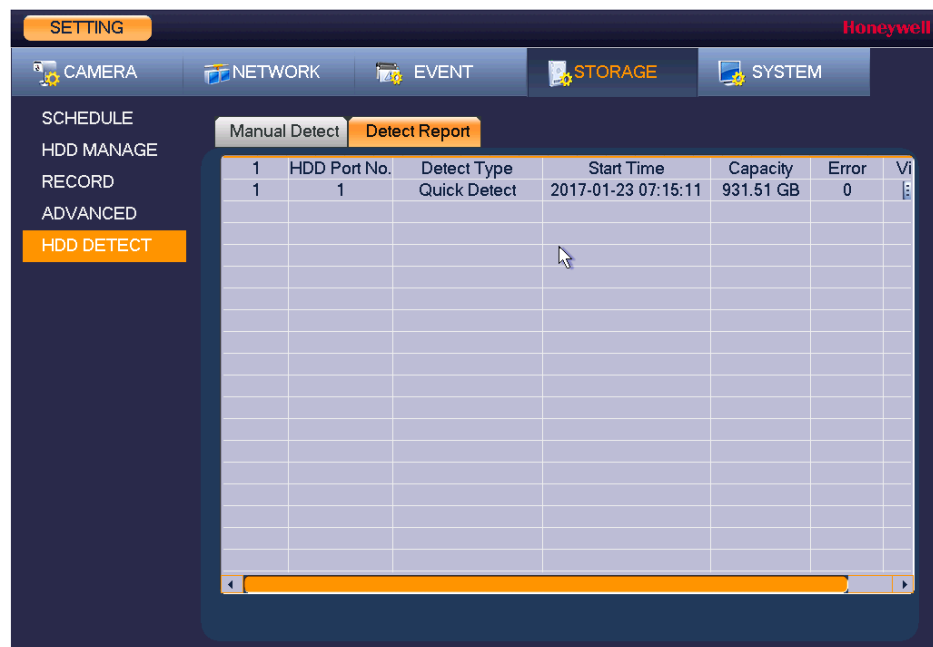
2. Use the **Detect Report** tab to view hard drive detection reports from previous detections. Click on a report row in the table to view the detection report details.

10

Configuring System Settings

This chapter contains the following sections:

Configuring General System Settings

Configuring Device Settings

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **GENERAL** > **General**.

Figure 10-1   General Configuration Tab
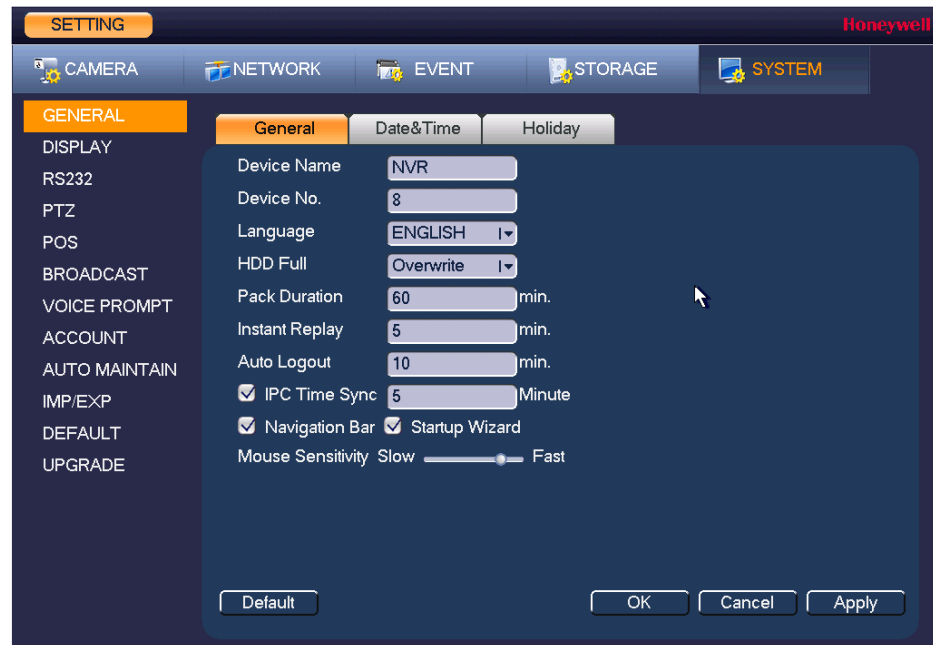
2. On the **General** tab, configure the following settings:

- **Device Name**   Enter a device name for the NVR.

- **Device No.**   Enter a device number for the NVR.

- **Language**   Set the language of the user interface.

- **HDD Full**   Set to **Overwrite** to continue recording over old data when the HDD is full. Set to **Stop Record** to stop recording when the HDD is full. The default setting is **Overwrite**.

- **Pack Duration**   Set the recording duration. Specify a time between **1** and **120** minutes. The default setting is **60 min**.

- **Instant Replay**   Set the length of time to play back video using the instant replay playback function in live view mode. Specify a time between **5** and **60** minutes. The default setting is **5 min**.

- **Auto Logout**   Set the length of time the NVR waits before logging out an inactive user. Specify a time between **0** and **60** minutes. The default setting is **10 min**.

- **IPC Time Sync**   Select the check box to have the NVR sync time with connected IP cameras at a set interval. Set the interval from **1** to **1440** minutes. The default setting is **5** minutes.

- **Navigation Bar**   Select the check box to display the live view toolbar on the live view screen. Clear the check box to hide the live view toolbar.

- **Startup Wizard**   Select the check box to display the **Startup Wizard** at startup. Clear the check box to bypass the Startup Wizard at startup.

- **Mouse Sensitivity**   Set the desired mouse speed using the slider.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **Save**.

Configuring Date and Time Settings

To configure the system time settings

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **GENERAL** > **Date&Time**.

Figure 10-2   Date and Time Configuration Tab

2. On the **Date&Time** tab, configure the following settings:

   - **Date Format**   Select the date format that you want to use for the system time: **YYYY MM DD**, **MM DD YYYY**, or **DD MM YYYY**.

   - **Time Format**   Select the time format that you want to use for the system time: **24-Hour** or **12-Hour**.

   - **Date Separator**   Select the separator that you want to use for the system time: period (**.**), hyphen (**-**), or forward slash (**/**).

   - **System Time**   Enter the system time and time zone, and then click **Save**.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

To configure the Daylight Saving Time (DST) settings

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **GENERAL** > **Date&Time**.

2. On the **Date&Time** tab, click to select the **DST** check box.

3. Specify when Daylight Saving Time begins and ends. Select DST Type as either **Date** (DST applies to specific dates) or **Week** (specify which week and time of each year to apply to DST).

   For example:

   a. Since the specific dates change every year, select **Week** as the **DST Type**.

   b. Set the **Start Time** as **Mar 2nd Su 02:00** (the second Sunday in March at 2:00 a.m.).

      c.   Set the **End Time** as **Nov 1st Su 02:00** (the first Sunday in November at 2:00 a.m.).

4. Click **Apply** to save your settings.

5. If you want to save your settings and exit the **SETTING** menu, click **OK**.

To synchronize the system time with the Network Time Protocol (NTP)

1. Ensure that the NVR is connected to the Internet.

2. Go to **Main Menu > SETTING > SYSTEM > GENERAL > Date&Time**.

3. On the **Date&Time** tab, click to select the **NTP** check box.

4. In the **Server** box, enter the IP address of the NTP server that you want to use (for example, `time.nist.gov`).

5. Ensure that **Port** is set to **123**.

6. To change the frequency with which the system time synchronizes with the NTP server, enter a new time in the **Interval** box. The default setting is **60 min**.

7. Click **Manual Update** to manually synchronize your system time with the NTP server.

8. Click **Apply** to save your settings.

9. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Holiday Settings

1. Go to **Main Menu > SETTING > SYSTEM > GENERAL > Holiday**.

Figure 10-3   Holiday Tab
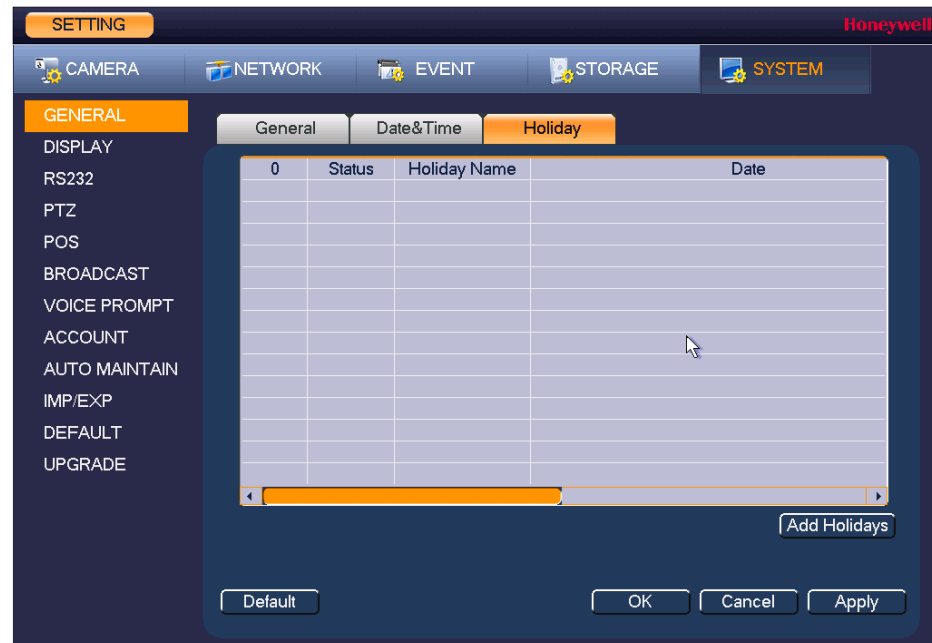
2. On the **Holiday** tab, click **Add Holidays**. The **Add Holidays** window appears.

Figure 10-4 Add Holidays Window

3. In the **Holiday Name** box, enter the name of the holiday that you want to add.

4. Set **Repeat Mode** to **Once** or **Always**.

Note If you want the NVR to recognize a particular day of the week as a holiday year-round (for example, every Friday), set **Repeat Mode** to **Always**.

---

5. Set **Holiday Range** to **Date** or **Week** depending on whether you want to designate a single day or one or more weeks as a holiday.

   • If **Date** is selected, enter the year, month, and day in the **Start Time** and **End Time** boxes.

   • If **Week** is selected, enter the year, month, week of the month (1st, 2nd, 3rd, 4th, Last), and day.

6. If you want to add more holidays, select the **Add More** check box.

7. Click **Add** to add the holiday.

8. After you have added the new holidays, on the **Holiday** tab, set the **Status** of each holiday. Select **Open** to enable the holiday or select **Stop** to disable it.

Configuring Display Settings

Configuring Display Settings

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **DISPLAY** > **Display**.

Figure 10-5   Display Configuration Tab
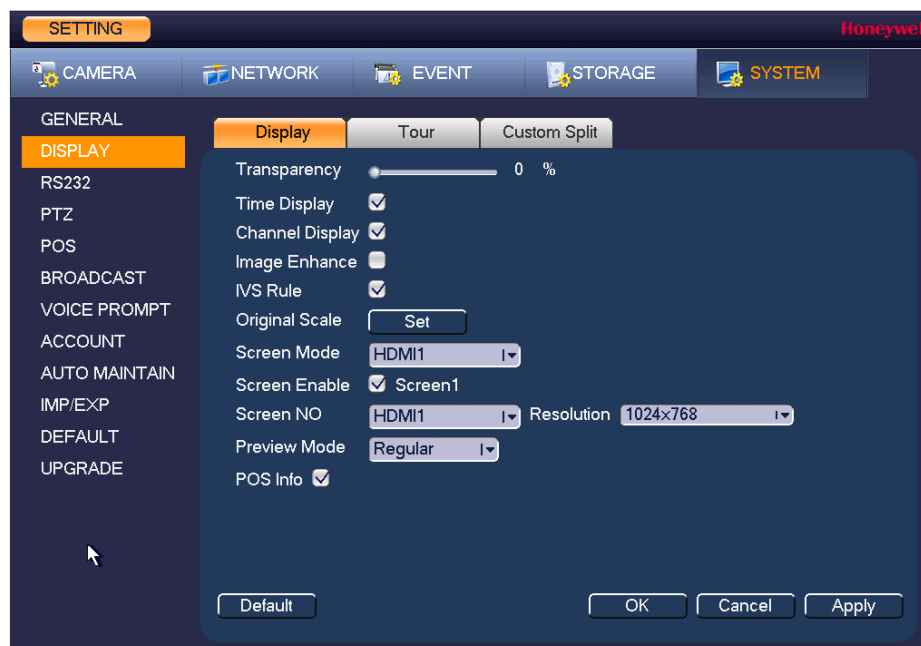
2. On the **Display** tab, configure the following settings:

- **Transparency** — Set the transparency of the graphical user interface (GUI) to a value between **0** and **100**, with **0** being totally opaque and **100** being totally transparent.

- **Time Display** — To display the current time in each channel window in live view mode, select the check box. To hide the time, clear the check box.

- **Channel Display** — To display the camera name, status, and channel number in each channel window, select the check box. To hide the camera name, status, and channel number, clear the check box.

- **Image Enhance** — To enhance the display image, select the check box. To keep the default settings, clear the check box.

- **Analytics Rule** — To display the active analytics rule in each channel window in live view mode, select the check box. To hide the analytics rule info, clear the check box.

- **Original Scale** — Click **Set** to select the channel(s) to display in the original aspect ratio, then click **OK**. Select **All** to display all the channels in the original aspect ration. Unselected channels display in full screen.

- **Screen Mode** — Select the type of display monitor used, **HDMI** or **VGA**.

- **Screen Enable** — Check this box to have the local monitor output screen enabled. Clear this box to disable the local monitor output.

- **Screen NO** — Select the screen to set the resolution for. If multiple monitors

- **Resolution** — Set the resolution of your display select in the **Screen NO** field.

  Note — You must restart the NVR for new display resolution settings to take effect.

- **Preview Mode** — Select the Preview Mode from the drop-down list from **Regular** or **Show Face List**.

- **POS Info** — To display the point of sales text in each channel window in live view mode, select the check box. To hide the POS info, clear the check box.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Tour Settings

In a tour, the NVR cycles through different channel views. You can specify which views and cameras you want to appear in the tour.

1. Go to **Main Menu > SETTING > SYSTEM > DISPLAY > Tour**.

Figure 10-6   Tour Configuration Tab
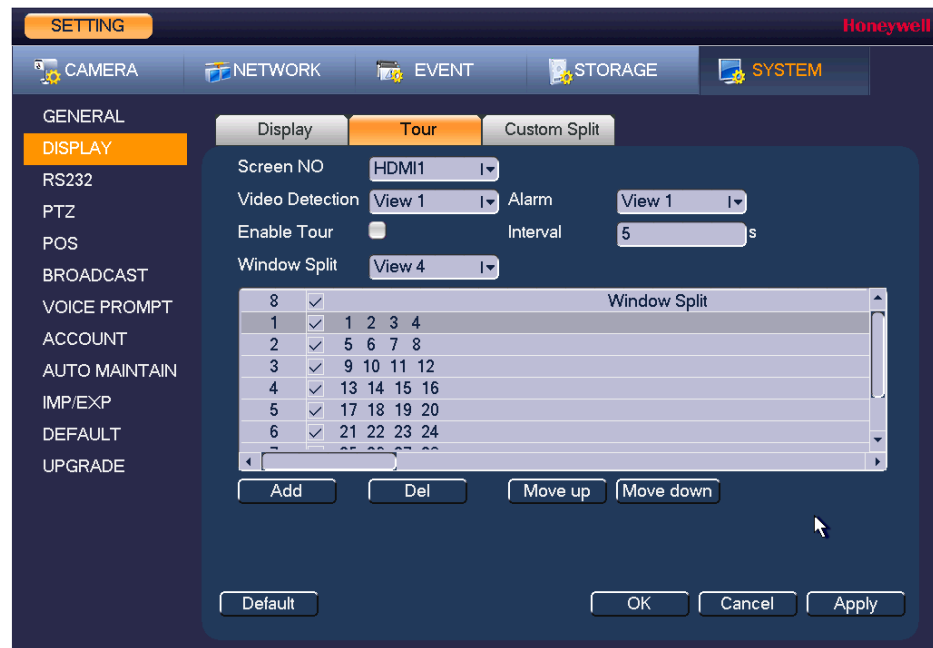
2. Select the monitor to display the tour with the **Screen NO** drop-down list.

3. If you want, you can add or delete cameras from the **Channel Group** list. You can only add cameras that do not already appear in the list.

Note   On some NVR models you can change the **Video Detection** tour and **Alarm** tour from **View 1** (single-channel view) to **View 8** (eight-channel view).

---

4. Select the **Enable Tour** check box to enable the tour function or clear the check box to disable the tour function.

5. In the **Interval** box, enter the amount of time in seconds (from 5-120) that you want each view to appear on the screen before displaying the next view in the tour. The default setting is **5** seconds.

6. Do one of the following:

- To cycle through all of the cameras in all of the available views, keep the default settings.

- To create a custom tour, for each view in the **Window Split** list (**View 1**, **View 4**, and so on), clear the check box on the top row of the **Channel Group** list to deselect all of the cameras for that view, then select the cameras for each view that you want to appear in the custom tour.

  For example, to create a tour showing only cameras 2, 3, and 5 in single-channel view, set **Window Split** to **View 1** and then select cameras **2**, **3**, and **5**. There should be no other cameras selected in View 1 or in any of the other views.

7. Click **Apply** to save your settings.

8. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Custom Split Settings

Use the Custom Split tab to configure a customized split screen display.

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **DISPLAY** > **Custom Split**.

Figure 10-7   Custom Split Configuration Tab
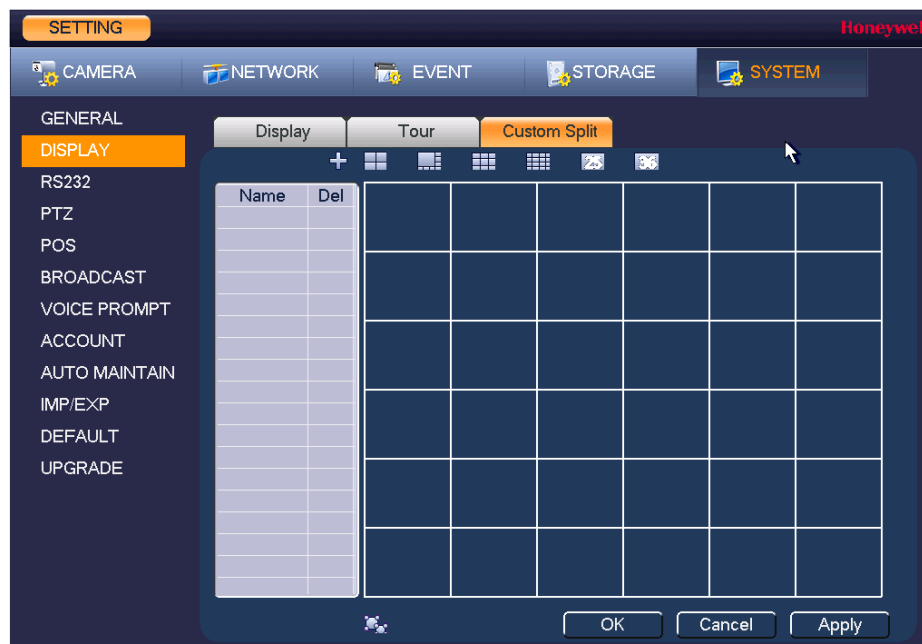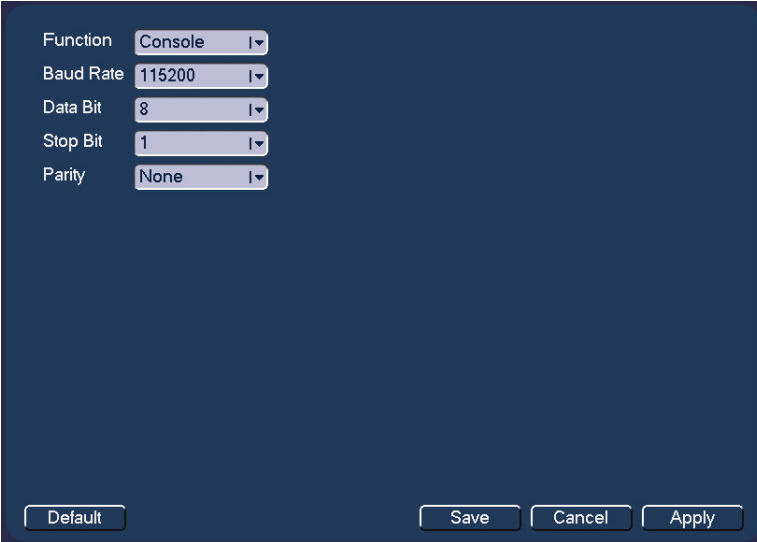
2. On the **Custom Split** tab, click **+** to add the selected split view to the list.

3. Use the mouse to click and drag the display grid to configure it, as needed. You can combine small squares into a larger display area, or split them up to view more channels at once.

4. Click **Apply** to save your settings.

5. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring RS232 Settings

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **RS232**.

   Figure 10-8   RS232 Configuration Window

2. Configure the following settings:

   - **Function**   Select **Console** or **Adapter**, depending on the type of RS232 device that you have connected to the NVR.

   - **Baud Rate**   Select a value between **1200** and **115200**. The default setting is **115200**.

   - **Data Bit**   Select a value between **5** and **8**. The default setting is **8**.

   - **Stop Bit**   Select **1**, **1.5**, or **2**. The default setting is **1**.

   - **Parity**   Select **None**, **Odd**, **Even**, **Mark**, or **Space**. The default setting is **None**.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Pan/Tilt/Zoom Settings

See *Configuring PTZ Connection Settings* on page 43 for more information.

Configuring Point of Sales Settings

Use the POS settings screen to setup a connection to a point of sales device, such as a cash register, to enable POS info to be synchronized with video data.

1. Go to **Main Menu > SETTING > SYSTEM > POS**.

Figure 10-9   POS Configuration Window
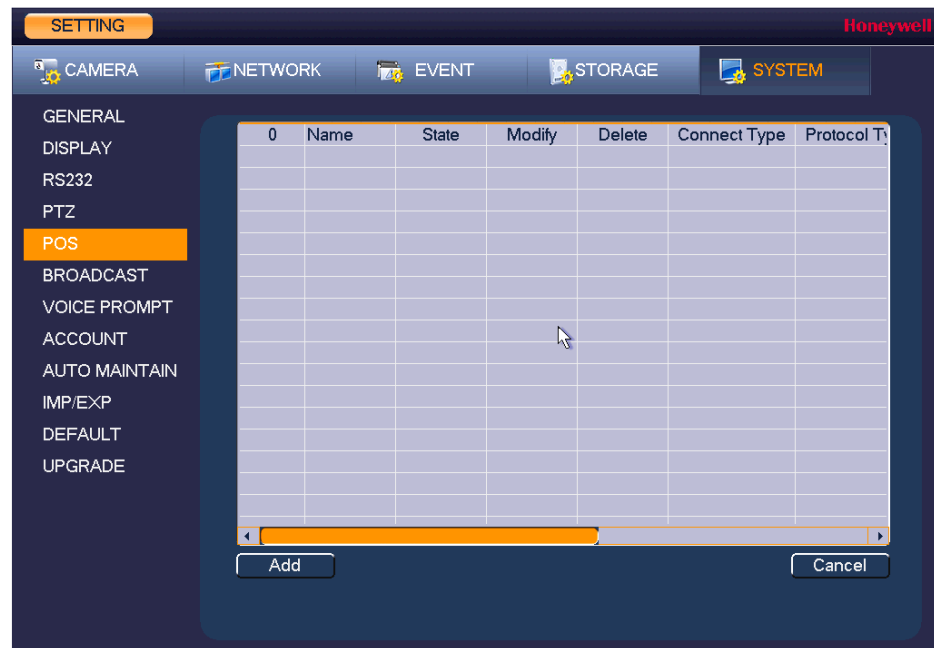
2. Click **Add** to add a new POS device.

Figure 10-10 Add POS Device Screen
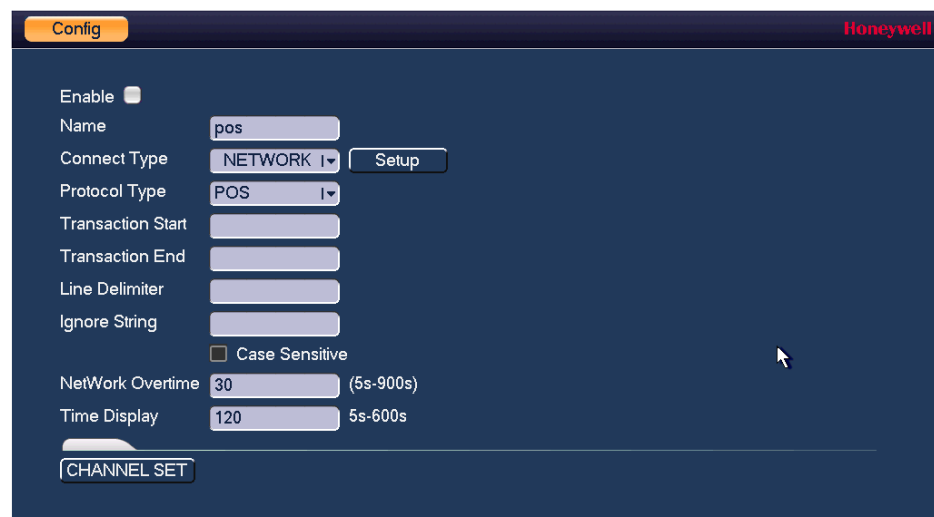
3. Configure the following settings:

- **Enable**   Check this box to enable the POS function. Clear the box to disable POS.

- **Name**   Enter a name for the POS device being added.

- **Connect Type**   Select the type of connection to the POS device. **Network** is the default option. Click **Setup** to enter the connection details for **Source IP** and **Port**, and **Destination IP** and **Port**. Click **OK** to confirm.

- **Protocol Type**   Select the communication protocol for the POS device. The default setting is **POS**.

- **Transaction Start**/**End**   Select the transaction start and end times. This field cannot be modified when **POS** is the selected protocol.

- **Line Delimiter**   Enter one or more characters to use as a line delimiter between text entries from the POS device. This field cannot be modified when **POS** is the selected protocol.

- **Ignore String**   Enter string types from the POS device that should be ignored and not displayed or recorded, such as a password string. This field cannot be modified when **POS** is the selected protocol.

- **Case Sensitive**   Check this box if you want the strings specified in the **Ignore String** field to be case sensitive.

- **NetWork Overtime** Enter the network overtime value in seconds.

- **Time Display**   Enter the amount of time in between time display instances.

- **Channel Set**   Click **CHANNEL SET** to select the channels to be associated with the POS device.

4. Click **Apply** to save your settings.

5. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Broadcast Settings

Use the Broadcast screen to setup a group of channels that be broadcast with bi-directional audio. This enables system users to output an audio message to several camera with audio outputs at the same time.

1. Go to **Main Menu > SETTING > SYSTEM > Broadcast**.

Figure 10-11 Broadcast Configuration Window
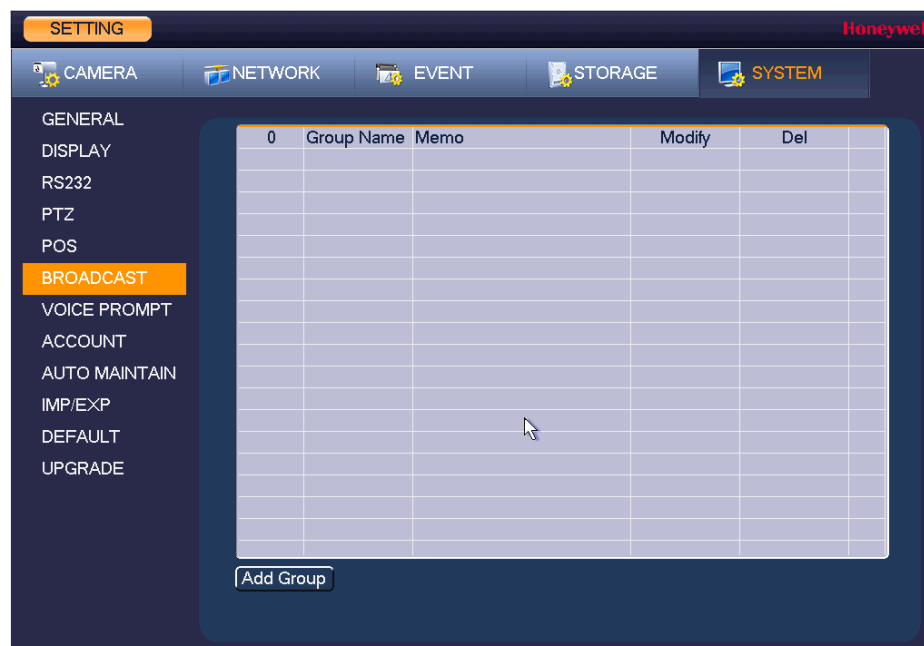
2.   Click **Add Group** to add a new broadcast group. Enter a Group Name and select the channels to be part of the group.

3.   Click **Save** to save the group.

Configuring Voice Prompt Settings

Voice prompt files can be used to as alarm audio and can be set as actions when events are triggered.

Managing Voice Prompt Files

Use the Voice Prompt File Manage screen to manage the voice prompt sound files and set the volume.

1.   Go to **Main Menu** > **SETTING** > **SYSTEM** > **Voice Prompt** > **File Manage**.

Figure 10-12 Voice Prompt File Configuration Window
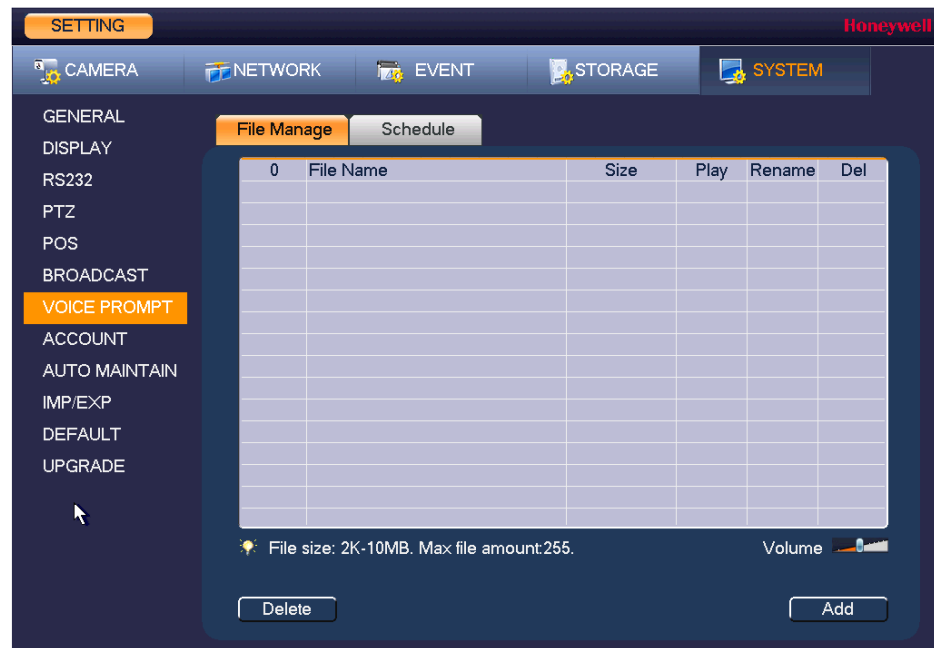
2. Click Add to add a new audio file for Voice Prompts. You must have a connected USB device with audio files saved to it.

3. Double-click on folders to navigate to the new voice prompt file, select the check box for the file(s) you want to add and click **Import**. Click **OK** to return to the previous page. The file will populate in the File Manage table.

    You can **Play**, **Rename**, or **Delete** the file using the table controls. Use the **Volume** slider to set the volume level.

Configuring Voice Prompt Schedules

Use the Voice Prompt Schedules screen to set the voice prompt schedule and timing. With the schedules, different voice prompt audio files can be enabled for different times of the day/week. For example, an *after hours* audio message can be played on weekends and nights.

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **Voice Prompt** > **Schedule**.

2. You can configure up to 6 scheduling periods to repeat on each day.

3. For each voice prompt schedule:

    a. Set the time range in the **Period** field.

    b. Select the voice prompt file to be played from the **File Name** drop-down list.

    c. Enter the number of times the voice prompt should repeat in the **Repeat** field and set the interval between repetitions in minutes in the **Interval** field.

    d. Select the audio device to play the voice prompt from the **Output** drop-down list.

    e. Place a check in the check box for each period that you configure.

Figure 10-13 Voice Prompt Schedule Configuration Window

4.   Click **Apply** to save your settings.

5.   If you want to save your settings and exit the **SETTING** menu, click **OK**.

Configuring Account Settings

You can add, edit, or delete user accounts. By default, the NVR has an admin user account and a default user account. The admin user account has permission to perform all the operation and configuration functions of the NVR. The default user account only has permission to monitor live video.

Managing User Accounts and Groups

To add a user account

1.   Go to **Main Menu > SETTING > SYSTEM > ACCOUNT > User**.

Figure 10-14 User Account Configuration Tab
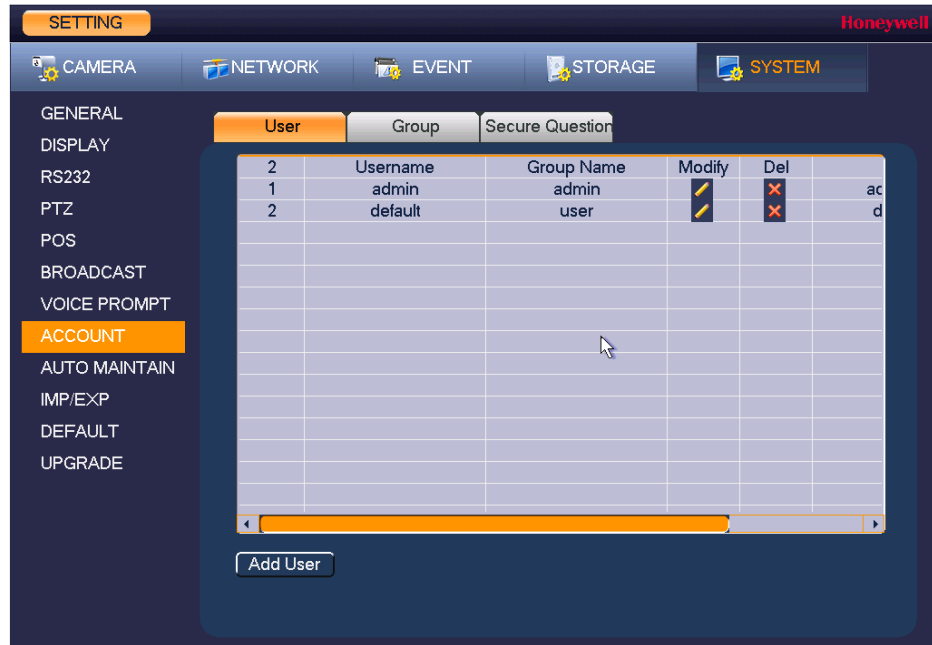
2. On the **User** tab, click **Add User**. The **Add User** page opens (see *Figure 10-15*).

Figure 10-15 Add User Window

3. On the **Add User** page, configure the following settings for the new user:

    •   **Username**   Enter a user name for the account.

    •   **Password**   Enter a password for the account.

    •   **Confirm Password** Re-enter the password.

•	**Memo**	Optionally, enter a brief description of the account.
•	**Group**	Assign the user to a group (**admin**, **user**, or another group that you have defined).
•	**Authority**	Assign privileges by selecting or clearing check boxes on the three tabs in the Authority section.

> **Note** By default, the **user** group is set up to allow a new user to monitor live video from all cameras, play back recorded video from all cameras, control PTZ cameras, view information, manually control the NVR, back up files, and adjust color settings. To assign additional privileges, change the **user** settings on the **Group** tab.

4. Click **Save** to save your settings.

To edit a user account

1. Go to **Main Menu > SETTING > SYSTEM > ACCOUNT > User**.

2. On the **User** tab, click the **Modify** icon 🖊 for the user account that you want to edit. The **Modify User** page opens.

3. On the **Modify User** page, you can change any of the following settings:

   • **Username**

   • **Password**

   • **User Group**

   • **Memo**

   • **Authority Tabs**

4. When you have finished making changes, click **Save** to save your settings.

To delete a user account

1. Go to **Main Menu > SETTING > SYSTEM > ACCOUNT > User**.

2. On the **User** tab, click the **Delete** icon ❌ for the user account that you want to delete.

3. The message "**Are you sure that you want to delete now**?" appears. Click **OK** to delete the account.

> **Note** You can only delete an account that you have created. You cannot delete the admin and default user accounts.

To add a user group

1. Go to **Main Menu > SETTING > SYSTEM > ACCOUNT > Group**.

Figure 10-16 Group Configuration Tab

2. On the **Group** tab, click **Add Group**.

3. On the **Add Group** page, enter a name for the group in the **Group Name** box, enter a description of the group in the **Memo** box, and then assign user permissions on the **Authority** tabs.

4. Click **Save** to save your settings.

To edit a user group

1. Go to **Main Menu > SETTING > SYSTEM > ACCOUNT > Group**.

2. On the **Group** tab, click the **Modify** icon ![icon] of the user group that you want to edit. The **Modify Group** page opens.

3. On the **Modify Group** page, you can change any of the following settings:

    • **Group**

    • **Group Name**

    • **Memo**

    • **Authority Tabs**

4. When you have finished making changes, click **Save** to save your settings.

To delete a user group

1. Go to **Main Menu > SETTING > SYSTEM > ACCOUNT > Group**.

2. On the **Group** tab, click the **Delete** icon ![icon] of the user group that you want to delete.

3. The message "`Are you sure that you want to delete now?`" appears. Click **OK** to delete the group.

Configuring Account Security Questions

In case that the admin password is lost or forgotten, you can setup security questions for the admin account that can be answered if the password is ever forgotten.

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **ACCOUNT** > **Secure Question**.

Figure 10-17 Secure Question Configuration Tab
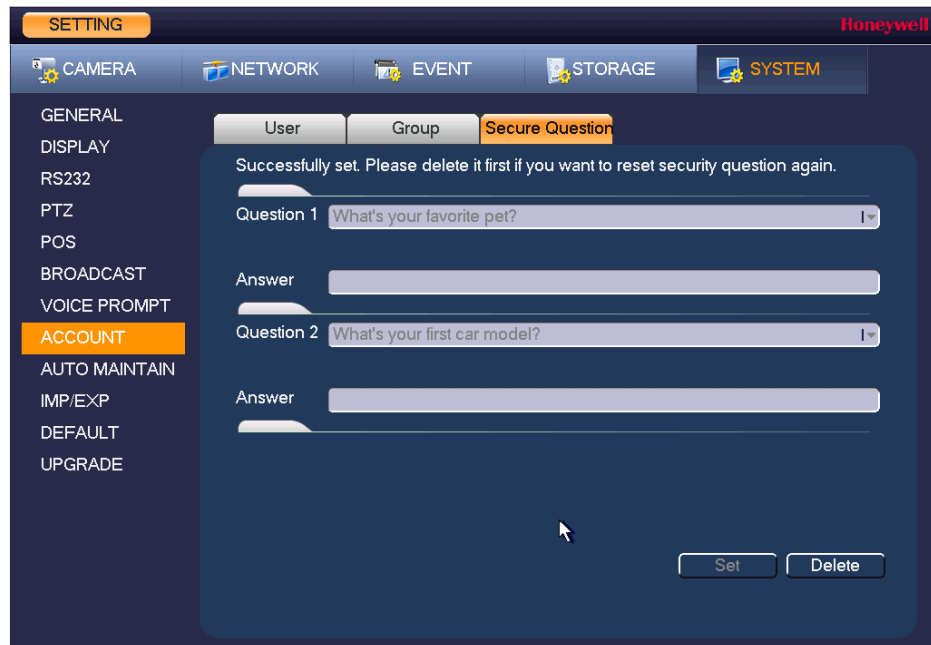
2. Select a security question from both the **Question 1** and **Question 2** drop-down lists. If the default questions are not suitable, select **Customized** to enter your own question text in the field.

3. Enter the answer to each question in the corresponding **Answer** field.

4. Click **Set** to save your settings.

Configuring Automatic Maintenance Settings

You can set up the NVR to automatically restart and/or to automatically delete old files.

To configure the auto-reboot function

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **AUTO MAINTAIN**.

Figure 10-18   Auto Maintenance Configuration Window

2. Under **Auto Reboot**, select one of the following options: **Never**, **Everyday**, **Sunday**, **Monday**, **Tuesday**, **Wednesday**, **Thursday**, **Friday**, or **Saturday**, and select a time of day to auto reboot from the drop-down menu.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

To configure to automatically delete old files

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **AUTO MAINTAIN**.

2. Under **Auto Delete Old Files**, select **Never** or **Customized**.

3. If **Customized** is selected, in the **Days Ago** box, enter the amount of time to elapse before the files are automatically deleted.

4. Click **Apply** to save your settings.

5. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Exporting and Importing System Configurations

You can export and/or import NVR system configurations if you are installing several NVRs requiring the same setup.

To export a system configuration

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **IMP/EXP**.

2. Insert a USB storage device (such as a USB flash drive) into one of the USB ports on the NVR. The **Find USB device** dialog box opens.

Figure 10-19   Find USB Device Window
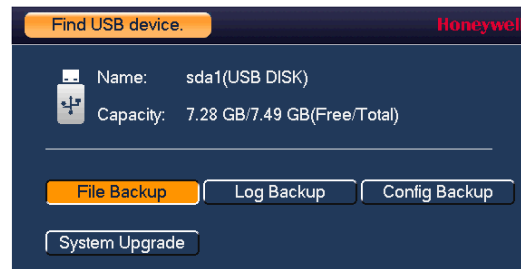
3. In the **Find USB device** dialog box, click **Config Backup**.

4. On the **IMP**/**EXP** page, click **Refresh**. The page populates with the details of the storage device.

Figure 10-20   Configuration Backup Window
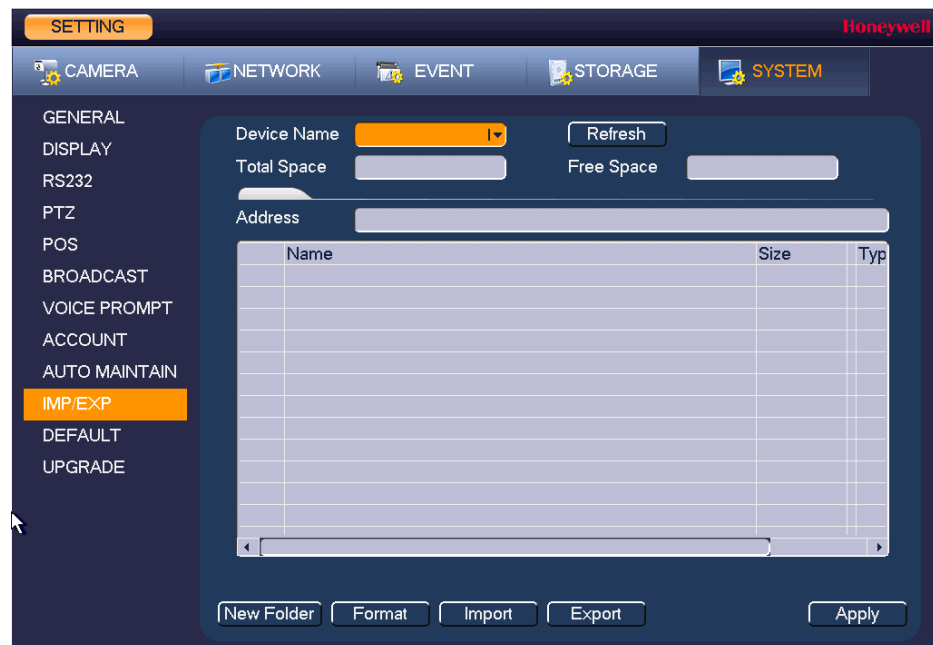
5. Click **EXPORT**. A message appears confirming that the export was successful and the system configuration file (named Config_[*YYYYMMDDhhmmss*]) is added to the file list.

To import a system configuration

1. Insert a USB storage device containing a system configuration file (exported from another NVR) into one of the USB ports on the NVR. The **Find USB device** dialog box opens.

2. In the **Find USB device** dialog box, click **CONFIG BACKUP**.

3. On the **IMP**/**EXP** page, click **Refresh** to show the contents of the USB device. Select the configuration file that you want to import (named Config_[*YYYYMMDDhhmmss*]), and then click **Import**.

4. Restart the NVR to apply the new settings.

To format an external USB storage device

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **IMP/EXP**.

2. Insert a USB storage device (such as a USB flash drive) into one of the USB ports on the NVR. The **Find USB device** dialog box opens.

3. In the **Find USB device** dialog box, click **CONFIG BACKUP**.

4. On the **IMP**/**EXP** page, click **Refresh**. The page populates with the details of the storage device.

5. Click **Format**.

6. The message "`Confirm format on the selected device?`" appears. Click **OK** to format the storage device.

Restoring Default Settings

You can restore camera, network, event, storage, and system default settings.

| Note | Restoring the default settings will cause all changes to the system menu color, language, time display mode, video format, IP address, and user accounts to be lost. |

1. Go to **Main Menu** > **SETTING** > **SYSTEM** > **DEFAULT**.

Figure 10-21   Default Configuration Window
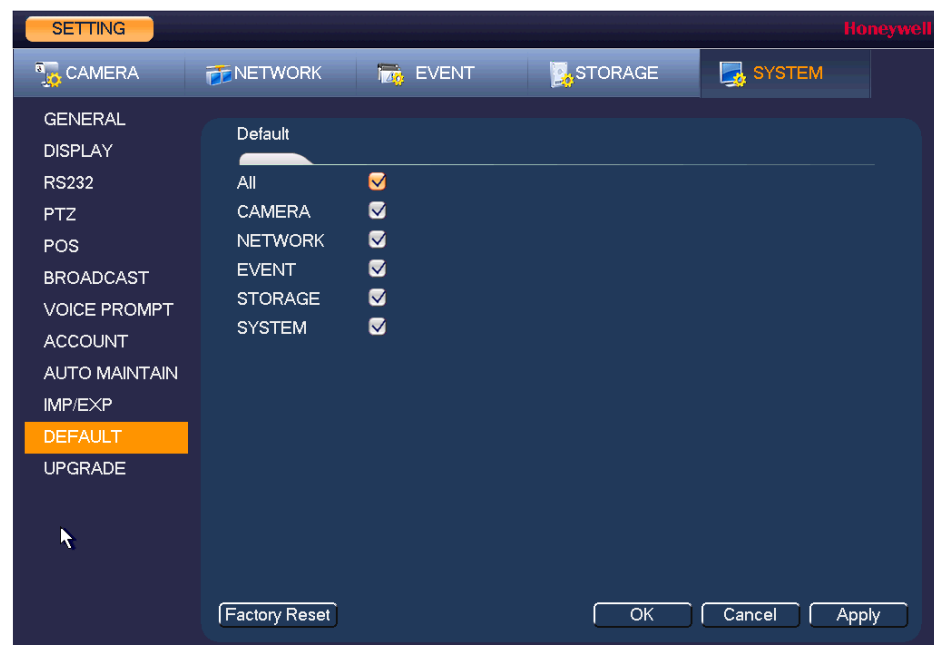
2. Select the check boxes of the items that you want to restore to their default settings, or select **All** to restore all of them to their default settings.

3. Click **Apply** to save your settings.

4. If you want to save your settings and exit the **SETTING** menu, click **OK**.

Note   To return the NVR to its factory default settings, click **Factory Reset**.

Upgrading the NVR

You can upgrade the system firmware locally at the NVR.

1. Go to **Main Menu > SETTING > SYSTEM > UPGRADE**.

Figure 10-22   Upgrade Window
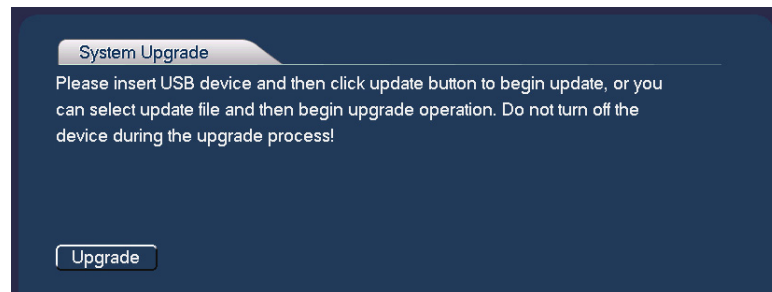
2. Insert a USB storage device (such as a USB flash drive) containing the new firmware into one of the USB ports on the NVR. The **Find USB device** dialog box opens.
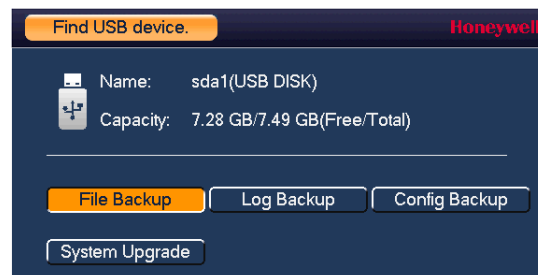
3. In the **Find USB device** dialog box, click **System Upgrade**.

4.   On the **Upgrade** page, click **Upgrade**. The **Upgrade** window opens.
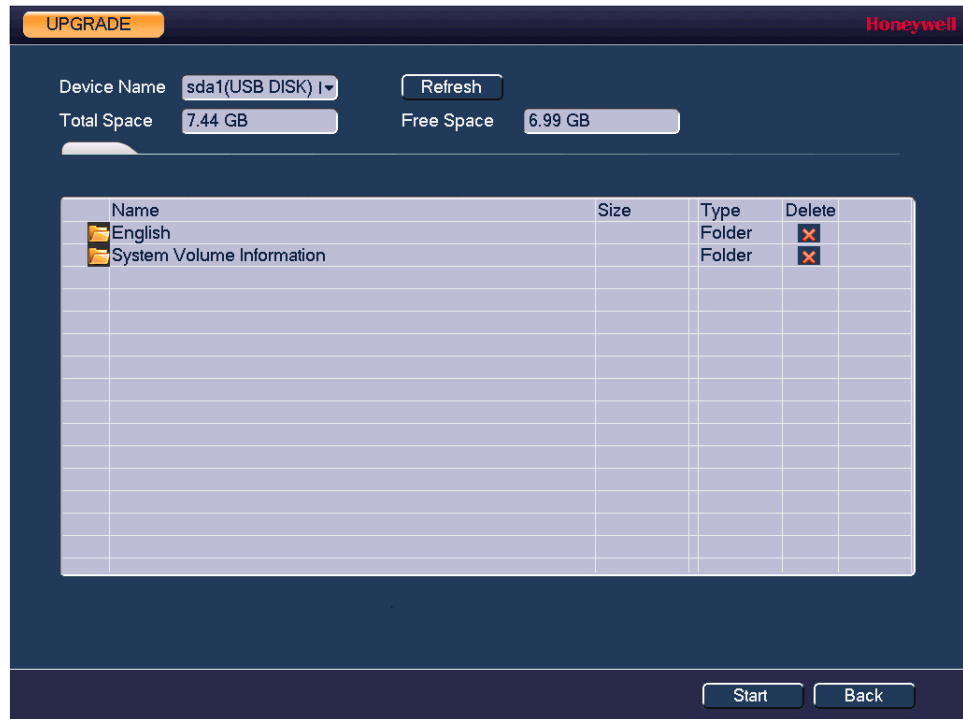
5.   Select the firmware file from the file list, and then click **Start**.

11

Viewing Information

This chapter contains the following sections:

Viewing System Information

In the system information interface you can view the following:

- Hard Disk information
- Recording information
- Bit stream statistics
- Version details

Viewing Hard Disk Information

1. Go to **Main Menu > INFO > SYSTEM > HDD**.

Figure 11-1   View HDD Information Window

2. Refer to the following table to interpret the HDD information:

SATA	**o** indicates the current HDD is normal. **x** indicates there is an error. **-** indicates that there is no HDD. **?** indicates that a HDD is damaged.
Device Name	Shows the name you have given the device.
Physical Position	Describes the hard drive bay where the hard drive is installed.
Type	Indicates the HDD type (for example, **Read**/**Write**).
Free Space	Indicates the amount of free space remaining on the HDD.
Total Space	Indicates the total capacity of the HDD.
Status	Indicates the operating status of the HDD.
S.M.A.R.T.	Indicates S.M.A.R.T (Self-Monitoring, Analysis, and Reporting Technology) status.

3. In the list of HDDs, double-click a HDD to view more details (see *Figure 11-2*).

Figure 11-2   S.M.A.R.T. Information Window

4.   Right-click to return to the previous screen.

Viewing Recording Information

•   Go to **Main Menu** > **INFO** > **SYSTEM** > **RECORD**.

Figure 11-3   Recording Information Window

On the **Record Info** page, you can view the device name as well as the start and end times for recorded video.

Viewing Data Stream Information

- Go to **Main Menu > INFO > SYSTEM > BPS**.

Figure 11-4   BPS Information Window

On the **BPS** page, you can view the current video data stream rates and resolutions for each channel.

Viewing Version Information

- Go to **Main Menu > INFO > SYSTEM > VERSION**.

Figure 11-5   Version Information Window

On the **VERSION** page, you can view the number of channels, number of alarm inputs and outputs, system version number, build date, web and ONVIF versions, and serial number.

Viewing Event Information

Navigate to the **INFO > EVENT > Event** field in the **Main Menu**.

Figure 11-6   Event Information Window

On the **Event** page, you can view event information at the device level and at the channel level. The NVR automatically refreshes this information.

Viewing Network Information

In the network information interface you can view and/or block online users, view network data transmission details, and perform network tests.

Viewing Online Users

You can view the user name, IP address, and login time of all online users. You can also block an online user for a specified period of time.

To view online users

Go to **Main Menu** > **INFO** > **NETWORK** > **ONLINE USERS**.

Figure 11-7   Viewing Online Users

Note   Every five seconds, the NVR system detects newly added or dropped users, and updates the list of online users.

To block an online user

1. In the **INFO** > **NETWORK** field in the **Main Menu**, go to **ONLINE USERS** (see *Figure 11-7*).

2. Click the **Block for** icon in the user list, and then, in the **Block for** box at the bottom of the screen, enter the time in seconds that you want to block the user for. You can enter up to **65535** seconds (18.2 hours).

Viewing Network Load Information

- Go to **Main Menu** > **INFO** > **NETWORK** > **Load**.

Figure 11-8   Viewing Network Load
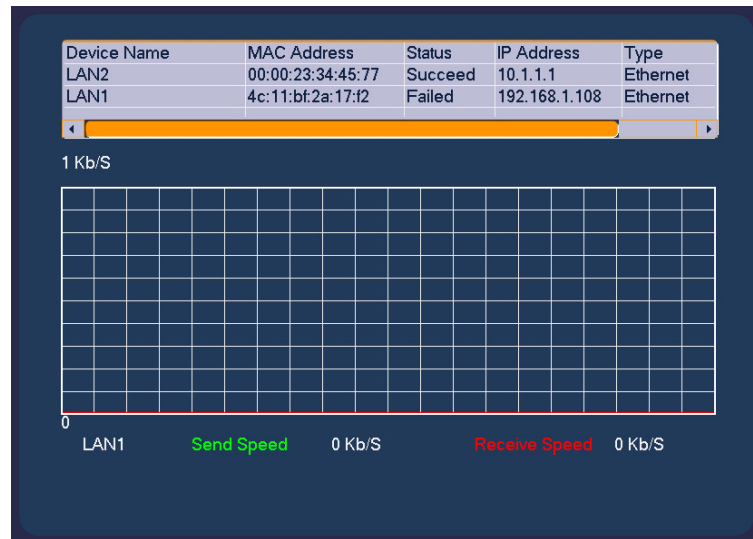
On the **Load** page, you can view the network device name, MAC address, status (**Succeed** or **Failed**), device IP address, network type, the maximum transmission unit (MTU), send speed, and receive speed.

Viewing Network Test Information

1. Go to **Main Menu > INFO > NETWORK > Test**.

Figure 11-9   Testing the Network

2. On the **Test** page, under **TEST**, enter a valid IPv4 address or domain name in the **Destination IP** box, and then click **Test**.

   The test result displays the average delay and packet loss rate. It also indicates if the network status is **OK**, **Bad**, or **No Connection**.

To back up network packet data to an external USB storage device

1. Insert a USB storage device (such as a USB flash drive) into one of the USB ports on the NVR.

2. On the **Test** page, under **Network Sniffer Packet Backup**, click **Refresh**. The connected USB storage device should appear in the **Device Name** box.

3. If you want, click **Browse** to set the saving path.

4. In the network devices list, in the **Sniffer Packet Backup** column, click the green arrow button to start capturing the data. Click the button again to stop capturing the data.

Viewing Log Information

To view log information

1. Go to **Main Menu** > **INFO** > **LOG**.

Figure 11-10   Viewing Log Information
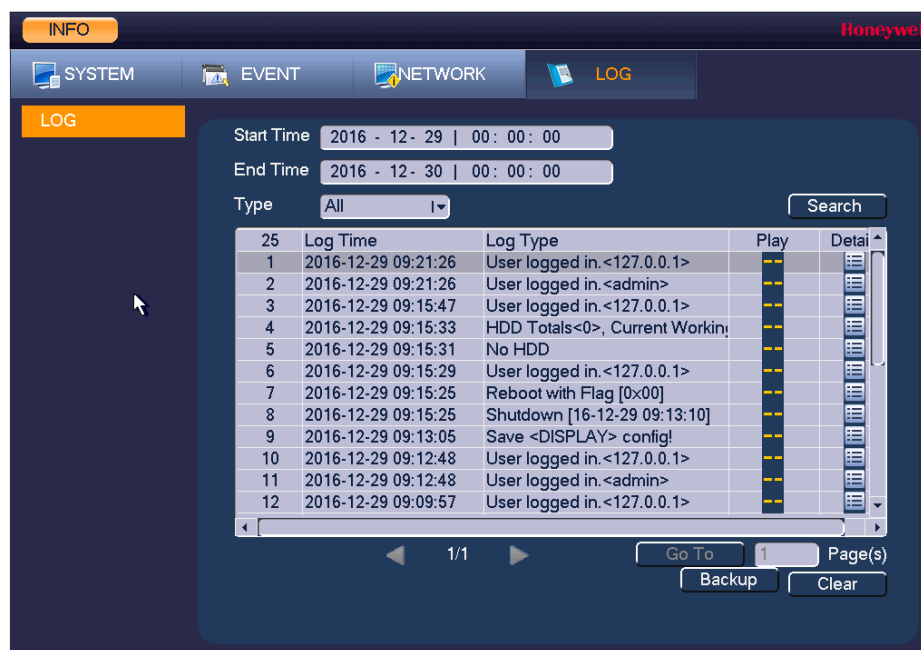
2. In the **Start Time** and **End Time** boxes, enter the time period to search the log.

3. In the **Type** box, select a specific log type to view (**System**, **Config**, **Storage**, **Alarm**, **Record**, **Account**, **Clear**, **Playback**, **Connection**) or select **All** to view all logs, and then click **Search**.

   The search results are displayed in an ordered list. The NVR can save up to **1024** log files.

4. To view more details about a log entry, click the **Details** button for that row.

To back up log information to an external USB storage device

1. Insert a USB storage device (such as a USB flash drive) into one of the USB ports on the NVR. The **Find USB device** dialog box opens.

   Figure 11-11 Find USB Device Window
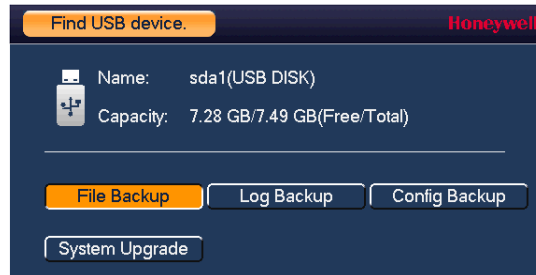
2. In the **Find USB device** dialog box, click **Log Backup**.

3. On the **Log** page, click **Backup**. The log file (`FileLog.txt`) is located in a folder named Log_[*YYYYMMDDhhmmss*] on your storage device.

12

Troubleshooting

The following section describes possible problems and solutions. Refer to these troubleshooting steps before calling Technical Support. If you still require assistance, call Honeywell Technical Support at 1-800-323-4576 (North America only) or send an e-mail to *https://www.honeywellsystems.com/ss/techsupp/index.html*. International contact information is listed on the back cover.

Problem: The NVR does not turn on.

- Check that the input voltage is correct.
- Check that the power cable is connected correctly to the NVR.
- Check that the power switch is in the ON position.
- Check that there is power at the outlet. Try connecting the NVR to another outlet or test the outlet with another device.
- Remove the housing and check that the hard drive cables are firmly connected.

Problem: The NVR automatically shuts down or stops running.

- Check that the NVR is receiving power and that the input voltage is correct and stable.
- Make sure that the working environment is within the specified temperature range and is free of dust. See *Appendix D, Specifications*.
- Remove the housing and check that the hard drive cables are firmly connected.

Problem: The NVR cannot detect the hard drive.

- Remove the housing and check that the hard drive cables are firmly connected.
- Inspect the hard drive and ribbon for damage. Replace if damaged.
- Inspect the main board SATA port for damage. Replace if damaged.

Problem: There is no picture on the monitor.

- Check that the correct input (VGA) is selected on the monitor.

- Turn off the monitor and NVR. Turn on the monitor, and then turn on the NVR.

- Check that the video cable is connected correctly to the NVR.

- Make sure that the camera's brightness setting is configured correctly.
See *Configuring Camera Image Settings* on page 65.

- Make sure that a privacy mask is not blocking the video.
See *Configuring the Text Overlay* on page 69.

Problem: Color of live video is distorted.

- Make sure that the camera image settings are configured correctly.
See *Configuring Camera Image Settings* on page 65.

- Make sure that the NVR is configured to use the correct video standard (NTSC or PAL).
See *Configuring General System Settings* on page 117.

Problem: Cannot search local records.

- Check that recording is enabled. See *Configuring the General Recording Settings* on page 50.

Problem: There is no audio when viewing live video.

- Check the audio input and output connections on the NVR.

- Increase the volume on the headphones/speakers.

Problem: There is no audio when playing back video.

- Make sure that the audio is enabled in the playback interface and the volume is turned up.

Problem: The time display is incorrect.

- Make sure that the date and time settings are configured correctly.
See *Configuring Date and Time Settings* on page 119.

- Replace the battery on the main board.

Problem: The NVR cannot control PTZ functions.

- Check that the PTZ camera is connected correctly to the network.
- Make sure that the NVR is configured correctly for PTZ operation. The protocol and address settings of the NVR must match the protocol and address settings of the PTZ camera. See *Adding a Camera* on page 63 for the camera settings. See *Configuring TCP/IP and Port Settings* on page 73 for NVR settings.

Problem: Motion detection does not work.

- Increase the motion detection sensitivity. It may be set too low.
  To set the motion detection sensitivity, see *Configuring Motion Detection Settings* on page 89.
- Make sure that the motion detection schedule is configured correctly.
  To setup up the Motion detection schedule, see *To set up motion detection periods* on page 91.
- Make sure that the motion detection zone setup is configured correctly.
  To set up motion detection zone, see *Configuring Motion Detection Settings* on page 89.

Problem: The network connection is unstable.

- Check that there is no IP address or MAC address conflict.

Problem: There is a USB backup error.

- Check that the USB storage device has sufficient space available.

Problem: Alarm signal cannot be disarmed.

- Make sure that the alarm settings are correctly configured.
- Check the alarm cable connections.
- Make sure that the NVR is running the latest firmware.

Problem: Alarm function is null.

- Make sure that the alarm settings are correctly configured.
- Check the alarm cable connections.
- Check that you have not connected two loops to one alarm device.

Problem: Cannot play a downloaded file.

- Use the player included on the software CD.

- Make sure that you have DirectX8.1 or greater installed on your computer.

- If you are using Windows XP, download the plug-ins **`DivX503Bundle.exe`** and **`ffdshow-20041012.exe`**.

A

Connecting Alarm Input/Outputs

This appendix contains the following sections:

Before Connecting Alarm Inputs and Outputs

- Ensure that the alarm input mode is set to ground.
- Ensure that the signal is grounded.
- Know that the alarm inputs require low-level voltage signals.
- Ensure that the alarm input mode is set to either NC (normally closed) or NO (normally open).
- Use a relay if you are connecting two NVRs, or a NVR plus another device, to separate them.
- Do NOT directly connect the alarm output port to a high-power load. The load should be less than 1 A to avoid damage.
- Use the contactor to make the connection between the alarm output port and the load.

Alarm Input and Output Rear Panel Connections

The connections for the alarm input and output channels are described below:

Input/Output	Description
1 to 4	Alarms inputs 1 to 4. The inputs becomes active with low voltage.
NO1 C1, NO2 C2	Normally open activation outputs (on/off)
⏚	Ground

Guidelines for Connecting Local Alarm Input Ports

- Ground alarm inputs. Choose from normally open (NO) or normally closed (NC).
- Connect the COM end and GND end of the alarm detector in parallel. Supply external power to the alarm detector.
- Connect the ground of the NVR and the ground of the alarm detector in parallel.
- Connect the NO/NC port of the alarm sensor to the NVR alarm input.
- Use the same ground as the NVR if you are supplying external power to the alarm device.

Guidelines for Connecting Alarm Output Ports

- Provide external power to external alarm device.
- To prevent overloading, carefully review the following relay specifications:

Material	Nickel/silver contacts with gold plating	
Rating (Resistance Load)	Rated switch capacity	30 V DC 1A; 125 V AC 0.5A
	Maximum switch power	62.5 V AC, 30 W
	Maximum switch voltage	125 V AC; 60 V DC

B

Installing Hard Drives

The appendix contains the following sections:

Note   Field retrofitting of the HDD storage with an incompatible HDD could invalidate the NVR warranty.

Hard Disk Drive Recommendations

- See *List of Compatible SATA HDDs* on page 165 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 Hard Drives

Note Field retrofitting of the HDD storage with an incompatible HDD could invalidate the NVR warranty.

On some recorder models, you can install an additional hard disk drive (HDD). For a list of compatible HDDs, see the *List of Compatible SATA HDDs* on page 165. A 7200 rpm or higher HDD is recommended.

⚠️ **CAUTION**   **Risk of electric shock. Disconnect the power before removing the cover.**

Note The procedure for installing a hard drive is different depending on what NVR unit you have. Check the model number of your NVR and make sure that you refer to the section that applies to your NVR unit:

- *Installing a HDD on HEN081*4/HEN161*4/HEN321*4* on page 158.
- *Installing a HDD on HEN162*4/HEN322*4/HEN642*4* on page 160.
- *Installing a HDD on HEN163*4/HEN323*4/HEN643*4* on page 162.

Installing a HDD on HEN081*4/HEN161*4/HEN321*4

1. Loosen the screws on the upper cover and side panel of the NVR, remove the cover, and set it aside.

   Figure B-1   Removing the NVR Cover

2. Loosen four screws on the HDD.

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

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

Figure B-3   Placing the HDD

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

Figure B-4   Securing the HDD to the NVR Housing

5. Connect the HDD cable and power cable.

Figure B-5   Connecting the HDD and the Power Cable

6.   Replace the NVR cover.

Figure B-6   Replacing the NVR Cover

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

Figure B-7   Securing the NVR Cover

Installing a HDD on HEN162*4/HEN322*4/HEN642*4

1.   Loosen the screws on the rear panel of the NVR, remove the front cover, and set it aside.

Figure B-8   Removing the NVR Cover

2.   Loosen four screws on the HDD.

Figure B-9   Loosening the Four Screws in the HDD Housing

3.   Put the HDD on the HDD bracket in the chassis and then align the HDD with the four holes in the bracket.

Figure B-10   Placing the HDD

4.   Fasten the screws to firmly attach the HDD to the NVR housing.

5.   Connect the HDD data cable to the main board and the HDD port respectively.

6.   Loosen the power cable from the chassis and connect another end of the power cable to the HDD port.

Figure B-11   Connecting the HDD and the Power Cable

7.   Replace the NVR cover.

Figure B-12   Replacing the NVR Cover
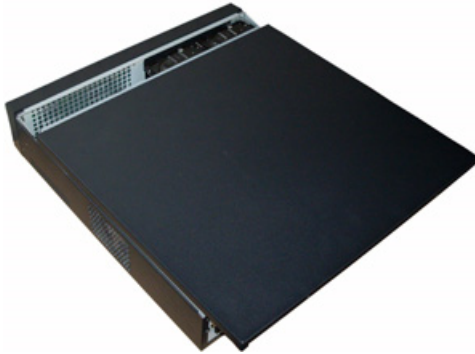
8.   Secure the NVR cover in place by fixing the screws in the rear panel.

Installing a HDD on HEN163*4/HEN323*4/HEN643*4

1.   Loosen the screws on the rear panel of the NVR, remove the front cover, and set it aside.

Figure B-13   Removing the NVR Cover

2.   Loosen four screws on the HDD.

Figure B-14   Loosening the Four Screws in the HDD Housing

3. Put the HDD on the HDD bracket in the chassis and then align the HDD with the four holes in the bracket.

Figure B-15   Placing the HDD

4. Fasten the screws to firmly attach the HDD to the NVR housing.

5. Connect the HDD data cable to the main board and the HDD port respectively.

6. Loosen the power cable from the chassis and connect another end of the power cable to the HDD port.

Figure B-16   Connecting the HDD and the Power Cable

7. Replace the NVR cover.

Figure B-17   Replacing the NVR Cover

8. Secure the NVR cover in place by fixing the screws in the rear panel.

Installing an Additional HDD

Note   The procedure for installing an additional hard drive is similar to the installing hard drive sections above, but different depending on what NVR unit you have. Check the model number of your NVR and make sure that you refer to the steps in the section that applies to your NVR unit when installing an additional HDD:

- *Installing a HDD on HEN081*4/HEN161*4/HEN321*4* on page 158.
- *Installing a HDD on HEN162*4/HEN322*4/HEN642*4* on page 160.
- *Installing a HDD on HEN163*4/HEN323*4/HEN643*4* on page 162.

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1. If the NVR is connected to a power source, disconnect it before continuing.

2. Remove the top cover from the NVR housing as described in the Installing HDD section for your unit. Refer to the corresponding section:

    - HEN081*4/HEN161*4/HEN321*4 on *page 158*,

    - HEN162*4/HEN322*4/HEN642*4 on *page 160*,

    - HEN163*4/HEN323*4/HEN643*4 on *page 162*.

3. Connect the SATA and power cables to the new HDD.

4. Position the new HDD over the four open screw holes in the base of the housing or HDD bracket (depending on your NVR model), adjacent to the existing HDD.

5. Secure the new HDD to the housing using the four supplied HDD mounting screws.

6. Replace the NVR top cover on the NVR housing and secure it with the screws removed in step 2.

List of Compatible SATA HDDs

Note   Upgrade the NVR firmware to the latest version to ensure the accuracy of the table below.

Manufacturer	Series	Model	Capacity
Seagate	Seagate SV35.3	ST31000340SV	1 TB
Seagate	Seagate SV35.5	ST31000525SV	1 TB
Seagate	Seagate SV35.5	ST31000526SV	1 TB
Seagate	Seagate SV35.5	ST1000VX003	1 TB
Seagate	Seagate SV35.5	ST2000VX003	2 TB
Seagate	Seagate SV35.5	ST2000VX002	2 TB
Seagate	Seagate SV35.5	ST2000VX000	2 TB
Seagate	Seagate SV35.5	ST3000VX000	3 TB
Seagate	Seagate Pipeline HD2	ST31000424CS	1 TB
Seagate	Seagate Pipeline HD2	ST31000322CS	1 TB
Seagate	Seagate Pipeline HD2	ST1000VM002	1 TB
Seagate	Seagate Pipeline HD2	ST1500VM002	1 TB
Seagate	Seagate Pipeline HD2	ST2000VM002	2 TB
Seagate	Seagate Pipeline HD2	ST2000VM003	2 TB
Seagate	Seagate Constellation ES	ST31000524NS	1 TB
Seagate	Seagate Constellation ES	ST32000644NS	2 TB
Seagate	Seagate Constellation ES	ST2000NM0011	2 TB
Seagate	Seagate Constellation ES	ST1000MN0011	1 TB
Seagate	Seagate Constellation ES	ST2000NM0031	2 TB
Seagate	Seagate Constellation ES	ST1000NM0031	1 TB
Seagate	Seagate Constellation ES	ST2000NM0051	2 TB
Seagate	Seagate Constellation ES	ST1000NM0051	1 TB
Seagate	Seagate Constellation ES2	ST33000650NS	3 TB
Seagate	Seagate Constellation ES2	ST32000645NS	2 TB
Seagate	Seagate Constellation ES2	ST33000651NS	3 TB
Seagate	Seagate Constellation ES2	ST32000646NS	2 TB
Seagate	Seagate Constellation ES2	ST33000652NS	3 TB

Manufacturer	Series	Model	Capacity
Seagate	Seagate Constellation ES2	ST32000647NS	2 TB
Seagate	Surveillance HDD	ST1000VX001	1 TB
Seagate	Surveillance HDD	ST2000VX003	2 TB
Seagate	Surveillance HDD	ST3000VX006	3 TB
Seagate	Surveillance HDD	ST4000VX000	4 TB
Seagate	Surveillance HDD	ST5000VX001	5 TB
Seagate	Surveillance HDD	ST6000VX0001	6 TB
Seagate	Surveillance HDD	ST8000VX0002	4 TB
Seagate	Surveillance HDD	ST1000VX003	1 TB
Seagate	Surveillance HDD	ST2000VX005	2 TB
Seagate	Surveillance HDD	ST3000VX005	3 TB
Seagate	Surveillance HDD	ST4000VX002	4 TB
Seagate	Surveillance HDD	ST5000VX0011	5 TB
Seagate	Surveillance HDD	ST6000VX0011	6 TB
Seagate	SV35	ST1000VX000	1 TB
Seagate	SV35	ST2000VX000	2 TB
Seagate	SV35	ST3000VX000	3 TB
Seagate	SV35	ST1000VX002	1 TB
Seagate	SV35	ST2000VX004	2 TB
Seagate	SV35	ST3000VX004	3 TB
Seagate	video 3.5	ST1000VM002	1 TB
Seagate	video 3.5	ST2000VM003	2 TB
Seagate	video 3.5	ST3000VM002	3 TB
Seagate	video 3.5	ST4000VM000	4 TB
Toshiba	Mars	DT01ABA100V	1 TB
Toshiba	Mars	DT01ABA200V	2 TB
Toshiba	Mars	DT01ABA300V	3 TB
Toshiba	Sonance	MD03ACA200V	2 TB
Toshiba	Sonance	MD03ACA300V	3 TB
Toshiba	Sonance	MD03ACA400V	4 TB
Toshiba	Sonance	MD04ABA400V	4 TB
Toshiba	Sonance	MD04ABA500V	5 TB
Western Digital	WDAV-GP–EVCS	WD10EVCS-63ZLB0	1 TB
Western Digital	WDAV-GP–EVCS	WD20EVCS-63ZLB0	2 TB
Western Digital	WDAV-GP–EVVS	WD10EVVS-63E1B1	1 TB
Western Digital	WDAV-GP–EVDS	WD10EVDS-63N5B1	1 TB

Manufacturer	Series	Model	Capacity
Western Digital	WDAV-GP–EVDS	WD15EVDS-63V9B0	1.5 TB
Western Digital	WDAV-GP–EVDS	WD20EVDS-63T3B0	2 TB
Western Digital	WD AV-GP	WD30EURS	3 TB
Western Digital	WD AV-GP	WD25EURS	2.5 TB
Western Digital	WD AV-GP	WD20EURS	2 TB
Western Digital	WD AV-GP	WD15EURS	1.5 TB
Western Digital	WD AV-GP	WD10EURS	1 TB
Western Digital	WD AV-GP	WD10EURX	1 TB
Western Digital	WD AV-GP	WD10EUCX	1 TB
Western Digital	WC Caviar Green	WD10EURX (EOL)	1 TB
Western Digital	WC Caviar Green	WD20EURX (EOL)	2 TB
Western Digital	WC Caviar Green	WD30EURX (EOL)	3 TB
Western Digital	WC Caviar Green	WD40EURX (EOL)	4 TB
Western Digital	WC Caviar Purple	WD10PURX	1 TB
Western Digital	WC Caviar Purple	WD20PURX	2 TB
Western Digital	WC Caviar Purple	WD30PURX	3 TB
Western Digital	WC Caviar Purple	WD40PURX	4 TB
Western Digital	WC Caviar Purple	WD50PURX	5 TB
Western Digital	WC Caviar Purple	WD4NPURX	6 TB
Western Digital	WC Caviar Purple	WD6nPURX	4 TB
Western Digital	WC Caviar Purple	WD60OURX	6 TB
Samsung	Samsung–HA	HA101UJ/CE	1 TB
Samsung	Samsung–HD	HD103SI/CEC	1 TB
Samsung	Samsung–HD	HD154UI/CE	1.5 TB
Hitachi	HitachiCinemaStar™ 7K1000.B	HCT721010SLA360	1 TB

List of Compatible Portable HDDs

Manufacturer	Model	Capacity
YDStar	YDStar HDD box	40 GB
Netac	Netac	80 GB
Iomega	Iomega RPHD-CG" RNAJ50U287	250 GB
WD Elements	WCAVY1205901	1.5 TB
Newsmy	Liangjian	320 GB
WD Elements	WDBAAR5000ABK-00	500 GB
WD Elements	WDBAAU0015HBK-00	1.5 TB
Seagate	FreeAgent Go (ST905003F)	500 GB
Aigo	H8169	500 GB

C

MAXPRO® Cloud

This appendix contains the following section:

Configuring for MAXPRO Cloud Mode

These cloud-ready devices can be standalone devices or can easily be connected to Honeywell's MAXPRO Cloud platform to create a fully integrated managed cloud solution. When used in MAXPRO Cloud mode, this device becomes a MAXPRO Cloud appliance that creates a secure connection to the cloud, and has the ability to stream high quality video while managing bandwidth. Critical events can be captured locally at higher resolution and frame rates, and then also stored in the cloud for safe and secure backup.

The MAXPRO Cloud solution provides the following additional added value for customers and dealers:

*   Access on the go. View live or recorded video anytime anywhere on your PC, MAC, laptop, or mobile device.

*   Ease of remote management, configuration and changes, f/w updates, and increase managed services from a single login.

*   Real-time informative notifications with clip links and alerts for health, status, and critical events.

*   Verification of site alarms, and reduction of false alarm costs and call outs.

*   Adding cloud storage on the go.

Note	A MAXPRO Cloud service subscription is required. Please contact Honeywell Customer Service for details. See the back cover for contact information.

To switch to MAXPRO Cloud mode:

1. Go to **Main Menu** > **OPERATION**, then click **MAXPRO CLOUD**.

Figure C-1   Selecting MAXPRO CLOUD
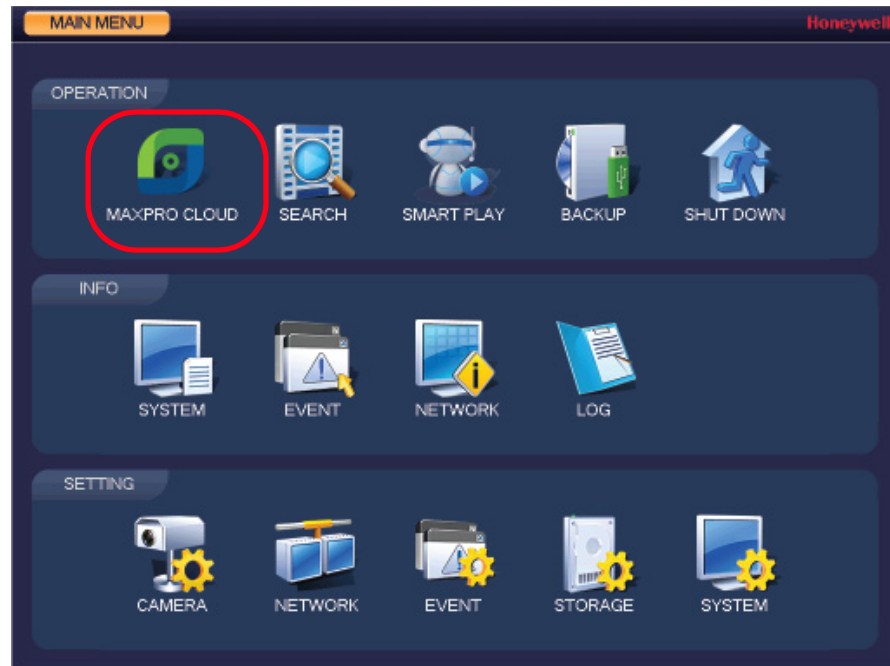
A confirmation message appears.

Figure C-2   MAXPRO Cloud Configuration Confirmation Message
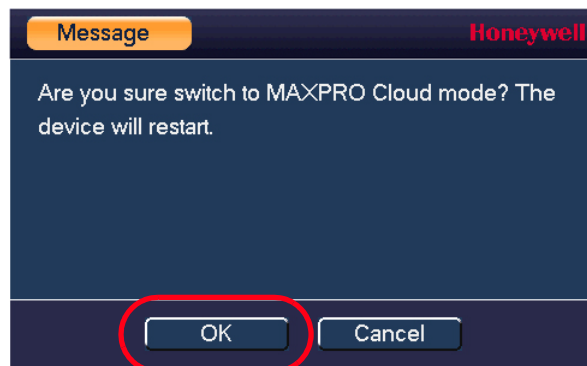
2.   Click **OK** to confirm that you want to switch to MAXPRO Cloud mode.

The NVR restarts and opens in MAXPRO Cloud mode.

Note   For information about operating in MAXPRO Cloud mode, please Contact Honeywell Customer Service.

D

Specifications

Table D-1   Specifications

System	
Main Processor	Quad-core embedded processor
Operating System	Embedded LINUX
Video	
IP Camera Inputs	**8-channel NVRs**: 8 **16-channel NVRs**: 16 **32-channel NVRs**: 32 **64-channel NVRs**: 64
Two-way Talking	1 channel input; 1 channel output; RCA
Display	
Interface	2 HDMI (1 HDMI up to 3840x2160), 1 VGA HEN081*4/HEN161*4/HEN321*4: 1 HDMI, 1 VGA
Resolution	3840 x 2160; 1920 x 1080; 1280 x 1024; 1280 x 720; 1024 x 768
Display Split	**8-channel NVRs**: 1/4/8/9 **16-channel NVRs**: 1/4/8/9/16 **32-channel NVRs**: 1/4/8/9/16/25/36 **64-channel NVRs**: 1/4/8/9/16/25/36
OSD	Camera title; Time; Video loss; Camera lock; Motion detection; Recording
Recording	
Compression	H.265 / H.264 / MJPEG / MPEG4
Resolution	12MP/8MP/6MP/5MP/4MP/3MP/1080p/720p/D1/CIF
Recording Rate	320 Mbps per channel
Bit Rate	16 kbps to 20 Mbps, per channel
Recording Mode	Manual; Schedule (Regular[Continuous]; MD; Alarm); Stop
Recording Interval	1 to 120 minutes (default: 60 minutes); Pre-recording: 1 to 30 seconds; Post-recording: 10 to 300 seconds

Table D-1   Specifications

Video Detection and Alarms	
Trigger Events	Recording; PTZ; Tour; Alarm; Video Push; Email; FTP; Snapshot; Buzzer; Screen Tips
Video Detection	Motion Detection; Motion Detection Zones (396: 22 x 18); Video Loss and Camera Blank
Alarm Input	16 channels HEN081*4/HEN161*4/HEN321*4: 4 channels
Relay Output	6 channels HEN081*4/HEN161*4/HEN321*4: 2 channels
Playback and Backup	
Sync Playback	**HEN081*4/HEN162*4/HEN163*4**: 1/4/8 **HEN161*4 and 32/64-channel NVRs**: 1/4/9/16
Search Mode	Time/Date; Alarm; Motion Detection; Exact Search (accurate to a second); Smart Search
Playback Function	Play; Pause; Stop; Rewind; Fast play; Slow Play; Next File; Previous File; Next Camera; Previous Camera; Full Screen; Repeat; Shuffle; Backup Selection; Digital Zoom
Backup Mode Compatibility	USB Device; Network; Internal SATA Burner; eSATA Device
Network	
Ethernet	1 RJ-45 port (10/100/1000Mbps)
PoE	**HEN081*4/HEN161*4/HEN321*4**: 8 ports (IEEE802.3at/af) **Other NVRs:** 16 ports (IEEE802.3at/af)
Network Function	HTTP, TCP/IP, IPv4/IPv6, UPnP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPoE, DDNS, FTP, Alarm Server, IP Search; P2P
Maximum number of users	128 users
Smart Phone compatibility	iPhone; iPad; Android
Storage	
Internal Storage	**HEN081*4/HEN161*4/HEN321*4**: 2 SATA ports (up to 12 TB) **HEN162*4/HEN322*4/HEN642*4**: 4 SATA ports (up to 24 TB) **HEN163*4/HEN323*4/HEN643*4**: 8 SATA ports (up to 48 TB)
External HDD	**HEN162*4/HEN322*4/HEN642*4**: 1 eSATA port **HEN163*4/HEN323*4/HEN643*4**: 1 eSATA port
HDD Mode	**HEN163*4/HEN323*4/HEN643*4**: RAID 0/1/5/6/10

Table D-1   Specifications

Auxiliary Interface	
USB	**HEN081*4**/**HEN161*4**/**HEN321*4**: 2 ports (1 rear USB 3.0, 1 front USB 2.0) **HEN162*4**/**HEN322*4**/**HEN642*4**: 3 ports (2 rear USB 3.0, 1 front USB 2.0) **HEN163*4**/**HEN323*4**/**HEN643*4**: 4 ports (2 rear USB 3.0, 2 front USB 2.0)
RS232	1 port, for PC communication and keyboard
Electrical	
Power Supply	100~240 V AC; 50/60 Hz
Power Consumption	**HEN081*4**/**HEN161*4**/**HEN321*4**: 15.2 W without HDD **HEN162*4**/**HEN322*4**/**HEN642*4**: 17.5 W without HDD **HEN163*4**/**HEN323*4**/**HEN643*4**: 17.5 W without HDD
PoE	**HEN081*4**/**HEN161*4**/**HEN321*4**: 8 ports (IEEE802.3at/af) total load not to exceed 130 W, maximum load on any single port 25.5 W **HEN162*4**/**HEN322*4**/**HEN642*4**: 16 ports (IEEE802.3at/af) total load not to exceed 150 W, maximum load on any single port 25.5 W **HEN163*4**/**HEN323*4**/**HEN643*4**: 16 ports (IEEE802.3at/af) total load not to exceed 150 W, maximum load on any single port 25.5 W
Environmental	
Operating Temperature	14° F to 131°F (-10°C to 55°C)
Humidity	10% to 90% relative humidity
Physical	
Dimensions	**HEN081*4**/**HEN161*4**/**HEN321*4**: 14.8 x 12.9 x 2.1 inches (375 x 327 x 53 mm) **HEN162*4**/**HEN322*4**/**HEN642*4**: 17.3 x 16.3 x 3.0 inches (440 x 413 x 75 mm) **HEN163*4**/**HEN323*4**/**HEN643*4**: 17.3 x 17.9 x 3.7 inches (440 x 454 x 95 mm)
Weight (without HDD)	**HEN081*4**/**HEN161*4**/**HEN321*4**: 5.73 pounds (2.6 kg) **HEN162*4**/**HEN322*4**/**HEN642*4**: 10.25 pounds (4.65 kg) **HEN163*4**/**HEN323*4**/**HEN643*4**: 15.43 pounds (7.0 kg)

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