Network Video Recorder

User's Manual

V2.0.0

Foreword

General

This user's manual (hereinafter referred to be "the Manual") introduces the installation, functions and operations of the Network Video Recorder (NVR) devices (hereinafter referred to be "the Device"). Read carefully before using the device, and keep the manual safe for future reference.

Safety Instructions

The following signal words might appear in the manual.

Signal Words	Meaning
DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, reductions in performance, or unpredictable results.
TIPS	Provides methods to help you solve a problem or save you time.
NOTE	Provides additional information as a supplement to the text.

Revision History

Version	Revision Content	Release Time
V2.0.0	● Added intelligent diagnosis. ● Added report query. ● Added LLDP. ● Updated several figures of the local interface.	March 2022
V1.3.0	● Updated the web login page. ● Added privacy masking. ● Added AI codec.	November 2021
V1.2.0	Added four models.	June 2021
V1.1.0	Combined AI and non-AI models and deleted discontinued models.	May 2021
V1.0.10	Added several models.	April 2021
V1.0.9	Added 6 models.	February 2021
V1.0.8	Added 5 models.	January 2021
V1.0.7	● Added 2 models. ● Added "5.11.7 Cellular Network".	August 2020

Version	Revision Content	Release Time
V1.0.6	● Added picture search, picture search playback, disk health monitoring, and exporting and importing face database. ● Updated AI search, human detection, configuration of face recognition, and display settings.	May 2020
V1.0.5	Added split tracking, main-sub tracking, analytics list, configuring video quality analytics, iSCSI, and cluster service.	May 2020
V1.0.4	● Added 16 models. ● Added PoE status, switch, and display.	April 2020
V1.0.3	● New GUI baseline, replaces all interfaces. ● Added AI functions.	July 2019
V1.0.2	Updated the description of rear panel.	May 2019
V1.0.1	● Added NVR 5216-16P-I and NVR5216-8P-I. Updated relevant info. ● Updated icons on the rear panel. ● Added video metadata function and non-motor vehicle detection function.	September 2018

Privacy Protection Notice

As the device user or data controller, you might collect the personal data of others such as their face, fingerprints, and license plate number. You need to be in compliance with your local privacy protection laws and regulations to protect the legitimate rights and interests of other people by implementing measures which include but are not limited: Providing clear and visible identification to inform people of the existence of the surveillance area and provide required contact information.

About the Manual

- The manual is for reference only. If there is inconsistency between the manual and the actual product,
- We are not liable for any loss caused by the operations that do not comply with the manual.
- The manual would be updated according to the latest laws and regulations of related regions. For detailed information, see the paper manual, CD-ROM, QR code or our official website. If there is inconsistency between paper manual and the electronic version, the electronic version shall prevail.
- All the designs and software are subject to change without prior written notice. The product updates might cause some differences between the actual product and the manual. Please contact the customer service for the latest program and supplementary documentation.
- There still might be deviation in technical data, functions and operations description, or errors in print. If there is any doubt or dispute, please see our final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and the company names in the manual are the properties of their respective owners.

- Please visit our website, contact the supplier or customer service if there is any problem occurred when using the device.
- If there is any uncertainty or controversy, please see our final explanation.

Important Safeguards and Warnings

The following description is the correct application method of the device. Read the manual carefully before use to prevent danger and property loss. Strictly conform to the manual during application and keep it properly after reading.

Operating Requirement

- Install the PoE front-end device indoors.
- The device does not support wall mount.
- Do not place and install the device in an area exposed to direct sunlight or near heat generating device.
- Do not install the device in a humid, dusty or fuliginous area.
- Keep its horizontal installation, or install it at stable places, and prevent it from falling.
- Do not drip or splash liquids onto the device; do not put on the device anything filled with liquids, in order to prevent liquids from flowing into the device.
- Install the device at well-ventilated places; do not block its ventilation opening.
- Use the device only within rated input and output range.
- Do not dismantle the device arbitrarily.
- Transport, use and store the device within allowed humidity and temperature range.

Power Requirement

- Use the designated battery type. Otherwise there might be explosion risk.
- Use batteries according to requirements. Otherwise, it might result in fire, explosion or burning risks of batteries!
- When replacing batteries, use the same type of batteries.
- Dispose the exhausted batteries according to the instructions.
- Use electric wires (power wires) recommended by this area and within its rated specification.
- Use standard power adapter matched with this device. Otherwise, the user shall undertake resulting personnel injuries or device damages.
- The power supply must conform to the requirements of ES1 in IEC 62368-1 standard and be no higher than PS2. Note that the power supply requirements are subject to the device label.
- Products with category I structure shall be connected to grid power output socket, which is equipped with protective grounding.
- Appliance coupler is a disconnecting device. During normal use, please keep an angle that facilitates operation.

Table of Contents

1 Features

1.1 Overview

The NVR is a high performance network video recorder. This product supports local live view, multiple-window display, recorded file local storage, remote control and mouse shortcut menu operation, and remote management and control function.

This product supports center storage, front-end storage and client-end storage. The monitor zone in the front-end can be set in anywhere. Working with other front-end devices such as IPC, NVS, this series product can establish a strong surveillance network through the CMS. In the network system, there is only one network cable from the monitor center to the monitor zone in the whole network. There is no audio/video cable from the monitor center to the monitor zone. The whole project is featured by simple connection, low-cost, low maintenance work.

This NVR can be widely used in areas such as public security, water conservancy, transportation and education.

1.2 Features

AI Functions

AI functions are available on select models and vary with models.

- Face detection. The system can detect the faces are on the video image.
- Face recognition. The system can compare the detected faces with the images in the face database in real time.
- Human body detection. The system activates alarm actions once human body is detected.
- People counting. The system can effectively count the number of people and flow direction.
- Heat map. The system can monitor the active objects in a specific area.
- Automatic number plate recognition (ANPR). The system can effectively monitor the passing vehicles.

Smart Playback

This function is available on select models.

- IVS playback. It can screen out and replay the records meeting the set rules.
- Face detection playback. It can screen out and replay the records with human faces.
- Face recognition playback. It can compare the face information in the video with the information in the database and replay the corresponding records.
- ANPR playback. It can screen out the record with a specific car plate number or all the records with car plate numbers.
- Human body detection playback. It can screen out and replay the records with specific human bodies.

- Smart search. It includes smart functions such as searching by attribute and searching by image to enable users to get target records quickly.

Cloud Upgrade

For the NVR connected to the Internet, it supports application online upgrade.

Real-Time Surveillance

- VGA, HDMI port. Connect to monitor to realize real-time surveillance. Some series support TV/VGA/HDMI output at the same time.
- Shortcut menu for preview.
- Support multiple popular PTZ decoder control protocols. Support preset, tour and pattern.

Playback

- Support independent real-time recording for each channel. At the same time it supports functions such as smart search, forward play, network monitor, record search and download.
- Support various playback modes: slow play, fast play, backward play and frame-by-frame play.
- Support time title overlay so that you can view the event accurate occurred time.
- Support specified zone enlargement.

User Management

Users can be added to user groups for management. Each group has a set of permissions that can be individually edited.

Storage

- With corresponding settings (such as alarm settings and schedule settings), you can back up related audio/video data in the network video recorder.
- You can take records via the web and the record files are saved on the PC in which the client locates.

Alarm

- Respond to external alarm simultaneously (within 200 ms). Based on user's pre-defined relay settings, the system can process the alarm input correctly and sends user screen or voice prompts (supporting pre-recorded audio).
- Support settings of the central alarm server, so that the system can automatically notify users of the alarm information. Alarm input can be derived from various connected peripheral devices.
- Alert you of alarm information via email.

Network Surveillance

- Send audio/video data compressed by IPC or NVS to client-ends through the network, and then the data will be decompressed and displayed.
- Support max 128 connections at the same time.
- Transmit audio/video data by protocols such as HTTP, TCP, UDP, MULTICAST and RTP/RTCP.
- Transmit some alarm data or alarm info by SNMP.
- Support web access in WAN/LAN.

Window Split

Adopt video compression and digital processing to display several windows in one monitor. Support 1/4/8/9/16/25/36 window split in preview and 1/4/9/16 window split in playback.

Record

Support regular record, motion record, alarm record and smart record. Save the recorded files in the HDD, USB device, client-end PC or network storage server and you can search or playback the saved files at the local-end or via the Web/USB devices.

Backup

Support network backup and USB record backup. You can back up the record files in devices such as network storage server, peripheral USB 2.0 device and burner.

Network Management

- Supervise NVR configuration and control power via Ethernet.
- Support web management.

Peripheral Equipment Management

- Support peripheral device control and you can freely set the control protocol and connection port.
- Support transparent data transmission such as RS-232 and RS-485.

Auxiliary

- Support switch between NTSC and PAL.
- Support real-time display of system resources information and running status.
- Support log record.
- Local GUI output. Shortcut menu operation with the mouse.
- IR control function (for some series only). Shortcut menu operation with remote control.
- Support to play the video/audio files from remote IPC or NVS.

2 Front Panel and Rear Panel

The following front panel and rear panel figures are for reference only.

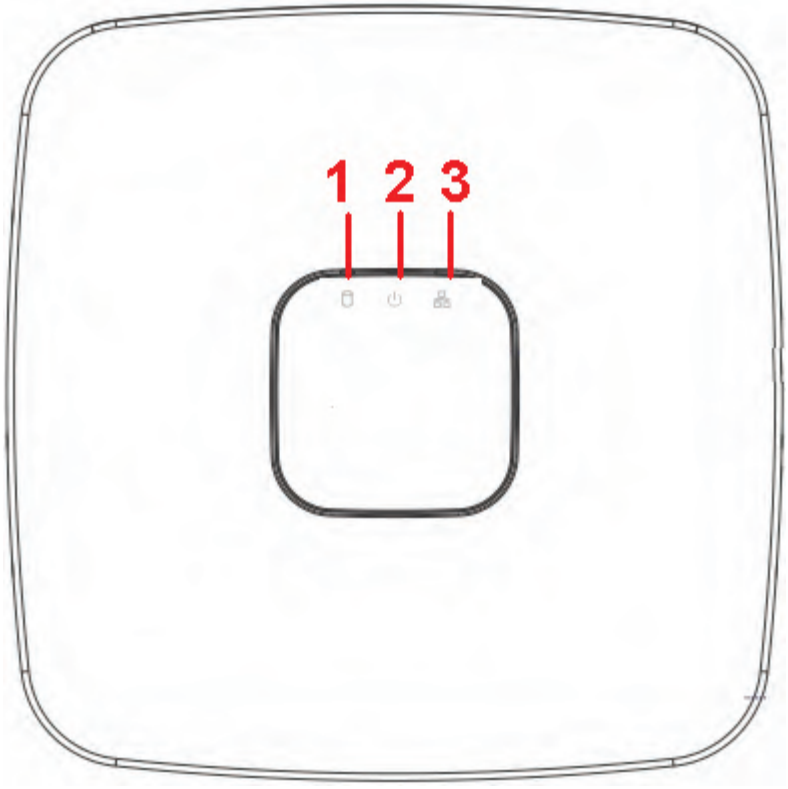
2.1 Front Panel

2.1.1 Smart 1U Series

The figure is for reference only.

The 4K Smart 1U (S2) front panel is shown as below.

Figure 2-1 Front panel



The 4K Smart 1U (S2) with 8 PoE ports/Beneficio 4K Smart 1U(S2) with 8 PoE ports front panel is shown as below.

Figure 2-2 Front panel

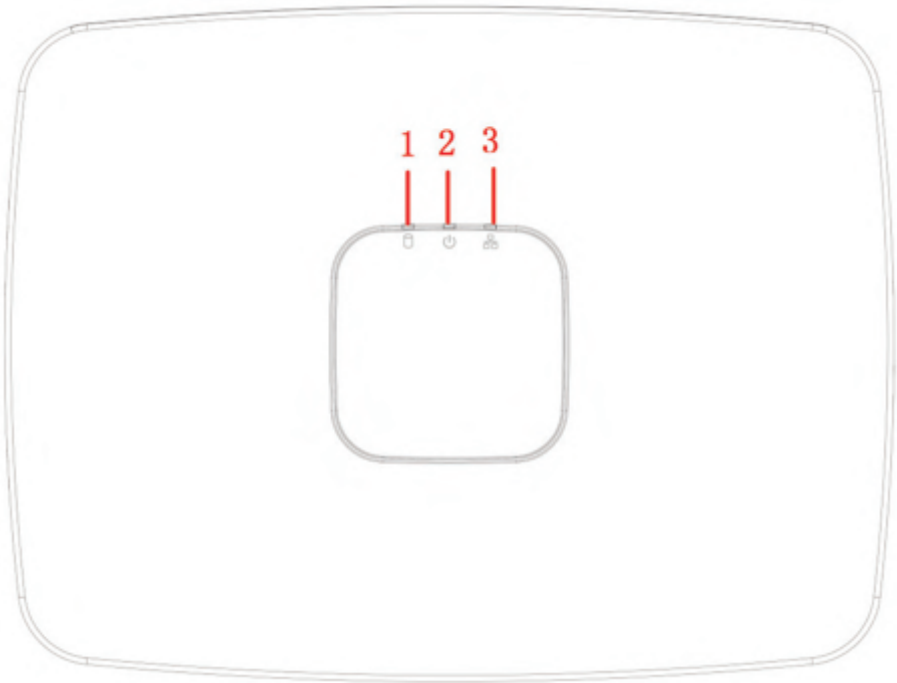


Table 2-1 Icons

No.	Name	Function
1	HDD status indicator light	The red light becomes on when HDD is abnormal.
2	Power indicator light	The red light becomes on when the power connection is normal.
3	Network status indicator light	The red light becomes on when the network connection is abnormal.

2.1.2 Compact 1U Series

The figure is for reference only.

Figure 2-3 Front panel

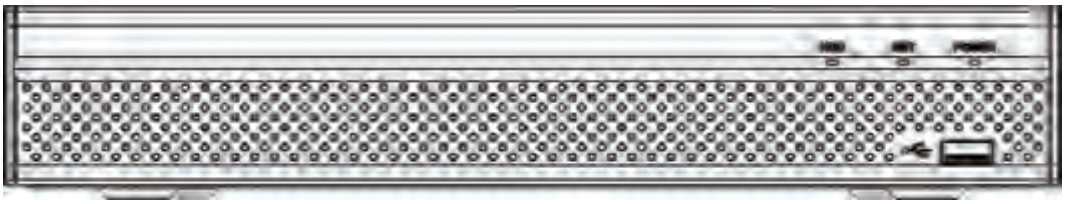


Table 2-2 Icons

Icon	Name	Function
HDD	HDD status indicator light	The blue light is on when the HDD is malfunction.
NET	Network status indicator light	The blue light is on when the network connection is abnormal.

Icon	Name	Function
POWER	Power status indicator light	The blue light is on when the power connection is OK.
	USB port	Connect to peripheral USB storage device, mouse and more.

2.1.3 1U/1.5U/2U Series

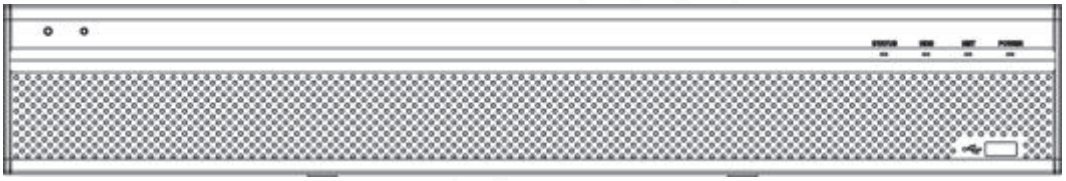
The figures are for reference only.

The 1U series front panel is shown as below.

Figure 2-4 Front panel

The 1.5U series front panel is shown as below.

Figure 2-5 Front panel



The 2U series front panel is shown as below

Figure 2-6 Front panel

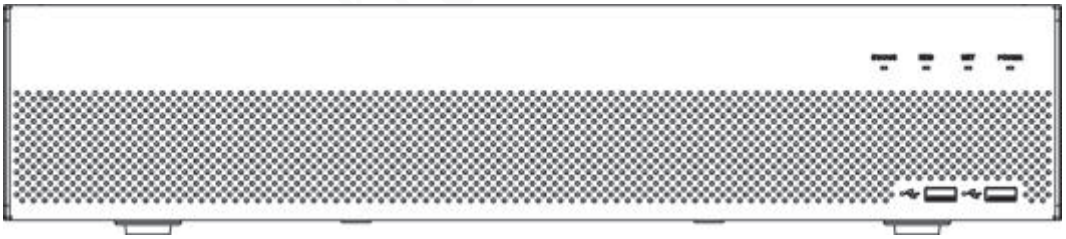


Table 2-3 Icons

Icon	Name	Function
STATUS	Status indicator light	The blue light is on when the Device is working properly.
HDD	HDD status indicator light	The blue light is on when the HDD malfunctions.
NET	Network status indicator light	The blue light is on when the network connection is abnormal.
POWER	Power status indicator light	The blue light is on when the power connection is normal.
	USB 2.0 port	Connect to peripheral USB 2.0 storage device, mouse, burner and more.

2.1.4 Smart 1U 4K (S2) with Wireless Series

The front panel is shown as below.

The figure is for reference only.

Figure 2-7 Front panel

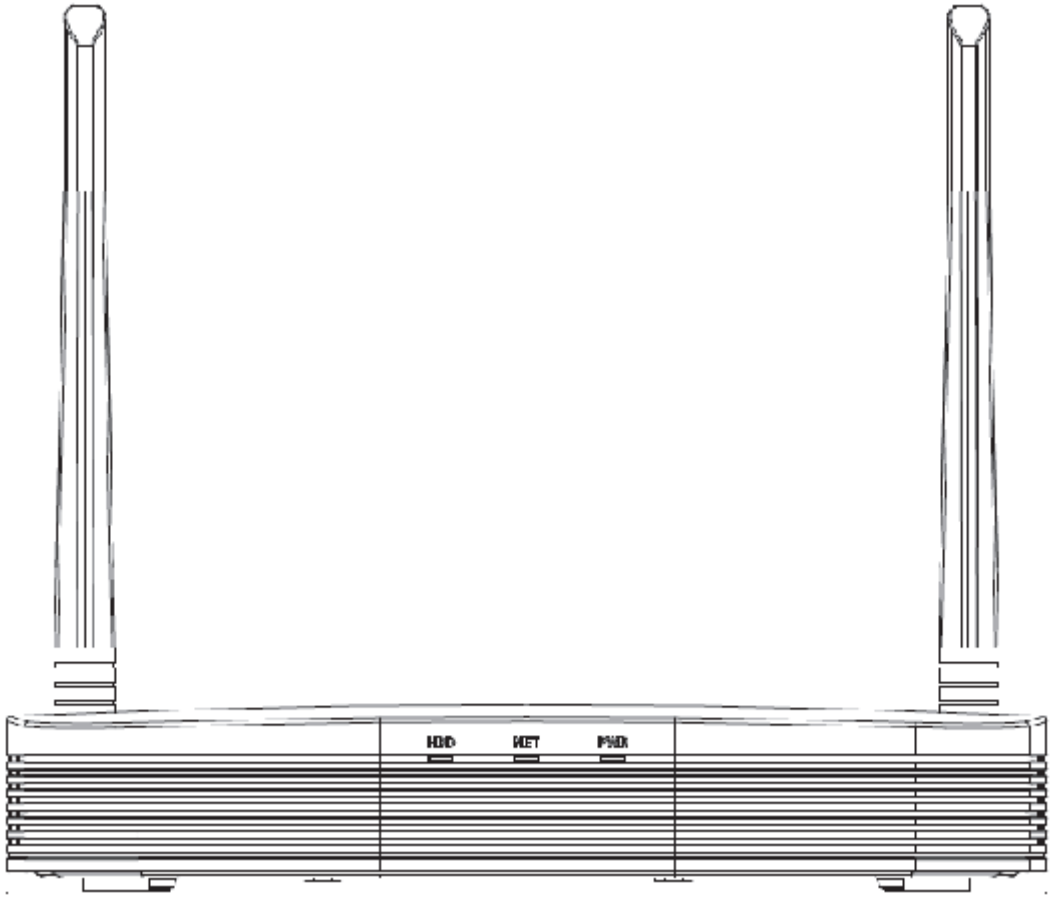


Table 2-4 Icons

Icon	Name	Function
HDD	HDD status indicator light	The blue light is on when the HDD malfunctions.
NET	Network status indicator light	The blue light is on when the network connection is abnormal.
PWR	Power status indicator light	The blue light is on when the power connection is normal.

2.1.5 DHI-NVR1104HS-W-S2-CE/DHI-NVR1104HS-W-S2-FCC/DHI-NVR1108HS-W-S2-CE/DHI-NVR1108HS-W-S2-FCC

The front panel is shown as below.

The figure is for reference only.

Figure 2-8 Front panel

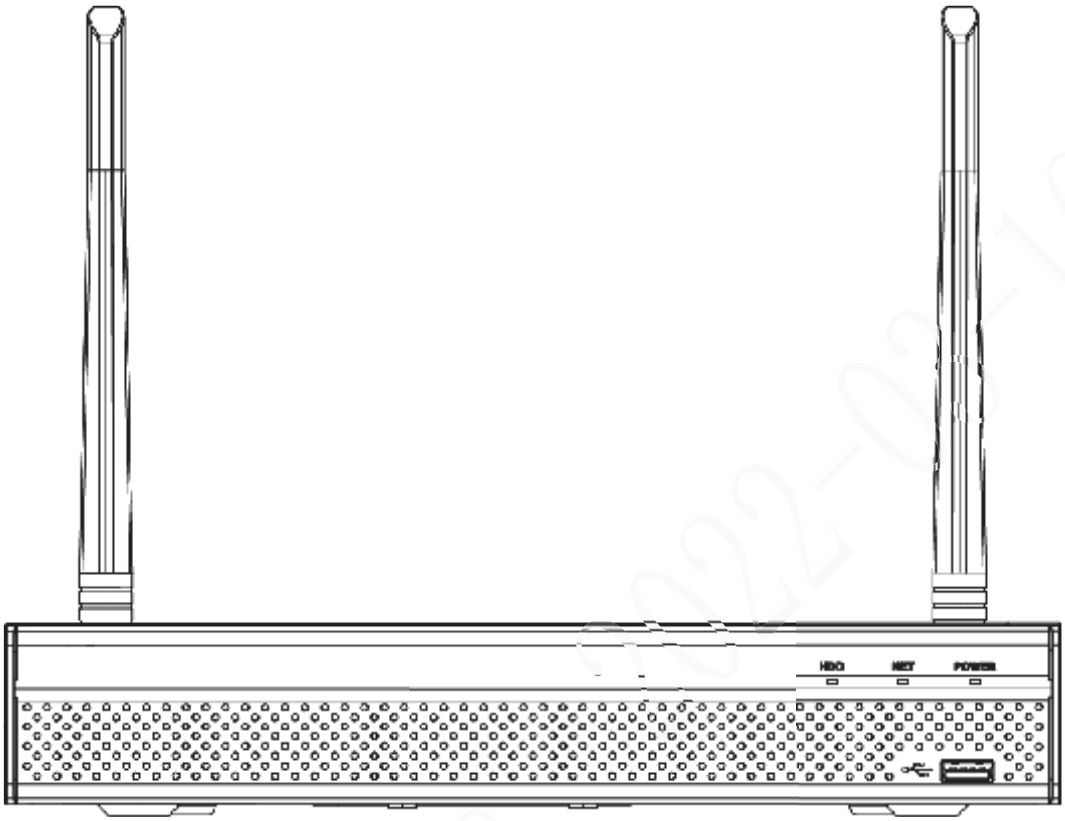


Table 2-5 Icons

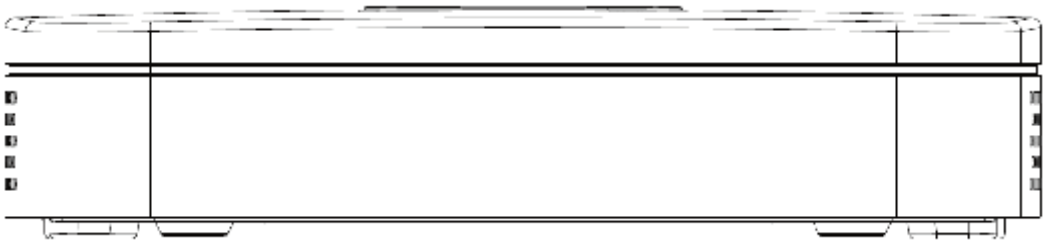
Icon	Name	Function
HDD	HDD status indicator light	The blue light is on when the HDD is malfunction.
NET	Network status indicator light	The blue light is on when the network connection is abnormal.
POWER	Power status indicator light	The blue light is on when the power connection is normal.
	USB 2.0 port	Connect to peripheral USB storage device, mouse and more.

2.1.6 Smart 1U AI NVR Series

The figure is for reference only.

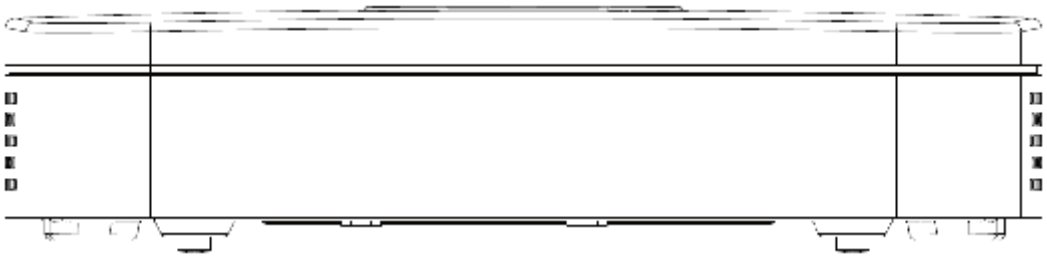
The Smart 1U AI NVR front panel is shown as below.

Figure 2-9 Front panel



The Smart 1U 4PoE AI NVR front panel is shown as below.

Figure 2-10 Front panel



The Smart 1U 8PoE AI NVR front panel is shown as below.

Figure 2-11 Front panel

2.1.7 General 1U AI NVR Series

The figure is for reference only.

The General 1U AI NVR front panel is shown as below.

Figure 2-12 Front panel

Table 2-6 Icons

Icon	Name	Function
	HDD status indicator light	The blue light is on when the HDD malfunctions.
	Network status indicator light	The blue light is on when the network connection is abnormal.
	Power status indicator light	The blue light is on when the power connection is normal.

Icon	Name	Function
	USB 2.0 port	Connect to peripheral USB 2.0 storage device, mouse, burner and more.

2.1.8 Compact 1U AI NVR/General 1.5U AI NVR Series

The figure is for reference only.

The Compact 1U AI NVR front panel is shown as below.

Figure 2-13 Front panel

The General 1.5U AI NVR front panel is shown as below.

Figure 2-14 Front panel

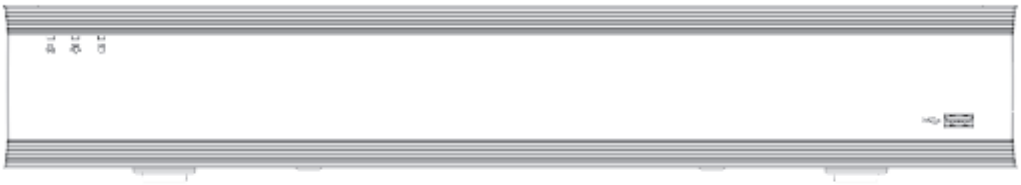


Table 2-7 Icons

Icon	Name	Function
	HDD status indicator light	The blue light is on when the HDD malfunctions.
	Network status indicator light	The blue light is on when the network connection is abnormal.
	Power status indicator light	The blue light is on when the power connection is normal.
	USB 2.0 port	Connect to peripheral USB 2.0 storage device, mouse, burner and more.

2.1.9 General 2U AI NVR/Advanced 2U AI NVR Series

The section takes General 2U AI NVR/Advanced 2U AI NVR series as examples.

The figure is for reference only.

Figure 2-15 Front panel

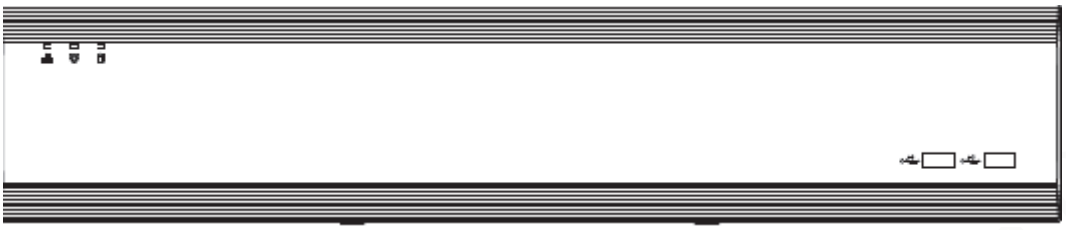


Table 2-8 Icons

Icon	Name	Function
HDD	HDD status indicator light	The blue light is on when the HDD malfunctions.
NET	Network status indicator light	The blue light is on when the network connection is abnormal.
POWER	Power status indicator light	The blue light is on when the power connection is OK.
	USB 2.0 port	Connect to peripheral USB 2.0 storage device, mouse, burner and more.

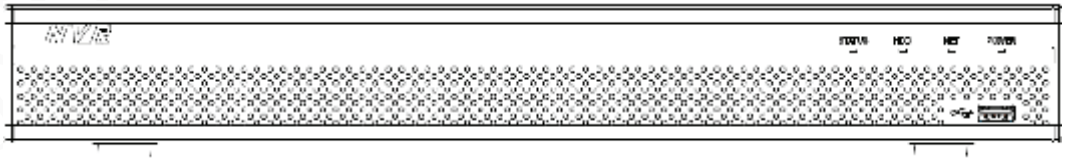
2.1.10 General 1U AI NVR/General 1.5U AI NVR/Advanced 1.5U 16PoE AI NVR/Advanced 1U 16PoE AI NVR/Advanced 1U 8PoE AI NVR Series

The section takes General 1U 8PoE AI NVR/General 1U AI NVR/ General 1U 16PoE AI NVR/General 1.5U 16PoE AI NVR/General 1.5U AI NVR/Advanced 1.5U 16PoE AI NVR/Advanced 1U 16PoE AI NVR/Advanced 1U 8PoE AI NVR series as examples.

The figure is for reference only.

Advanced 1U 16PoE AI NVR:

Figure 2-16 Front panel



General 1U AI NVR/General 1.5U AI NVR/Advanced 1.5U 16PoE AI NVR/Advanced 1U 8PoE AI NVR:

Figure 2-17 Front panel

Table 2-9 Icons

Icon	Name	Function
STATUS	Status indicator light	The blue light is on when the device is working properly.
HDD/	HDD status indicator light	The blue light is on when the HDD malfunctions.
NET/	Network status indicator light	The blue light is on when the network connection is abnormal.
POWER/	Power status indicator light	The blue light is on when the power connection is OK.
	USB 2.0 port	Connect to peripheral USB 2.0 storage device, mouse, burner and more.

2.1.11 General 2U AI NVR/General 2U 16PoE AI NVR Series

The figures are for reference only.

The General 2U AI NVR/General 2U 16PoE AI NVR series front panel is shown as below.

Figure 2-18 Front panel

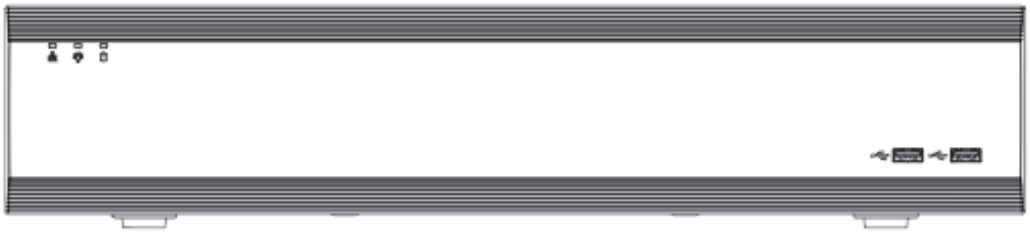


Table 2-10 Icons

Icon	Name	Function
	HDD status indicator light	The blue light is on when the HDD malfunctions.
	Network status indicator light	The blue light is on when the network connection is abnormal.
	Power status indicator light	The blue light is on when the power connection is OK.
	USB 2.0 port	Connect to peripheral USB 2.0 storage device, mouse, burner and more.

2.1.12 Advanced 2U 32/64/128Channel AI NVR Series

The following figures are for reference only.

The Advance 2U 32Channel AI NVR front panel is shown as below.

Figure 2-19 Front panel

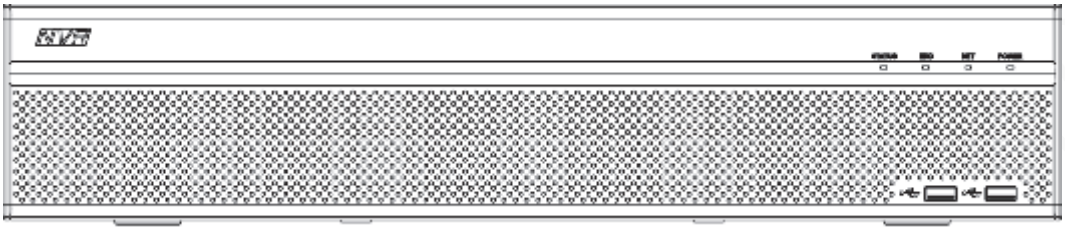


Table 2-11 Icons

Icon	Name	Function
STATUS	Status indicator light	The blue light is on when the device is working properly.
HDD	HDD status indicator light	The blue light is on when the HDD malfunctions.
NET	Network status indicator light	The blue light is on when the network connection is abnormal.
POWER	Power status indicator light	The blue light is on when the power connection is normal.
	USB 2.0 port	Connect to peripheral USB 2.0 storage device, mouse, burner and more.

The Advance 2U 64/128Channel 8HDD AI NVR front panel is shown as below.

Figure 2-20 Front panel

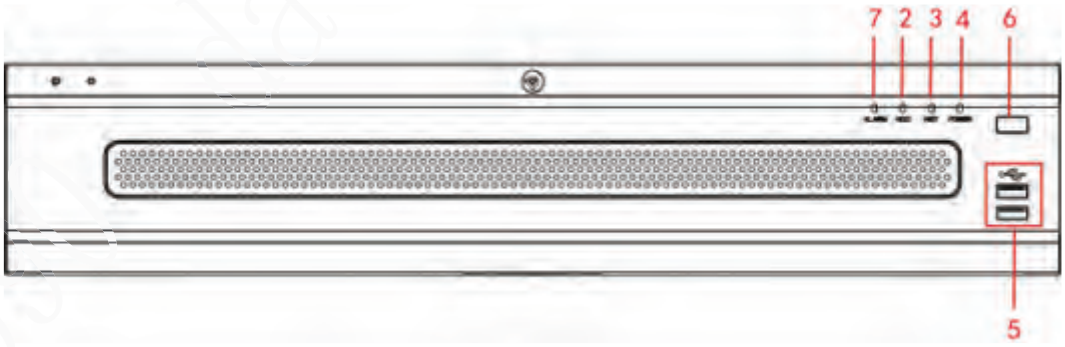


Table 2-12 Icons

No.	Icon	Name
1	STATUS	Status indicator light
2	HDD	HDD status indicator light
3	NET	Network status indicator light
4	POWER	Power status indicator light
5		USB 2.0 port
6		Power on-off button

No.	Icon	Name
7	ALARM	Alarm indicator light

2.1.13 Advanced 3U AI NVR Series

The following figures are for reference only.

For the product of LCD, the front panel of Advanced 3U AI NVR is shown as below.

Figure 2-21 Front panel

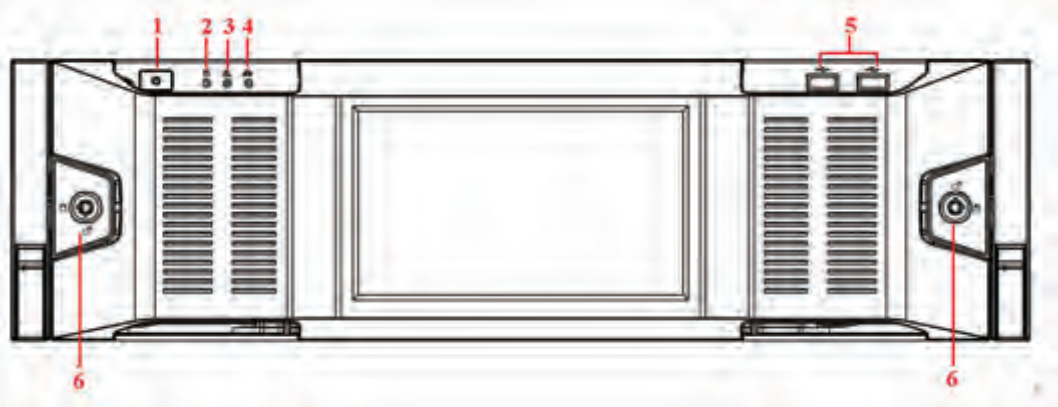


Table 2-13 Icons

No.	Name	Function
1	Power button	Press it once to turn on the device. Press it for a long time to turn off the device. We do not recommend you turn off the Device in this way. Press power button for a long time or pull out the power cable might result in device auto restart.
2	System HDD Indicator light	The blue light becomes on after system booted up properly. In the system HDD, there are device important configuration file, factory default configuration file, and device initial boot up data.
3	Alarm indicator light	The alarm indicator light becomes on once an alarm occurred. It becomes on via the software detection. The indicator light becomes on when there is a local alarm.
4	Network indicator light	The blue network indicator light is on after you connected the device to the network.
5	USB port	—
6	Front panel lock	—

For general Advanced 3U 16HDD AI NVR series, the front panel is shown as below.

Figure 2-22 Front panel

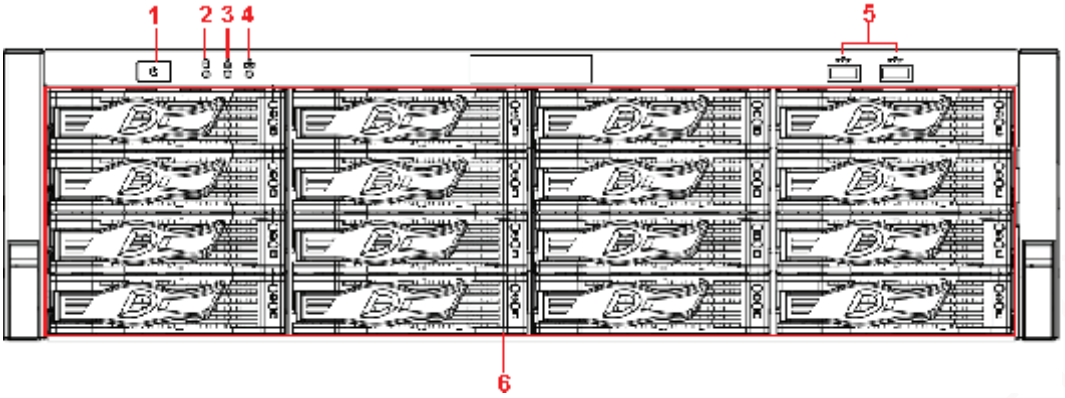


Table 2-14 Icons

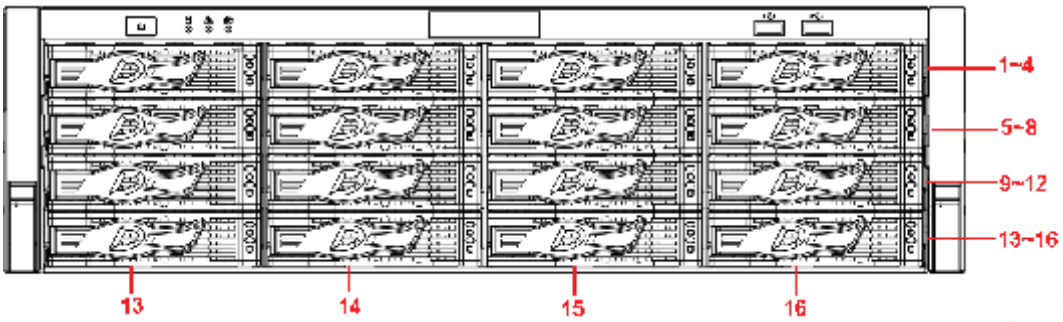
No.	Name	Function
1	Power button	Press it once to turn on the device. Press it for a long time to turn off the device. We do not recommend you turn off the Device in this way. Press power button for a long time or pull out the power cable might result in device auto restart.
2	System HDD Indicator light	The blue light becomes on after system booted up properly. In the system HDD, there are device important configuration file, factory default configuration file, device initial boot up data.
3	Alarm indicator light	The alarm indicator light becomes on once an alarm occurred. It becomes on via the software detection. The indicator light becomes on when there is a local alarm.
4	Network indicator light	The blue network indicator light is on after you connected the device to the network.
5	USB port	—
6	16 HDD slot	—

After you remove the front panel, you can see there are 16 HDDs. From the left to the right and from the top to the bottom, it ranges from 1~4, 5~8, 9~12, 13~16.

You can see there are two indicator lights on the HDD bracket.

- The power indicator light is at the top. The light is yellow after you connected the device to the power.
- The read-write indicator light is at the bottom. The blue light flashes when system is reading or writing the data.

Figure 2-23 Front panel

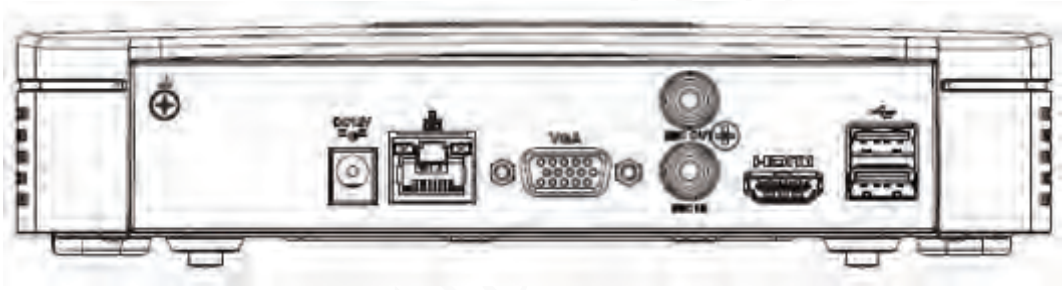


2.2 Rear Panel

2.2.1 Smart 1U Series

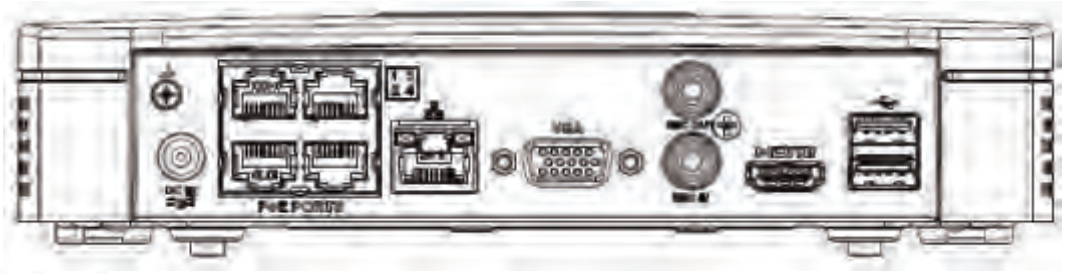
The general is shown as below.

Figure 2-24 Rear panel



The 4 PoE ports appearance is shown as below.

Figure 2-25 Rear panel



The 8 PoE ports appearance is shown as below.

Figure 2-26 Rear panel

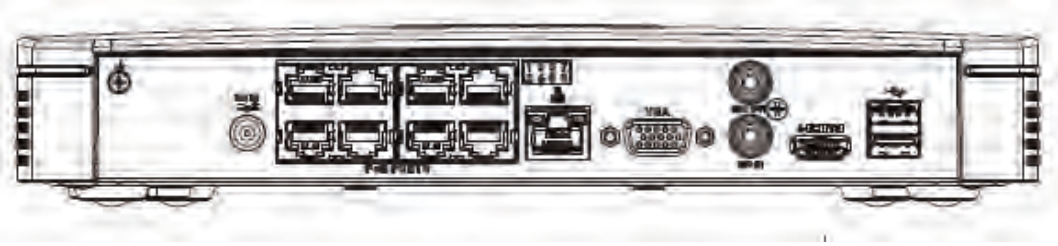


Table 2-15 Ports

Port Name	Connection	Function
DC 12V /	Power input port	Power socket. ● For general, input 12 VDC/2 A. ● For 4 PoE ports, input 48 VDC/1.25 A. ● For 8 PoE ports, input 48 VDC/2 A.
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
	GND	Ground end.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.

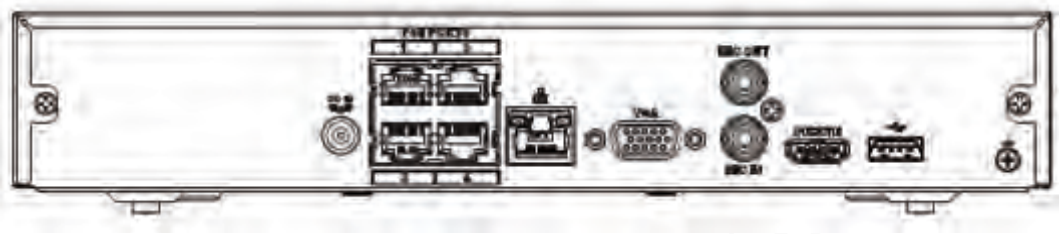
2.2.2 Compact 1U Series

The general series rear panel is shown as below.

Figure 2-27 Rear panel

The 4 PoE ports series rear panel is shown as below.

Figure 2-28 Rear panel



The 8 PoE ports series rear panel is shown as below.

Figure 2-29 Rear panel

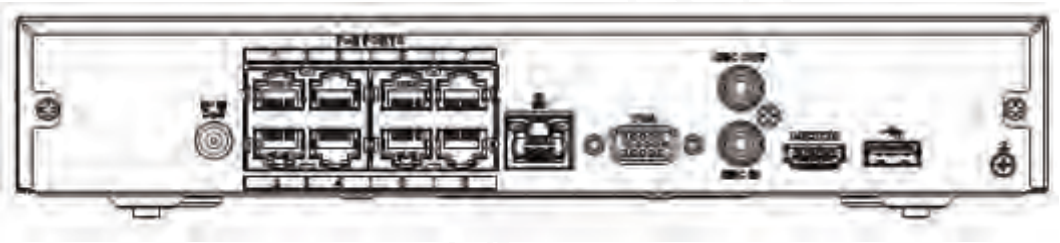


Table 2-16 Ports

Port Name	Connection	Function
DC 12V /	Power input port	Power socket. ● For general series, input 12 VDC/2 A. ● For 4 PoE ports series, input 48 VDC/1.25 A. ● For 8 PoE ports series, input 48 VDC/2 A.
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.

Port Name	Connection	Function
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
⏚	GND	Ground end.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.

2.2.3 Beneficio 4K 1U (S2) Series

The general series rear panel is shown as below.

Figure 2-30 Rear panel

The 4 PoE ports series rear panel is shown as below.

Figure 2-31 Rear panel

The 8 PoE ports series rear panel is shown as below.

Figure 2-32 Rear panel

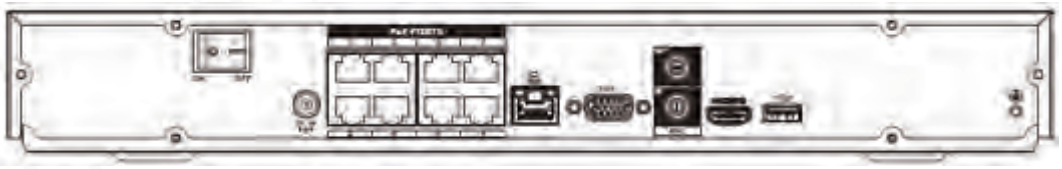


Table 2-17 Rear panel description

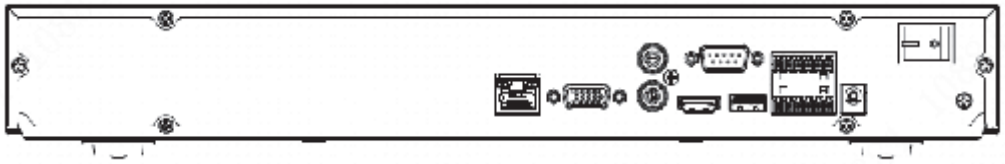
Port Name	Connection	Function
DC 12V / ⏚	Power input port	Power socket. ● For general series, input 12 VDC/4 A. ● For 4 PoE ports series, input 48 VDC/1.5 A. ● For 8 PoE ports series, input 53 VDC 120 W.
品	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
⇐	USB port	USB port. Connect to mouse, USB storage device and more.

Port Name	Connection	Function
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
⏚	GND	Ground end.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.

2.2.4 Professional 4K 1U/ Professional 4K 1U with 8 PoE ports/ Professional 4K 1U with 16 PoE ports/4K 1U (S2) with 24 PoE Ports/4K 1U (S2E) with 8 PoE ports/4K 1U (S2E) with 16 PoE ports Series

The professional 4K 1U series rear panel is shown as below.

Figure 2-33 Rear panel

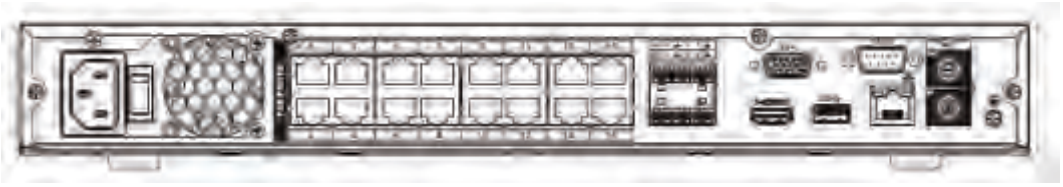


The professional 4K 1U with 8 PoE ports series rear panel is shown as below.

Figure 2-34 Rear panel

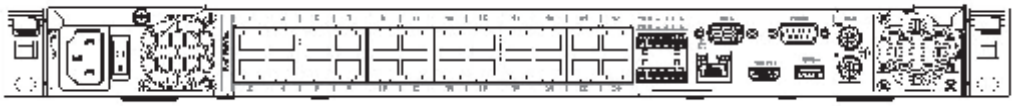
The professional 4K 1U with 16 PoE ports series rear panel is shown as below.

Figure 2-35 Rear panel



The professional 4K 1U with 24 PoE ports series rear panel is shown as below.

Figure 2-36 Rear panel



The professional 4K 1U (S2E) with 8 PoE ports/4K 1U (S2E) with 16 PoE ports series rear panel is shown as below.

The following figure takes 4K 1U (S2E) with 16 PoE ports series as an example.

Figure 2-37 Rear panel

Table 2-18 Ports

Icon	Port Name	Function
	Network port	10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
SS	USB 3.0 port	USB 3.0 port. Connect to mouse, USB storage device, USB burner and more.
RS-232	RS-232 debug COM	It is for general COM debug to configure IP address or transfer transparent COM data.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.

Icon	Port Name	Function
1–8	Alarm input port 1–8	• There are two groups. The first group is from port 1 to port 4; the second group is from port 5 to port 8. They are to receive the signal from the external alarm source. There are two types; NO (normal open)/NC (normal close). • When your alarm input device is using external power, please make sure the device and the NVR have the same ground.
⏚	GND	Alarm input ground port.
NO1–NO3	Alarm output port 1–3	• 3 groups of alarm output ports. (Group 1: port NO1–C1; Group 2: port NO2–C2; Group 3: port NO3–C3). Output alarm signal to the alarm device. Please make sure there is power to the external alarm device. • NO: Normal open alarm output port. • C: Alarm output public end.
C1–C3		
A	RS-485 communication port	RS485_A port. It is the cable A. You can connect to the control devices such as speed dome PTZ.
B		RS485_B. It is the cable B. You can connect to the control devices such as speed dome PTZ.
DC 12V	Power input port	Input 12 VDC/4 A.
Power switch	—	Power on/off button.
PoE PORTS	—	Built-in Switch. Support PoE or ePoE function. • For ePoE series product, port 1 to port 8 are the ePoE ports. ePoE port supports 300 meters@100Mbps, 800 meters@10Mbps. Port 9 to port 16 are general PoE ports. • The 8 PoE series product supports total 130 W. • The 16 PoE series product supports total 130 W.

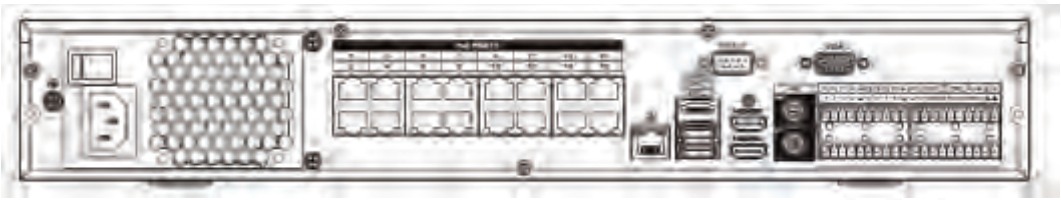
2.2.5 Professional 4K 1.5U/ Professional 4K 1.5U with 16 PoE ports/ Professional 4K 2U / Professional 4K 2U with 16 PoE ports/4K 1.5U (S2) with 24 PoE ports/4K 1.5U (S2E) with 16 PoE Ports/4K 2U (S2E) with 16 PoE Series

The professional 4K 1.5U/ professional 4K 2U series rear panel is shown as below.

Figure 2-38 Rear panel

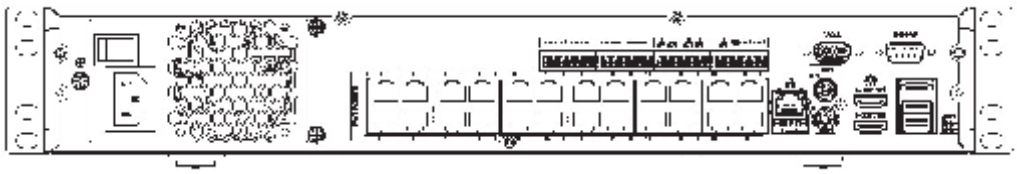
The professional 4K 1.5U with 16 PoE ports / professional 4K 2U with 16 PoE ports series rear panel is shown as below.

Figure 2-39 Rear panel



The professional 4K 1U (S2) with 24 PoE ports series rear panel is shown as below.

Figure 2-40 Rear panel



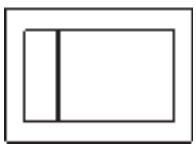
The 4K 1.5U (S2E) with 16 PoE ports series rear panel is shown as below.

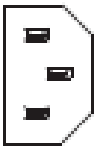
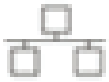
Figure 2-41 Rear panel

The 4K 2U (S2E) with 16 PoE ports series rear panel is shown as below.

Figure 2-42 Rear panel

Table 2-19

Name		Function
	Power switch	Power on-off button

Name		Function
	Power input port	Input 100–240 VAC.
	Network port	10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
eSATA	eSATA port	External SATA port. It can connect to the device of the SATA port. Please jump the HDD when there is peripheral connected HDD.
	USB port	USB port. Connect to mouse, USB storage device, USB burner and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4b.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
1–16	Alarm input port 1–16	● There are four groups. The first group is from port 1 to port 4, the second group is from port 5 to port 8, the third group is from 9 to 12, and the fourth group is from 13 to 16. They are to receive the signal from the external alarm source. There are two types; NO (normal open)/NC (normal close). ● When your alarm input device is using external power, please make sure the device and the NVR have the same ground.
	Ground	Alarm input ground end.
NO_1–NO_5	Alarm output port 1–5	● 5 groups of alarm output ports. (Group 1: port NO_1–C_1, Group 2:port NO_2–C_2, Group 3: port NO_3–C_3, Group 4: port NO_4–C_4, Group 5: port NO_5, C_5, NC_5). Output alarm signal to the alarm device. Please make sure there is power to the external alarm device. ● NO: Normal open alarm output port. ● C: Alarm output public end. ● NC: Normal close alarm output port.
C_1–C_5		
NC_5		

Name		Function
A	RS-485 communication port	RS485_A port. It is the cable A. You can connect to the control devices such as speed dome PTZ.
B		RS485_B. It is the cable B. You can connect to the control devices such as speed dome PTZ.
CTRL (CTRL 12 V)	—	Controller 12 V power output. It is to control the on-off alarm relay output. It can be used to control the device alarm output. At the same time, it can also be used as the power input source of some devices such as the alarm detector.
P (+12 V)	—	+12 V power output port. It can provide the power to some peripheral devices such as the camera or the alarm device. Please note the supplying power shall be below 1 A.
RS-232	RS-232 debug COM	It is for general COM debug to configure IP address or transfer transparent COM data.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
PoE PORTS	—	Built-in Switch. Support PoE or ePoE function. For ePoE series product, port 1 to port 8 are the ePoE ports. ePoE port supports 300 meters@100Mbps, 800 meters@10Mbps. Port 9 to port 16 are general PoE ports. The 16 PoE series supports total 150W.

2.2.6 4K 1U (S2) Series

The general 4K 1U (S2) series rear panel is shown as below.

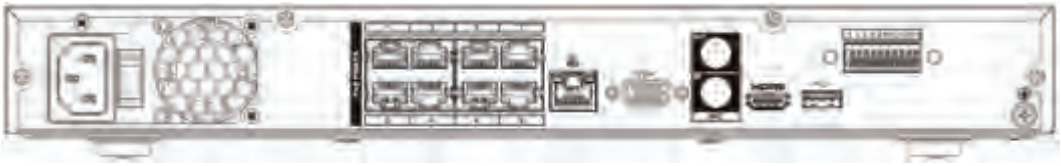
Figure 2-43 Rear panel

The 4K 1U (S2) with 4 PoE ports series rear panel is shown as below.

Figure 2-44 Rear panel

The 4K 1U (S2) with 8 PoE ports series rear panel is shown as below.

Figure 2-45 Rear panel



The 4K 1U (S2) with 16 PoE ports series rear panel is shown as below.

Figure 2-46 Rear panel

Table 2-20 Rear panel description

Name		Function
	Power switch	Power on/off button.
DC 12V	Power input port	Input 12 VDC/4 A. For general 4K 1U (S2) series product only.
		Switch power port. Input 48 VDC/96 W. For 4K 1U (S2) with 4 PoE ports series product only.
		Input 90~264-12 VAC 5 A/52 V 2.5 A-190 W. For 4K 1U (S2) with 8 PoE ports/ 4K 1U (S2) with 16 PoE ports series product only.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
1–4	Alarm input port 1–4	● There are two types; NO (normal open)/NC (normal close). ● When your alarm input device is using external power, please make sure the device and the NVR have the same ground.
⏚	GND	Alarm input ground port.
N1, N2	Alarm output port 1–2	● 2 groups of alarm output ports. (Group 1: port NO1–C1,Group 2: port NO2–C2).Output alarm signal to the alarm device. Please make sure there is power to the external alarm device. ● NO: Normal open alarm output port. ● C:Alarm output public end.
C1, C2		
A	RS-485 communication	RS485_A port. It is the cable A. You can connect to the control devices such as speed dome PTZ.

Name		Function
B	port	RS485_B. It is the cable B. You can connect to the control devices such as speed dome PTZ.
	Network port	10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
	USB port	USB port. Connect to mouse, USB storage device, USB burner and more.
RS-232	RS-232 debug COM	It is for general COM debug to configure IP address or transfer transparent COM data.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
PoE PORTS	/	Built-in Switch. Support PoE. For PoE series product, you can use this port to provide power to the network camera.

2.2.7 4K 1.5U (S2)/General 1.5U AI NVR Series

The general 4K 1.5U (S2)/General 1.5U AI NVR series rear panel is shown as below.

Figure 2-47 Rear panel

The 1.5U (S2) with sixteen PoE ports/General 1.5U 16PoE AI NVR series rear panel is shown as below.

Figure 2-48 Rear panel

Table 2-21 Ports

Name		Function
Power switch	—	Power on-off button
Power input port	—	90~264-12 VAC 12.5 A/-53 V 2.83 A
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.

Name		Function
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VIDEO OUT	Video output port	CVBS output
1–16	Alarm input port 1–16	● There are four groups. The first group is from port 1 to port 4, the second group is from port 5 to port 8, the third group is from 9 to 12, and the fourth group is from 13 to 16. They are to receive the signal from the external alarm source. There are two types; NO (normal open)/NC (normal close). ● When your alarm input device is using external power, please make sure the device and the NVR have the same ground.
⏚	Video output port	CVBS output
NO1–NO3	Alarm output port 1–3	● 3 groups of alarm output ports. (Group 1: port NO1–C1; Group 2: port NO2–C2; Group 3: port NO3–C3). Output alarm signal to the alarm device. Please make sure there is power to the external alarm device. ● NO: Normal open alarm output port. ● C: Alarm output public end.
C1–C3		
A	RS-485 communication port	RS485_A port. It is the cable A. You can connect to the control devices such as speed dome PTZ.
B		RS485_B. It is the cable B. You can connect to the control devices such as speed dome PTZ.
CTRL (CTRL 12 V)	—	Controller 12 V power output. It is to control the on-off alarm relay output. It can be used to control the device alarm output. At the same time, it can also be used as the power input source of some devices such as the alarm detector.
P (+12 V)	—	+12 V power output port. It can provide the power to some peripheral devices such as the camera or the alarm device. Please note the supplying power shall be below 1 A.
品	Network port	10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
eSATA	eSATA port	External SATA port. It can connect to the device of the SATA port. Please jump the HDD when there is peripheral connected HDD.
⇐	USB 2.0 port	USB 2.0 port. Connect to mouse, USB storage device, USB burner and more.

Name		Function
RS-232	RS-232 debug COM	It is for general COM debug to configure IP address or transfer transparent COM data.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.3.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
PoE PORTS	PoE port	Built-in Switch. Support PoE. For PoE series product, you can use this port to provide power to the network camera.

2.2.8 4K 2U (S2)/General 2U AI NVR Series

The general 4K 2U (S2)/General 2U AI NVR series rear panel is shown as below.

Figure 2-49 Rear panel

The 4K 2U (S2) with 16 PoE ports/General 2U 16PoE AI NVR series rear panel is shown as below.

Figure 2-50 Rear panel

Table 2-22 Ports

Name		Function
Power switch	—	Power on-off button.
Power input port	—	90~264-12 VAC 12.5 A/-53 V 2.83 A.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VIEDEO OUT	Video output port	CVBS output.

Name		Function
1–16	Alarm input port 1–16	• There are four groups. The first group is from port 1 to port 4, the second group is from port 5 to port 8, the third group is from 9 to 12, and the fourth group is from 13 to 16. They are to receive the signal from the external alarm source. There are two types; NO (normal open)/NC (normal close). • When your alarm input device is using external power, please make sure the device and the NVR have the same ground.
⏚	GND	Alarm input ground port.
NO1–NO3	Alarm output port 1–3	• 3 groups of alarm output ports. (Group 1: port NO1–C1; Group 2: port NO2–C2; Group 3: port NO3–C3). Output alarm signal to the alarm device. Please make sure there is power to the external alarm device. • NO: Normal open alarm output port. • C: Alarm output public end.
C1–C3		
A	RS-485 communication port	RS485_A port. It is the cable A. You can connect to the control devices such as speed dome PTZ.
B		RS485_B. It is the cable B. You can connect to the control devices such as speed dome PTZ.
CTRL (CTRL 12 V)	—	Controller 12 V power output. It is to control the on-off alarm relay output. It can be used to control the device alarm output. At the same time, it can also be used as the power input source of some devices such as the alarm detector.
P (+12 V)	—	+12 V power output port. It can provide the power to some peripheral devices such as the camera or the alarm device. Please note the supplying power shall be below 1 A.
	Network port	One 10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
eSATA	eSATA port	External SATA port. It can connect to the device of the SATA port. Please jump the HDD when there is peripheral connected HDD.
	USB port	USB port. Connect to mouse, USB storage device, USB burner and more.
RS-232	RS-232 debug COM	It is for general COM debug to configure IP address or transfer transparent COM data.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.

Name		Function
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
PoE PORTS	PoE port	Built-in Switch. Support PoE. For PoE series product, you can use this port to provide power to the network camera.

2.2.9 Smart 1U 4K (S2) with Wireless Series

Figure 2-51 Rear panel

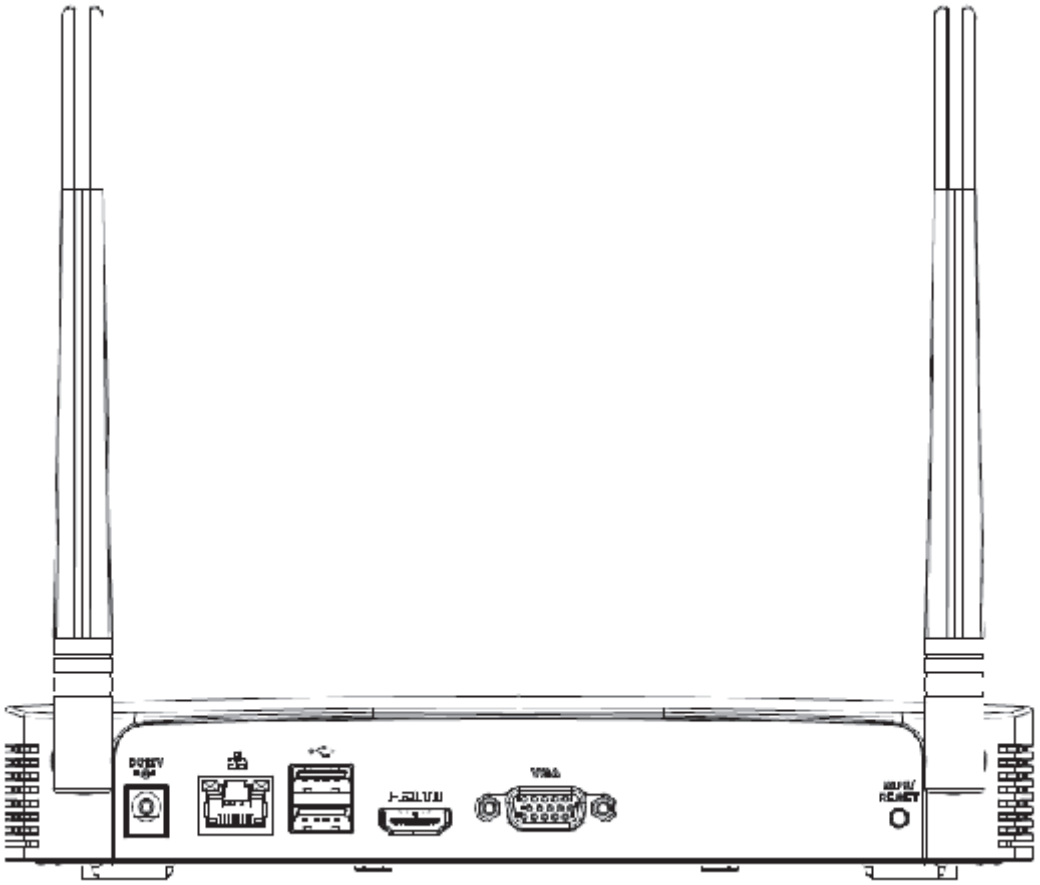


Table 2-23 Ports

Port Name	Connection	Function
	USB 2.0 port	USB 2.0 port. Connect to mouse, USB storage device, USB burner and more.
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.

Port Name	Connection	Function
DC 12V	Power input port	Input 12 VDC/2 A.
WPS/RESET	Reset/WPS function	Device Wi-Fi reset and WPS function button: ● Hold down this button for 5 seconds and above to restore Wi-Fi AP to defaults. ● Press this button for less than 2 seconds, and then press the WPS button of Wi-Fi IPC, the device and Wi-Fi IPC can be connected.

2.2.10

DHI-NVR1104HS-W-S2-CE/DHI-NVR1104HS-W-S2-FCC/DHI-NVR1108HS-W-S2-CE/DHI-NVR1108HS-W-S2-FCC

Figure 2-52 Rear panel

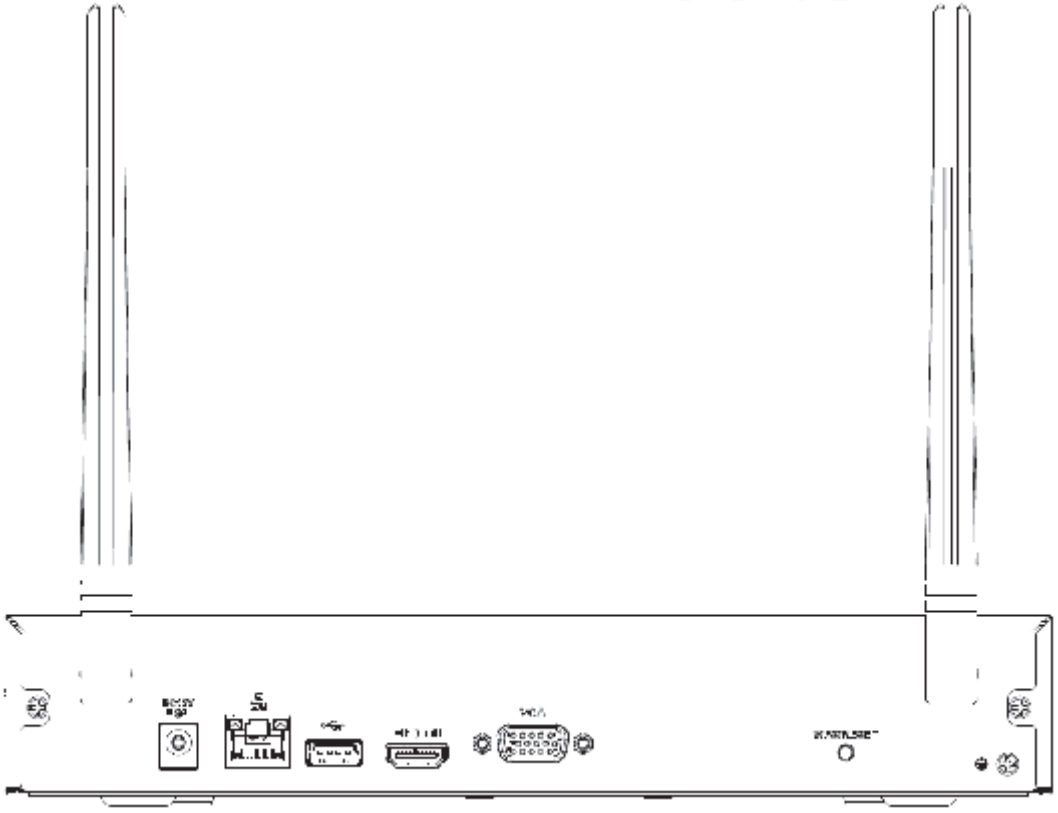


Table 2-24 Ports

Icon	Name	Function
DC 12V	Power input socket	Power socket. Input 12 VDC/2 A.
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
	USB 2.0 port	USB 2.0 port. Connect to mouse, USB storage device, and more.

Icon	Name	Function
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
⏚	GND	Ground end.
WPS/RESET	Reset/WPS function	Device Wi-Fi reset and WPS function button: ● Hold down this button for 5 seconds and above to restore Wi-Fi AP to defaults. ● Press this button for less than 2 seconds, and then press the WPS button of Wi-Fi IPC, the device and Wi-Fi IPC can be connected.

2.2.11 Smart 1U AI NVR Series

The figure is for reference only.

Figure 2-53 Rear panel

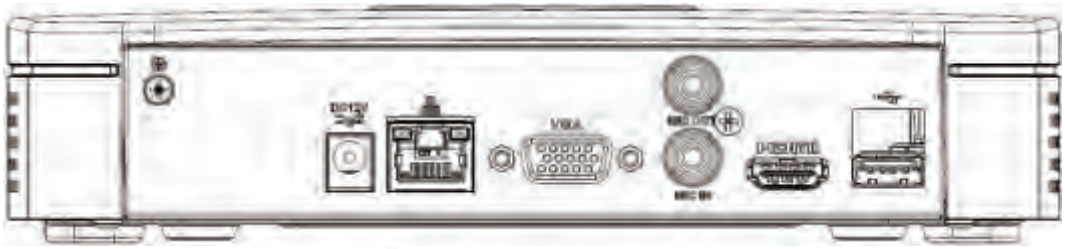


Table 2-25 Ports

Port Name	Connection	Function
⇐	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.

Port Name	Connection	Function
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
DC 12V	Power input port	Power socket.
	GND	Ground end.

2.2.12 General 1U AI NVR Series

The rear panel is shown as below.

The figure is for reference only.

Figure 2-54 Rear panel

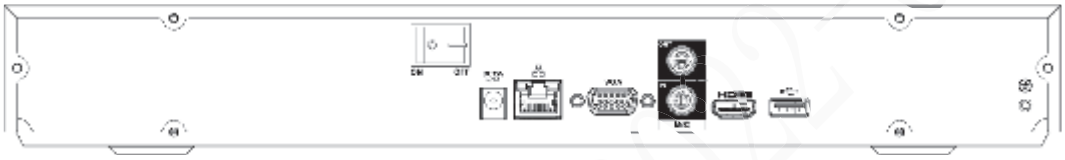


Table 2-26 Ports

Port Name	Connection	Function
	GND	Ground end.
	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
DC 12V	Power input port	Power socket.
	Power switch	Power on/off button.

2.2.13 Smart 1U 4PoE AI NVR Series

The figure is for reference only.

Figure 2-55 Rear panel

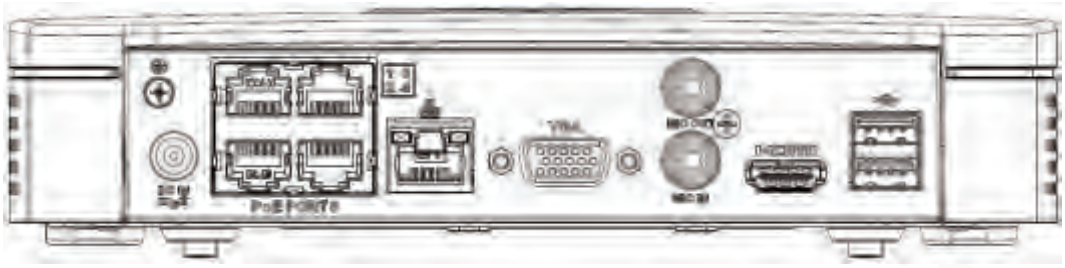


Table 2-27 Ports

Port Name	Connection	Function
	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.
DC IN	Power input port	Power socket.
	GND	Ground end.

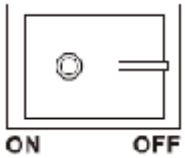
2.2.14 General 1U 4PoE AI NVR Series

The rear panel is shown as below.

The figure is for reference only.

Figure 2-56 Rear panel

Table 2-28 Ports

Port Name	Connection	Function
⏚	GND	Ground end.
⇤	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
品	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.
	Power input port	Power socket.
	Power switch	Power on/off button.

2.2.15 Smart 1U 8PoE AI NVR Series

The figure is for reference only.

Figure 2-57 Rear panel

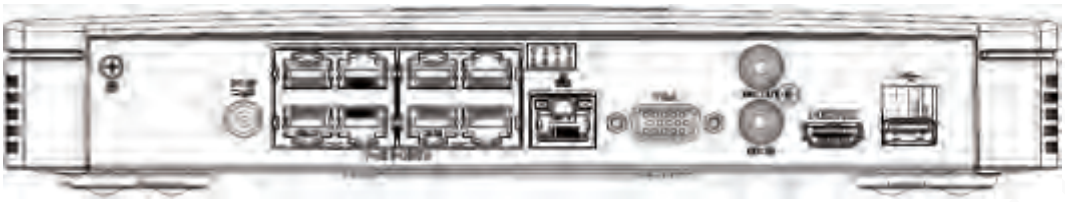


Table 2-29 Ports

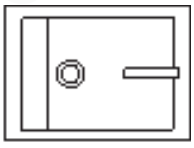
Port Name	Connection	Function
	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.
DC IN	Power input port	Power socket.
	GND	Ground end.

2.2.16 General 1U 8PoE AI NVR Series

The figure is for reference only.

Figure 2-58 Rear panel

Table 2-30 Ports

Port Name	Connection	Function
⏚	GND	Ground end.
⇐	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
品	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.
DC IN	Power input port	Power socket.
	Power switch	Power on/off button.

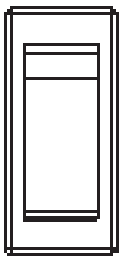
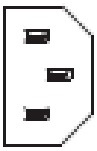
2.2.17 General 1U 16PoE AI NVR Series

The figure is for reference only.

Figure 2-59 Rear panel

Table 2-31 Ports

Port Name	Connection	Function
⏚	GND	Ground end.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
RS-232	RS-232 debug COM	It is for general COM debug to configure IP address or transfer transparent COM data.
品	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
⇐	USB port	USB port. Connect to mouse, USB storage device and more.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
NO1	Alarm output port	● 1 group of alarm output ports (port NO1–C1). Output alarm signal to the alarm device. Please make sure there is power to the external alarm device. ● NO: Normal open alarm output port. ● C: Alarm output public end.
C1		
CTRL	—	Controllable power supply output. Control the output of the on-off button alarm relay. It controls the alarm device with the presence or absence of voltage. It can also be used as power input for some alarm devices such as alarm detectors.

Port Name	Connection	Function
P	—	Power output port. It can provide power to some peripheral devices such as camera and alarm device. Make sure the power supply of peripheral device shall be below 1 A.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.
	Power switch	Power on/off button.
	Power input port	Power socket.

2.2.18 Compact 1U AI NVR Series

The figure is for reference only.

Figure 2-60 Rear panel

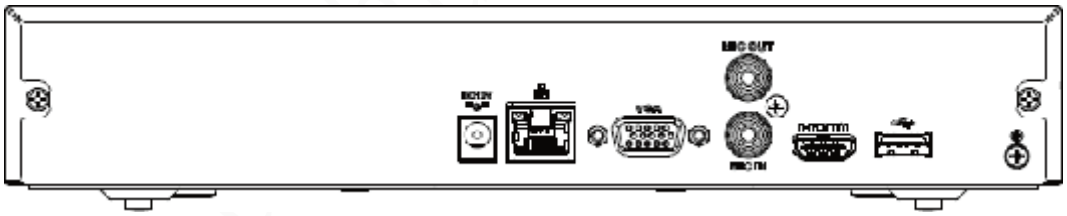


Table 2-32

Port Name	Connection	Function
⏚	GND	Ground end.
	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.

Port Name	Connection	Function
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.
DC 12V	Power input port	Power socket.

2.2.19 Compact 1U 4PoE AI NVR Series

The figure is for reference only.

Figure 2-61 Rear panel

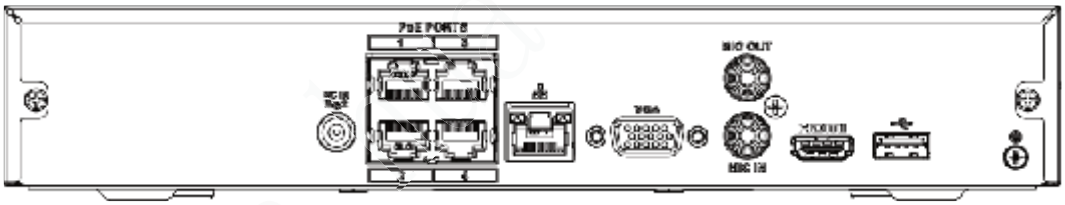


Table 2-33 Ports

Port Name	Connection	Function
DC IN	Power input port	Power socket.
	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.
	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.

Port Name	Connection	Function
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
⏚	GND	Ground end.
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.

2.2.20 Compact 1U 8PoE AI NVR Series

The figure is for reference only.

Figure 2-62 Rear panel

Table 2-34 Ports

Port Name	Connection	Function
⏚	GND	Ground end.
⇐	USB port	USB port. Connect to mouse, USB storage device and more.
HDMI	High Definition Media Interface	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel data to the HDMI port of the display device. HDMI version is 1.4.
MIC IN	Audio input port	Bidirectional talk input port. It is to receive the analog audio signal output from the devices such as microphone, pickup.
MIC OUT	Audio output port	Audio output port. It is to output the analog audio signal to the devices such as the sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
VGA	VGA video output port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
品	Network port	10/100 Mbps self-adaptive Ethernet port. Connect to the network cable.

Port Name	Connection	Function
PoE PORTS	PoE port	Built-in switch. Support PoE function. For PoE series product, you can use this port to provide power to the network camera.
DC IN	Power input port	Power socket.

2.2.21 General 1U 8PoE AI NVR Series

These figures are for reference only.

Figure 2-63 Rear panel

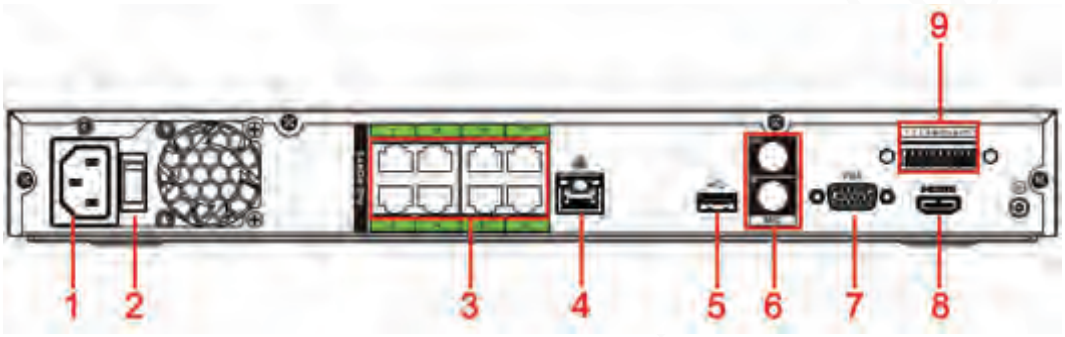


Table 2-35 Ports

No.	Port Name	Function
1	Power input port	Input power of 100-240 V and 50-60 Hz.
2	Power button	Turns on/off the NVR.
3	PoE port	Built-in switch. It can provide power for IPC. 8 PoE ports: 1-8 are ePoE ports (support 300m @ 100M. 800m @ 10M). The device supports 48 V, 100 W total power output under 55 °C, and 48 V, 130 W total power output under 45 °C.
4	Network port	10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
5	USB port	USB 3.0 port. Connect to devices such as mouse, USB storage device and USB burner.
6	MIC IN	Bidirectional talk input port. It is to receive analog audio signal from devices such as microphone, sound pickup.
	MIC OUT	Audio output port. It is to output analog audio signal to devices such as sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
7	VGA port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.

No.	Port Name	Function
8	HDMI port	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel audio data to displays with HDMI port.
9	Alarm input port (1-4)	• They receive signals from external alarm source. Alarm input includes two types; NO (normal open) and NC (normal close). • When your alarm input device is using external power, make sure the device and the NVR have the same GND.
	⏚	GND. Alarm input ground port.
	NO C	One NO activation output group. (On-off button).
	CTRL	Controllable power supply output. Control the output of the on-off button alarm relay. It controls the alarm device with the presence or absence of voltage. It can also be used as power input for some alarm devices such as alarm detectors.
	P	Power output port. It can provide power to some peripheral devices such as camera and alarm device. Make sure the power supply of peripheral device shall be below 1 A.

2.2.22 General 1U AI NVR Series

The figure is for reference only.

Figure 2-64 Rear panel

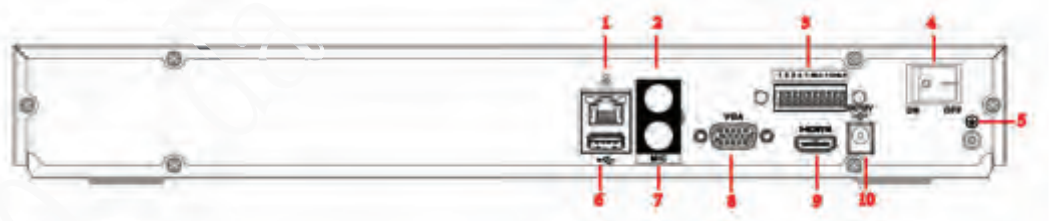


Table 2-36 Ports

No.	Port Name	Function
1	Network port	10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
2	MIC OUT	Audio output port. It is to output analog audio signal to devices such as sound box. • Bidirectional talk output. • Audio output on 1-window video monitor. • Audio output on 1-window video playback.

No.	Port Name	Function
3	Alarm input port (1-4)	• They receive signals from external alarm source. Alarm input includes two types; NO (normal open) and NC (normal close). • When your alarm input device is using external power, make sure the device and the NVR have the same GND.
	⏚	GND. Alarm input ground port.
	NO C	One NO activation output group. (On-off button).
	CTRL	Controllable power supply output. Control the output of the on-off button alarm relay. It controls the alarm device with the presence or absence of voltage. It can also be used as power input for some alarm devices such as alarm detectors.
	P	Power output port. It can provide power to some peripheral devices such as camera and alarm device. Make sure the power supply of peripheral device shall be below 1 A.
4	Power button	Turns on/off the NVR.
5	⏚	GND.
6	USB port	USB 3.0 port. Connect to devices such as mouse, USB storage device and USB burner.
7	MIC IN	Bidirectional talk input port. It is to receive analog audio signal from devices such as microphone, sound pickup.
8	VGA port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
9	HDMI port	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel audio data to displays with HDMI port.
10	Power input port	Input power of 100V-240V and 50Hz-60Hz.

2.2.23 Advanced 2U AI NVR/General 2U AI NVR Series

- The figure takes Advanced 2U 8HDD AI NVR/General 2U 8HDD AI NVR series as examples.
- The figure is for reference only.

Figure 2-65 Rear panel

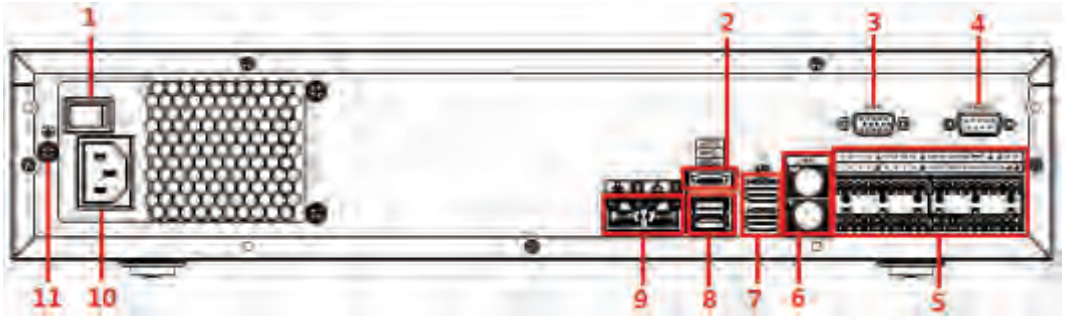


Table 2-37 Ports

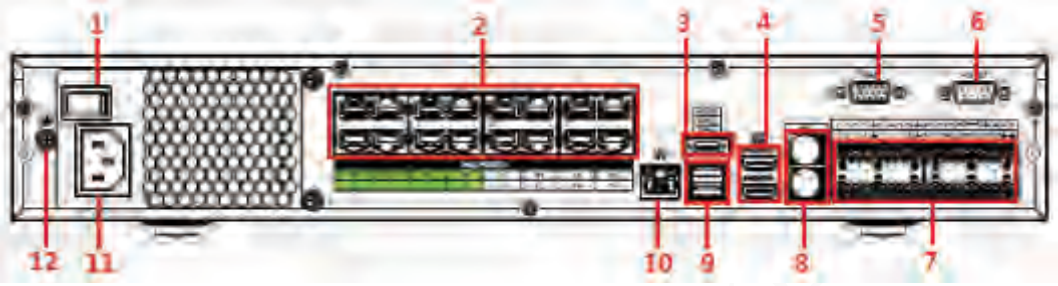
No.	Port Name	Function
1	Power button	Turns on/off the NVR.
2	eSATA port	External SATA port. It can connect device with SATA port. You need to jump the HDD when there is peripherally connected HDD.
3	VGA port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
4	RS-232 port	It is for general COM debugging to configure IP address and transfer transparent COM data.
5	Alarm input port (1-16)	• There are four groups: 1-4, 5-8, 9-12 and 13-16. They receive signals from external alarm source. Alarm input includes two types; NO (normal open) and NC (normal close). • When your alarm input device is using external power, make sure the device and the NVR have the same GND.
	Alarm output port (NO_1-NO_5, C_1-C_5, NC_5)	• Five groups of alarm output ports (Group 1: NO_1-C_1, Group 2: NO_2-C_2, Group 3: NO_3-C_3, Group 4: NO_4-C_4, Group 5: NO_5, C_5, NC_5). Output alarm signal to the external alarm device. Make sure power supply is available for the external alarm device. • NO: Normal open alarm output port. • C: Alarm output public end. • NC: Normal close alarm output port.
	⏚	GND. Alarm input ground port.

No.	Port Name	Function
	RS-485 port (A, B)	• RS485_A port. Control cable A of the 485 device. It connects external devices such as speed dome and PTZ. • RS485_B port. Control cable B of the 485 device. It connects external devices such as speed dome and PTZ.
	CTRL	Controllable 12 V power output. It is to control the on-off alarm relay output. It can be used to control the device alarm output. At the same time, it can also be used as the power input source of some devices such as alarm detector.
		+12 V power output port. It can provide power to some peripheral devices such as camera and alarm device. Make sure the power supply of peripheral device shall be below 1 A.
6	MIC IN	Bidirectional talk input port. It is to receive analog audio signal from devices such as microphone, sound pickup.
	MIC OUT	Audio output port. It is to output analog audio signal to devices such as sound box. • Bidirectional talk output. • Audio output on 1-window video monitor. • Audio output on 1-window video playback.
7	HDMI port	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel audio data to displays with HDMI port. The two HDMI ports support 2-channel high definition HDMI output of different sources.
8	USB port	USB 3.0 port. Connect to devices such as mouse, USB storage device and USB burner.
9	Network port	10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
10	Power input port	Input power of 100-240 V and 50Hz-60Hz.
11		GND.

2.2.24 Advanced 1.5U 16PoE AI NVR/General 1.5U 16PoE AI NVR/General 1.5U AI NVR Series

- The following figure takes Advanced 32-channel 1.5U 16PoE AI NVR series as examples.
- The figure is for reference only.

Figure 2-66 Rear panel



No.	Port Name	Function
1	Power button	Turns on/off the NVR.
2	PoE port	Built-in switch. It can provide power for IPC. ● 16 PoE ports: 1-8 are ePoE ports (support 300m @ 100M. 800m @ 10M). 9-16 are regular PoE ports. ● Device with 16 PoEs supports 150 W total power.
3	eSATA port	External SATA port. It can connect device with SATA port. You need to jump the HDD when there is peripherally connected HDD.
4	HDMI port	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel audio data to displays with HDMI port. The two HDMI ports support 2-channel high definition HDMI output of different sources.
5	VGA port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
6	RS-232 port	It is for general COM debugging to configure IP address and transfer transparent COM data.
7	Alarm input port (1-16)	● There are four groups: 1-4, 5-8, 9-12 and 13-16. They receive signals from external alarm source. Alarm input includes two types; NO (normal open) and NC (normal close). ● When your alarm input device is using external power, make sure the device and the NVR have the same GND.

No.	Port Name	Function
	Alarm output port (NO1-NO5, C1-C5, NC5)	• Five groups of alarm output ports (Group 1: NO1-C1, Group 2: NO2-C2, Group 3: NO3-C3, Group 4: NO4-C4, Group 5: NO5, C5, NC5). Output alarm signal to the external alarm device. Make sure power supply is available for the external alarm device. • NO: Normal open alarm output port. • C: Alarm output public end. • NC: Normal close alarm output port.
	⏚	GND. Alarm input ground port.
	RS-485 port (A, B)	• RS485_A port. Control cable A of the 485 device. It connects external devices such as speed dome and PTZ. • RS485_B port. Control cable B of the 485 device. It connects external devices such as speed dome and PTZ.
	CTRL	Controllable 12 V power output. It is to control the on-off alarm relay output. It can be used to control the device alarm output. At the same time, it can also be used as the power input source of some devices such as alarm detector.
	P	+12 V power output port. It can provide power to some peripheral devices such as camera and alarm device. Make sure the power supply of peripheral device shall be below 1 A.
8	MIC IN	Bidirectional talk input port. It is to receive analog audio signal from devices such as microphone, sound pickup.
	MIC OUT	Audio output port. It is to output analog audio signal to devices such as sound box. • Bidirectional talk output. • Audio output on 1-window video monitor. • Audio output on 1-window video playback.
9	USB port	USB 3.0 port. Connect to devices such as mouse, USB storage device and USB burner.
10	Network port	10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
11	Power input port	Input power of 100V-240V and 50Hz-60Hz.
12	⏚	GND.

2.2.25 Advanced 1U 16PoE AI NVR /Advanced 1U 8PoE AI NVR/General 1U 16PoE AI NVR Series

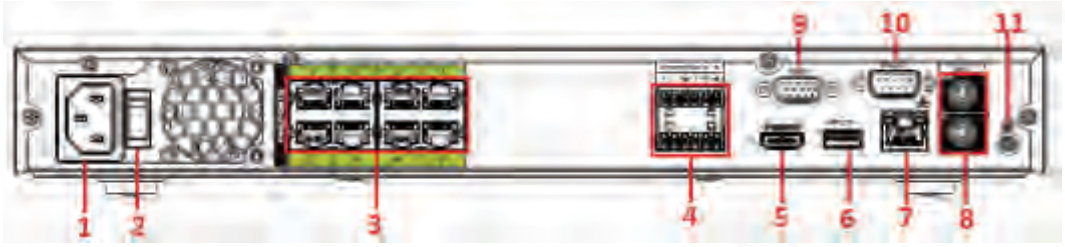
These figures are for reference only.

The Advanced 1U 16PoE AI NVR series rear panel is shown as below.

Figure 2-67 Rear panel

The Advanced 1U 8PoE AI NVR series rear panel is shown as below.

Figure 2-68 Rear panel



The General 1U 16PoE AI NVR series rear panel is shown as below.

Figure 2-69 Rear panel

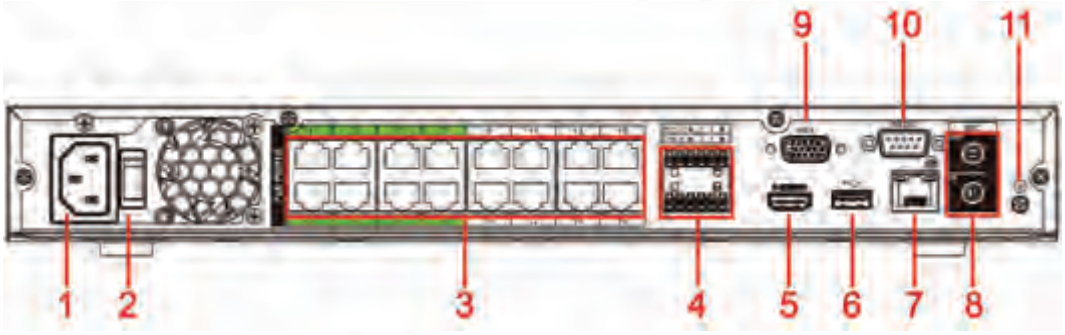


Table 2-38 Rear panel description

No.	Port Name	Function	
1	Power input port	Input power of 100-240 V and 50-60 Hz.	
2	Power button	Turns on/off the NVR.	
3	PoE port	Built-in switch. It can provide power for IPC. 16 PoE ports: 1-8 are ePoE ports (support 300m @ 100M. 800m @ 10M). 9-16 are regular PoE ports. The device supports 150 W total power. 8 PoE ports: 1-8 are ePoE ports (support 300m @ 100M. 800m @ 10M). The device supports 48 V, 120 W total power.	
4	Alarm input/output of Advanced 1U 16PoE AI NVR and Advanced 1U 8PoE AI NVR	Alarm input port (1-4)	• They receive signals from external alarm source. Alarm input includes two types; NO (normal open) and NC (normal close). • When your alarm input device is using external power, make sure the device and the NVR have the same GND.

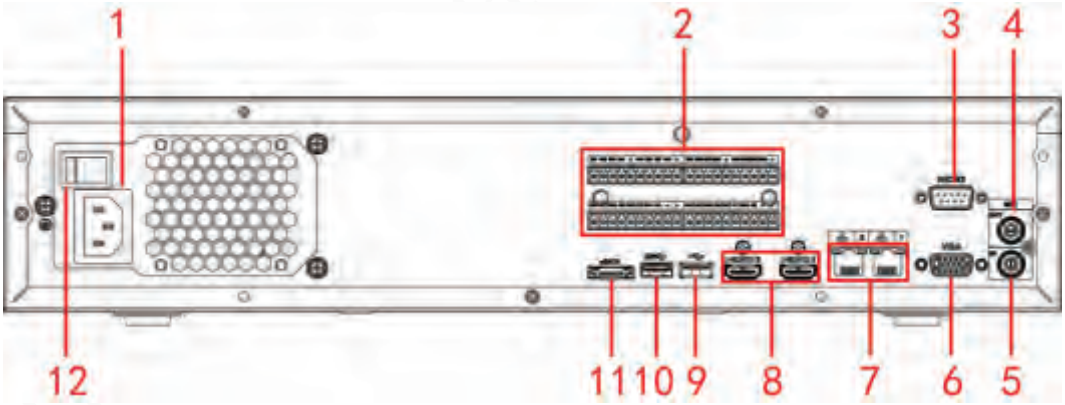
No.	Port Name	Function	
		Alarm output port (NO1-NO2, C1-C2)	• Two groups of alarm output ports (Group 1: NO1-C1, Group 2: NO2-C2). Output alarm signal to the external alarm device. Make sure power supply is available for the external alarm device. • NO: Normal open alarm output port. • C: Alarm output public end.
		⏚	GND. Alarm input ground port.
		RS-485 port (A, B)	• RS485_A port. Control cable A of the 485 device. It connects external devices such as speed dome and PTZ. • RS485_B port. Control cable B of the 485 device. It connects external devices such as speed dome and PTZ.
	Alarm input/output of General 1U 16PoE AI NVR	Alarm input port (1-4)	• They receive signals from external alarm source. Alarm input includes two types; NO (normal open) and NC (normal close). • When your alarm input device is using external power, make sure the device and the NVR have the same GND.
		Alarm output port (NO1, C1)	• One group of alarm output ports (Group 1: NO1-C1). Output alarm signal to the external alarm device. Make sure power supply is available for the external alarm device. • NO: Normal open alarm output port. • C: Alarm output public end.
		⏚	GND. Alarm input ground port.
		CTRL	Controllable 12 V power output. It is to control the on-off alarm relay output. It can be used to control the device alarm output. At the same time, it can also be used as the power input source of some devices such as alarm detector.
		P	+12 V power output port. It can provide power to some peripheral devices such as camera and alarm device. Make sure the power supply of peripheral device shall be below 1 A.
5	HDMI port	High definition audio and video signal output port. It transmits uncompressed high definition video and multiple-channel audio data to displays with HDMI port.	

No.	Port Name	Function
6	USB port	USB 3.0 port. Connect to devices such as mouse, USB storage device and USB burner.
7	Network port	10/100/1000 Mbps self-adaptive Ethernet port. Connect to the network cable.
8	MIC IN	Bidirectional talk input port. It is to receive analog audio signal from devices such as microphone, sound pickup.
	MIC OUT	Audio output port. It is to output analog audio signal to devices such as sound box. ● Bidirectional talk output. ● Audio output on 1-window video monitor. ● Audio output on 1-window video playback.
9	VGA port	VGA video output port. Output analog video signal. It can connect to the monitor to view analog video.
10	RS-232 port	It is for general COM debugging to configure IP address and transfer transparent COM data.
11	⏚	GND.

2.2.26 Advanced 2U AI NVR Series

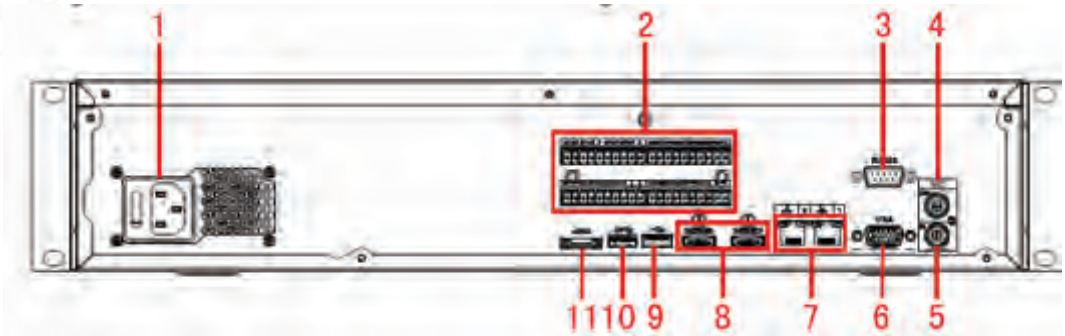
The Advanced 2U 32Channel AI NVR series rear panel is shown as below.

Figure 2-70 Rear panel



The Advanced 2U 64/128Channel AI NVR general series rear panel is shown as below.

Figure 2-71 Rear panel



The Advanced 2U 64/128Channel AI NVR redundant power series rear panel is shown as below.

Figure 2-72 Rear panel

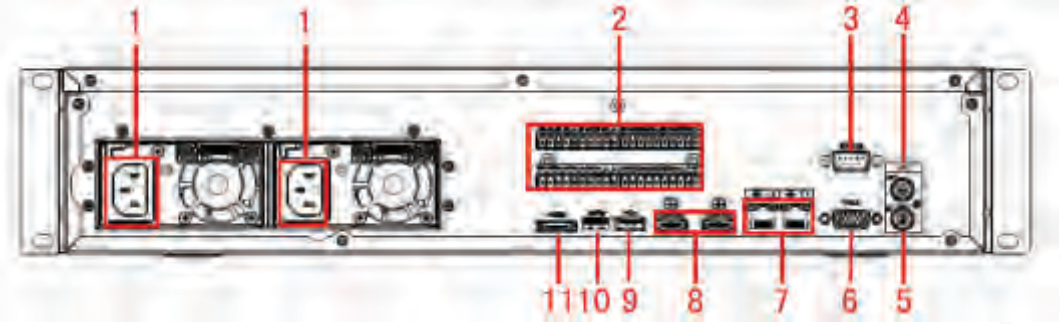


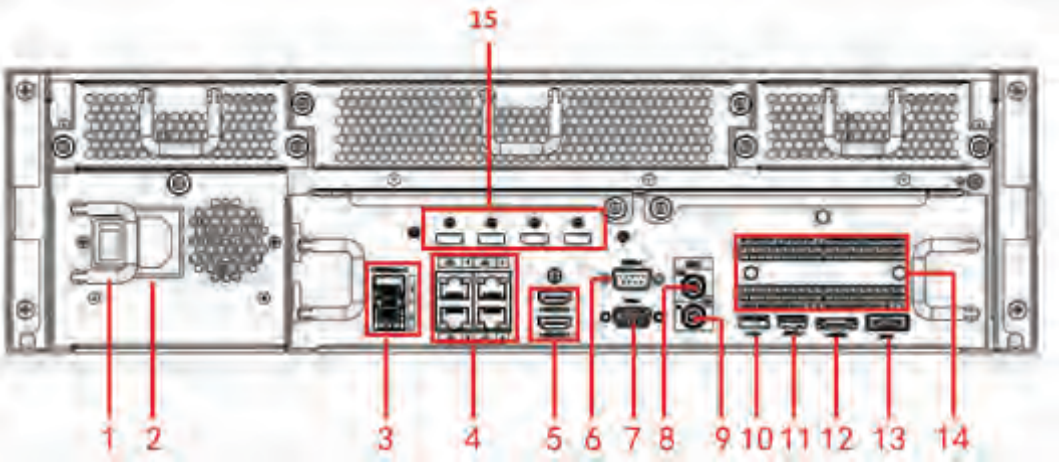
Table 2-39 Ports

No.	Function	No.	Function
1	Power socket.	2	Alarm input/alarm output/RS-485 port
3	RS-232 port	4	Audio output
5	Audio input	6	VGA port
7	Network port	8	HDMI port
9	• NVR608-4K: USB 2.0 port • NVR608-4KS2: USB 3.0 port	10	USB 3.0 port
11	eSATA port	—	—

2.2.27 Advanced 3U AI NVR Series

The general series rear panel of Advanced 3U AI NVR is shown as below.

Figure 2-73 Rear panel



The redundant power series rear panel of Advanced 3U AI NVR is shown as below.

Figure 2-74 Rear panel

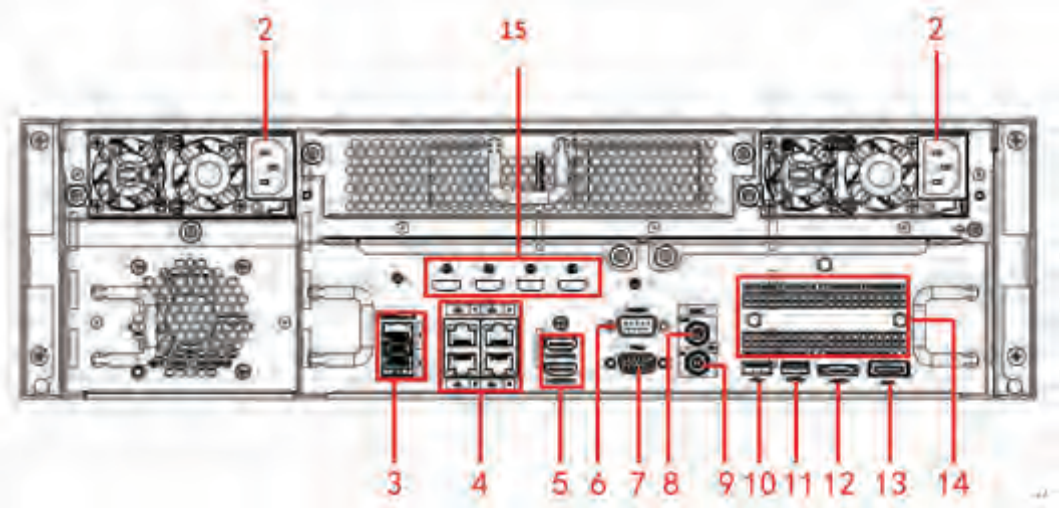


Table 2-40 Ports

No.	Name	No.	Name
1	Power on-off button	2	Power socket.
3	1000M fiber port	4	Network port
5	HDMI port	6	RS-232 port
7	Video VGA output	8	Audio output
9	Audio input	10	USB 3.0 port
11	USB 3.0 port	12	eSATA port
13	SAS extension port	14	Alarm input/output/RS-485 port
15	HDMI port High-definition decoding card is not installed in standard hardware configuration, you can purchase as needed.		

2.3 Alarm Connection

2.3.1 Alarm Port

The alarm port is shown as below. The following figure is for reference only.

Figure 2-75 Alarm port

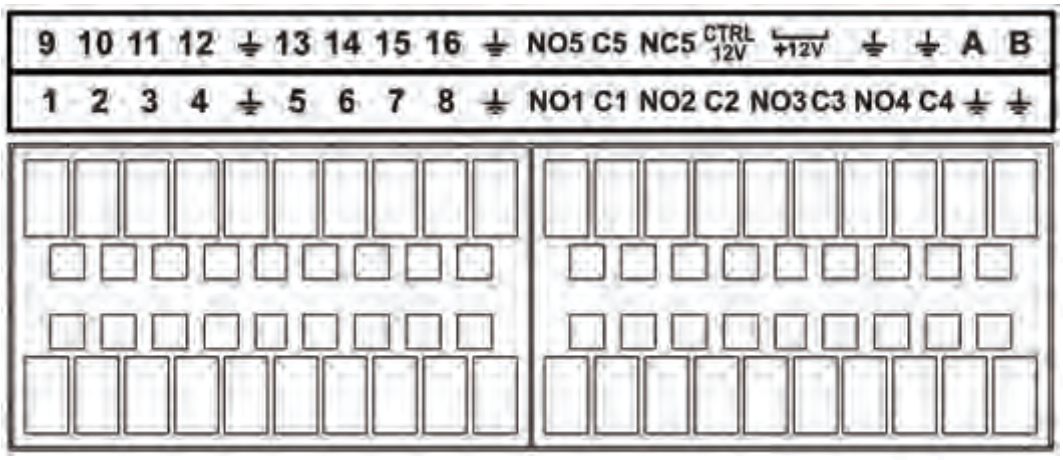


Table 2-41 Alarm port description

Icon	Function
1–16	ALARM1–ALARM16. The alarm becomes activated in the low level.
NO1 C1, NO2 C2, NO3 C3, NO4 C4	Four NO activation output groups. (On-off button).
NO5 C5 NC5	One NO/NC activation output group. (On-off button).
CTRL (CTRL 12 V)	Control power output. Disable power output when alarm is canceled. Current is 500 mA.
P (+12 V)	Rated current output. Current is 500 mA.
⏚	GND.
A/B	485 communication port. They are used to control devices such as PTZ. Please parallel connect 120 TΩ between A/B cables if there are too many PTZ decoders.

- Different models support different alarm input ports. Please see the specifications sheet for detailed information.
- Slight difference might be found on the alarm port layout.

2.3.2 Alarm Input Port

Connect the positive end (+) of the alarm input device to the alarm input port (ALARM IN 1–16) of the NVR. Connect the negative end (-) of the alarm input device to the ground end (⏚) of the NVR.

Figure 2-76 Alarm input port

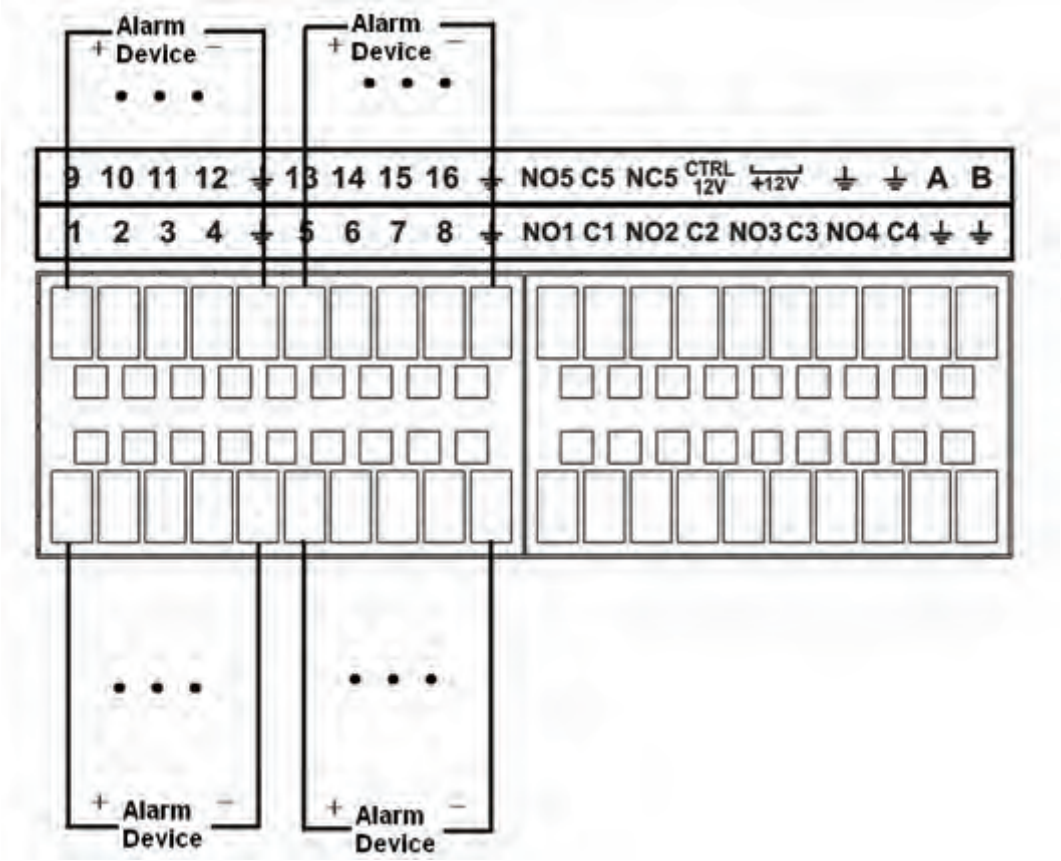
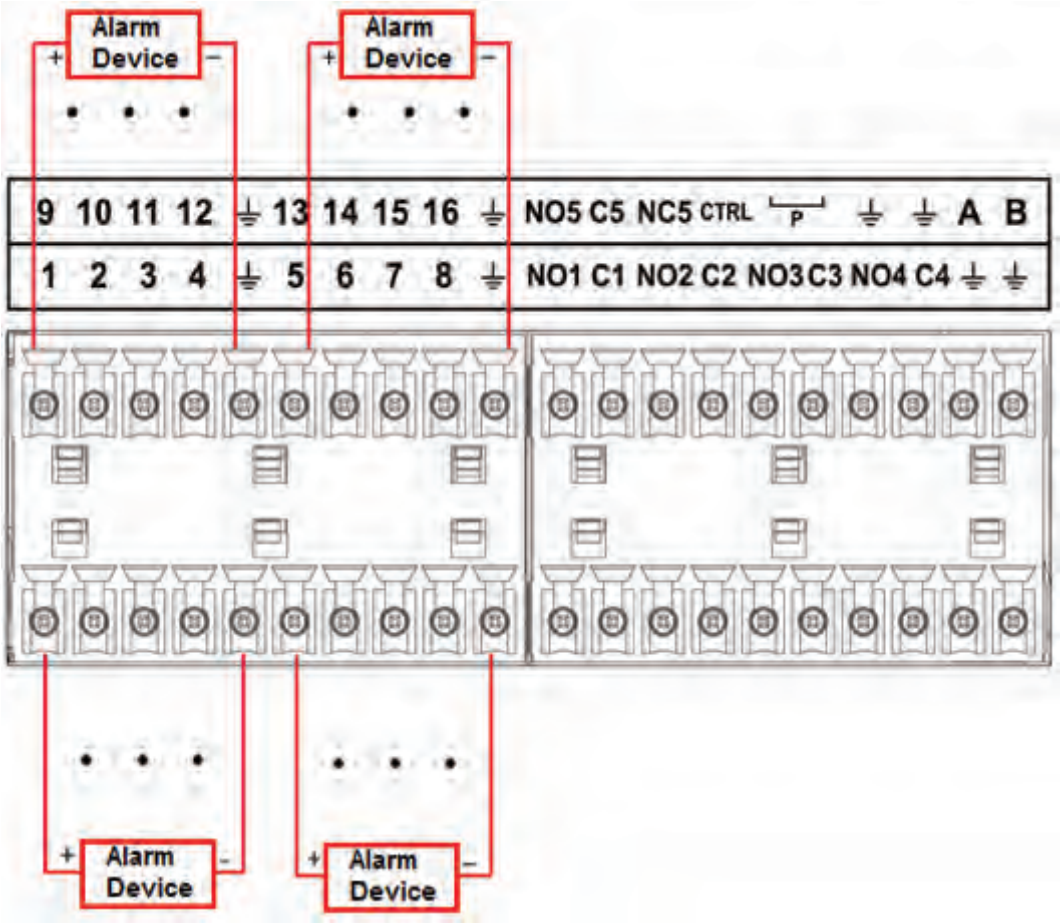


Figure 2-77 Alarm input port



- There are two alarm input types: NO/NC.
- When connect the ground port of the alarm device to the NVR, you can use any of the GND ports (⏚).
- Connect the NC port of the alarm device to the alarm input port (ALARM) of the NVR.
- When there is peripheral power supplying for the alarm device, please make sure it is earthed with the NVR.

2.3.3 Alarm Output Port

- There is peripheral power supplying for the external alarm device.
- In case overload might result in NVR damage, please see the following relay specifications for detailed information.
- A/B cable of the RS-485 is for the A/B cable connection of the speed PTZ.

2.3.4 Alarm Relay Specifications

Table 2-42 Alarm relay specifications

Model: JRC-27F		
Material of the touch	Silver	
Rating (Resistance Load)	Rated switch capacity	30 VDC 2 A, 125 VAC 1 A
	Maximum switch power	125 VAC, 160 W
	Maximum switch voltage	250 VAC, 220 VDC
	Maximum switch currency	1 A
Insulation	Between touches with same polarity	1000 VAC 1 minute
	Between touches with different polarity	1000 VAC 1 minute
	Between touch and winding	1000 VAC 1 minute
Surge voltage	Between touches with same polarity	1500 V (10×160 μs)
Length of open time	3 ms max	
Length of close time	3 ms max	
Longevity	Mechanical	50 × 106 MIN (3 Hz)
	Electrical	200 × 103 MIN (0.5 Hz)
Temperature	-40 °C to +70 °C	

2.4 Two-way Talk

2.4.1 Device-end to PC-end

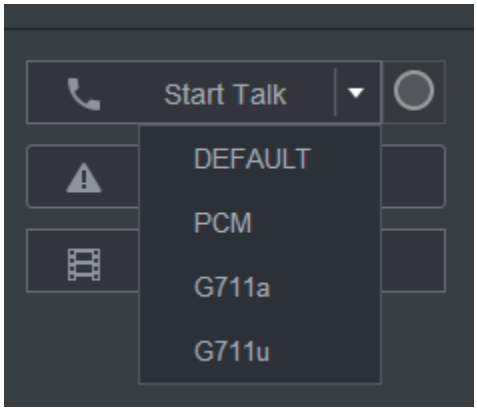
Step 1 Connect the speaker or the pickup to the first audio input port on the device rear panel.

Step 2 Connect the earphone or the sound box to the audio output port in the PC.

Step 3 Log in to the web and then enable the corresponding channel real-time monitor.

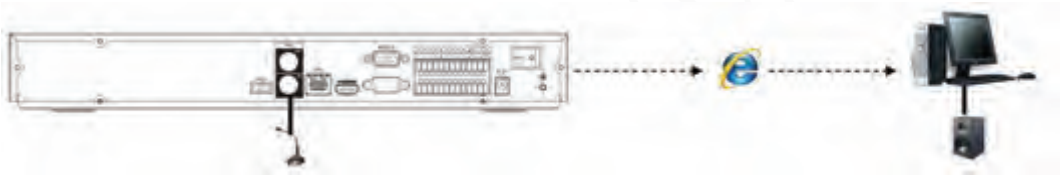
Step 4 Enable two-way talk.

Figure 2-78 Enable two-way talk



Step 5 At the device end, speak by the speaker or the pickup, and then you can get the audio from the earphone or sound box at the PC end.

Figure 2-79 Device to PC



2.4.2 PC-end to the Device-end

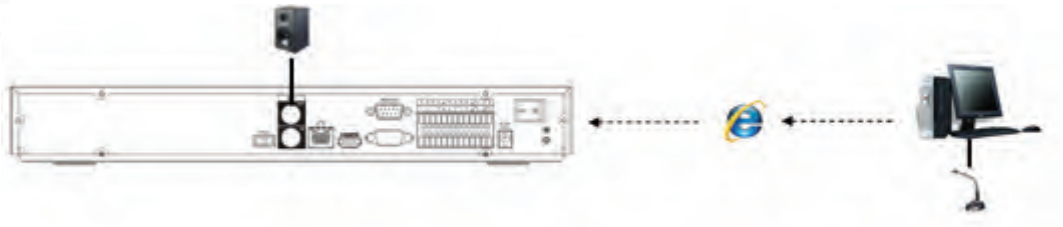
Device Connection

1. Connect the speaker or the pickup to the audio output port in the PC.
2. Connect the earphone or the sound box to the first audio input port in the device rear panel.
3. Log in to the web and then enable the corresponding channel real-time monitor.
4. Enable bidirectional talk. See Figure 2-78.

Listening Operation

At the PC-end, speak by the speaker or the pickup, and then you can get the audio from the earphone or sound box at the device-end.

Figure 2-80 PC to device



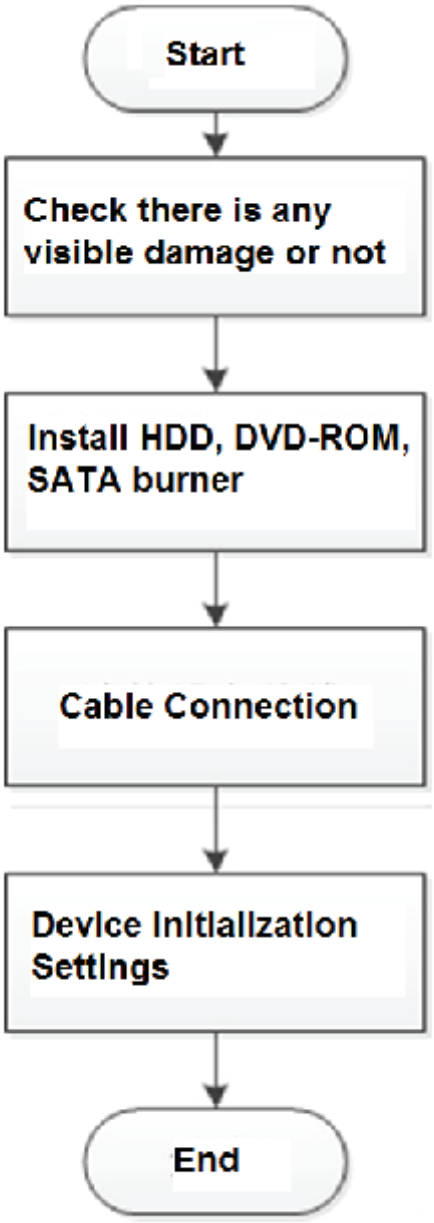
3 Device Installation

All the installation and operations here should conform to your local electric safety rules.

3.1 Device Installation Diagram

Please see the following diagram to install the NVR.

Figure 3-1 Installation flowchart



3.2 Checking Unpacked NVR

When you receive the NVR, check against the following checklist. If any of the items are missing or damaged, contact the local retailer or after-sales service immediately.

Table 3-1 Checklist

Sequence	Item		Description
1	Overall packaging	Appearance	No obvious damage.
		Package	Not distorted or broken.
		Accessories	Nothing missing.
2	The Device	Appearance	No obvious damage.

Sequence	Item		Description
		Model	The model description is consistent with the contract.
		Label	Not torn up. Keep the label well. You need to provide the serial number on the label when calling the after-sales service.

3.3 HDD Installation

For the first time installation, make sure whether the HDD has been installed or not. We recommend to use HDD of enterprise level or surveillance level. It is not recommended to use PC HDD.

- Shut off the power before you replace the HDD.
- Use the dedicated SATA HDD for monitoring recommended by the HDD manufacturer.
- You can see the Appendix for HDD space information and recommended HDD brand.

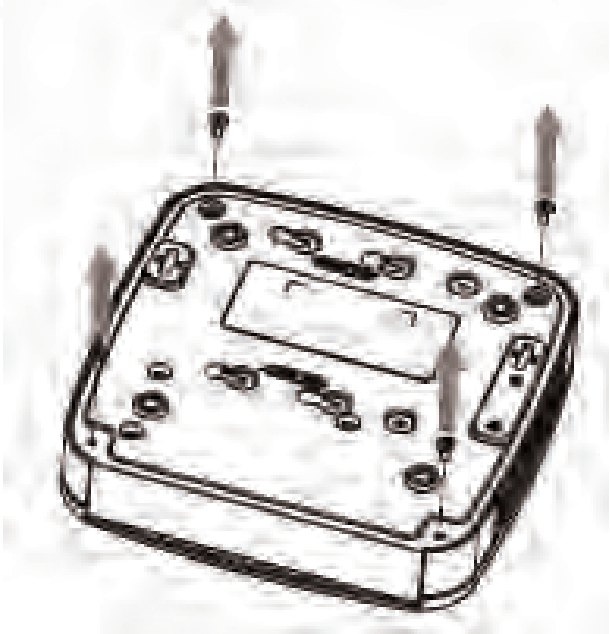
3.3.1 Smart 1U Series

Connect cable and then secure the HDD on the NVR if it is not convenient to connect the HDD data cable and power cable at first.

Procedure

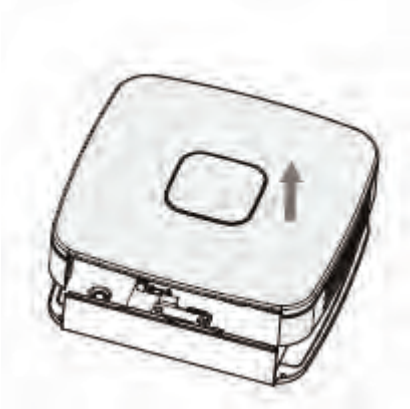
Step 1 Loosen the screws of the bottom of the chassis.

Figure 3-2 Lossen screws



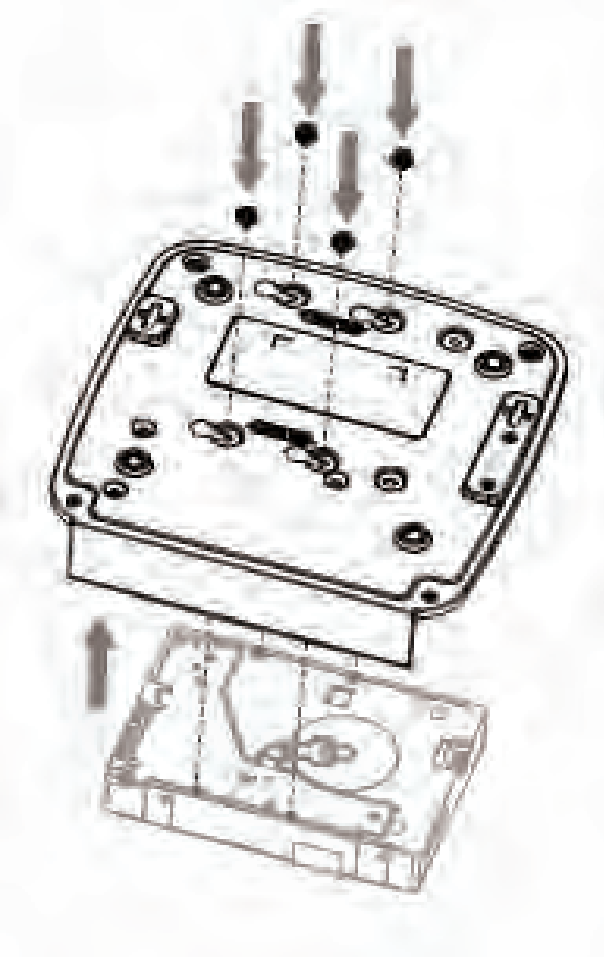
Step 2 Place the HDD in accordance with the four holes in the bottom.

Figure 3-3 Aligh HDD



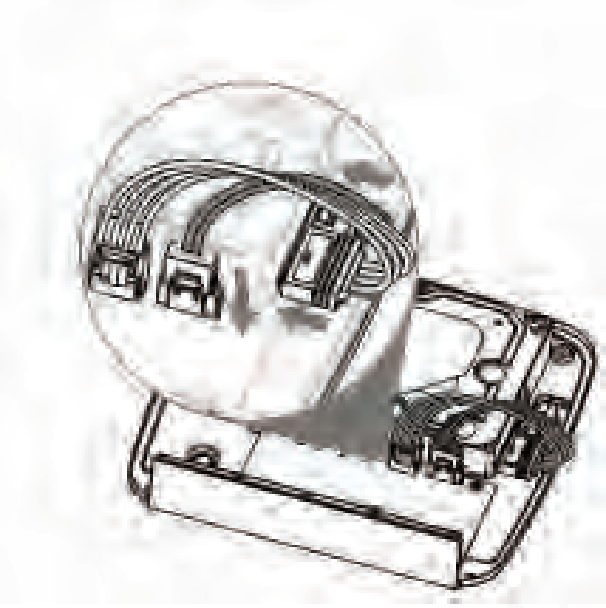
Step 3 Turn the device upside down and then secure the screws firmly.

Figure 3-4 Secure screws



Step 4 Connect the HDD cable and power cable to the HDD and the mainboard respectively.

Figure 3-5 Connect cables



Step 5 Put the cover back and then fix the screws of the rear panel. The installation is complete.

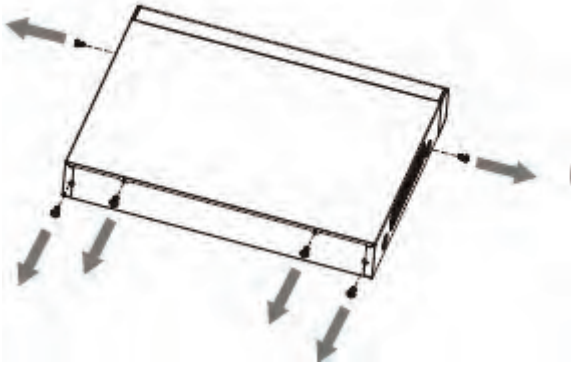
Figure 3-6 Put back the cover

3.3.2 Mini 1U/Compact 1U Series

Procedure

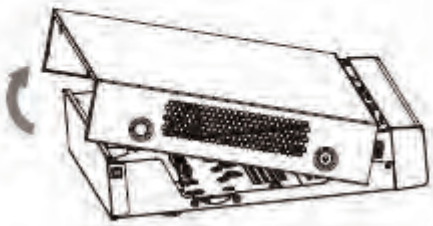
Step 1 Loosen the screws of the upper cover and side panel.

Figure 3-7 Loosen screws



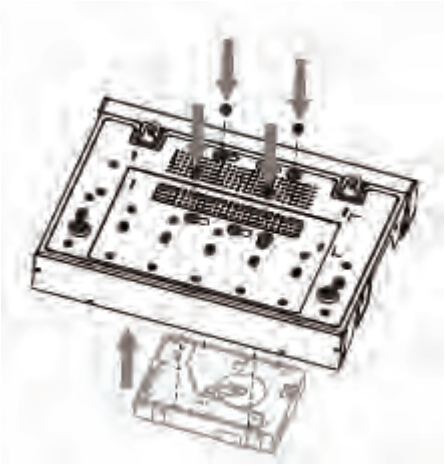
Step 2 Remove the cover in the direction of the arrow as shown in the figure below.

Figure 3-8 Remove cover



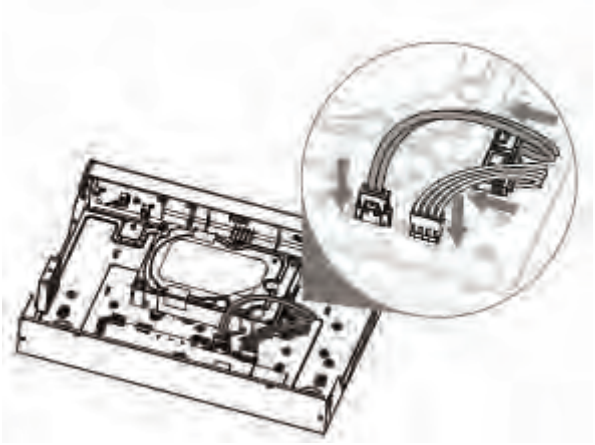
Step 3 Turn over the device, and align the HDD to the four holes of bottom panel, and then fix the HDD with screws.

Figure 3-9 Align HDD



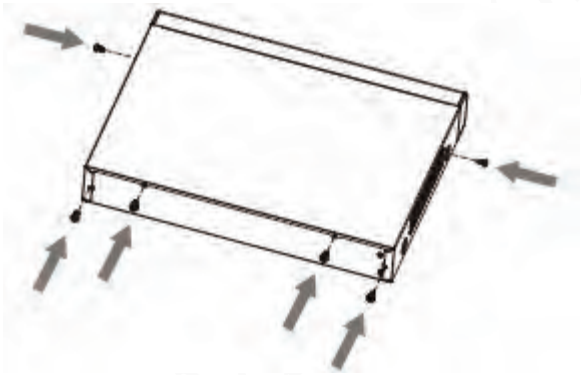
Step 4 Connect HDD to the device using data cable and power cable.

Figure 3-10 Connect cables



Step 5 Put the cover in accordance with the clip and then fix the screws on the rear panel and side panel.

Figure 3-11 Put cover back



3.3.3 1U Series

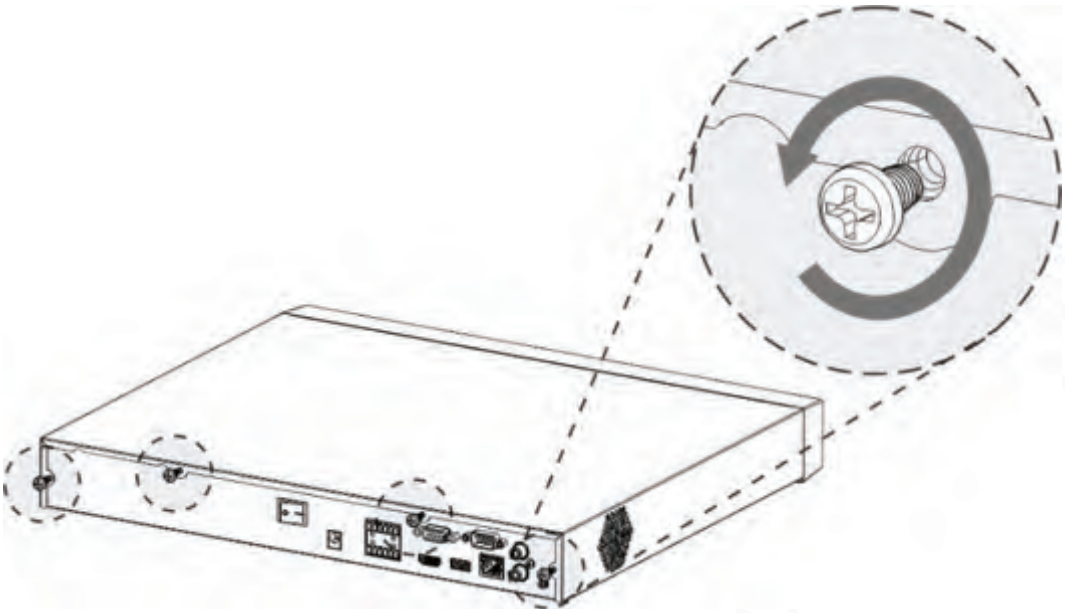
Background Information

Different models have different numbers of HDDs.

Procedure

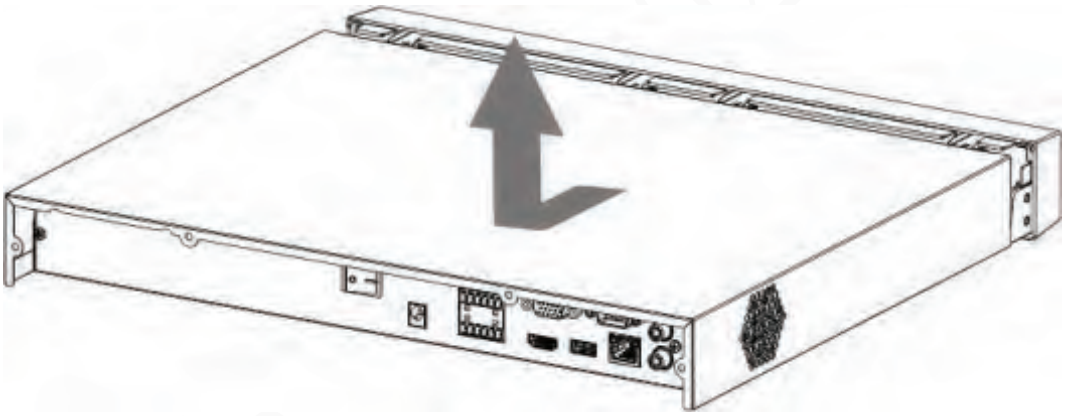
Step 1 Remove the four fixing screws on the rear panel.

Figure 3-12 Remove screws



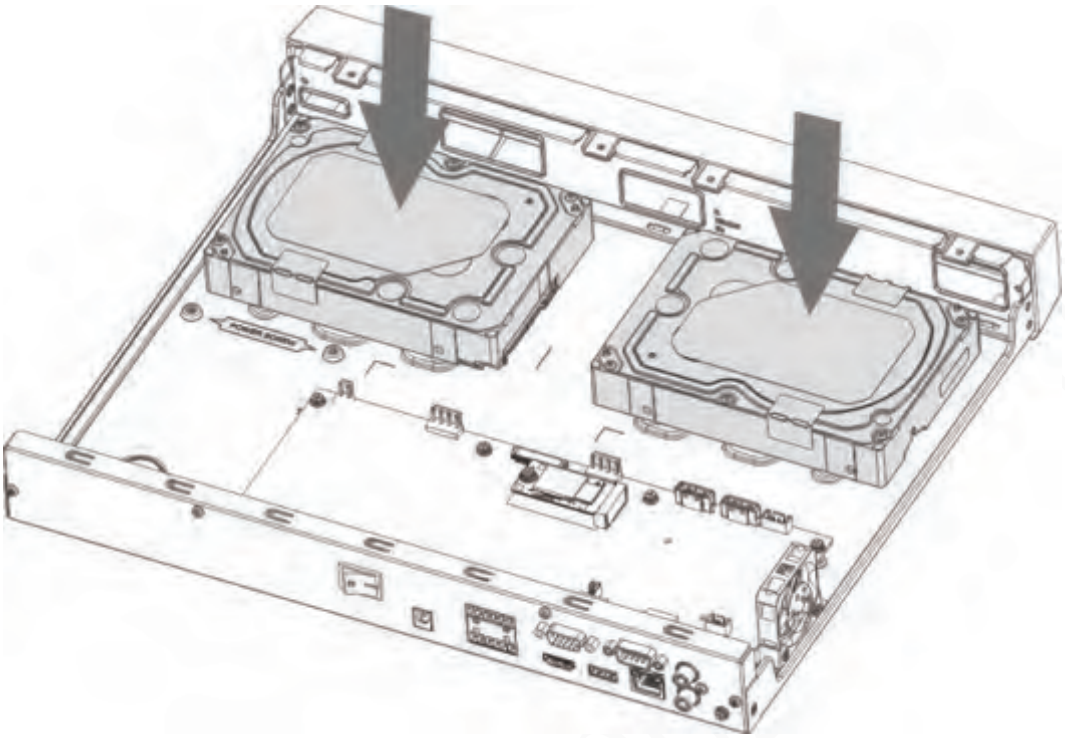
Step 2 Remove the case cover along the direction shown in the following arrow.

Figure 3-13 Remove cover



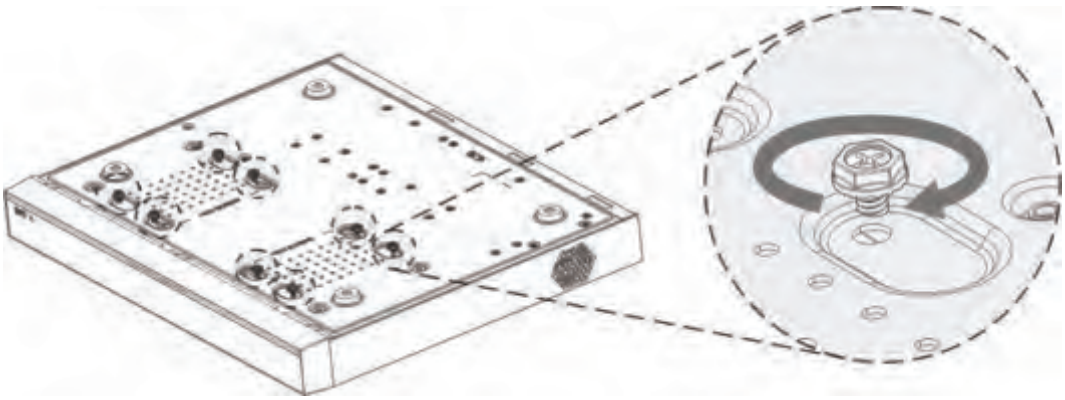
Step 3 Match the four holes on the baseboard to place the HDD.

Figure 3-14 Align HDD



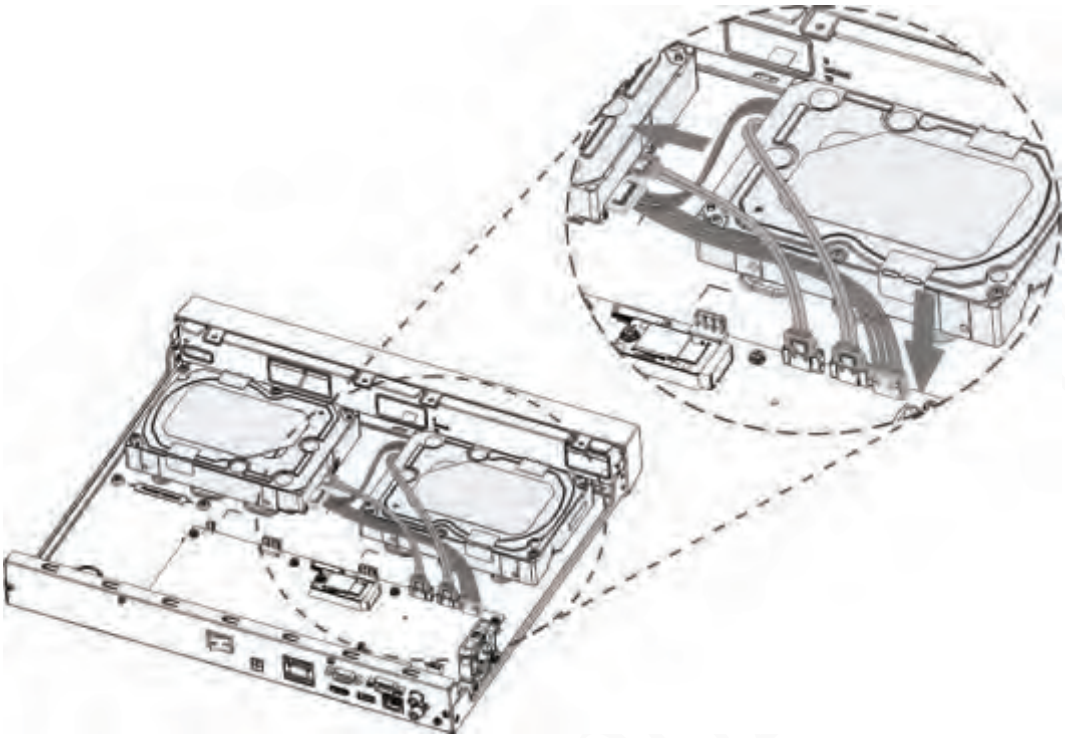
Step 4 Turn the device upside down, match the screws with the holes on the HDD and then fasten them. The HDD is fixed to the baseboard.

Figure 3-15 Fasten screws



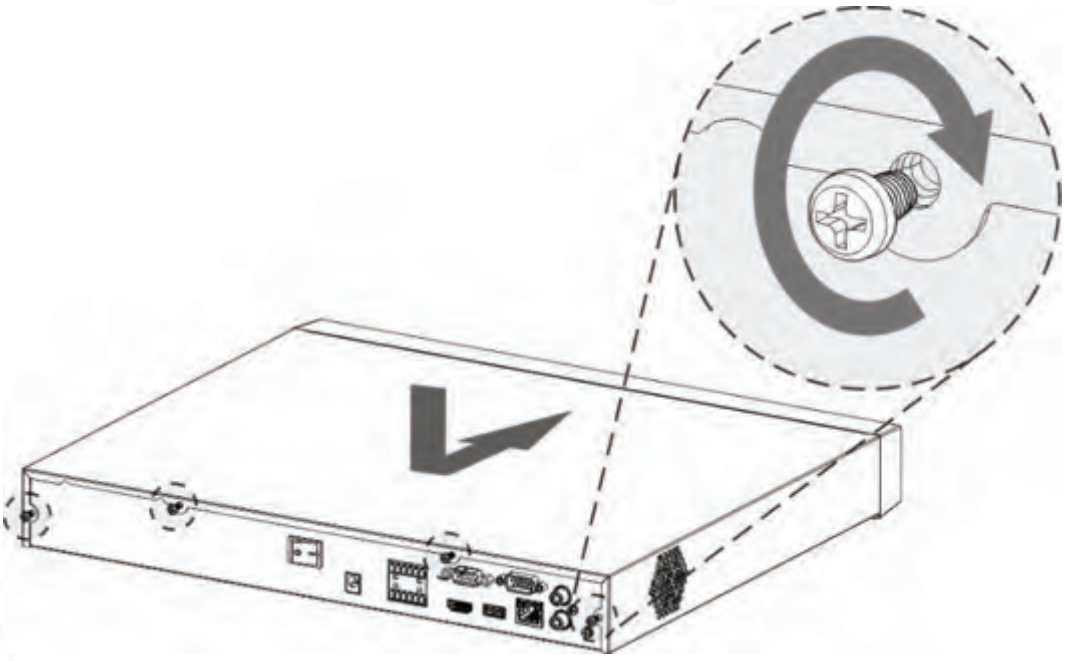
Step 5 Connect the HDD data cable and power cable to the device.

Figure 3-16 Connect cables



Step 6 Put back the cover and fasten the four screws on the rear panel to complete the installation.

Figure 3-17 Put back cover



3.3.4 1.5U/2U Series

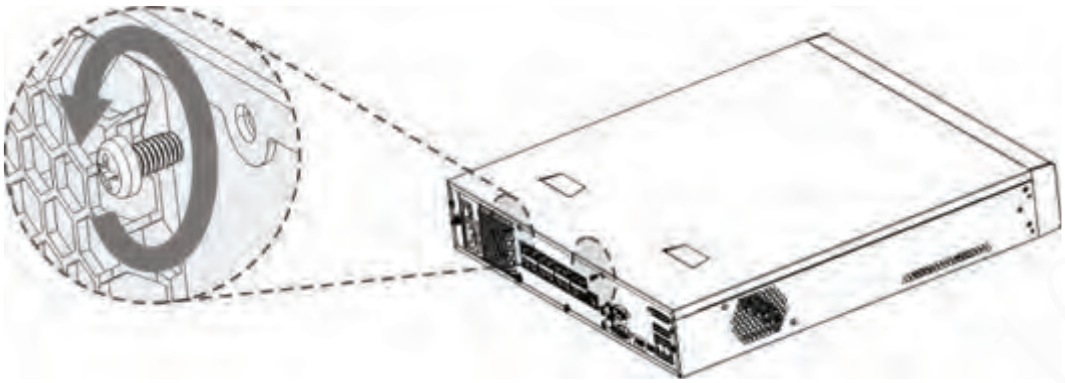
Background Information

Different models have different number of HDDs.

Procedure

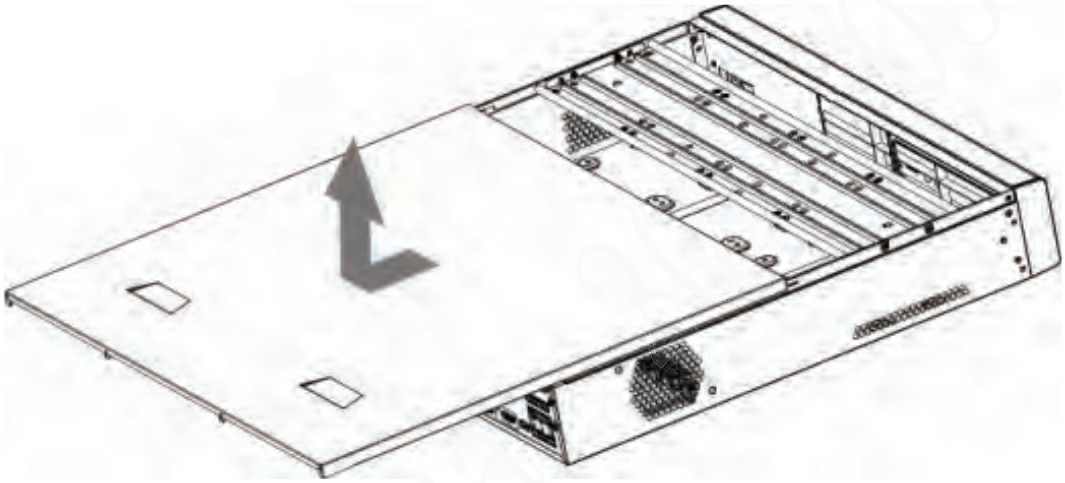
Step 1 Remove the fixing screws on the rear panel of the device.

Figure 3-18 Remove screws



Step 2 Remove the case cover along the direction shown in the following arrow.

Figure 3-19 Remove cover



Step 3 Remove the screws on the sides of HDD bracket to take out the bracket.

- 1.5U device has one HDD bracket. For the way to remove the bracket, see Figure 3-20
- 2U device has two HDD brackets. For the way to remove the brackets, see Figure 3-21.

Figure 3-20 Remove screws (1.5U)

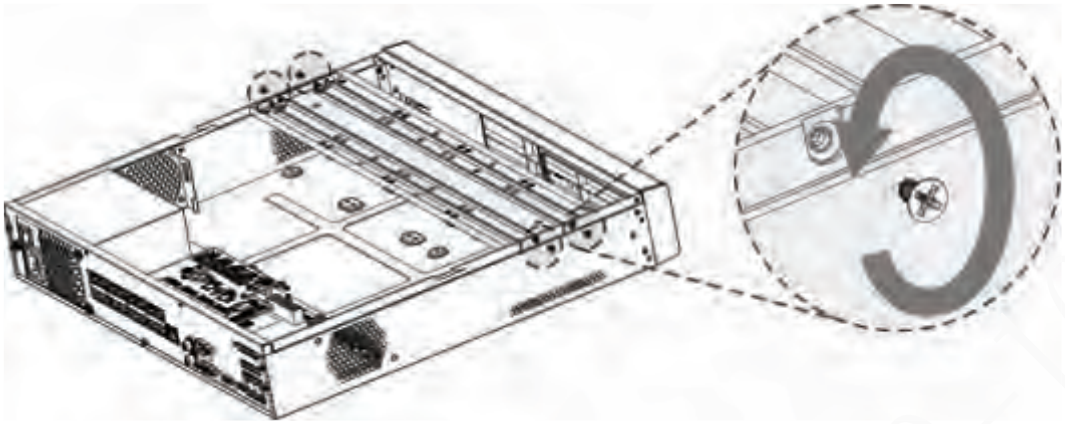
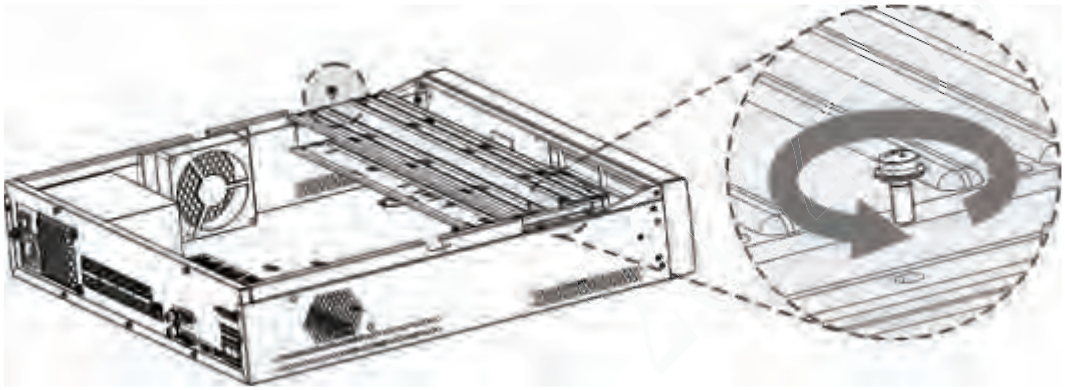


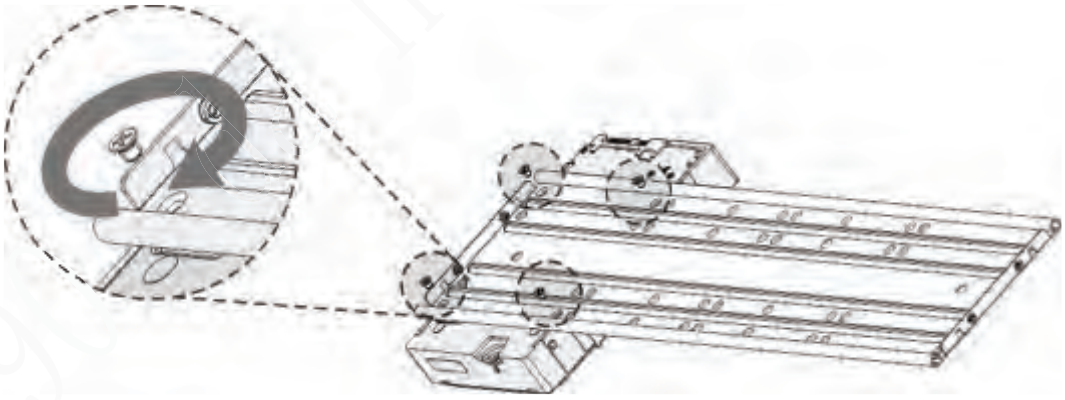
Figure 3-21 Remove screws (2U)



Step 4 Match the four screw holes on the HDD with the four holes on the bracket and then fasten the screws.

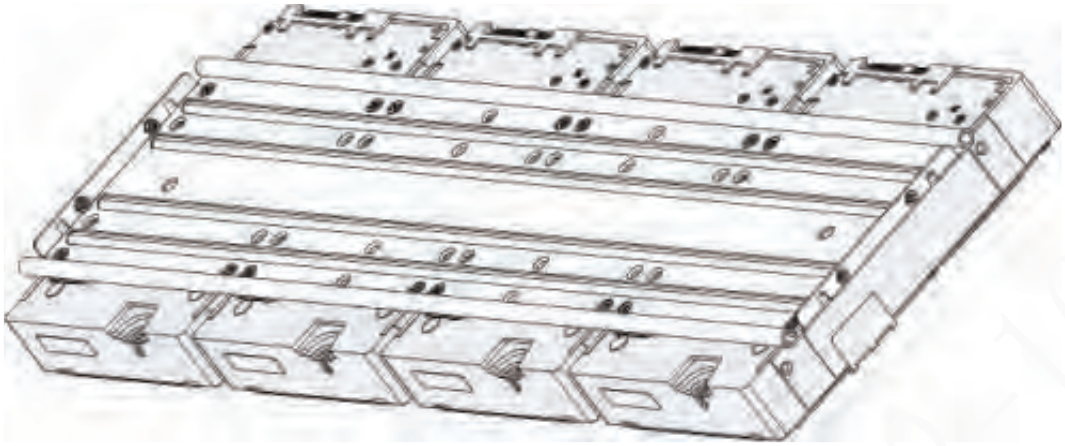
The HDD is fixed to the bracket.

Figure 3-22 Fasten screws



Step 5 see Step 4 to install other HDDs.

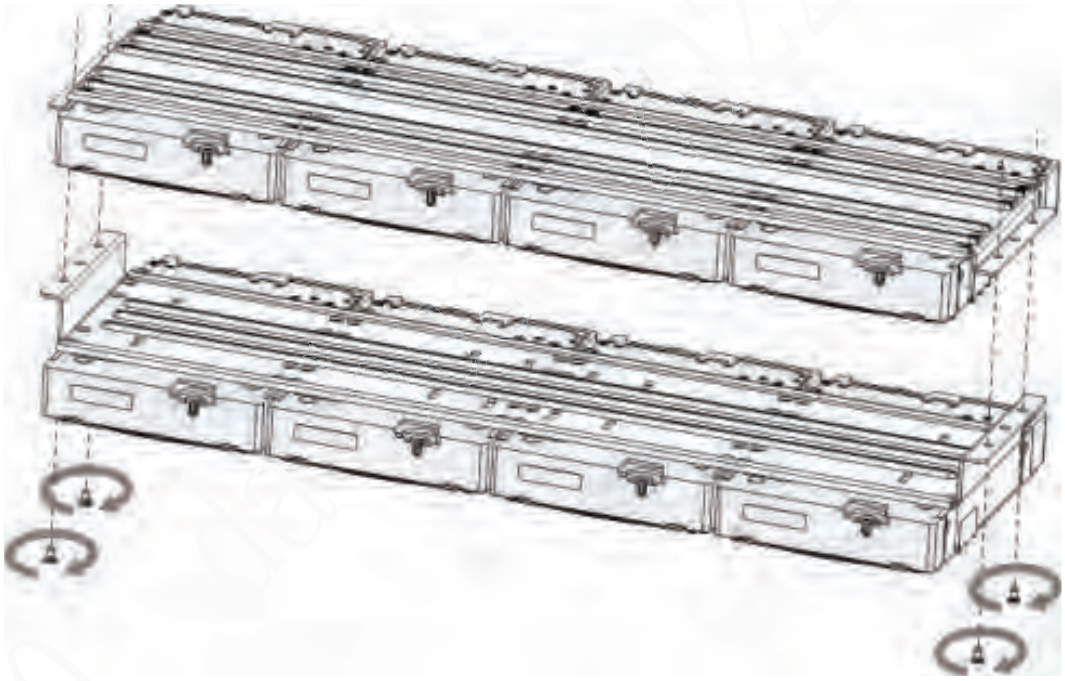
Figure 3-23 Install more HDDs



Step 6 Lock the two HDD brackets.

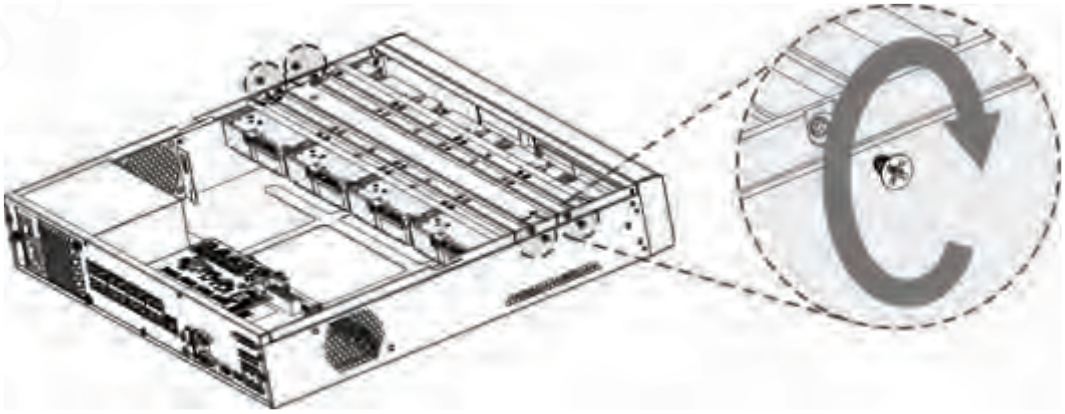
This step is required for 2U devices only.

Figure 3-24 Lock brackets



Step 7 Place the bracket to the device and then fasten the screws on the sides of the bracket.

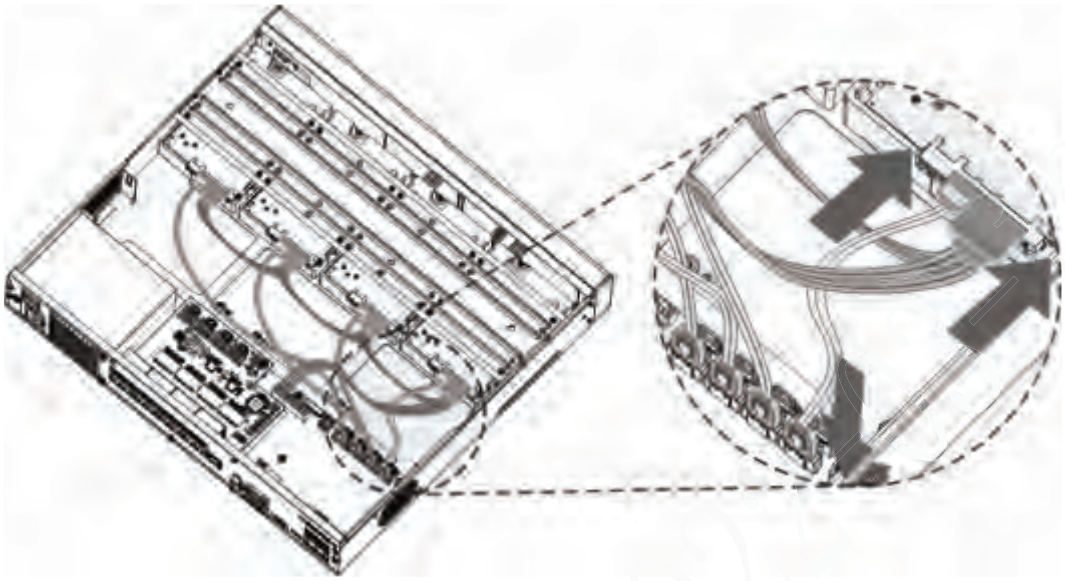
Figure 3-25 Fasten screws



Step 8 Connect the HDD data cable and power cable to the device.

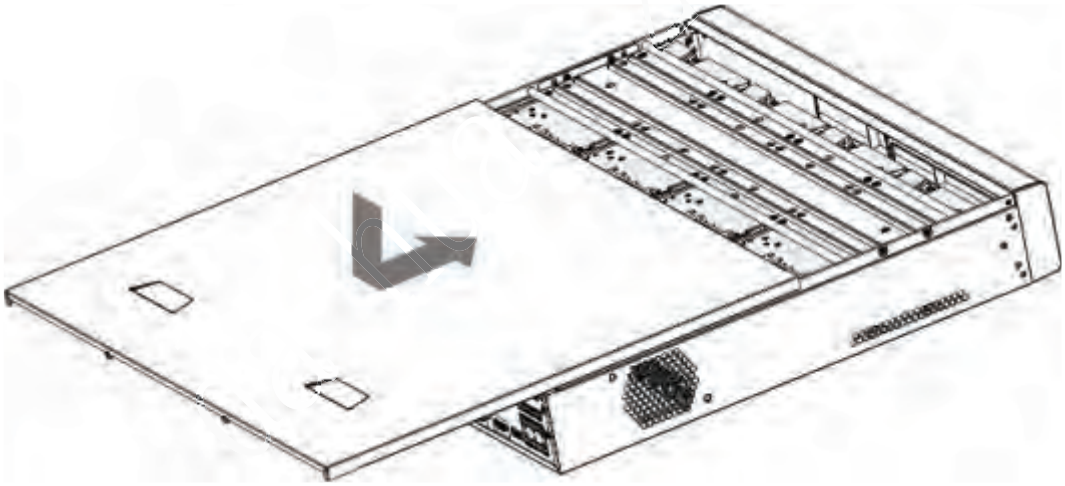
The following figure is for reference only.

Figure 3-26 Connect cables



Step 9 Put back the cover and fasten the screws on the rear panel to complete the installation.

Figure 3-27 Fasten screws



3.3.5 3U Series

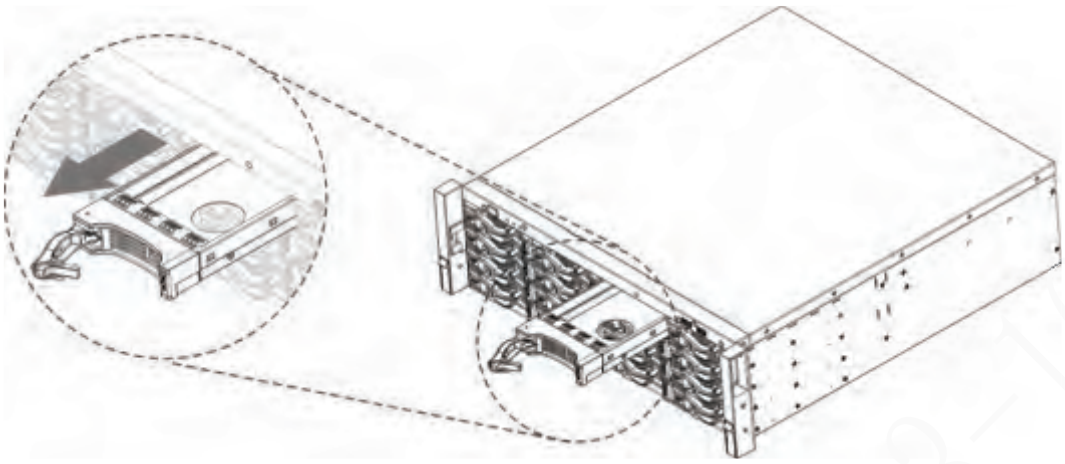
Background Information

The following figures are for reference only.

Procedure

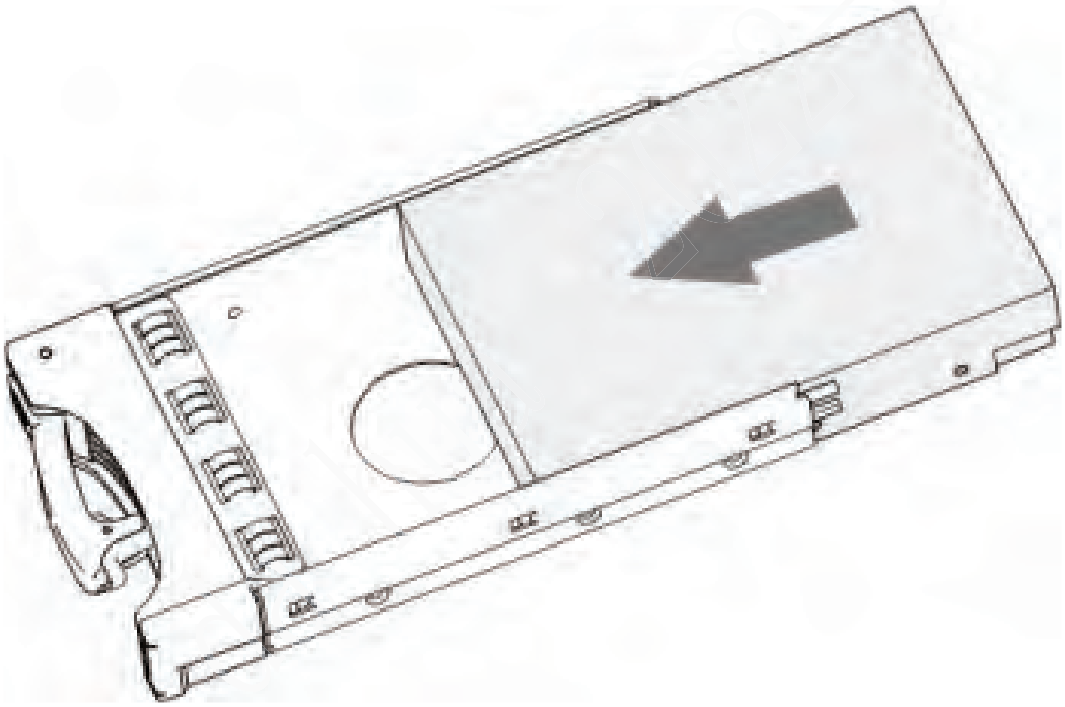
Step 1 Press the red button on the HDD box, open the handle and then pull out the HDD box.

Figure 3-28 Take out HDD box



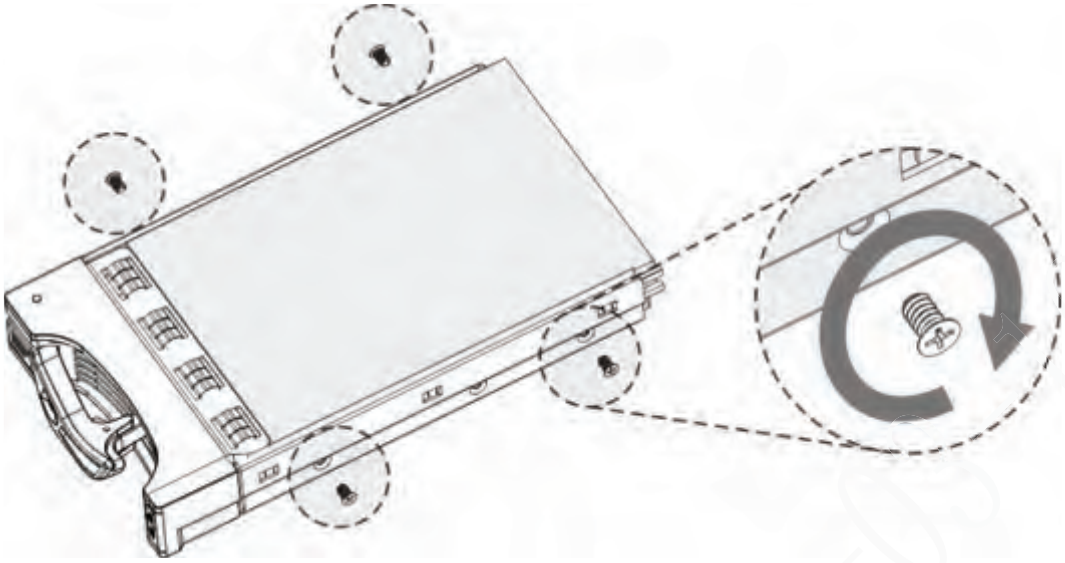
Step 2 Put the HDD into the HDD box along the direction shown in the following arrow.

Figure 3-29 Put HDD into box



Step 3 Fasten the screws on the sides of the HDD box.

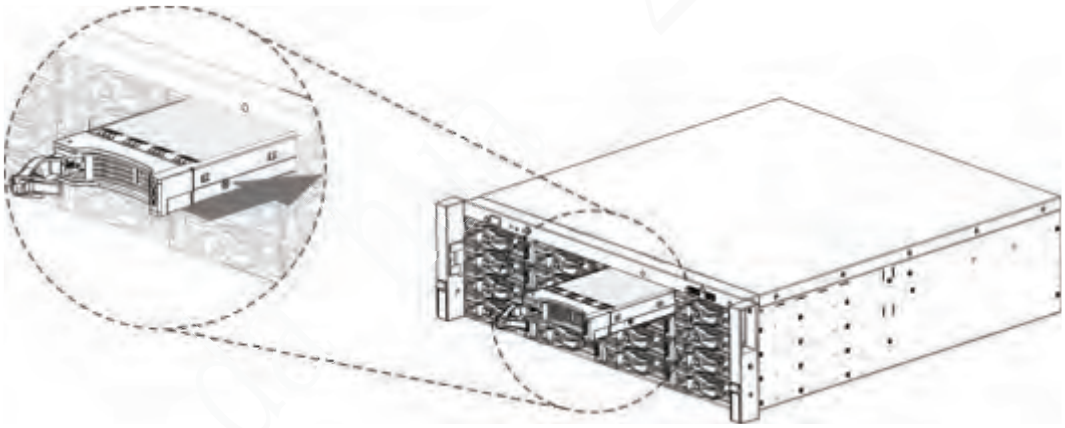
Figure 3-30 Fasten screws



Step 4 Insert the HDD box into the HDD slot, press it to the bottom, and then close the box handle.

If you have not pushed the HDD box to the bottom, do not close the handle to avoid any damage to the HDD slot

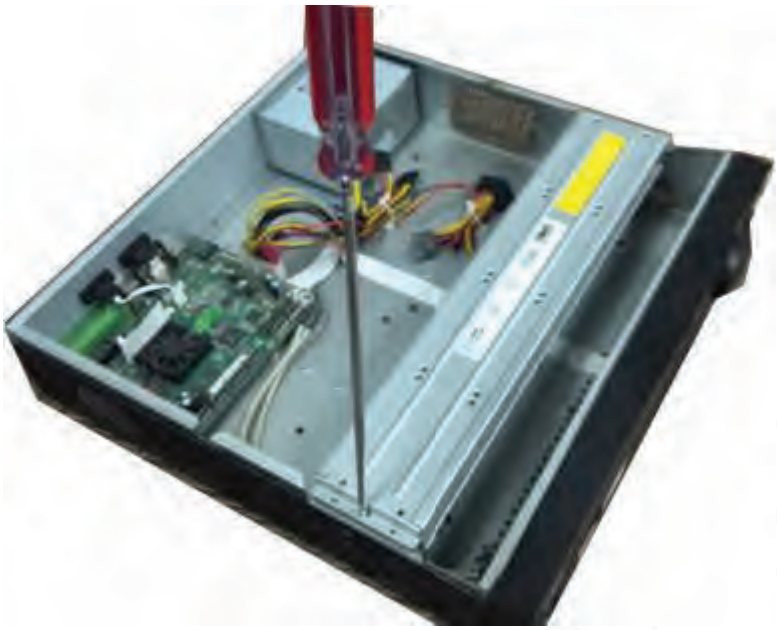
Figure 3-31 Close the handle



3.4 CD-ROM Installation

Step 1 Open the top cover and then remove the HDD bracket.

Figure 3-32 Open the top cover



Step 2 Take off the bottom of the HDD bracket and CD-ROM bracket.

Figure 3-33 Take out HDD bracket

Figure 3-34 Take out CD-ROM bracket

Step 3 Fix the CD-ROM bracket at the HDD bracket.

Figure 3-35 Fix bracket

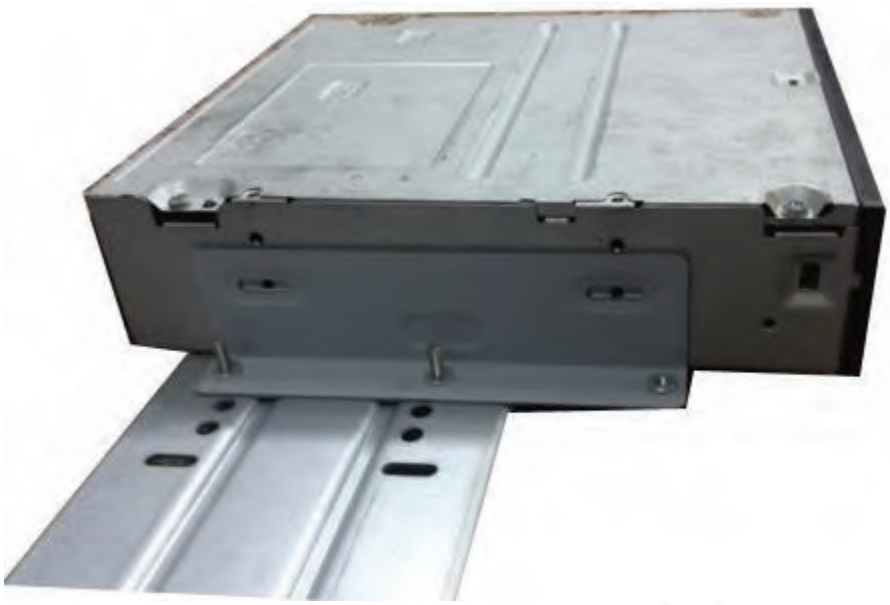
Step 4 Install a pair of the CD-ROM bracket. Please make sure that the reverse side is secure too.

Figure 3-36 Install bracket

Figure 3-37 Install bracket (reverse side)

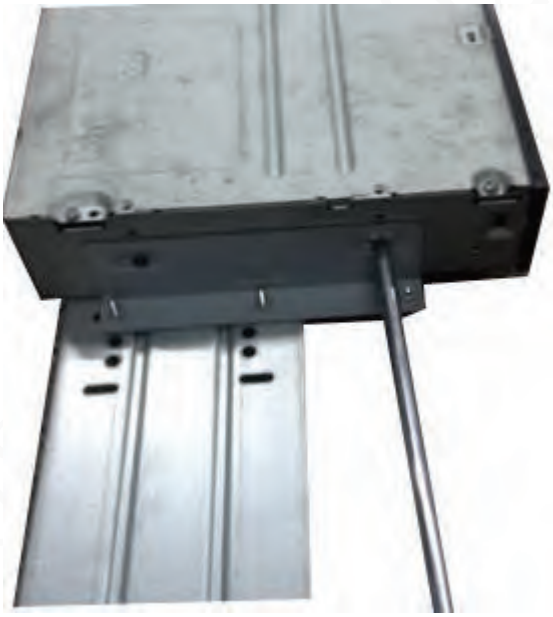
Step 5 Install SATA burner. Line up the SATA burner to the hole positions.

Figure 3-38 Install SATA burner



Step 6 Use screw driver to fix the screws.

Figure 3-39 Fasten screws

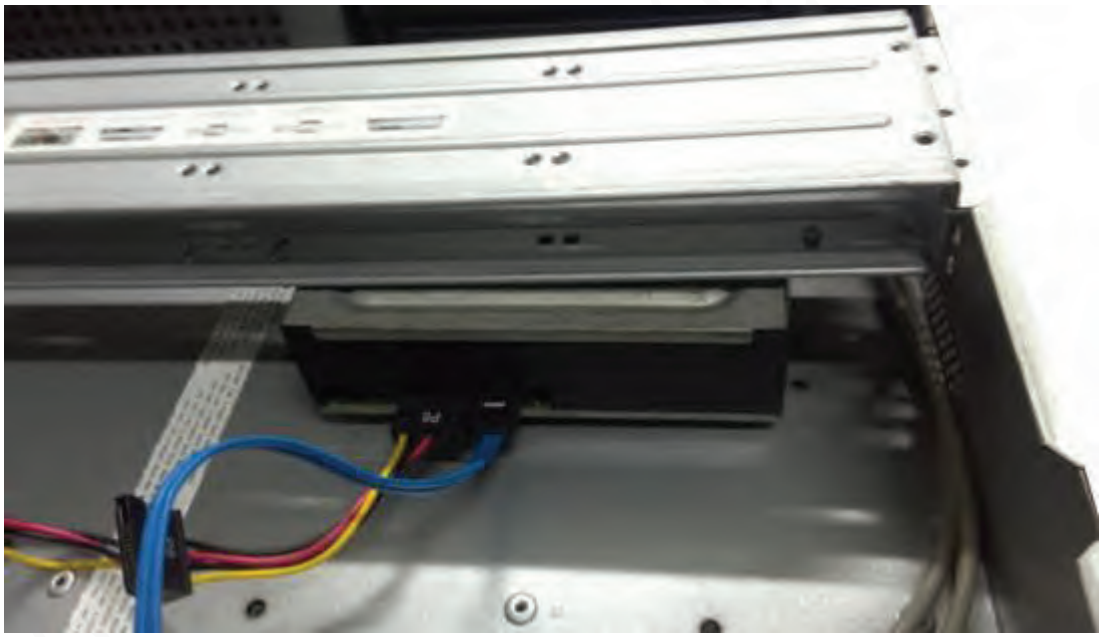


Step 7 Put the bracket back. Please adjust the CD-ROM to the proper position so that the button of the front panel is directly facing the pop-up button of the CD-ROM.

Figure 3-40 Put bracket back

Step 8 Connect the SATA cable and power wire.

Figure 3-41 Connect cables



Step 9 Secure the HDD bracket and put the top cover back.

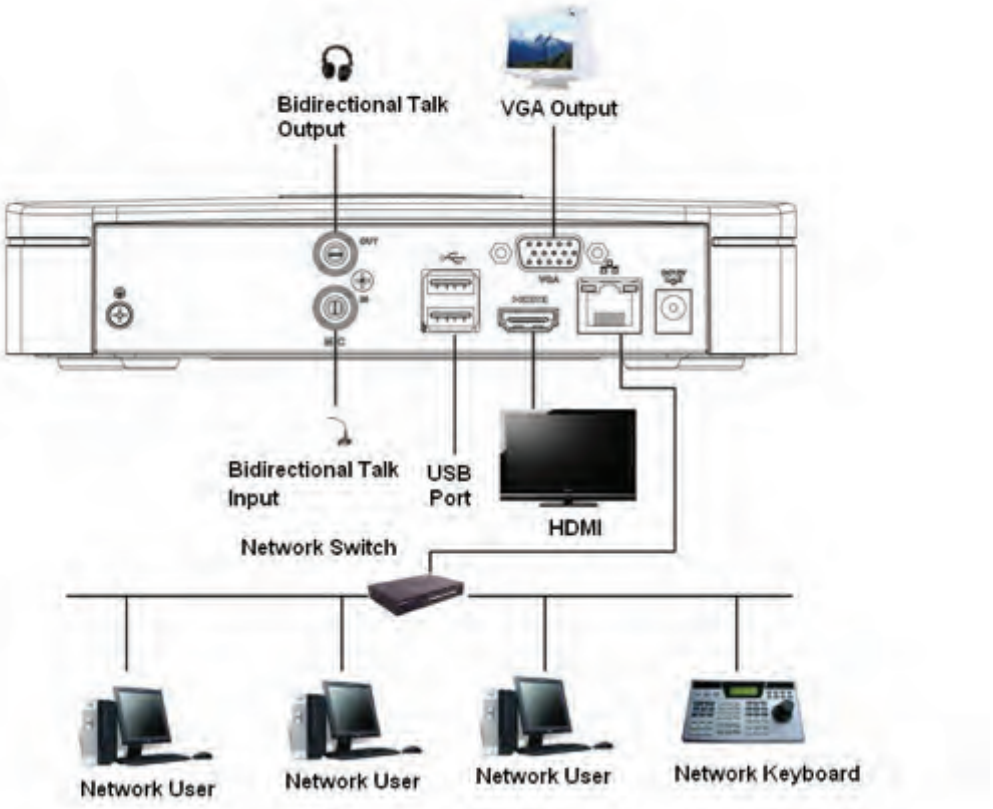
Figure 3-42 Put cover back

3.5 Connection Sample

The following figures are for reference only and might differ from the actual product.

3.5.1 Beneficio 4K Smart 1U (S2)/4K Smart 1U (S2)/Smart 1U AI NVR Series

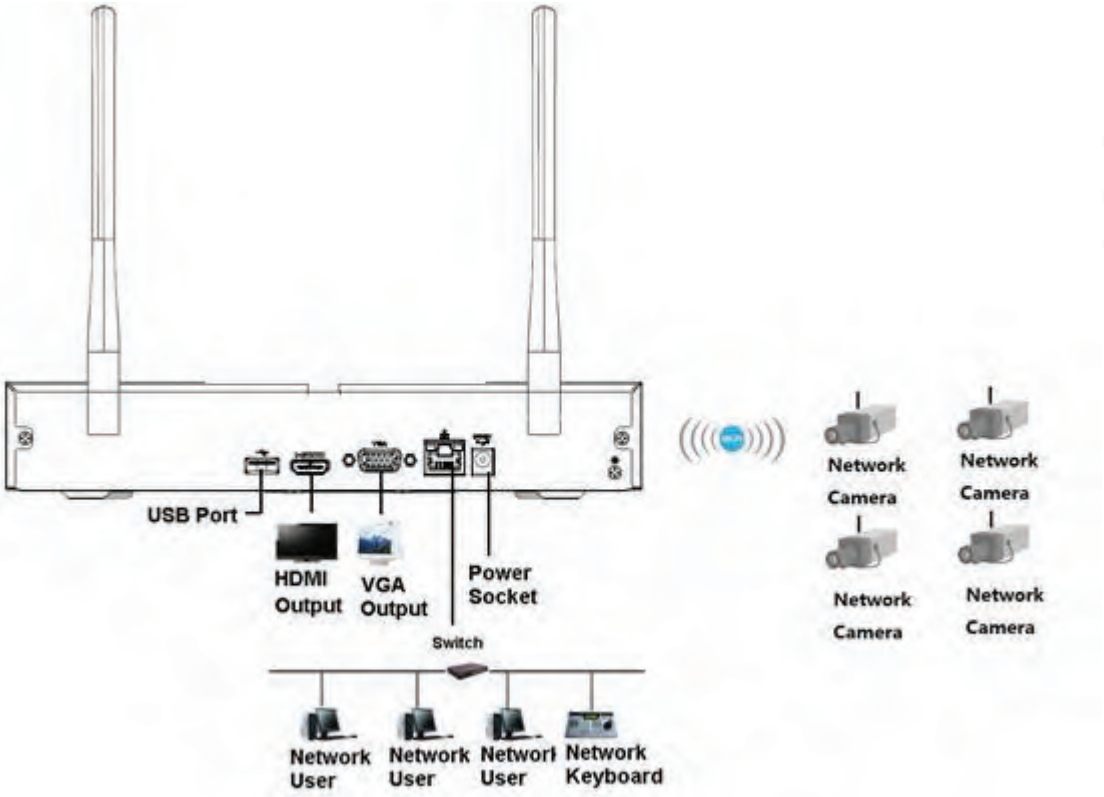
Figure 3-43 Typical connection



3.5.2

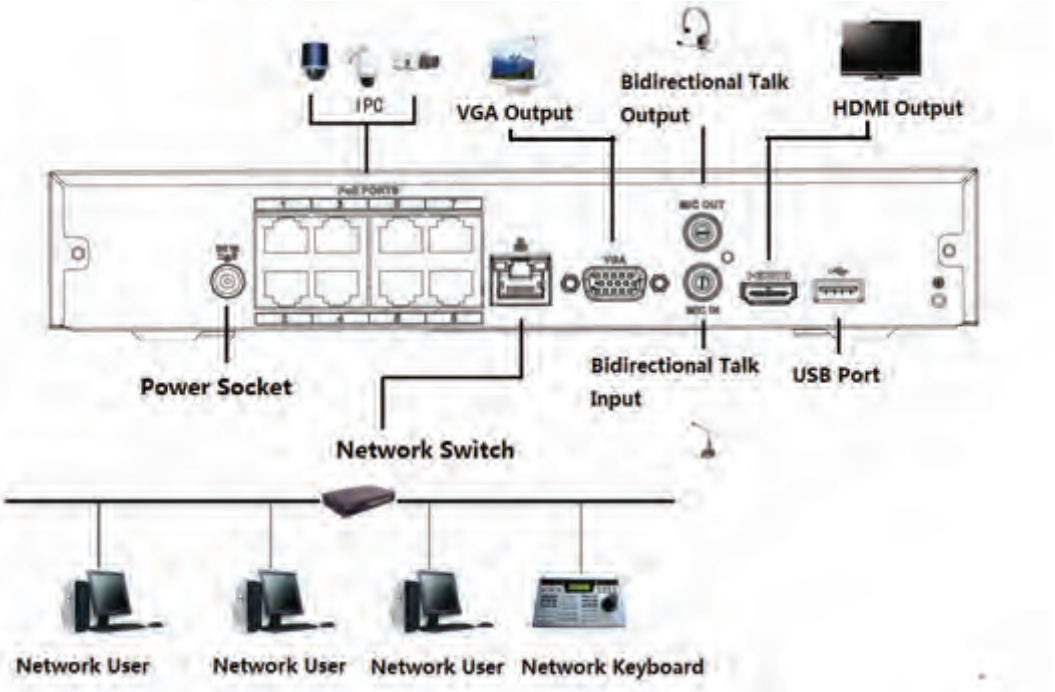
DHI-NVR1104HS-W-S2-CE/DHI-NVR1104HS-W-S2-FCC/DHI-NVR1108HS-W-S2-CE/DHI-NVR1108HS-W-S2-FCC

Figure 3-44 Typical connection



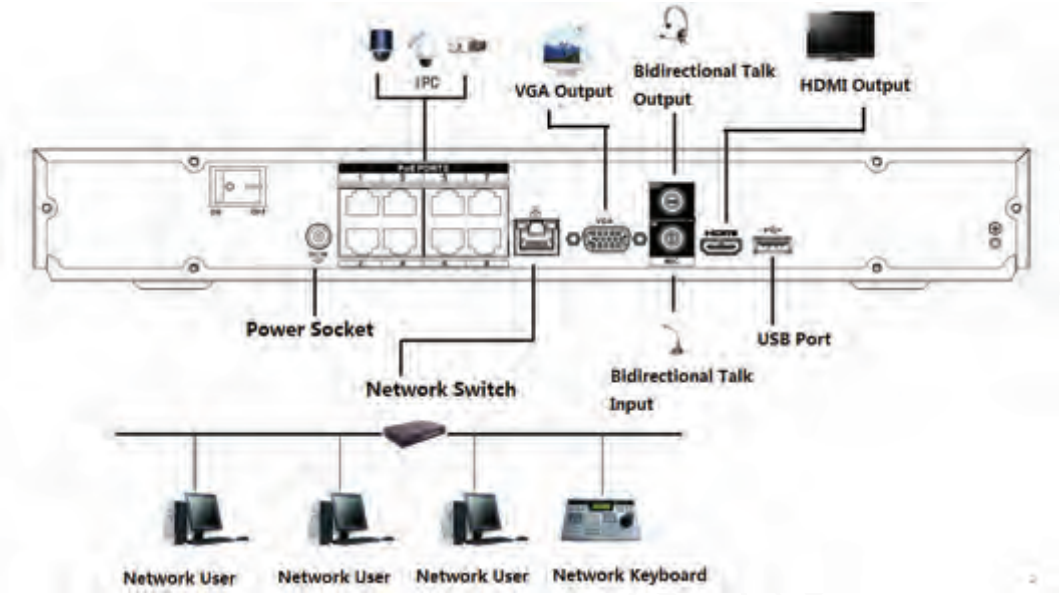
3.5.3 Compact 1U Series

Figure 3-45 Typical connection



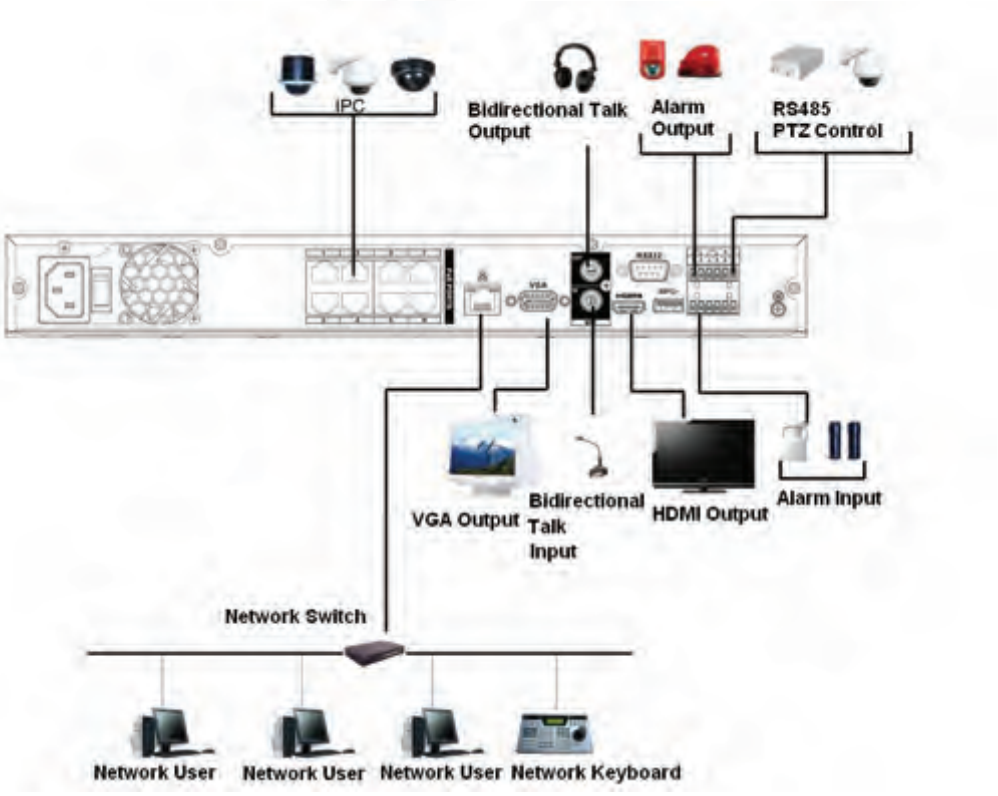
3.5.4 Beneficio 4K 1U (S2)/General 1U AI NVR Series

Figure 3-46 Typical connection



3.5.5 Professional 4K 1U/ Professional 4K 1U with 8 PoE ports/ Professional 4K 1U with 16 PoE ports/4K 1U (S2) with 24 PoE Ports/4K 1U (S2E) with 8 PoE Ports/4K 1U (S2E) with 16 PoE Ports Series

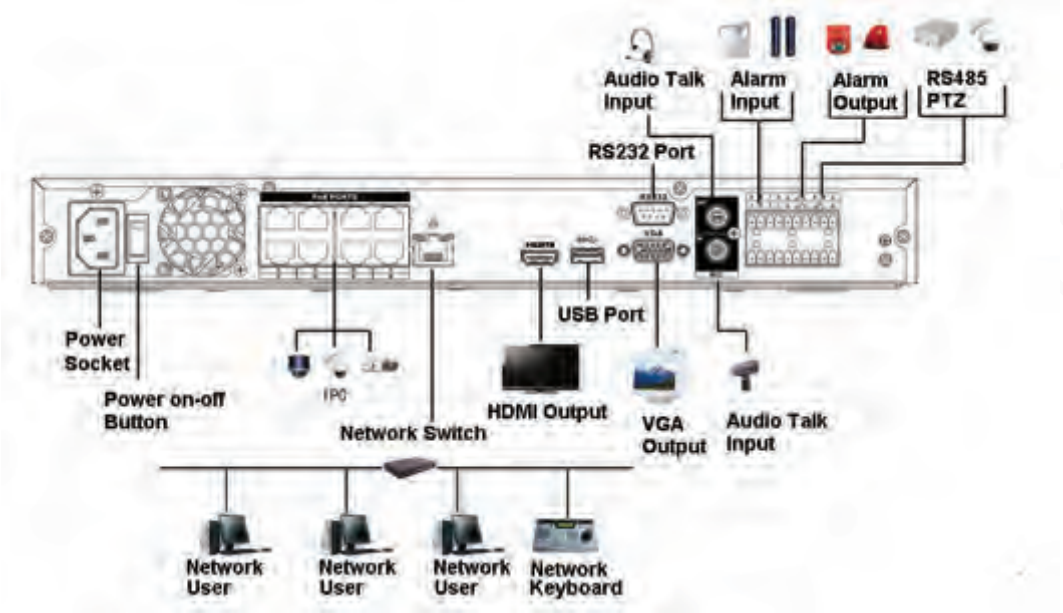
Figure 3-47 Typical connection



3.5.6 General 4K 1U (S2)/4K 1U (S2) with 4 PoE ports/4K 1U (S2) with 8

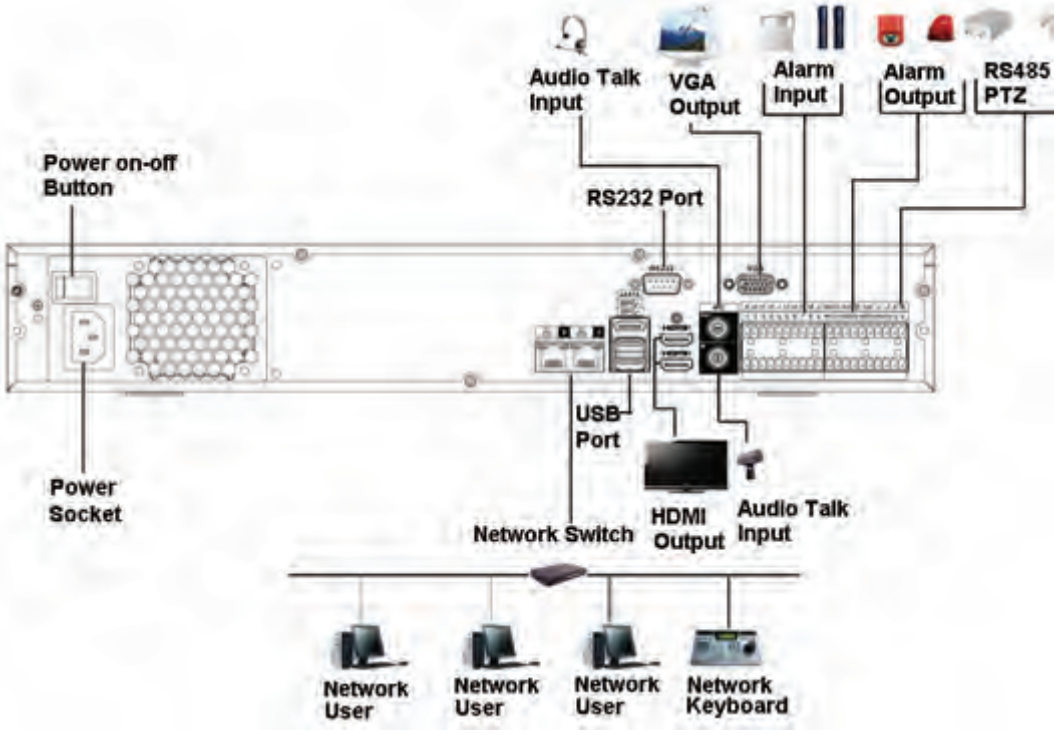
PoE ports/4K 1U (S2) with 16 PoE ports Series

Figure 3-48 Typical connection



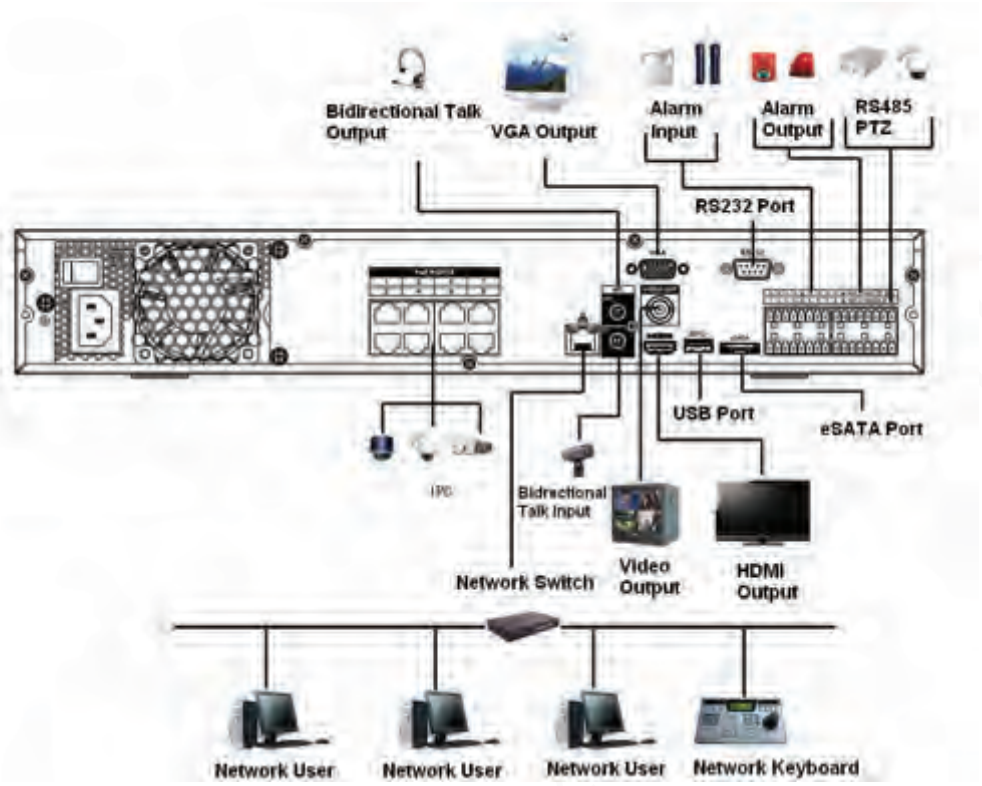
3.5.7 Professional 4K 1.5U/ Professional 4K 1.5U with 16 PoE ports/ Professional 4K 2U / Professional 4K 2U with 16 PoE ports/4K 1.5U (S2E) with 16 PoE ports/4K 2U (S2E) with 16 PoE Ports Series

Figure 3-49 Typical connection



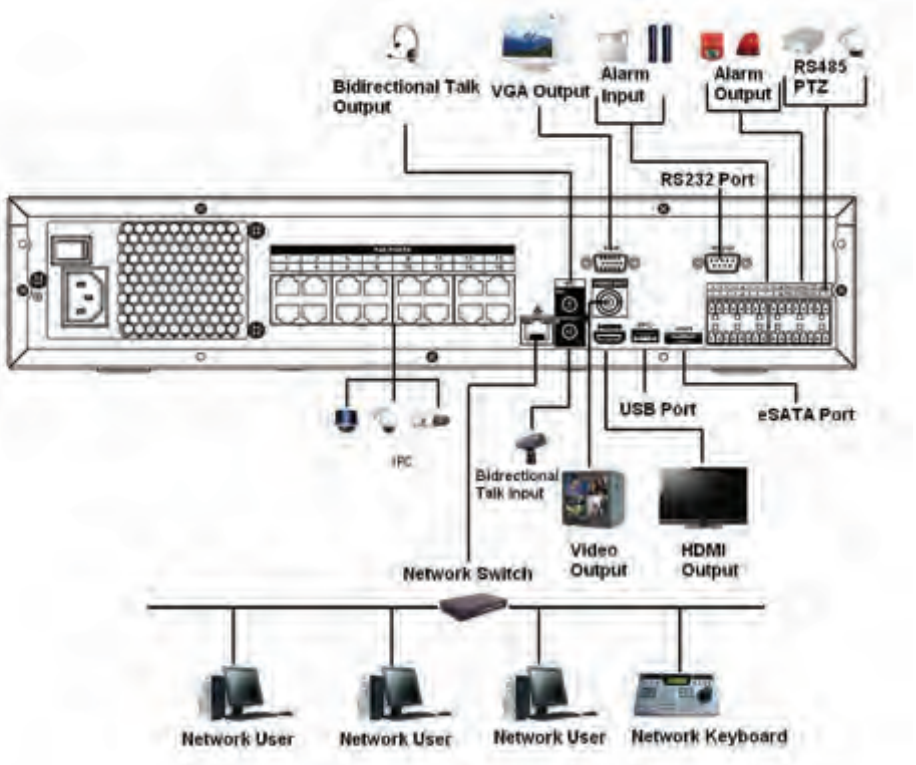
3.5.8 4K 1.5U (S2)/General 1.5U AI NVR Series

Figure 3-50 Typical connection



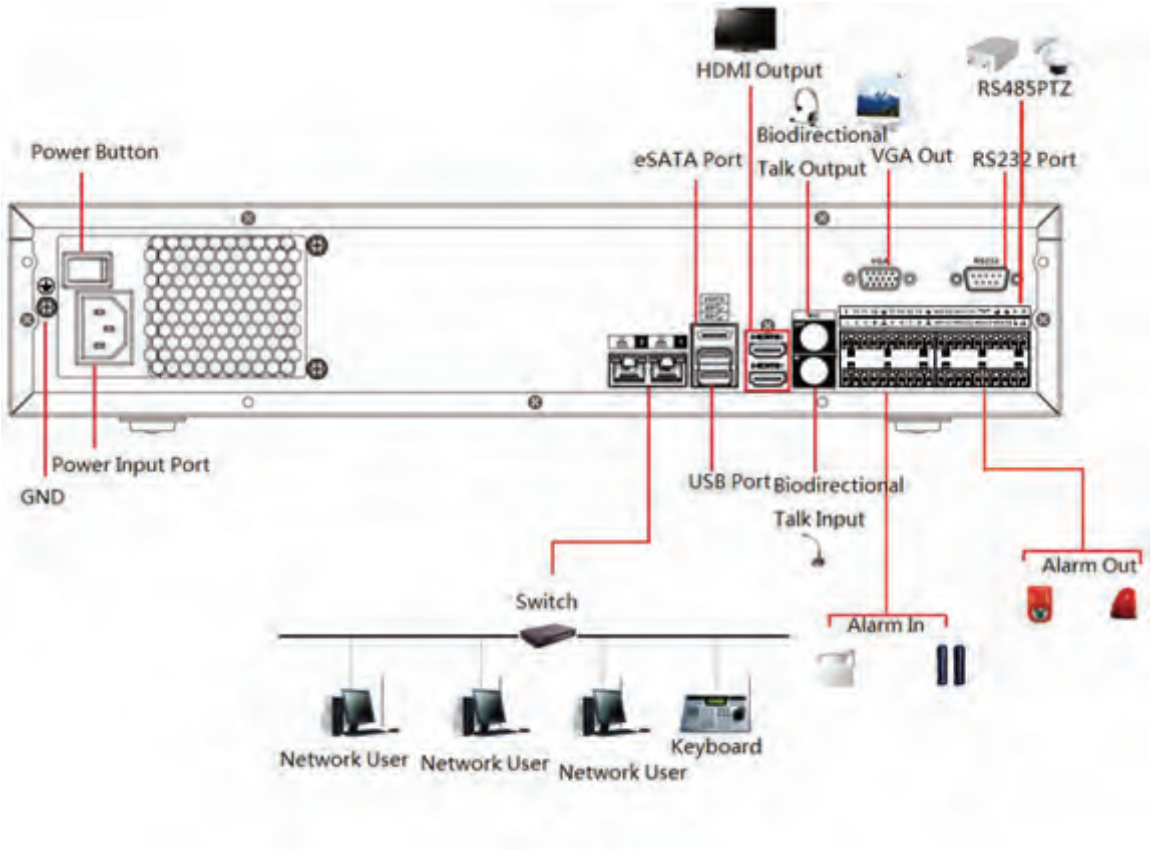
3.5.9 4K 2U (S2)/General 2U AI NVR Series

Figure 3-51 Typical connection



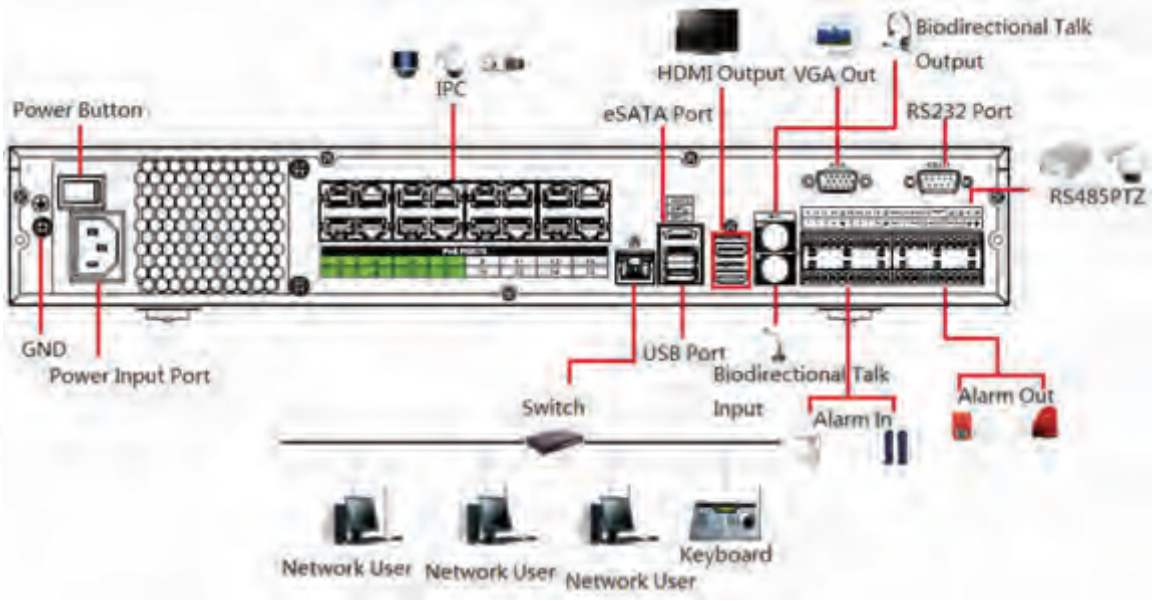
3.5.10 Advanced 2U AI NVR/General 2U AI NVR Series

Figure 3-52 Typical connection



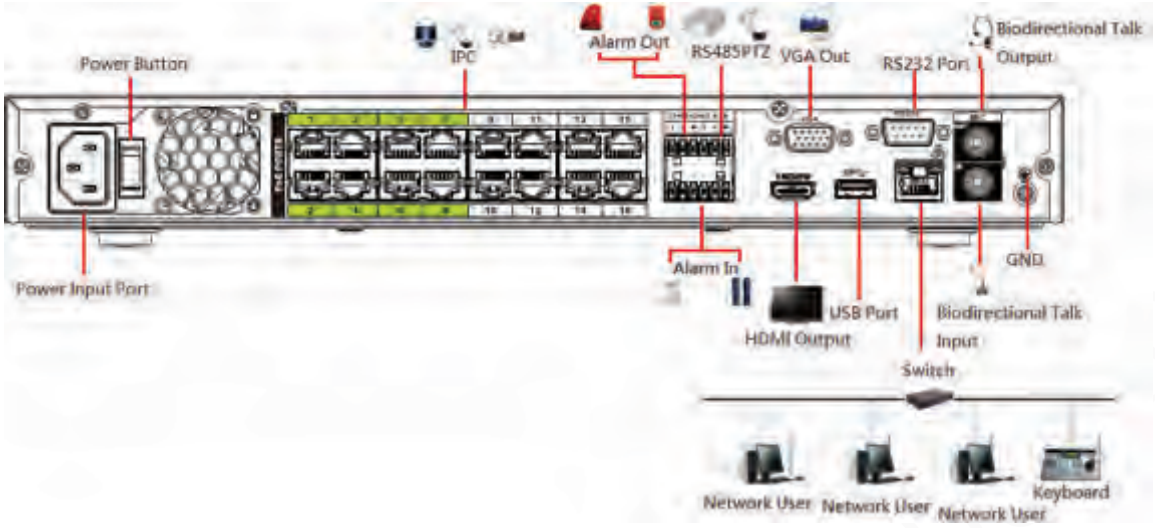
3.5.11 Advanced 1.5U 16PoE AI NVR/General 1.5U 16PoE AI NVR/General 1.5U 4HDD AI NVR

Figure 3-53 Typical connection



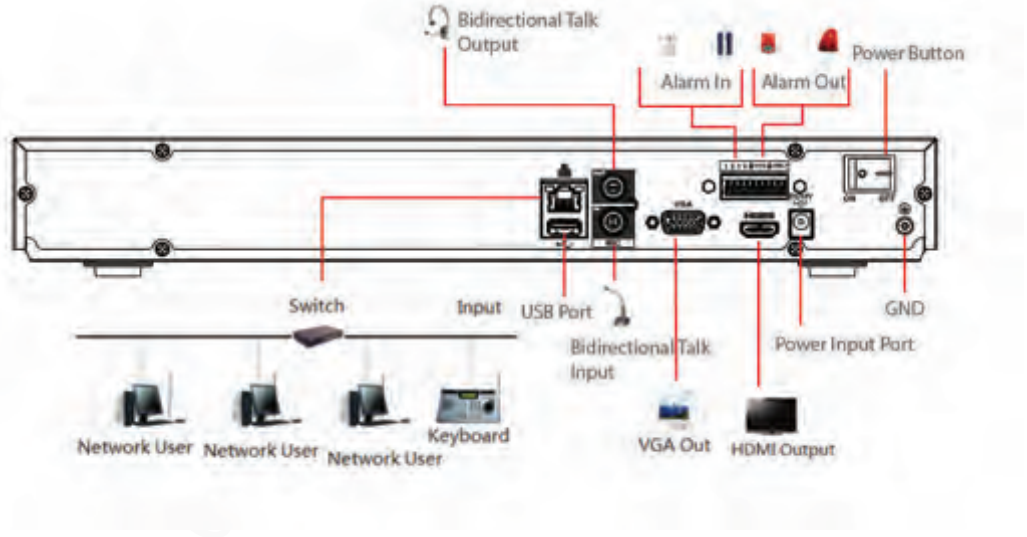
3.5.12 Advanced 1U 16PoE AI NVR/Advanced 1U 8PoE AI NVR/General 1U 8PoE AI NVR/General 1U 16PoE AI NVR Series

Figure 3-54 Typical connection



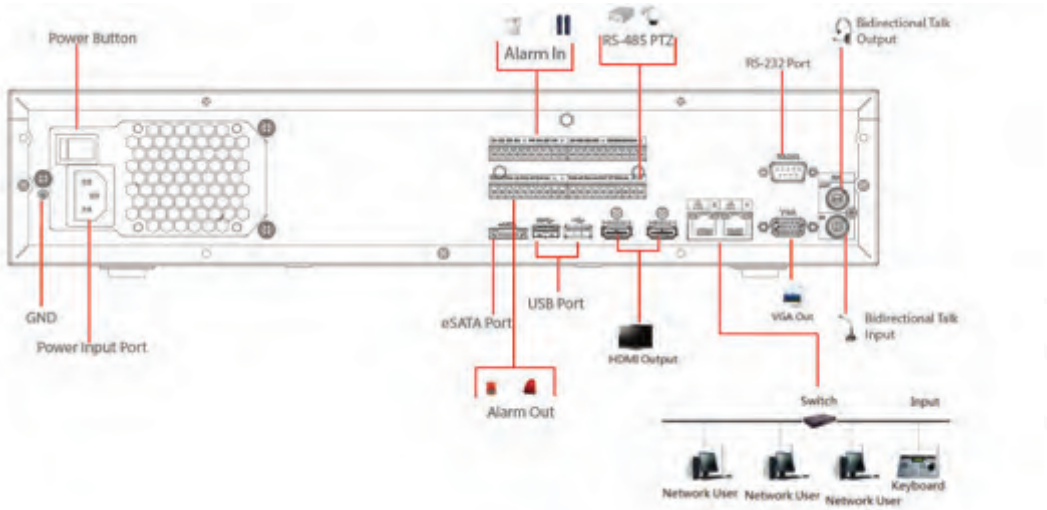
3.5.13 General 1U AI NVR Series

Figure 3-55 Typical connection



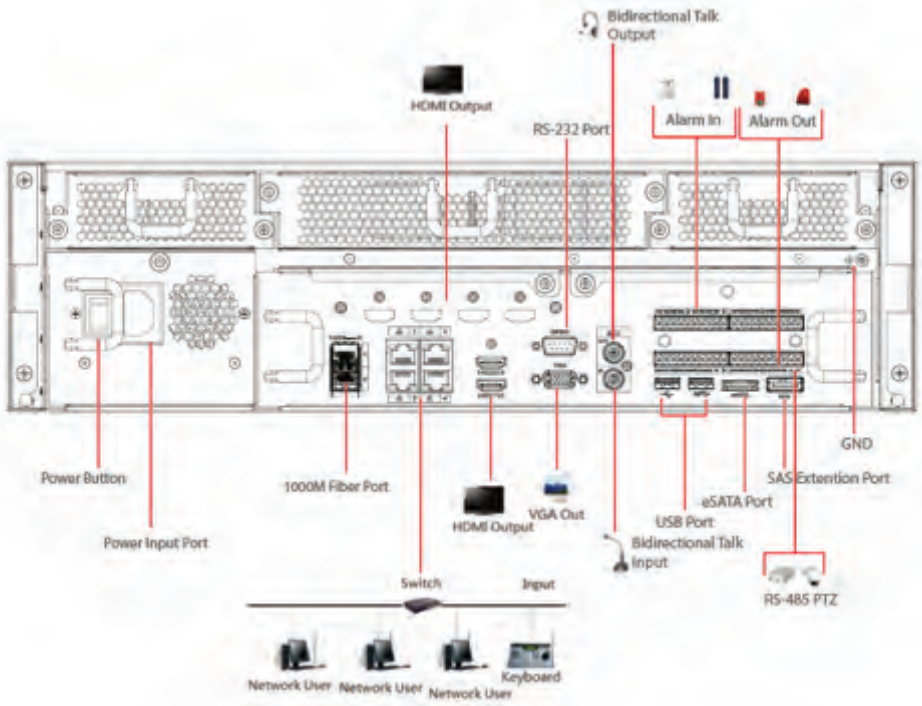
3.5.14 Advanced 2U AI NVR Series

Figure 3-56 Typical connection



3.5.15 Advanced 3U AI NVR Series

Figure 3-57 Typical connection



4 Starting the Device

Background Information

- For device security, connect the NVR to the power adapter first and then connect the device to the power socket.
- The rated input voltage matches the device power button. Make sure the power wire connection is OK. Then press the power button.
- Always use the stable current, if necessary UPS is a best alternative measure.

Step 1 Connect the device to the monitor and then connect a mouse.

Step 2 Connect power cable.

Step 3 Press the power button on the front panel or turn on the power switch on the rear panel to start up the device.

After the device starts, the system is in multiple-channel display mode by default.

The Device will verify license during starting up. If the verification failed, the icon  is displayed on the screen. Contact the technical support.

5 Local Operations

The following figures are for reference only. Slight difference might be found on the actual interface.

5.1 Initialization

Background Information

- For first-time use, set a login password for the admin account (default user).
- We recommend setting password protection so that you can reset password in case you forgot.

- For your device safety, keep your login password well, and change the password regularly.
- The IP address of the Device is 192.168.1.108 by default.

Procedure

Step 1 Start the NVR.

Step 2 Set region, time zone, and time according to the actual situation, and then click **Next**.

Click to shut down the device. The system integrator or the user can shut down the Device directly after setting the time zone.

Step 3 Set the login password for the admin account and then click **Next**.

Figure 5-1 Set password

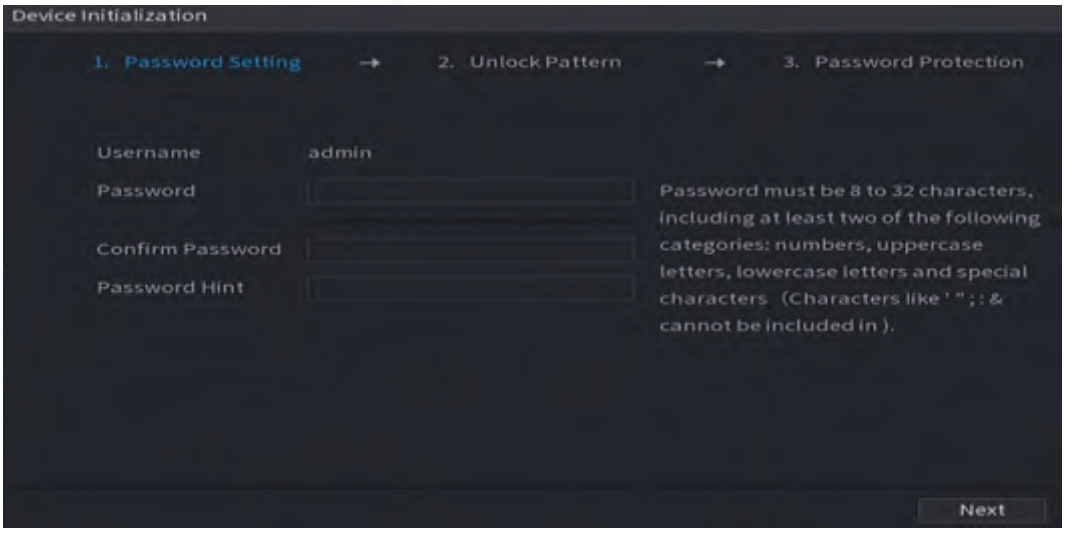


Table 5-1 Password parameters

Parameter	Description
User	By default, the user is admin.
Password	Enter the password for admin and then confirm the password.
Confirm Password	

Parameter	Description
Password Hint	Enter the information that can remind you of the password. On the login window, click to display the password hint.

Step 4 Set unlock pattern.

- The pattern that you want to set must cross at least four points.
- If you do not want to configure the unlock pattern, click **Skip**.
- Once you have configured the unlock pattern, the system will require the unlock pattern as the default login method. If you did not configure the unlock pattern, you need to enter password for login.

Figure 5-2 Draw unlock pattern

Step 5 Set password protection.

- After configuration, if you forgot the password for admin user, you can reset the password through the linked email address or security questions. For details on resetting the password, see #d1449e7a1026.
- If you do not need password protection, disable **Reserved Email** and **Security Question**.

Figure 5-3 Set password protection

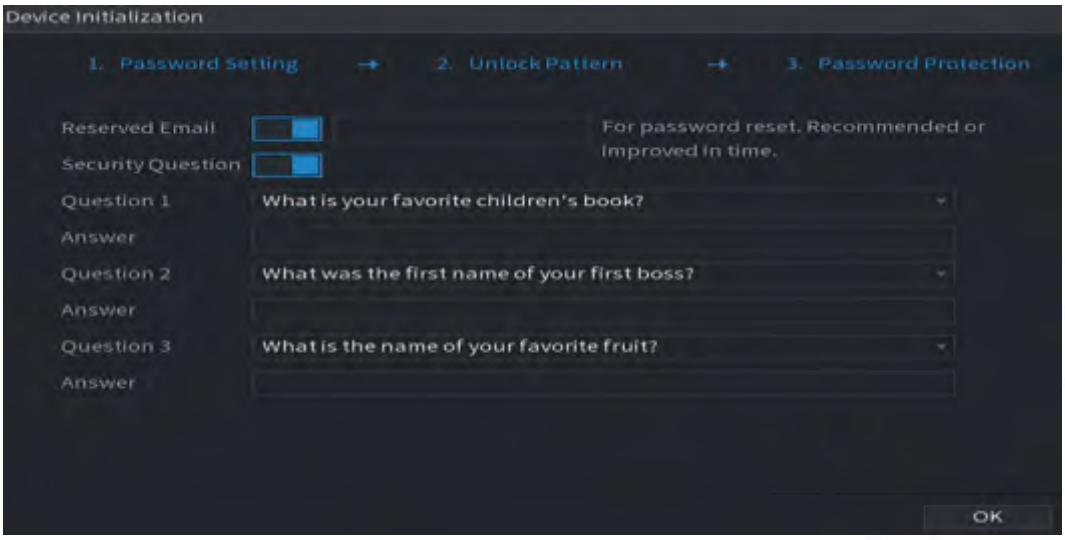


Table 5-2 Security question parameters

Password Protection Mode	Description
Email Address	Enter the linked email address. Enter an email address for password reset. If you forgot the password, enter the security code that you will get from this linked email address to reset the password of admin.
Security Questions	Configure the security questions and answers. If you forgot the password, you can reset the password after entering the answers to the questions.

Step 6 Click **Save**.

5.2 Startup Wizard

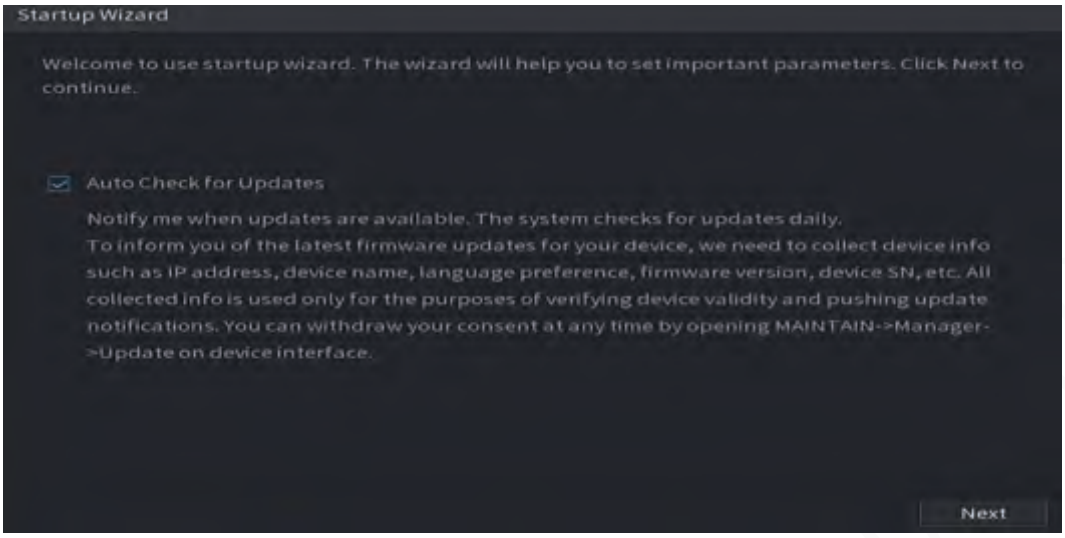
After initialization, the system goes to **Startup Wizard**. You can quickly configure your device.

Startup Wizard is displayed only when you log in to the Device for the first time or have restored the Device to factory settings.

Step 1 Select **Auto Check for Updates,** and then click **Next**.

If you select the **Auto Check for Updates** checkbox, the system will notify you automatically when updates are available.

Figure 5-4 Startup wizard

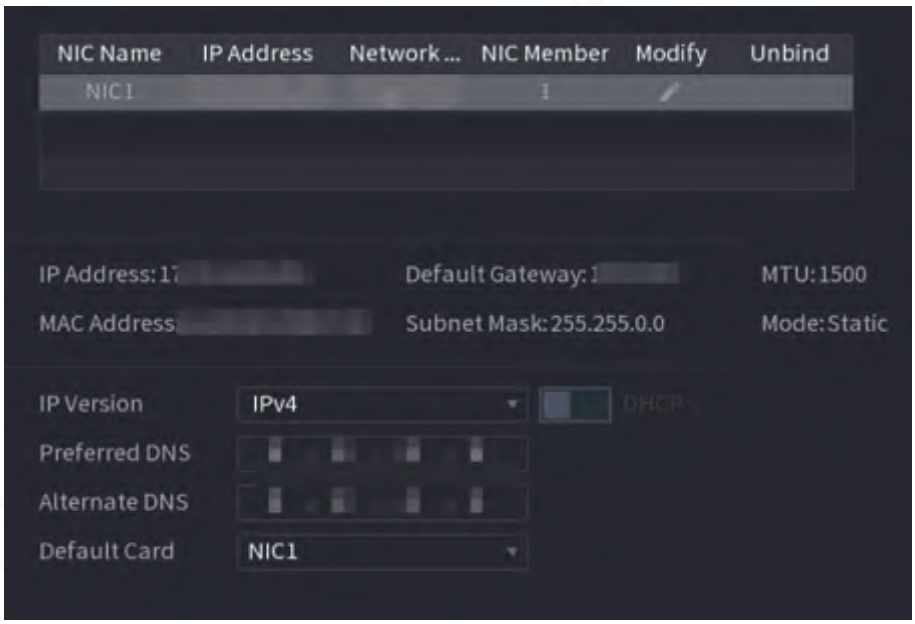


Step 2 Configure IP address, and then click **Next**.

The number of network adapters might vary with models. Configure the IP address of the network adapter according to the actual connection situation.

1) Click .

Figure 5-5 Edit network adapter



1) Configure parameters.

Table 5-3 Network parameters

Parameter	Description
Network Mode	• **Single NIC**: Two network adapters work separately. If one of the

Parameter	Description
Default Ethernet Port	two network adapters is disconnected, the system network status is regarded as offline. ● **Fault Tolerance**: Two network adapters share one IP address. Normally only one network adapter is working. When this adapter fails, the other network adapter will start working automatically to ensure the network connection.  ◇ When you test the network status, the network is regarded as offline only when both network adapters are disconnected. ◇ The two network adapters are used under the same LAN. ● **Load Balance**: Two network adapters share one IP address. The two adapters work at the same time to share the network load averagely. If one of them fails, the other can continue working normally.  ◇ When testing the network status, the network is regarded as offline only when both of the two network adapters are disconnected. ◇ The two network adapters are used under the same LAN.  The Device with single Ethernet port does not support this function.
IP Version	Select **IPv4** or **IPv6**. Both versions are supported for access.
DHCP	Enable the system to automatically obtain a dynamic IP address.
MAC Address	Displays the MAC address of the Device.
IP Address Subnet Mask Default Gateway	● Enter the IP address and then configure the corresponding subnet mask and default gateway. ● After configuration, click **Test** to check whether there is conflict in IP address.  IP address and default gateway must be on the same network segment.

To unbind NIC, on the **TCP/IP** page, click . The unbinding will take effect after the Device restarts.

2) On the **TCP/IP** page, configure DNS server. This step should be performed when you enable the domain name service.

   You can get DNS server address or manually enter it.

   ● Automatically get DNS server address: When there is a DHCP server in the network, you can enable **DHCP**, and then the Device gets a dynamic IP address.

   ● Enter DNS server address: Select **IP Version**, and then configure the preferred DNS server and alternate DNS server.

3) On the **Default Card** drop-down list, select the default NIC.
4) Click **Next**.

Step 3 Enable **P2P**, and then click **Next**.

Scan the QR code on the actual interface to download the app. Register an account and then you can add the Device to the app.

Before using the P2P function, make sure that the NVR has connected to the WAN.

The **Status** becomes **Online** after you successfully configure P2P.

Figure 5-6 P2P

Step 4 Add cameras according to the actual situation.

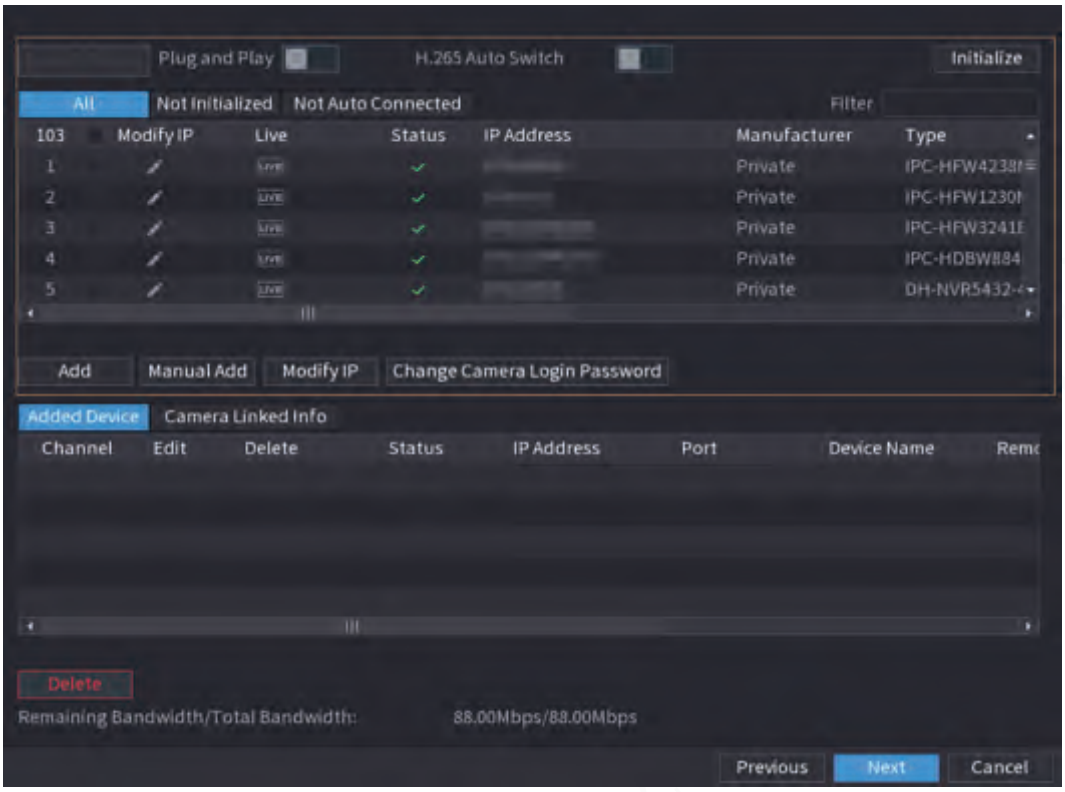
After adding cameras, you can view the video images transmitted from the cameras, and change camera configuration.

- The number of cameras that can be added to the NVR varies with models.
- The system supports adding camera through searching, manual add and batch add. This section uses adding by searching as an example.
- Initialize the camera before adding to the Device.

1) Click **Search Device**.

   The devices found are displayed at the upper pane, excluding devices already added.

Figure 5-7 Search device



- To view the live image of a camera, click **LIVE** and then enter the username and password. You can only view live images of cameras accessed through private protocol.
- To filter the remote devices, select device name from the **Filter** drop-down list.
- To filter out the uninitialized devices, click the **Not Initialized** tab, and then you can initialize the devices remotely.
- To view all remote devices added through plug and play, click the **Not Auto Connected** tab. You can remove devices added through plug and play, and they can be automatically added again after plug and play is enabled.

2) (Optional) Enable **Plug and Play**.
   When **Plug and Play** is enabled, the Device automatically adds cameras on the same LAN.

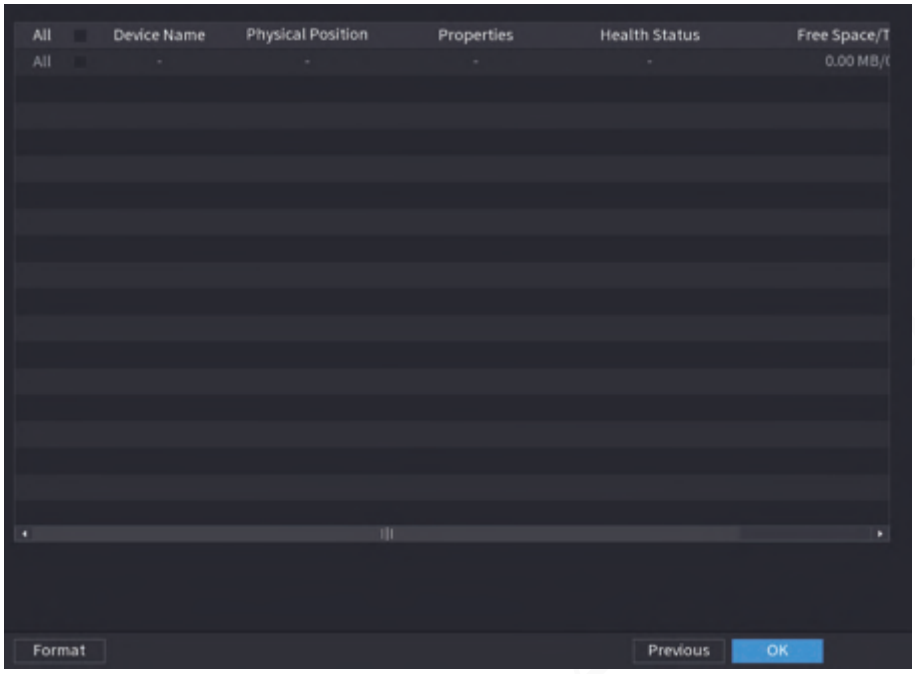
   For uninitialized cameras, the Device automatically initializes them before adding them.

3) Enable **H.265 Auto Switch**
   When **H.265 Auto Switch** is enabled, the video compression standard of added remote devices is switched to H.265 automatically.
4) Double-click a camera, or select a camera and then click **Add** to register it to the **Added Device** list.
5) Click **Next**.

Step 5 Manage HDD. You can view HDD name, physical position, health status, capacity, and more.

- To configure read/write property, select an option from the **Properties** drop-down list.
- To format an HDD, select the HDD, and then click **Format**.

Figure 5-8 Manage HDD



Step 6 Click **OK**.

When the Device prompts whether to restart, click **OK**. The configurations through startup wizard take effect after the Device restarts.

5.3 Login

Log in to the Device to perform local operations.

Step 1 Right-click the live page, and then click the shortcut menu.

- If you have configured unlock pattern, the unlock pattern login window is displayed. Click **Forgot Pattern** to switch to password login.
- If you did not configure unlock pattern, the password login window is displayed.

Figure 5-9 Unlock pattern login

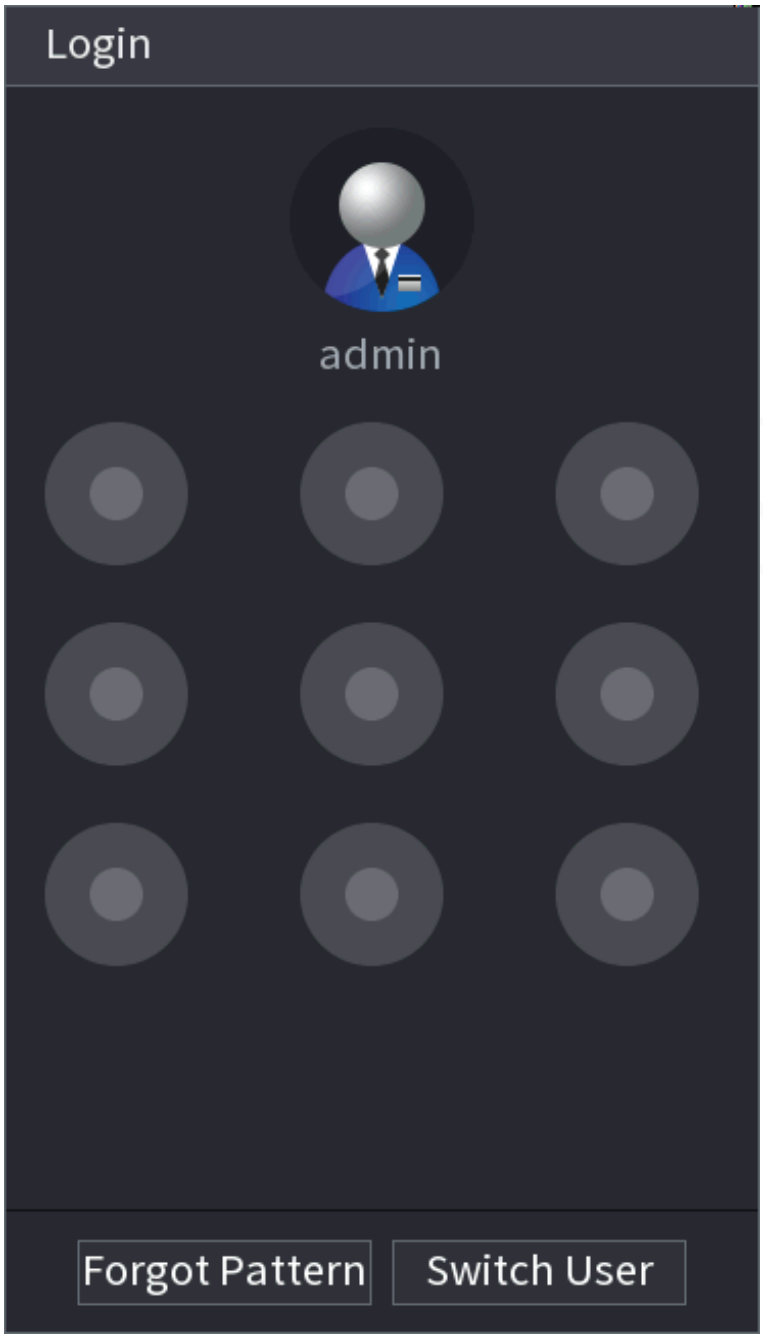
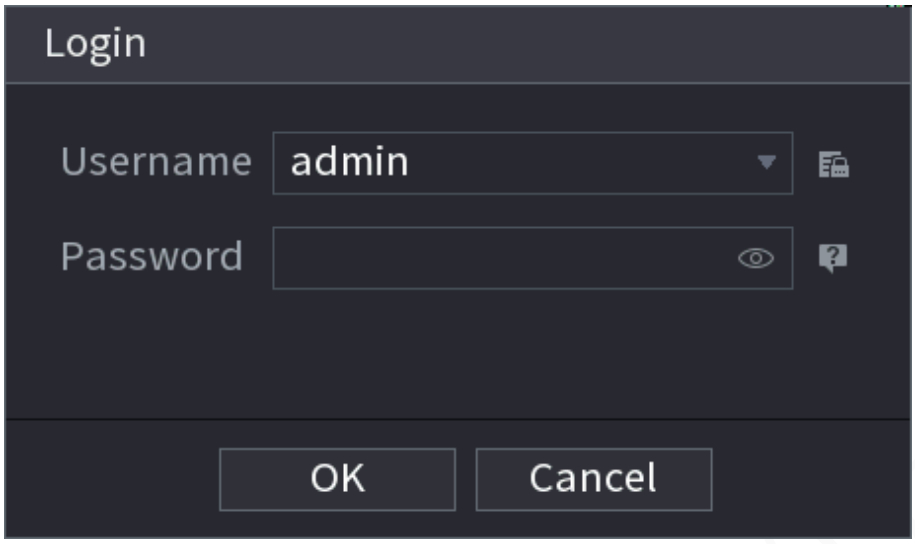


Figure 5-10 Password login



Step 2 Draw unlock pattern, or enter password and then click **OK**.

5.4 Main Menu

After login, right-click the live page, and then click **Main Menu**.

Figure 5-11 Main menu

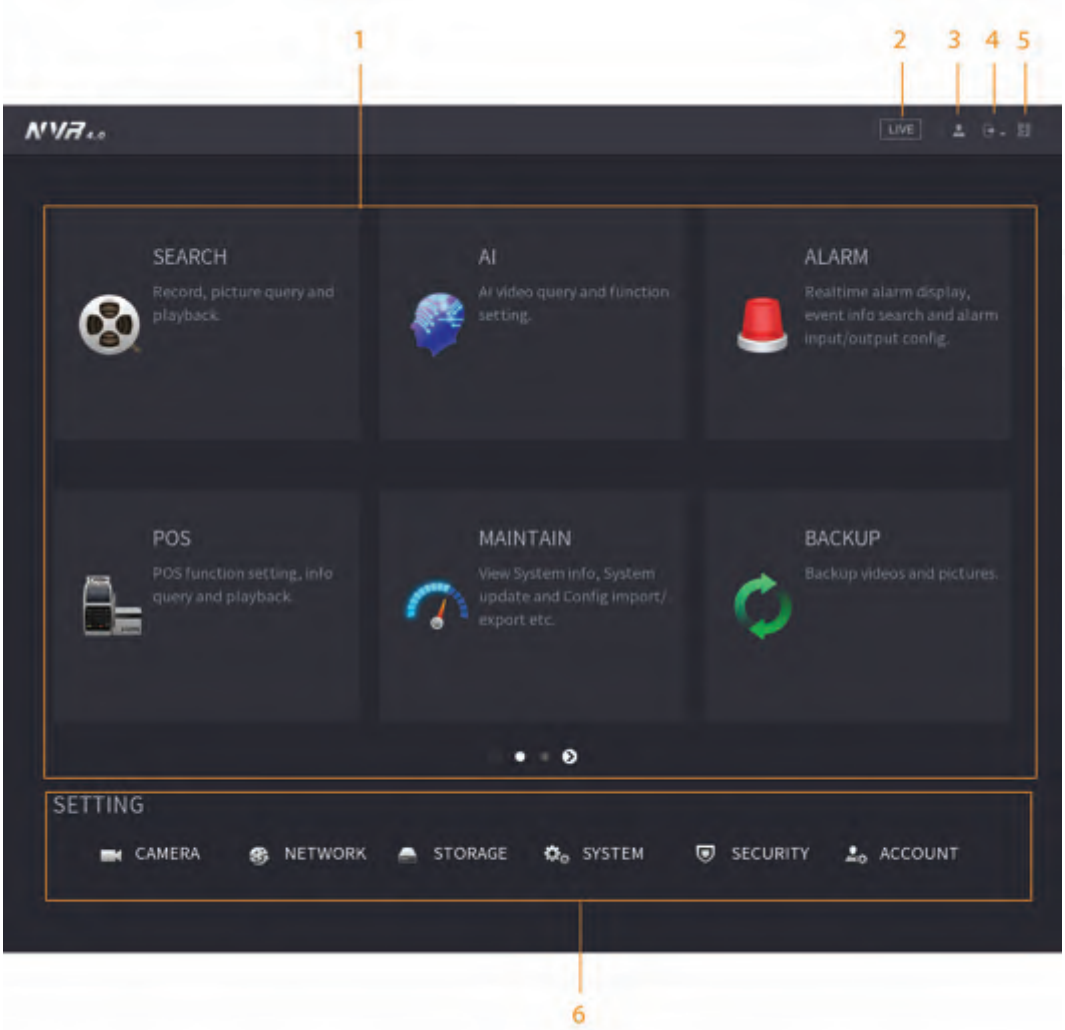


Table 5-4 Main menu description

No.	Description
1	Click each tile to open the corresponding configuration page.
2	Go back to live view.
3	Point to the icon to view the current username.
4	Log out of, restart, or shut down the Device.
5	Click the icon to get the QR codes of mobile client and device SN. You can add the Device to the mobile client for remote management.
6	Configure the settings of camera, network, storage, system, security and account.

5.5 Quick Operation Bar

You can click the icons on the main menu to go to the corresponding configuration page. After that, you can go to other function tiles or setting item through the quick operation bar.

This section uses **ALARM** and **CAMERA** as examples to show how to quickly access other modules.

Shortcut Icons on Function Titles

Click **ALARM** to go to the **ALARM** page.

Figure 5-12 Quick operation bar (1)

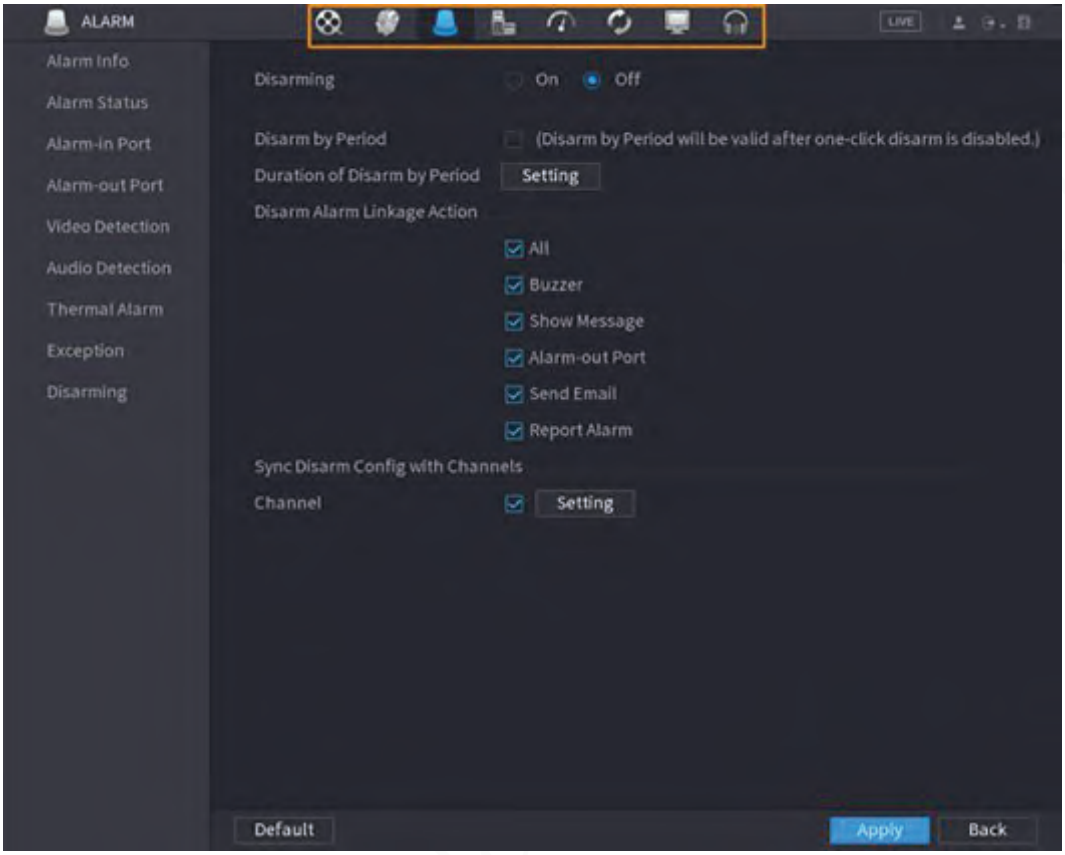


Table 5-5 Quick operation bar description (1)

Icon	Description
	Go to the **SEARCH** page.
	Go to the **ALARM** page.
	Go to the **AI** page.
	Go to the **POS** page.
	Go to **NETWORK** page.
	Go to the **MAINTAIN** page.
	Go to the **BACKUP** page.
	Go to the **DISPLAY** page.
	Go to the **AUDIO** page.

Shortcut Icons on Setting Menu

Click **CAMERA** to go to the **CAMERA** page.

Figure 5-13 Quick operation bar (2)

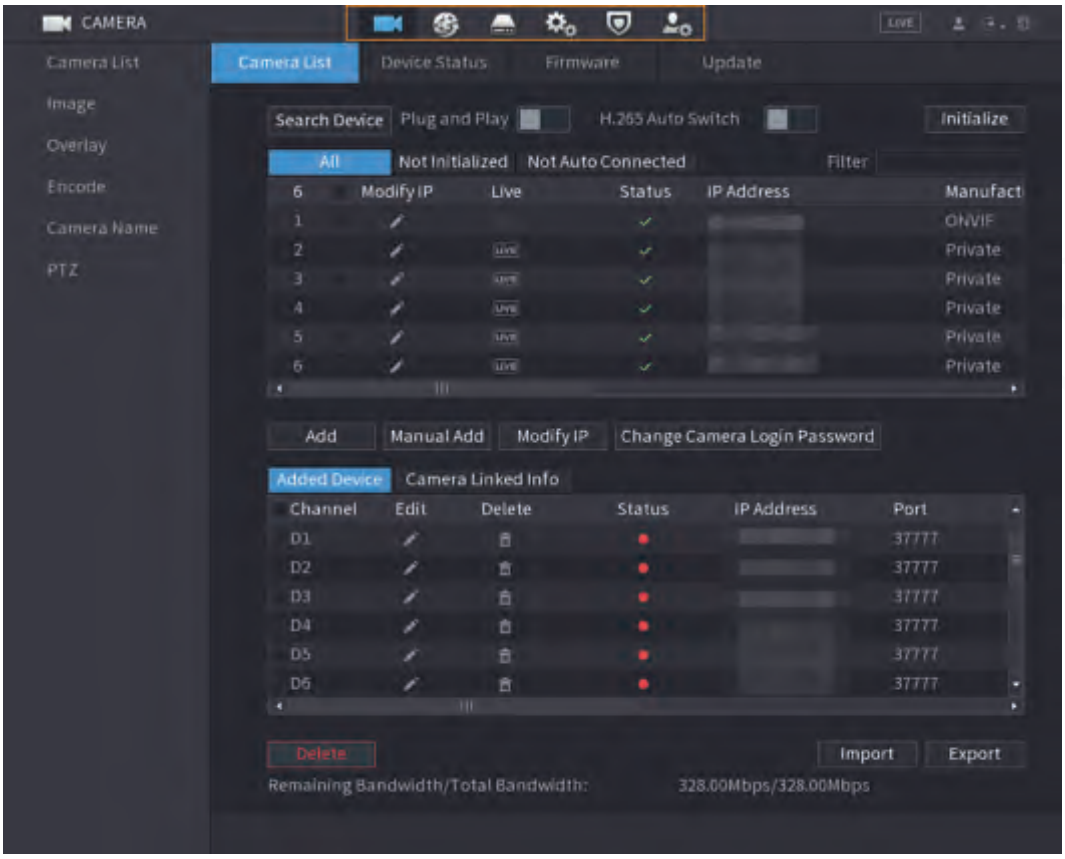


Table 5-6 Quick operation bar description (2)

Icon	Description
	Go to the **CAMERA** page.
	Go to the **NETWORK** page.
	Go to the **STORAGE** page.
	Go to the **SYSTEM** page.
	Go to the **SECURITY** page.
	Go to the **ACCOUNT** page.

5.6 Live View

After you logged in, the system goes to multiple-channel live view mode by default. You can view the live video of each channel.

The number of window splits might vary depending on the model you are using.

5.6.1 Live Page

On the live view page, you can view the live video of each channel. The corresponding channel displays date, time, and channel name after you overlay the corresponding information.

Table 5-7 Icon description

No.	Icon	Description
1		The current channel is recording.
2		Motion detection alarm occurs.
3		Video loss alarm occurs.
4		The current channel is in monitor lock status.
5		The Device connects to the network camera remotely. This function is available on select models.

5.6.2 Navigation bar

Background Information

You can quickly perform operations through the icons on the navigation bar.

The navigation bar might vary with models.

Step 1 After login, right-click the live page, and then select **Main Menu**.

Step 2 Select **System** > **General** > **Basic**.

Step 3 Click to enable navigation bar.

Step 4 On the live page, click any position and then the navigation appears at the bottom.

Figure 5-14

Table 5-8

Icon	Function
	Open **Main Menu**.
	Expand or condense the navigation bar.
	Select view layout.
	Go to the previous screen.
	Go to the next screen.
	Enable tour function. The icon switches to . If you close the tour or the triggered tour operation has canceled, the Device restores the previous preview video.
	Open the PTZ control panel. For details, see "5.6.7.2 PTZ Control".
	Configure image settings. For details, see "5.7.4 Configuring Image Settings". This function is supported only in single-channel layout.

Icon	Function
	Search for records. For detail, see "5.8.2.1 Search Page".
	Open the **Voice Broadcast** page. For detail, see"5.18.3 Broadcast".
	Open the **Alarm Status** interface to view the device alarm status. For details, see "5.10.2 Alarm Status".
	Open the **Channel Info** interface to display the information of each channel.
	Open the **Add Camera** page..
	Open the **NETWORK** page. For details, see "5.19.3 Network".
	Open the **Disk Manager** page. For details, see "5.12.2 Disk Manager".
	Open the **USB Management** page. You can view USB information, back up files, and update the system.

5.6.3 Live View Control Bar

Point to the top center of the video of current channel; and then the live view control bar appears. If your mouse stays in this area for more than 6 seconds and has no operation, the control bar automatically hides.

- Disable the navigation bar before using this function.
- The live view control bar is different depending on the model.

Figure 5-15 Live view control bar

5.6.3.1 Instant Playback

You can play back the previous 5-60 minutes record of current channel.

Click for instant playback.

Figure 5-16 Instant playback

- Move the slider to choose the time you want to start playing.
- You can start, pause and close playback.
- The information such as channel name and recording status icon are shielded during instant playback and will not display until you exit playback.
- During playback, screen split layout switch is not allowed.
- Tour has high higher priority than the instant playback. The instant playback function is not available when tour function is in process and the live view control bar automatically hides either. The function becomes available again after tour ends.

Go to the **Main Menu** > **SYSTEM** > **General** > **Basic** to set instant playback time.

5.6.3.2 Digital Zoom

You can zoom in a specified zone of the current channel to view details. They system supports multi-channel zoom. You can use the digital zoom in the following two ways:

- Click . The icon switches to . Select an area. The area is enlarged after you release the mouse button.

  For some models, when the image is enlarged in this way, the selected area is zoomed proportionally according to the window.

- Point to the center that you want to enlarge, and then scroll the mouse to enlarge the area.

When the image is in the enlarged status, you can drag the image toward any direction to view the other enlarged areas. Right-click to cancel zoom and go back to the original video image.

Figure 5-17 Zoom

5.6.3.3 Instant Backup

You can record the video of any channel and save the clip to a USB storage device.

Clicking to start the recording. To stop recording, click this icon again. The clip is automatically saved to the connected USB storage device.

5.6.3.4 Manual Snapshot

You can take one to five snapshots of the video and save to a USB storage device.

Click to take snapshots. The snapshots are automatically saved to the connected USB storage device. You can view the snapshots on your PC.

To change the quantity of snapshots, select **Main Menu** > **CAMERA** > **Encode** > **Snapshot**, in the **Manual Snapshot** list, select the snapshot quantity.

5.6.3.5 Two-way Talk

Background Information

You can perform the voice interaction between the NVR and the remote device to improve efficiency of emergency.

Procedure

Step 1 Click to start two-way talk. The icon changes to . The rest two-way talk buttons of digital channel become dimmed.

Step 2 Click again to cancel two-way talk.

5.6.3.6 Stream Switch

Click to switch the bit stream type of the main stream and sub stream according to current network bandwidth.

- M: Main stream: Its bit streams are big and definition is high. It occupies large network bandwidth suitable for video wall surveillance, storage and more.
- S: Sub stream: Its definition is low but occupies small network bandwidth. It is suitable for general surveillance, remote connection and more. Some models support two sub streams (S1, S2).

5.6.3.7 Picture Search

Background Information

Select the image of target person on the live view page and then search by image for all the related videos with the target person.

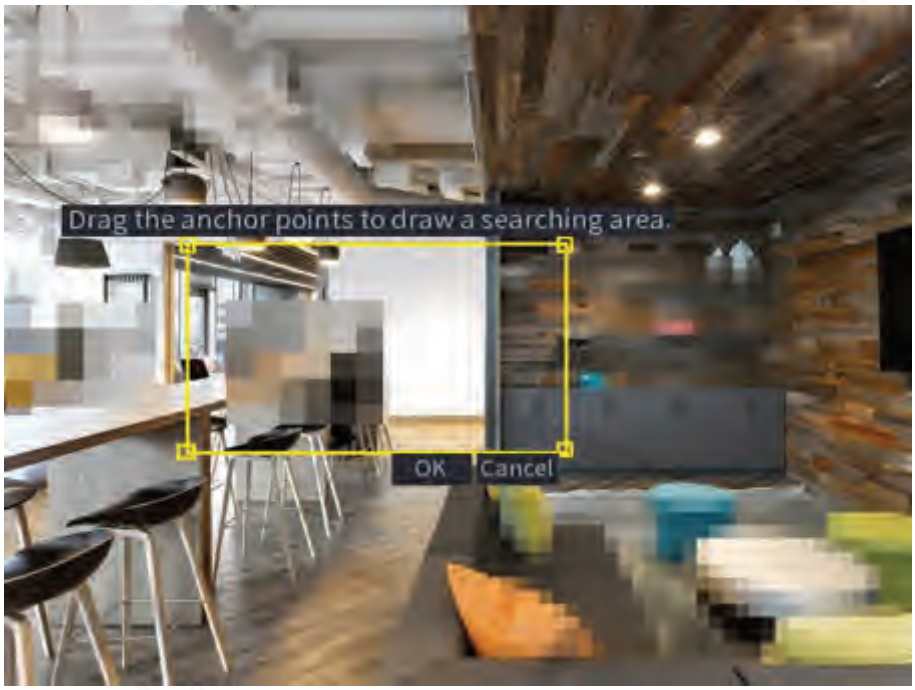
Procedure

Step 1 Click . The live image is frozen.

Step 2 Draw a search range according to the on-screen prompt, and then click **OK**.

You can adjust the search range. Make sure that there are less than 30 faces in the selected range.

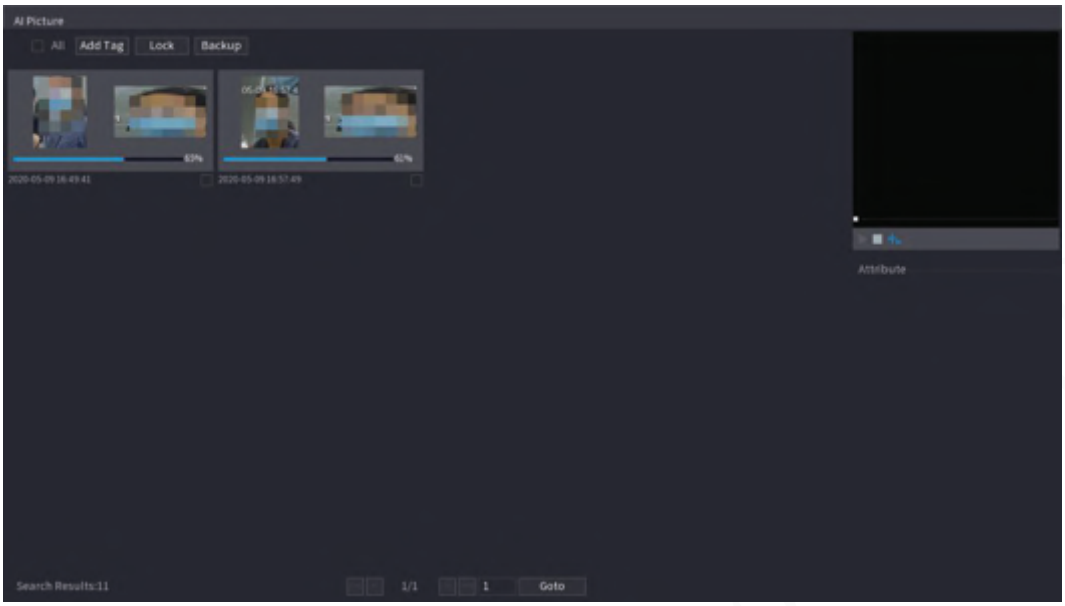
Figure 5-18 Draw a searching range



Step 3 Select the target face that you want to search for. You can select maximum 8 target faces.

Step 4 Click **Search**. The search results are displayed.

Figure 5-19 Picture search results



- Play video.
  Select the picture and then click to play back the video within 10 seconds before and after the snapshot. During playback, you can
  - ◇ Click to pause.
  - ◇ Click to stop.
  - ◇ Click to display or hide the intelligent rules.
- Add tag.
  Select the picture and then click **Add Tag** to add a tag to the recorded video to find the target recorded video more fast.
- Lock recorded video.
  If you want to keep the recorded video permanently, select the picture, and then click **Lock**. The locked video cannot be overwritten and deleted.
- Back up recorded video or picture.
  Select the picture, and then click **Backup**. You can set save path, backup type, and file type, and then export to the external storage device.

5.6.4 Shortcut Menu

Right-click the live view page to bring up the shortcut menu. You can go to main menu, play back videos or images, configure view split, and configure the settings of PTZ, image, and more.

The shortcut menu is different for different models.

Figure 5-20 Shortcut menu (1)

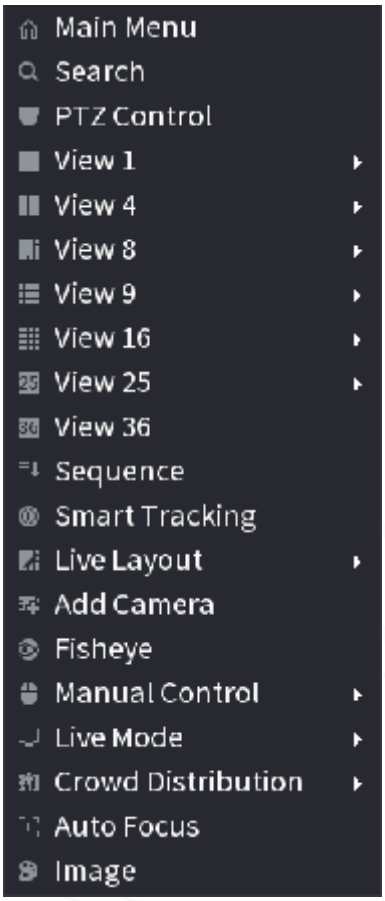


Figure 5-21 Shortcut menu (2)

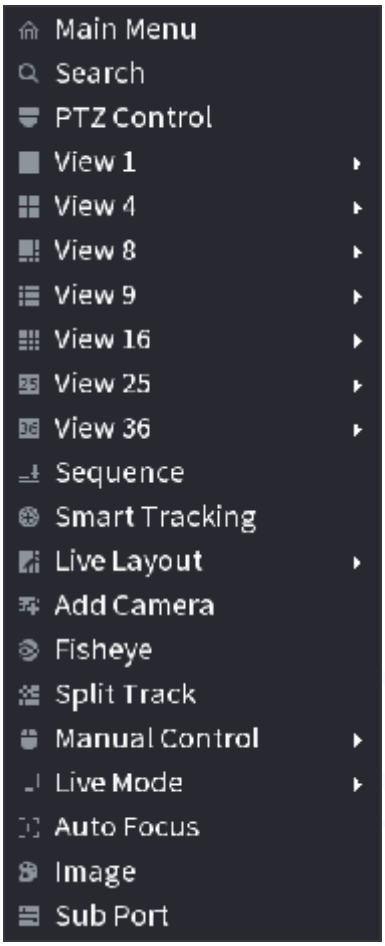


Figure 5-22 Shortcut menu (3)

Table 5-9 Shortcut menu description

Function	Description
Main Menu	Go to main menu.
Search	Search and play back videos or images.
PTZ Control	Open the PTZ control panel. For details, see "5.6.7 PTZ".
View 1/4/8/9/16/25/36	Configure the live view screen as a single-channel layout or multi-channel layout.

Function	Description
Sequence	Set customized screen split mode and channels. For details, see "5.6.9 Sequence".
Add Camera	Add cameras to the Device. For details, see #d1823e7a1026.
Wireless Pairing	Quickly add IPCs. For details, see "5.6.8 Wireless Pairing".
Split Track	Split the screen of a certain channel. For details, see "5.6.6 Split Tracking".
Manual Control	• **Record Mode**: You can configure the recording mode as **Auto** or **Manual**, or stop the recording. You can also enable or disable snapshot function • **Alarm Mode**: You can configure alarm output settings.
Live Mode	Select **General** or **AI Mode**. In the AI mode, the information of detected face, human or vehicles are displayed on the right side of the live page.
Crowd Distribution	Select **On** or **Close** to enable or disable crowd distribution function.
Auto Focus	Click to realize auto focus function. Make sure the connected camera supports this function.
Image	Click to modify the camera image parameters. For details, see "5.7.4 Configuring Image Settings".
Sub Screen	Click **Sub Screen** to switch to the current monitor to the sub screen.

5.6.5 AI Live View Mode

Background Information

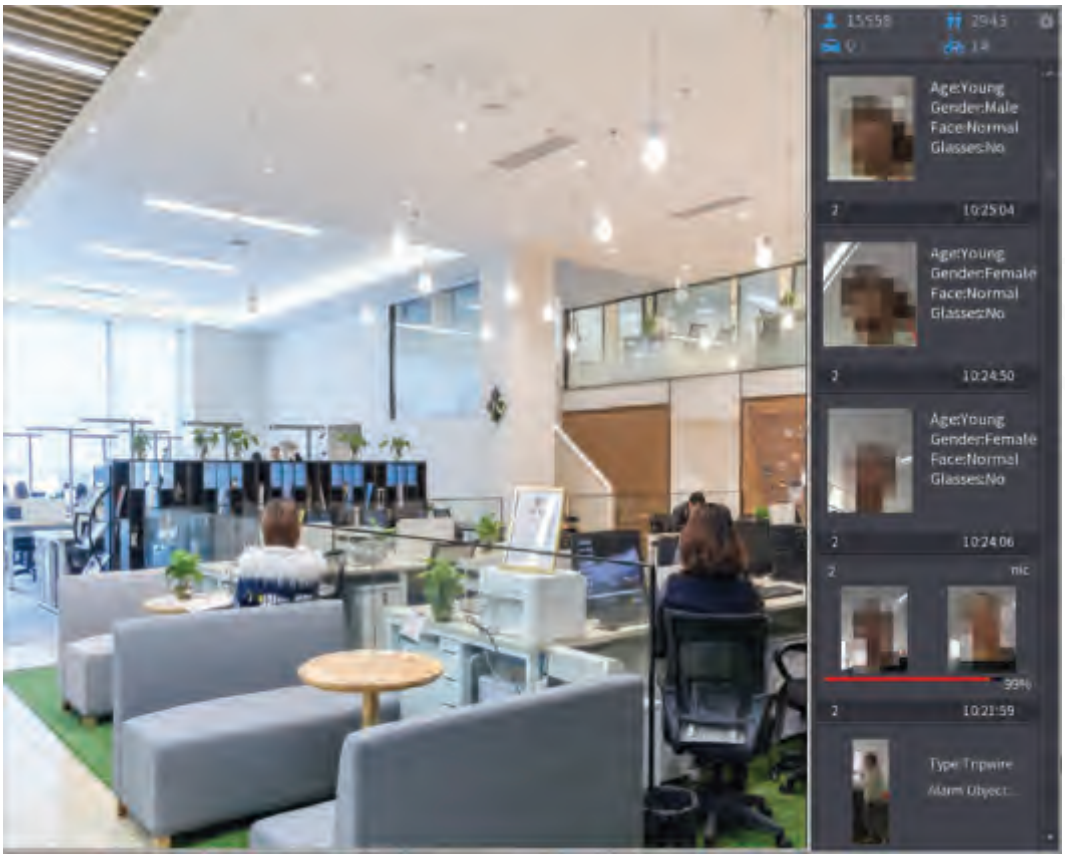
When you select AI mode, the system displays information of human face, personnel, vehicle and non-motor vehicle on the right side of the live page, and it supports to play back records and display feature attributes.

You need to enable face detection, body detection, vehicle detection and non-motor vehicle detection to support this function. For details, see "5.9.8.2 Configuring Video Metadata".

Procedure

Step 1 Right-click the live page, and then select **AI Mode** as **Live Mode**.

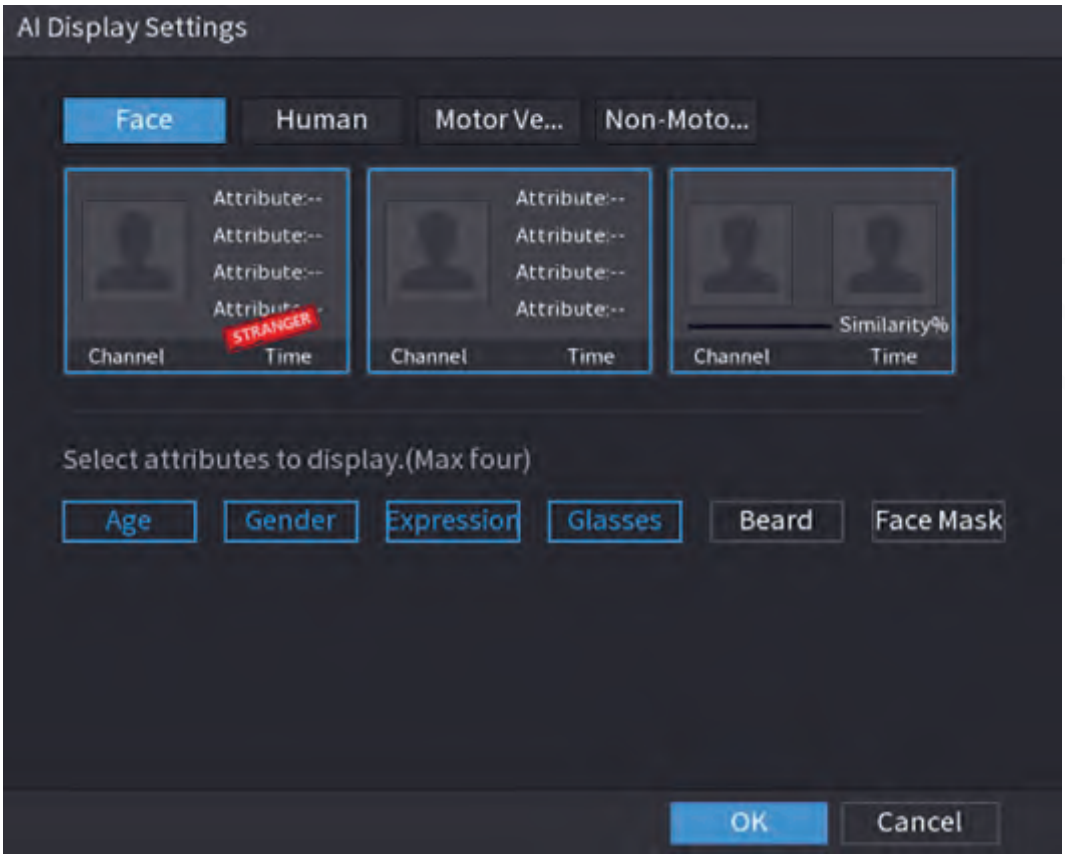
Figure 5-23 AI live view



Step 2 (Optional) Double-click the image on the right to play the corresponding video.

Step 3 Click , and then select the face attributes that you want to display. You can select up to four attributes.

Figure 5-24 Face vehicle properties



Step 4 Click **OK**.

The system can display four attributes at most.

5.6.6 Split Tracking

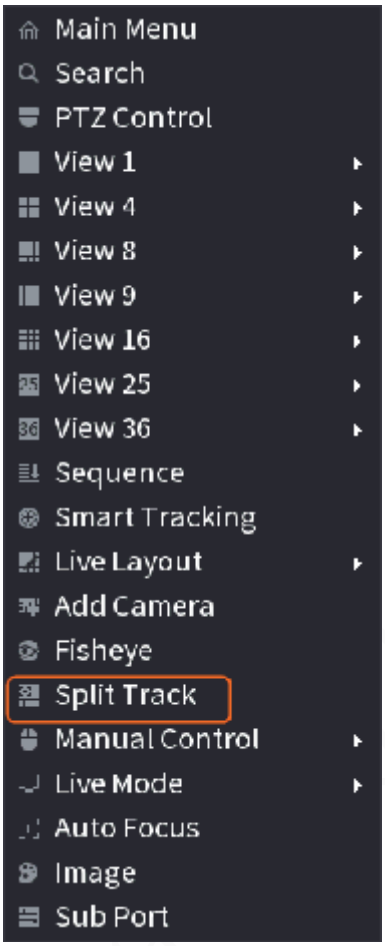
You can track window split for a certain channel.

This function is for select models only.

Procedure

Step 1 Right-click the live page, and then select **Split Track**.

Figure 5-25 Split track



Step 2 Select a split mode.

Figure 5-26 Split mode

Split mode includes full screen, 1 main screen + 3 split screens and 1 main screen + 5 split screens.

- You can move the rectangles with color to adjust the videos displayed on split screens.
- You can scroll the mouse in split screens to zoom in or out the video.

Figure 5-27 Split display

5.6.7 PTZ

PTZ is a mechanical platform that carries a camera and a protective cover and performs overall control remotely. A PTZ can move in both horizontal and vertical direction to provide all-around view to the camera.

Before you control the PTZ, make sure the PTZ decoder and the NVR network connection is OK.

5.6.7.1 PTZ Settings

Background Information

You can set different PTZ parameters for local type and remote type. Before you use local PTZ, make sure you have set PTZ protocol; otherwise you cannot control the local PTZ.

- Local: The PTZ device connects to the NVR through the cable.
- Remote: The PTZ device connects to the NVR through the network.

This function is available on select models.

Procedure

Step 1 Select **Main menu** > **Camera** > **PTZ**.

Figure 5-28 PTZ (local)

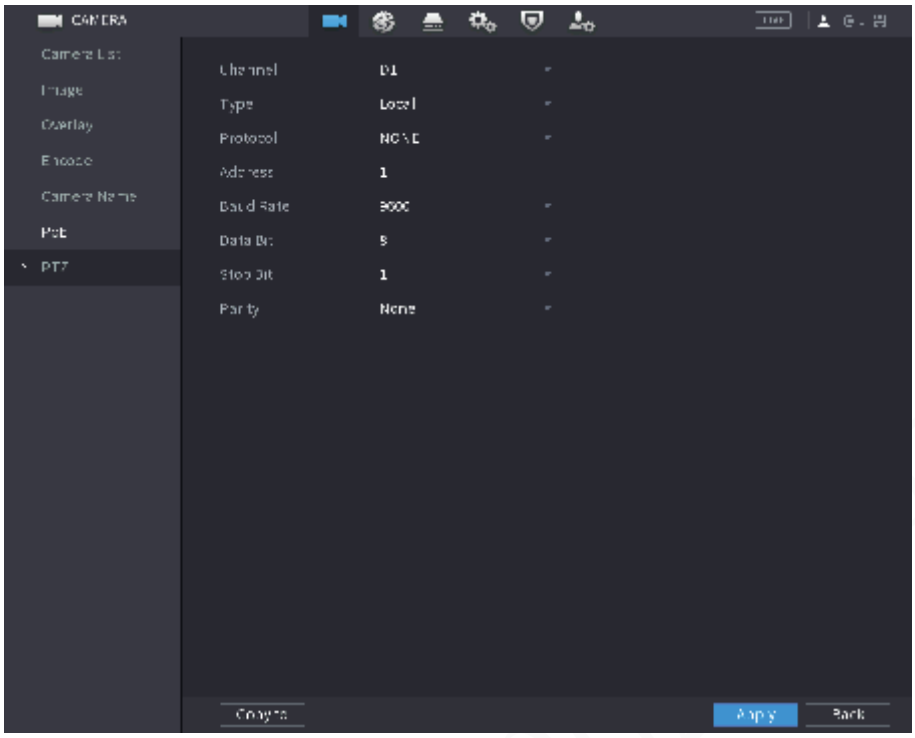
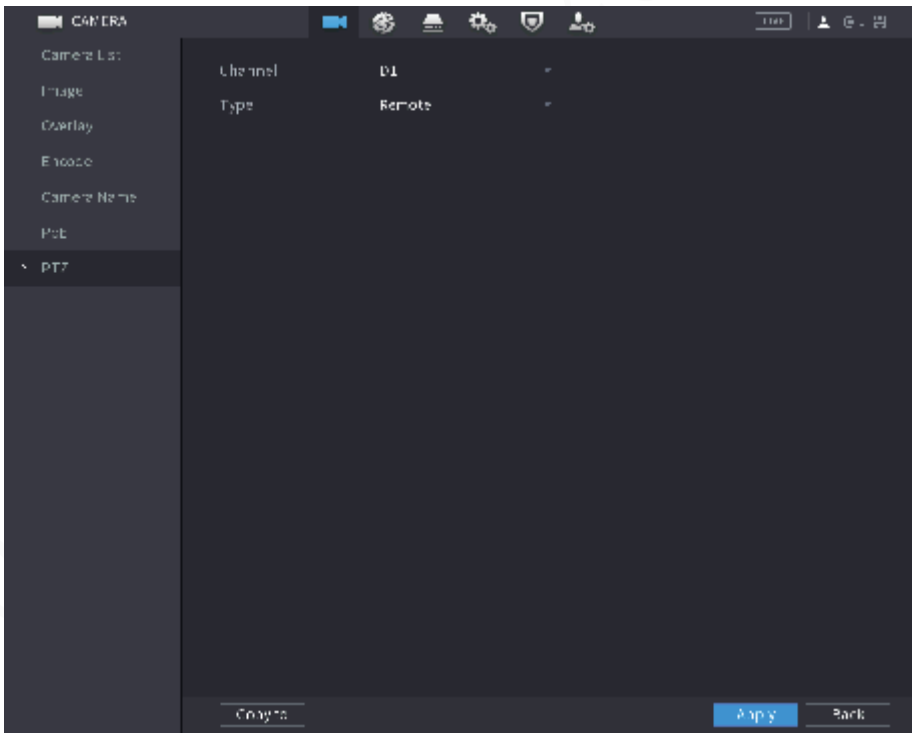


Figure 5-29 PTZ (remote)



Step 2 Configure parameters.

Table 5-10 PTZ parameters

Parameter	Description
Channel	Select the channel that you want to connect the PTZ camera to.
Type	• Local: Connect through RS-485 port. • Remote: Connect through network by adding IP address of PTZ camera to the Device.
Protocol	Select the protocol for the PTZ camera such as PELCOD.

Parameter	Description
Address	Enter the address for PTZ camera. The default is 1. The entered address must be the same with the address configured on the PTZ camera; otherwise the system cannot control PTZ camera.
Baud rate	Select the baud rate for the PTZ camera. The default is 9600.
Data Bit	The default value is 8.
Stop Bit	The default value is 1.
Parity	The default value is **None**.

Step 3 Click **Apply**.

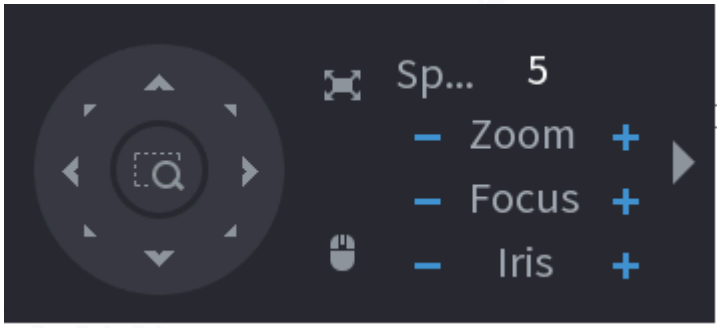
5.6.7.2 PTZ Control

You can use the PTZ control panel to perform the operations such as directing camera in eight directions, adjusting zoom, focus and iris settings, and quick positioning.

Basic PTZ Control Panel

Right-click the live page, and then select **PTZ Control**.

Figure 5-30 Basic PTZ control panel



- The gray button means system does not support current function.
- For some model, the PTZ function is available only in one-window mode.

Table 5-11 PTZ control parameters

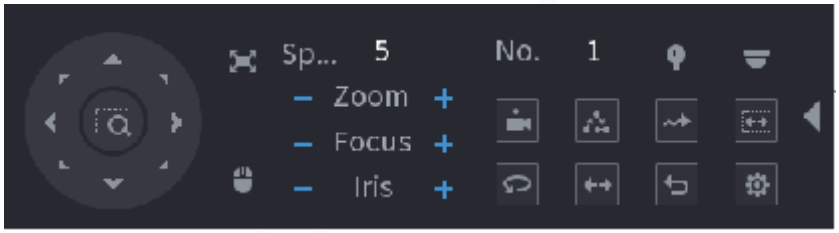
Parameter	Description
Speed	Controls the movement speed. The bigger the value, the faster the movement.
Zoom	−: Zoom out. +: Zoom in.
Focus	−: Focus far. +: Focus near.
Iris	−: Image darker. +: Image brighter.
PTZ movement	Supports eight directions.

Parameter	Description
	Fast positioning button. ● Positioning: Click the icon, and the click any point on the live page. The PTZ will turn to this point and locate this point in the center. ● Zooming: Click the icon, and then drag to draw a square on the view. The square supports zooming. ◇ Drag upward to zoom out, and drag downward to zoom in. ◇ The smaller the square, the larger the zoom effect. This function is available on select models, and can only be controlled through mouse operations.
	Click the icon, and then you can control the four directions (left, right, up, and down) of PTZ movement through mouse operation.
	Open the expanded PTZ control panel.

Expanded PTZ Control Panel

On the basic PTZ control panel, click to open the expanded PTZ control panel to find more options. See Figure 5-31.

Figure 5-31 Expanded PTZ control bar



- The functions with buttons in gray are not supported by the system.
- Right-click once to return to the interface of PTZ basic control panel.

Table 5-12 PTZ functions

Icon	Function	Icon	Function
	Preset		Pan
	Tour		Flip
	Pattern		Reset
	Scan		Click the **AUX Config** icon to open the PTZ functions settings interface.
	AUX Switch		Click the **Enter Menu** icon to open the **PTZ Menu** interface.

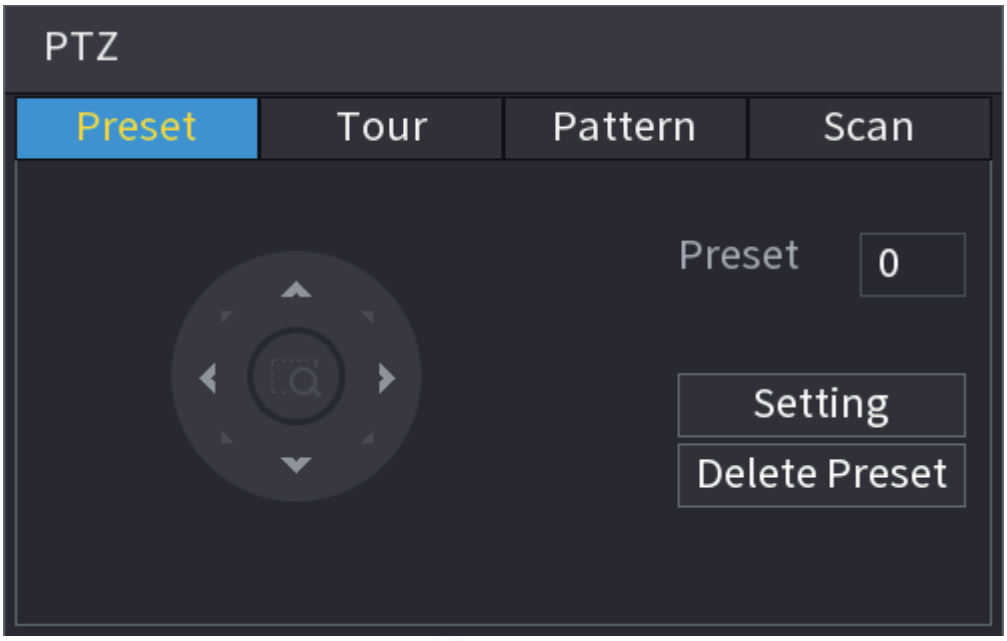
5.6.7.3 Configuring PTZ Functions

5.6.7.3.1 Configuring Presets

Procedure

Step 1 On the expanded PTZ control panel, click .

Figure 5-32 Preset



Step 2 Click the direction arrows to the required position.

Step 3 In the **Preset** box, enter the value to represent the required position.

Step 4 Click **Setting** to complete the preset settings.

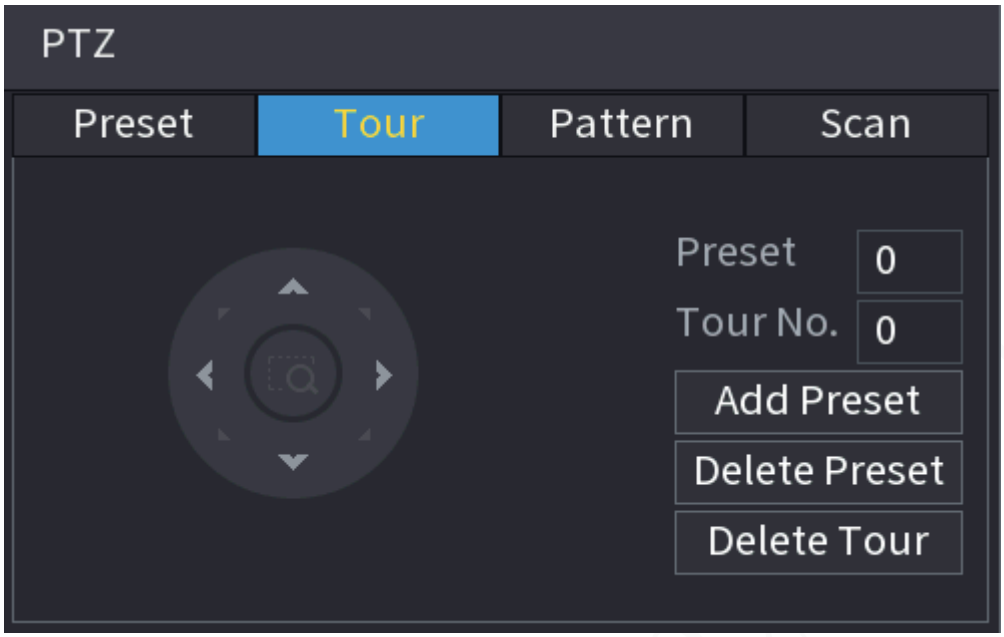
5.6.7.3.2 Configuring Tours

Procedure

Step 1 On the expanded PTZ control panel, click .

Step 2 Click the **Tour** tab.

Figure 5-33 Tour



Step 3 In the **Tour No.** box, enter the value for the tour route.

Step 4 In the **Preset** box, enter the preset value.

Step 5 Click **Add Preset**.

A preset will be added for this tour.

- You can repeat adding more presets.
- Click **Delete Preset** to delete the preset for this tour. This operation can be repeated to delete more presets. Some protocols do not support deleting.

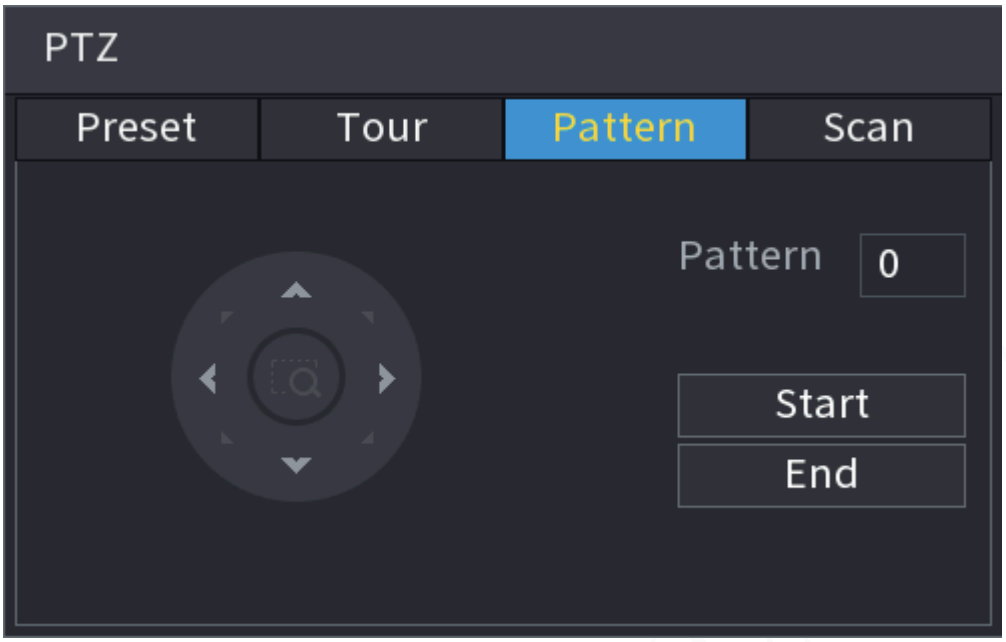
5.6.7.3.3 Configuring Patterns

Procedure

Step 1 On the expanded PTZ control panel, click .

Step 2 Click the **Pattern** tab.

Figure 5-34 Pattern



Step 3 In the **Pattern** box, enter the value for pattern.

Step 4 Click **Start** to perform the directions operations. You can also go to the PTZ Control Panel to perform the operations of adjusting zoom, focus, iris, and directions.

Step 5 On the **PTZ** window, click **End** to complete the settings.

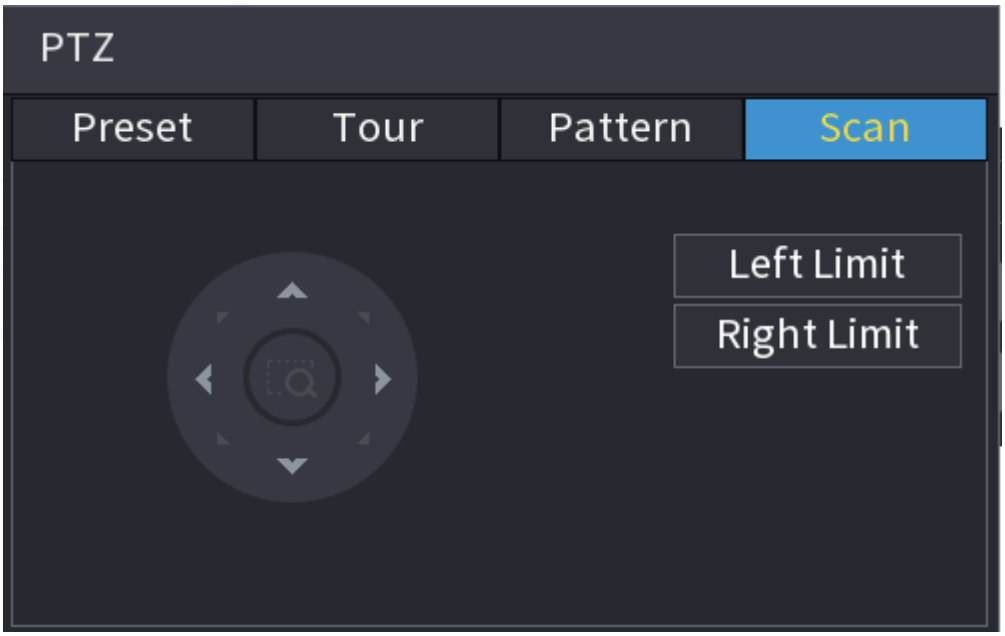
5.6.7.3.4 Configuring AutoScan

Procedure

Step 1 On the expanded PTZ control panel, click .

Step 2 Click the **Scan** tab.

Figure 5-35 Scan

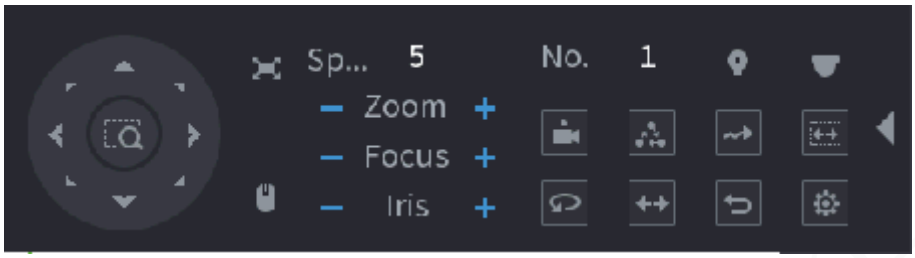


Step 3 Click the direction arrows to position the left and right limits.

5.6.7.4 Using PTZ Functions

After you have configured the PTZ settings, you can use the PTZ functions from the expanded PTZ control panel.

Figure 5-36 Expanded PTZ control panel



5.6.7.4.1 Presets

Procedure

Step 1 On the expanded PTZ control panel, in the **No.** box, enter the value of the preset.

Step 2 Click to call the preset.

Step 3 Click again to stop calling the preset.

5.6.7.4.2 Tours

Procedure

Step 1 On the expanded PTZ control panel, in the **No.** box, enter the value of the tour.

Step 2 Click to call the tour.

Step 3 Click again to stop calling the tour.

5.6.7.4.3 Patterns

Procedure

Step 1 On the expanded PTZ control panel, in the **No.** box, enter the value of the pattern.

Step 2 Click to call the pattern.

The PTZ camera moves according to the configured pattern repeatedly.

Step 3 Click again to stop calling the pattern.

5.6.7.4.4 AutoScan

Procedure

Step 1 On the expanded PTZ control panel, in the **No.** box, enter the value of the border.

Step 2 Click .

The PTZ camera performs scanning according to the configured borders.

Step 3 Click again to stop auto scanning.

5.6.7.4.5 Calling AutoPan

Procedure

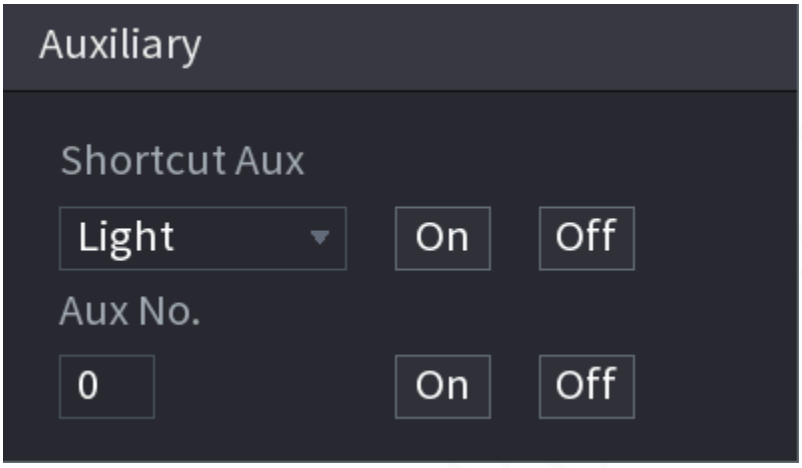
Step 1 On the expanded PTZ control panel, click to start moving in horizontal direction.

Step 2 Click again to stop moving.

5.6.7.4.6 Auxiliary Button

On the expanded PTZ control panel, click .
In the **Shortcut Aux** list, select the option that corresponds to the applied protocol.
In the **Aux No.** box, enter the number that corresponds to the AUX switch on the decoder.

Figure 5-37 Auxiliary



5.6.8 Wireless Pairing

You can use the wireless pairing to quickly add IPCs to the NVR.

Make sure that the IPC and NVR are on the same network segment.
Right-click the live page, and then select **Wireless Pairing**. The system starts a 120-second pairing countdown. You can see the video of the paired IPC after pairing is successful.

Figure 5-38 Wireless pairing

5.6.9 Sequence

Background Information

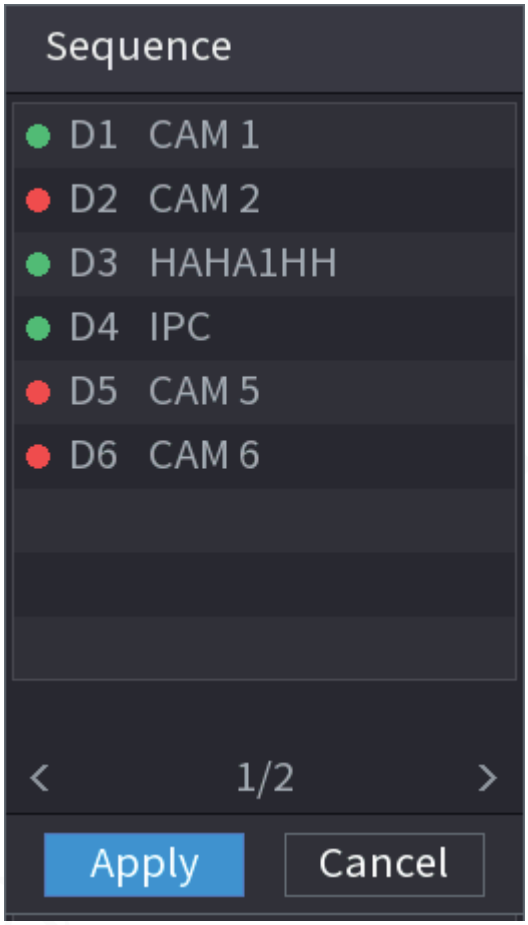
You can configure the sequence of the channels displayed on the live page.

Procedure

Step 1 Right-click the live page, and then select **Sequence**.

- After you select **Sequence**, the system automatically switches to the max split amount mode.
- The channel list on the **Sequence** panel displays the added camera channel number and channel name. means camera is online. means camera is offline.

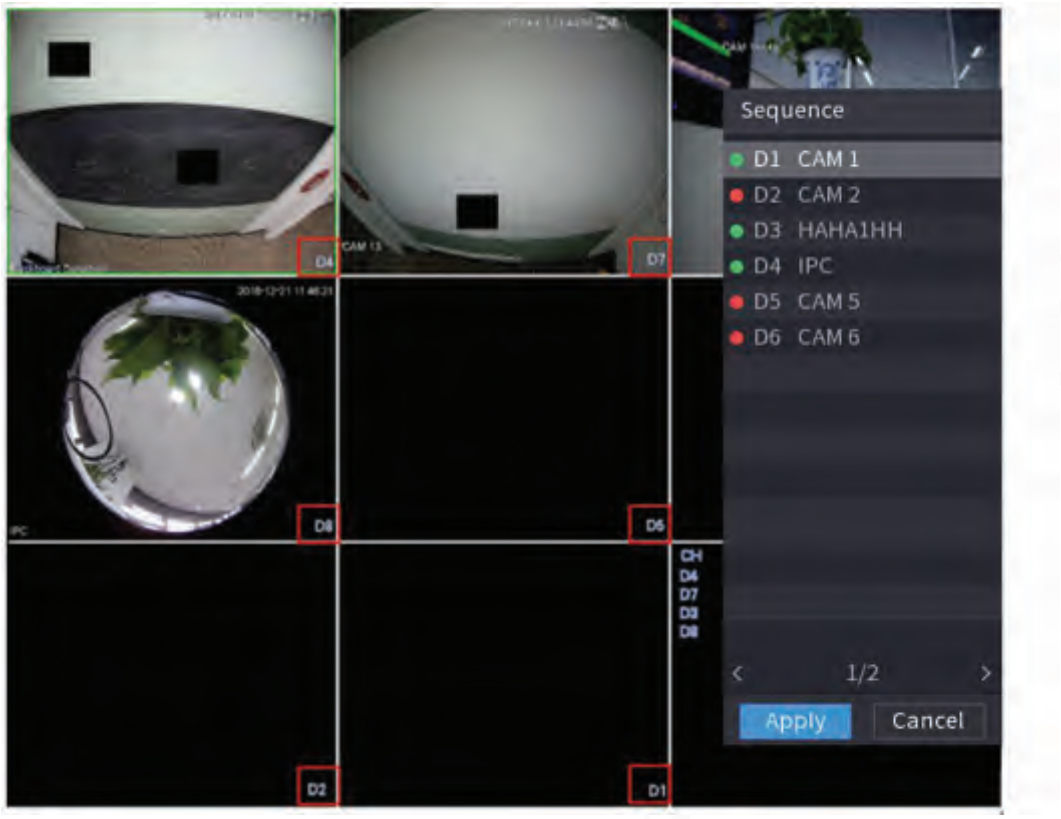
Figure 5-39 Sequence



Step 2 On the **Sequence** panel, drag the channel to the desired window, or drag on the live window to switch the position.

Check the channel number at the right bottom corner to view the current channel sequence.

Figure 5-40 Channel number

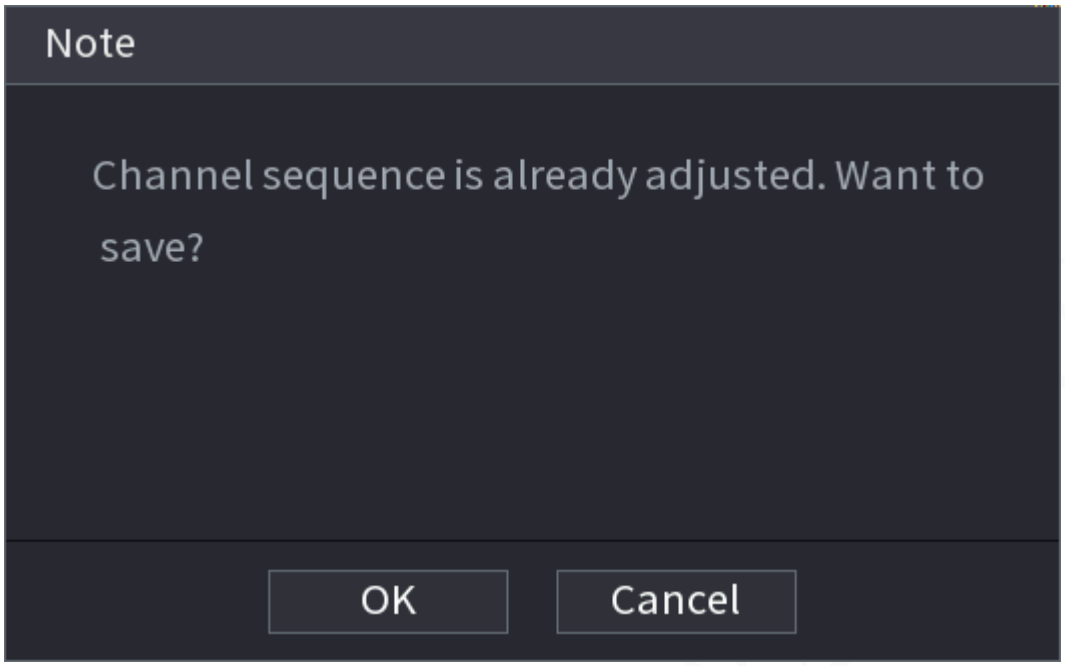


Step 3 Click **Apply**.

After you change the channel sequence, click **Cancel** or right-click the live view page, the system prompts you whether to save the sequence change.

- Click **OK** to save current settings.
- Click **No** to exit without saving the settings.

Figure 5-41 Note for saving sequence



5.6.10 Fisheye

This function is for some models only.

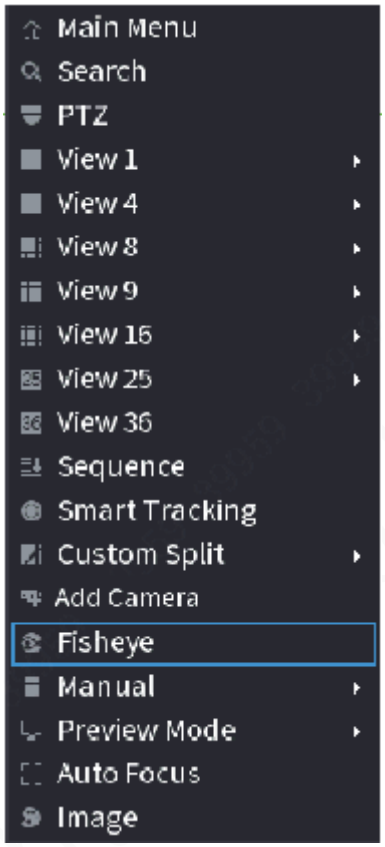
5.6.10.1 Fisheye De-warp on Live View Interface

The fisheye camera (panoramic camera) has wide video of angle but its video is seriously distorted. The de-warp function can present the proper and vivid video suitable for human eyes.

On the live page, right-click the fisheye channel, and then select **Fisheye**. You can set fisheye installation mode and display mode.

- For the non-fish eye channel, the system prompts you it is not a fisheye channel and does not support de-warp function.
- If system resources are insufficient, the system prompts you the de-warp function is not available.

Figure 5-42 Fisheye



There are three installation modes: ceiling mount, wall mount, and ground mount.

- The different installations modes have different de-warp modes.
- Some models support de-warp of 180° fisheye camera. 180° fisheye camera supports de-warp in wall mount mode only.

Figure 5-43 Fisheye settings

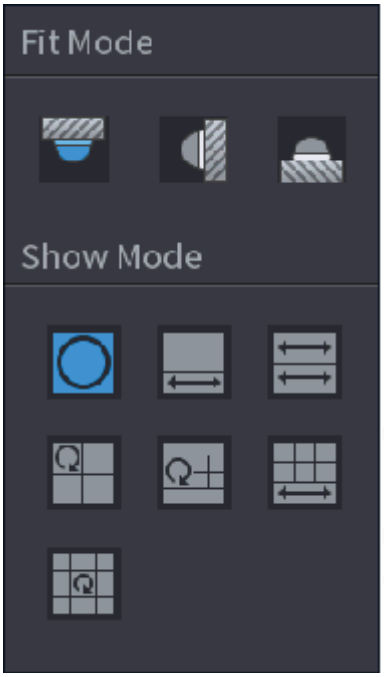


Table 5-13 Installation mode

Installation mode	Icon	Description
(Ceiling mount) (Ground mount)		360° panorama original view
		1 de-warp window+1 panorama stretching
		2 panorama stretching views
		1 360° panorama view+3 de-warp windows
		1 360°panorama view+4 de-warp windows
		4 de-warp windows+1 panorama stretching
		1 360° panorama view+8 de-warp windows
(Wall mount)		360°panorama original view
		Panorama stretching
		1 panorama unfolding view+3 de-warp windows
		1 panorama unfolding view +4 de warp windows
		1 panorama unfolding view +8 de warp windows

Figure 5-44 De-warp

You can adjust the color pane on the left pane or use your mouse to change the position of the small images on the right pane to realize fish eye de-warp.

Operation: Use mouse to zoom in, zoom out, move, and rotate the image (Not for wall mount mode.)

5.6.10.2 Fisheye De-warp During Playback

Background Information

When playing back the fisheye record file, you can use de-warp function to adjust video.

Procedure

Step 1 On the main menu, click **BACKUP**.

Step 2 Select 1-window playback mode and corresponding fish eye channel, click ▶ to play.

Step 3 Right-click , and then you can go to the de-warp playback page. For detailed information, see Figure 5-44.

5.6.11 Temperature Monitoring

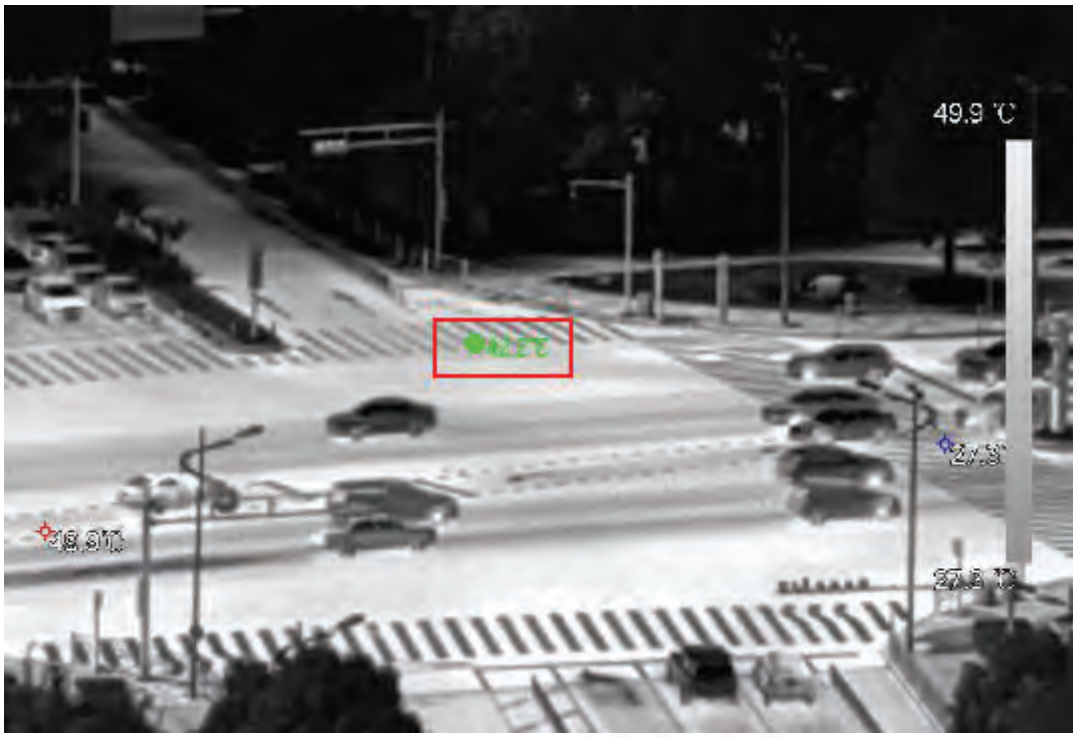
When NVR connects to the camera that supports temperature detection, the system can display instant temperature.

- This function might collect the human temperature in the surveillance video.
- This function is available on select models.

Step 1 Go to **Main Menu** > **DISPLAY** > **Display** to enable the temperature test function.

Step 2 On the live page, click any position on the thermal channel video. The temperature at the position is displayed.

Figure 5-45 Temperature display



5.6.12 Shortcut Menu to Add Camera

Background Information

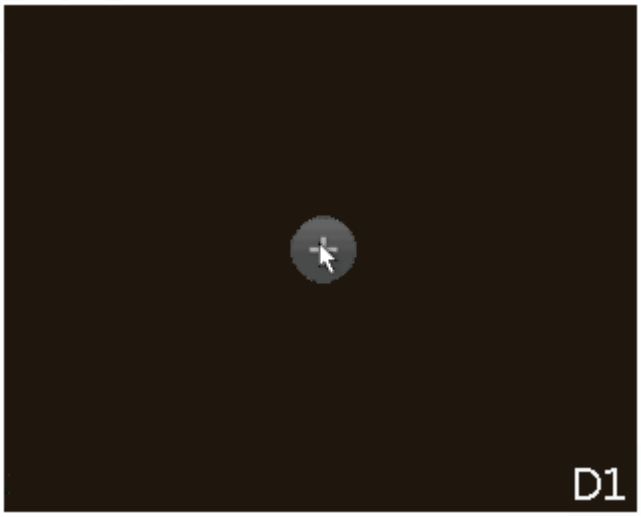
You can add cameras on the live page.

Procedure

Step 1 On the live page, point to a channel window.

There is an icon + on the channel window.

Figure 5-46 Add icon



Step 2 Click "+", and then configure the parameters to add the remote device. For details, see "5.7.2 Adding Remote Devices".

5.7 Camera

5.7.1 Initializing Remote Devices

You can change the login password and IP address of a remote device when you initialize it.

- When you connect a camera to the NVR via PoE port, NVR automatically initializes the camera. The camera adopts NVR current password and email information by default.
- When you connect a camera to the NVR via PoE port after NVR is upgraded to the new version, the NVR might fail to initialize the camera. You need to initialize the camera manually.

Step 1 Log in to the local system of the Device.

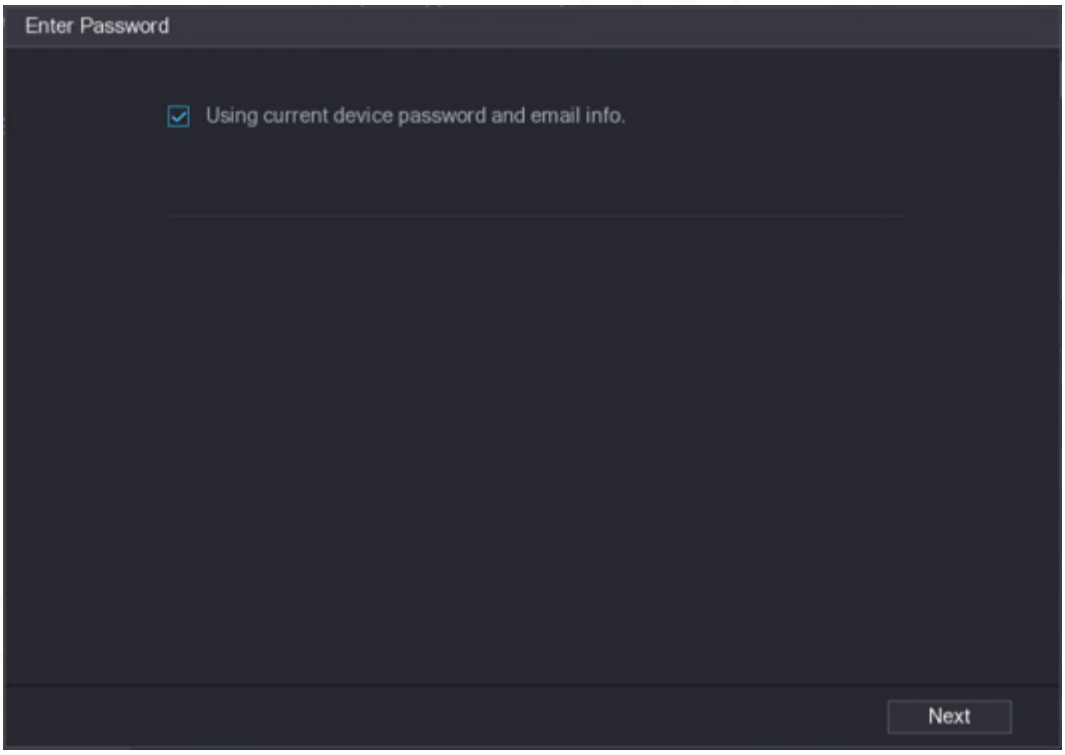
Step 2 Right-click the live page and then select **Main Menu** > **CAMERA** > **Camera List** > **Camera List**.

Step 3 Click **Uninitialized,** and then click **Search Device**.

The Device displays cameras to be initialized.

Step 4 Select a camera to be initialized and then click **Initialize**.

Figure 5-47 Enter password

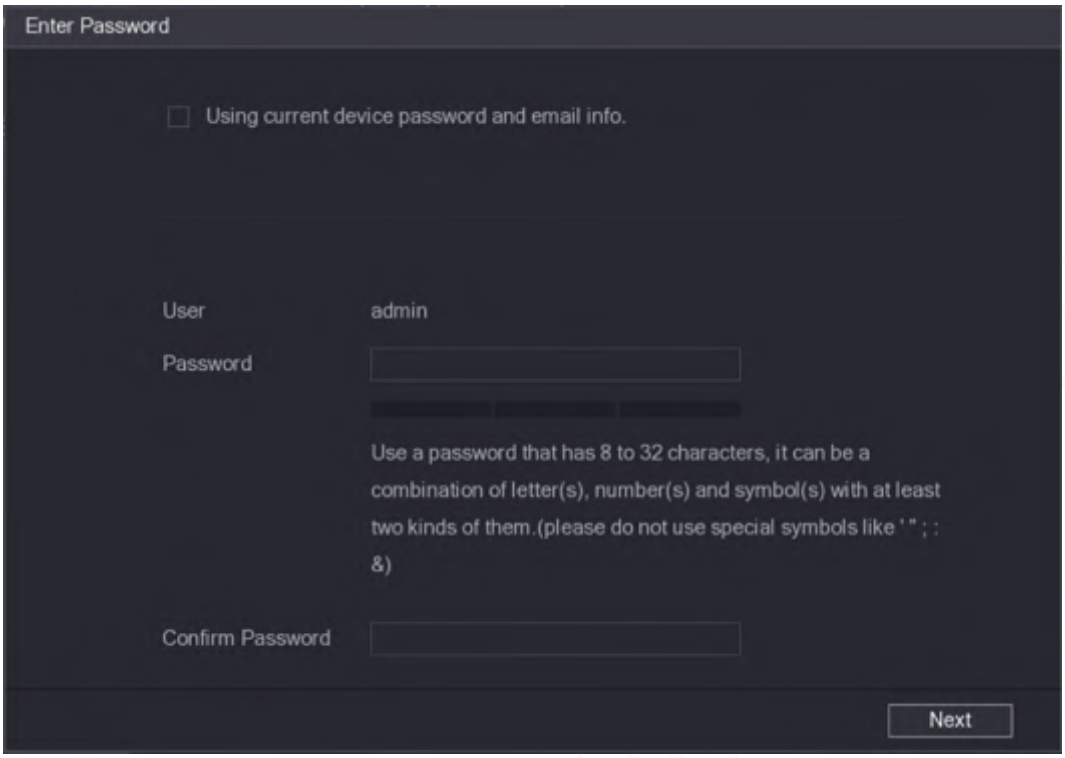


Step 5 Set password and email information for the remote device.

If you select **Using current device password and email info,** the remote device automatically uses NVR admin account information (login password and email). You can skip this step.

1) Cancel the selection of **Using current device password and email info**.

Figure 5-48 Password

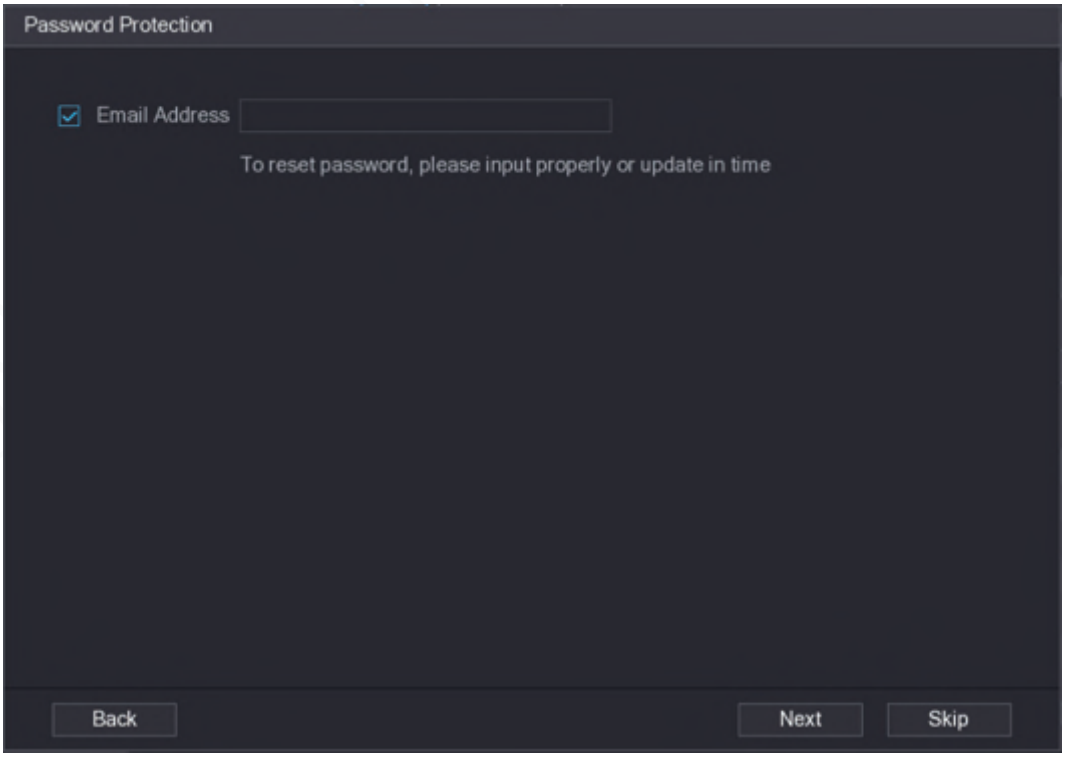


2) Enter the password and then confirm it.

For your device security, we recommend you create a strong password according to the password strength indication and change your password regularly.

3) Click **Next**.

Figure 5-49 Password protection



4) Enter your email address, and then click **Next**.
The email address is used to receive the security code for password resetting.

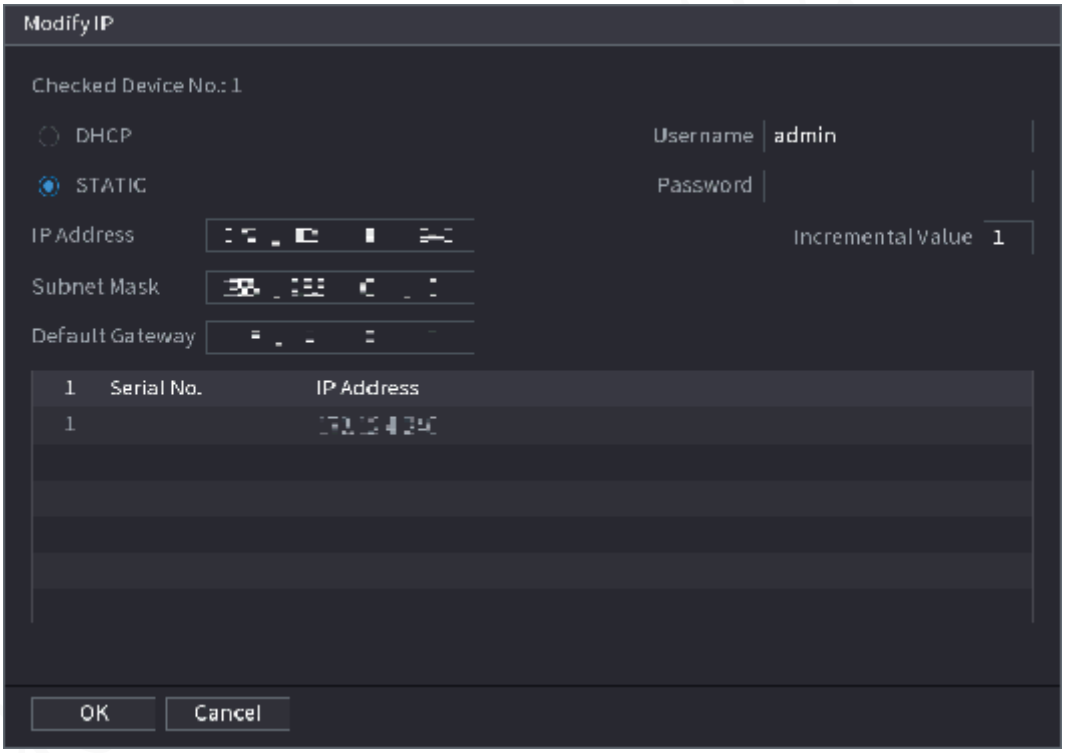
If you do not want to enter email information, cancel the selection of the checkbox and then click **Next** or **Skip**.

Step 6 Set camera IP address.

- **DHCP**: There is no need to enter IP address, subnet mask, and default gateway. Device automatically allocates the IP address to the camera.
- **Static**: You need to enter IP address, subnet mask, and default gateway.

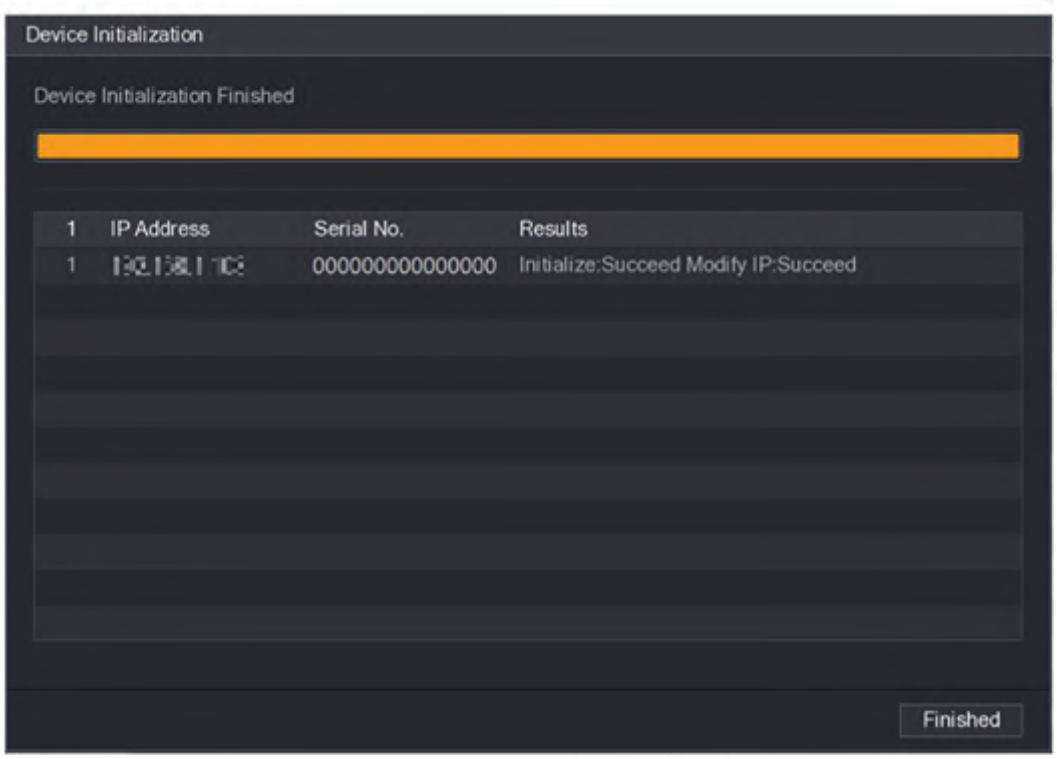
- When you are changing IP addresses of several devices at the same time, enter incremental value. The system can add the fourth decimal digit of the IP address one by one to automatically allocate the IP addresses.
- If an IP conflict occurs when you change static IP address, the system will notify you of the issue. If you change IP addresses in batches, the system automatically skips the conflicted IP and begins the allocation according to the incremental value.

Figure 5-50 Modify IP



Step 7 Click **Next**.

Figure 5-51 Device initialization



Step 8 Click **Finished**.

5.7.2 Adding Remote Devices

Add remote devices to the NVR to receive, store, and manage the video streams of the remote device.

Before adding the remote devices, make sure that the devices have been initialized.

5.7.2.1 Adding Cameras from Search

Search for the remote devices that are on the same network with the NVR, and then add the remote devices from the search results.

We recommend this method when you do not know the specific IP address of the remote device.

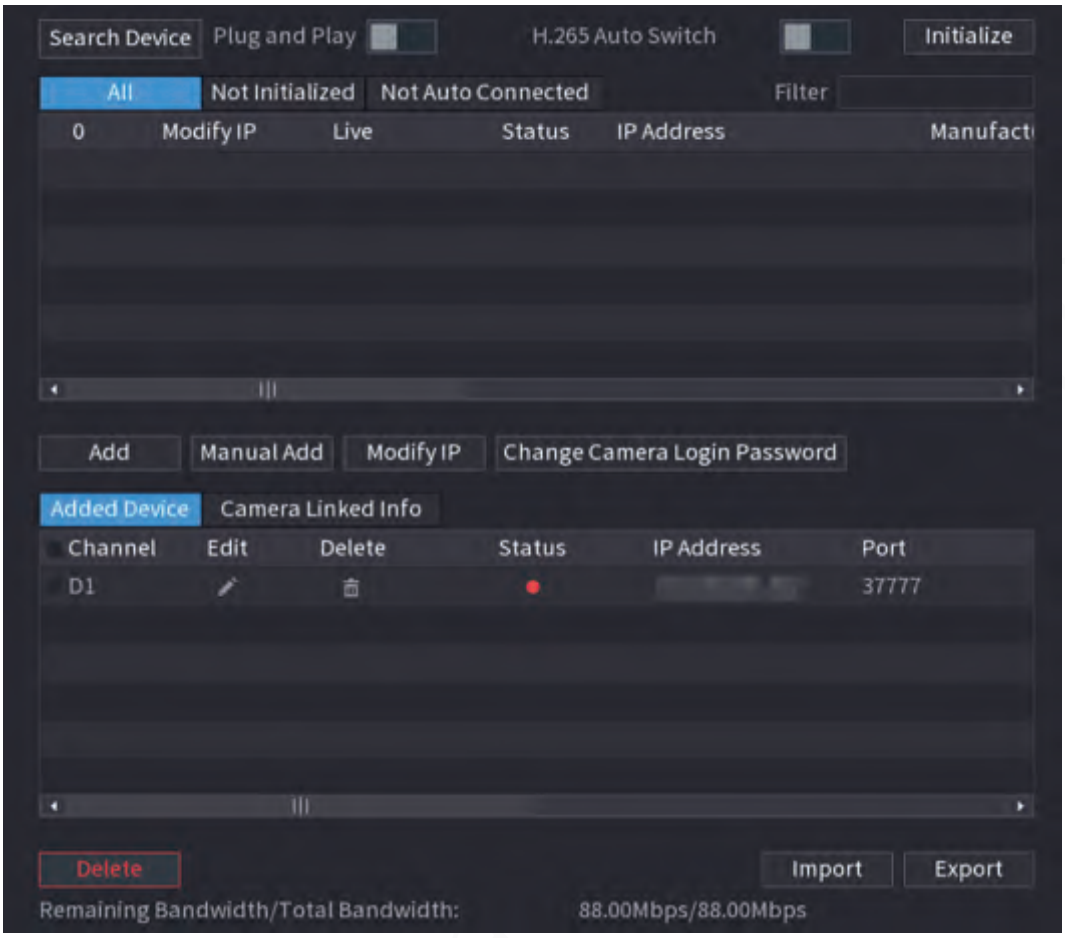
Procedure

Step 1 Select **Main Menu** > **CAMERA** > **Camera List** > **Camera List**.

Step 2 Click **Search Device**.

The remote devices found are displayed at the upper pane. Devices already added are not included in the searched results.

Figure 5-52 Search device



- For cameras accessed through private protocol, you can click **LIVE** and then enter the username and password to play live video.
- To filter the remote devices, you can enter all or part of device name in the **Filter** box.
- To filter out the uninitialized devices, click the **Not Initialized** tab, and then you can initialize the devices. For details, see "5.7.1 Initializing Remote Devices".
- To view all remote devices added through plug and play, you can click the **Not Auto Connected** tab. You can remove devices added through plug and play, and they can be automatically added again after plug and play is enabled.

Step 3 (Optional) Enable **Plug and Play**.

When **Plug and Play** is enabled, the NVR automatically adds remote devices on the same subnet.

For uninitialized remote devices, the NVR automatically initializes them before adding them.

Step 4 (Optional) Enable **H.265 Auto Switch**.

When **H.265 Auto Switch** is enabled, the video compression standard of added remote devices is switched to H.265 automatically.

Step 5 Double-click a remote device, or select a remote device and then click **Add** to register it to the **Added Device** list.

Related Operations

- Change camera login password.
  Select an added camera, and then click **Change Camera Login Password** to change the password.
- Edit camera information.
  On the **Added Device** list, click  to change the IP address, username, password and other information.
- Import and export cameras.
  You can export the information of the connected cameras and import camera information to the system to add cameras in batches. For details, see "5.7.2.3 Importing Cameras".
- View linked information.
  If the remote device has multiple channels, you can click the **Camera Linked Info** to view linked information of the remote device.
- Delete cameras.
  - ◇ Delete one by one.
    Click  to delete the corresponding camera.
  - ◇ Delete in batches.
    Select one or more cameras, and then click **Delete**.

5.7.2.2 Adding Cameras Manually

Configure the IP address, username, password and other information of the remote device manually to add to the NVR.

We recommend this method when you want to add only a few remote devices and know their IP addresses, usernames and passwords.

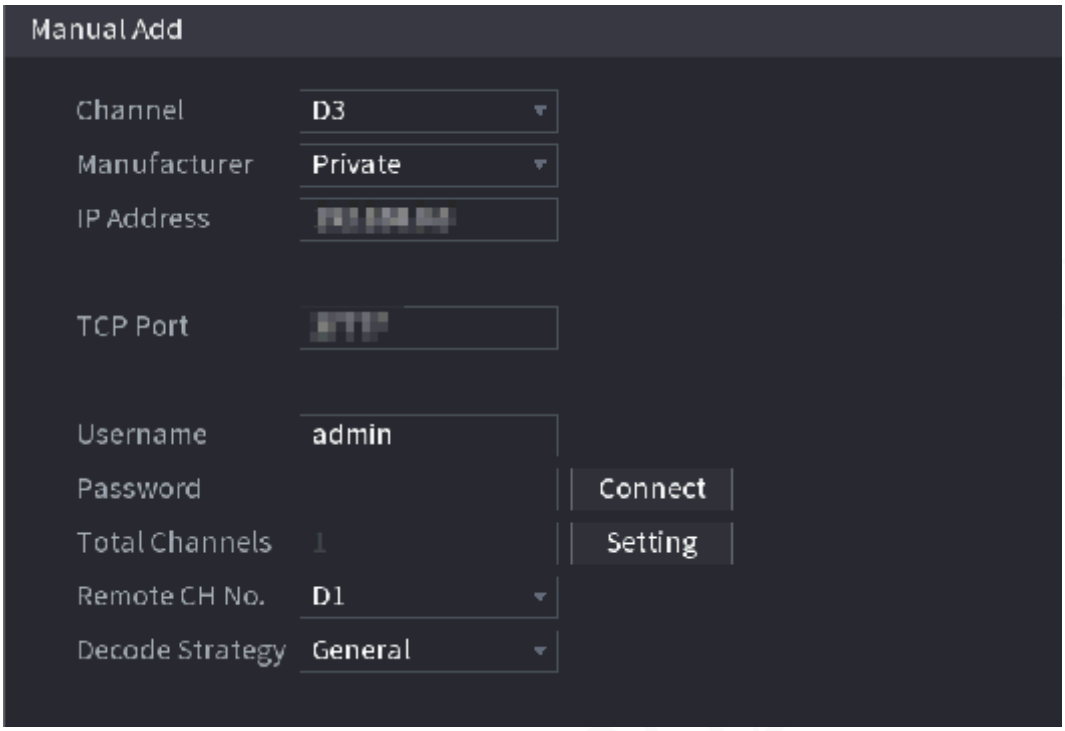
Step 1 Select **Main Menu** > **CAMERA** > **Camera List** > **Camera List**.

Step 2 (Optional) Enable **H.265 Auto Switch**.

When **H.265 Auto Switch** is enabled, the video compression standard of added remote devices is switched to H.265 automatically.

Step 3 Click **Manual Add**.

Figure 5-53 Manual add



Step 4 Configure the parameters.

The parameters might vary depending on the manufacturer that you select.

Table 5-14 Remote channel parameters

Parameter	Description
Channel	Select the channel that you want use on the Device to connect the remote device.
Manufacturer	Select the manufacturer of the remote device.
IP Address	Enter the IP address of the remote device.
RTSP Port	Enter the RTSP port number. The default value is 554.
HTTP Port	Enter the HTTP port number. The default value is 80.
TCP Port	The default value is 37777. You can enter the value as needed.
Username	Enter the username of the remote device.
Password	Enter the password of the user for the remote device.
Total Channels	Click **Connect** to get the total number of channels of the remote device.
Remote CH No.	Enter the remote channel number of the remote device.
Decode Strategy	Select **Default**, **Realtime**, or **Fluent**.
Protocol Type	• If the remote device is added through private protocol, the default type is **TCP**. • If the remote device is added through ONVIF protocol, the system supports **Auto**, **TCP**, **UDP**, or **MULTICAST**. • If the remote device is added through other manufacturers, the system supports **TCP** and **UDP**.

Parameter	Description
Encryption	If the remote device is added through ONVIF protocol, select the **Encrypt** checkbox and then the system will provide encryption protection to the data being transmitted. To use this function, make sure that the HTTPS function is enabled for the remote IP camera.

Step 5 Click **OK**.

5.7.2.3 Importing Cameras

You can import remote devices in batches.

We recommend this method when you want to add lots of remote devices whose IP addresses, usernames and passwords are not the same.

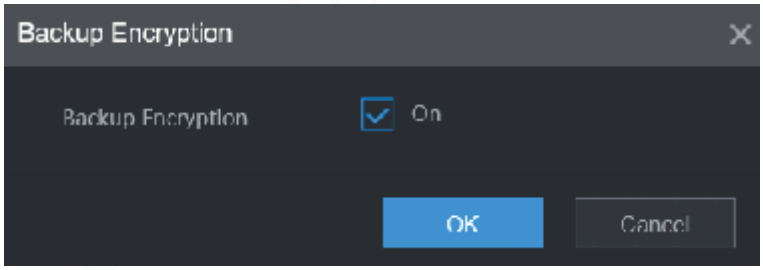
Step 1 Select **Main Menu** > **CAMERA** > **Camera List** > **Camera List**.

Step 2 Export the template.

The exported template includes the information of the added remote device. Pay attention to your data security.

1) Click **Export**.

Figure 5-54 Backup encryption



2) Cancel the selection of the **On** checkbox to disable backup encryption, and then click **OK**.

- If **Backup Encryption** is enabled, the file format is .backup.
- If **Backup Encryption** is disabled, the file format is .csv. Keep unencrypted files well to avoid data leakage.

3) Select the storage path and then click **Save**.
   - The template file is named RemoteConfig_*20220222191255*.csv. *20220222191255* represents the export time.
   - The template includes the IP address, port, remote channel No., manufacturer, username, password and other information.

Step 3 Fill in the template and then save the file.

Do not change the file extension of the template. Otherwise, the template cannot be imported.

Step 4 Click **Import**, select the template file and then open it.

The remote devices in the template are added to the NVR. If the remote device in the template has been added, the system will prompt you whether to replace the existing one on the device list.

- If you select **Yes**, the system deletes the existing one and import the device again.
- If you select **No**, the system retains the existing one and add the device to another unoccupied channel.

5.7.3 Changing IP Address of Remote Device

The procedures to change the IP addresses of connected and unconnected cameras are different.

You can change the IP address only when the camera is online.

5.7.3.1 Changing IP Address of Connected Remote Device

Step 1 Select **Main Menu** > **CAMERA** > **Camera List** > **Camera List**.

Step 2 On the **Added Device** list, double-click a remote device or click .

Step 3 Change the IP address.

Step 4 Click **OK**.

5.7.3.2 Changing IP Address of Unconnected Cameras

Step 1 Select **Main Menu** > **CAMERA** > **Camera List** > **Camera List**.

Step 2 Click **Search Device**.

The remote devices found are displayed at the upper pane.

Step 3 Click , or select one or more remote devices and then click **Modify IP**.

When changing the IP addresses of multiple remote devices at the same time, make sure that they share the same username and password.

Step 4 Enter username and password of the remote device, and then configure the IP address.

- **DHCP**: The remote device gets a dynamic IP address automatically.
- **Static**: You need to enter static IP address, subnet mask, and default gateway. When changing IP addresses of multiple remote devices at the same time. enter the incremental value so that the system can add the fourth decimal digit of the IP address one by one according to the incremental value.

Step 5 Click **OK**.

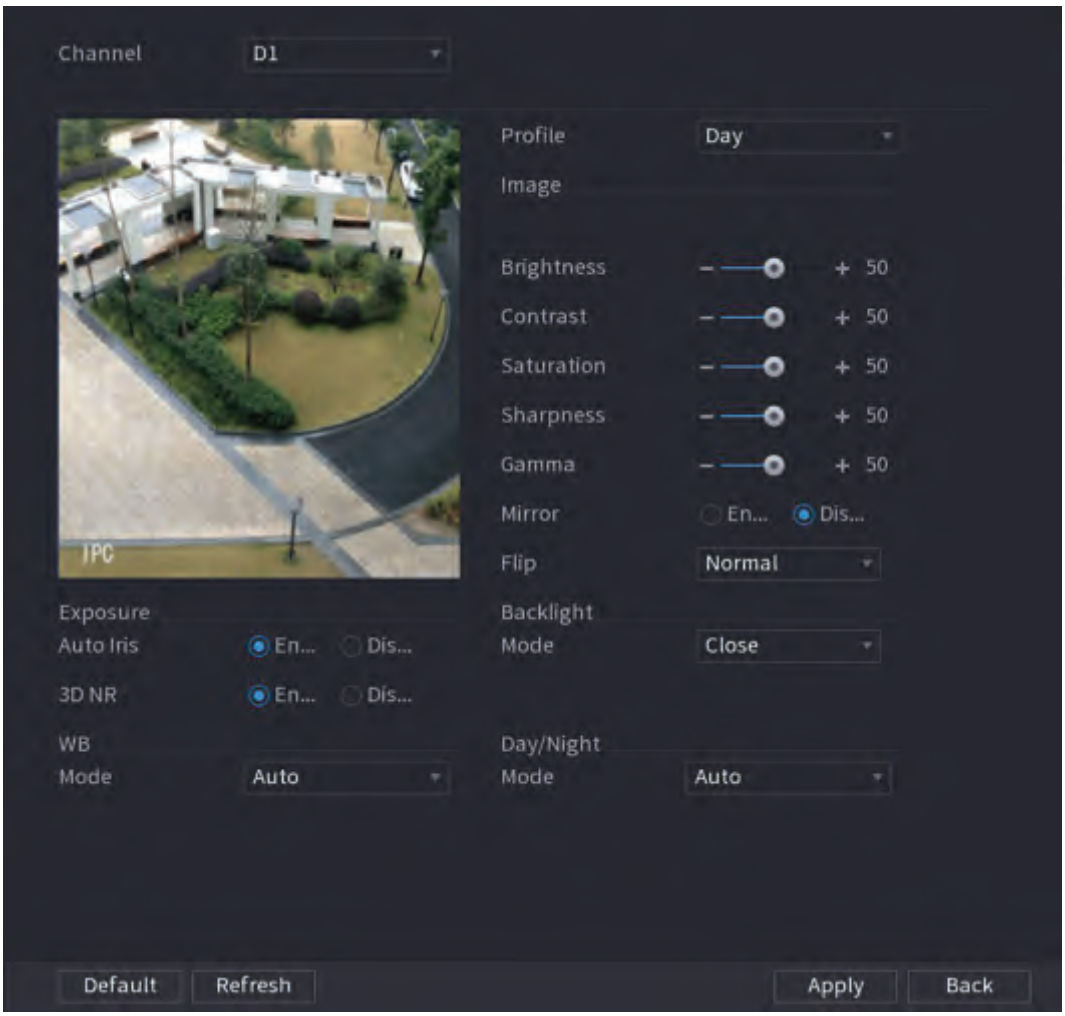
5.7.4 Configuring Image Settings

You can set network camera parameters according to different environments to get the best video

effect.

Step 1 Select **Main Menu** > **CAMERA** > **Image**.

Figure 5-55 Image



Step 2 Select a channel and then configure parameters.

The parameters might vary depending on the camera model.

Table 5-15 Image parameters

Parameter	Description
Profile	There are three configuration files. The system has configured the corresponding parameters for each file. You can select according to your actual situation.
Brightness	Adjust the image brightness. The bigger the value is, the brighter the image will become.
Contrast	Adjust the image contrast. The bigger the value is, the more obvious the contrast between the light area and dark area will become.
Saturation	Adjust the color shades. The bigger the value, the lighter the color will become.
Sharpness	Adjust the sharpness of image edge. The bigger the value is, the more obvious the image edge is.

Parameter	Description	
Gamma	Adjust image brightness and enhance the image dynamic display range. The bigger the value is, the brighter the video is.	
Mirror	Switch the left and right sides of the video image. It is disabled by default.  This function is available on select models.	
Flip	Set video display direction. It includes normal, 180°, 90°, and 270°.	
Exposure	Auto Iris	● This function is available when the camera is equipped with the auto iris lens. ● After you enable auto iris function, the iris can automatically zoom in and zoom out according to the brightness of the environment and the image brightness changes accordingly. ● If you disable the auto iris function, the iris is at the biggest value. The iris does not automatically zoom in or zoom out according to the brightness of the environment.
	3D NR	This function specially applies to the image whose frame rate is configured as 2 at least. It reduces the noise by using the information between two frames. The bigger the value is, the better the effect.
Backlight Mode	You can set camera backlight mode. ● SSA: In the backlight environment, the system can automatically adjust image brightness to clearly display the object. ● BLC: ◇ Default: The device performs automatic exposures according to the environment situation to make the darkest area of the video clear. ◇ Customize: After you select the specified zone, the system can expose the specific zone so that the zone can reach the proper brightness. ● WDR: In backlight environment, the system lowers the high bright section and enhances the brightness of the low bright section, so that you can view these two sections clearly at the same time. ● HLC: In the backlight environment, the system lowers the brightness of the brightest section, reduces the area of the halo and lowers the brightness of the whole video. ● Close: Disable the BLC function.	

Parameter	Description
WB Mode	You can set camera white balance mode. The system adjusts the overall image hue to make the image color display precisely as it is. Different cameras support different white balance modes, such as auto, manual, natural light, and outdoor.
Day/Night Mode	Configure the color and black & white mode of the image. This parameter is not affected by the configuration files. ● **Color**: The camera outputs color image only. ● **Auto**: The camera outputs color images or black and white images according to ambient brightness ● **B/W**: The camera outputs black and white image only. ● **Sensor**: Use this mode when there is peripheral IR light connected. The **Sensor** mode is available on select non-IR models.

Step 3 Click **Apply**.

5.7.5 Configuring Overlay Settings

You can set parameters for overlay and private masking.

5.7.5.1 Overlay

You can add the information of time and channel in the live view interface.

Step 1 Select **Main Menu** > **CAMERA** > **Overlay** > **Overlay**.

Step 2 Select a channel and then configure parameters.

Table 5-16 Video overlay parameters

Parameter	Description
Time Title	Display the time tile on the video image in live view and playback. 1. Select **Time Title**. 2. Drag the time title to a desired place. 3. Click **Apply**.
Channel Title	Display the channel tile on the video image in live view and playback. 1. Select **Channel Title** and then edit the channel title. 2. Drag the channel title to a desired place. 3. Click **Apply**.
Custom Title	You can customize title to be overlaid on the video image. Click **Setting** to set the information such as font size, title content and text alignment, and then click **OK**.
Default	Restore the overlay settings to default configuration.
Copy to	Copy the overlay settings to other channels.

Step 3 Click **Apply**.

5.7.5.2 Privacy Masking

You can mask certain areas of the video image for privacy protection.

Procedure

Step 1 Select **Main Menu** > **CAMERA** > **Overlay** > **Privacy Masking**.

Figure 5-56 Privacy masking

Step 2 Select a channel.

Step 3 Click to enable privacy masking.

Step 4 Click **Add**, select the masking type and color, and then draw mosaic or color blocks in the image as needed.

A masking block appears on the video image.

- The number of masking blocks that you can add might differ depending on the camera. You can add up to 24 masking blocks.
- Click **Clear** to delete all masking areas. Click to delete a masking area.

Step 5 Drag the masking block to a desired position and then configure the type, color and other parameters.

Step 6 Click **Apply**.

5.7.6 Configuring Encoding Settings

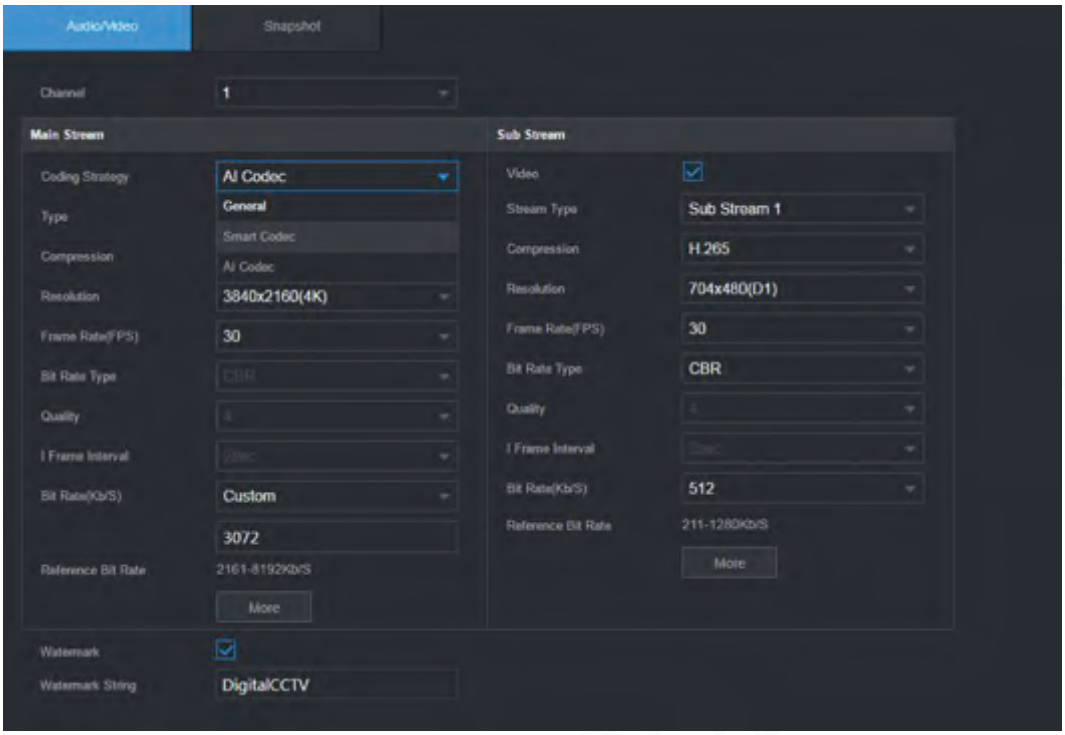
You can set video bit stream and image parameters.

5.7.6.1 Configuring Audio and Video Encoding Settings

You can set audio and video encoding parameters such as bit stream type, compression, and resolution.

Step 1 Select **Main Menu** > **CAMERA** > **Encode** > **Audio/Video**.

Figure 5-57 Audio/video



Step 2 Select a channel and then configure parameters.

The parameters for main stream and sub stream are different. Some models support three streams: main stream, sub stream 1, sub stream 2.

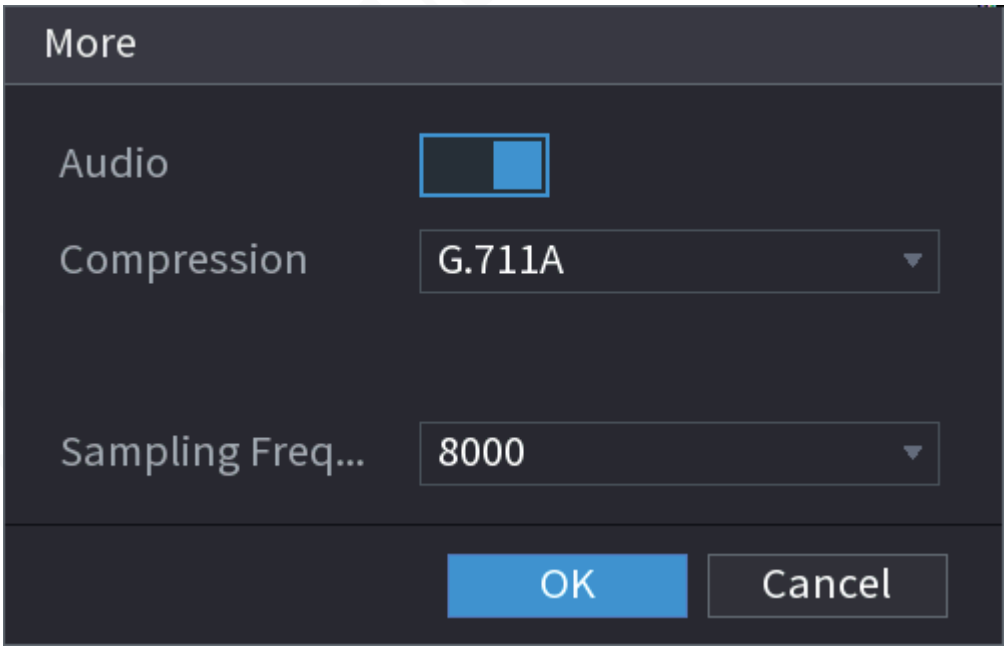
Table 5-17 Audio/video parameters

Parameter	Description
Coding Strategy	• **General**: Use general coding strategy. • **Smart Codec**: Enable the smart codec function. This function can reduce the video bit stream for non-important recorded video to maximize the storage space. • **AI Codec**: Enable the AI codec function. This function can reduce the camera code stream, network transmission pressure, and hard drive storage space without affecting the image quality.
Type	Select the recording type for main stream from **General**, **Motion** (motion detection), or **Alarm**.
Compression	Select the encoding mode. • H.265: Main profile encoding. This setting is recommended. • H.264H: High profile encoding. Low bit stream with high definition. • H.264: Main profile encoding. • H.264B: Baseline profile encoding. This mode requires higher bit stream compared with other modes for the same definition.
Resolution	Select resolution for the video. The maximum video resolution might be different depending on your device model.

Parameter	Description
Frame Rate (FPS)	Configure the frames per second for the video. The higher the value is, the clearer and smoother the image will become. Frame rate changes along with the resolution. Generally, in PAL format, you can select the value from 1 through 25; in NTSC format, you can select the value from 1 through 30. However, the actual range of frame rate that you can select depends on the capability of the Device.
Bit Rate Type	• **CBR** (constant bit rate): The bit rate changes slightly around the defined value. We recommended selecting **CBR** when there might be only small changes in the monitoring environment. • **VBR** (variable bit rate): The bit rate changes with monitoring scenes. Select variable stream when there might be big changes in the monitoring environment.
Quality	The bigger the value is, the better the image will become. This parameter is available if you select **VBR** as **Bit Rate Type**.
I Frame Interval	The interval between two reference frames.
Bit Rate (Kb/S)	• Main stream: The higher the value, the better the image quality. • Sub stream: For constant stream, the bit rate changes near the defined value; for variable stream, the bit rate changes along with the image but the maximum value still stays near the defined value.

Step 3 Click **More**.

Figure 5-58 More settings



Step 4 Configure audio compression parameters.

Table 5-18 Audio compression parameters

Parameter	Description
Audio	This function is enabled by default for main stream. You need to manually enable it for sub stream. Once this function is enabled, the recorded video file is composite audio and video stream.
Compression	Select an audio compression format.
Sampling Frequency	Set how many times per second a sound is sampled. The bigger the value, the more natural the sound.

Step 5 Click **OK**.

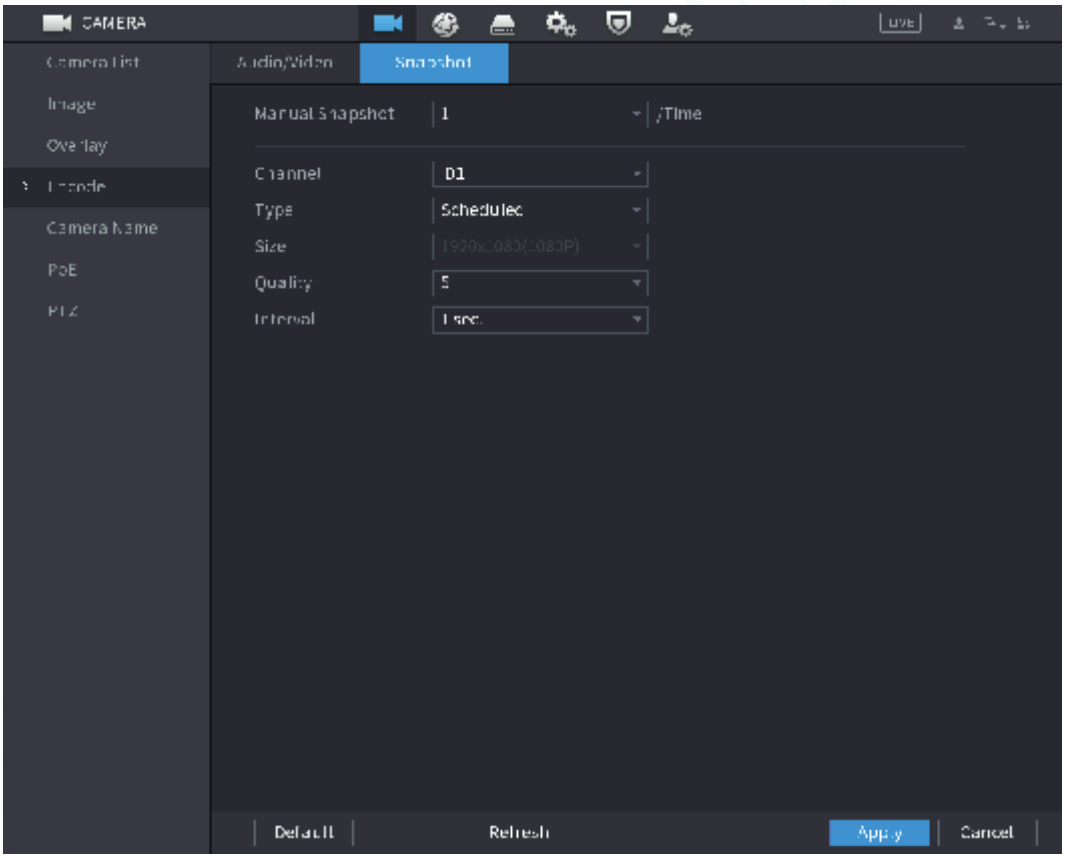
Step 6 Click **Apply**.

5.7.6.2 Snapshot

You can set snapshot mode, image size, quality and interval.

Step 1 Select **Main Menu** > **CAMERA** > **Encode** > **Snapshot**

Figure 5-59 Snapshot



Step 2 Configure parameters.

Table 5-19 Snapshot parameters

Parameter	Description
Manual Snapshot	Select the number of snapshots that you want to take each time.
Channel	Select the channel that you want to configure the settings for.
Type	• **Scheduled**: The snapshot is taken during the scheduled period. • **Event**: The snapshot is taken for motion detection, video loss, local alarms and other events.

Parameter	Description
Size	The size is determined by the resolution of the main stream or sub stream of the channel.
Quality	Configure the image quality. The higher the level is, the better the image will become. Level 6 represents the best quality.
Interval	Select or customize how frequently snapshots are to be taken.

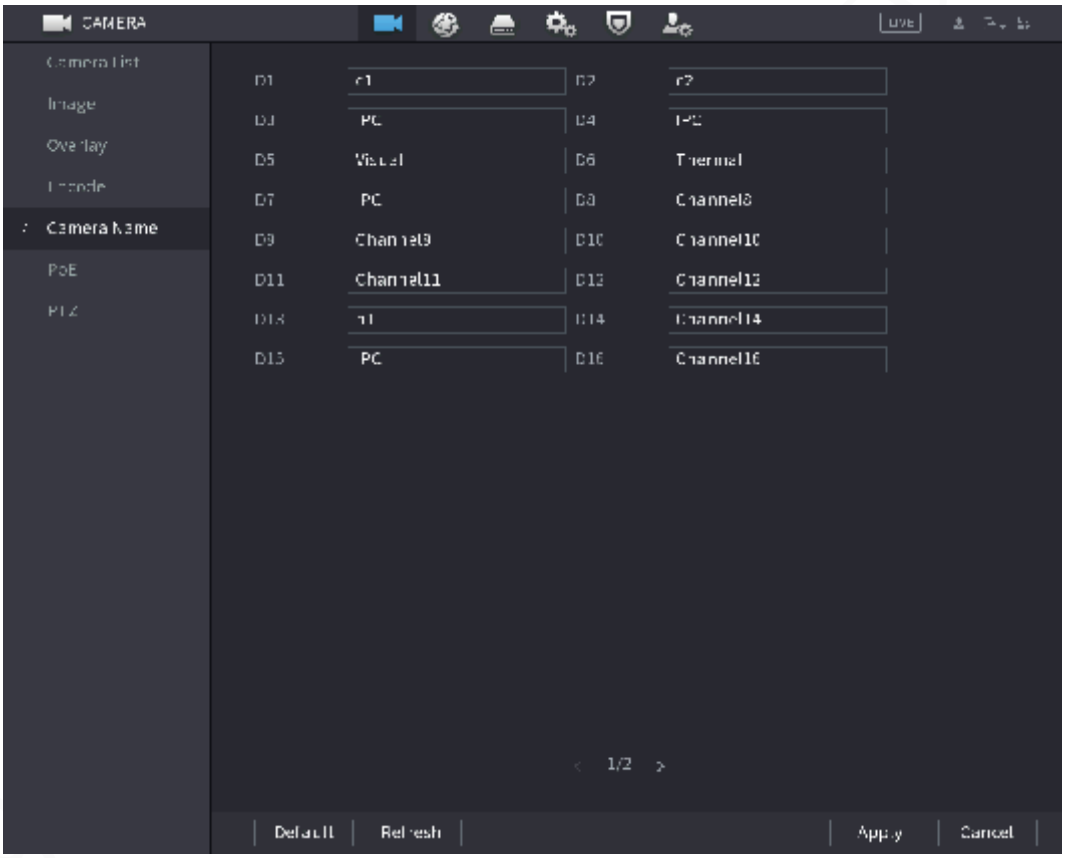
Step 3 Click **Apply**.

5.7.7 Modifying Channel Name

You can customize channel name.

Step 1 Select **Main Menu** > **CAMERA** > **Camera Name**.

Figure 5-60 Camera name



Step 2 Modify a channel name.

- You can only change the name of the camera connected via the private protocol.
- You can enter up to 63 English characters for a channel name.

Step 3 Click **Apply**.

5.7.8 Checking the PoE Status

You can check the status of PoE ports and set enhancement mode for each PoE port.

Step 1 Select **Main Menu** > **CAMERA** > **PoE**.

Figure 5-61 PoE

Step 2 (Optional) Set **Enhancement Mode** to **On** or **Off**.

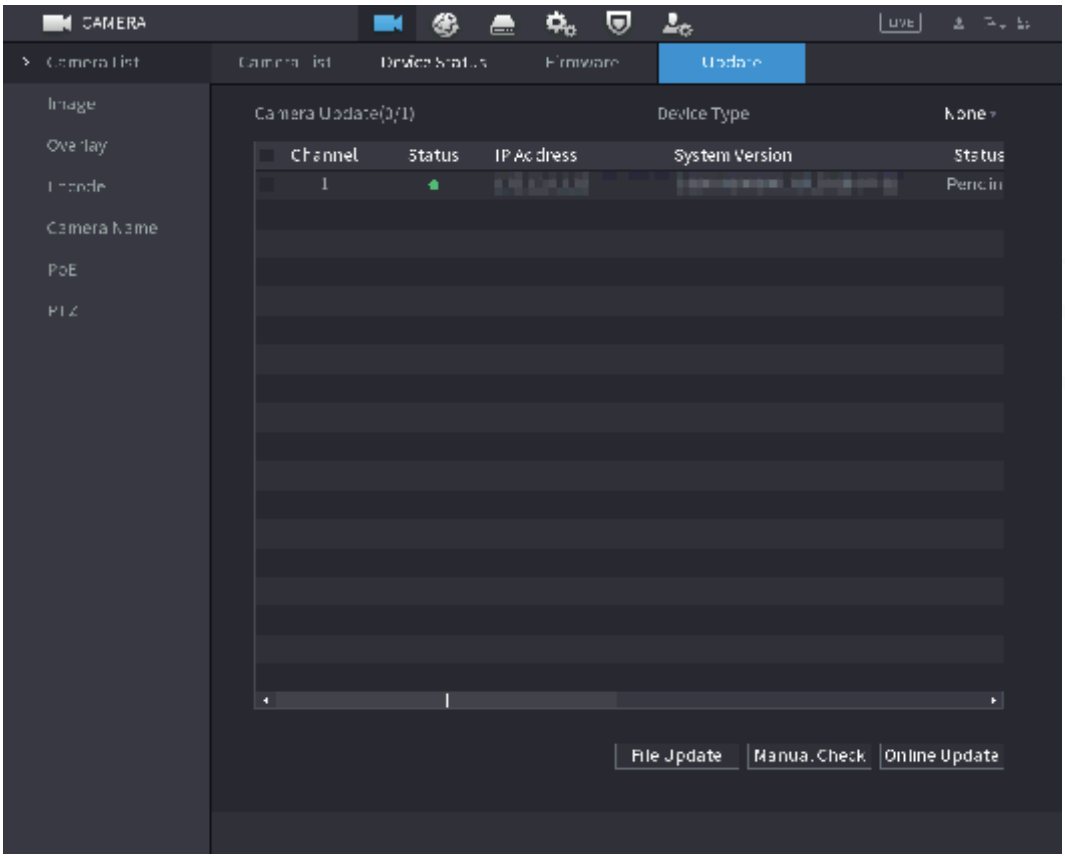
When enhancement mode is enabled, the transmission distance of the PoE port will be extended.

5.7.9 Updating Remote Devices

You can update the firmware of the connected network camera through online update or file update.

Step 1 Select **Main Menu** > **CAMERA** > **Camera List** > **Update**.

Figure 5-62 Update



Step 2 Update the firmware of the connected remote device.

- Online update.
  1. Select a remote device and then click **Manual Check**.
     The system checks for available updates.
  2. Select a remote device that has an update available for it, and then click **Online Update**.
- File update.
  1. Select a channel and then click **File Update**.
  2. Select an update file.
  3. Click **OK**.

If there are too many remote devices, you can filter them on the **Device Type** list.

5.7.10 Viewing Remote Device Information

5.7.10.1 Device Status

You can view the connection and alarm status of the corresponding channel.

Select **Main Menu** > **CAMERA** > **Camera List** > **Device Status**.

Figure 5-63 Device status

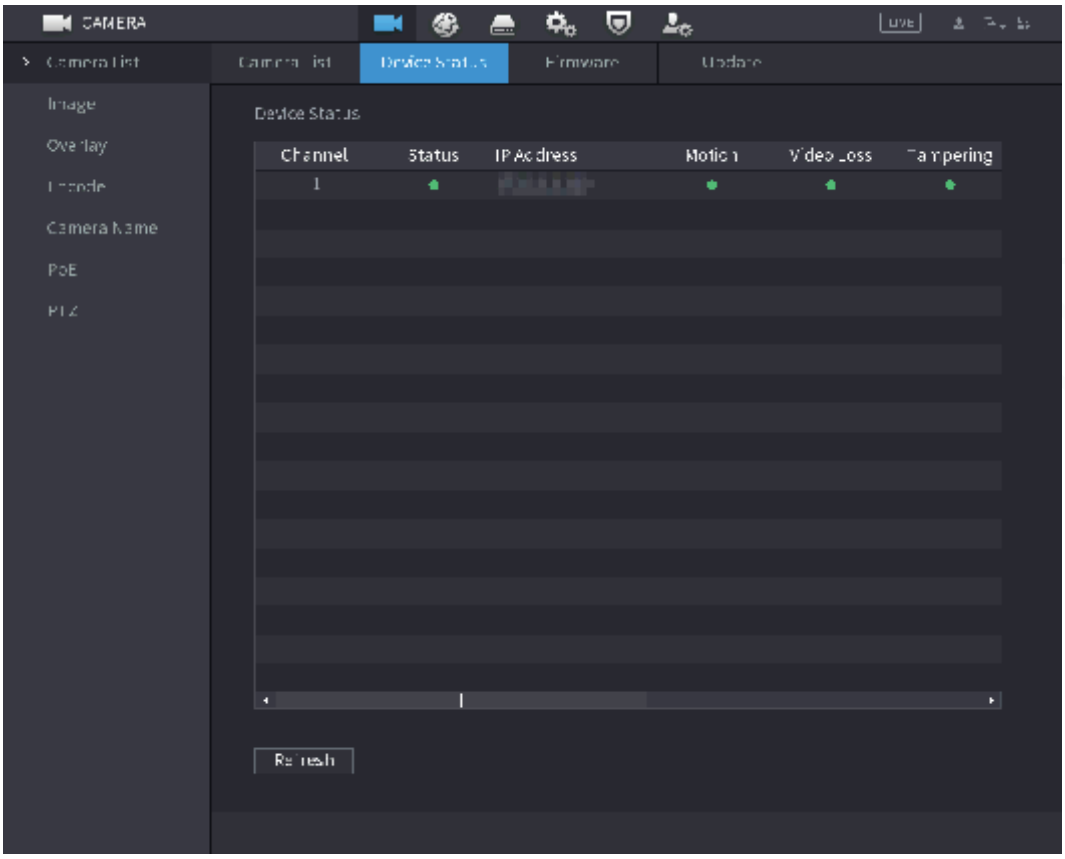


Table 5-20 Parameters of device status

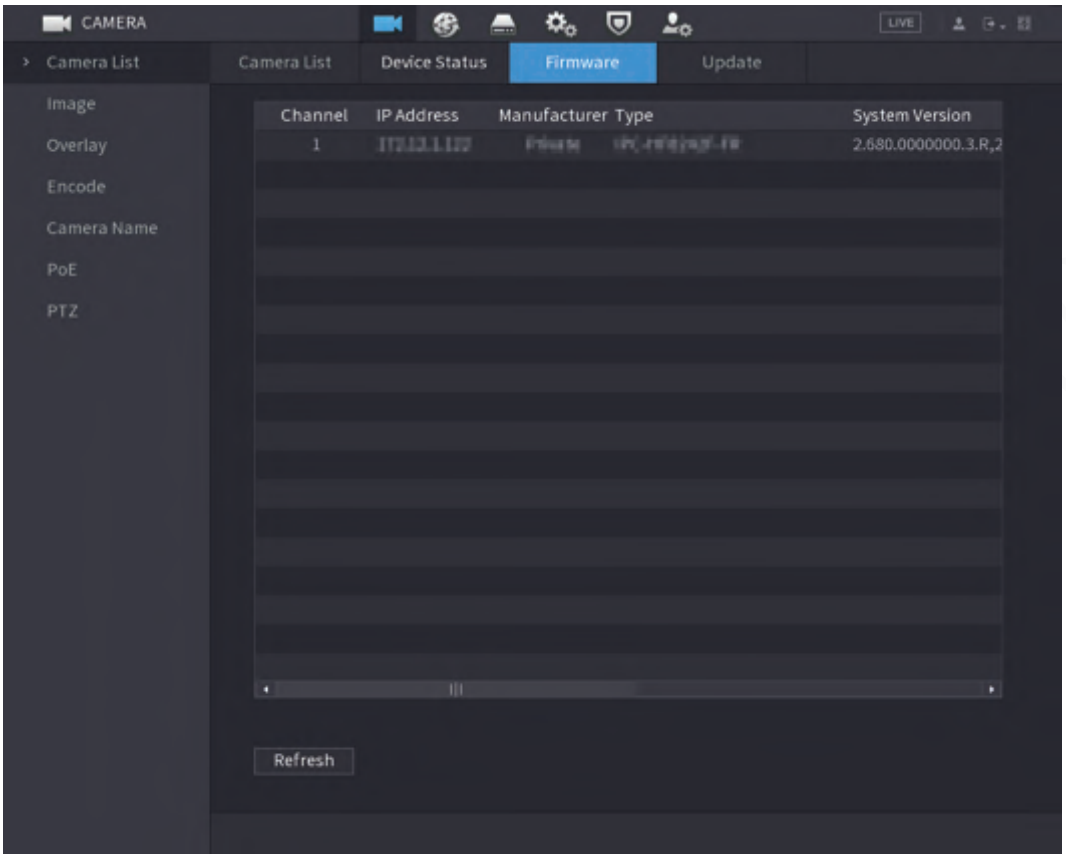
Icon	Description	Icon	Description
	IPC works properly.		IPC is not supported.
	Alarm.		Video loss.

5.7.10.2 Firmware

You can view the IP address, manufacturer, type, and system version of the connected remote device.

Select **Main Menu** > **CAMERA** > **Camera List** > **Firmware**.

Figure 5-64 Firmware



5.8 Recording Management

5.8.1 Recording Schedule

After you set the recording schedule for videos and snapshots, the Device can automatically record videos and snapshots at the scheduled time.

5.8.1.1 Configuring Video Recording Schedule

After you set the schedule for videos, the Device will record videos according to the period you set. For example, if the alarm recording period is from 6:00–18:00 on Monday, the Device will make a recording on Mondays from 6:00-18:00.

Step 1 Right-click the live page, and then select **Main Menu** > **STORAGE** > **Schedule** > **Record**.

Figure 5-65 Video schedule

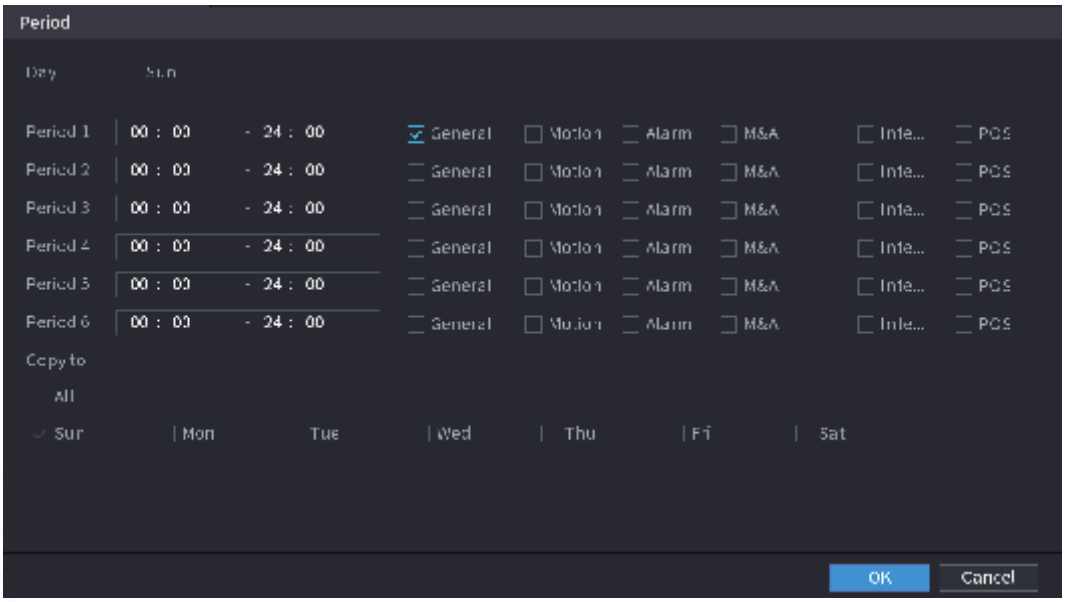
Step 2 Configure the parameters.

Table 5-21 Video schedule parameters

Parameter	Description
Channel	Select a channel to record a video.
Pre-record	Enter the amount of time that you want the pre-recording to last. A recording will be made prior to the event.
Redundancy	If there are several HDDs installed to the Device, you can set one of the HDDs as the redundant HDD to save the recorded files into different HDDs. If one of the HDDs becomes damaged, you can find the backup on the other HDD. ● Select **Main Menu** > **STORAGE** > **Disk Manager**, and then set a HDD as redundant HDD. ● Select **Main Menu** > **STORAGE** > **Schedule** > **Record**, and then select the **Redundancy** checkbox. ◇ If the selected channel is not recording, the redundancy function will take effect the next time that you record, whether or not you select the checkbox. ◇ If the selected channel is recording, the current recorded files will be packed, and then start recording according to the new schedule. ● This function is for some models only. ● The redundant HDD only backs up the recorded videos but not snapshots.

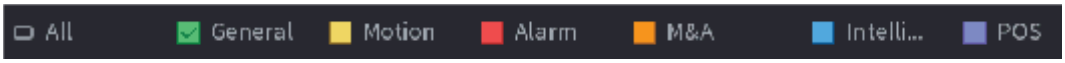
Parameter	Description
ANR	You can set the ANR (auto network resume) function. ● The IPC continues recording once the NVR and IPC connection fails. After the network becomes normal, the NVR can download recording files while it is disconnected from the IPC. This is to help protect against data loss from the current IPD channel that is connected. ● Set the maximum recording upload period. If the offline period is longer than the period you set, IPC will only upload the recording file during the specified period. Make sure that SD card is installed and the recording function is enabled on the IPC.
Period	Set a period during which the configured recording setting is active. The system only activates the alarm in the defined period.
Copy to	Click **Copy to** to copy the settings to other channels.

Figure 5-66 Period



Step 3 Set one or more recording types from **General, Motion** (motion detection)**, Alarm, M&A** (motion detection and alarm)**, Intelligent** and **Alarm**.

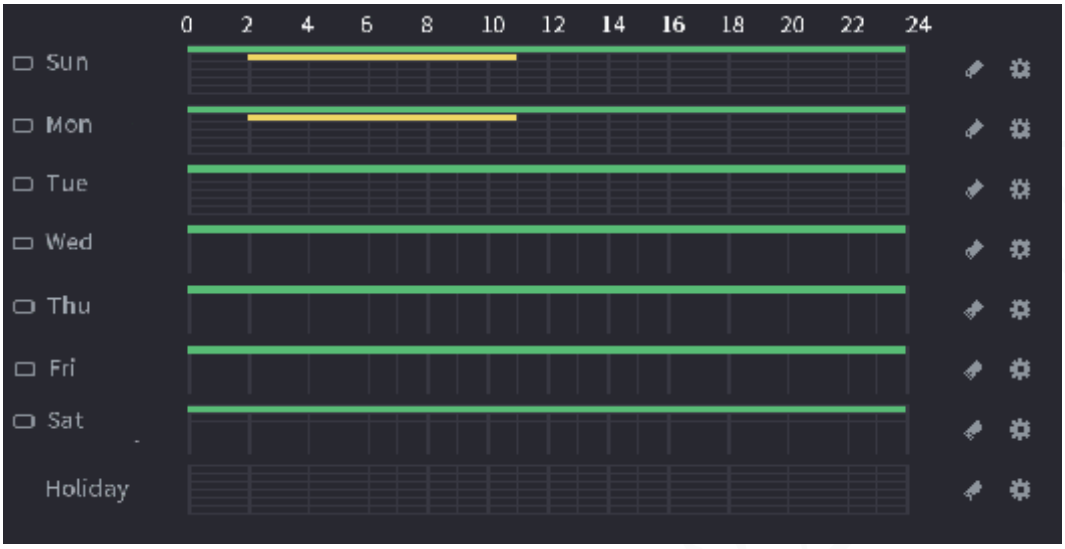
Figure 5-67 Recording type



Step 4 Set recording period.

If you have added a holiday, you can set the recording period for the holiday.

Figure 5-68 Set record period



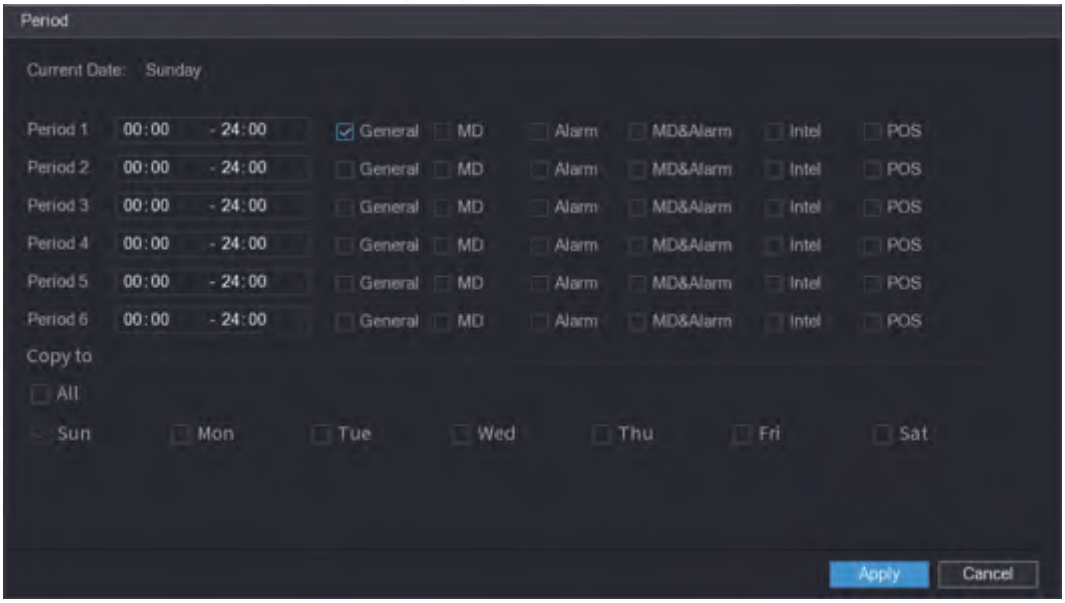
- Define the period by drawing.
  1. Select a corresponding date to set.
     - Define for the whole week: Click next to **All**. All the icon switch to . You can define the period for all the days simultaneously.
     - Define for several days of a week: Click before each day one by one. The icon switches to . You can define the period for the selected days simultaneously.
  2. On the timeline, drag to define a period.
     - Once the time period overlaps, the recording priority is: **M&A** > **Alarm** > **POS** > **Intelligent** > **Motion** > **General**.
     - Select a recording type and then click the of the corresponding date to clear the corresponding period.

Figure 5-69 Set period by drawing

The MD record and alarm record function are both null if you enabled MD&Alarm function.

- Define the period by editing.
  1. Select a date and then click .

Figure 5-70 Set period by editing



  2. Set the recording type for each period.
     - ◇ There are six periods for you to set for each day.
     - ◇ Under **Copy to,** select **All** to apply the settings to all the days of the week, or select specific days that you want to apply the settings to.
  3. Click **Apply**.

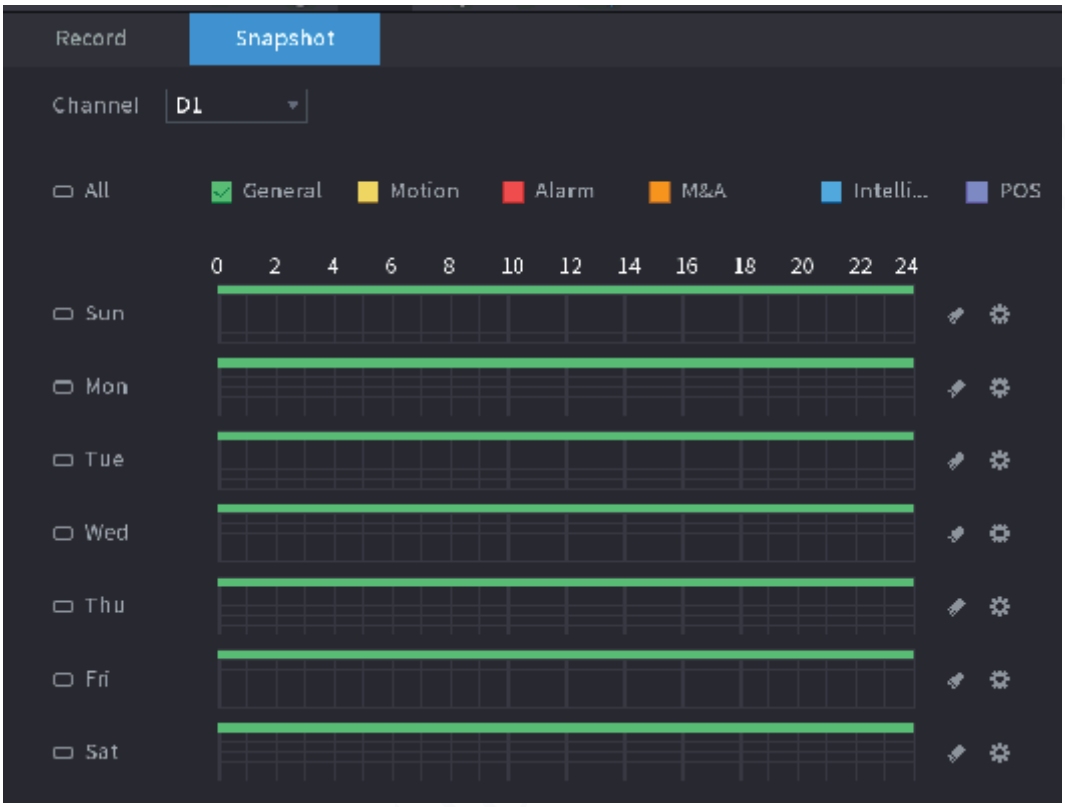
Step 5 Click **Apply** to complete the settings.

5.8.1.2 Configuring Snapshot Schedule

Configure recording schedule for snapshots.

Step 1 Right-click the live page, and then select **Main Menu** > **STORAGE** > **Schedule** > **Snapshot**.

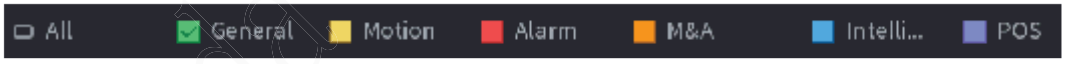
Figure 5-71 Snapshot



Step 2 Select a channel to set schedule snapshot.

Step 3 Set a recording type.

Figure 5-72 Recording type



Step 4 Set snapshot period. For details, see Step4 in "5.8.1.1 Configuring Video Recording Schedule".

Step 5 Click **Apply**.

5.8.1.3 Configuring Recording Mode

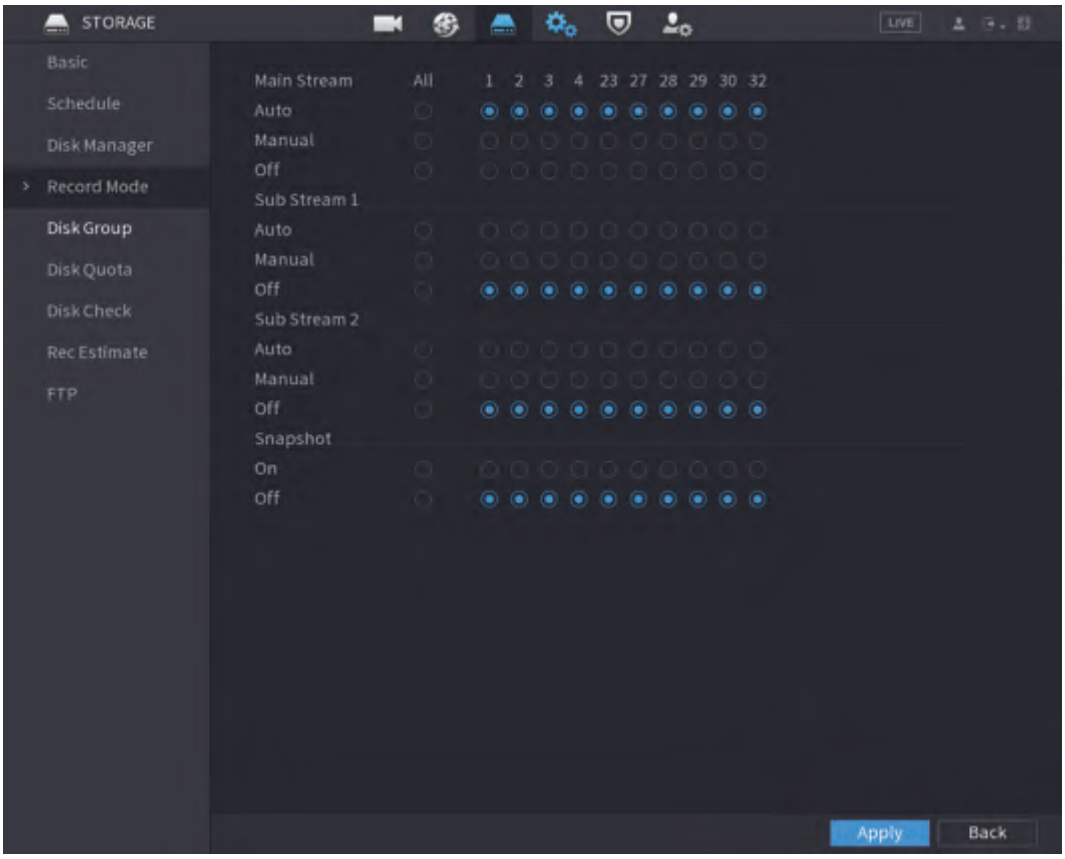
After you set schedule record or schedule snapshot, you need to enable the auto record and snapshot function so that the system can automatically record or take snapshot.

- Auto: The system automatically records the videos and snapshots according to the defined schedule.
- Manual: The system records general files for the entire day.

You need to have storage authorities to use the **Manual** recording mode.

Step 1 Right-click the live page, and then select **Main Menu** > **STORAGE** > **Record**.

Figure 5-73 Recording mode



Step 2 Configure parameters.

Table 5-22 Recording mode parameters

Parameter	Description
Channel	Displays all the connected channels. You can select a single channel or select **All**.
Recording status	• Auto: Automatically make recordings according to the schedule. • Manual: Makes a general recording within 24 hours for the selected channel. • Off: Do not record.
Snapshot status	Enable or disable the scheduled snapshot for the corresponding channels.

Step 3 Click **Apply**.

5.8.2 Search and Playback

5.8.2.1 Search Page

You can search for and play back the recorded files on the NVR.

Select **Main Menu** > **SEARCH,** or right-click on the live view page and then select **Search**.

The following figure is for reference only.

Figure 5-74 Search

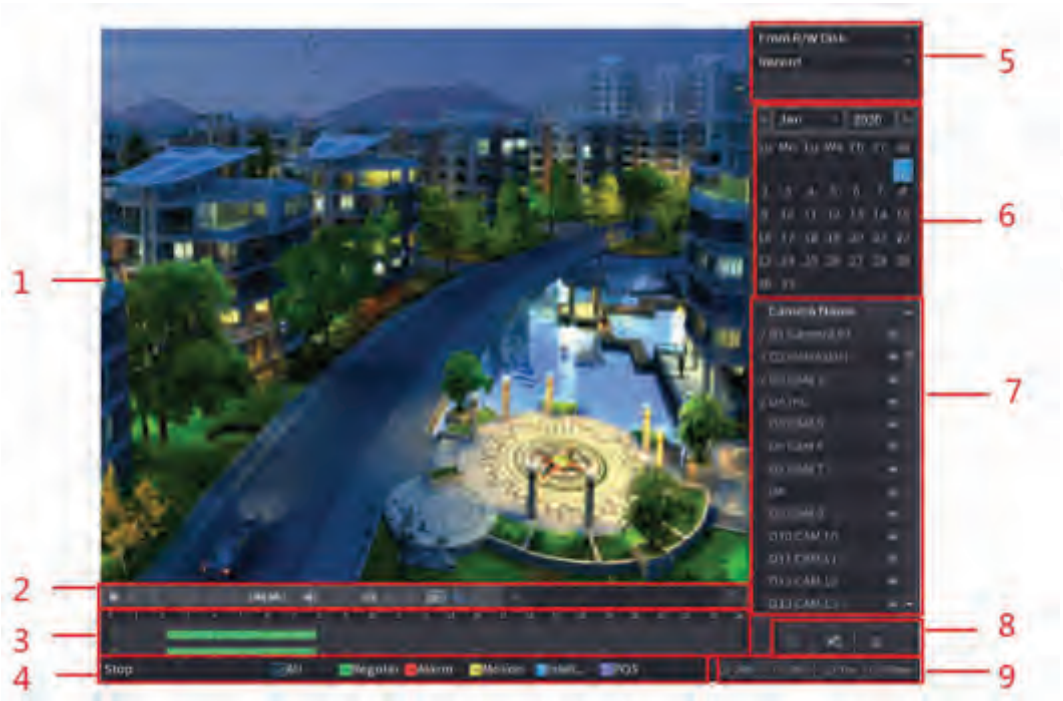


Table 5-23 Search page description

No.	Function	Description
1	Display Window	Display the searched recorded video or picture. The system supports playing in single-channel, 4-channel, 9-channel, and 16-channel simultaneously. When playing back in the single-channel mode, hold down the left mouse button to select the area that you want to enlarge. The area is enlarged after the left mouse button is released. To exit the enlarged status, right-click the image.
2	Playback Controls Bar	Playback control buttons.
	Clip	Click to clip the recording file and then save the footage. See "5.8.2.4 Clipping Videos" for details.
	Backup	Click to back up recordings.

No.	Function	Description
3	Time Bar	Display the type and time period of the current recorded video. ● In the 4-channel layout, 4 time bars are displayed. In other view layouts, only 1 time bar is displayed. ● Click the colored area to start playback from a certain time. ● When you are configuring the settings, rotate the wheel button on the time bar to zoom in from 0. When a playback is being played, rotate the wheel button on the time bar, the time bar will zoom into the time point where the playback is located. ● Time bar colors: Green for general type; red for external alarm; yellow for motion detection; blue for intelligent events; purple for POS events. ● Click and hold the time bar, and the mouse pointer changes to a hand icon, and then you can drag to view the playback of the target time. ● You can drag the vertical orange line on the time bar to rapidly view the playback in iframe format. ● When playing back a video in one channel mode, point to the time bar for 0.1 seconds, and then you can view 4 pictures before and after the selected time, and the thumbnail picture of the selected time. ● For some models, when you click the blank area in the time bar, the system automatically jumps to the next time point where there is a recorded video located.
4	Play Status	Includes 2 playback status: **Play** and **Stop**.
	Record type	Select the checkbox to define the recording type to search for.
5	Search type	Select the content to play back: **Record**, **Picture**, and **Subperiod**.
6	Calendar	Click the date that you want to search for. The dates with recordings or snapshots have a small solid circle under the date.
7	View Layout and Channel Selection	● In the **Camera Name** list, select one or more channels that you want to play back. ● The window split is decided by how you select the channels. For example, if you select 1 channel, the playback is displayed in the single-channel view. If you select two to four channels, the playback is displayed in the four-channel view. The maximum is eight channels. ● Click M to switch the streams. M indicates main stream, and S indicates sub stream.

No.	Function	Description
8	List Display	This area includes **Tag List** and **File List**. The icons displayed might vary with models. ● : Click **Tag List** to view the marked recorded video list. Double-click the file to start playing. ● : Click **File List** to view the files that were found. You can lock and unlock the files. See"5.8.2.6 File List" for detailed information. ● : fisheye dewarp. See "5.6.10.2 Fisheye De-warp During Playback " for detailed information.
14	Time Bar Unit	You can select 24 hr, 2 hr, 1 hr, or 30 min as the unit of time bar.

All the operations for playback might vary with hardware versions. Some functions are available on select models.

5.8.2.2 Playback

You can search for and play back videos, images or video clips. The operations are similar. This section uses video playback as an example.

Step 1 Select **Main Menu** > **Search,** or right-click the live page and then select **Search**.

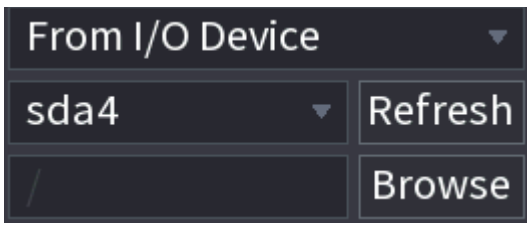
Step 2 Select **From R/W Disk** or **From I/O Device**.

- From R/W Disk: Search for recorded files on the HDD of the Device.

Figure 5-75 Search from R/W disk

- From I/O Device: Search for recorded files from external storage device.
  Click **Browse,** select the storage path of the recorded video file that you want to play. Double-click the video file or click to start playing.

Figure 5-76 Search from I/O device



Step 3 Select **Record** as the search type.

Step 4 Select the date, and channel.

Step 5 Click or any position on the time bar.

The system starts playback. You can use the playback controls to control the playback process.

Figure 5-77 Playback control

Table 5-24 Playback control description

Icon	Function
/	Play/Pause In slow play mode, click it to switch between play/pause.
	Stop When playing back, click to stop current playback process.
	Rewind In normal play mode, left-click the button, the file begins to rewind. Click it again to pause it. While it is rewinding, click or to restore normal play.
,	Display previous frame/next frame. When you pause the normal playback file, click or to play back frame by frame. In frame by frame playback mode, click or to resume normal playback mode.
	Slow play In playback mode, click it to use various slow play modes such as slow play 1, slow play 2, and more.
	Fast forward In playback mode, click to realize various fast play modes such as fast play 1,fast play 2 and more.
	Adjust the volume of the playback.
	Smart search. See "5.8.2.3 Smart Search Playback" for detailed information.
	Smart motion detection. You can click the icon to select a human or motor vehicle, and the system plays detected videos of the person or motor vehicle. Human and motor vehicle can be selected at the same time.
	Click the snapshot button in the full-screen mode to take one snapshot. System supports custom snap picture saved path. Connect the peripheral device first, click snap button on the full-screen mode, you can select or create a path. Click Start button, the snapshot picture can be saved to the specified path.
	Mark button. This function is available on select models. Make sure there is a mark button in the playback control pane. See "5.8.2.7 Tag Playback" for detailed information.

Icon	Function
	Display and hide POS information. In 1-channel playback mode, you can click it to display/hide POS information on the video.
	In 1-channel playback mode, click it to enable or disable display IVS rule information on the video.  This function is for some series only.
	Picture search.

5.8.2.3 Smart Search Playback

This function is for some models only.

During the playback process, the system can analyze the motion detection zone in the scene and give the analysis result.

Make sure that motion detection has been enabled in **Main Menu** > **ALARM** > **Video Detection** > **Motion Detection**.

Step 1 Select a channel to playback video and then click  . You can view the grids on the playback video.

- This function is for one-channel playback mode.
- In multiple-channel playback mode, double-click a channel to switch to one-channel playback mode.

Step 2 Select smart search zones (22*18(PAL), 22*15(NTSC)).

Step 3 Click  to go to smart search and playback. The system is going to play back all motion detection record footage.

Step 4 Click  again to stop smart search.

- The motion detection region cannot be the full screen zone.
- The motion detection region adopts the current whole play pane by default.
- The time bar unit switch, rewinding, frame by frame are not available when the system is playing a motion detection file.

5.8.2.4 Clipping Videos

You can clip some footage from recorded videos to a new file and then save to the USB device.

Step 1 Select a record first and then click  to play back.

Step 2 Select a time on the time bar and then click  to start clip.

Step 3 Select a time on the time bar and then click to stop clip.

Step 4 Click  , the system pops up dialogue box to save the clip file.

Figure 5-78 Clip

5.8.2.5 Backing Up

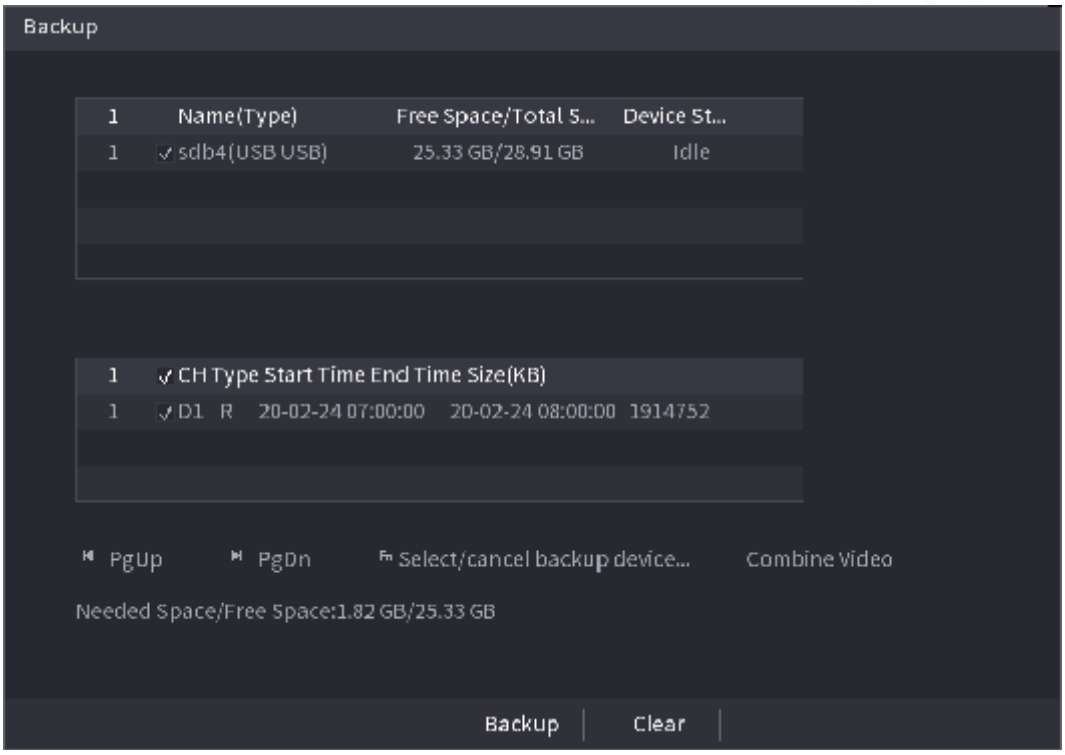
You can back up recorded videos, images, or video clips to a USB storage device.

Step 1 Select the files that you want to back up.

- Videos or images. Click at the lower-right corner of the search page, and then on the file list, select the files for backup.
- Video clips. See "5.8.2.4 Clipping Videos".

Step 2 Click .

Figure 5-79 Backup



Step 3 Select the storage device, and then click **Backup**.

- You can cancel the selection of the files that you do not want to back up.
- Select **Combine Video** to merge several videos into one.

5.8.2.6 File List

On the search page, select a channel, and then click to view the file list. On the file list, you can manage the files of the selected channel.

- Play.
  Double-click a file to play.
- Search.
  Select a specific time and then click .
- Lock or unlock files.

- To lock files, on the file list, select one or more files, and then click  . The locked files will not be overwritten.
- To unlock files, click  . and then select one or more files and then click **Unlock**.

- Go back to the previous page.
  Click  to return to the page with calendar.

5.8.2.7 Tag Playback

When you are playing back a video, you can add a tag to mark an important point in time on the video. After playback, you can use time or the tag keywords to search for the corresponding video and then play.

Adding Tag

When the system is playing back, click  , and then configure the tag name.

Playing back Tag

During single-channel playback, click  , and then on the tag list, double-click a file to play back.

To search for tagged videos by time, select the tag time and then click  .

Playing before Tagged Time

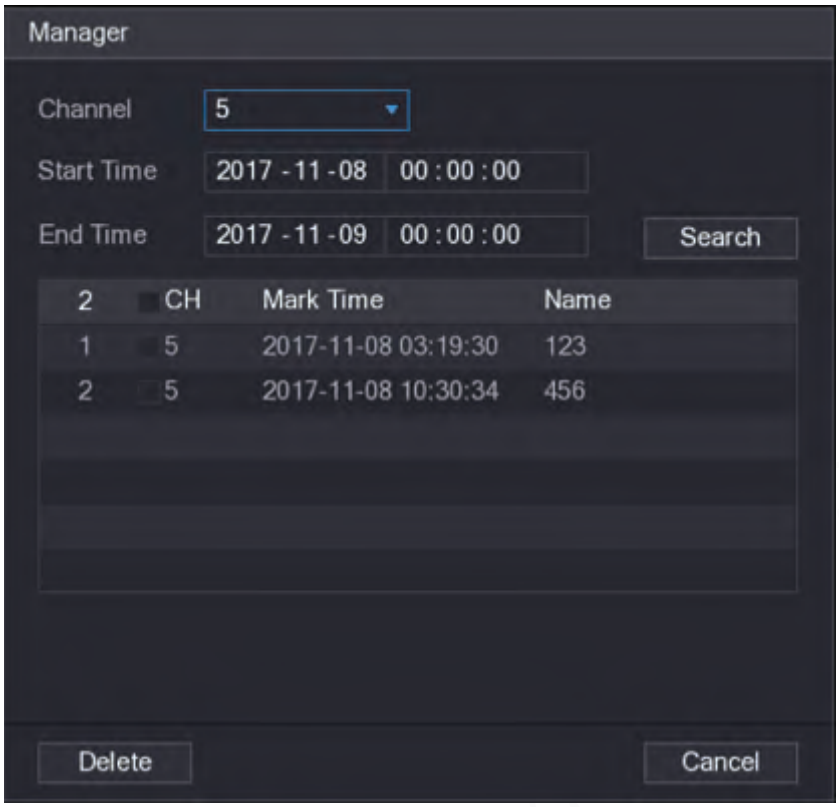
You can choose to play back from the previous N seconds of the tag time.

The system can play back previous N seconds before the tagged time if there is a video at that point. Otherwise, the system plays back as much as there is.

Managing Tags

On the tag list, click  .

Figure 5-80 Tag management

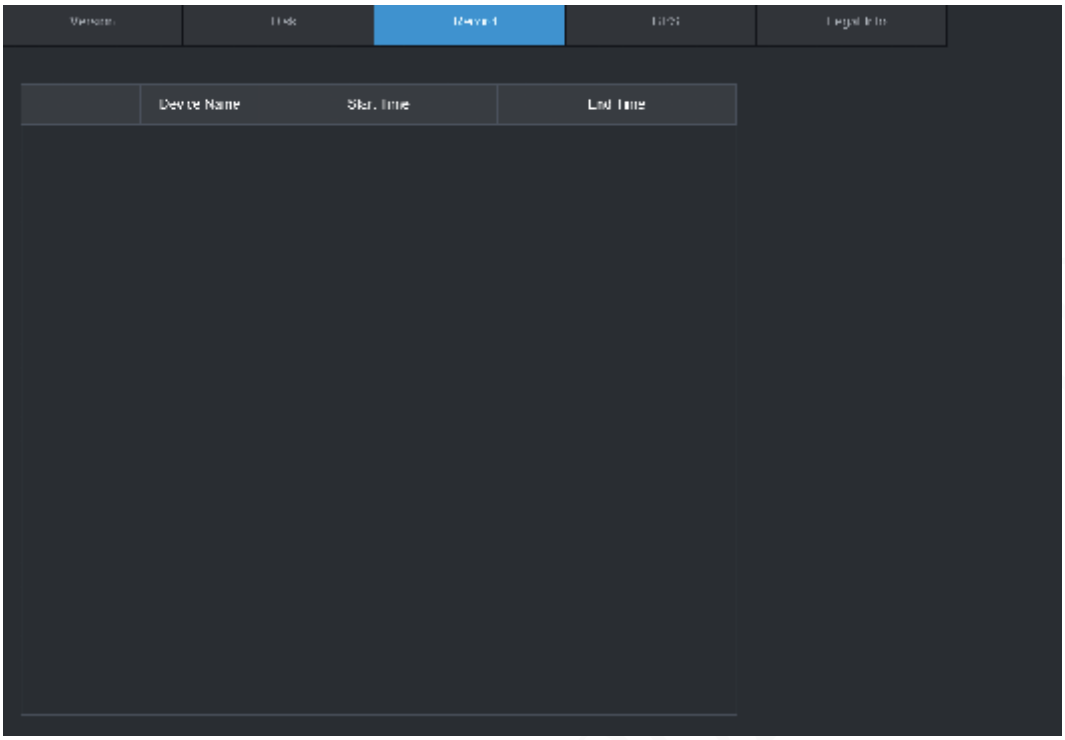


- To search for the tagged video, select channel number, start time and end time, and then click **Search**.
- To change the tag name, double-click a tagged video, and then enter the new name.
- To delete tags, select one or more tagged videos, and then click **Delete**.

5.8.3 Recording Information

Select **Main Menu** > **MAINTAIN** > **System Info** to view the recording information.

Figure 5-81 Recording information



5.9 AI

AI detection is to process and analyze the image and extract the key information, and then compare the key information with the preset detection rule. An alarm is triggered when the detected behavior matches the detection rule.

The following figures are for reference only and might differ from the actual situation.

5.9.1 Overview

AI detection falls into AI by camera and AI by recorder.

- AI by camera: Some cameras themselves support AI detection. The cameras perform AI detection and send the detection results to the NVR for display. When using AI by camera, make sure to connect the Device to the cameras that support the corresponding AI detection functions.
- AI by recorder: The cameras send videos to NVR for detection, analysis and result display.

- Some models support AI by camera only.
- The AI functions might vary with models.
- Different AI functions might conflict with each other. You cannot enable two conflicting AI functions for the same channel.

5.9.2 Smart Plan

Background Information

To use AI by camera for face detection, face recognition and other detection functions, you need to enable the corresponding smart plan first.

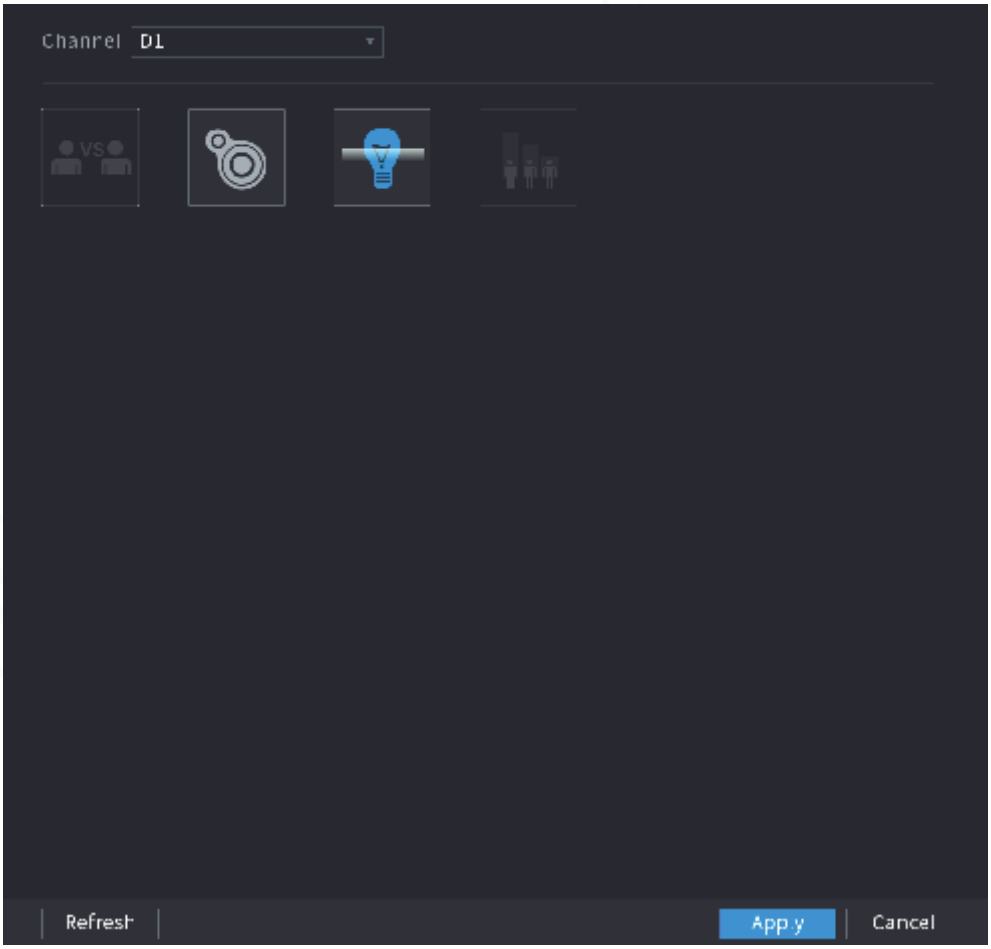
Procedure

Step 1 Select **Main Menu** > **AI** > **Parameters** > **Smart Plan**.

Step 2 Select a channel.

The page might differ depending on which smart plans that the remote device supports.

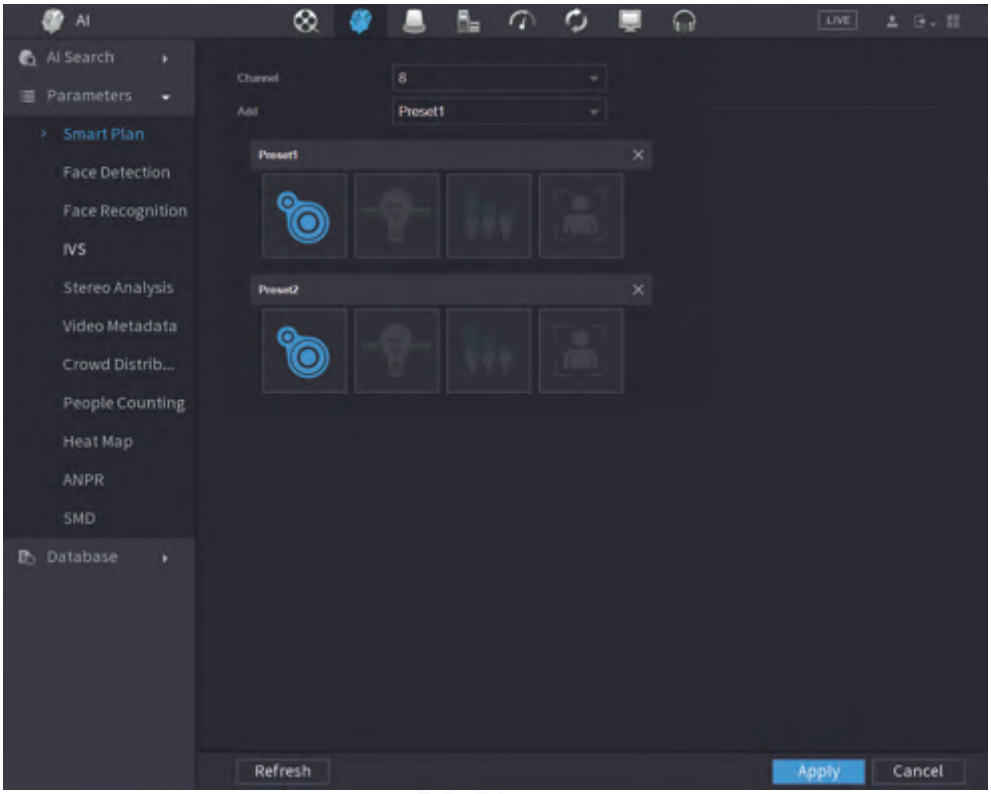
Figure 5-82 Smart plan



Step 3 Click the icon that represents the smart plan to enable it. The icon becomes highlighted.

If the channel is connected to a PTZ camera, you can set smart plans separately for each preset point.

Figure 5-83 Smart plan (PTZ)



Step 4 Click **Apply**.

5.9.3 Face Detection

The Device can detect faces on the video image.

5.9.3.1 Enabling Smart Plan

To use AI by camera, you need to enable the smart plan first. For details, see "5.9.2 Smart Plan".

5.9.3.2 Configuring Face Detection

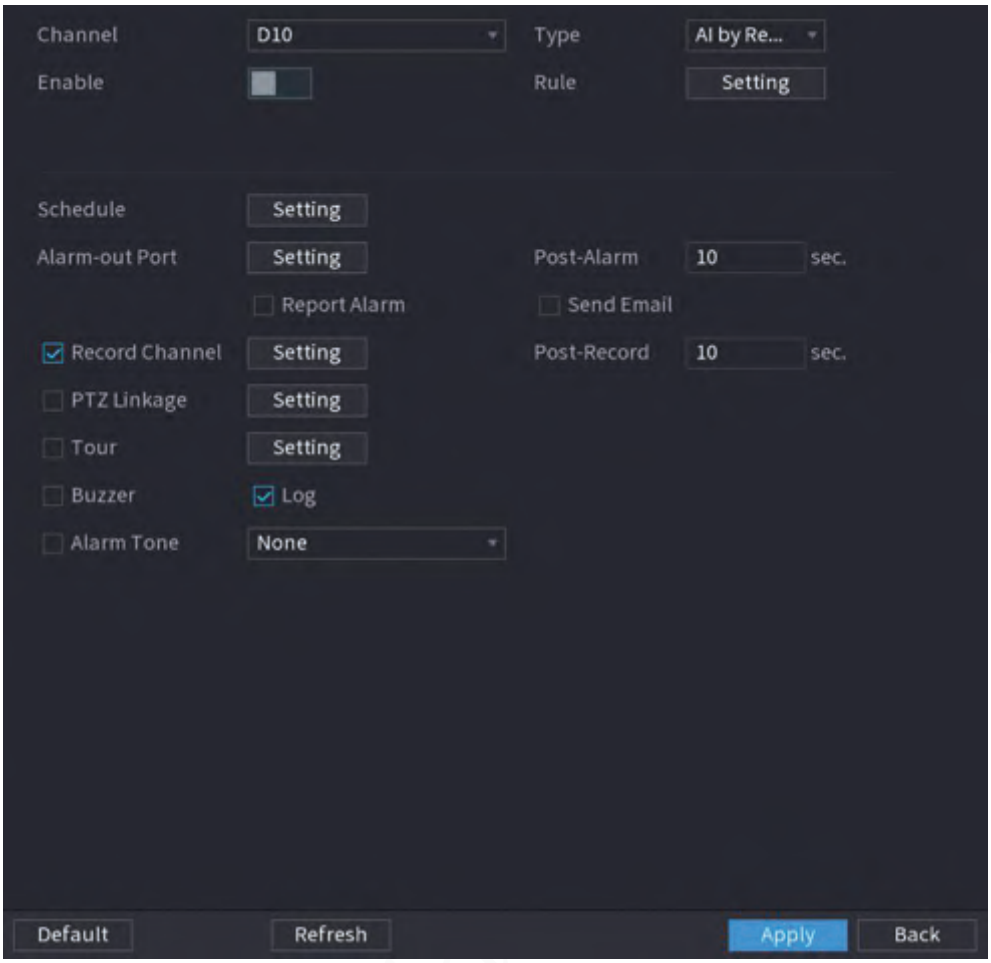
Background Information

Configure alarm rules for face detection.

Procedure

Step 1 Select **Main Menu** > **AI** > **Parameters** > **Face Detection**.

Figure 5-84 Face detection



Step 2 Select a channel, and then select **AI by Reorder** or **AI by Camera** as **Type**.

When **AI by Camera** is selected, you can enable **Face Enhancement** to improve face detection efficiency.

Step 3 Click to enable face detection.

Step 4 Click **Setting** next to **Rule** to draw areas to filter the target.

You can configure two target filters (maximum size and minimum size). The system triggers an alarm when the size of detected target is between the maximum size and the minimum size.

Step 5 Click **Setting** next to **Schedule** to configure the arming period.

The system triggers corresponding alarm actions only during the arming period.

- On the time line, drag to set the period.
- You can also click to set the period.

Step 6 Configure alarm linkage actions. For details, see Table 5-42.

Step 7 Click **Apply**.

5.9.3.3 AI Search (Face Detection)

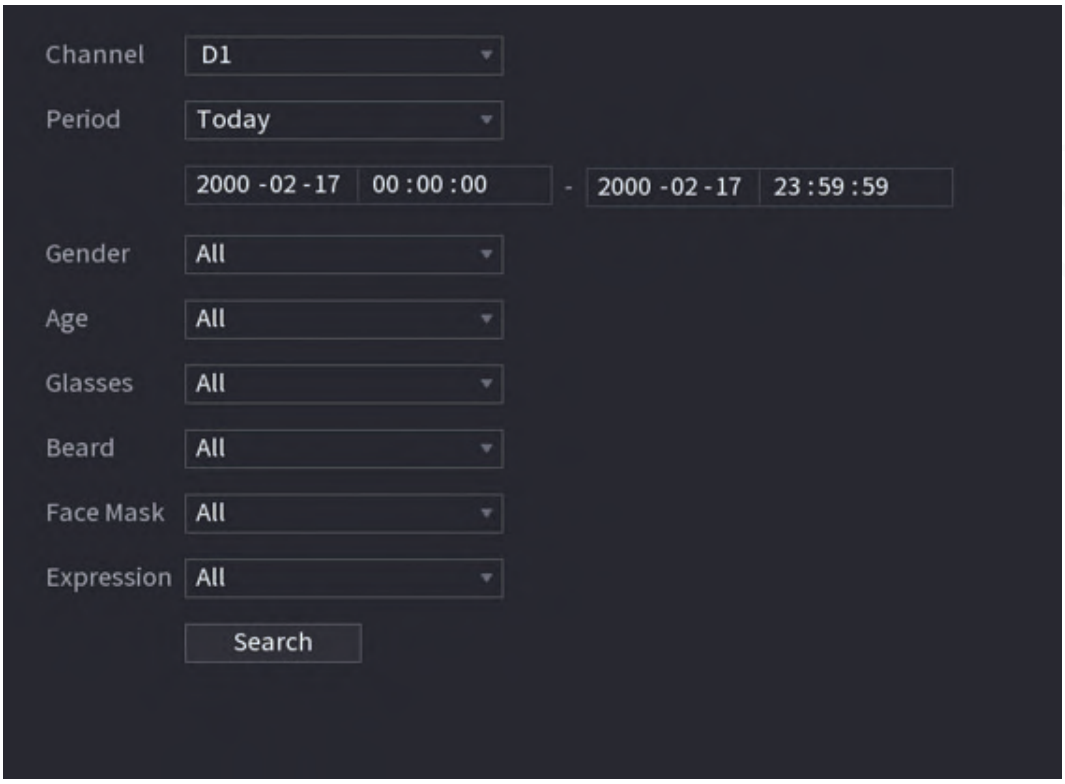
Background Information

You can search for the detected faces and play back related recordings.

Procedure

Step 1 Select **Main Menu** > **AI** > **AI Search** > **Face Detection**.

Figure 5-85 Face search



Step 2 Select the channel, enter the start time and end time, and select the attributes.

Step 3 Click **Search**.

The results are displayed.

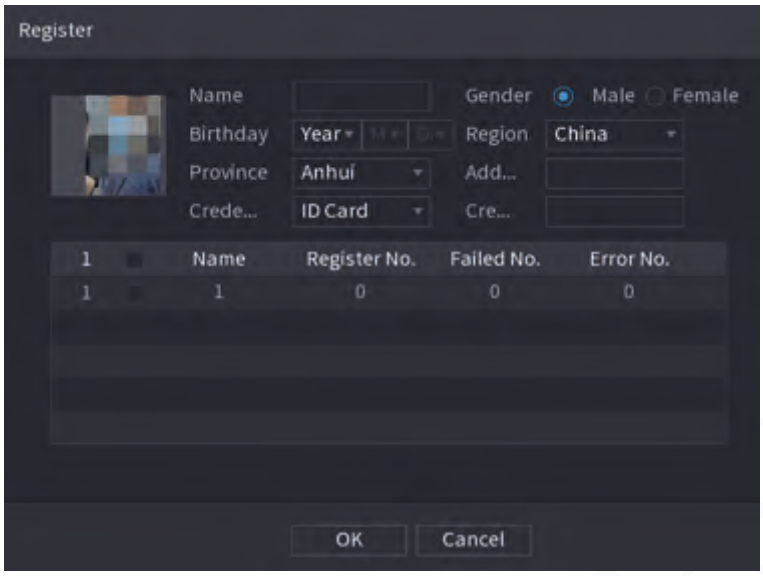
For privacy reason, the human faces in the image are intentionally blurred. The actual image is clear.

Figure 5-86 Search results

Related Operations

- Play related video.
  Click a face and then click . The system plays back the video around the snapshot time.
- Export.
  Click **Export** to export results in Excel format.
- Back up.
  Select one or more images, click **Backup**, select the storage path and file type, and then click **Start** to back up the selected files to an external storage device.
- Lock.
  Select one or more images and then click **Lock**. The locked files will not be overwritten.
- Add tags.
  Select one or more images and then click **Add Tag**.
- Add to face database.
  Click **Add to Face Database**, enter corresponding information, and then add the image to the face database.

Figure 5-87 Add face image to database



5.9.4 Face & Body Detection

After enabling face & body detection, you can view the face and body snapshots and related attributes on the live page.

5.9.4.1 Enabling Smart Plan

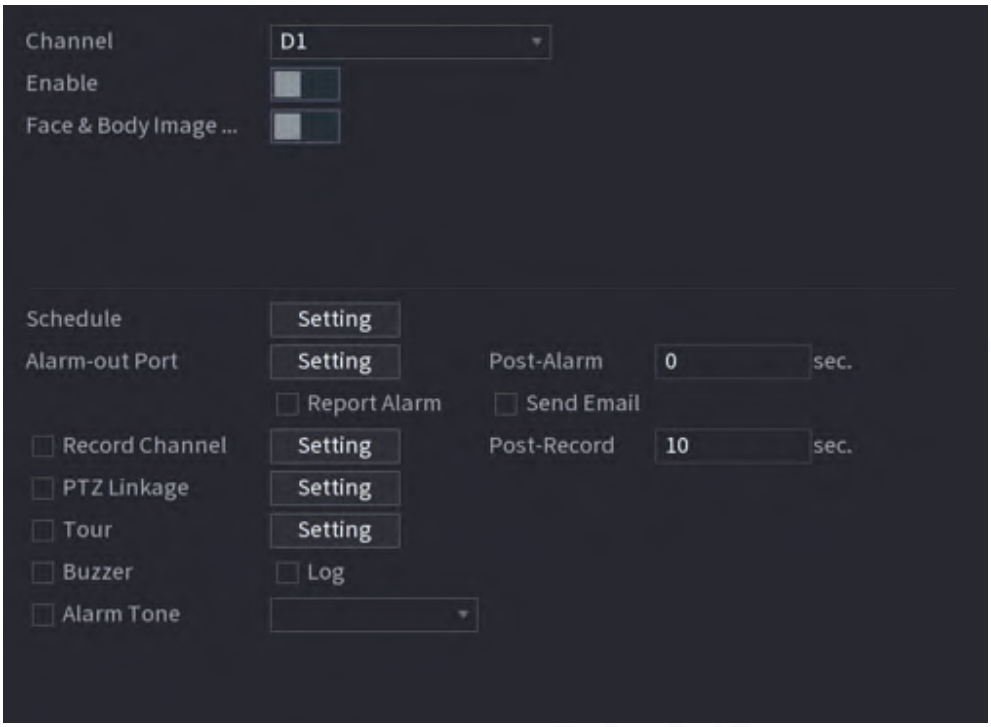
To use AI by camera, you need to enable the smart plan first. For details, see "5.9.2 Smart Plan".

5.9.4.2 Configuring Face & Body Detection

Configure alarm rules for face and body detection.

Step 1 Select **Main Menu** > **AI** > **Parameters** > **Face Detection**.

Figure 5-88 Face and body detection



Step 2 Select a channel, and then click  to enable the function.

Step 3 Enable **Face & Body Image Enhancement** to improve detection efficiency.

Step 4 Configure target filters.

You can configure two target filters (maximum size and minimum size). The system triggers an alarm when the size of detected target is between the maximum size and the minimum size.

Step 5 Click **Setting** next to **Schedule** to configure the arming period.

The system triggers corresponding alarm actions only during the arming period.

- On the time line, drag to set the period.
- You can also click  to set the period.

Step 6 Configure alarm linkage actions. For details, see Table 5-42.

Step 7 Click **Apply**.

5.9.4.3 AI Search (Face & Body Detection)

To search for face detection results, see "5.9.3.3 AI Search (Face Detection)". To search for body detection results, see "5.9.8.3.1 Human Detection".

5.9.5 Face Recognition

The system compares the detected faces with the faces in the database to judge whether the detected face belongs to the database. When the similarity reaches the defined threshold, an alarm is triggered.

5.9.5.1 Enabling Smart Plan

To use AI by camera, you need to enable the smart plan first. For details, see "5.9.2 Smart Plan".

5.9.5.2 Creating Face Database

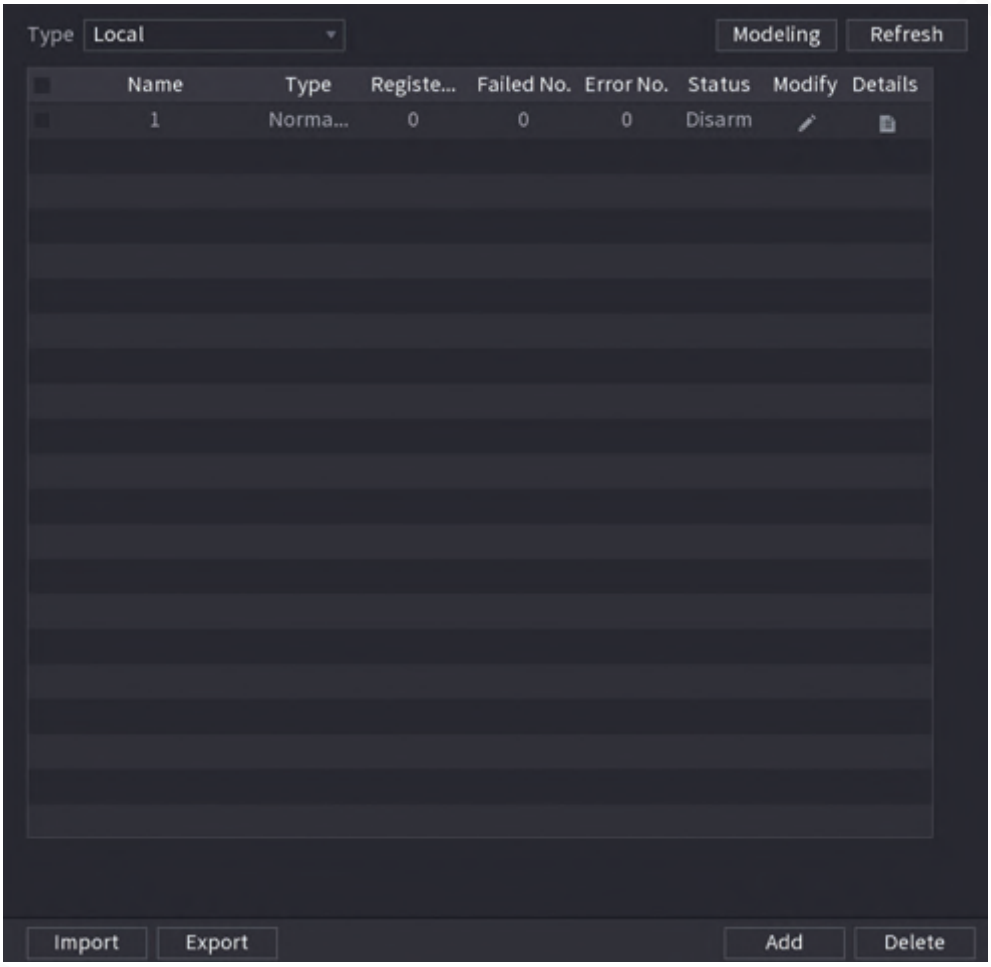
Create face databases to manage face images for face recognition.

5.9.5.2.1 Creating Local Face Databases

You can create face databases on the Device to manage face images for face recognition by Device.

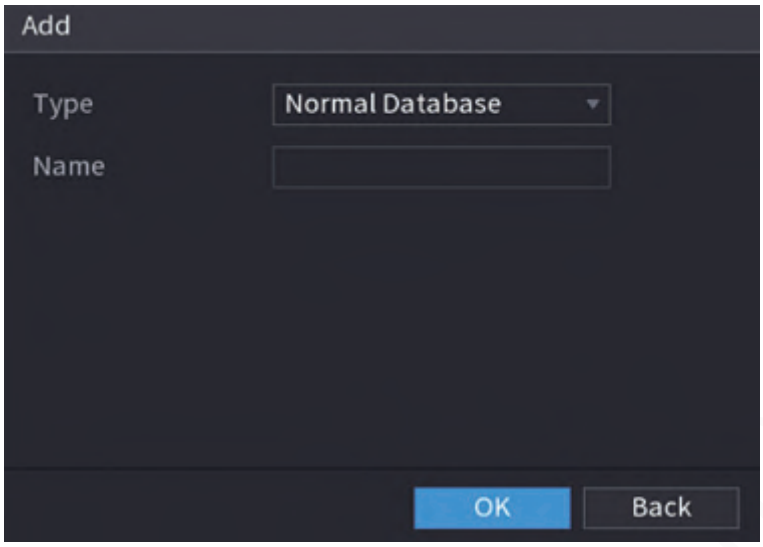
Step 1 Select **Main Menu** > **AI** > **Database** > **Face Database Config**.

Figure 5-89 Face database configuration



Step 2 Select **Local** as **Type**, and then click **Add**.

Figure 5-90 Add database



Step 3 Select **Normal Database** from the **Type** list, and then enter database name.

Step 4 Click **OK**.

5.9.5.2.2 Creating Remote Face Databases

The Device can get face databases from the remote devices, and also allows creating face databases for remote devices. The remote device face database is suitable for face recognition by Camera.

Step 1 Select **Main Menu** > **AI** > **Database** > **Face Database Config**.

Step 2 Select **Remote** as **Type**, select a channel and then click **Add**.

Step 3 Enter database name.

Step 4 Click **OK**.

5.9.5.2.3 Creating the Passerby Database

If you use the passerby database for alarm linkage, when the detected face is not in the face database, the system automatically captures the face image, and then save it to the passerby database.

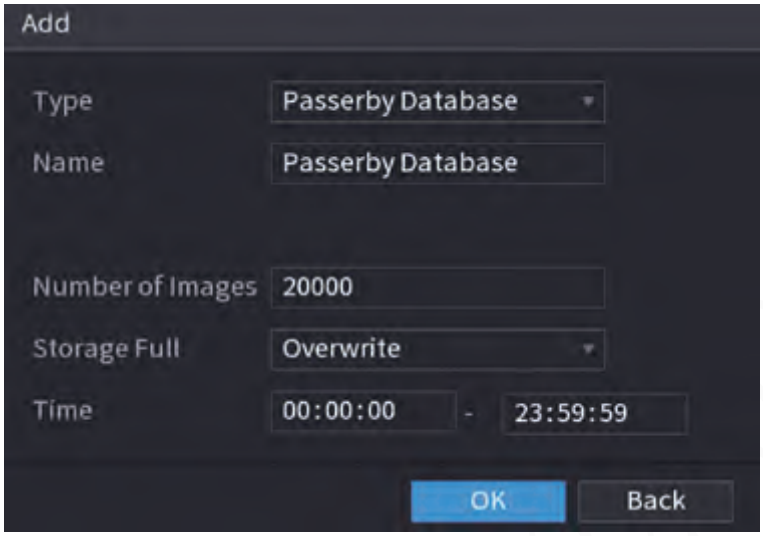
This function is available on select models.

Step 1 Select **Main Menu** > **Database** > **Face Database Config**.

Step 2 Select **Local** as **Type**, and then click **Add**.

You can create only one passerby database.

Figure 5-91 Add database



Step 3 Select **Passerby Database** from the **Type** list, and then configure other parameters.

Table 5-25 Passerby database parameters

Parameter	Description
Name	Enter a name for the passerby database.
Number of Images	Configure the number of images that the database can contain.
Storage Full	Select the storage strategy when space is full. ● Stop: No more images can be added. ● Overwrite: The newest images overwrite the oldest images. Back up the old images as necessary.
Time	Set the period in which the system removes duplicate face images from the database.

Step 4 Click **OK**.

5.9.5.3 Adding Images to Face Database

You can add face images to the existing databases one by one or in batches.

5.9.5.3.1 Adding Face Images One by One

Background Information

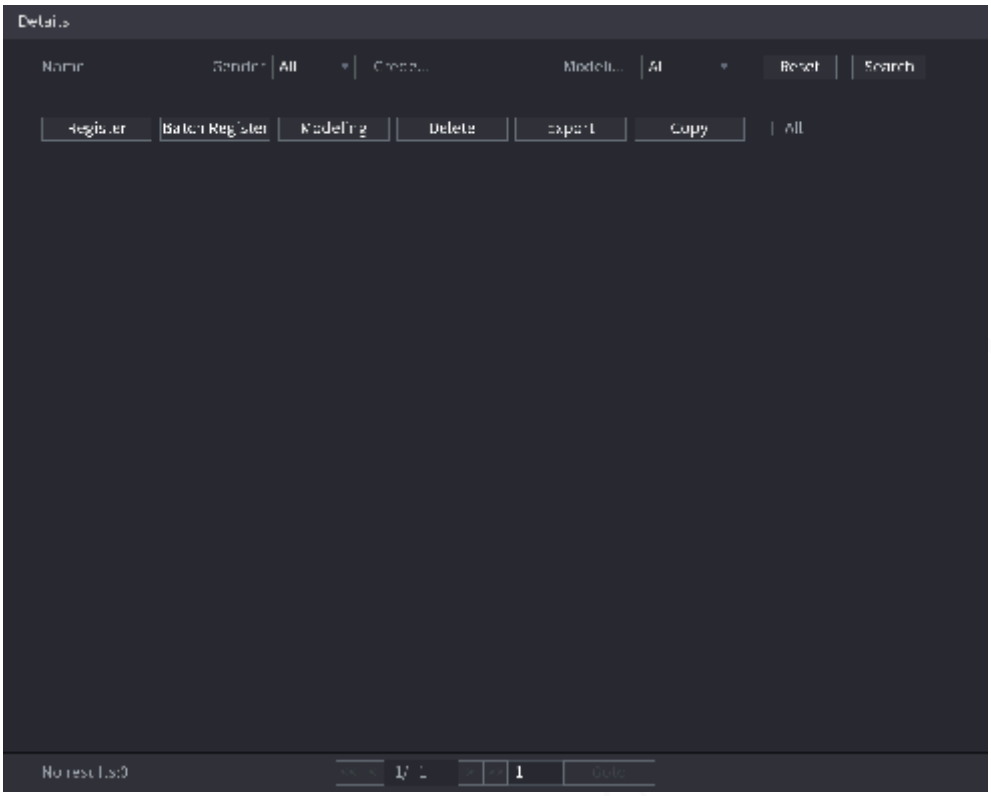
You can add one face image to the database. It is for the scenario that the registered human face picture amount is small.

Procedure

Step 1 Select **Main Menu** > **AI** > **Database** > **Face Database Config**.

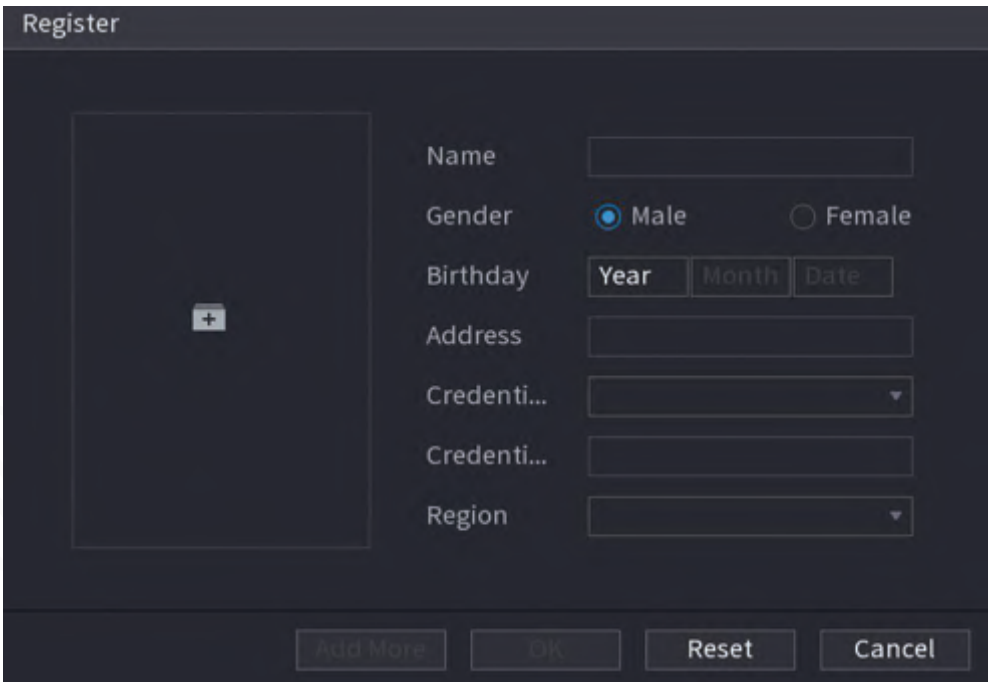
Step 2 Click of the database that you want to configure.

Figure 5-92 Databases details



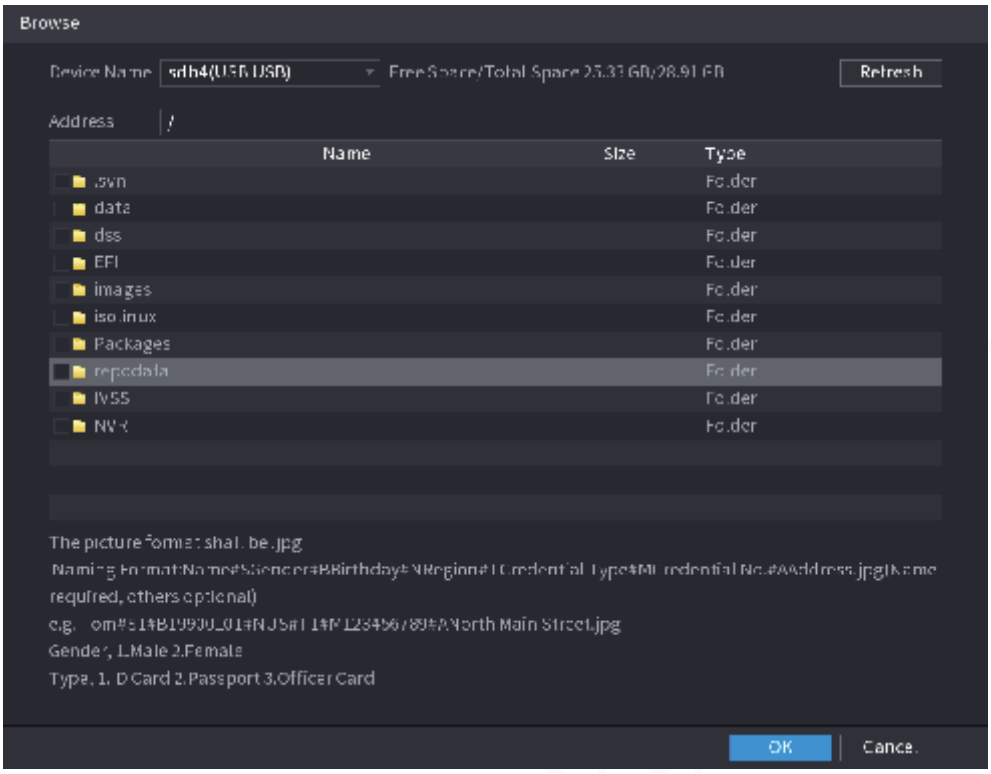
Step 3 Click **Register**.

Figure 5-93 Register



Step 4 Click to add a face image.

Figure 5-94 Browse



Step 5 Select a face image and then enter the registration information.

Step 6 Click **OK**.

The system prompts the registration is successful.

Step 7 On the **Details** page, click **Search**.

The system prompts modeling is successful.

If the system prompts modeling is in process, wait a while and then click **Search** again. If modeling failed, the registered face image cannot be used for face recognition.

Related Operations

- Edit registration information.

  Click  to modify the registration information.
- Model face images.

  The face images are modeled automatically after added to face database. You can also model face images manually.
  - ◇ On the **Database Config** page, select a database, and then click **Modeling** to model all the face images in the database.
  - ◇ On the **Details** page, select one or more face images, and then click **Modeling** to model the selected images.
- Export face images.

  Select one or more face images, and then click **Export**.
- Delete face images.

  Select one or more face images, and then click **Delete**.

5.9.5.3.2 Adding Face Images in Batches

Background Information

The system supports batch add if you want to import several human face image at the same time.

Procedure

Step 1 Give a name to the face picture by referring to the following table.

Table 5-26 Naming rule

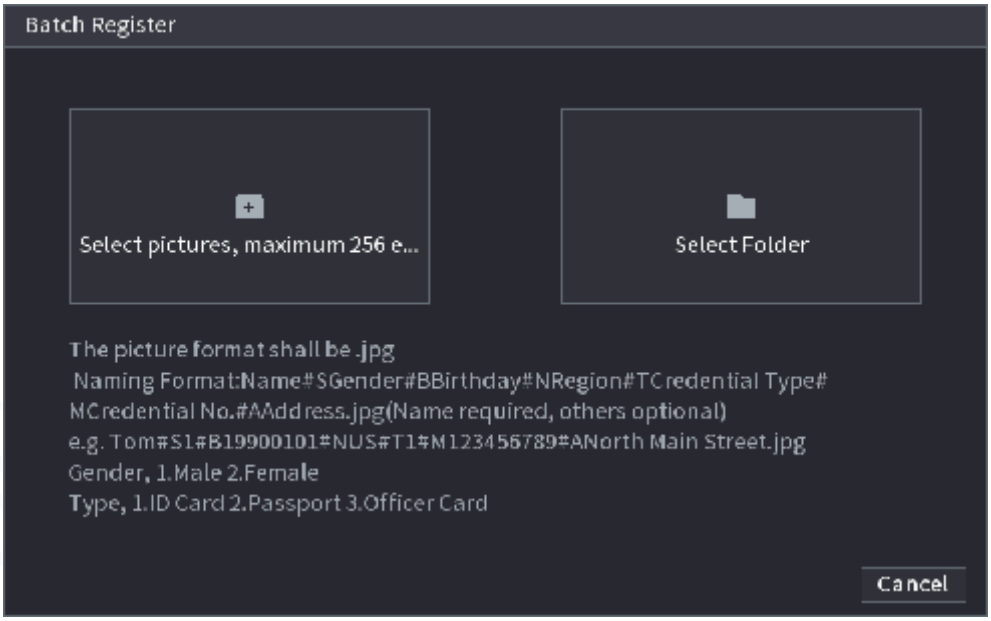
Naming format	Description
Name	Enter the name.
Gender	Enter 1 or 2. 1 represents male, and 2 represents female.
Birthday	Enter numbers in the format of yyyy-mm-dd.
Region	Enter the abbreviation of region. For example, CN for China.
Credential Type	1 represents ID card; 2 represents passport; 3 represents officer card.
Credential No.	Enter the credential number.
Address	Enter the address.

Step 2 Select **Main Menu** > **AI** > **Database** > **Face Database Config**.

Step 3 Click of the database that you want to configure.

Step 4 Click **Batch Register**.

Figure 5-95 Batch register



Step 5 Click or to import face images.

Step 6 Click **OK**.

Related Operations

- Edit registration information.

  Click to modify the registration information.

- Model face images.

  The face images are modeled automatically after added to face database. You can also model face images manually.

- ◇ On the **Database Config** page, select a database, and then click **Modeling** to model all the face images in the database.
- ◇ On the **Details** page, select one or more face images, and then click **Modeling** to model the selected images.

- Export face images.
  Select one or more face images, and then click **Export**.
- Delete face images.
  Select one or more face images, and then click **Delete**.

5.9.5.4 Configuring Face Recognition

Configure alarm rules for face recognition.

5.9.5.4.1 Configuring AI by Recorder

Prerequisites

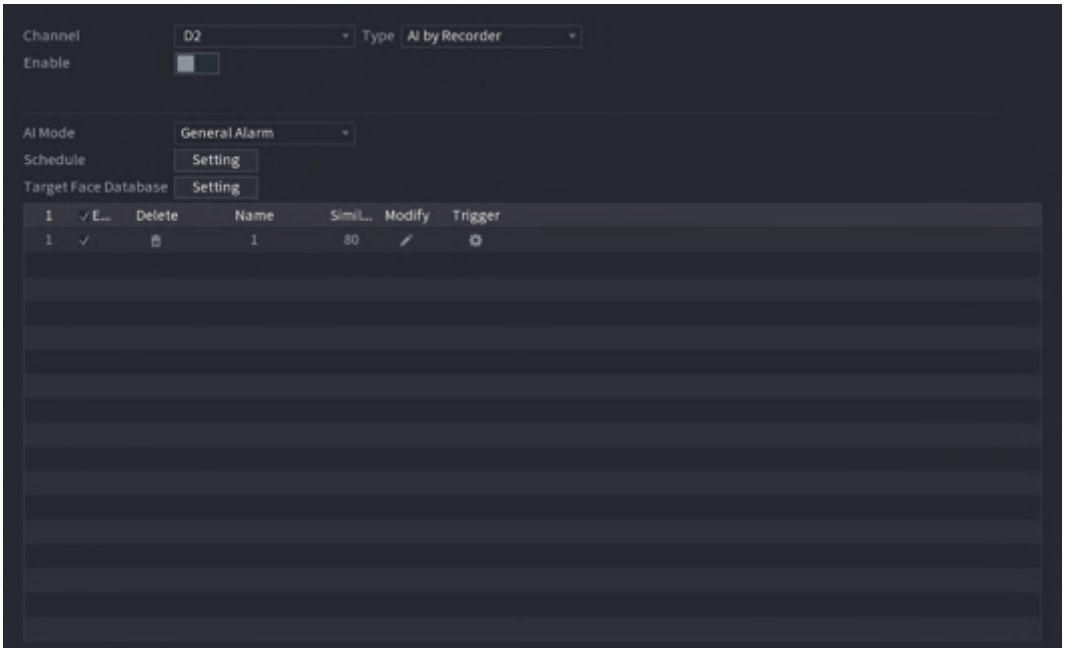
Make sure the face detection function is enabled at corresponding channel.

Procedure

Step 1 Select **Main Menu** > **AI** > **Parameters** > **Face Recognition**.

Step 2 Select the channel, enable the function, and select **AI by Recorder** in the **Type** list.

Figure 5-96 AI by recorder



Step 3 Click **Setting** next to **Schedule** to configure arming periods. The corresponding alarm actions are linked by the alarm events triggered during armed period.

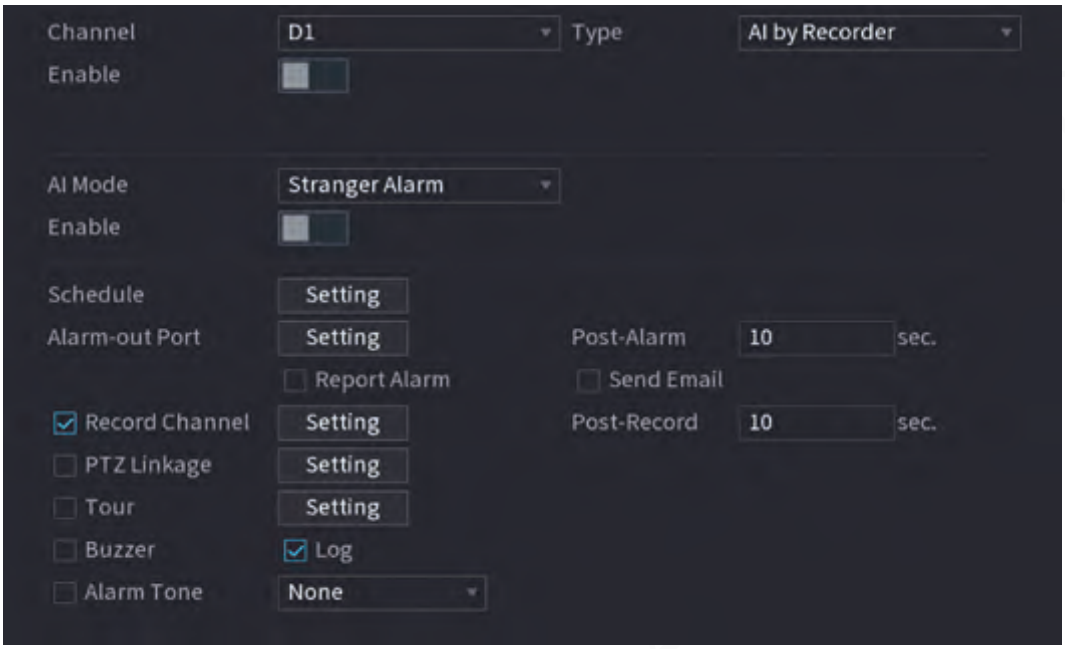
Step 4 Arm target face database.

- **General Alarm**: The alarm is triggered when the similarity of detected faces reaches the defined value.
  1. Select **General Alarm** in **AI Mode**.
  2. Click **Setting** next to **Target Face Database**.
  3. Select the face database that you want to arm, and then click **OK**.

4. Click to modify similarity.
5. Click to configure alarm linkages.

- **Stranger Alarm**: The alarm is triggered when the similarity of detected faces does not reach the defined value.

Figure 5-97 Stranger alarm (AI by recorder)



1. Select **Stranger Alarm** in **AI Mode**.
2. Click enable the function.
3. Configure the alarm linkage actions. For details on alarm linkage, see Table 5-42.

Step 5 Click **Apply**.

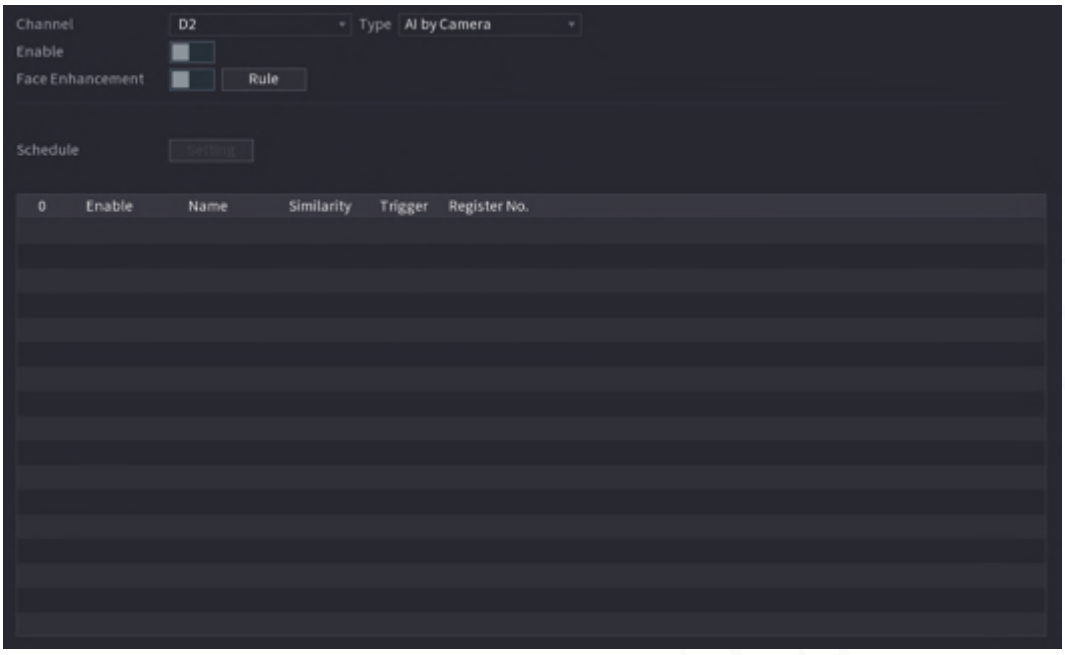
5.9.5.4.2 Configuring AI by Camera

Make sure the connected camera supports face recognition.

Step 1 Select **Main Menu** > **AI** > **Parameters** > **Face Recognition**.

Step 2 Select the channel, enable the function, and select **AI by Camera** in the **Type** list.

Figure 5-98 AI by camera



Step 3 Enable **Face Enhancement** to make the faces displayed more clear.

Step 4 Click **Rule** to draw areas to filter the target.

You can configure two target filters (maximum size and minimum size). When the target is smaller than the minimum size or larger than the maximum size, no alarms will be activated.

Step 5 Select target face database, and then click to configure alarm linkage. For details on alarm linkage, see Table 5-42.

Step 6 Click **Apply**.

5.9.5.5 AI Search (Face Recognition)

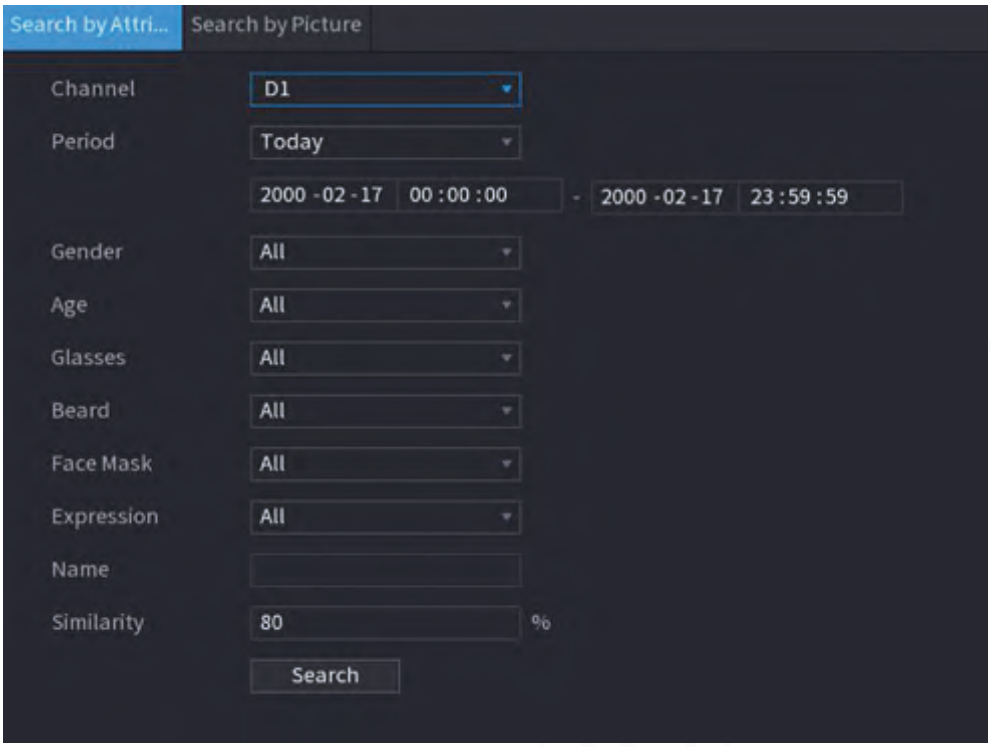
You can search for the face recognition results by attributes or by image.

5.9.5.5.1 Search by Attributes

Procedure

Step 1 Select **Main Menu** > **AI** > **AI Search** > **Face Recognition** > **Search by Attributes**.

Figure 5-99 Search by attributes

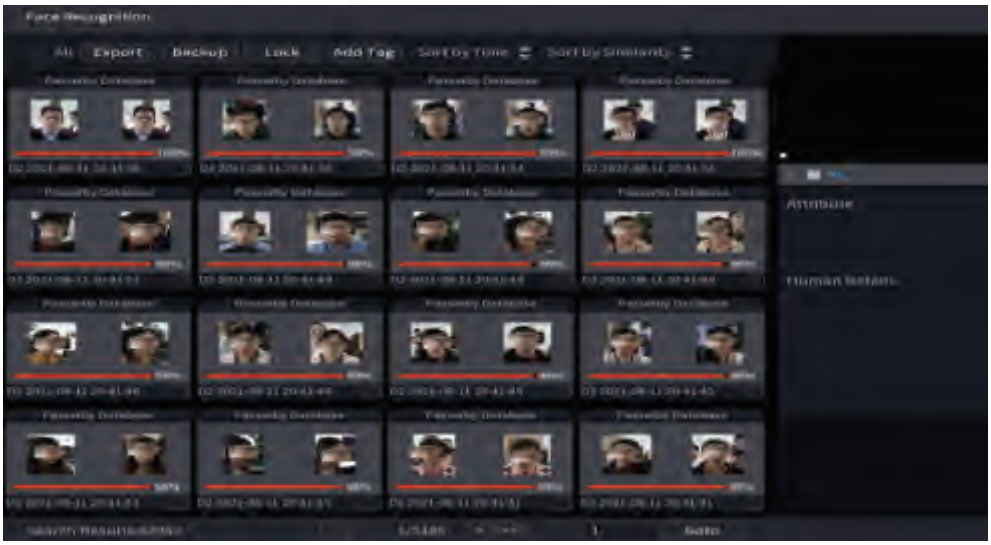


Step 2 Select the channel and set the parameters including start time, end time, gender, age, glasses, beard, mask, name and similarity.

Step 3 Click **Search**.

The faces in the image are intentionally blurred for privacy protection. The actual images are clear.

Figure 5-100 Search results



Related Operations

- Play back video.

  Click an image, and then click to play back the related video.

  During playback, you can:

  ◇ Click to pause.

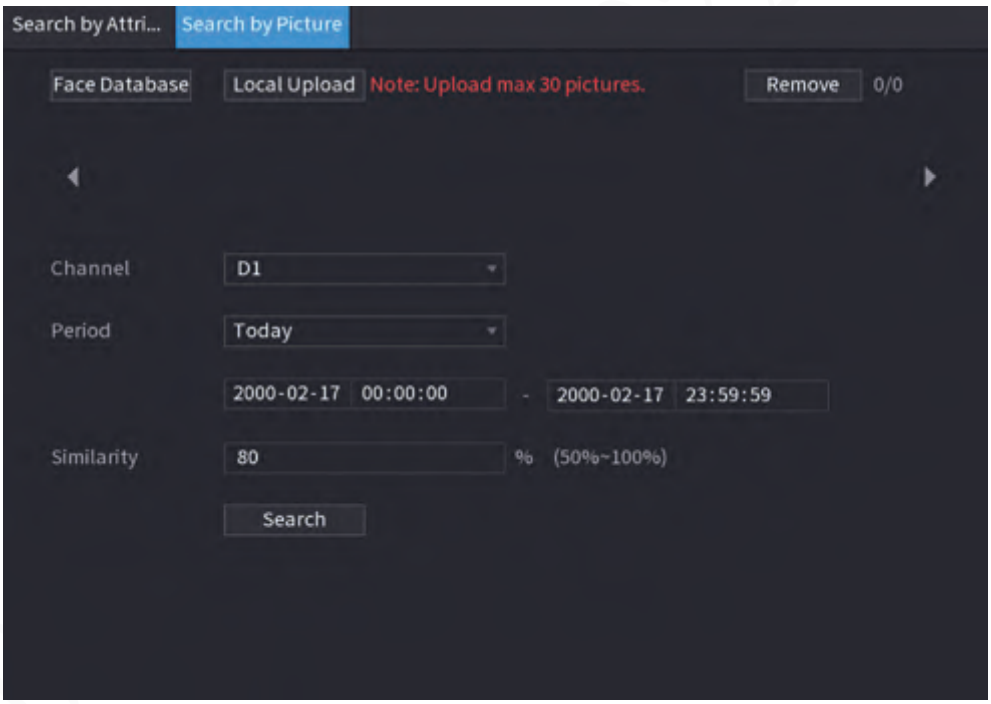
- ◇ Click  to stop.
- ◇ Click  to display AI rule. The icon changes to  .

- Add tags.
  Select one or more images, and then click **Add Tag**.
- Lock.
  Select one or more images, and then click **Lock**. The locked files will not be overwritten.
- Export.
  Select one or more images, and then click **Export** to export selected search results in excel.
- Back up.
  Select one or more images, click **Backup**, select the storage path and file type, and then click **Start** to export files to external storage device.

5.9.5.5.2 Search by Image

Step 1 Select **Main Menu** > **AI** > **AI Search** > **Face Recognition** > **Search by Picture**.

Figure 5-101 Search by image



Step 2 Upload face images.

- **Face Database**: Upload face images from database.
- **Local Upload**: Upload face images from external storage device.

Step 3 Select the image used to search and then set the parameters including channel, start time, end time, gender, age, glasses, beard, mask, and similarity.

Step 4 Click **Search**.
The search results are displayed.

Related Operations

- Play back video.
  Click an image, and then click  to play back the related video.
  During playback, you can: