



Network Video Recorder

User Manual

User Manual

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About this Manual

This Manual is applicable to Network Video Recorder (NVR).

The Manual includes instructions for using and managing the product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version in the company website (<http://overseas.hikvision.com/en/>).

Please use this user manual under the guidance of professionals.

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Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement



This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the LVD Directive 2014/35/EU, the RoHS Directive 2011/65/EU.



2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info



2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Safety Instructions

- Proper configuration of all passwords and other security settings is the responsibility of the installer and/or end-user.
- In the use of the product, you must be in strict compliance with the electrical safety regulations of the nation and region. Please refer to technical specifications for detailed information.
- Input voltage should meet both the SELV (Safety Extra Low Voltage) and the Limited Power Source with 100~240 VAC, 48VDC or 12 VDC according to the IEC60950-1 standard. Please refer to technical specifications for detailed information.
- Do not connect several devices to one power adapter as adapter overload may cause over-heating or a fire hazard.
- Please make sure that the plug is firmly connected to the power socket.
- If smoke, odor or noise rise from the device, turn off the power at once and unplug the power cable, and then please contact the service center.

Preventive and Cautionary Tips

Before connecting and operating your device, please be advised of the following tips:

- Ensure unit is installed in a well-ventilated, dust-free environment.
- Unit is designed for indoor use only.
- Keep all liquids away from the device.
- Ensure environmental conditions meet factory specifications.
- Ensure unit is properly secured to a rack or shelf. Major shocks or jolts to the unit as a result of dropping it may cause damage to the sensitive electronics within the unit.
- Use the device in conjunction with an UPS if possible.
- Power down the unit before connecting and disconnecting accessories and peripherals.
- A factory recommended HDD should be used for this device.
- Improper use or replacement of the battery may result in hazard of explosion. Replace with the same or equivalent type only. Dispose of used batteries according to the instructions provided by the manufacturer.




Applicable Models

This manual is applicable to the models listed in the following table.

| Series | Model |
|------------------|------------------|
| DS-7100NI-K1/W/M | DS-7104NI-K1/W/M |
| | DS-7108NI-K1/W/M |

Symbol Conventions

The symbols that may be found in this document are defined as follows.

| Symbol | Description |
|---|---|
|  NOTE | Provides additional information to emphasize or supplement important points of the main text. |
|  WARNING | Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results. |
|  DANGER | Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury. |

Product Key Features

General

- Connectable to network cameras, network dome and encoders.
- Connectable to the third-party network cameras via HIK, ONVIF, private RTSP protocols.
- Connectable to the smart IP cameras.
- PAL/NTSC adaptive video inputs.
- Supports H.265+/H.265/ H.264+/H.264 video streams.
- Each channel supports dual-stream.
- Up to 8 network cameras can be connected.
- Independent configuration for each channel, including resolution, frame rate, bit rate, image quality, etc.
- The quality of the input and output record is configurable.

Local Monitoring

- HDMI™/VGA outputs at up to 1920×1080 resolution.
- Multiple screen display in live view is supported, and the channel display sequence is adjustable.
- Live view screen can be switched in group, and manual switch and automatic cycle live view are also provided, and the interval of automatic cycle can be adjusted.
- Configurable main stream and sub-stream for the live view.
- Quick setting menu is provided for live view.
- Motion detection, video tampering, VCA (Video Content Analysis) alarm, video exception alert and video loss alert functions.
- Privacy mask.
- Supports multiple PTZ protocols; PTZ preset, patrol and pattern.
- Zooming in by clicking the mouse and PTZ tracing by dragging mouse.

HDD Management

- 1 SATA hard disk of 6 TB capacity can be connected.
- Supports S.M.A.R.T. and bad sector detection.
- HDD quota management; different capacity can be assigned to different channel.

Recording and Playback

- Holiday recording schedule configuration.

- Continuous and event video recording parameters.
- Multiple recording types: manual, continuous, alarm, motion, motion | alarm, motion & alarm.
- 8 recording time periods with separated recording types each day.
- Pre-record and post-record for alarm, motion detection for recording, and pre-record time for schedule and manual recording.
- Searching record files by events (alarm input/motion detection/VCA).
- Playback by sub-periods.
- Tag adding for record files, searching and playing back by tags.
- Locking and unlocking record files.
- Local redundant recording.
- Provides playback interface with easy and flexible operation.
- Searching and playing back record files by camera No., recording type, start time, end time, etc.
- Smart search for the selected area in the video.
- Zooming in when playback.
- Reverse playback of multi-channel.
- Supports pause, play reverse, speed up, speed down, skip forward, and skip backward when playback, and locating by dragging the mouse.
- Supports thumbnails view and fast view during playback.
- Up to 4/8-ch synchronous playback.

Backup

- Export video data by USB or SATA device.
- Export video clips when playback.
- Management and maintenance of backup devices.

Alarm and Exception

- Configurable arming time of alarm input/output.
- Alarm for video loss, motion detection, VCA, video tampering, HDD full, HDD error, network disconnected, IP confliction, and illegal login, abnormal record, etc.
- Alarm triggers full screen monitoring, audio alarm, notifying surveillance center, sending email and alarm output.
- Automatic restore when system is abnormal.
- Supports line crossing detection and intrusion detection.

- VCA alarm message push via Hik-Connect mobile client software.

Other Local Functions

- Three-level user management; admin user is allowed to create many operating accounts and define their operating permission, which includes the limit to access any channel.
- Admin password resetting by exporting/importing the GUID file.
- Operation, alarm, exceptions and log recording and searching.
- Manually triggering and clearing alarms.
- Import and export of device configuration information.

Network Functions

- 10 /100 Mbps self-adaptive Ethernet interface.
- IPv6 is supported.
- TCP/IP protocol, DHCP, DNS, DDNS, NTP, SADP, and SMTP are supported.
- TCP, UDP and RTP for unicast.
- Auto/Manual port mapping by UPnP™.
- Supports access by Hik-Connect.
- Remote reverse playback via RTSP.
- Supports accessing by the platform via ONVIF.
- Remote search, playback, download, locking and unlocking of the record files, and the breakpoint resume is supported for downloading files.
- Remote viewing of the device status, system logs and alarm status.
- Remote keyboard operation.
- Remote locking and unlocking of control panel and mouse.
- Remote HDD formatting and program upgrading.
- Remote system restart and shutdown.
- Alarm and exception information can be sent to the remote host
- Remotely start/stop recording.
- Remotely start/stop alarm output.
- Remote PTZ control (depending on models).
- Remote JPEG capture.
- Embedded WEB server.
- Upgrade by FTP server.

Development Scalability:

- SDK for Windows and Linux system.
- Source code of application software for demo.
- Development support and training for application system.

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Chapter 1 Introduction

1.1 Front Panel

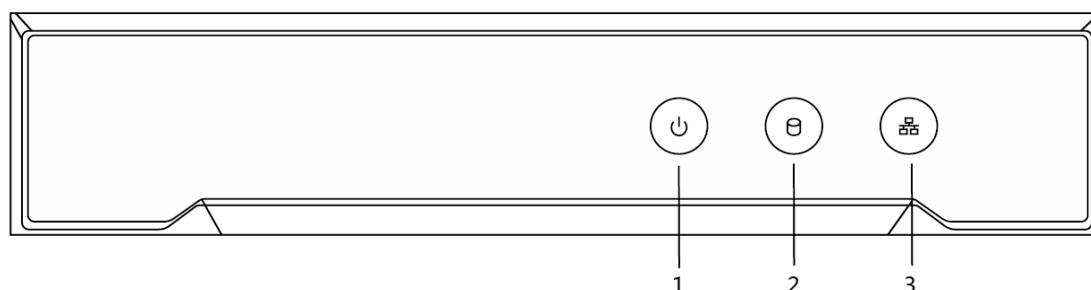





Figure 1-1 DS-7100NI-K1/W/M Series

Table 1-1 Description of Front Panel

| No. | Icon | Description |
|-----|---|--|
| 1 |  | Indicator turns red when NVR is powered up. |
| 2 |  | Indicator lights in red when there is data transmission. |
| 3 |  | Indicator blinks blue when network connection is functioning properly. |

1.2 USB Mouse Operation

A regular 3-button (Left/Right/Scroll-wheel) USB mouse can also be used with this NVR. To use a USB mouse:

Step 1 Plug USB mouse into one of the USB interfaces on the front panel of the NVR.

Step 2 The mouse should automatically be detected. If in a rare case that the mouse is not detected, the possible reason may be that the two devices are not compatible, please refer to the recommended the device list from your provider.

The operation of the mouse:

Table 1-2 Description of the Mouse Control

| Name | Action | Description |
|------------|--------------|--|
| Left-Click | Single-Click | Live view: Select channel and show the quick set menu. |

| | | |
|--------------|----------------|---|
| | | Menu: Select and enter. |
| | Double-Click | Live view: Switch between single-screen and multi-screen. |
| | Click and Drag | PTZ control: pan, tilt and zoom. Video tampering, privacy mask and motion detection: Select target area. Digital zoom-in: Drag and select target area. Live view: Drag channel/time bar. |
| Right-Click | Single-Click | Live view: Show menu. Menu: Exit current menu to upper level menu. |
| Scroll-Wheel | Scrolling up | Live view: Previous screen. Menu: Previous item. |
| | Scrolling down | Live view: Next screen. Menu: Next item. |

1.3 Rear Panel



NOTE

The rear panel varies according to different models.

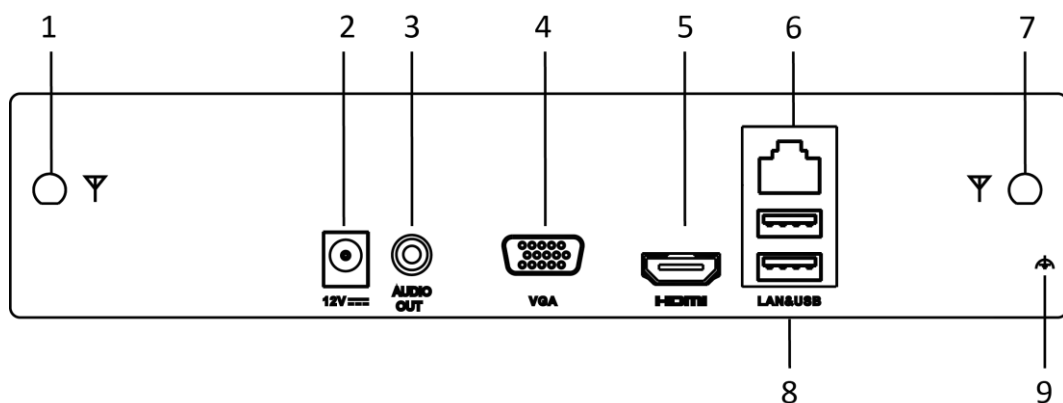


Figure 1-2 DS-7100NI-K1/W/M Rear Panel

Table 1-3 Description of Rear Panel

| No. | Name | Description |
|-----|---------------|--|
| 1 | Wi-Fi Antenna | Wi-Fi antenna interface. |
| 2 | Power supply | 12 VDC power supply. |
| 3 | Audio out | 1 RCA connectors for audio output. |
| 4 | VGA | VGA video output connector. |
| 5 | HDMI | HDMI video output connector. |
| 6 | LAN | One RJ-45 10M/100M self-adaptive Ethernet interfaces provided. |
| 7 | Wi-Fi Antenna | Wi-Fi antenna interface. |
| 8 | USB | Two USB 2.0 interface. |
| 9 | Ground | Ground (needs to be connected when device starts up). |

Chapter 2 Getting Started

2.1 Device Startup and Activation

2.1.1 Startup and Shutdown the NVR


Purpose:

Proper startup and shutdown procedures are crucial to expanding the life of the NVR.

Before you start:

Check that the voltage of the extra power supply is the same with the NVR's requirement, and the ground connection is working properly.

Starting up the NVR:

- Step 1 Check the power supply is plugged into an electrical outlet. It is HIGHLY recommended that an Uninterruptible Power Supply (UPS) be used in conjunction with the device. The Power indicator LED on the front panel should be red, indicating the device gets the power supply.
- Step 2 Turn on the power switch on the rear panel if the device starts up for the first time, or press the  button on the front panel. The Power indicator LED should turn blue indicating that the unit begins to start up.
- Step 3 After startup, the Power indicator LED remains blue. A splash screen with the status of the HDD appears on the monitor. The row of icons at the bottom of the screen shows the HDD status. 'X' means that the HDD is not installed or cannot be detected.

Shutting down the NVR

- Step 1 Go to **Menu > Shutdown**.



Figure 2-1 Shutdown Menu

- Step 2 Click **shutdown**.

- Step 3 Click **Yes**.

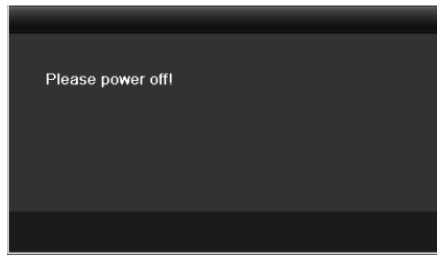


Figure 2-2 Shutdown Attention

Rebooting the NVR

In the Shutdown menu, you can also reboot the NVR.

Step 1 Go to **Menu > Shutdown**.

Step 2 Click **Logout** to lock the NVR or **Reboot** to reboot the NVR.

2.1.2 Activate Your Device

Purpose:

For the first-time access, you need to activate the device by setting an admin password. No operation is allowed before activation.

Step 1 Input the same password **Create New Password** and **Confirm New Password**.

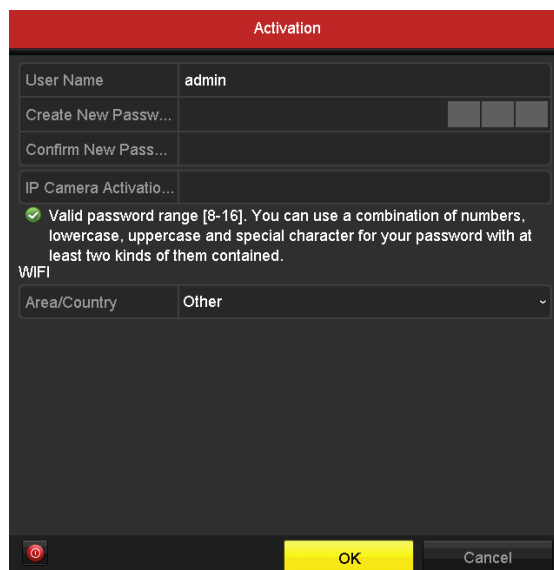


Figure 2-3 Settings Admin Password

WARNING

We highly recommend you create a strong password of your own choosing (Using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters.) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Step 2 Enter **IP Camera Activation Password** to set the IP camera activation password.

Step 3 Select **Area/Country**

Step 4 Click **OK**.

Step 5 When the device is activated, a message box will pop up. And you can click **Yes** to continue to export the GUID file for the future password resetting.



Figure 2-4 Export GUID File Remind

Step 6 Insert the USB flash drive disk to your device, and export the GUID file to the USB flash drive disk in the Reset Password interface. Please refer to Chapter 2.1.5 Reset Your Password for the instructions of password resetting.



Figure 2-5 Export GUID File



NOTE

- Please keep your GUID file properly for future password resetting.
- For the old version device, if you update it to the new version, the following dialog box will pop up once the device starts up. You can click **YES** and follow the wizard to set a strong password.

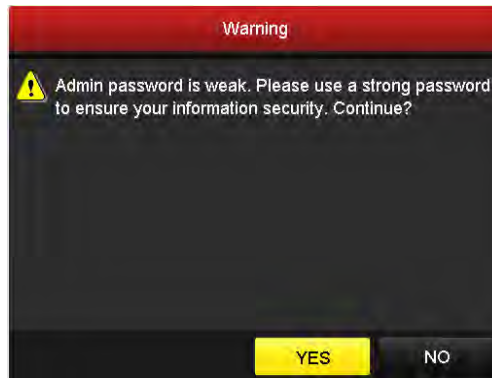


Figure 2-6 Warning

2.1.3 Use the Unlock Pattern for Login

You can configure the unlock pattern for device login.

Configuring the Unlock Pattern

After the device is activated, you can enter the following interface to configure the device unlock pattern.

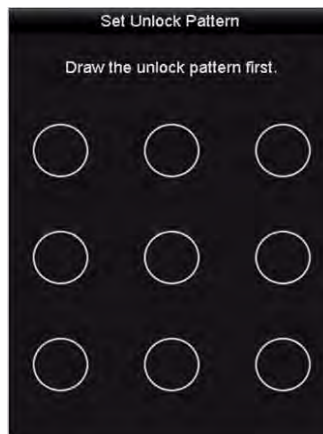


Figure 2-7 Set Unlock Pattern

Step 1 Use the mouse to draw a pattern among the 9 dots on the screen. Release the mouse when the pattern is done.

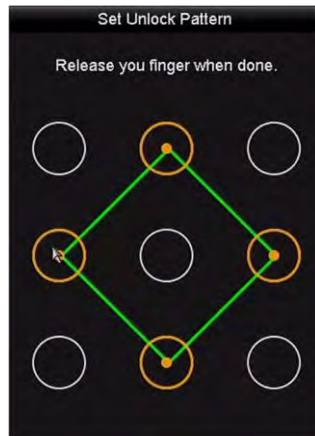


Figure 2-8 Draw the Pattern



- Connect at least 4 dots to draw the pattern.
- Each dot can be connected for once only.

Step 2 Draw the same pattern again to confirm it. When the two patterns match, the pattern is configured successfully.

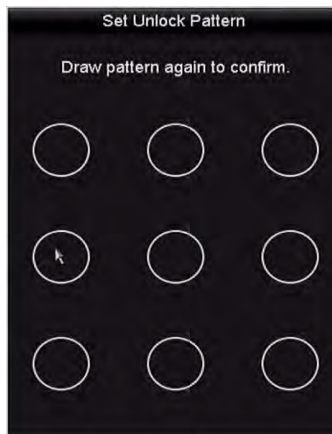


Figure 2-9 Confirm the Pattern



If the two patterns are different, you must set the pattern again.

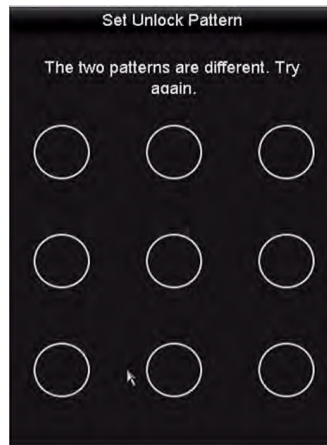


Figure 2-10 Re-set the Pattern

Logging in via Unlock Pattern



NOTE

- Only the *admin* user has the permission to unlock the device.
- Please configure the pattern first before unlocking. Please refer to Configuring the Unlock Pattern:

Step 1 Right click the mouse on the screen and select the menu to enter the interface as shown in Figure 2.8.

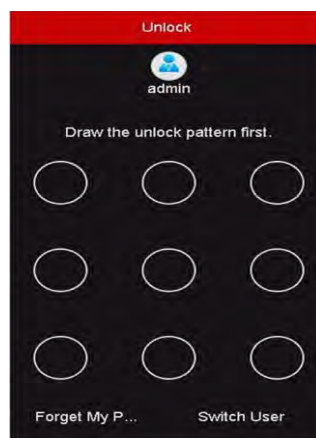


Figure 2-11 Draw the Unlock Pattern

Step 2 Draw the pre-defined pattern to unlock to enter the menu operation.



NOTE

- If you have forgotten your pattern, you can select the **Forget My Pattern** or **Switch User** option to enter the normal login dialog box.
- When the pattern you draw is different from the pattern you have configured, you should try again.
- If you have drawn the wrong pattern for more than 5 times, the system will switch to the normal login mode automatically.

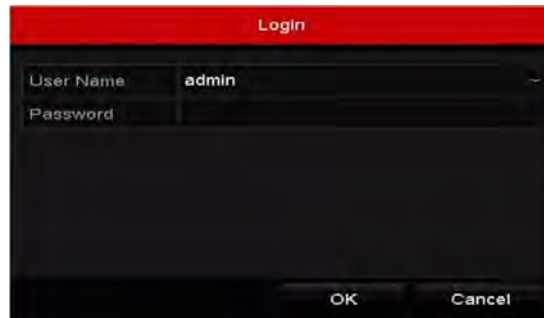


Figure 2-12 Normal Login Dialog Box

2.1.4 Login and Logout

User Login

Purpose:

If NVR has logged out, you must login the device before operating the menu and other functions.

Step 1 Select **User Name** in the dropdown list.



Figure 2-13 Login Interface

Step 2 Input password.

Step 3 Click **OK** to log in.



When you forget the password of the admin, you can click Forget Password to reset the password. Please refer to Chapter 2.1.5 Reset Your Password for details.



The device gets locked for 60 seconds if the admin user performs 7 failed password attempts (5 attempts for the guest/operator).

User Logout

Purpose:

After logging out, the monitor turns to the live view mode and if you want to do some operation, you need to enter user name and password to log in again.

Step 1 Go to **Menu > Shutdown**.



Figure 2-14 Logout

Step 2 Click **Logout**.



After you have logged out the system, menu operation on the screen is invalid. It is required to input a user name and password to unlock the system.

2.1.5 Reset Your Password

When you forget the password of the admin, you can reset the password by importing the GUID file. The GUID file must be exported and saved in the local U-flash disk after you have activated the device (refer to Chapter 2.1.2 Activate Your Device).

Step 1 On the user login interface, click **Forget Password** to enter the Reset Password interface.



Please insert the U-flash disk stored with the GUID file to the NVR before resetting password.



Figure 2-15 Reset Password

Step 2 Select the GUID file from the U-flash disk and click **Import** to import the file to the device.



If you have imported the wrong GUID file for 7 times, you will be not allowed to reset the password for 30 minutes.

Step 3 After the GUID file is successfully imported, enter the reset password interface to set the new admin password.

Step 4 Click **OK** to set the new password. You can export the new GUID file to the U-flash disk for future password resetting.



When the new password is set, the original GUID file will be invalid. The new GUID file should be exported for future password resetting. You can also enter the User>User Management interface to edit the admin user and export the GUID file.

2.2 Use the Wizard for Basic Configuration

The Setup Wizard can guide you to configure the system resolution, system date/time, HDD initialization, IP camera management, etc.



If you don't want to use the setup wizard at that moment, click Exit. You can also choose to use the Setup Wizard next time by leaving the "Start wizard when the device starts?" checkbox checked.

Step 1 Enter the general settings interface to configure the VGA/HDMI resolution, system date and time, and HDD initialization.

Initialize HDD: check it to initialize the HDD which it is used for the first time.

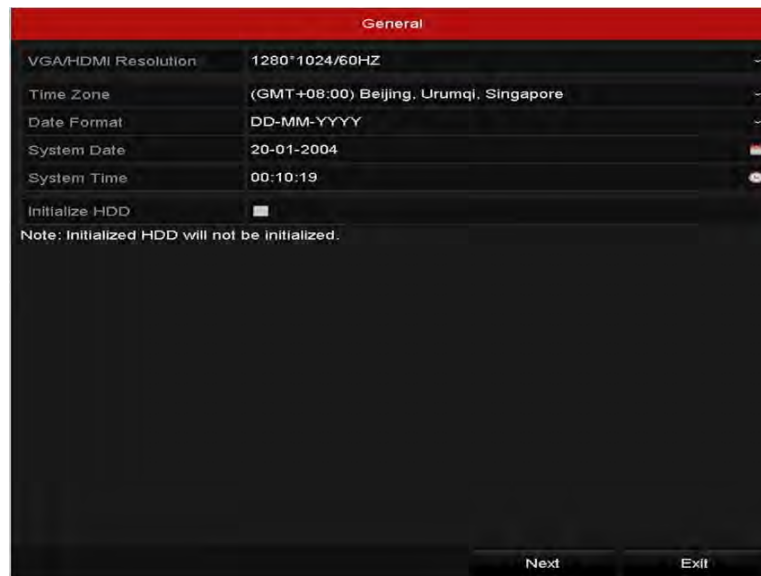


Figure 2-16 Start Wizard Interface

Step 2 Click **Next** to enter the IP Camera Management interface.

- **Automatically Add Cameras (for Non-PoE Models)**

For non-PoE devices, you can quickly add one or more IP cameras which are searched within the same network and have the same user name and password with the device.



Figure 2-17 Start Wizard Interface

- 1) Click **Add All**.
The device starts to automatically search and add the matched cameras.
- 2) Click **OK** when the cameras are added.

● Manually Add Cameras

- 1) Click **Search** to search the online IP cameras within the same network.
- 2) Click **Add** to add the cameras which have the same user name and password with the device.



Figure 2-18 IP Camera Management

NOTE

Figure 2-19 Before adding the camera, make sure the IP camera to be added is in active status. If the camera is in inactive status, you can click the inactive icon of the camera to set the password to activate it. You can also select multiple cameras from the list and click the **One-touch Activate** to activate the cameras in batch.

Step 3 Click **Exit** to complete the startup Setup Wizard.

2.3 Adding and Connecting the IP Cameras

2.3.1 Activate the IP Camera

Purpose:

Before adding the camera, make sure the IP camera to be added is in active status.

Step 1 Select **Add IP Camera** from the right-click menu in live view mode or Go to **Menu > Camera > IP Camera** to enter the IP camera management interface.

For the IP camera detected online in the same network segment, the **Password** status shows whether it is active or inactive.

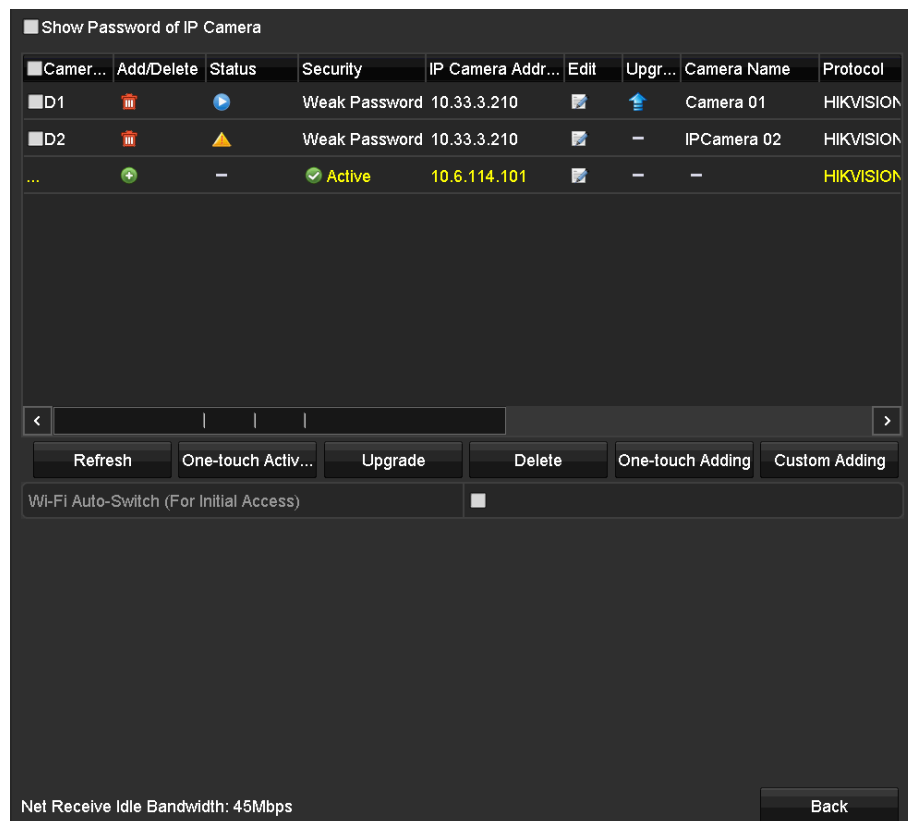


Figure 2-20 IP Camera Management Interface

Step 2 Click the inactive icon of the camera to enter the following interface to activate it. You can also select multiple cameras from the list and click **One-touch Activate** to activate the cameras in batch.

Step 3 Set the password of the camera to activate it.

Use IP Camera Activation Password: when you check the checkbox, the camera (s) will be configured with the same password which you set the device activation interface. Refer to Chapter 2.1.2 Activate Your Device.



Figure 2-21 Set New Password

Create New Password: If the admin password is not used, you must create the new password for the camera and confirm it.

**WARNING**

We highly recommend you create a strong password of your own choosing (Using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters.) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Step 4 Click **OK** to finish the activating of the IP camera. And the security status of camera will be changed to **Active**.

2.3.2 Add the Online IP Cameras

Purpose:

The main function of the NVR is to connect the network cameras and record the video got from it. So before you can get a live view or record of the video, you should add the network cameras to the connection list of the device.

Before you start:

Ensure the network connection is valid and correct. For detailed checking and configuring of the network, please see *Chapter Checking Network Traffic* and *Chapter Configuring Network Detection*.

When adding a camera through wireless network, it is necessary to log in the camera by web browser and configure the wireless parameters.

Adding the IP Cameras


- **OPTION 1:**

Step 1 Select **Add IP Camera** from the right-click menu in live view mode or Go to **Menu > Camera > Camera** to enter the IP camera management interface.



Figure 2-22 Adding IP Camera Interface

Step 2 The online cameras with same network segment will be detected and displayed in the camera list.

Step 3 Select the IP camera from the list and click the  button to add the camera. Or you can click **One-touch Adding** to add all cameras (with the same login password) from the list.



Make sure the camera to add has already been activated.

Step 4 (For the encoders with multiple channels only) check the **Channel Port** checkbox in the pop-up window, as shown in the following figure, and click **OK** to add multiple channels.



Figure 2-23 Selecting Multiple Channels

- **OPTION 2:**

Step 1 On the IP Camera Management interface, click **Custom Adding** to pop up the Add IP Camera (Custom) interface.



Figure 2-24 Custom Adding IP Camera Interface

Step 2 You can edit the IP address, protocol, management port, and other information of the IP camera to be added.



NOTE

If the IP camera to add has not been activated, you can activate it from the IP camera list on the camera management interface.

Step 3 (Optional) Check **Continue to Add** to add other IP cameras.

Step 4 Click **Add** to add the camera. The successfully added cameras are listed in the interface.

Refer to the following table for the description of the icons

Table 2-1 Description of Icons

| Icon | Explanation | Icon | Explanation |
|------|---|-----------------|---|
| | Edit basic parameters of the camera | | Add the detected IP camera |
| | The camera is disconnected; you can click the icon to get the exception information of camera | | Delete the IP camera |
| | Play the live video of the connected camera | | Advanced settings of the camera. |
| | Upgrade the connected IP camera | Security | Show the security status of the camera to be active/inactive or the password strength (strong/medium/weak/risk) |

**NOTE**

For the added IP cameras, the Security status shows the security level of the password of camera: strong password, weak password and risk password.

| Cam... | Add/De... | Status | Security | IP Camera A... | Edit | Upgrade | Camera Name |
|--------|-----------|--------|---------------|----------------|------|---------|-------------|
| D1 | — | | Weak Pass... | 10.11.36.38 | | | Camera 01 |
| D2 | — | | Strong Pas... | 10.16.1.250 | | — | IPdome |
| D3 | — | | N/A | 192.168.254.4 | | — | IPCamera 03 |

Figure 2-25 Security Level of IP Camera's Password

Show the Password of the Added IP Camera

For admin, check **Show Password of IP Camera** to show the passwords of the successfully added IP cameras.


Enable the Wi-Fi Auto-Switch


When connect an IP camera to a Wi-Fi NVR, check Wi-Fi Auto-Switch (For Initial Access) to synchronize Wi-Fi parameters to the IP camera.

2.3.3 Edit the Connected IP Cameras and Configure Customized Protocols

After the adding of the IP cameras, the basic information of the camera lists in the page, you can configure the basic setting of the IP cameras.

Editing the IP Camera Parameters

Step 1 Click the  icon to edit the parameters; you can edit the IP address, protocol and other parameters.




| Edit IP Camera | |
|--------------------|-----------|
| IP Camera No. | D1 |
| IP Camera Address | 10.16.1.2 |
| Protocol | ONVIF |
| Management Port | 80 |
| Channel Port | 1 |
| Transfer Protocol | Auto |
| User Name | admin |
| Admin Password | |
| Protocol OK Cancel | |

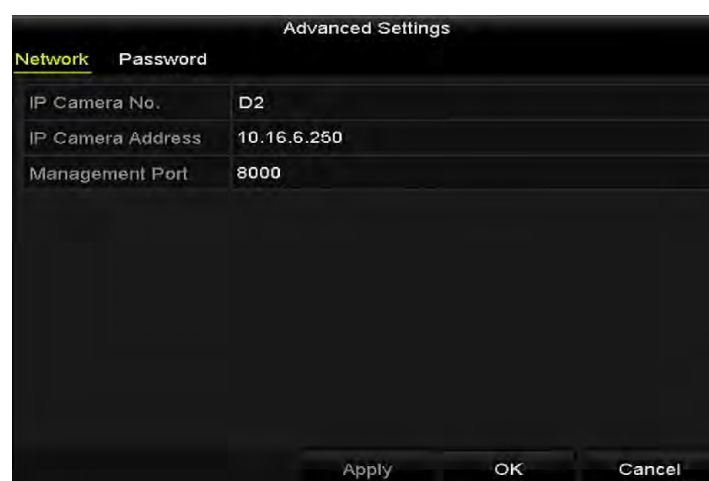
Figure 2-26 Edit the Parameters

Channel Port: If the connected device is an encoding device with multiple channels, you can choose the channel to connect by selecting the channel port No. in the dropdown list.

Step 2 Click **OK** to save the settings and exit the editing interface.

Editing the Advanced Parameters

Step 1 Drag the horizontal scroll bar to the right side and click the  icon.



| Advanced Settings | |
|-------------------|-------------|
| Network | Password |
| IP Camera No. | D2 |
| IP Camera Address | 10.16.6.250 |
| Management Port | 8000 |
| Apply OK Cancel | |

Figure 2-27 Network Configuration of the Camera

Step 2 You can edit the network information and the password of the camera.

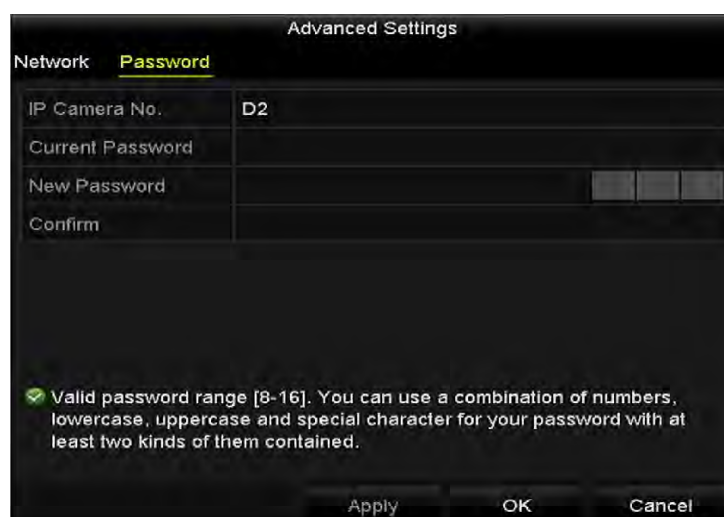


Figure 2-28 Password Configuration of the Camera

Step 3 Click **OK** to save the settings and exit the interface.

Configuring the Customized Protocols

Purpose:

To connect the network cameras which are not configured with the standard protocols, you can configure the customized protocols for them.

Step 1 Click **Protocol** in the custom adding IP camera interface to enter the protocol management interface.

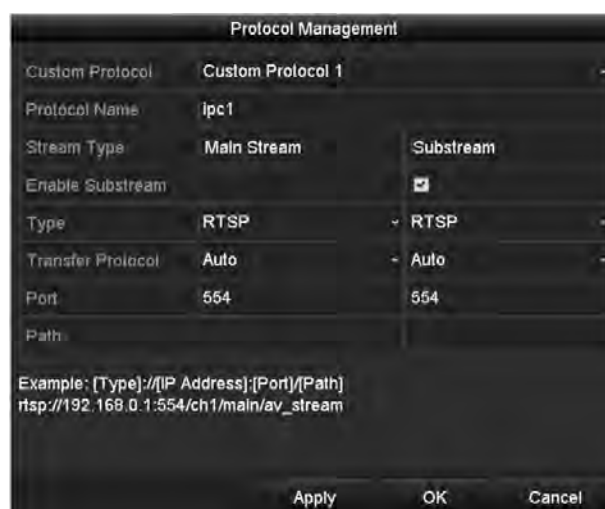


Figure 2-29 Protocol Management Interface

There are 16 customized protocols provided in the system, you can edit the protocol name; and choose whether to enable the sub-stream.

Step 2 Choose the protocol type of transmission and choose the transfer protocols.

**NOTE**

Before customizing the protocol for the network camera, you have to contact the manufacturer of the network camera to consult the URL (uniform resource locator) for getting main stream and sub-stream.

The format of the URL is: [Type]://[IP Address of the network camera]:[Port]/[Path].

Example: rtsp://192.168.1.55:554/ch1/main/av_stream.

- **Protocol Name:** Edit the name for the custom protocol.
- **Enable Substream:** If the network camera does not support sub-stream or the sub-stream is not needed leave the checkbox empty.
- **Type:** The network camera adopting custom protocol must support getting stream through standard RTSP.
- **Transfer Protocol:** Select the transfer protocol for the custom protocol.
- **Port:** Set the port No. for the custom protocol.
- **Path:** Set the resource path for the custom protocol. E.g., ch1/main/av_stream.

**NOTE**

The protocol type and the transfer protocols must be supported by the connected network camera.

After adding the customized protocols, you can see the protocol name is listed in the dropdown list of protocol.

| No. | IP Address | Amount of... | Device M... | Protocol | Managen |
|---|------------|--------------|-------------|----------|---------|
| <div> <div><</div> <div> </div> <div> </div> <div> </div> <div>></div> </div> | | | | | |
| IP Camera Address | 10.16.1.64 | | | | |
| Protocol | ONVIF | | | | |
| Management Port | 80 | | | | |
| Transfer Protocol | Auto | | | | |
| User Name | admin | | | | |
| Admin Password | ***** | | | | |
| <input type="checkbox"/> Continue to Add | | | | | |
| <div> <div>Protocol</div> <div>Search</div> <div>Add</div> <div>Back</div> </div> | | | | | |

Figure 2-30 Protocol Setting

Step 3 Choose the protocols you just added to validate the connection of the network camera.





Chapter 3 Live View

Live View displays the video image getting from each camera in real time.

3.1 Live View Status Icons

In the live view mode, there are status icons at the upper-right of the screen for each channel, showing the status of the record and alarm in the channel, so that you can know whether the channel is recorded, or whether there are alarms occur as soon as possible.

Table 3-1 Description of Live View Icons

| Icons | Description |
|---|--|
|  | Alarm (video loss, video tampering, motion detection, sensor alarm or VCA alarm) |
|  | Record (manual record, continuous record, motion detection , sensor alarm or VCA alarm triggered record) |
|  | Alarm & Record |
|  | Event/Exception (motion detection, sensor alarm, VCA alarm or exception information, appears at the lower-left corner of the screen. Please refer to <i>Chapter 8.8 Setting Alarm Response Actions</i> for details.) |

3.2 Operations in Live View Mode

3.2.1 Right-Click Menu

In live view mode, there are many functions provided. The functions are listed below.

When the aux output is enabled, the main output cannot perform any operation, and you can do some basic operation on the live view mode for the Aux output.

Table 3-2 Mouse Operation in Live View

| Name | Description |
|-------------------------------|---|
| Common Menu | Quick access to the sub-menus which you frequently visit. |
| Menu | Enter the main menu of the system by right clicking the mouse. |
| Single Screen | Switch to the single full screen by choosing channel number from the dropdown list. |
| Multi-screen | Adjust the screen layout by choosing from the dropdown list. |
| Previous Screen | Switch to the previous screen. |
| Next Screen | Switch to the next screen. |
| Start/Stop Auto-switch | Enable/disable the auto-switch of the screens. |
| Start Recording | Start continuous recording or motion detection recording of all channels. |
| Add IP Camera | Enter the IP Camera Management interface, and manage the cameras. |
| Playback | Enter the playback interface and start playing back the video of the selected channel immediately. |
| Output Mode | Four modes of output supported, including Standard, Bright, Gentle and Vivid. |
| Aux Monitor | The NVR checks the connection of the output interfaces to define the main and auxiliary output interfaces. The priority level for the main and aux output is HDMI > VGA When both the HDMI and VGA are connected, the HDMI is used as main output and the VGA is used as the aux output. |

**NOTE**

The *dwell time* of the live view configuration must be set before using **Start Auto-switch**.

**NOTE**

The right-click menu varies according to different models, please refer to the actual GUI menu of the device.

3.2.2 Quick Setting Toolbar in Live View Mode

On the screen of each channel, there is a quick setting toolbar which shows when you single click the mouse in the corresponding screen.



Figure 3-1 Quick Setting Toolbar

Table 3-3 Description of Quick Setting Toolbar Icons

| Icon | Description | Icon | Description | Icon | Description |
|------|------------------------------|------|--------------------|------|----------------|
| | Enable/Disable Manual Record | | Instant Playback | | Mute/Audio on |
| | PTZ Control | | Digital Zoom | | Image Settings |
| | Face Detection | | Live View Strategy | | Information |
| | Close | | Main/Sub-Stream | | |

Instant Playback only shows the record in last five minutes. If no record is found, it means there is no record during the last five minutes.

Digital Zoom is for zooming in the live image. You can zoom in the image to different proportions (1 to 16X) by moving the sliding bar from to . You can also scroll the mouse wheel to control the zoom in/out.



Figure 3-2 Digital Zoom

Image Settings icon can be selected to enter the Image Settings menu.

You can set the image parameters like brightness, contrast, saturation and hue.



Figure 3-3 Image Settings- Customize



Live View Strategy can be selected to set strategy, including Real-time, Balanced, Fluency.



Figure 3-4 Live View Strategy



Move the mouse onto the icon to show the real-time stream information, including the frame rate, bitrate, resolution and stream type.



Figure 3-5 Information

3.3 Adjuste Live View Settings

Purpose:

Live View settings can be customized according to different needs. You can configure the output interface, dwell time for screen to be shown, mute or turning on the audio, the screen number for each channel, etc.

Step 1 Go to **Menu > Configuration > Live View**.

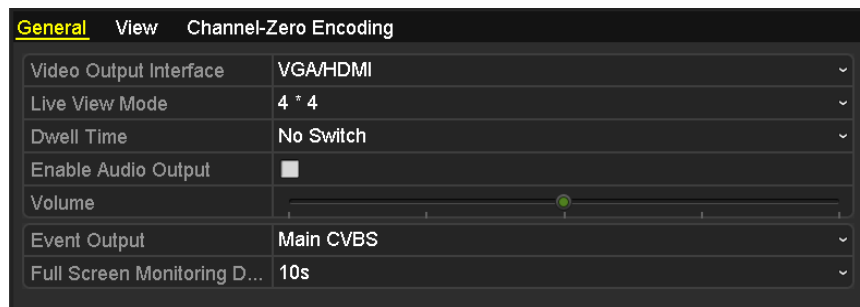


Figure 3-6 Live View-General





The settings available in this menu include:

- **Video Output Interface:** Designates the output to configure the settings for, and only VGA/ HDMI™ is selectable by default.
- **Live View Mode:** Designates the display mode to be used for Live View.
- **Dwell Time:** The time in seconds to *dwell* between switching of channels when enabling auto-switch in Live View.
- **Enable Audio Output:** Enables/disables audio output for the selected video output.
- **Volume:** Adjust the volume of live view, playback and two-way audio for the selected output interface.
- **Event Output:** Designates the output to show event video.
- **Full Screen Monitoring Dwell Time:** The time in seconds to show alarm event screen.

Step 2 Setting Cameras Order



Figure 3-7 Live View- Camera Order

- 1) Select a View mode in . Up to 36-screen display is supported for 32-ch NVR.
- 2) Select the small window, and double-click on the channel number to display the channel on the window.
- 3) If you do not want the camera to be displayed on the live view interface, click the corresponding  to stop it.
- 4) You can also click  button to start live view for all the channels and click  to stop all the live view.
- 5) Click **Apply** to save the setting.

Step 3 Set the stream type for live view of camera.

- 1) Click the **More Settings** to enter the more settings interface.
- 2) Select the camera to configure from the list.
- 3) Select the stream type to Main Stream, Sub-Stream or Auto.

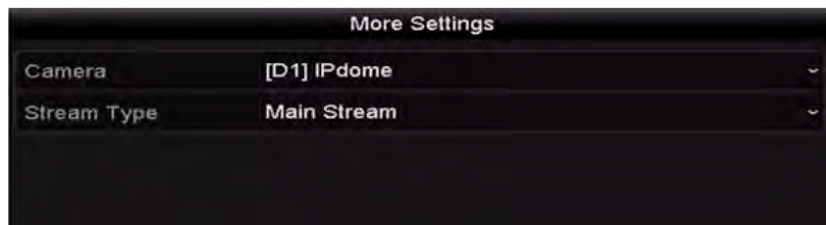


Figure 3-8 Stream Type Settings

- 4) Click **Apply** to save the settings.
- 5) (Optional) You can click **Copy** to copy the stream type settings of the current camera to other camera (s).

3.4 Channel-zero Encoding

Purpose:

Sometimes you need to get a remote view of many channels in real time from web browser or CMS (Client Management System) software, in order to decrease the bandwidth requirement without affecting the image quality, channel-zero encoding is supported as an option for you.

Step 1 Go to **Menu > Configuration > Live View**.

Step 2 Select **Channel-Zero Encoding**.

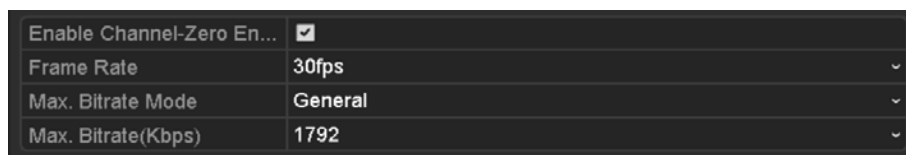


Figure 3-9 Live View- Channel-Zero Encoding

Step 3 Check the checkbox after **Enable Channel Zero Encoding**.

Step 4 Configure the Frame Rate, Max. Bitrate Mode and Max. Bitrate.

After you set the Channel-Zero encoding, you can get a view in the remote client or web browser of 16 channels in one screen.

Chapter 4 PTZ Controls

4.1 Configuring PTZ Settings

Purpose:

Follow the procedure to set the parameters for PTZ. The configuring of the PTZ parameters should be done before you control the PTZ camera.

Step 1 Go to **Menu > Camera > PTZ**.



Figure 4-1 PTZ Settings

Step 2 Click **PTZ Parameters** to set the PTZ parameters.



Figure 4-2 PTZ- General

Step 3 Choose the camera for PTZ setting in the **Camera** dropdown list.

Step 4 Enter the parameters of the PTZ camera.



All the parameters should be exactly the same as the PTZ camera parameters.

Step 5 Click **Apply** to save the settings.

4.2 Setting PTZ Presets, Patrols & Patterns

Before you start:

Please make sure that the presets, patrols and patterns should be supported by PTZ protocols.

4.2.1 Customizing Presets

Purpose:

Follow the steps to set the Preset location which you want the PTZ camera to point to when an event takes place.

Step 1 Go to **Menu > Camera > PTZ**.



Figure 4-3 PTZ Settings

Step 2 Use the directional button to wheel the camera to the location where you want to set preset; and the zoom and focus operations can be recorded in the preset as well.

Step 3 Enter the preset No. (1~255) in the preset text field, and click the **Set** button to link the location to the preset.

Step 4 Repeat the steps2-3 to save more presets.


You can click **Clear** to clear the location information of the preset, or click the **Clear All** button to clear the location information of all the presets.

4.2.2 Calling Presets

Purpose:

This feature enables the camera to point to a specified position such as a window when an event takes place.

Step 1 Click the button **PTZ** in the lower-right corner of the PTZ setting interface;

Or press the PTZ button on the front panel or click the PTZ Control icon  in the quick setting bar, or select the PTZ option in the right-click menu to show the PTZ control panel.

Step 2 Choose **Camera** in the dropdown list.


Step 3 Click the  button to show the general settings of the PTZ control.



Figure 4-4 PTZ Panel - General

Step 4 Click to enter the preset No. in the corresponding text field.

Step 5 Click the **Call Preset** button to call it.

4.2.3 Customizing Patrols

Purpose:

Patrols can be set to move the PTZ to different key points and have it stay there for a set duration before moving on to the next key point. The key points are corresponding to the presets. The presets can be set following the steps above in **Customizing Presets**.

Step 1 Go to **Menu > Camera > PTZ**.



Figure 4-5 PTZ Settings

Step 2 Select patrol No. in the drop-down list of patrol.

Step 3 Click **Set** to add key points for the patrol.



Figure 4-6 Key point Configuration

Step 4 Configure key point parameters, such as the key point No., duration of staying for one key point and speed of patrol. The key point is corresponding to the preset. The **Key Point No.** determines the order at which the PTZ will follow while cycling through the patrol. The **Duration** refers to the time span to stay at the corresponding key point. The **Speed** defines the speed at which the PTZ will move from one key point to the next.

Step 5 Click **Add** to add the next key point to the patrol, and you can click **OK** to save the key point to the patrol.


You can delete all the key points by clicking **Clear** for the selected patrol, or click the **Clear All** button to delete all the key pints for all patrols.

4.2.4 Calling Patrols

Purpose:

Calling a patrol makes the PTZ to move according the predefined patrol path.

Step 1 Click the button **PTZ** in the lower-right corner of the PTZ setting interface;

Or press the PTZ button on the front panel or click the PTZ Control icon  in the quick setting bar, or select the PTZ option in the right-click menu to show the PTZ control panel.


Step 2 Click the  button to show the general settings of the PTZ control.



Figure 4-7 PTZ Panel - General

Step 3 Select a patrol in the dropdown list and click the **Call Patrol** button to call it.

Step 4 You can click the **Stop Patrol** button to stop calling it.

4.2.5 Customizing Patterns

Purpose:

Patterns can be set by recording the movement of the PTZ. You can call the pattern to make the PTZ movement according to the predefined path.

Step 1 Go to **Menu > Camera > PTZ**.



Figure 4-8 PTZ Settings

Step 2 Choose pattern number in the dropdown list.

Step 3 Click **Start** and click corresponding buttons in the control panel to move the PTZ camera, and click **Stop** to stop it.


The movement of the PTZ is recorded as the pattern.

4.2.6 Calling Patterns

Purpose:

Follow the procedure to move the PTZ camera according to the predefined patterns.

Step 1 Click **PTZ** in the lower-right corner of the PTZ setting interface;

Or press the PTZ button on the front panel or click the PTZ Control icon  in the quick setting bar, or select the PTZ option in the right-click menu to show the PTZ control panel.


Step 2 Click the  button to show the general settings of the PTZ control.



Figure 4-9 PTZ Panel - General

Step 3 Click **Call Pattern** to call it.

Step 4 Click **Stop Pattern** to stop calling it.

4.2.7 Customizing Linear Scan Limit

Purpose:

The Linear Scan can be enabled to trigger the scan in the horizontal direction in the predefined range.



NOTE

This function is supported by some certain models.

Step 1 Go to **Menu > Camera > PTZ**.



Figure 4-10 PTZ Settings

Step 2 Use the directional button to wheel the camera to the location where you want to set the limit, and click the **Left Limit** or **Right Limit** button to link the location to the corresponding limit.



The speed dome starts linear scan from the left limit to the right limit, and you must set the left limit on the left side of the right limit, as well the angle from the left limit to the right limit should be no more than 180°.

4.2.8 Calling Linear Scan




Before operating this function, make sure the connected camera supports the linear scan and is in HIKVISION protocol.

Purpose:

Follow the procedure to call the linear scan in the predefined scan range.

Step 1 Click **PTZ** in the lower-right corner of the PTZ setting interface;

Or press the PTZ button on the front panel or click the PTZ Control icon  in the quick setting bar to enter the PTZ setting menu in live view mode.


Step 2 Click the  button to show the one-touch function of the PTZ control.



Figure 4-11 PTZ Panel - One-touch

Step 3 Click **Linear Scan** to start the linear scan and click the Linear Scan button again to stop it.

You can click **Restore** to clear the defined left limit and right limit data and the dome needs to reboot to make settings take effect.

4.2.9 One-touch Park




Before operating this function, make sure the connected camera supports the linear scan and is in HIKVISION protocol.

Purpose:

For some certain model of the speed dome, it can be configured to start a predefined park action (scan, preset, patrol and etc.) automatically after a period of inactivity (park time).

Step 1 Click **PTZ** in the lower-right corner of the PTZ setting interface;

Or press the PTZ button on the front panel or click the PTZ Control icon  in the quick setting bar to enter the PTZ setting menu in live view mode.


Step 2 Click the  button to show the one-touch function of the PTZ control.



Figure 4-12 PTZ Panel - One-touch

Step 3 There are 3 one-touch park types selectable, click the corresponding button to activate the park action.

Park (Quick Patrol): The dome starts patrol from the predefined preset 1 to preset 32 in order after the park time. The undefined preset will be skipped.

Park (Patrol 1): The dome starts move according to the predefined patrol 1 path after the park time.

Park (Preset 1): The dome moves to the predefined preset 1 location after the park time.



NOTE

The park time can only be set through the speed dome configuration interface, by default the value is 5s.

Step 4 Click the button again to inactivate it.


4.2.10 PTZ Control Panel

To enter the PTZ control panel, there are two ways supported.

OPTION 1:

In the PTZ settings interface, click **PTZ** on the lower-right corner which is next to the Back button.

OPTION 2:

In the Live View mode, you can press the PTZ Control button on the front panel or on the remote control, or choose the PTZ Control icon , or select the PTZ option in the right-click menu.

Click **Configuration** on the control panel, and you can enter the PTZ Settings interface.










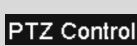

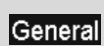








In PTZ control mode, the PTZ panel will be displayed when a mouse is connected with the device. If no mouse is connected, the **PTZ** icon appears in the lower-left corner of the window, indicating that this camera is in PTZ control mode.



Figure 4-13 PTZ Panel

Table 4-1 Description of the PTZ panel icons

| Icon | Description | Icon | Description | Icon | Description |
|---|--|---|-------------------------|---|-----------------------|
|  | Direction button and the auto-cycle button |  | Zoom+, Focus+, Iris+ |  | Zoom-, Focus-, Iris- |
|  | The speed of the PTZ movement |  | Light on/off |  | Wiper on/off |
|  | 3D-Zoom |  | Image Centralization |  | Menu |
|  | Switch to the PTZ control |  | Switch to the one-touch |  | Switch to the general |

| Icon | Description | Icon | Description | Icon | Description |
|---|------------------------------------|---|-------------------|---|------------------------|
| | interface | | control interface | | settings interface |
|  | Previous item |  | Next item |  | Start pattern / patrol |
|  | Stop the patrol / pattern movement |  | Exit |  | Minimize windows |

Chapter 5 Recording Settings

5.1 Configuring Parameters

Purpose:

By configuring the parameters you can define the parameters which affect the image quality, such as the transmission stream type, the resolution and so on.

Before you start:

Step 1 Make sure that the HDD has already been installed. If not, please install a HDD and initialize it. (Menu > HDD > General)



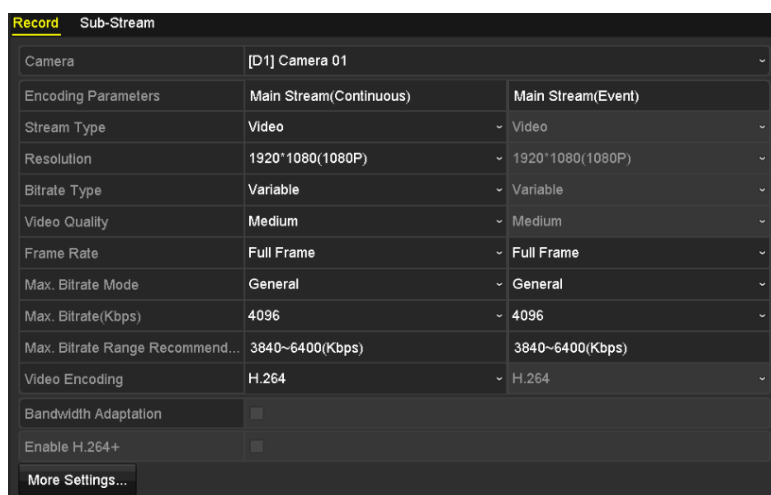
| L... | Capacity | Status | Property | Type | Free Space | Gr... | Edit | D... |
|------|----------|--------|----------|-------|------------|-------|------|------|
| 1 | 465.76GB | Normal | R/W | Local | 305GB | 1 | | — |
| 2 | 931.51GB | Normal | R/W | Local | 814GB | 1 | | — |

Figure 5-1 HDD- General

Step 2 Check the storage mode of the HDD.

- 1) Click **Advanced** to check the storage mode of the HDD.
- 2) If the HDD mode is Quota, please set the maximum record capacity For detailed information, see Chapter 10.2 Configuring Quota Mode.

Step 3 Go to **Menu > Record > Parameters**.



| Record | | Sub-Stream |
|---------------------------------|--------------------------|--------------------|
| Camera | [D1] Camera 01 | |
| Encoding Parameters | Main Stream(Continuous) | Main Stream(Event) |
| Stream Type | Video | Video |
| Resolution | 1920*1080(1080P) | 1920*1080(1080P) |
| Bitrate Type | Variable | Variable |
| Video Quality | Medium | Medium |
| Frame Rate | Full Frame | Full Frame |
| Max. Bitrate Mode | General | General |
| Max. Bitrate(Kbps) | 4096 | 4096 |
| Max. Bitrate Range Recommend... | 3840~6400(Kbps) | 3840~6400(Kbps) |
| Video Encoding | H.264 | H.264 |
| Bandwidth Adaptation | <input type="checkbox"/> | |
| Enable H.264+ | <input type="checkbox"/> | |
| More Settings... | | |

Figure 5-2 Recording Parameters

Step 4 Parameters Setting for Recording

- 1) Select **Record** to configure. You can configure the stream type, the resolution, and other parameters on your demand.

Enable Bandwidth Adaptation: Once enabled, the bitrate of camera can adapt to the bandwidth of the current transmission network.

Enable H.264+ Mode: check the checkbox to enable. Once enabled, the **Max. Bitrate Mode**, **Max. Bitrate(Kbps)** and **Max. Bitrate Range Recommend** are not configurable. Enabling it helps to ensure the high video quality with a lowered bitrate.



NOTE

The function is only available for IP cameras which support H.264+ stream.

- 2) Click the **More Settings** button to set the advanced parameters for recording and then click **OK** button to finish editing.



Figure 5-3 Recording Parameters-More Settings

Pre-record: The time you set to record before the scheduled time or event. For example, when an alarm triggers the recording at 10:00, if you set the pre-record time as 5 seconds, the camera records it at 9:59:55.

Post-record: The time you set to record after the event or the scheduled time. For example, when an alarm triggered recording ends at 11:00, if you set the post-record time as 5 seconds, it records till 11:00:05.

Expired Time: The expired time is the longest time for a record file to be kept in the HDD, if the deadline is reached, the file will be deleted. You can set the expired time to 0, and then the file will not be deleted. The actual keeping time for the file should be determined by the capacity of the HDD.

Redundant Record: Enabling redundant record means you save the recording files in the redundant HDD. See Chapter Configuring Redundant Recording.

Record Audio: Check the checkbox to enable or disable audio recording.

Video Stream: Main stream and sub-stream are selectable for recording. When you select sub-stream, you can record for a longer time with the same storage space.

- 3) Click **Apply** to save the settings.



You can enable the ANR (Automatic Network Replenishment) function via the web browser (**Configuration > Storage > Schedule Settings > Advanced**) to save the video files in the IP camera when the network is disconnected, and synchronize the files to the NVR when the network is resumed.



- The redundant record is to decide whether you want the camera to save the recording files in the redundant HDD. You must configure the redundant HDD in HDD settings.
- The parameters of Main Stream (Event) are read-only.

Step 5 Parameters Settings for Sub-stream

- 1) Enter the Sub-stream tab page.

| Record | Substream |
|-------------------------------|-----------------|
| Camera | [D1] Camera 01 |
| Stream Type | Video |
| Resolution (max.: 720P) | 704*480(4CIF) |
| Bitrate Type | Variable |
| Video Quality | Medium |
| Frame Rate | Full Frame |
| Max. Bitrate Mode | General |
| Max. Bitrate (Kbps) (max,...) | 1024 |
| Max. Bitrate Range Reco... | 1152~1920(Kbps) |
| Video Encode | H.265 |

Figure 5-4 Sub-stream Parameters

- 2) Configure the parameters of the camera.
- 3) Click **Apply** to save the settings.

5.2 Configuring Recording Schedule

Purpose:

Set the recording schedule, and then the camera automatically starts/stops recording according to the configured schedule.

Step 1 Go to **Menu > Record > Schedule**.

Step 2 Configure Record Schedule

- 1) Select Record Schedule.

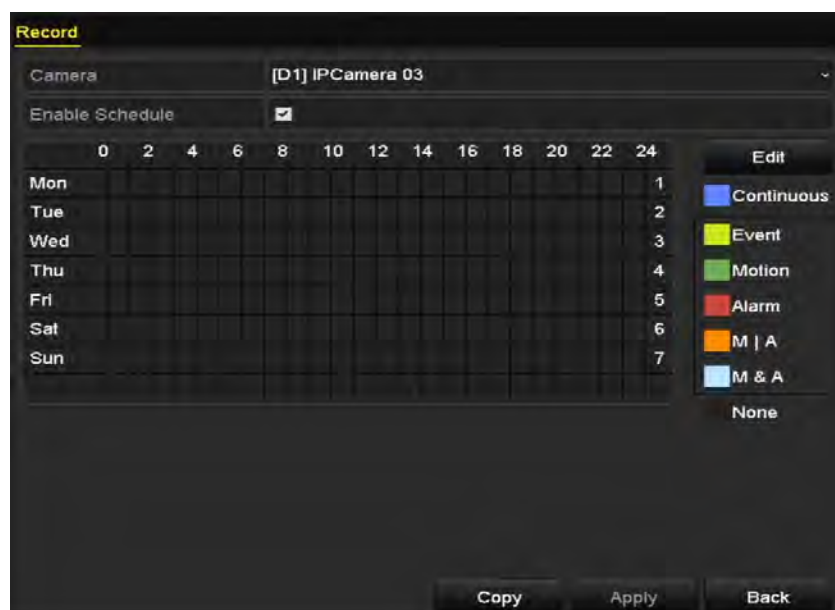


Figure 5-5 Record Schedule

Different recording types are marked in different color icons.

- **Continuous:** scheduled recording.
 - **Event:** recording triggered by all event triggered alarm.
 - **Motion:** recording triggered by motion detection.
 - **Alarm:** recording triggered by alarm.
 - **M/A:** recording triggered by either motion detection or alarm.
 - **M&A:** recording triggered by motion detection and alarm.
- 2) Choose the camera you want to configure.
 - 3) Select the check box after the **Enable Schedule** item.
 - 4) Click **Edit** or click on the color icon under the edit button and draw the schedule line on the panel.

Edit the Schedule

Step 1 In the message box, you can choose the day to which you want to set schedule.

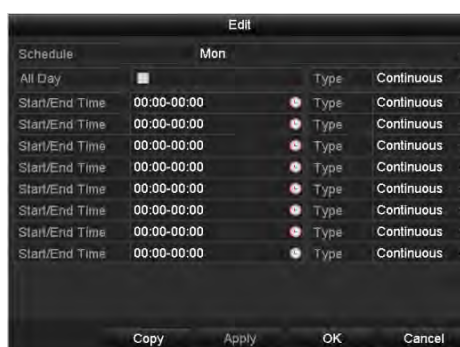


Figure 5-6 Recording Schedule Interface

You can click the  button to set the accurate time of the schedule.

Step 2 To schedule an all-day recording, check the checkbox after the **All Day** item.

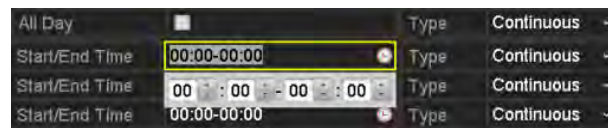


Figure 5-7 Edit Schedule

Step 3 To arrange other schedule, leave the **All Day** checkbox blank and set the Start/End time.



NOTE

Up to 8 periods can be configured for each day. And the time periods cannot be overlapped each other.

Step 4 Select the record type in the dropdown list.



NOTE

- To enable Motion, Alarm, M | A (motion or alarm), M & A (motion and alarm) and VCA (Video Content Analysis) triggered recording and capture, you must configure the motion detection settings, alarm input settings or VCA settings as well. For detailed information, refer to *Chapter 8.1* , *Chapter 8.2* and *Chapter 5.5* .
- The VCA settings are only available to the smart IP cameras.

Repeat the above edit schedule steps to schedule recording for other days in the week. You can click **Copy** to enter the Copy to interface to copy the schedule settings to other days

Step 5 Click **Apply** in the Record Schedule interface to save the settings.

Draw the Schedule

Step 1 Click on the color icons, you can choose the schedule type as continuous or event.

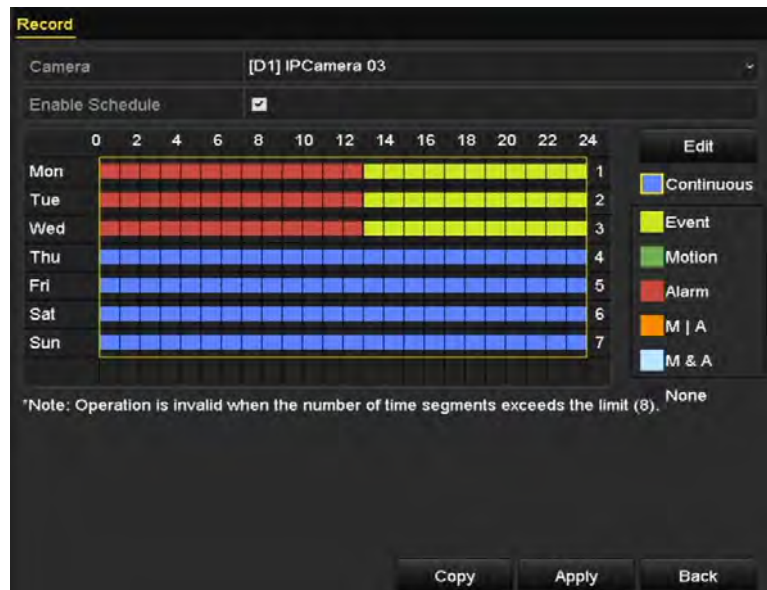


Figure 5-8 Draw the Schedule

Step 2 Click **Apply** to validate the settings.

Step 3 (Optional) If the settings can also be used to other channels, click **Copy**, and then choose the channel to which you want to copy.

Step 4 Click **Apply** to save the settings.

5.3 Configuring Motion Detection Recording

Purpose:

Follow the steps to set the motion detection parameters. In the live view mode, once a motion detection event takes place, the NVR can analyze it and do many actions to handle it. Enabling motion detection function can trigger certain channels to start recording, or trigger full screen monitoring, audio warning, notify the surveillance center and so on. In this chapter, you can follow the steps to schedule a record which triggered by the detected motion.

Step 1 Go to **Menu > Camera > Motion**.

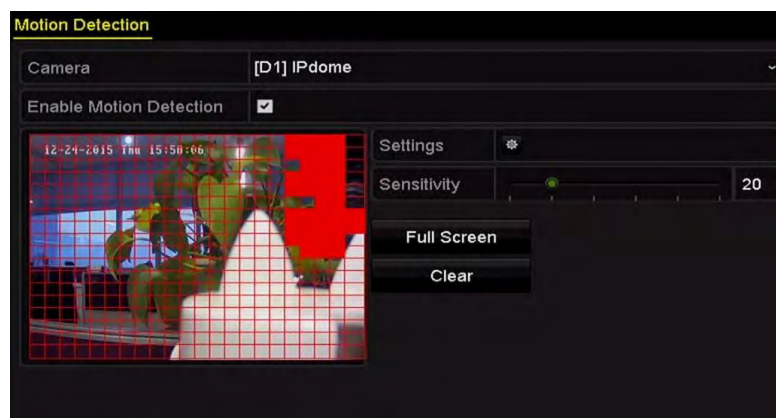


Figure 5-9 Motion Detection

Step 2 Configure Motion Detection

- 1) Choose camera you want to configure.
- 2) Check the checkbox after **Enable Motion Detection**.
- 3) Drag and draw the area for motion detection by mouse. If you want to set the motion detection for all the area shot by the camera, click **Full Screen**. To clear the motion detection area, click **Clear**.



By default, the feature of **Dynamic Analysis for Motion** is enabled. When the motion detection triggered frame (green) for the moving targets in the motion detection area will be displayed on the live video.

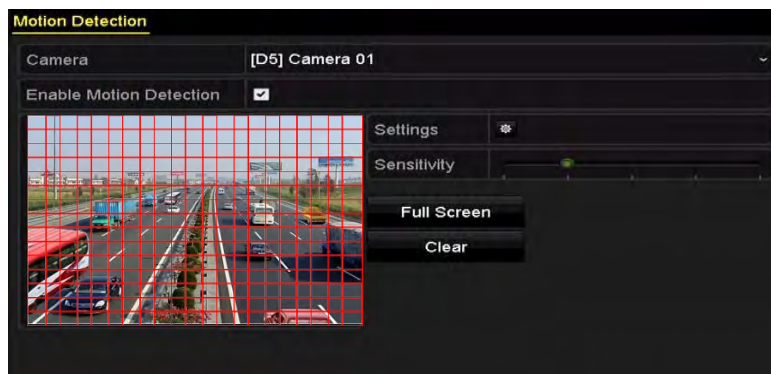


Figure 5-10 Motion Detection- Mask

- 4) Click **Settings**, and the message box for channel information pop up.



Figure 5-11 Motion Detection Handling

- 5) Select the channels which you want the motion detection event to trigger recording.
- 6) Click **Apply** to save the settings.
- 7) Click **OK** to back to the upper level menu.
- 8) Exit the Motion Detection menu.

Step 3 Edit the Motion Detection Record Schedule. For the detailed information of schedule configuration, see *Chapter 5.2 Configuring Recording Schedule*.

5.4 Configuring Alarm Triggered Recording

Purpose:

Follow the procedure to configure alarm triggered recording.

Step 1 Go to **Menu > Configuration > Alarm**.



Figure 5-12 Alarm Settings

Step 2 Click **Alarm Input** tab and set the alarm parameters.



Figure 5-13 Alarm Settings- Alarm Input

- 1) Select Alarm Input number and configure alarm parameters.
- 2) Choose N.O (normally open) or N.C (normally closed) for alarm type.
- 3) Check the checkbox for Enable.
- 4) Click **Settings**.



Figure 5-14 Alarm Settings

- 1) Choose the alarm triggered recording channel.
- 2) Check the checkbox to select channel.
- 3) Click **Apply** to save settings.
- 4) Click **OK** to back to the upper level menu.

Repeat the above steps to configure other alarm input parameters.

If the settings can also be applied to other alarm inputs, click **Copy** and choose the alarm input number.

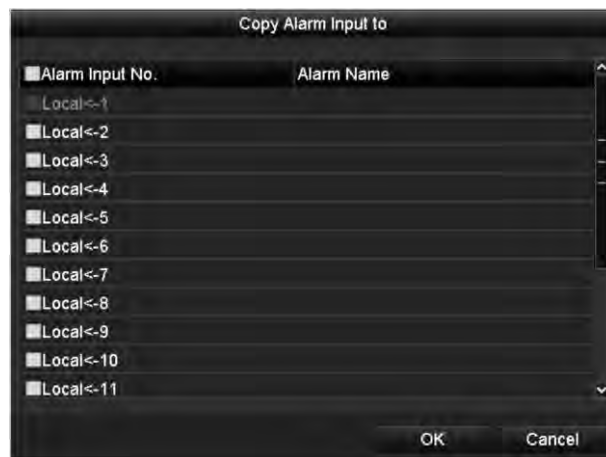


Figure 5-15 Copy Alarm Input

Step 3 Edit the Alarm triggered record in the Record Schedule setting interface. For the detailed information of schedule configuration, see *Chapter 5.2 Configuring Recording Schedule*.

5.5 Configuring VCA Event Recording

Purpose:

You can configure the recording triggered by the line crossing detection and intrusion detection alarm events.

Step 1 Go to **Menu > Camera > VCA**.

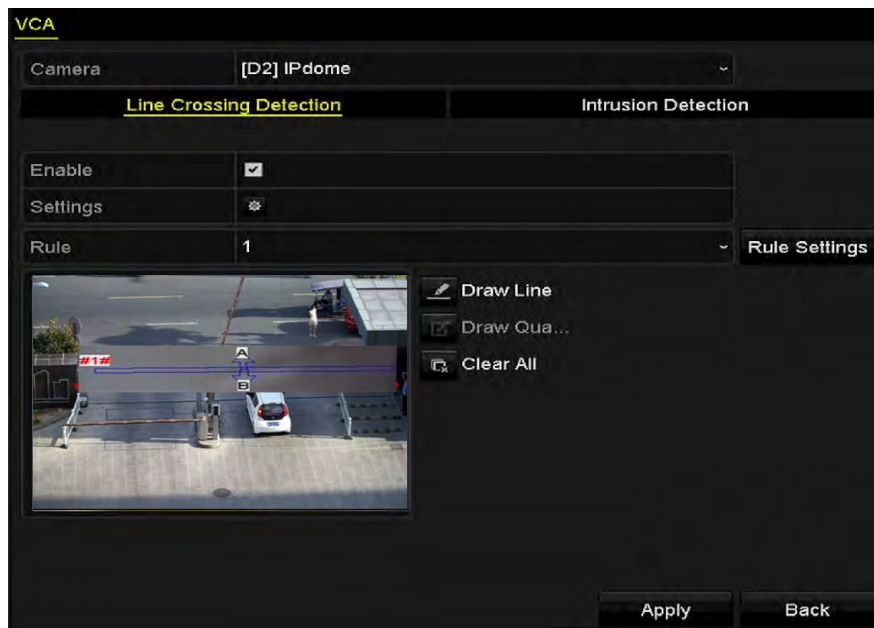



Figure 5-16 VCA Settings

Step 2 Configure the detection rules for the line crossing detection or intrusion detection.

Step 3 Click the icon  to configure the alarm linkage actions for the VCA events.

- 1) Select **Trigger Channel** tab and select one or more channels which will start to record when VCA alarm is triggered.
- 2) Click **Apply** to save the settings.

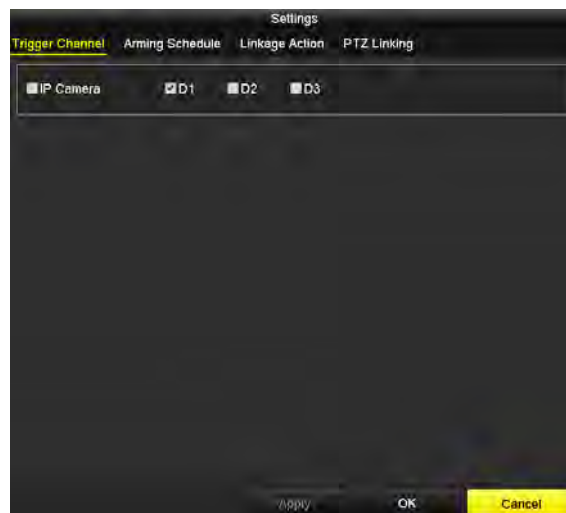


Figure 5-17 Set Trigger Camera of VCA Alarm



NOTE

The PTZ Linking function is only available for the VCA settings of IP cameras.

Step 4 Enter Record Schedule settings interface (**Menu > Record > Schedule > Record Schedule**), and then set VCA as the record type. For details, see step 2 in *Chapter 5.2 Configuring Recording Schedule*.

5.6 Manual Recording

Purpose:

Follow the steps to set parameters for the manual record. Using manual record, you need to manually cancel the record. The manual recording is prior to the scheduled recording.

Step 1 Go to **Menu > Manual**.

Or press the **REC/SHOT** button on the front panel.



Figure 5-18 Manual Record

Step 2 Enable the Manual Record.

- 1) Select **Record** on the left bar.
- 2) Click the status button before camera number to change **OFF** to **ON**.

Step 3 Disable manual record.

Click the status button to change **ON** to **OFF**.



NOTE

Green icon **ON** means that the channel is configured the record schedule. After rebooting, all the manual records enabled will be canceled.

5.7 Configuring Holiday Recording

Purpose:

Follow the steps to configure the record schedule on holiday for that year. You may want to have different plan for recording on holiday.

Step 1 Enter the Record setting interface.

Menu > Record > Holiday



| No. | Holiday Name | Status | Start Date | End Date | Edit |
|-----|--------------|----------|------------|----------|------|
| 1 | Holiday1 | Disabled | 1.Jan | 1.Jan | |
| 2 | Holiday2 | Disabled | 1.Jan | 1.Jan | |
| 3 | Holiday3 | Disabled | 1.Jan | 1.Jan | |
| 4 | Holiday4 | Disabled | 1.Jan | 1.Jan | |
| 5 | Holiday5 | Disabled | 1.Jan | 1.Jan | |
| 6 | Holiday6 | Disabled | 1.Jan | 1.Jan | |
| 7 | Holiday7 | Disabled | 1.Jan | 1.Jan | |
| 8 | Holiday8 | Disabled | 1.Jan | 1.Jan | |
| 9 | Holiday9 | Disabled | 1.Jan | 1.Jan | |
| 10 | Holiday10 | Disabled | 1.Jan | 1.Jan | |
| 11 | Holiday11 | Disabled | 1.Jan | 1.Jan | |

Figure 5-19 Holiday Settings

Step 2 Enable Edit Holiday schedule.

- 1) Click  to enter the Edit interface.



Edit
 Holiday Name: Holiday1
 Enable: ☒
 Mode: By Week
 Start Date: Jan 1st Sun
 End Date: Jan 1st Sun
 Apply OK Cancel

Figure 5-20 Edit Holiday Settings

- 2) Check the checkbox after **Enable Holiday**.
- 3) Select Mode from the dropdown list.
- 4) There are three different modes for the date format to configure holiday schedule.
- 5) Set the start and end date.
- 6) Click **Apply** to save settings.

Step 3 Click **OK** to exit the Edit interface.

Step 4 Enter Record Schedule settings interface to edit the holiday recording schedule.

See *Chapter 5.2 Configuring Recording Schedule*.

5.8 Configuring Redundant Recording

Purpose:


Enabling redundant recording, which means saving the recording files not only in the R/W HDD but also in the redundant HDD, will effectively enhance the data safety and reliability. .

Step 1 Go to **Menu > HDD**.



| L... | Capacity | Status | Property | Type | Free Space | Gr... | Edit | D... |
|------|----------|--------|----------|-------|------------|-------|------|------|
| 1 | 465.76GB | Normal | R/W | Local | 305GB | 1 | | — |
| 2 | 931.51GB | Normal | R/W | Local | 814GB | 1 | | — |

Figure 5-21 HDD General

Step 2 Select the **HDD** and click  to enter the Local HDD Settings interface.

7) Set the HDD property to **Redundancy**.



Local HDD Settings

HDD No. 1

HDD Property

☐ R/W

☐ Read-only

☒ Redundancy

Group

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 ☐ 7 ☐ 8

☐ 9 ☐ 10 ☐ 11 ☐ 12 ☐ 13 ☐ 14 ☐ 15 ☐ 16

HDD Capacity 465.76GB

Apply OK Cancel

Figure 5-22 HDD General-Editing

Click **Apply** to save the settings.

Click **OK** to back to the upper level menu.



NOTE

You must set the Storage mode in the HDD advanced settings to Group before you set the HDD property to Redundant. There should be at least another HDD which is in Read/Write status.

Step 3 Go to **Menu > Record > Parameters**.

- 1) Select **Record** tab.
- 2) Click **More Settings** to enter the following interface.



Figure 5-23 Record Parameters

- 3) Check **Redundant Record**.
- 4) Click **OK** to save settings and back to the upper level menu.

Repeat the above steps for configuring other channels.

5.9 Files Protection

Purpose:

You can lock the recording files or set the HDD property to Read-only to protect the record files from being overwritten.

5.9.1 Locking the Recording Files


Lock File when Playback

Step 1 Go to **Menu> Playback**.

Step 2 Check the checkbox of channel(s) in the channel list and then double-click to select a date on the calendar.




Figure 5-24 Normal Playback

Step 3 During playback, click the  button to lock the current recording file.



NOTE

In the multi-channel playback mode, clicking the  button will lock all the record files related to the playback channels.




Step 4 You can click the  button to pop up the file management interface. Click **Locked File** to check and export the locked files.



Figure 5-25 Locked File Management

In the File Management interface, you can also click  to change it to  to unlock the file and the file is not protected.

Lock File when Export

Step 1 Go to **Menu > Export**.

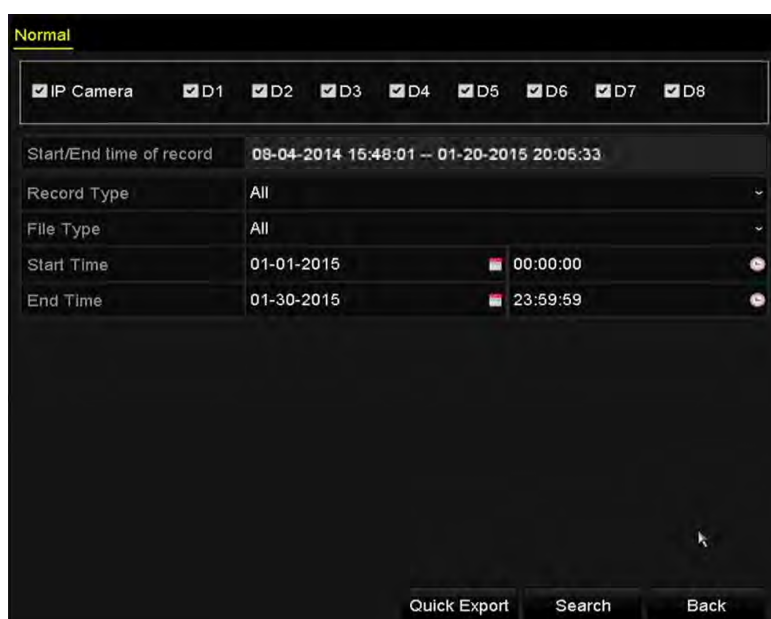


Figure 5-26 Export

Step 2 Select the channels you want to investigate by checking the checkbox to .



Step 3 Configure the record type, file type start/end time.

Step 4 Click **Search** to show the results.



Figure 5-27 Export- Search Result

Step 5 Protect the record files.

- 1) Find the record files you want to protect, and then click the  icon which will turn to , indicating that the file is locked.



The record files of which the recording is still not completed cannot be locked.

- 2) Click  to change it to  to unlock the file and the file is not protected.



Figure 5-28 Unlocking Attention

5.9.2 Setting HDD Property to Read-only

Step 1 Go to **Menu > HDD**.



Figure 5-29 HDD General

Step 2 Click  to edit the HDD you want to protect.



Figure 5-30 HDD General- Editing

Step 3 Set the HDD property to **Read-only**.

Step 4 Click **OK** to save settings and back to the upper level menu.



NOTE

- You cannot save any files in a Read-only HDD. If you want to save files in the HDD, change the property to R/W.
- If there is only one HDD and is set to Read-only, the NVR can't record any files. Only live view mode is available.
- If you set the HDD to Read-only when the NVR is saving files in it, then the file will be saved in next R/W HDD. If there is only one HDD, the recording will be stopped.

Chapter 6 Playback


6.1 Playing Back Record Files

6.1.1 Instant Playback

Purpose:

Play back the recorded video files of a specific channel in the live view mode. Channel switch is supported.

Instant playback by channel

Step 1 Choose a channel in live view mode and click the  button in the quick setting toolbar.



NOTE

In the instant playback mode, only record files recorded during the last five minutes on this channel will be played back.



Figure 6-1 Instant Playback Interface

6.1.2 Playing Back by Normal Search

Playback by Channel

Step 1 Enter the Playback interface.

Step 2 Right click a channel in live view mode and select Playback from the menu, as shown in Figure 6-2.

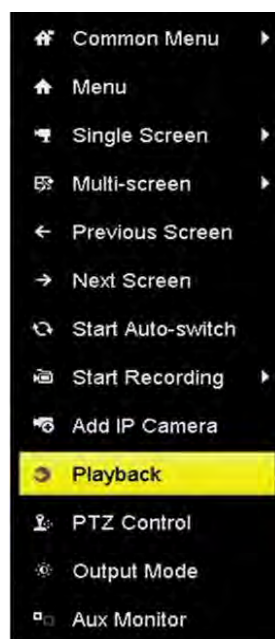


Figure 6-2 Right-click Menu under Live View



NOTE

Pressing numerical buttons will switch playback to the corresponding channels during playback process.

Playback by Time

Purpose:

Play back video files recorded in specified time duration. Multi-channel simultaneous playback and channel switch are supported.

Step 1 Go to **Menu>Playback**.

Step 2 Select **Normal/Smart** in the drop-down list on the top-left side.

Step 3 Select a camera in the camera list.


Step 4 Select a date in the calendar and click the  button on the left toolbar to play the video file.



Figure 6-3 Playback Calendar

If there are record files for that camera in that day, in the calendar, the icon for that day is displayed in different colors for different recording types: blue for continuous recording and red for event recording.

Step 5 Click  to start playing the continuous recorded files.

Playback Interface

You can use the toolbar in the bottom part of playback interface to control playing progress, as shown in Figure 6-4.



Figure 6-4 Playback Interface



Figure 6-5 Toolbar of Playback



You can click the channel(s) to execute simultaneous playback of multiple channels.



- The **01-01-2016 00:00:23 -- 04-07-2016 19:37:29** indicates the start/end time of the recorded video files.
- Playback progress bar: use the mouse to click any point of the progress bar or drag the progress bar to locate specific frames.

Table 6-1 Detailed Explanation of Playback Toolbar

| Item | Button | Operation | Button | Operation |
|-------------------|--------|---|--------|---|
| Smart Search | | Draw quadrilateral for the motion detection | | Search the matched video |
| | | Set full screen for motion detection | | Draw line for the line crossing detection |
| | | Draw quadrilateral for the intrusion detection | | Filter video files by setting the target characters |
| ● Operations | | Audio on/Mute | | Start/Stop clipping |
| | | Digital Zoom | | Lock File |
| | | Add default tag | | Add customized tag |
| | | File management for video clips, captured pictures, locked files and tags | | |
| ● Playing Control | | Pause/Play | | Reverse play/ Pause |
| | | Slow forward | | Stop |
| | | 30s forward | | 30s reverse |
| | | Next day | | Fast forward |
| | | Previous day | | |
| Time Bar | | Previous/Next period | | Play the time bar in 30 minutes (default) |
| | | Play the time bar in | | Play the time bar in |

| | | | | |
|----------------|---|------------------------------|---|-------------------------------|
| Scaling | | 1 hour | | 2 hours |
| |  | Play the time bar in 6 hours |  | Play the time bar in 24 hours |



Please refer to the *Chapter 3.2.4 Fisheye Expansion* for the description and operation of the fisheye expansion.



The playing speed of 256X is supported.

6.1.3 Playing back by Smart Search

Purpose:

The smart playback function provides an easy way to get through the less effective information. When you select the smart playback mode, the system will analyze the video containing the motion or VCA information, mark it with green color and play it in the normal speed while the video without motion will be played in the 16-time speed. The smart playback rules and areas are configurable.

Before you start:

To get the smart search result, the corresponding event type must be enabled and configured on the IP camera.

Step 1 Go to Menu>Playback.

Step 2 Select the **Normal/Smart** in the drop-down list on the top-left side.

Step 3 Select a camera in the camera list.



Step 4 Select a date in the calendar and click  on the left toolbar to play the video file.





Figure 6-6 Playback by Smart Search


Step 5 Click  to switch to the playback by smart search.

Step 6 Set the rules and areas for smart search of line crossing detection, intrusion detection or motion detection event triggered recording.


Motion Detection

Click , and then hold the mouse on the image to draw the mouse to set the detection area manually. You can also click the  button to set the full screen as the detection area.

Line Crossing Detection

Select , and click on the image to specify the start point and end point of the line.

Intrusion Detection

Click , and specify 4 points to set a quadrilateral region for intrusion detection. Only one region can be set.


Step 7 (Optional) You can click  to filter the searched video files by setting the target characters, including the gender and age of the human and whether he/she wears glasses.



Figure 6-7 Set Result Filter

6.1.4 Playing Back by Event Search

Purpose:

Play back record files on one or several channels searched out by event type (e.g., alarm input, motion detection and VCA).

Step 1 Go to **Menu>Playback**.

Step 2 Select the **Event** in the drop-down list on the top-left side.

Step 3 Select the major type to **Alarm Input**, **Motion** or **VCA** as the event type.



We take playback by VCA as the example in the following instructions.



Figure 6-8 Event Search Interface


Step 4 Select the minor type of VCA from the drop-down list.

**NOTE**

For configuring the VCA recording, please refer to *Chapter 5.5 Configuring VCA Event Recording and Capture*; and for details of VCA detection types, please refer to *Chapter 9 VCA Alarm*.

Step 5 Select the camera (s) for searching, and set the Start time and End time.

Step 6 Click **Search** to get the search result information. You may refer to the right-side bar for the result.

Step 7 Select a result item and click  to play back the file.

**NOTE**

Pre-play and post-play can be configured.

Step 8 Enter the Synch Playback interface to select the camera (s) for synchronous playback.

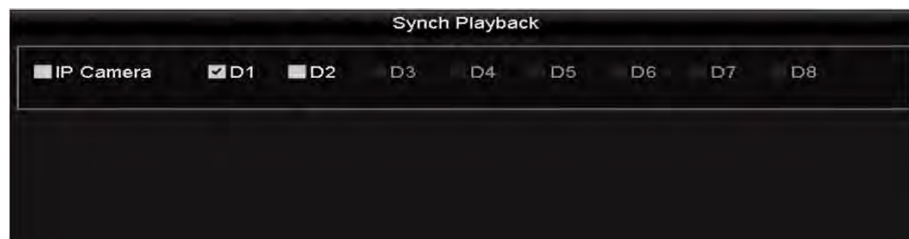




Figure 6-9 Synch Playback Interface

Step 9 Enter the playback interface.

The toolbar in the bottom part of playback interface can be used to control playing process.



Figure 6-10 Interface of Playback by Event

Step 10 You can click  or  to select the previous or next event. Please refer to Table 6.1 for the description of buttons on the toolbar.

6.1.5 Playing Back by Tag

Purpose:

Video tag allows you to record related information like people and location of a certain time point during playback. You can use video tag(s) to search for record files and position time point.


Before playing back by tag:

Step 1 Go to **Menu>Playback**.

Step 2 Search and play back the record file(s). Refer to *Chapter 6.1.1* for the detailed information about searching and playback of the record files.



Figure 6-11 Interface of Playback by Time

Step 3 Click  to add default tag.

Step 4 Click  to add customized tag and input tag name.



NOTE

Max. 64 tags can be added to a single video file.

Tag Management.


Click  to enter the File Management interface and click **Tag** to manage the tags. You can check, edit, and delete tag(s).



Figure 6-12 Tag Management Interface

Playing back by Tag

Step 1 Select **Tag** from the drop-down list in the Playback interface.


Step 2 Choose channels, edit start time and end time, and then click **Search** to enter Search Result interface.



Figure 6-13 Interface of Playback by Tag



You can enter keyword in the textbox to search the tag on your command.

Step 3 Click  to play back the selected tag file.



You can click the **Back** to back to the search interface.



Figure 6-14 Interface of Playback by Tag

**NOTE**

Pre-play and post-play can be configured.

You can click  or  to select the previous or next tag. Please refer to Table 6.1 for the description of buttons on the toolbar.

6.1.6 Playing Back by System Logs

Purpose:

Play back record file(s) associated with channels after searching system logs.

Step 1 Go to **Menu>Maintenance>Log Information**.

Step 2 Click **Log Search** to enter Playback by System Logs.

Set search time and type and click **Search**.

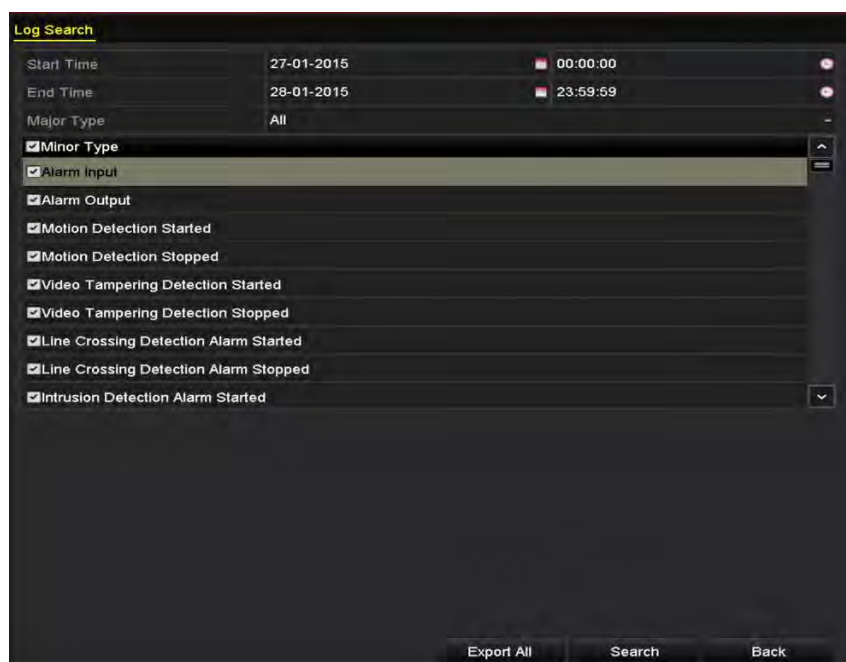


Figure 6-15 System Log Search Interface

Step 3 Choose a log with record file and click  to enter Playback interface.



NOTE

If there is no record file at the time point of the log, the message box “No result found” will pop up.



| Search Result | | | | | | |
|-------------------|------------|---------------------|---------------------|-----------|---|---------|
| No. | Major Type | Time | Minor Type | Parameter | Play | Details |
| 1 | Exception | 27-01-2015 10:02:58 | HDD Error | N/A | — | ✓ |
| 2 | Exception | 27-01-2015 10:02:58 | HDD Error | N/A | — | ✓ |
| 3 | Exception | 27-01-2015 10:02:58 | HDD Error | N/A | — | ✓ |
| 4 | Operation | 27-01-2015 10:03:00 | Abnormal Shutd... | N/A | — | ✓ |
| 5 | Operation | 27-01-2015 10:03:01 | Power On | N/A | — | ✓ |
| 6 | Exception | 27-01-2015 10:03:13 | Record/Capture ... | N/A |  | ✓ |
| 7 | Exception | 27-01-2015 10:03:13 | Record/Capture ... | N/A |  | ✓ |
| 8 | Exception | 27-01-2015 10:03:13 | Record/Capture ... | N/A |  | ✓ |
| 9 | Operation | 27-01-2015 11:06:34 | Local Operation:... | N/A | — | ✓ |
| 10 | Exception | 27-01-2015 11:07:36 | HDD Error | N/A | — | ✓ |
| Total: 417 P: 1/5 | | | | | | |
| | | | | | Export | Back |

Figure 6-16 Result of System Log Search

Step 4 Playback interface.

The toolbar in the bottom part of Playback interface can be used to control playing process.



Figure 6-17 Interface of Playback by Log

6.1.7 Playing Back External File

Purpose:

Perform the following steps to look up and play back files in the external devices.

Step 1 Go to **Menu > Playback**.

Step 2 Select the **External File** in the drop-down list on the top-left side.

The files are listed in the right-side list.

You can click  Refresh to refresh the file list.




Step 3 Select and click  to play back it. And you can adjust the playback speed by clicking  and .



Figure 6-18 Interface of External File Playback

6.1.8 Playing Back by Sub-periods

Purpose:

The video files can be played in multiple sub-periods simultaneously on the screens.

Step 1 Go to **Menu > Playback**.

Step 2 Select **Sub-periods** from the drop-down list in the upper-left corner of the page to enter the Sub-periods Playback interface.

Step 3 Select a date and start playing the video file.

Step 4 Select the Split-screen Number from the dropdown list. Up to 16 screens are configurable.



Figure 6-19 Interface of Sub-periods Playback



NOTE

According to the defined number of split-screens, the video files on the selected date can be divided into average segments for playback. E.g., if there are video files existing between 16:00 and 22:00, and the 6-screen display mode is selected, then it can play the video files for 1 hour on each screen simultaneously.

6.2 Auxiliary Functions of Playback




6.2.1 Playing Back Frame by Frame

Purpose:



Play video files frame by frame, in case of checking image details of the video when abnormal events happen.

Using a Mouse:

Go to Playback interface.

- If you choose playback of the record file: click button  until the speed changes to Single frame and one click on the playback screen represents playback of one frame.
- If you choose reverse playback of the record file: click button  until the speed changes to Single frame and one click on the playback screen represents reverse playback of one frame. It is also feasible to use button  in toolbar.

Using the Front Panel:

Click the  to set the speed to Single frame. One click on  button, one click on the playback screen or Enter button on the front panel represents playback or reverse playback of one frame.

6.2.2 Fast View

You can hold the mouse to drag on the time bar to get the fast view of the video files.

Step 1 Enter the playback interface and start to play the video files.



Figure 6-20 Playback Interface

Step 2 Use the mouse to hold and drag through the playing time bar to fast view the video files.

Step 3 Release the mouse to the required time point to enter the full-screen playback.



NOTE

The fast view is supported only in the 1X single-camera playback mode.

6.2.3 Digital Zoom

Step 1 Click the  on the playback control bar to enter Digital Zoom interface.



Step 2 You can zoom in the image to different proportions (1 to16X) by moving the sliding bar from  to . You can also scroll the mouse wheel to control the zoom in/out.



Figure 6-21 Draw Area for Digital Zoom

Step 3 Right-click the image to exit the digital zoom interface.

6.2.4 File Management

You can manage the video clips, locked files and tags you have added in the playback mode.

Step 1 Enter the playback interface.


Step 2 Click  on the toolbar to enter the file management interface.



Figure 6-22 File Management

Step 3 You can view the saved video clip, lock/unlock the files and edit the tags which you added in the playback mode.

If required, select the items and click **Export All** or **Export** to export the clips/files/tags to local storage device.

Chapter 7 Backup

7.1 Backing up Record Files

7.1.1 Backing up by Normal Video Search

Purpose:

The record files can be backup to various devices, such as USB devices (USB flash drives, USB HDDs, USB writer), SATA writer and e-SATA HDD.

Backup using USB flash drives and USB HDDs

Step 1 Go to **Menu>Export>Normal**.

Step 2 Select the cameras to search.

Step 3 Set search condition and click **Search** button to enter the search result interface.
The matched video files are displayed in Chart or List display mode.

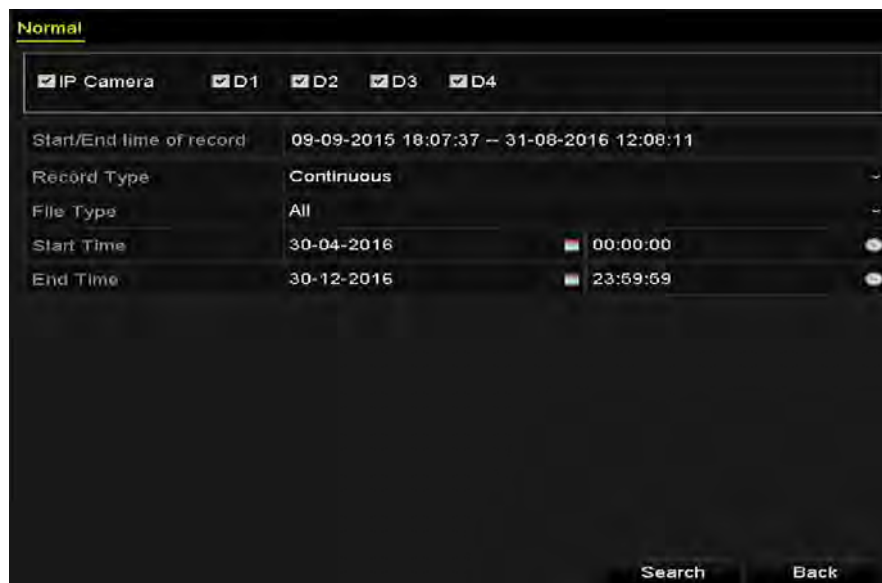



Figure 7-1 Normal Video Search for Backup

Step 4 Select video files or pictures from the Chart or List to export.

Click  to play the record file if you want to check it.

Check the checkbox before the record files you want to back up.



NOTE

The size of the currently selected files is displayed in the lower-left corner of the window.

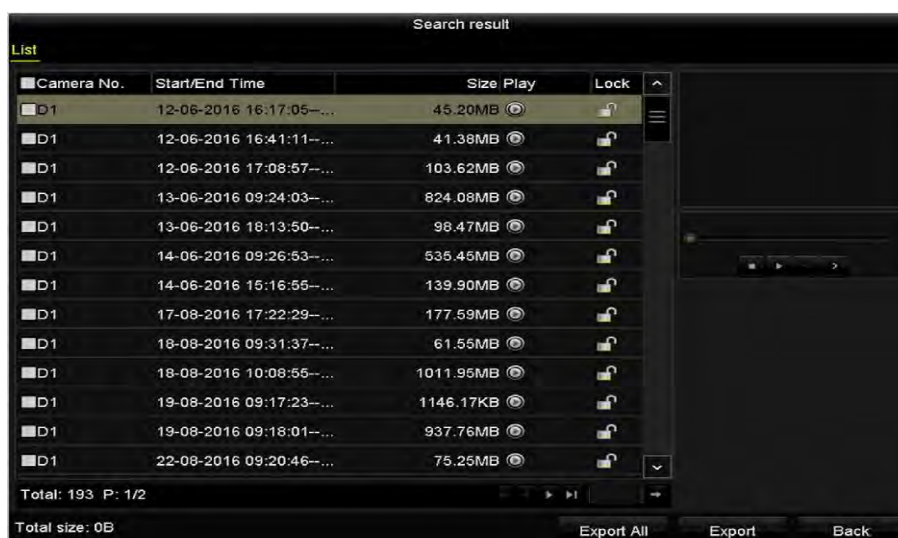


Figure 7-2 Result of Normal Video Search for Backup

Step 5 Export the video files or picture files.

Click **Export All** to export all the files.

Or you can select recording files you want to back up, and click **Export** to enter Export interface.



NOTE

If the inserted USB device is not recognized:

- Click the Refresh button.
- Reconnect device.
- Check for compatibility from vendor.

You can also format USB flash drives or USB HDDs via the device.



Figure 7-3 Export by Normal Video Search using USB Flash Drive

Stay in the Exporting interface until all record files are exported with pop-up message box “Export finished”.



Figure 7-4 Export Finished



The backup of video files using USB writer or SATA writer has the same operating instructions. Please refer to steps described above.

7.1.2 Backing up by Event Search

Purpose:

Back up event-related record files using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer or eSATA HDD. Quick Backup and Normal Backup are supported.

Step 1 Go to **Menu > Export > Event**.

Step 2 Select the cameras to search.

Step 3 Select the event type to alarm input, motion or VCA.

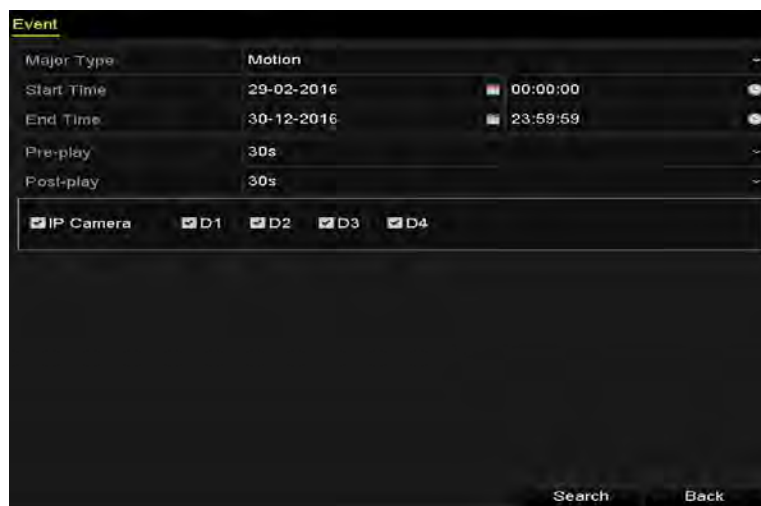


Figure 7-5 Event Search for Backup

Step 4 Set search condition and click **Search** button to enter the search result interface. The matched video files are displayed in Chart or List display mode.

Step 5 Select video files from the Chart or List interface to export.

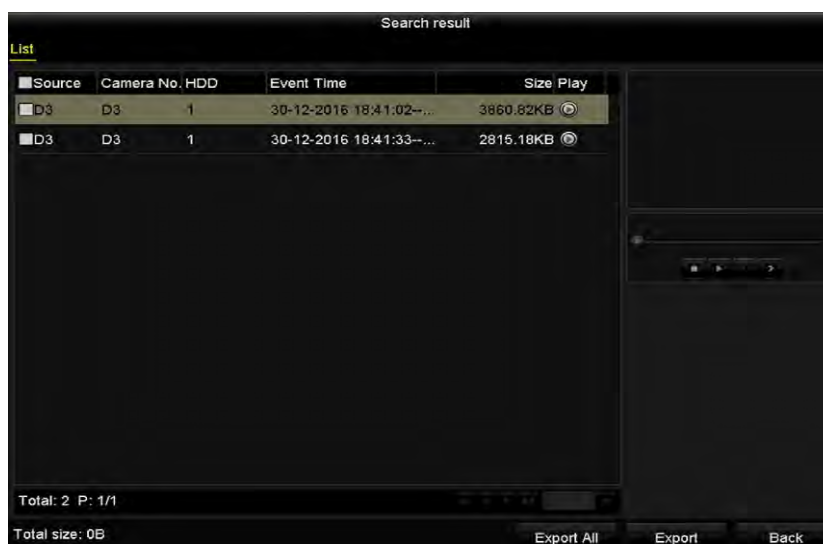


Figure 7-6 Result of Event Search

Step 6 Export the video files. Please refer to step5 of Chapter 7.1.1 Backing up by Normal Video Search for details.



7.1.3 Backing up Video Clips

Purpose:

You may also select video clips in playback mode to export directly during Playback, using USB devices (USB flash drives, USB HDDs, USB writer), SATA writer.

Step 1 Enter Playback interface.

Please refer to Chapter 6.1 Playing Back Record Files.

Step 2 During playback, use buttons  or  in the playback toolbar to start or stop clipping record file(s).


Step 3 Click  to enter the file management interface.



Figure 7-7 Video Clips Export Interface

Step 4 Export the video clips in playback. Please refer to step5 of Chapter 7.1.1 Backing up by Normal Video Search for details.

7.2 Managing Backup Devices

Management of USB flash drives, USB HDDs and eSATA HDDs

Step 1 Enter the Export interface.

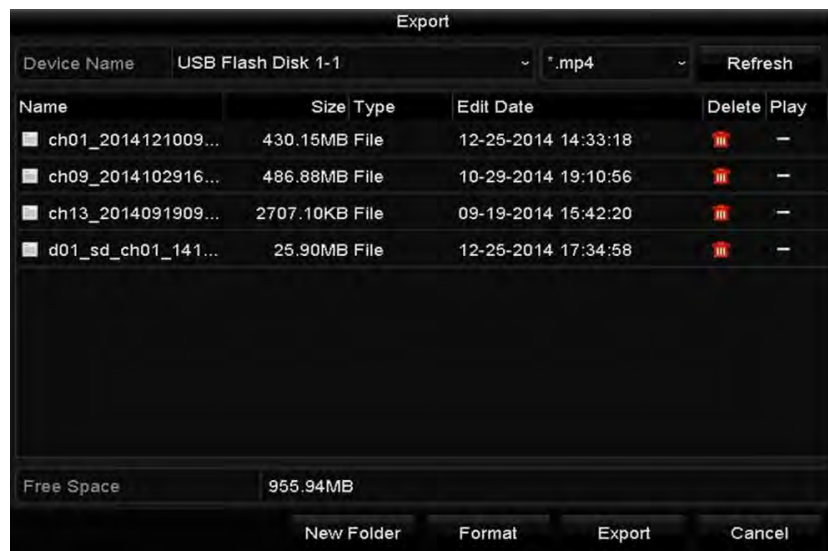


Figure 7-8 Storage Device Management

Step 2 Backup device management.

Click **New Folder** button if you want to create a new folder in the backup device.

Select a record file or folder in the backup device and click button if you want to delete it.

Click **Erase** if you want to erase the files from a re-writable CD/DVD.

Click **Format** to format the backup device.



NOTE

If the inserted storage device is not recognized:

- Click **Refresh**.
- Reconnect device.
- Check for compatibility from vendor.

Chapter 8 Alarm Settings

8.1 Setting Motion Detection Alarm

Step 1 Go to **Menu > Camera > Motion** to enter Motion Detection interface of Camera Management and choose a camera you want to set up motion detection.

Step 2 Set up detection area and sensitivity.

Tick **Enable Motion Detection**, and use the mouse to draw detection area(s) and drag the sensitivity bar to set sensitivity.



By default, the motion detection is enabled and configured in full screen.

Click  and set alarm response actions.

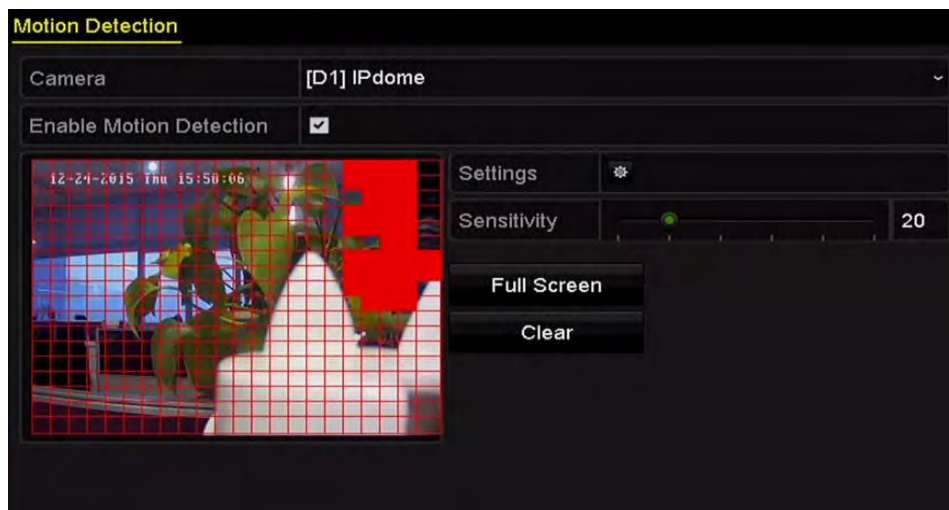


Figure 8-1 Motion Detection Setup Interface



By default, the feature of **Dynamic Analysis for Motion** is enabled. When the motion detection triggered frame (green) for the moving targets in the motion detection area will be displayed on the live video.

Step 3 Click **Trigger Channel** and select one or more channels which will start to record or become full-screen monitoring when motion alarm is triggered, and click **Apply** to save the settings.



Figure 8-2 Set Trigger Camera of Motion Detection

Step 4 Set up arming schedule of the channel.

- 1) Select Arming Schedule tab to set the arming schedule of handling actions for the motion detection.
- 2) Choose one day of a week and up to eight time periods can be set within each day.
- 3) Click **Apply** to save the settings



NOTE

Time periods shall not be repeated or overlapped.



Figure 8-3 Set Arming Schedule of Motion Detection

Step 5 Click **Handling** to set up alarm response actions of motion alarm (please refer to *Chapter 8.8 Setting Alarm Response Actions*).

Step 6 If you want to set motion detection for another channel, repeat the above steps or just click **Copy** in the Motion Detection interface to copy the above settings to it.

8.2 Setting Sensor Alarms

Purpose:

Set the handling action of an external sensor alarm.

Step 1 Go to **Menu > Configuration > Alarm**.

Select Alarm Input tab to enter Alarm Input Settings interface.



Figure 8-4 Alarm Status Interface of System Configuration

Step 2 Set up the handling action of the selected alarm input.

Check **Enable** and click **Setting** to set up its alarm response actions.



Figure 8-5 Alarm Input Setup Interface

Step 3 (Optional) Enable the one-key disarming for local alarm input 1 (Local<-1).

- 1) Check **Enable One-Key Disarming**.
- 2) Click **Settings** to enter the linkage action settings interface.
- 3) Select the alarm linkage action (s) you want to disarm for local alarm input 1. The selected linkage actions include the Full Screen Monitoring, Audible Warning, Notify Surveillance Center, Send Email and Trigger Alarm Output.



When the alarm input 1 (Local<-1) is enabled with one-key disarming, the other alarm input settings are not configurable.

Step 4 Select **Trigger Channel** tab and select one or more channels which will start to record or become full-screen monitoring when an external alarm is input, and click **Apply** to save the settings.

Step 5 Select **Arming Schedule** to set the arming schedule of handling actions.

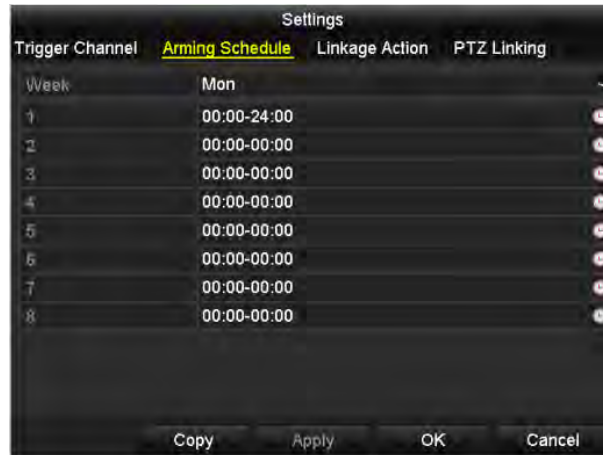


Figure 8-6 Set Arming Schedule of Alarm Input

Choose one day of a week and Max. eight time periods can be set within each day, and click **Apply** to save the settings.



Time periods shall not be repeated or overlapped.

Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

Step 6 Select **Linkage Action** to set up alarm response actions of the alarm input (please refer to *Chapter 8.8 Setting Alarm Response Actions*).

Step 7 If necessary, select **PTZ Linking** tab and set PTZ linkage of the alarm input.

Step 8 Set PTZ linking parameters and click **OK** to complete the settings of the alarm input.



Please check whether the PTZ or speed dome supports PTZ linkage.

One alarm input can trigger presets, patrol or pattern of more than one channel. But presets, patrols and patterns are exclusive.



Figure 8-7 Set PTZ Linking of Alarm Input

Step 9 If you want to set handling action of another alarm input, repeat the above steps.

Or you can click the **Copy** button on the Alarm Input Setup interface and check the checkbox of alarm inputs to copy the settings to them.

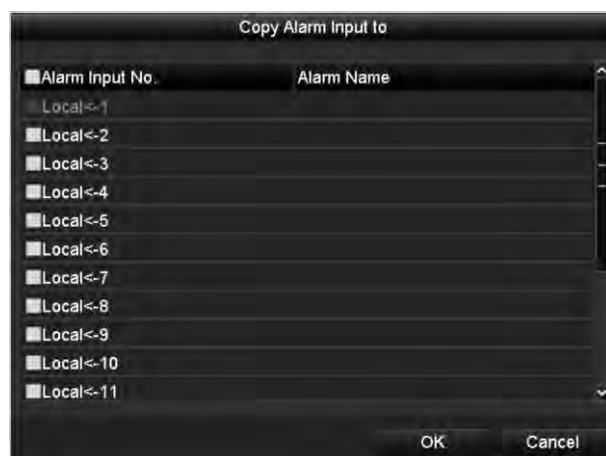


Figure 8-8 Copy Settings of Alarm Input

8.3 Detecting Video Loss Alarm

Purpose:


Detect video loss of a channel and take alarm response action(s).

Step 1 Go to **Menu > Camera > Video Loss** to enter Video Loss interface of Camera Management and select a channel you want to detect.



Figure 8-9 Video Loss Setup Interface

Step 2 Set up handling action of video loss.

Check the checkbox of “Enable Video Loss Alarm”, and click  button to set up handling action of video loss.

Step 3 Set up arming schedule of the handling actions.

- 1) Select Arming Schedule tab to set the channel’s arming schedule.
- 2) Choose one day of a week and up to eight time periods can be set within each day.
- 3) Click **Apply** to save the settings.



NOTE

Time periods shall not be repeated or overlapped.

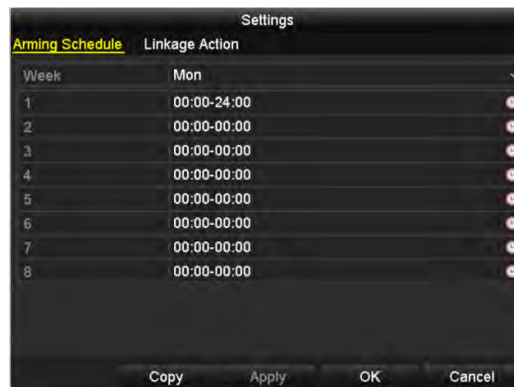


Figure 8-10 Set Arming Schedule of Video Loss

Step 4 Select **Linkage Action** to set up alarm response action of video loss (please refer to [Chapter 8.8 Setting Alarm Response Actions](#)).

Step 5 Click **OK** to complete the video loss settings of the channel.

8.4 Detecting Video Tampering Alarm

Purpose:

Trigger alarm when the lens is covered and take alarm response action(s).

Step 1 Go to **Menu> Camera > Video Tampering** to enter Video Tampering interface of Camera Management and select a channel you want to detect video tampering.

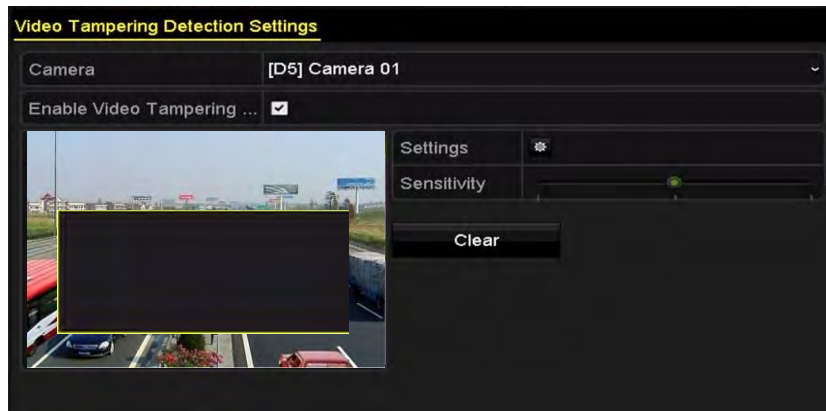


Figure 8-11 Video Tampering Setup Interface

Step 2 Set the video tampering handling action of the channel.

Check **Enable Video Tampering Detection**.

Drag the sensitivity bar to set a proper sensitivity level. Use the mouse to draw an area you want to detect video tampering.

Click  button to set up handling action of video tampering.

Step 3 Set arming schedule and alarm response actions of the channel.

- 4) Click **Arming Schedule** to set the arming schedule of handling actions.
- 5) Choose one day of a week and max. eight time periods can be set within each day.
- 6) Click **Apply** to save the settings.



Time periods shall not be repeated or overlapped.



Figure 8-12 Set Arming Schedule of Video Tampering

Step 4 Select **Linkage Action** to set up alarm response actions of video tampering alarm (please refer to *Chapter 8.8 Setting Alarm Response Actions*).

Step 5 Click **OK** to complete the video tampering settings of the channel.

8.5 Line Crossing Detection Alarm

Purpose:


This function can be used for detecting people, vehicles and objects cross a set virtual line. The line crossing direction can be set as bidirectional, from left to right or from right to left. And you can set the duration for the alarm response actions, such as full screen monitoring, audible warning, etc.

Step 1 Go to **Menu > Camera > VCA**.

Step 2 Select the camera to configure the VCA.

Step 3 Select the VCA detection type to **Line Crossing Detection**.

Step 4 Check **Enable** to enable this function.

Step 5 Click  to configure the trigger channel, arming schedule and linkage actions for the line crossing detection alarm.

Step 6 Click the **Rule Settings** button to set the line crossing detection rules.

- 1) Select the direction to A<->B, A->B or A<-B.

A<->B: Only the arrow on the B side shows; when an object going across the configured line with both direction can be detected and alarms are triggered.

A->B: Only the object crossing the configured line from the A side to the B side can be detected.

B->A: Only the object crossing the configured line from the B side to the A side can be detected.

- 2) Click-and-drag the slider to set the detection sensitivity.

Sensitivity: Range [1-100]. The higher the value is, the more easily the detection alarm can be triggered.

- 3) Click **OK** to save the rule settings and back to the line crossing detection settings interface.



Figure 8-13 Set Line Crossing Detection Rules

Step 7 Click and set two points in the preview window to draw a virtual line.

Step 8 You can use the to clear the existing virtual line and re-draw it.



NOTE

Up to 4 rules can be configured.

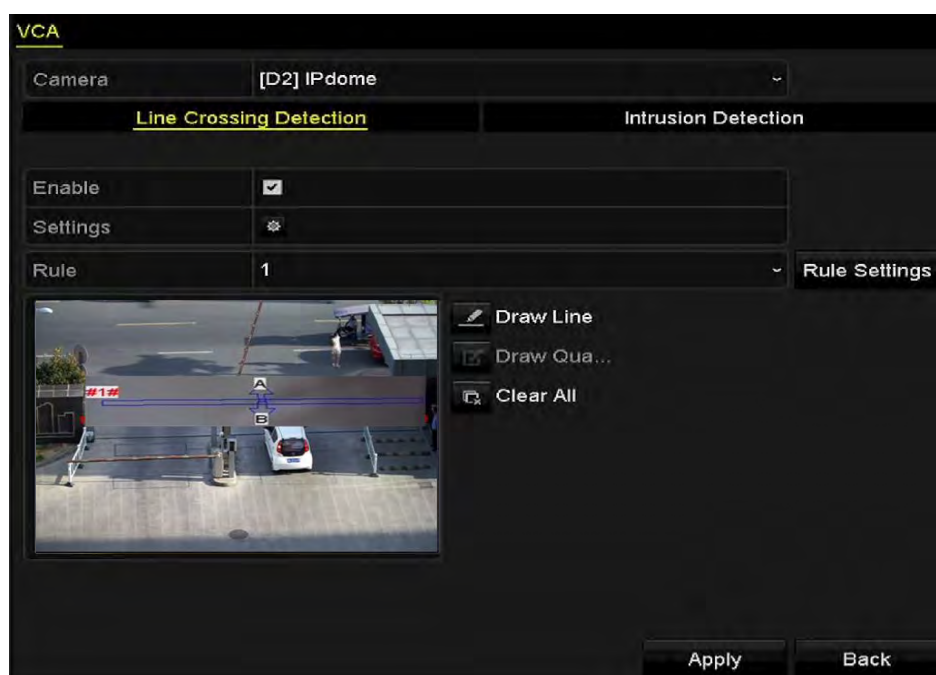


Figure 8-14 Draw Line for Line Crossing Detection

Step 9 Click **Apply** to activate the settings.

8.6 Intrusion Detection Alarm

Purpose:


Intrusion detection function detects people, vehicle or other objects which enter and loiter in a pre-defined virtual region, and some certain actions can be taken when the alarm is triggered.

Step 1 Go to **Menu> Camera> VCA**.

Step 2 Select the camera to configure the VCA.

Step 3 Select the VCA detection type to **Intrusion Detection**.

Step 4 Check **Enable** to enable this function.

Step 5 Click  to configure the trigger channel, arming schedule and linkage actions for the line crossing detection alarm.


Step 6 Click the **Rule Settings** button to set the intrusion detection rules. Set the following parameters.


- 4) **Threshold:** Range [1s-10s], the threshold for the time of the object loitering in the region. When the duration of the object in the defined detection area is longer than the set time, the alarm will be triggered.
- 5) Click-and-drag the slider to set the detection sensitivity.
- 6) **Sensitivity:** Range [1-100]. The value of the sensitivity defines the size of the object which can trigger the alarm. The higher the value is, the more easily the detection alarm can be triggered.
- 7) **Percentage:** Range [1-100]. Percentage defines the ratio of the in-region part of the object which can trigger the alarm. For example, if the percentage is set as 50%, when the object enters the region and occupies half of the whole region, the alarm is triggered.



Figure 8-15 Set Intrusion Crossing Detection Rules

- 8) Click **OK** to save the rule settings and back to the line crossing detection settings interface.

Step 7 Click  and draw a quadrilateral in the preview window by specifying four vertexes of the detection region, and right click to complete drawing. Only one region can be configured.

You can use the  to clear the existing virtual line and re-draw it.



Up to 4 rules can be configured.

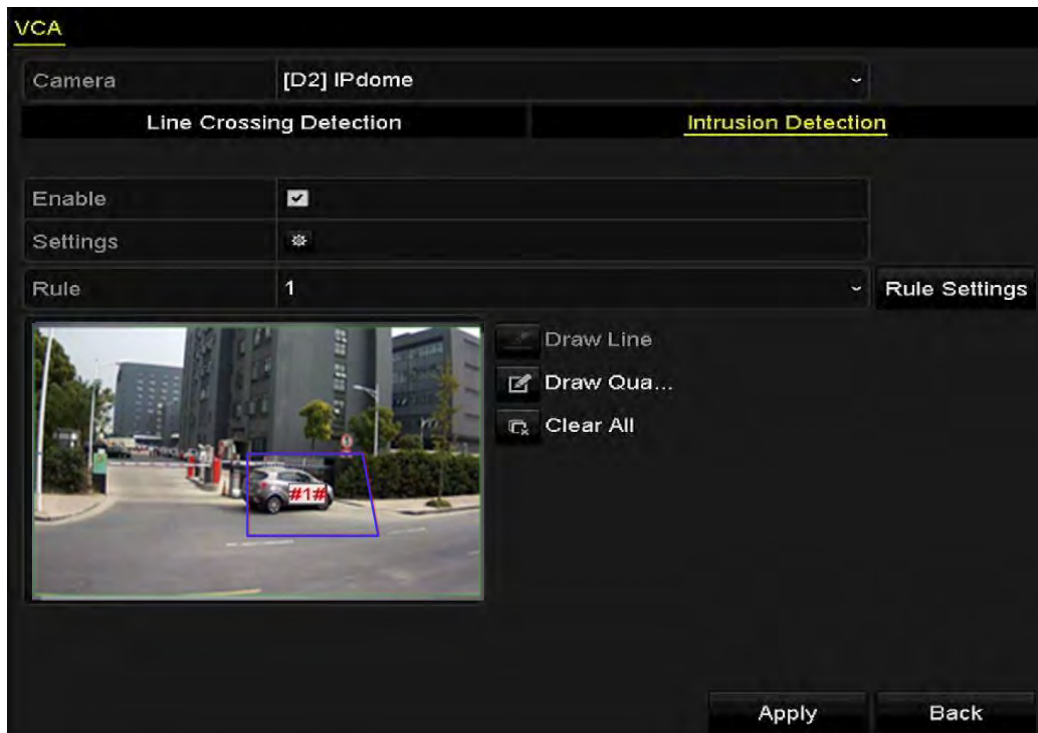


Figure 8-16 Draw Area for Intrusion Detection

Step 8 Click **Apply** to save the settings.

8.7 Handling Exceptions Alarm

Purpose:

Exception settings refer to the handling action of various exceptions, e.g.

- **HDD Full:** The HDD is full.
- **HDD Error:** Writing HDD error or unformatted HDD.
- **Network Disconnected:** Disconnected network cable.
- **IP Conflicted:** Duplicated IP address.
- **Illegal Login:** Incorrect user ID or password.
- **Record Exception:** No space for saving recorded files.

Step 1 Go to **Menu> Configuration> Exceptions** to enter Exception interface of System Configuration and handle various exceptions.

Please refer to *Chapter 8.8 Setting Alarm Response Actions* for detailed alarm response actions.



Figure 8-17 Exceptions Setup Interface

8.8 Setting Alarm Response Actions

Purpose:

Alarm response actions will be activated when an alarm or exception occurs, including Event Hint Display, Full Screen Monitoring, Audible Warning (buzzer), Notify Surveillance Center, Upload Picture to FTP, Trigger Alarm Output and Send Email.

Event Hint Display

When an event or exception happens, a hint can be displayed on the lower-left corner of live view image. And you can click the hint icon to check the details. Besides, the event to be displayed is configurable.

Step 1 Go to **Menu > Configuration > Exceptions**.

Step 2 Check **Enable Event Hint**.

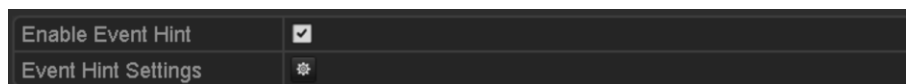


Figure 8-18 Event Hint Settings Interface


Step 3 Click the  to set the type of event to be displayed on the image.



Figure 8-19 Event Hint Settings Interface

Step 4 Click the **OK** button to finish settings.

Full Screen Monitoring

When an alarm is triggered, the local monitor (VGA and HDMI™ monitor) display in full screen the video image from the alarming channel configured for full screen monitoring.

If alarms are triggered simultaneously in several channels, their full-screen images will be switched at an interval of 10 seconds (default dwell time). A different dwell time can be set by going to Menu > Configuration > Live View > Full Screen Monitoring Dwell Time.

Auto-switch will terminate once the alarm stops and you will be taken back to the Live View interface.



You must select during “Trigger Channel” settings the channel(s) you want to make full screen monitoring.

Audible Warning

Trigger an audible *beep* when an alarm is detected.

Notify Surveillance Center

Sends an exception or alarm signal to remote alarm host when an event occurs. The alarm host refers to the PC installed with Remote Client.



The alarm signal will be transmitted automatically at detection mode when remote alarm host is configured. Please refer to *Chapter 11.2.6 Configuring More Settings* for details of alarm host configuration.

Email Linkage

Send an email with alarm information to a user or users when an alarm is detected.

Please refer to *Chapter 9.3.5* for details of Email configuration.

Trigger Alarm Output

Trigger an alarm output when an alarm is triggered.

Step 5 Go to **Menu > Configuration > Alarm > Alarm Output**.

Select an alarm output and set alarm name and dwell time. Click **Schedule** to set the arming schedule of alarm output.



If “Manually Clear” is selected in the dropdown list of Dwell Time, you can clear it only by going to **Menu > Manual > Alarm**.

| Alarm Status | Alarm Input | Alarm Output |
|------------------|-------------|--------------|
| Alarm Output No. | Local->1 | |
| Alarm Name | | |
| Dwell Time | 5s | |
| Settings | | |

Figure 8-20 Alarm Output Setup Interface

Step 6 Set up arming schedule of the alarm output.

Choose one day of a week and up to 8 time periods can be set within each day.



Time periods shall not be repeated or overlapped.

| Settings | |
|-----------------|-------------|
| Arming Schedule | |
| Week | Mon |
| 1 | 00:00-24:00 |
| 2 | 00:00-00:00 |
| 3 | 00:00-00:00 |
| 4 | 00:00-00:00 |
| 5 | 00:00-00:00 |
| 6 | 00:00-00:00 |
| 7 | 00:00-00:00 |
| 8 | 00:00-00:00 |

Copy Apply OK Cancel

Figure 8-21 Set Arming Schedule of Alarm Output

Step 7 Repeat the above steps to set up arming schedule of other days of a week. You can also use **Copy** button to copy an arming schedule to other days.

Step 8 Click **OK** to complete the video tampering settings of the alarm output No.

Step 9 You can also copy the above settings to another channel.

| Copy Alarm Output to | |
|--|------------|
| <input checked="" type="checkbox"/> Alarm Output No. | Alarm Name |
| <input checked="" type="checkbox"/> Local->1 | |
| <input type="checkbox"/> Local->2 | |
| <input type="checkbox"/> Local->3 | |
| <input type="checkbox"/> Local->4 | |
| <input type="checkbox"/> 172.6.23.105:8000->1 | |

OK Cancel

Figure 8-22 Copy Settings of Alarm Output

8.9 Triggering or Clearing Alarm Output Manually

Purpose:

Sensor alarm can be triggered or cleared manually. If “Manually Clear” is selected in the dropdown list of dwell time of an alarm output, the alarm can be cleared only by clicking **Clear** button in the following interface.

Step 1 Select the alarm output you want to trigger or clear and make related operations.

Step 2 Go to **Menu> Manual> Alarm**.

Step 3 Click **Trigger/Clear** if you want to trigger or clear an alarm output.

Step 4 Click **Trigger All** if you want to trigger all alarm outputs.

Step 5 Click **Clear All** if you want to clear all alarm output.



The screenshot shows a web interface titled "Alarm" in yellow text. Below the title is a table with three columns: "Alarm Output No.", "Alarm Name", and "Trigger". The table contains five rows of data. The first row, "Local->1", is highlighted with a light blue background. The other rows are "Local->2", "Local->3", "Local->4", and "172.6.23.105:8000->1". All "Trigger" values are "No".

| Alarm Output No. | Alarm Name | Trigger |
|----------------------|------------|---------|
| Local->1 | | No |
| Local->2 | | No |
| Local->3 | | No |
| Local->4 | | No |
| 172.6.23.105:8000->1 | | No |

Figure 8-23 Clear or Trigger Alarm Output Manually

Chapter 9 Network Settings

9.1 Configuring General Settings

Purpose:

Network settings must be properly configured before you operate NVR over network.

Step 1 Go to **Menu > Configuration > Network > General**.

| | | | |
|----------------------------------|-------------------------------------|-------------------|------------------------------|
| NIC Type | 100M Full-dup | | |
| Enable DHCP | <input checked="" type="checkbox"/> | | |
| IPv4 Address | 10 .15 .1 .108 | IPv6 Address 1 | fe80::b6a3:82ff:febe:ad2c/64 |
| IPv4 Subnet ... | 255 .255 .255 .0 | IPv6 Address 2 | |
| IPv4 Default G... | 10 .15 .1 .254 | IPv6 Default G... | |
| MAC Address | b4:a3:82:be:ad:2c | | |
| MTU(Bytes) | 1500 | | |
| Enable Obtain DNS Server Addr... | <input checked="" type="checkbox"/> | | |
| Preferred DNS Server | 10.1.7.88 | | |
| Alternate DNS Server | 10.1.7.77 | | |
| Internal NIC IPv4 Address | 192 .168 .254 .1 | | |

Figure 9-1 Network Settings

Step 2 Configure the following settings: Working Mode, NIC Type, IPv4 Address, IPv4 Gateway, MTU and DNS Server.

If the DHCP server is available, you can click the checkbox of **DHCP** to automatically obtain an IP address and other network settings from that server.



NOTE

The valid value range of MTU is 500 ~ 9676.

Step 3 Click **Apply**.

9.2 Configuring Wi-Fi Settings

Purpose:

The device can work as a wireless network router. Follow the steps to setup a network router.

Step 1 Go to **Menu > Configuration > WiFi**.

| WIFI | |
|------------------|--------------------------|
| SSID | NVRadsg |
| Area/Country | China |
| Channel | Self-adaptive |
| Security Mode | WPA-PSK/WPA2-PSK |
| Encryption Type | TKIP |
| Key | QE0EE4CC |
| Network Bridging | <input type="checkbox"/> |
| IP Address | 192.168.254.1 |

WPS

Figure 9-2 Wi-Fi Settings

Step 2 Configure wireless network parameters, including **Network Bridging**, **SSID**, **Security Mode**, and **Key**.

- **Network Bridging:** Enable device to create a single aggregate network from multiple communication networks or network segments.
- **SSID:** It is the short for Service Set Identifier. SSID is the WiFi name that the device provides.
- **Area/Country:** Select where the router is used.
- **Channel:** Select the best channel according to your situation.
- **Security Mode:** Select the security protocol for the wireless network.
- **Encryption Type:** It is used to protect information. TKIP and AES are selectable.
- **Key:** Enter the encryption key.
- **WPS:** It is the short of Wi-Fi Protected Setup. Click the button and then you can connect the wireless network without password for once.

Step 3 Click Apply to save the settings.

9.3 Configuring Advanced Settings

9.3.1 Configuring Hik-Connect

Purpose

Hik-Connect enables the mobile phone application and the service platform page (www.hik-connect.com) to access and manage your connected NVR, providing a convenient remote access to the surveillance system.

**NOTE**

The Hik-Connect can be enabled via operation on SADP software, GUI and Web browser. We introduce the operation steps on GUI in this section.

Step 1 Go to **Menu > Configuration > Network > Platform Access**.

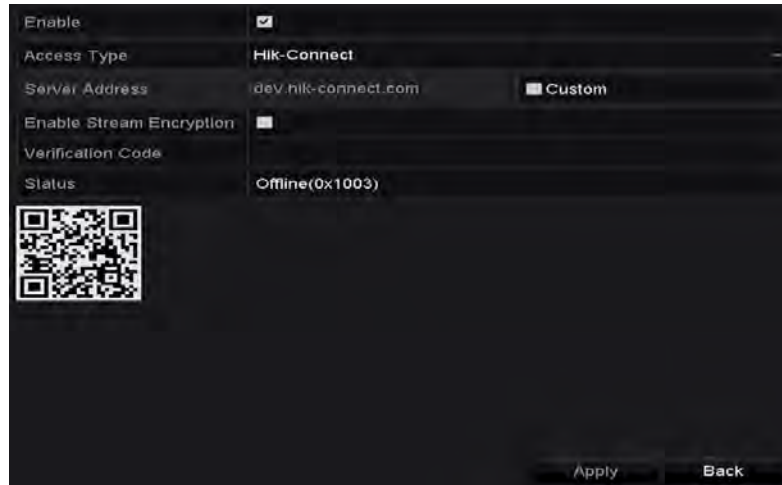


Figure 9-3 Hik-Connect Settings

Step 2 Check **Enable** to activate the function. The **Service Terms** interface pops up as below.

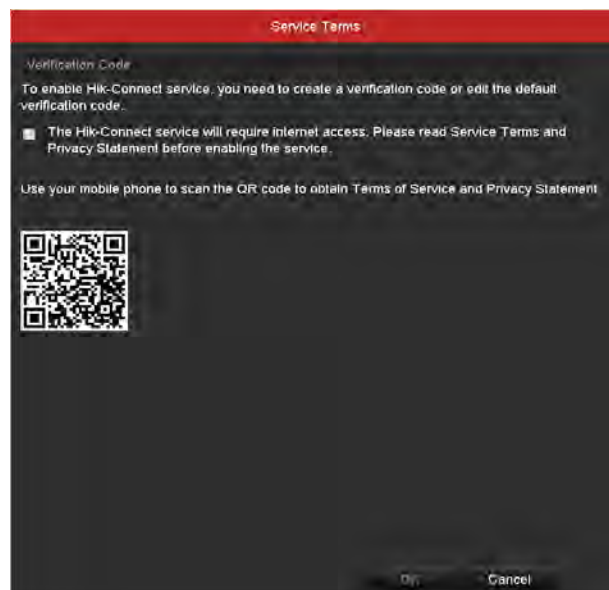


Figure 9-4 Service Terms

- 1) Create the verification code and enter the code in the **Verification Code** text field.
- 2) Check the checkbox of **The Hik-Connect service will require internet access. Please read Service Terms and Privacy Statement before enabling the service.**
- 3) Scan the QR code on the interface to read the Service Terms and the Privacy Statement.

4) Click **OK** to save the settings and return to the Hik-Connect interface.



- Hik-Connect is disabled by default.
- The verification code is empty when the device leaves factory.
- The verification code must contain 6 to 12 letters or numbers and is case sensitive.
- Every time you enable Hik-Connect, the Service Terms interface pops up and you should check the checkbox before enabling it.

Step 3 (Optional) Check **Custom** and input the **Server Address**.

Step 4 (Optional) Check **Enable Stream Encryption**. After this feature is enabled, the verification code is required for remote access and live view.



You can use the scanning tool of your phone to quickly get the code by scanning the QR code below.

| | |
|--------------------------|---|
| Enable | <input checked="" type="checkbox"/> |
| Access Type | Hik-Connect |
| Server Address | dev.hik-connect.com <input type="checkbox"/> Custom |
| Enable Stream Encryption | <input checked="" type="checkbox"/> |
| Verification Code | asdfgh |
| Status | Offline |




Figure 9-5 Hik-Connect Settings Interface

Step 5 Click **Apply** to save the settings.

Step 6 After configuration, you can access and manage the DVR by your mobile phone or by the website (www.hik-connect.com).

For the iOS users, please scan the QR code below to download the Hik-Connect application for the subsequent operations.



Figure 9-6 QR Code for iOS Users

For the Android users, please scan the QR code below to download the Hik-Connect application for the subsequent operations. You must install *googleplay* on your Android mobile phone to skip to the address successfully.



Figure 9-7 QR Code for Android Users

**NOTE**

Please refer to the help file on the official website (www.hik-connect.com) and the *Hik-Connect Mobile Client User Manual* for adding the device to Hik-Connect and more operation instructions.

After configuration, you can access and manage the NVR by your mobile phone on which the Hik-Connect application is installed or by the website (www.hik-connect.com).

**NOTE**

Please refer to the help file on the official website (www.hik-connect.com) and the *Hik-Connect Mobile Client User Manual* for adding the device to Hik-Connect and more operation instructions.

9.3.2 Configuring DDNS

Purpose:

You can set the Dynamic DNS (DDNS) to be used for network access.

Prior registration with your ISP is required before configuring the system to use DDNS.

Step 1 Go to **Menu > Configuration > Network**.

Step 2 Select **DDNS** to enter the DDNS Settings interface.

Step 3 Check **Enable DDNS** to enable this feature.

Step 4 Select **DDNS Type**. Five different DDNS types are selectable: DynDNS, PeanutHull, NO-IP.

DynDNS:

- 1) Enter Server Address for DynDNS (i.e. members.dyndns.org).
- 2) In the NVR Domain Name text field, enter the domain obtained from the DynDNS website.
- 3) Enter the **User Name** and **Password** registered in the DynDNS website.

| | |
|--------------------|-------------------------------------|
| Enable DDNS | <input checked="" type="checkbox"/> |
| DDNS Type | DynDNS |
| Area/Country | Custom |
| Server Address | |
| Device Domain Name | |
| Status | DDNS is disabled. |
| User Name | |
| Password | |

Figure 9-8 DynDNS Settings Interface

PeanutHull: Enter the **User Name** and **Password** obtained from the PeanutHull website.

| | |
|--------------------|-------------------------------------|
| Enable DDNS | <input checked="" type="checkbox"/> |
| DDNS Type | PeanutHull |
| Area/Country | Custom |
| Server Address | |
| Device Domain Name | |
| Status | DDNS is disabled. |
| User Name | |
| Password | |

Figure 9-9 PeanutHull Settings Interface

NO-IP:

Enter the account information in the corresponding fields. Refer to the DynDNS settings.

- 1) Enter **Server Address** for NO-IP.

- 2) In the NVR Domain Name text field, enter the domain obtained from the NO-IP website (www.no-ip.com).
- 3) Enter the **User Name** and **Password** registered in the NO-IP website.

| | |
|--------------------|-------------------------------------|
| Enable DDNS | <input checked="" type="checkbox"/> |
| DDNS Type | NO-IP |
| Area/Country | Custom |
| Server Address | |
| Device Domain Name | |
| Status | DDNS is disabled. |
| User Name | |
| Password | |

Figure 1. 1 NO-IP Settings Interface

Step 5 Click **Apply** to save the settings.

After setting all the required parameters for the DDNS, you can view the connecting status of the device by checking the **Status** information.

9.3.3 Configuring NTP Server

Purpose:

Ensure the network connection of the PC (running FTP server) and the device is valid and correct. Run the FTP server on the PC and copy the firmware into the corresponding directory of your PC.



Refer to the user manual of the FTP server to set the FTP server on your PC and put the firmware file into the directory as required.

Step 1 Go to **Menu > Configuration > Network**.

Step 2 Select **NTP** to enter the NTP Settings interface, as shown in Figure 9-10.

| | |
|----------------|-------------------------------------|
| Enable NTP | <input checked="" type="checkbox"/> |
| Interval (min) | 60 |
| NTP Server | |
| NTP Port | 123 |

Figure 9-10 NTP Settings Interface

Step 3 Check **Enable NTP** to enable this feature.

Step 4 Configure the following NTP settings:

Interval: Time interval between the two synchronizing actions with NTP server. The unit is minute.

NTP Server: IP address of NTP server.

NTP Port: Port of NTP server.

Step 5 Click **Apply** to save and exit the interface.



The time synchronization interval can be set from 1 to 10080min, and the default value is 60min. If the NVR is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the NVR is setup in a more customized network, NTP software can be used to establish a NTP server used for time synchronization.

9.3.4 Configuring More Settings

Step 1 Go to **Menu > Configuration > Network**.

Step 2 Select the **More Settings** tab to enter the More Settings interface.

| | |
|-----------------|------|
| Alarm Host IP | |
| Alarm Host Port | 0 |
| Server Port | 8000 |
| HTTP Port | 80 |
| Multicast IP | |
| RTSP Port | 554 |

Figure 9-11 More Settings Interface

Step 3 Configure the remote alarm host, server port, HTTP port, multicast, RTSP port.

Alarm Host IP/Port: With a remote alarm host configured, the device will send the alarm event or exception message to the host when an alarm is triggered. The remote alarm host must have the CMS (Client Management System) software installed.

The **Alarm Host IP** refers to the IP address of the remote PC on which the CMS (Client Management System) software (e.g., iVMS-4200) is installed, and the **Alarm Host Port** must be the same as the alarm monitoring port configured in the software (default port is 7200).

Multicast IP: The multicast can be configured to realize live view for more than the maximum number of cameras through network. A multicast address spans the Class-D IP range of 224.0.0.0 to 239.255.255.255. It is recommended to use the IP address ranging from 239.252.0.0 to 239.255.255.255.

When adding a device to the CMS (Client Management System) software, the multicast address must be the same as the device's multicast IP.

RTSP Port: The RTSP (Real Time Streaming Protocol) is a network control protocol designed for use in entertainment and communications systems to control streaming media servers.

Enter the RTSP port in the text field of **RTSP Port**. The default RTSP port is 554, and you can change it according to different requirements.

Server Port and **HTTP Port**: Enter the **Server Port** and **HTTP Port** in the text fields. The default Server Port is 8000 and the HTTP Port is 80, and you can change them according to different requirements.

**NOTE**

The Server Port should be set to the range of 2000-65535 and it is used for remote client software access. The HTTP port is used for remote IE access.

| | |
|-----------------|--------------|
| Alarm Host IP | 192.0.0.10 |
| Alarm Host Port | 7200 |
| Server Port | 8000 |
| HTTP Port | 80 |
| Multicast IP | 239.252.2.50 |
| RTSP Port | 554 |

Figure 9-12 Configure More Settings

Step 4 Click the **Apply** button to save and exit the interface.

9.3.5 Configuring Email

Purpose:

The system can be configured to send an Email notification to all designated users if an alarm event is detected, etc., an alarm or motion event is detected or the administrator password is changed.

Before configuring the Email settings, the NVR must be connected to a local area network (LAN) that maintains an SMTP mail server. The network must also be connected to either an intranet or the Internet depending on the location of the e-mail accounts to which you want to send notification.

Step 1 Go to **Menu > Configuration > Network**.

Step 2 Set the IPv4 Address, IPv4 Subnet Mask, IPv4 Gateway and the Preferred DNS Server in the Network Settings men.

| | | | |
|----------------------|-------------------------------------|-----------------|---------------------------|
| NIC Type | 10M/100M Self-adaptive | | |
| Enable DHCP | <input checked="" type="checkbox"/> | | |
| IPv4 Address... | 10 .16 .5 .15 | IPv6 Address... | fe80::a614:37ff:feac:6/64 |
| IPv4 Subn... | 255 .255 .255 .0 | IPv6 Address... | |
| IPv4 Defa... | 10 .16 .5 .254 | IPv6 Defa... | |
| MAC Address | a4:14:37:ac:00:06 | | |
| MTU(Bytes) | 1500 | | |
| Enable DNS DHCP | <input checked="" type="checkbox"/> | | |
| Preferred DNS Server | 10.1.7.88 | | |
| Alternate DNS Server | 10.1.7.77 | | |

Figure 9-13 Network Settings Interface

Step 3 Click **Apply** to save the settings.

Step 4 Select the Email tab to enter the Email Settings interface.

| | | | |
|----------------------------|-------------------------------------|--------------|--------------------------|
| Enable Se... | <input checked="" type="checkbox"/> | SMTP Ser... | smtp.126.com |
| User Name | 01 | SMTP Port | 25 |
| Password | ***** | Enable SS... | <input type="checkbox"/> |
| Sender | example1 | | |
| Sender's Address | example1@126.com | | |
| Select Receivers | Receiver 1 | | |
| Receiver | example2 | | |
| Receiver's Address | example@163.com | | |
| <div>Test Apply Back</div> | | | |

Figure 9-14 Email Settings Interface

Step 5 Configure the following Email settings:

Enable Server Authentication (optional): Check the checkbox to enable the server authentication feature.

User Name: The user account of sender's Email for SMTP server authentication.

Password: The password of sender's Email for SMTP server authentication.

SMTP Server: The SMTP Server IP address or host name (e.g., smtp.263xmail.com).

SMTP Port No.: The SMTP port. The default TCP/IP port used for SMTP is 25.

Enable SSL/TLS (optional): Click the checkbox to enable SSL/TLS if required by the SMTP server.

Sender: The name of sender.

Sender's Address: The Email address of sender.

Select Receivers: Select the receiver. Up to 3 receivers can be configured.

Receiver: The name of user to be notified.

Receiver's Address: The Email address of user to be notified.

Test: Sends a test message to verify that the SMTP server can be reached.

Step 6 Click **Apply** to save the Email settings.

Step 7 You can click **Test** to test whether your Email settings work. The corresponding Attention message box will pop up.

9.3.6 Configuring NAT

Purpose:

Two ways are provided for port mapping to realize the remote access via the cross-segment network, UPnP™ and manual mapping.

● UPnP™

Universal Plug and Play (UPnP™) can permit the device seamlessly discover the presence of other network devices on the network and establish functional network services for data sharing, communications, etc. You can use the UPnP™ function to enable the fast connection of the device to the WAN via a router without port mapping.

Before you start:

If you want to enable the UPnP™ function of the device, you must enable the UPnP™ function of the router to which your device is connected. When the network working mode of the device is set as multi-address, the Default Route of the device should be in the same network segment as that of the LAN IP address of the router.

Step 1 Go to **Menu > Configuration > Network**.

Step 2 Select **NAT** to enter the port mapping interface.

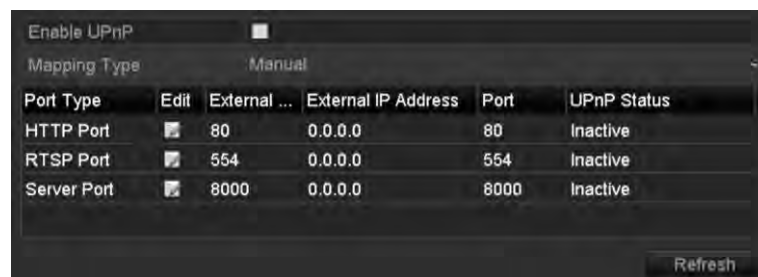


Figure 9-15 UPnP™ Settings Interface

Step 3 Check ☒ checkbox to enable UPnP™.

Step 4 Select the Mapping Type as Manual or Auto in the drop-down list.

OPTION 1: Auto

If you select Auto, the Port Mapping items are read-only, and the external ports are set by the router automatically.

- 1) Select Auto in the drop-down list of Mapping Type.
- 2) Click **Apply** to save the settings.
- 3) You can click **Refresh** to get the latest status of the port mapping.

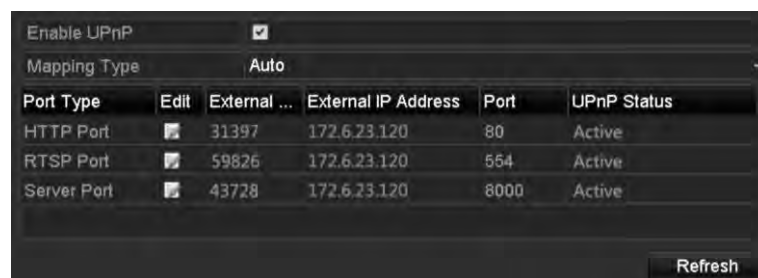




Figure 9-16 UPnP™ Settings Finished-Auto

OPTION 2: Manual

If you select **Manual** as the mapping type, you can edit the external port on your demand by clicking  to activate the External Port Settings dialog box.

- 4) Select **Manual** in the drop-down list of Mapping Type.
- 5) Click  to activate the External Port Settings dialog box. Configure the external port No. for server port, http port, RTSP port and https port respectively.

NOTE

- You can use the default port No., or change it according to actual requirements.
- External Port indicates the port No. for port mapping in the router.
- The value of the RTSP port No. should be 554 or between 1024 and 65535, while the value of the other ports should be between 1 and 65535 and the value must be different from each other. If multiple devices are configured for the UPnP™ settings under the same router, the value of the port No. for each device should be unique.



Figure 9-17 External Port Settings Dialog Box

- 6) Click **Apply** to save the settings.
- 7) You can click **Refresh** to get the latest status of the port mapping.

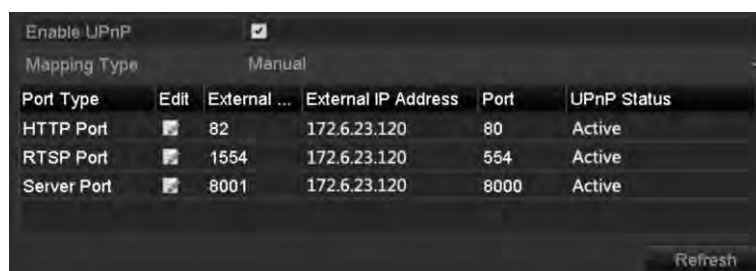


Figure 9-18 UPnP™ Settings Finished-Manual

● **Manual Mapping**

If your router does not support the UPnP™ function, perform the following steps to map the port manually in an easy way.


Before you start:

Make sure the router support the configuration of internal port and external port in the interface of Forwarding.

Step 1 Go to **Menu > Configuration > Network**.

Step 2 Select **NAT** to enter the port mapping interface.

Step 3 Leave the Enable UPnP checkbox unchecked.

Step 4 Click  to activate the External Port Settings dialog box. Configure the external port No. for server port, http port, RTSP port and https port respectively.



The value of the RTSP port No. should be 554 or between 1024 and 65535, while the value of the other ports should be between 1 and 65535 and the value must be different from each other. If multiple devices are configured for the UPnP™ settings under the same router, the value of the port No. for each device should be unique.

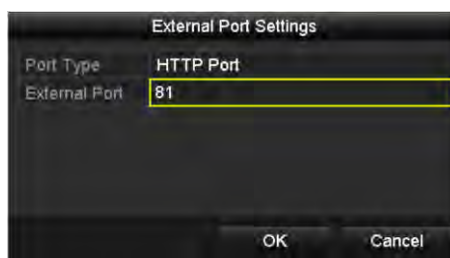


Figure 9-19 External Port Settings Dialog Box

Step 5 Click **OK** to save the setting for the current port and return to the upper-level menu.

Step 6 Click **Apply** to save the settings.

Step 7 Enter the virtual server setting page of router; fill in the blank of Internal Source Port with the internal port value, the blank of External Source Port with the external port value, and other required contents.



Each item should be corresponding with the device port, including server port, http port, RTSP port and https port.

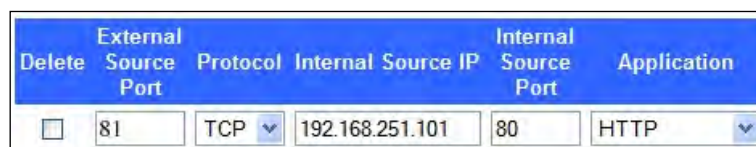


Figure 9-20 Setting Virtual Server Item



The above virtual server setting interface is for reference only, it may be different due to different router manufactures. Please contact the manufacture of router if you have any problems with setting virtual server.

9.3.7 Checking Network Traffic

Purpose:

You can check the network traffic to obtain real-time information of NVR such as linking status, MTU, sending/receiving rate, etc.

Step 1 Go to **Menu > Maintenance > Net Detect.**

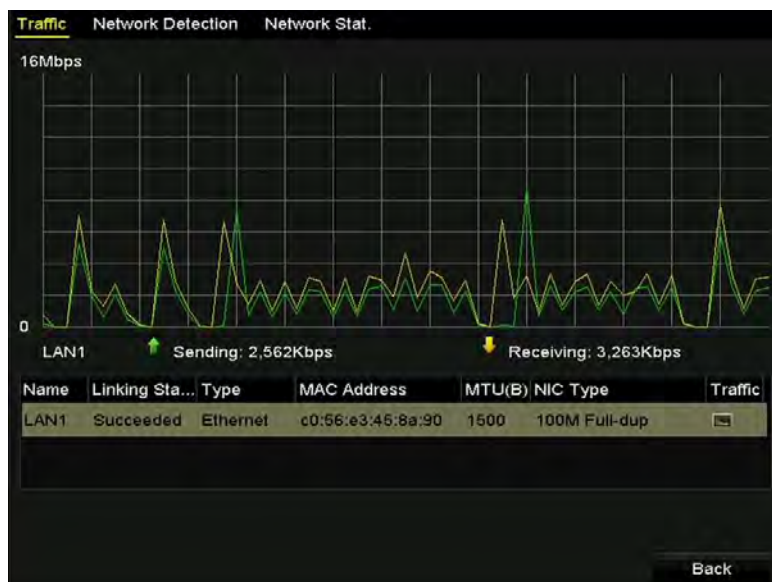


Figure 9-21 Network Traffic Interface

Step 2 You can view the sending rate and receiving rate information on the interface.
The traffic data is refreshed every 1 second.

9.4 Configuring Network Detection

Purpose:

You can obtain network connecting status of NVR through the network detection function, including network delay, packet loss, etc.

9.4.1 Testing Network Delay and Packet Loss

Step 1 Go to **Menu > Maintenance > Net Detect**.

Step 2 Click the **Network Detection** tab to enter the Network Detection menu, as shown in Figure 9-22.

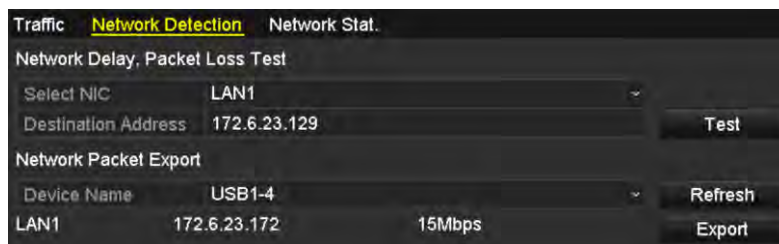


Figure 9-22 Network Detection Interface

Step 3 Enter the destination address in the text field of **Destination Address**.

Step 4 Click **Test** to start testing network delay and packet loss. The testing result pops up on the window. If the testing is failed, the error message box will pop up as well.

9.4.2 Exporting Network Packet

Purpose:

By connecting the NVR to network, the captured network data packet can be exported to USB-flash disk, SATA, DVD-R/W and other local backup devices.

Step 1 Go to **Menu > Maintenance > Net Detect**.

Step 2 Click the **Network Detection** tab to enter the Network Detection interface.

Step 3 Select the backup device from the dropdown list of Device Name, as shown in Figure 9-23.



Click **Refresh** if the connected local backup device cannot be displayed. When it fails to detect the backup device, please check whether it is compatible with the NVR. You can format the backup device if the format is incorrect.

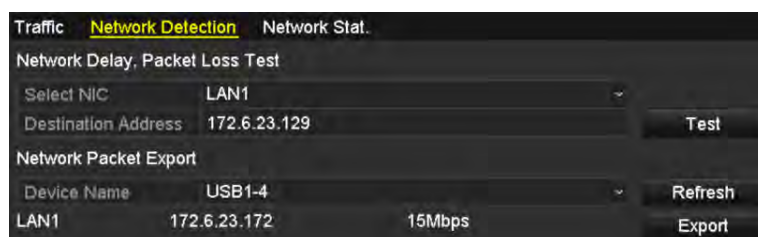


Figure 9-23 Export Network Packet

Step 4 Click **Export** to start exporting.

Step 5 After the exporting is complete, click **OK** to finish the packet export, as shown in Figure 9-24.

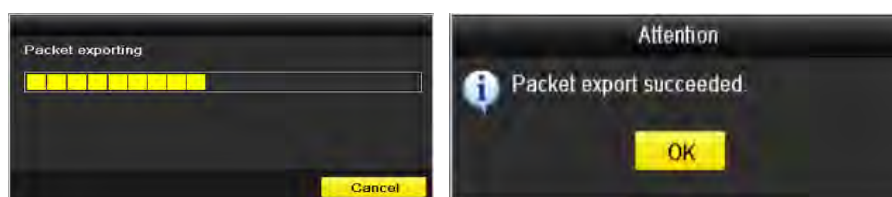


Figure 9-24 Packet Export Attention



NOTE

Up to 1M data can be exported each time.

9.4.3 Checking the Network Status

Purpose:

You can also check the network status and quick set the network parameters in this interface.

Step 1 Click **Status** on the lower- right corner of the page.



Figure 9-25 Network Status Checking

If the network is normal the following message box pops out.

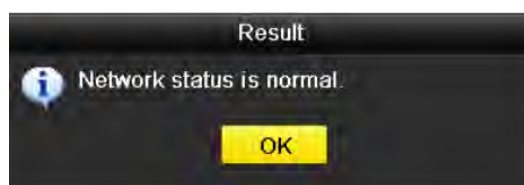


Figure 9-26 Network status checking result

If the message box pops out with other information instead of this one, you can click **Network** button to show the quick setting interface of the network parameters.

9.4.4 Checking Network Statistics

Purpose:

You can check the network status to obtain the real-time information of NVR.

Step 1 Go to **Menu > Maintenance > Net Detect.**

Step 2 Choose **Network Stat.**

| Traffic Network Detection <u>Network Stat.</u> | |
|--|-----------|
| Type | Bandwidth |
| IP Camera | 11Mbps |
| Remote Live View | 10Mbps |
| Remote Playback | 0bps |
| Net Receive Idle | 189Mbps |
| Net Send Idle | 70Mbps |
| Refresh | |

Figure 9-27 Network Stat. Interface

Step 3 Check the bandwidth of IP Camera, bandwidth of Remote Live View, bandwidth of Remote Playback, bandwidth of Net Receive Idle and bandwidth of Net Send Idle.

Step 4 You can click **Refresh** to get the newest status.

Chapter 10 HDD Management

10.1 Initializing HDDs

Purpose:

A newly installed hard disk drive (HDD) must be initialized before use.

Option 1: Initialize HDD from Startup Wizard

When the device starts up, the Setup Wizard can guide you to configure some basic settings.

In the General settings interface, check Initialize HDD to initialize the HDD which it is used for the first time.

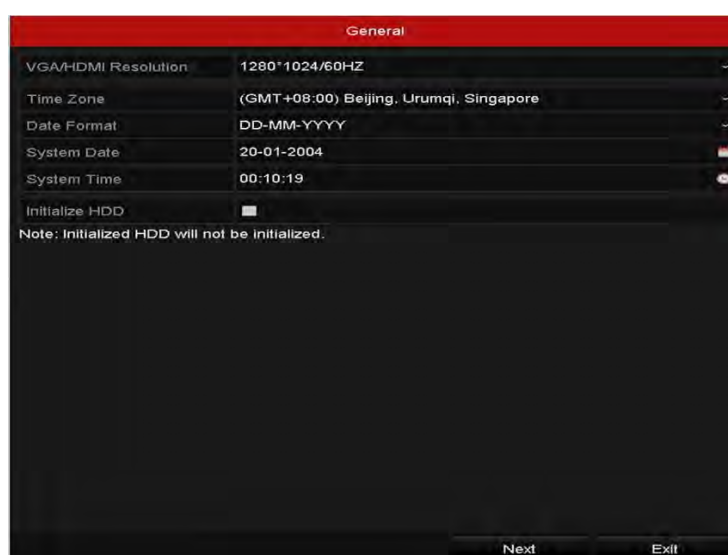


Figure 10-1 Initialize HDD

Option 2: Initialize HDD from HDD management interface

Step 1 Go to **Menu > HDD > General**.



Figure 10-2 HDD Information Interface

Step 2 Select HDD to be initialized.

Step 3 Click the **Init** button.

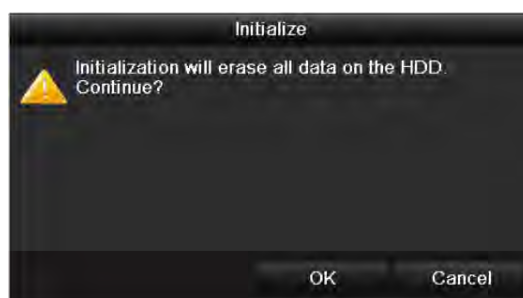


Figure 10-3 Confirm Initialization

Step 4 Select **OK** to start initialization.

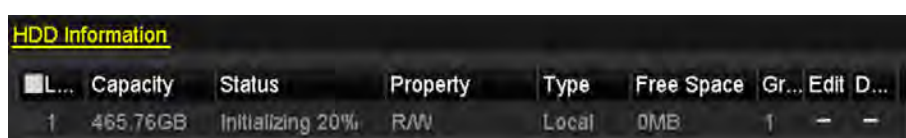


Figure 10-4 Status changes to Initializing

Step 5 After the HDD has been initialized, the status of the HDD will change from *Uninitialized* to *Normal*.

| HDD Information | | | | | | | | |
|-----------------|----------|--------|----------|-------|------------|-------|------|------|
| L... | Capacity | Status | Property | Type | Free Space | Gr... | Edit | D... |
| 1 | 465.76GB | Normal | R/W | Local | 465GB | 1 | - | - |

Figure 10-5 HDD Status Changes to Normal



NOTE

Initializing the HDD will erase all data on it.

10.2 Configuring Quota Mode

Purpose:

Each camera can be configured with allocated quota for the storage of recorded files.

Step 1 Go to Menu > HDD > Advanced.

Step 2 Set **Mode** to Quota, as shown in Figure 10-6.



NOTE

The NVR must be rebooted to enable the changes to take effect.



Figure 10-6 Storage Mode Settings Interface

Step 3 Select a camera for which you want to configure quota.

Step 4 Enter the storage capacity in the text fields of **Max. Record Capacity (GB)**.

Step 5 You can copy the quota settings of the current camera to other cameras if required. Click the **Copy** button to enter the Copy Camera menu, as shown in Figure 10-7.



Figure 10-7 Copy Settings to Other Camera(s)

Step 6 Select the camera (s) to be configured with the same quota settings. You can also click the checkbox of IP Camera to select all cameras.

Step 7 Click **OK** to finish the Copy settings and back to the Storage Mode interface.

Step 8 Click **Apply** to apply the settings.

**NOTE**

If the quota capacity is set to 0, then all cameras will use the total capacity of HDD for record.

10.3 HDD Detection

Purpose:

The device provides the HDD detection function such as the adopting of the S.M.A.R.T. and the Bad Sector Detection technique. The S.M.A.R.T. (Self-Monitoring, Analysis and Reporting Technology) is a monitoring system for HDD to detect and report on various indicators of reliability in the hopes of anticipating failures.

S.M.A.R.T. Settings

Step 1 Go to **Menu > Maintenance > HDD Detect**.

Step 2 Select the HDD to view its S.M.A.R.T information list, as shown in Figure 10-8.



Figure 10-8 S.M.A.R.T Settings Interface

The related information of the S.M.A.R.T. is shown on the interface.

You can choose the self-test types as Short Test, Expanded Test or the Conveyance Test.

Click the start button to start the S.M.A.R.T. HDD self-evaluation.



If you want to use the HDD even when the S.M.A.R.T. checking is failed, you can check the checkbox of the **Continue to use the disk when self-evaluation is failed** item.

Bad Sector Detection

Step 3 Click **Bad Sector Detection**.

Step 4 Select the HDD No. in the dropdown list you want to configure, and choose All Detection or Key Area Detection as the detection type.

Step 5 Click **Detect** to start the detection.

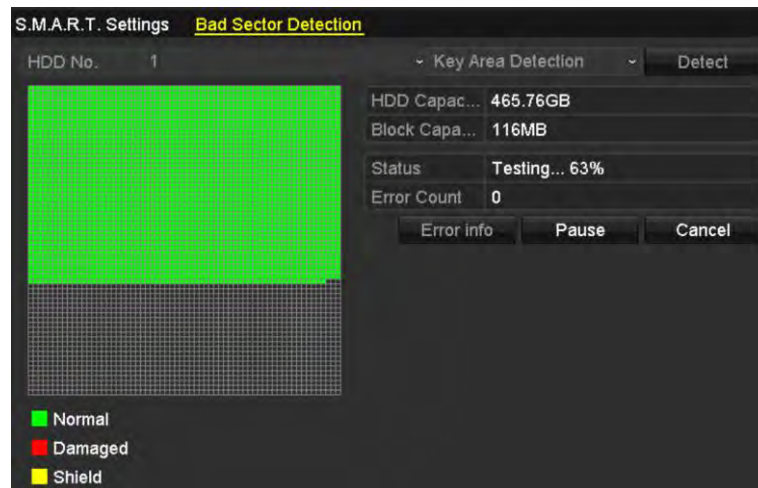


Figure 10-9 Bad Sector Detection

And you can click **Error info** button to see the detailed damage information.

And you can also pause/resume or cancel the detection.

10.4 Configuring HDD Error Alarms

Purpose:

You can configure the HDD error alarms when the HDD status is *Uninitialized* or *Abnormal*.

Step 1 Go to **Menu > Configuration > Exceptions**.

Step 2 Select the Exception Type to **HDD Error** from the dropdown list.

Step 3 Click the checkbox(s) below to select the HDD error alarm type (s), as shown in Figure 10-10.



NOTE

The alarm type can be selected to: Audible Warning, Notify Surveillance Center, Send Email and Trigger Alarm Output. Please refer to *Chapter 8.8 Setting Alarm Response Actions*.

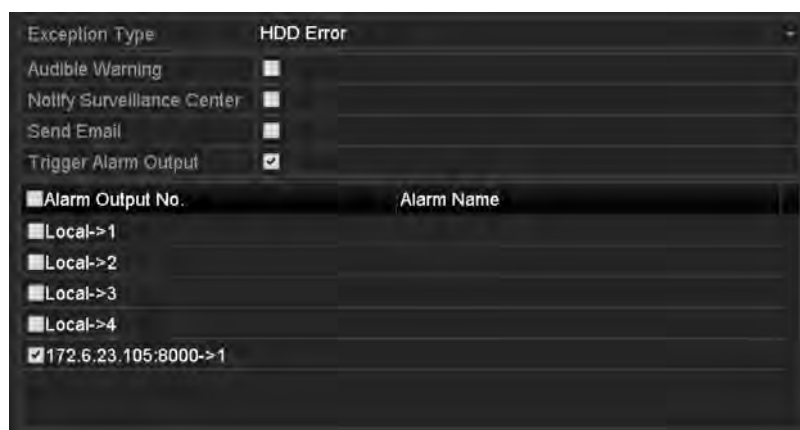


Figure 10-10 Configure HDD Error Alarm

Step 4 When the Trigger Alarm Output is selected, you can also select the alarm output to be triggered from the list below.

Step 5 Click **Apply** to save the settings

Chapter 11 Camera Settings

11.1 Configuring OSD Settings

Purpose:

You can configure the OSD (On-screen Display) settings for the camera, including date /time, camera name, etc.

Step 1 GO to **Menu > Camera > OSD**.

Step 2 Select the camera to configure OSD settings.

Step 3 Edit the Camera Name in the text field.

Step 4 Configure the Display Name, Display Date and Display Week by clicking the checkbox.

Step 5 Select the Date Format, Time Format and Display Mode.

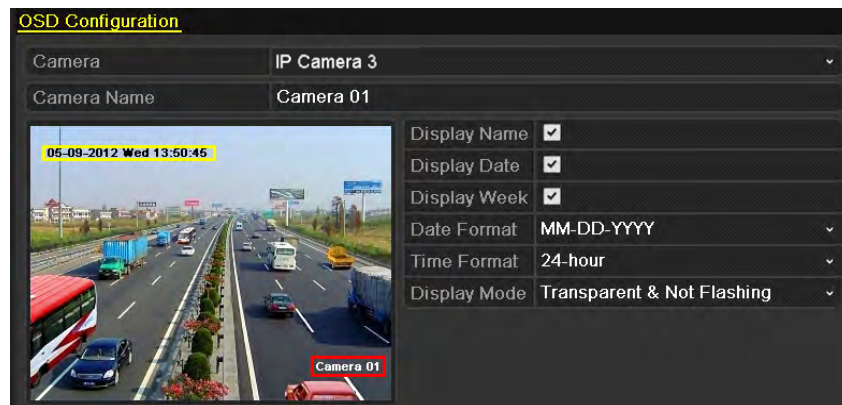


Figure 11-1 OSD Configuration Interface

Step 6 You can use the mouse to click and drag the text frame on the preview window to adjust the OSD position.

Step 7 Click **Apply** to apply the settings.

11.2 Configuring Privacy Mask

Purpose:

You are allowed to configure the four-sided privacy mask zones that cannot be viewed by the operator. The privacy mask can prevent certain surveillance areas to be viewed or recorded.

Step 1 Go to **Menu > Camera > Privacy Mask**.

Step 2 Select the camera to set privacy mask.

Step 3 Click the checkbox of **Enable Privacy Mask** to enable this feature.



Figure 11-2 Privacy Mask Settings Interface

Step 4 Use the mouse to draw a zone on the window. The zones will be marked with different frame colors.



NOTE

Up to 4 privacy masks zones can be configured and the size of each area can be adjusted.

Step 5 The configured privacy mask zones on the window can be cleared by clicking the corresponding Clear Zone1-4 icons on the right side of the window, or click **Clear All** to clear all zones.



Figure 11-3 Set Privacy Mask Area

Step 6 Click the **Apply** button to save the settings.

11.3 Configuring Video Parameters

Purpose:

You can customize the image parameters including the brightness, contrast, saturation, image rotate and mirror for the live view and recording effect.

Step 1 Go to **Menu > Camera > Image**.

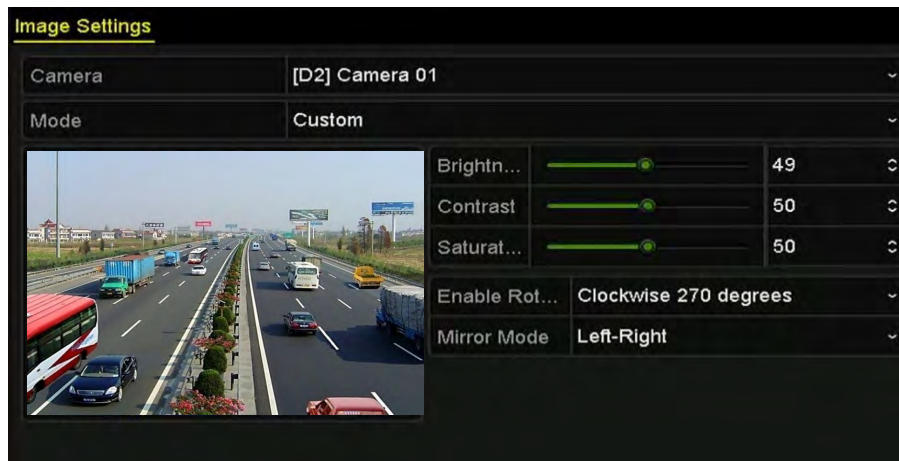


Figure 11-4 Image Settings Interface

Step 2 Select the camera to set image parameters.

Step 3 Adjust the slider or click on the up/down arrow to set the value of the brightness, contrast or saturation.

Step 4 Select the **Enable Rotate** function to Clockwise 270 degrees or OFF. When OFF is selected, the image is restored to original.

Step 5 Select the **Mirror Mode** to Left-Right, Up-Down, Center or OFF. When OFF is selected, the image is restored to original.



NOTE

- The Rotate and Mirror functions must be supported by the connected IP camera.
- The image parameters adjustment can affect both the live view and the recording quality.

Step 6 Click **Apply** to save the settings.

Chapter 12 Device Management and Maintenance

12.1 Viewing System Information

Step 1 Go to **Menu > Maintenance > System Info**.

Step 2 You can click the **Device Info**, **Camera**, **Record**, **Alarm**, **WIFI**, **Network** and **HDD** tabs to view the system information of the device.

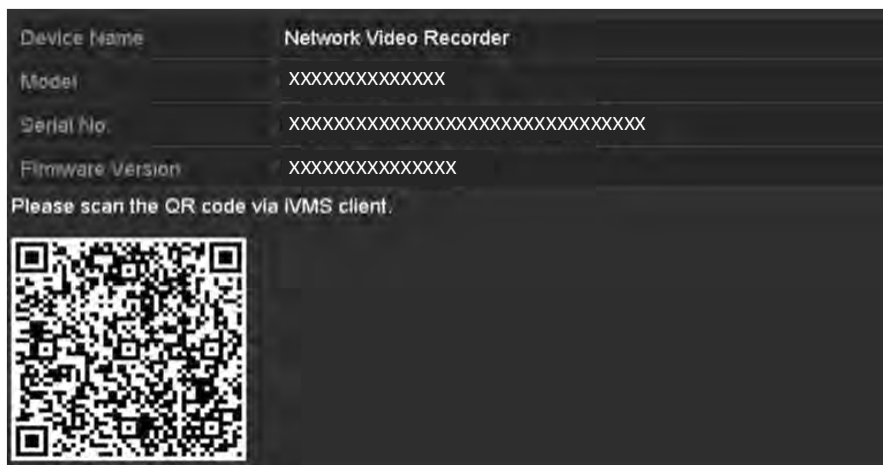


Figure 12-1 Device Information Interface

12.2 Searching & Export Log Files

Purpose:

The operation, alarm, exception and information of the NVR can be stored in log files, which can be viewed and exported at any time.

Step 1 Go to **Menu > Maintenance > Log Information**.

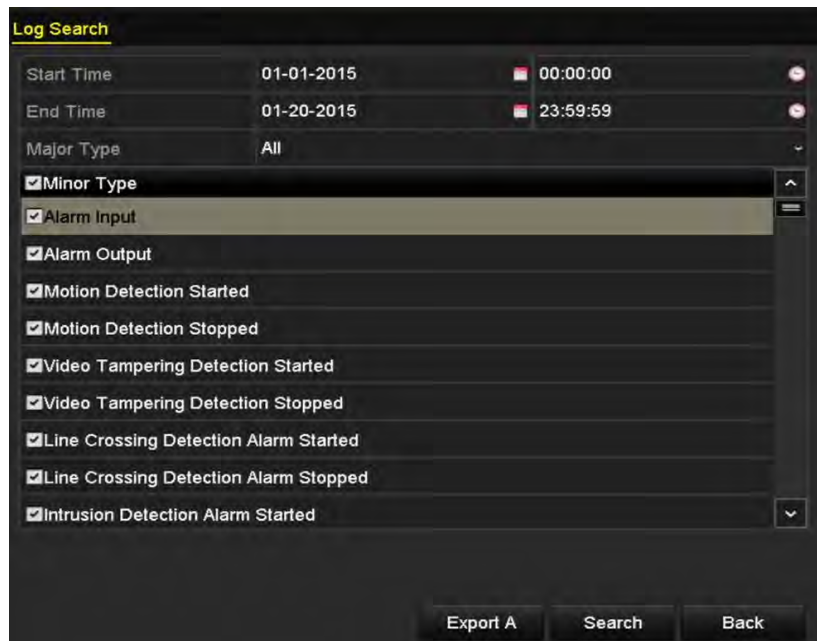


Figure 12-2 Log Search Interface

Step 2 Set the log search conditions to refine your search, including the Start Time, End Time, Major Type and Minor Type.

Step 3 Click **Search** to start search log files.

Step 4 The matched log files will be displayed on the list shown below.

| No. | Major Type | Time | Minor Type | Parameter | Play | Details |
|-----|------------|---------------------|---------------------|-----------|------|---------|
| 1 | Operation | 01-14-2015 21:04:06 | Abnormal Shutd... | N/A | — | ✓ |
| 2 | Operation | 01-14-2015 21:04:08 | Power On | N/A | — | ✓ |
| 3 | Exception | 01-14-2015 21:04:08 | Record Exception | N/A | ⏮ | ✓ |
| 4 | Operation | 01-14-2015 21:11:44 | Local Operation:... | N/A | — | ✓ |
| 5 | Operation | 01-14-2015 21:39:45 | Power On | N/A | — | ✓ |
| 6 | Exception | 01-14-2015 21:39:47 | Record Exception | N/A | ⏮ | ✓ |
| 7 | Operation | 01-14-2015 21:44:05 | Abnormal Shutd... | N/A | — | ✓ |
| 8 | Operation | 01-14-2015 21:44:06 | Power On | N/A | — | ✓ |
| 9 | Exception | 01-14-2015 21:44:07 | Record Exception | N/A | ⏮ | ✓ |
| 10 | Operation | 01-14-2015 21:57:06 | Abnormal Shutd... | N/A | — | ✓ |

Total: 985 P: 1/10

Export Back

Figure 12-3 Log Search Results



Up to 2000 log files can be displayed each time.



Step 5 You can click the  button of each log or double click it to view its detailed information, as shown in Figure 12-4. And you can also click the  button to view the related video files if available.



Figure 12-4 Log Details

Step 6 If you want to export the log files, click the **Export** button on the Search Result interface to enter the Export menu, as shown in Figure 12-5.



Figure 12-5 Export Log Files

Step 7 Select the backup device from **Device Name**.

Step 8 Select the format of the log files to be exported. Up to 9 formats are selectable.

Step 9 Click the **Export** to export the log files to the selected backup device.

You can click the **New Folder** button to create new folder in the backup device, or click the **Format** button to format the backup device before log export.



Please connect the backup device to NVR before operating log export.

12.4 Importing/Exporting Configuration Files

Purpose:

The configuration files of the NVR can be exported to local device for backup; and the configuration files of one NVR can be imported to multiple NVR devices if they are to be configured with the same parameters.

Step 1 Go to **Menu > Maintenance > Import/Export**.

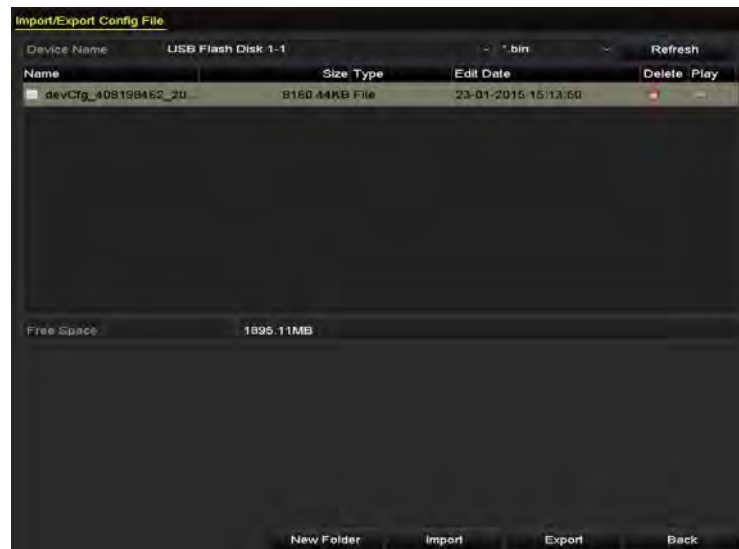


Figure 12-6 Import/Export Config File

Step 2 Click the **Export** button to export configuration files to the selected local backup device.

Step 3 To import a configuration file, select the file from the selected backup device and click the **Import** button. After the import process is completed, you must reboot the NVR.



NOTE

After having finished the import of configuration files, the device will reboot automatically.

12.5 Upgrading System

Purpose:

The firmware on your NVR can be upgraded by local backup device, or remote FTP server.

12.5.1 Upgrading by Local Backup Device

Step 1 Connect your NVR with a local backup device where the update firmware file is located.

Step 2 Go to **Menu > Maintenance > Upgrade**.

Step 3 Click the **Local Upgrade** tab to enter the local upgrade menu, as shown in Figure 12-7.

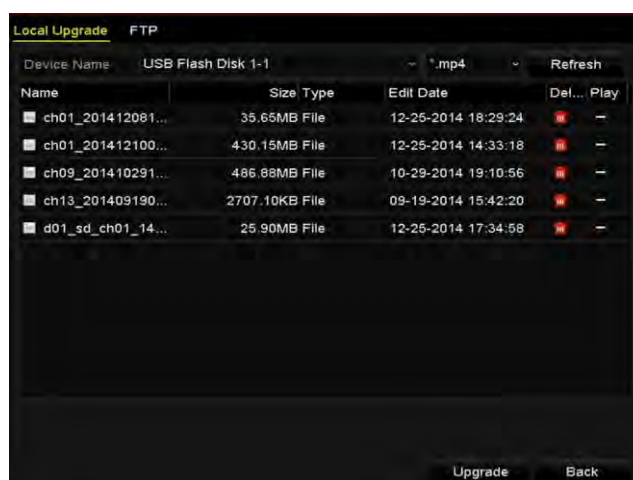


Figure 12-7 Local Upgrade Interface

Step 4 Select the update file from the backup device.

Step 5 Click **Upgrade** to start upgrading.

Step 6 After the upgrading is complete, reboot the NVR to activate the new firmware.

12.5.2 Upgrading by FTP

Purpose:

Ensure the network connection of the PC (running FTP server) and the device is valid and correct. Run the FTP server on the PC and copy the firmware into the corresponding directory of your PC.



NOTE

Refer to the user manual of the FTP server to set the FTP server on your PC and put the firmware file into the directory as required.

Step 1 Go to **Menu > Maintenance > Upgrade**.

Step 2 Click the **FTP** tab to enter the local upgrade interface, as shown in Figure 12-8.

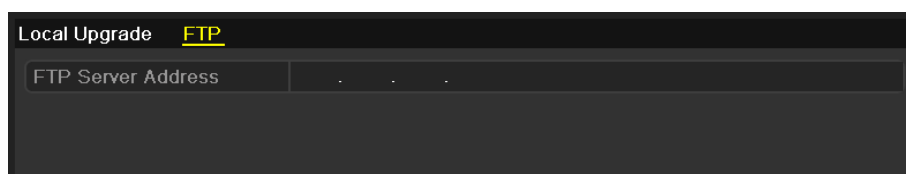


Figure 12-8 FTP Upgrade Interface

Step 3 Enter the FTP Server Address in the text field.

Step 4 Click **Upgrade** to start upgrading.

Step 5 After the upgrading is complete, reboot the NVR to activate the new firmware.

12.6 Restoring Default Settings

Step 1 Go to **Menu > Maintenance > Default**.

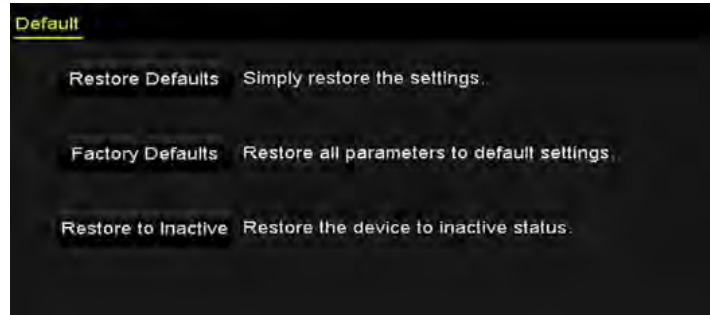


Figure 12-9 Restore Defaults

Step 2 Select the restoring type from the following three options.

Restore Defaults: Restore all parameters, except the network (including IP address, subnet mask, gateway, MTU, NIC working mode, default route, server port, etc.) and user account parameters, to the factory default settings.

Factory Defaults: Restore all parameters to the factory default settings.

Restore to Inactive: Restore the device to the inactive status.

Step 3 Click the **OK** button to restore the default settings.



NOTE

The device will reboot automatically after restoring to the default settings.

Chapter 13 Others

13.1 Configuring General Settings

Purpose:

You can configure the BNC output standard, VGA output resolution, mouse pointer speed through the Menu > Configuration > General interface.

Step 1 Go to **Menu >Configuration> General**.

Step 2 Select the **General** tab.

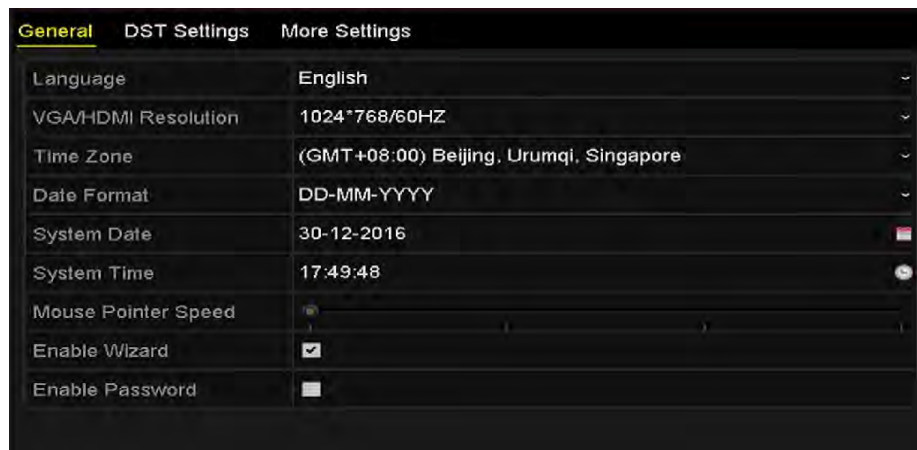


Figure 13-1 General Settings Interface

Step 3 Configure the following settings:

Language: The default language used is *English*.

Resolution: Configure the VGA resolution and HDMI resolution respectively.

Time Zone: Select the time zone.

Date Format: Select the date format.

System Date: Select the system date.

System Time: Select the system time.

Mouse Pointer Speed: Set the speed of mouse pointer; 4 levels are configurable.

Enable Wizard: Enable/disable the Wizard when the device starts up.

Enable Password: Enable/disable the use of the login password.

Step 4 Click **Apply** to save the settings.

13.2 Configuring DST Settings

Step 1 Go to **Menu >Configuration>General**.

Step 2 Choose **DST Settings**.

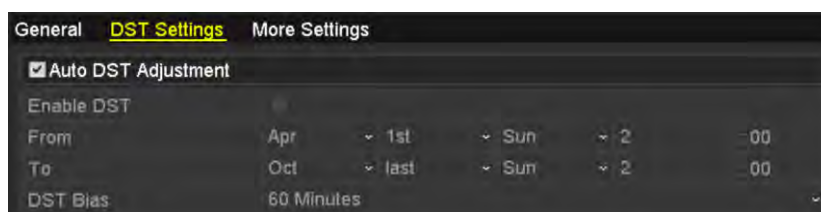


Figure 13-2 DST Settings Interface

You can check the checkbox before the Auto DST Adjustment item.

Or you can manually check the Enable DST checkbox, and then you choose the date of the DST period.

13.3 Configuring More Settings for Device Parameters

Step 1 Go to **Menu >Configuration>General**.

Step 2 Click **More Settings** to enter the More Settings interface, as shown in Figure 13-3.

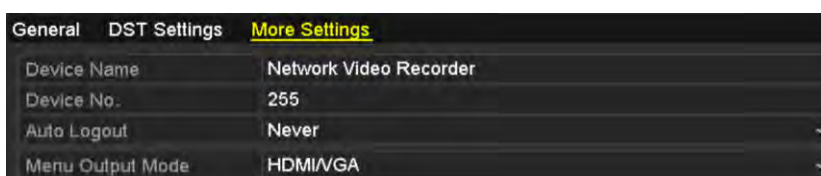


Figure 13-3 More Settings Interface

Step 3 Configure the following settings:

Device Name: Edit the name of NVR.

Device No.: Edit the serial number of NVR. The Device No. can be set in the range of 1~255, and the default No. is 255. The number is used for the remote and keyboard control.

Auto Logout: Set timeout time for menu inactivity. E.g., when the timeout time is set to *5 Minutes*, then the system will exit from the current operation menu to live view screen after 5 minutes of menu inactivity.

Menu Output Mode: You can choose the menu display on different video output. By default, only HDMI™ /VGA is selectable.

Step 4 Click the **Apply** button to save the settings.

13.4 Managing User Accounts

Purpose:

There is a default account in the NVR: *Administrator*. The *Administrator* user name is *admin* and the password is set when you start the device for the first time. The *Administrator* has the permission to add and delete user and configure user parameters.

13.4.1 Adding a User

Step 1 Go to **Menu >Configuration>User**.

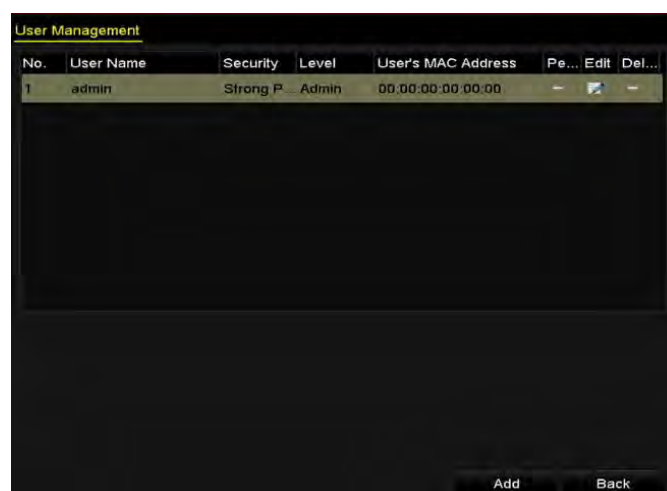


Figure 13-4 User Management Interface

Step 2 Click **Add** to enter the Add User interface.

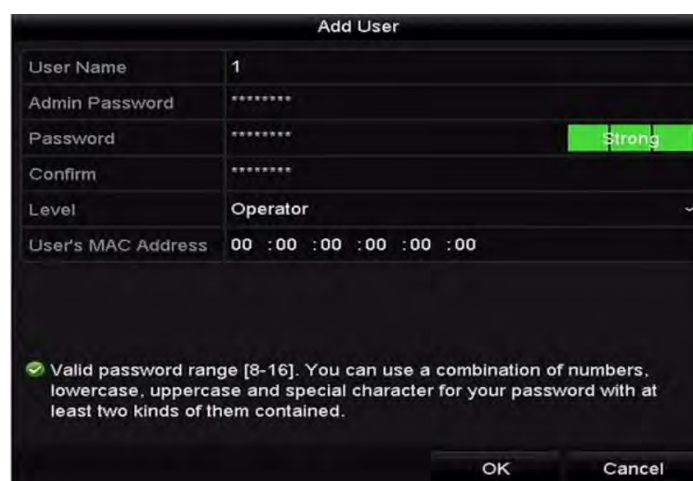
The screenshot shows the 'Add User' form. It has several input fields: 'User Name' with the value '1', 'Admin Password' with a masked password '*****', 'Password' with a masked password '*****' and a green 'Strong' indicator, 'Confirm' with a masked password '*****', 'Level' with a dropdown menu showing 'Operator', and 'User's MAC Address' with the value '00 :00 :00 :00 :00 :00'. At the bottom, there are 'OK' and 'Cancel' buttons. A green checkmark icon is next to a note: 'Valid password range [8-16]. You can use a combination of numbers, lowercase, uppercase and special character for your password with at least two kinds of them contained.'

Figure 13-5 Add User Menu

Step 3 Enter the information for new user, including User Name, Admin Password, Password, Confirm, Level and User's MAC Address.

Password: Set the password for the user account.

**WARNING**

We highly recommend you create a strong password of your own choosing (Using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters.) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Level: Set the user level to Operator or Guest. Different user levels have different operating permission.

- **Operator:** The *Operator* user level has permission of Two-way Audio in Remote Configuration and all operating permission in Camera Configuration by default.
- **Guest:** The Guest user has no permission of Two-way Audio in Remote Configuration and only has the local/remote playback in the Camera Configuration by default.

User's MAC Address: The MAC address of the remote PC which logs onto the NVR. If it is configured and enabled, it only allows the remote user with this MAC address to access the NVR.

Step 1 Click **OK** to save the settings and go back to the User Management interface. The added new user will be displayed on the list, as shown in Figure 1. 2.

| No. | User Name | Level | User's MAC Address | Pe... | Edit | Del... |
|-----|-----------|----------|--------------------|-------|------|--------|
| 1 | admin | Admin | 00:00:00:00:00:00 | - | | - |
| 2 | 01 | Operator | 00:00:00:00:00:00 | | | |

Figure 1. 2 Added User Listed in User Management Interface

Step 2 Select the user from the list and then click the button to enter the Permission settings interface.



Figure 13-6 User Permission Settings Interface

Step 3 Set the operating permission of Local Configuration, Remote Configuration and Camera Configuration for the user.

Local Configuration

- Local Log Search: Searching and viewing logs and system information of NVR.
- Local Parameters Settings: Configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Local Camera Management: The adding, deleting and editing of IP cameras.
- Local Advanced Operation: Operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Local Shutdown Reboot: Shutting down or rebooting the NVR.

Remote Configuration

- Remote Log Search: Remotely viewing logs that are saved on the NVR.
- Remote Parameters Settings: Remotely configuring parameters, restoring factory default parameters and importing/exporting configuration files.
- Remote Camera Management: Remote adding, deleting and editing of the IP cameras.
- Remote Serial Port Control: Configuring settings for RS-232 and RS-485 ports.
- Remote Video Output Control: Sending remote button control signal.
- Two-Way Audio: Realizing two-way radio between the remote client and the NVR.
- Remote Alarm Control: Remotely arming (notify alarm and exception message to the remote client) and controlling the alarm output.
- Remote Advanced Operation: Remotely operating HDD management (initializing HDD, setting HDD property), upgrading system firmware, clearing I/O alarm output.
- Remote Shutdown/Reboot: Remotely shutting down or rebooting the NVR.

Camera Configuration

- Remote Live View: Remotely viewing live video of the selected camera (s).
- Local Manual Operation: Locally starting/stopping manual recording and alarm output of the selected camera (s).
- Remote Manual Operation: Remotely starting/stopping manual recording and alarm output of the selected camera (s).
- Local Playback: Locally playing back recorded files of the selected camera (s).
- Remote Playback: Remotely playing back recorded files of the selected camera (s).
- Local PTZ Control: Locally controlling PTZ movement of the selected camera (s).
- Remote PTZ Control: Remotely controlling PTZ movement of the selected camera (s).
- Local Video Export: Locally exporting recorded files of the selected camera (s).

Step 4 Click **OK** to save the settings and exit interface.



Only the admin user account has the permission of restoring factory default parameters.

13.4.2 Deleting a User

Step 1 Go to **Menu > Configuration > User**.

Step 2 Select the user to be deleted from the list, as shown in Figure 1. 3.

| User Management | | | | | | |
|-----------------|-----------|----------|--------------------|-------|------|--------|
| No. | User Name | Level | User's MAC Address | Pe... | Edit | Del... |
| 1 | admin | Admin | 00:00:00:00:00:00 | — | | — |
| 2 | 01 | Operator | 00:00:00:00:00:00 | | | |

Figure 1. 3 User List

Step 3 Click to delete the selected user account.

13.4.3 Editing a User

For the added user accounts, you can edit the parameters.

Step 1 Go to **Menu > Configuration > User**.

Step 2 Select the user to be edited from the list, as shown in Figure 1. 3.


Step 3 Click  to enter the Edit User interface.



Figure 13-7 Edit User (Operator/Guest)

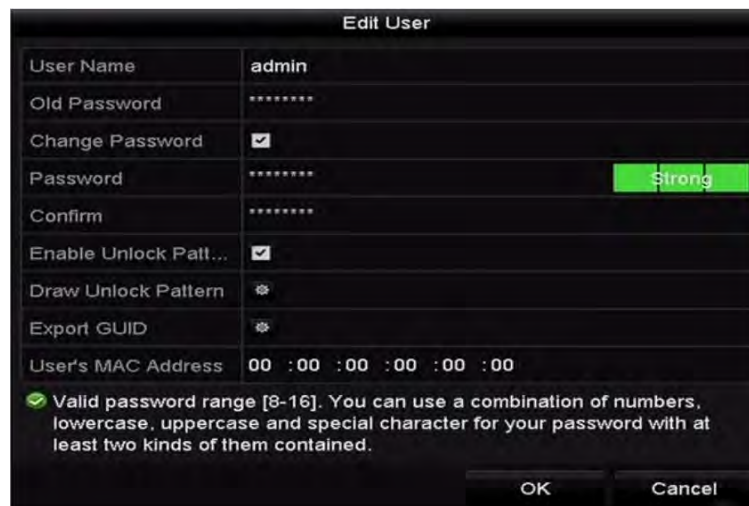


Figure 13-8 Edit User (admin)

Step 4 Edit the corresponding parameters.

- **Operator and Guest**

You can edit the user information, including user name, password, permission level and MAC address. Check the checkbox of **Change Password** if you want to change the password, and input the new password in the text field of **Password** and **Confirm**. A strong password is recommended.

- **Admin**

You are only allowed to edit the password and MAC address. Check the checkbox of **Change Password** if you want to change the password, and the input the correct old password, and the new password in the text field of **Password** and **Confirm**.

**WARNING**

We highly recommend you create a strong password of your own choosing (Using a minimum of 8 characters, including at least three of the following categories: upper case letters, lower case letters, numbers, and special characters.) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Step 5 Edit the unlock pattern for the admin user account.

- 1) Check the checkbox of Enable Unlock Pattern to enable the use of unlock pattern when logging in to the device.
- 2) Use the mouse to draw a pattern among the 9 dots on the screen. Release the mouse when the pattern is done.

**NOTE**

Please refer to Chapter 2.3.1 Configuring the Unlock Pattern for detailed instructions.

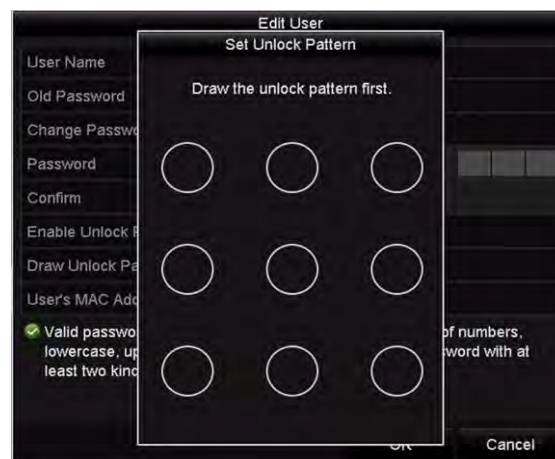




Figure 13-9 Set Unlock Pattern for Admin User

Step 6 Click  of **Export GUID** to enter the reset password interface to export the GUID file for the admin user account.

When the admin password is changed, you can re-export the GUID file to the connected U-flash disk for the future password resetting. Please refer to Chapter 2.1.5 Reset Your Password for details.

Step 7 Click **OK** to save the settings and exit the menu.

Step 8 For the **Operator** or **Guest** user account, you can also click the  button on the user management interface to edit the permission.

Chapter 14 Appendix

14.1 Glossary

- **Dual Stream:** Dual stream is a technology used to record high resolution video locally while transmitting a lower resolution stream over the network. The two streams are generated by the DVR, with the main stream having a maximum resolution of 4CIF and the sub-stream having a maximum resolution of CIF.
- **HDD:** Acronym for Hard Disk Drive. A storage medium which stores digitally encoded data on platters with magnetic surfaces.
- **DHCP:** Dynamic Host Configuration Protocol (DHCP) is a network application protocol used by devices (DHCP clients) to obtain configuration information for operation in an Internet Protocol network.
- **HTTP:** Acronym for Hypertext Transfer Protocol. A protocol to transfer hypertext request and information between servers and browsers over a network
- **DDNS:** Dynamic DNS is a method, protocol, or network service that provides the capability for a networked device, such as a router or computer system using the Internet Protocol Suite, to notify a domain name server to change, in real time (ad-hoc) the active DNS configuration of its configured hostnames, addresses or other information stored in DNS.
- **Hybrid DVR:** A hybrid DVR is a combination of a DVR and NVR.
- **NTP:** Acronym for Network Time Protocol. A protocol designed to synchronize the clocks of computers over a network.
- **NTSC:** Acronym for National Television System Committee. NTSC is an analog television standard used in such countries as the United States and Japan. Each frame of an NTSC signal contains 525 scan lines at 60Hz.
- **NVR:** Acronym for Network Video Recorder. An NVR can be a PC-based or embedded system used for centralized management and storage for IP cameras, IP Domes and other DVRs.
- **PAL:** Acronym for Phase Alternating Line. PAL is also another video standard used in broadcast television systems in large parts of the world. PAL signal contains 625 scan lines at 50Hz.
- **PTZ:** Acronym for Pan, Tilt, Zoom. PTZ cameras are motor driven systems that allow the camera to pan left and right, tilt up and down and zoom in and out.
- **USB:** Acronym for Universal Serial Bus. USB is a plug-and-play serial bus standard to interface devices to a host computer.

14.2 Troubleshooting

No image displayed on the monitor after starting up normally.

Possible Reasons

- a) No VGA or HDMI™ connections.
- b) Connection cable is damaged.
- c) Input mode of the monitor is incorrect.

Step 1 Verify the device is connected with the monitor via HDMI™ or VGA cable.

If not, please connect the device with the monitor and reboot.

Step 2 Verify the connection cable is good.

If there is still no image display on the monitor after rebooting, please check if the connection cable is good, and change a cable to connect again.

Step 3 Verify Input mode of the monitor is correct.

Please check the input mode of the monitor matches with the output mode of the device (e.g. if the output mode of NVR is HDMI™ output, then the input mode of monitor must be the HDMI™ input). And if not, please modify the input mode of monitor.

Step 4 Check if the fault is solved by the step 1 to step 3.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

There is an audible warning sound “Di-Di-Di-DiDi” after a new bought NVR starts up.

Possible Reasons

- a) No HDD is installed in the device.
- b) The installed HDD has not been initialized.
- c) The installed HDD is not compatible with the NVR or is broken-down.

Step 1 Verify at least one HDD is installed in the NVR.

- 1) If not, please install the compatible HDD.



Please refer to the “Quick Operation Guide” for the HDD installation steps.

- 2) If you don't want to install a HDD, select “Menu>Configuration > Exceptions”, and uncheck the Audible Warning checkbox of “HDD Error”.

Step 2 Verify the HDD is initialized.

- 1) Select "Menu>HDD>General".
- 2) If the status of the HDD is "Uninitialized", please check the checkbox of corresponding HDD and click the "Init" button.

Step 3 Verify the HDD is detected or is in good condition.

- 1) Select "Menu>HDD>General".
- 2) If the HDD is not detected or the status is "Abnormal", please replace the dedicated HDD according to the requirement.

Step 4 Check if the fault is solved by the step 1 to step 3.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

The status of the added IP camera displays as "Disconnected" when it is connected through Private Protocol. Select "Menu>Camera>Camera>IP Camera" to get the camera status.

Possible Reasons

- a) Network failure, and the NVR and IP camera lost connections.
- b) The configured parameters are incorrect when adding the IP camera.
- c) Insufficient bandwidth.

Step 1 Verify the network is connected.

- 1) Connect the NVR and PC with the RS-232 cable.
- 2) Open the Super Terminal software, and execute the ping command. Input "ping IP" (e.g. ping 172.6.22.131).



Simultaneously press **Ctrl** and **C** to exit the ping command.

If there exists return information and the time value is little, the network is normal.

Step 2 Verify the configuration parameters are correct.

- 3) Select "Menu>Camera>Camera>IP Camera".
- 4) Verify the following parameters are the same with those of the connected IP devices, including IP address, protocol, management port, user name and password.

Step 3 Verify the whether the bandwidth is enough.

- 1) Select "Menu >Maintenance > Net Detect > Network Stat.".
- 2) Check the usage of the access bandwidth, and see if the total bandwidth has reached its limit.

Step 4 Check if the fault is solved by the step 1 to step 3.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

The IP camera frequently goes online and offline and the status of it displays as “Disconnected”.

Possible Reasons

- a) The IP camera and the NVR versions are not compatible.
- b) Unstable power supply of IP camera.
- c) Unstable network between IP camera and NVR.
- d) Limited flow by the switch connected with IP camera and NVR.

Step 1 Verify the IP camera and the NVR versions are compatible.

- 1) Enter the IP camera Management interface “Menu > Camera > Camera>IP Camera”, and view the firmware version of connected IP camera.
- 2) Enter the System Info interface “Menu>Maintenance>System Info>Device Info”, and view the firmware version of NVR.

Step 2 Verify power supply of IP camera is stable.

- 1) Verify the power indicator is normal.
- 2) When the IP camera is offline, please try the ping command on PC to check if the PC connects with the IP camera.

Step 3 Verify the network between IP camera and NVR is stable.

- 1) When the IP camera is offline, connect PC and NVR with the RS-232 cable.
- 2) Open the Super Terminal, use the ping command and keep sending large data packages to the connected IP camera, and check if there exists packet loss.



NOTE

Simultaneously press **Ctrl** and **C** to exit the ping command.

Example: Input **ping 172.6.22.131 -l 1472 -f**.

Step 4 Verify the switch is not flow control.

Check the brand, model of the switch connecting IP camera and NVR, and contact with the manufacturer of the switch to check if it has the function of flow control. If so, please turn it down.

Step 5 Check if the fault is solved by the step 1 to step 4.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

No monitor connected with the NVR locally and when you manage the IP camera to connect with the device by web browser remotely, of which the status displays as Connected. And then you connect the device with the monitor via VGA or HDMI™ interface and reboot the device, there is black screen with the mouse cursor.

Connect the NVR with the monitor before startup via VGA or HDMI™ interface, and manage the IP camera to connect with the device locally or remotely, the status of IP camera displays as Connect.

Possible Reasons:

After connecting the IP camera to the NVR, the image is output via the main spot interface by default.

Step 1 Enable the output channel.

Step 2 Select “Menu > Configuration > Live View > View”, and select video output interface in the drop-down list and configure the window you want to view.



NOTE

- The view settings can only be configured by the local operation of NVR.
- Different camera orders and window-division modes can be set for different output interfaces separately, and digits like “D1” and “D2” stands for the channel number, and “X” means the selected window has no image output.

Step 3 Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

Live view stuck when video output locally.

Possible Reasons:

- a) Poor network between NVR and IP camera, and there exists packet loss during the transmission.
- b) The frame rate has not reached the real-time frame rate.

Step 1 Verify the network between NVR and IP camera is connected.

- 1) When image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.

- 2) Open the Super Terminal, and execute the command of “**ping 192.168.0.0 –l 1472 –f**” (the IP address may change according to the real condition), and check if there exists packet loss.



NOTE

Simultaneously press **Ctrl** and **C** to exit the ping command.

Step 2 Verify the frame rate is real-time frame rate.

Select “Menu > Record > Parameters > Record”, and set the Frame rate to Full Frame.

Step 3 Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

Live view stuck when video output remotely via the Internet Explorer or platform software.

Possible Reasons:

- a) Poor network between NVR and IP camera, and there exists packet loss during the transmission.
- b) Poor network between NVR and PC, and there exists packet loss during the transmission.
- c) The performances of hardware are not good enough, including CPU, memory, etc.

Step 1 Verify the network between NVR and IP camera is connected.

- 1) When image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.
- 2) Open the Super Terminal, and execute the command of “**ping 192.168.0.0 –l 1472 –f**” (the IP address may change according to the real condition), and check if there exists packet loss.



NOTE

Simultaneously press **Ctrl** and **C** to exit the ping command.

Step 2 Verify the network between NVR and PC is connected.

- 1) Open the cmd window in the Start menu, or you can press “windows+R” shortcut key to open it.
- 2) Use the ping command to send large packet to the NVR, execute the command of “ping 192.168.0.0 –l 1472 –f” (the IP address may change according to the real condition), and check if there exists packet loss.



Simultaneously press **Ctrl** and **C** to exit the ping command.

Step 3 Verify the hardware of the PC is good enough.

Simultaneously press **Ctrl**, **Alt** and **Delete** to enter the windows task management interface, as shown in the following figure.

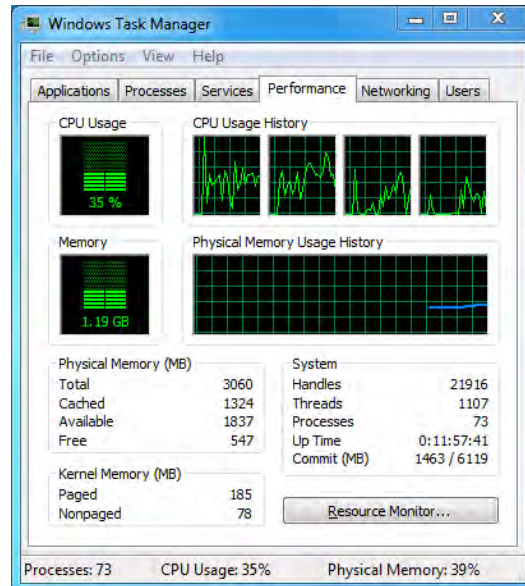


Figure 14-1 Windows task management interface

Select the “Performance” tab; check the status of the CPU and Memory.

If the resource is not enough, please end some unnecessary processes.

Step 4 Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

When using the NVR to get the live view audio, there is no sound or there is too much noise, or the volume is too low.

Possible Reasons:

- a) Cable between the pickup and IP camera is not connected well; impedance mismatches or incompatible.
- b) The stream type is not set as “Video & Audio”.
- c) The encoding standard is not supported with NVR.

Step 1 Verify the cable between the pickup and IP camera is connected well; impedance matches and compatible.

Log in the IP camera directly, and turn the audio on, check if the sound is normal. If not, please contact the manufacturer of the IP camera.

Step 2 Verify the setting parameters are correct.

Select “Menu > Record > Parameters > Record”, and set the Stream Type as “Audio & Video”.

Step 3 Verify the audio encoding standard of the IP camera is supported by the NVR.

NVR supports G722.1 and G711 standards, and if the encoding parameter of the input audio is not one of the previous two standards, you can log in the IP camera to configure it to the supported standard.

Step 4 Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

The image gets stuck when NVR is playing back by single or multi-channel.

Possible Reasons:

- a) Poor network between NVR and IP camera, and there exists packet loss during the transmission.
- b) The frame rate is not the real-time frame rate.
- c) The NVR supports up to 16-channel synchronize playback at the resolution of 4CIF, if you want a 16-channel synchronize playback at the resolution of 720p, the frame extracting may occur, which leads to a slight stuck.

Step 1 Verify the network between NVR and IP camera is connected.

- 1) When image is stuck, connect the RS-232 ports on PC and the rear panel of NVR with the RS-232 cable.
- 2) Open the Super Terminal, and execute the command of “**ping 192.168.0.0 -l 1472 -f**” (the IP address may change according to the real condition), and check if there exists packet loss.



Simultaneously press the **Ctrl** and **C** to exit the ping command.

Step 2 Verify the frame rate is real-time frame rate.

Select “Menu > Record > Parameters > Record”, and set the Frame Rate to “Full Frame”.

Step 3 Verify the hardware can afford the playback.

Reduce the channel number of playback.

Select “Menu > Record > Encoding > Record”, and set the resolution and bitrate to a lower level.

Step 4 Reduce the number of local playback channel.

Select "Menu > Playback", and uncheck the checkbox of unnecessary channels.

Step 5 Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.

No record file found in the NVR local HDD, and prompt "No record file found".

Possible Reasons:

- a) The time setting of system is incorrect.
- b) The search condition is incorrect.
- c) The HDD is error or not detected.

Step 1 Verify the system time setting is correct.

Select "Menu > Configuration > General > General", and verify the "Device Time" is correct.

Step 2 Verify the search condition is correct.

Select "Playback", and verify the channel and time are correct.

Step 3 Verify the HDD status is normal.

Select "Menu > HDD > General" to view the HDD status, and verify the HDD is detected and can be read and written normally.

Step 4 Check if the fault is solved by the above steps.

If it is solved, finish the process.

If not, please contact the engineer from our company to do the further process.



See Far, Go Further