Digital Video Recorder with AI

User Manual

Introduction

General presentation

This user manual (hereinafter referred to as the "manual") describes the installation, functions and operations of the Digital Video Recorder (DVR) (hereinafter referred to as the "Device"). Please read this manual carefully before using the Device and retain it for future reference.

Safety instructions

The following warning indicators may appear in this manual.

Signal words	Meaning
⚠️ **DANGER**	Indicates a situation with a high potential risk which, if not avoided, could result in death or serious injury.
⚠️ **WARNING**	Indicates a situation with a medium or low potential risk which, if not avoided, may result in minor or moderate injury.
⚠️ **ATTENTION**	Indicates a potential risk which, if not avoided, may result in property damage, data loss, reduced performance, or other unforeseeable consequences.
⊙⚊ **ADVICE**	They explain useful methods to solve a problem or to help save time.
📖 **NOTE**	Provides additional information that complements that given in the text.

Revision history

Version	Review content	Date of issue
V2.5.0	● Added region of interest tracking. ● Added EPTZ function. ● Update regarding some features.	November 2024
V2.4.0	● Updated the live view control bar. ● Added Quick Pick function. ● Added privacy protection. ● Added video quality analysis. ● Added scene change. ● Added password recovery. ● Added access to the main menu, also on the web. ● Updated video playback and playback control bar. ● Update regarding settings	June 2024

Version	Review content	Date of issue
	following parameters: color, image, encoding and covered area. ● Update regarding coaxial camera upgrade. ● Update regarding AI disarm and mode configuration. ● Maintenance update.	
V2.3.4	● Security Center Update. ● Alarm center update.	January 2024
V2.3.3	● Update regarding encoding settings. ● Update regarding HDD information. ● Alarm center update.	October 2023
V2.3.2	● Added settings for images supported by the illuminator. ● Update regarding the opt-out. ● Encoding update. ● Update regarding email settings. ● Update regarding the main menu on the web.	July 2023
V2.3.1	Update related to 3G/4G/Wi-Fi connection settings.	February 2023
V2.3.0	Adding DH-XVR54xxL-4KL-I3, DH-XVR58xxS-4KL-I3, DH-XVR58xxS-4KL-I3-LP, DH-XVR71xxH-4K-I3, DH-XVR71xxHE-4K-I3, DH-XVR72xxA-4K-I3, DH-XVR72xxAN-4K-I3, DH-XVR74xxL-4K-I3 and DH-XVR78xxS-4K-I3.	July 2022
V2.2.0	Added extended smart lighting configuration.	June 2022
V2.1.0	Added DH-XVR54xxL-I3 and DH-XVR58xxS-I3.	May 2022
V2.0.0	● Added DH-XVR42xxAN-I (Version 2.0). ● Added smart lighting as alarm link. ● Added scheduled mode for AI functions. ● Added IVS mode switching. ● Added event notification disabling in disarming function. ● Added sensitivity for IVS settings.	April 2022

Version	Review content	Date of issue
	● Disk quota update. ● Support for Security Guidelines 2.0.	
V1.2.1	● Update regarding AI mode switching. ● Added intelligent diagnosis. ● Update regarding alarm input settings. ● Password reset update.	December 2021
V1.2.0	Added some templates.	October 2021
V1.1.0	Adding DH-XVR4232AN-I.	July 2021
V1.0.11	Addition of DH-XVR5816S-4KL-I2-LP and DH-XVR7816S-4KL-X-LP-V2.	May 2021
V1.0.10	Eliminate video quality analysis function.	April 2021
V1.0.9	Added some templates.	February 2021
V1.0.8	Added some templates.	November 2020
V1.0.7	Added some templates.	September 2020
V1.0.6	Added some templates.	May 2020
V1.0.5	Updated to UI version 4.0.	February 2020
V1.0.4	● Added the following functions: disarm, HDD database and SMD preview. ● Optimized smart search function for filtering people and vehicles.	September 2019
V1.0.0	First version.	October 2018

Privacy Policy

It is possible that the device user or data controller collects personal data of others, such as a face, audio conversations, fingerprints or license plate number of a vehicle. Users must comply with local laws and regulations on privacy protection to ensure that the rights and legitimate interests of third parties are respected. To this end, appropriate measures must be taken, including but not limited to: using clear and visible signs to inform people of the existence of a surveillance system in the area, indicating the required contact information.

About the manual

● This manual is for reference only. There may be slight differences from the actual product.
● We decline all responsibility for any losses caused by uses of the product that do not comply with the instructions in the manual.

- The manual will be updated according to the updated laws and regulations. For detailed information, please refer to the printed user manual, use the CD-ROM, scan the QR code, or visit our official website. This manual is for reference only. There may be slight differences between the electronic and paper versions of the manual.

- Design and software are subject to change without notice. Due to product updates, differences may arise between the actual product and the information in the manual. Contact support for the latest software and additional documentation.

- There may be typographical errors or discrepancies in the description of functions, operations and technical data. In case of doubt or dispute, we reserve the right of final interpretation.

- If you cannot view the manual (in PDF format), please update your PDF reader program or try other reader software.

- All trademarks, registered trademarks and company names appearing in this manual are the property of their respective owners.

- If you encounter any problems while using the device, please refer to our website, or contact your supplier or customer service.

- In case of doubts or disputes, we reserve the right of final interpretation.

Safety rules and important warnings

This section describes the procedures for proper handling of the Device and for the prevention of risks and material damage. Read it carefully before using the device and follow the guidelines for use.

Transport requirements

⚠️

Transport the device under permitted humidity and temperature conditions.

Storage requirements

⚠️

Store the device in the permitted humidity and temperature conditions.

Installation requirements

⚠️ **DANGER**

Danger in case of instability

Possible Result: The rack may fall and cause serious injury to people.

Preventive measures, including but not limited to:

● Before placing the rack in its final location, read the installation instructions.

● Do not place loads on the device when installing it on the slide rail.

● Do not retract the slide guide with the device installed.

⚠️ **WARNING**

● 🌀 Danger: Moving fan blades

Avoid touching the fan blades, especially while they are moving.

● ⚡ 📇 Before installation, disconnect all power cables.

● Do not connect the device to the power adapter while the power adapter is turned on.

● Strictly comply with local electrical safety regulations and standards. Make sure the voltage supplied is stable and meets the power requirements of the device.

● Use the power adapter and power cords provided with the device. We assume no responsibility for injuries or damages caused by improper use of the power adapter and power cords.

⚠️

● ⏚ To improve safety, connect the ground terminal reliably.

ground terminal varies depending on the device, and some devices do not have one. Proceed according to the model of your device.

● The device must be installed in a place accessible only to technical personnel. Non-technical personnel are prohibited from entering the installation area.

● The device must be provided with reliable grounding by professional technicians. The technicians must install the ground conductor in the building floor and check the grounding connection of the outlet socket.

● Do not place the Device in places exposed to sunlight or near heat sources.

● Keep the Device away from moisture, dust and soot.

● Install the Device on a stable surface to prevent it from falling.

● Place the device in a well-ventilated area and do not obstruct air circulation.

● The Device is a Class I electrical appliance. Ensure that the power supply to the device is connected to a socket outlet with a protective earth connection.

● Use power cords that comply with local requirements and ratings.

● Before connecting the power, verify that the input voltage matches the power requirements of the server.

● When installing the device, make sure that the power plug is easily accessible to disconnect the appliance from the mains.

● Opening the device case is prohibited to non-technical and unauthorized personnel.

● Before use, securely fix the controller to the building.

Operation request

⚠ **DANGER**

● ⚠ ⊕ The device or remote control contains button batteries. Do not ingest the batteries. avoid the risk of chemical burns.

Possible outcome: Swallowing button batteries can cause severe internal burns and death within 2 hours.

Preventive measures, including but not limited to:

- Keep new and used batteries out of reach of children.
- If the battery compartment is not closed properly, stop using the device immediately and keep it out of the reach of children.
- Consult a doctor immediately if you believe a battery has been swallowed or inserted into any part of the body.

● Battery Precautions

Preventive measures, including but not limited to:

- Do not transport, store or use batteries at high altitudes with low pressures and in extremely high or low temperature environments.
- To avoid explosion, do not dispose of batteries by throwing them into a fire or hot oven, by mechanical crushing or cutting.
- Do not leave batteries in extremely high or low temperatures to avoid explosions and leakage of flammable liquids or gases.
- Do not subject batteries to very low atmospheric pressures to avoid explosions and leakage of flammable liquids or gases.

⚠ **WARNING**

Place the device in a place not easily accessible to children.

⚠

- This is a Class 1 laser device. Only modules that meet the requirements for Class 1 lasers may be inserted into it.
- Avoid spilling or splashing liquids on the device and ensure that no containers filled with liquids are placed on top of the device.
- Place the device in a well-ventilated area and do not obstruct air circulation.

- Power the device with inputs and outputs of power within the indicated range.
- The device may only be disassembled by qualified personnel.
- Transport, use and store the device under permitted humidity and temperature conditions.

Maintenance requirements

⚠ **DANGER**

Replacing used batteries with new ones of the wrong type may cause an explosion. Preventive measures, including but not limited to:

- Replace used batteries with new batteries of the same type and model to avoid the risk of fire or explosion.
- Dispose of old batteries as directed.

⚠

The unit coupler is a disconnect device. Keep it at a proper angle when using. Before repairing or maintaining the device, disconnect the appliance coupler.

Index

1 Introduction

1.1 Overview

This device is a premium digital monitoring product for the security industry. The built-in LINUX operating system ensures stable operation. H.265 and G.711 technologies ensure high image quality and low bitstream. Frame-by-frame playback function shows more details for analysis, provides rich functions such as recording, playback and monitoring, and ensures audio and video synchronization. The device also adopts advanced control technology and provides high performance in network data transmission.

The integrated design also allows for a high level of security and reliability. The device can work locally and, thanks to its advanced networking features, can be connected to professional surveillance software (Smart PSS) to create a security network in which to exploit its powerful remote monitoring functions.
The numerous application scenarios include, among others, banking, telecommunications, electricity, traffic, smart residential districts, factories, warehouses and water conservation facilities.

1.2 Functions

The functions they can vary in base at the version of the software And 'hardware of the model purchased.

AI Function

- It supports face detection, which analyzes attributes such as age, gender, glasses, beard, and mask and stores them in data structures that can be used for quick search.
- Supports facial recognition, which compares captured facial snapshots with those in the face database and links configured alarms (face detection function must be active).
- Supports image search, which is useful for finding a target image in the database.
- Support 16-channel IVS function, which includes line crossing and intrusion detection rules. IVS function can avoid false alarms by filtering factors such as rain, light and animals.
- Calculate the number of people detected in 24 hours.
- Detects vehicles passing by in 24 hours.

Real-time surveillance

- Support VGA and HDMI ports for monitor surveillance.
- Simultaneous support for HDMI, VGA and TV outputs.

IoT Management

It provides a specific management module for IoT features, such as temperature and humidity data reporting and alarm linking.

Sensor integration

It integrates coaxial cameras with various sensor arrays, such as temperature and humidity, and wireless alarm devices.

Storage Management

● The special format ensures data security and eliminates the risk of tampering.
● Supports digital watermark.

Compression format

Support multi-channel audio and video signals. Independent hardware decodes audio signal and video signal of each channel, to ensure audio and video synchronization.

Backup function

● Supports backup operations via USB port (e.g. using USB storage disks, portable HDDs and burners).
● The client-side user can download files over the network to their local hard drive for backup purposes.

Playback and recording

● All channels support independent real-time recording at the same time with the activation of various functions, such as search, backward playback, network monitoring, recording search and download.
● It supports multiple playback modes: slow, fast, backward and frame by frame.

● Supports text overlay, to accurately display the time an event occurred.

● Supports zooming in on a selected area in live view.

Network usage

Support remote and real-time network monitoring, remote record search and remote PTZ control.

Activating alarms

● It offers multiple relay alarm outputs for on-site alarm triggering and light control.
● The alarm inputs and outputs are designed with protection circuit which ensures the safety of the device.

Communication ports

● RS-485 port allows alarm signal input and PTZ control.

- The RS-232 port allows you to connect a keyboard, a computer's COM port, or a matrix control.
- The standard Ethernet port allows remote network access.
- The dual network port features multi-address, fault tolerance and load balancing configuration modes.

Control of swivel

Support connecting PTZ decoder via RS-485 port.

Intelligent operation

- Supports mouse use.
- Support copy and paste functions for same settings.

UPNP (Universal Plug and Play)

It allows you to establish a mapping connection between LAN and WAN networks via the UPnP protocol.

Camera with automatic adaptation

Supports and automatically recognizes PAL, NTSC and HD cameras.

2 Initial procedures

2.1 Checking the components

The wait, The type And the number Of components effective they can vary in base to the model purchased. After receiving the device, please check the package contents according to the following checklist. If there are any missing or damaged items, please contact your local dealer or after-sales service immediately.

Table 2-1 Checklist

N.	Items to check		Requirements
1	Packaging	I wait	No obvious damage.
		Materials of packaging	No broken or deformed elements due to impacts.
2	Labels	Labels on the device	No tearing. Do not damage or tear the labels; otherwise the services covered by the warranty will be void. may become invalid. When contacting after-sales service, please indicate the product serial number.
3	Device	I wait	No obvious damage.
		Data cables, power cables, cables of the fans and Motherboard	No loose connections.

2.2 Installing the HDD

When using for the first time, please make sure the HDD is already installed in the device. We suggest using officially recommended HDD. Do not use the HDD of the computer.

Turn off The device And disconnect The cable Of diet Before Of open the using For substitute the HDD.

2.2.1

DH-XVR42xxAN-I/DH-XVR42xxAN-I(V2.0)/DH-XVR52xxA-I2/DH-XVR 52xxA-I3/DH-XVR52xxA-4KL-I2/DH-XVR52xxA-4KL-I3/DH-XVR52xxA N-I2/DH-XVR52xxAN-I3/DH-XVR52xxAN-4KL-I2/DH-XVR52xxAN-4KL - I3/DH-XVR72xxA-4K-I2/DH-XVR72xxA-4K-I3/DH-XVR72xxA-4KL-I/D H-XVR72xxAN-4K-I2/DH-XVR72xxAN-4K-I3/DH-XVR82xxA-4K-I/DH-XVR82xxA-4KL-I

Procedure

Step 1: Remove the screws to remove the cover.

Figure 2-1 Removing the screws
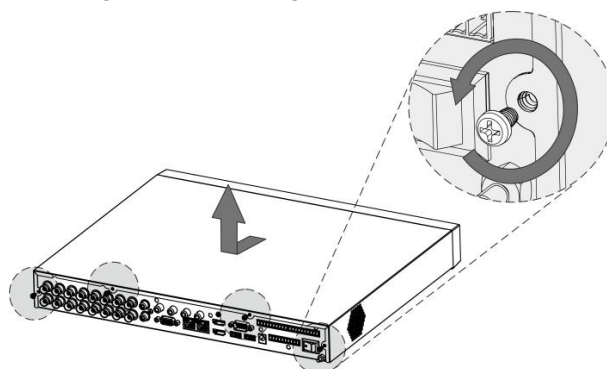
Step 2: Place two screws on the HDD and tighten them one turn.

Figure 2-2 Screw placement
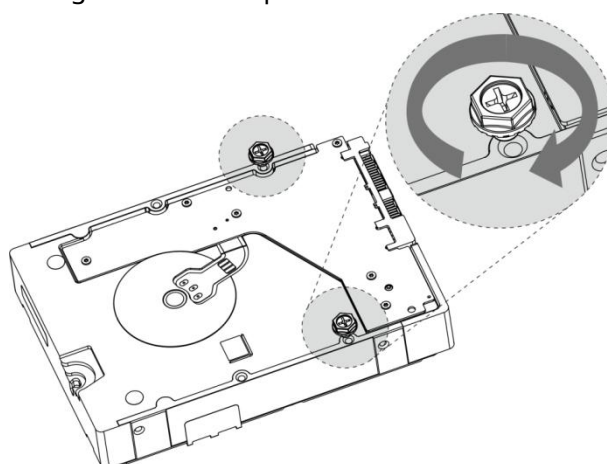
Step 3: Align the two screws with the holes on the device.

Figure 2-3 Screw alignment
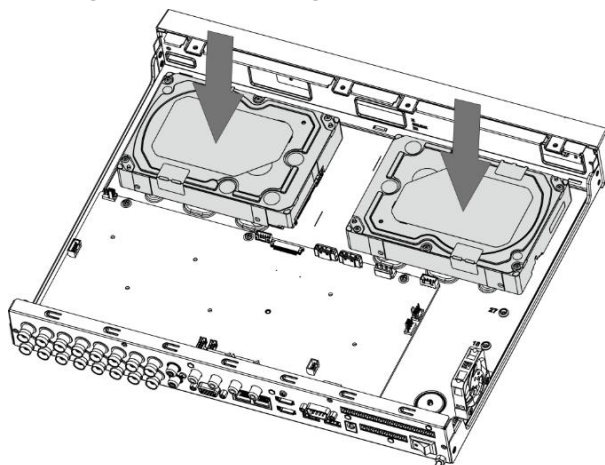
Step 4: Turn the device over and insert the other two screws, then tighten all screws to secure the HDD to the device.

Figure 2-4 Tightening the screws
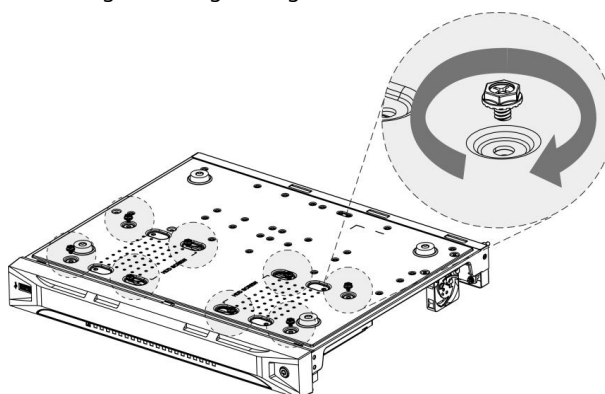
Step 5: Use the power cable and data cable to connect the HDD to the device.

Figure 2-5 Connecting the cables
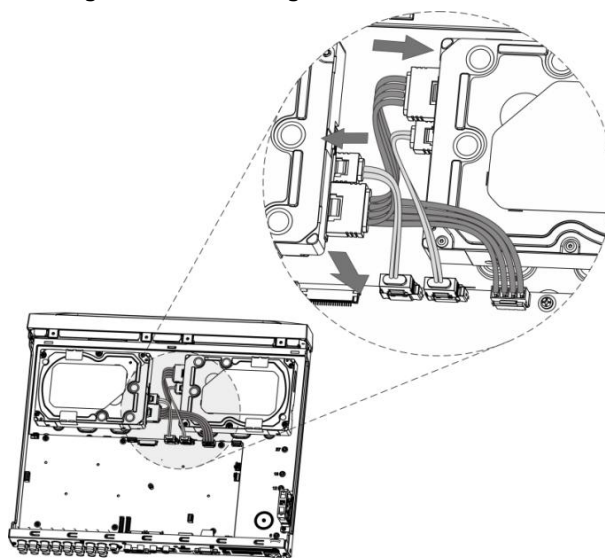
Step 6: Replace the cover and tighten the screws.

Figure 2-6 Replacing the cover
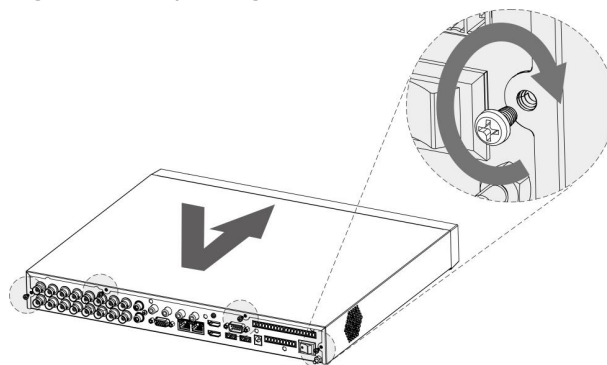
2.2.2

DH-XVR58xxS-I2/DH-XVR58xxS-4KL-I2/DH-XVR58xxS-4KL-I2-LP/DH - XVR58xxS-I3 / DH-XVR58xxS-4KL-I3 / DH-XVR58xxS-4KL-I3-LP / DH- - XVR88xxS-4KL-I

Procedure

Step 1: Remove the screws from the frame.

Figure 2-7 Removing the screws
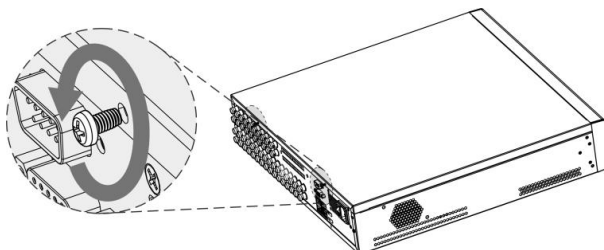
Step 2: Remove the cover from the frame.

Figure 2-8 Removing the cover
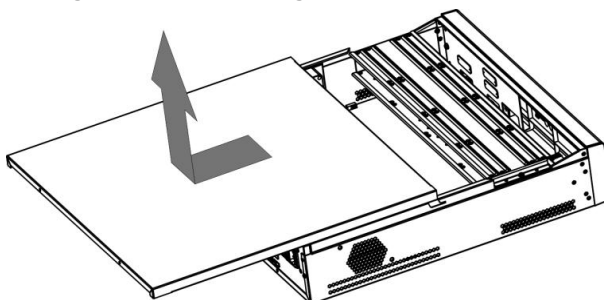
Step 3: Remove the screws from the support bracket and pull the bracket out.

Figure 2-9 Removing the support bracket
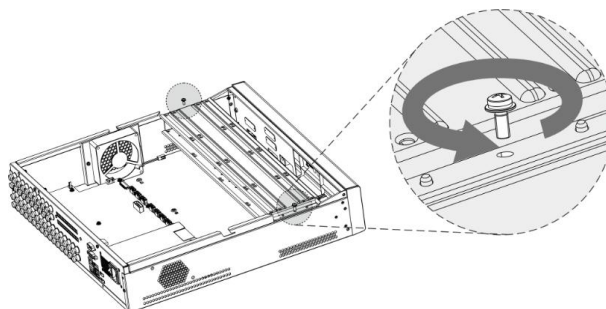
Step 4: Align the four screw holes on the disc with those on the mounting bracket and screw the disc into the bracket.

Figure 2-10 Securing the disc
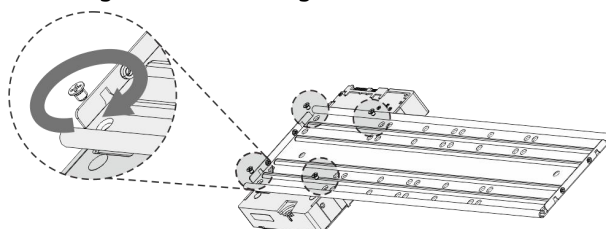
Step 5: If necessary, attach additional discs to the bracket.

Figure 2-11 Attaching additional discs
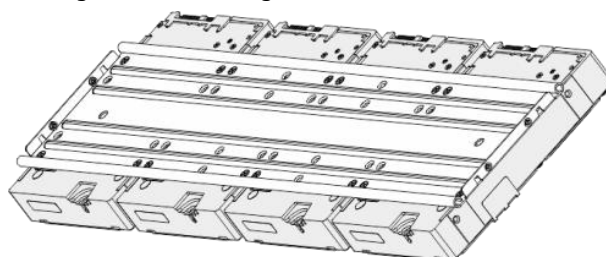
Step 6: Fix the two support brackets.

This operation And necessary Alone on models with 8 housings.

Figure 2-12 Attaching the support brackets
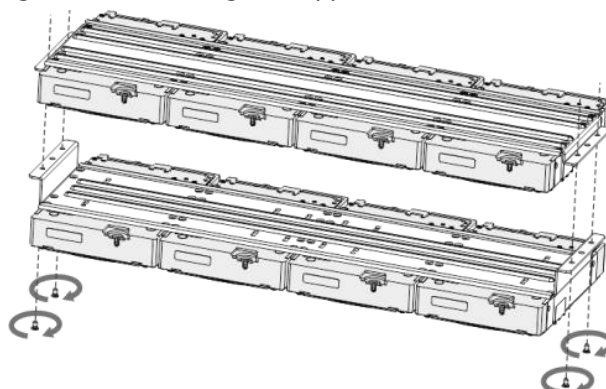
Step 7: Replace the mounting brackets and secure them to the DVR.

Figure 2-13 Replacing the support bracket
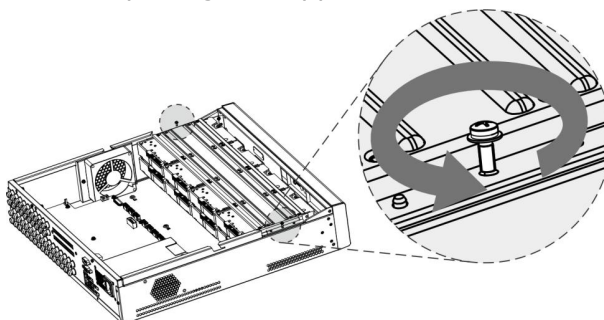
Step 8: Connect the disks to the DVR using the power cable and data cable.

The example in the figure That follows Yesase on the connection Of a model to 4 housings.

Figure 2-14 Connecting the cables
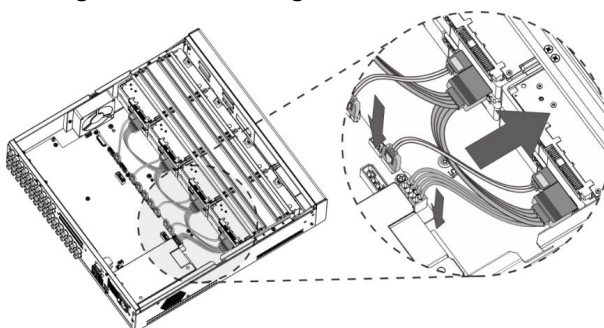
Step 9: Replace the cover and tighten the screws.

Figure 2-15 Replacing the cover
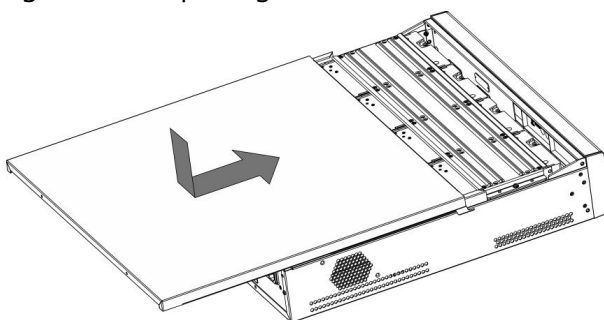
2.2.3

DH-XVR54xxL-I2/DH-XVR54xxL-4KL-I2/DH-XVR54xxL-I3/DH-XVR54x xL-4KL-I3/DH-XVR74xxL-4K-I2/DH-XVR74xxL-4K-I3

Procedure

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

Figure 2-16 Removing the screws
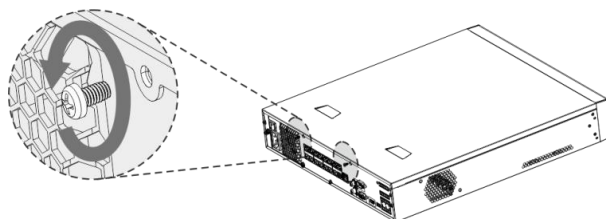
Step 2: Remove the cover following the direction shown by the arrow below.

Figure 2-17 Removing the cover
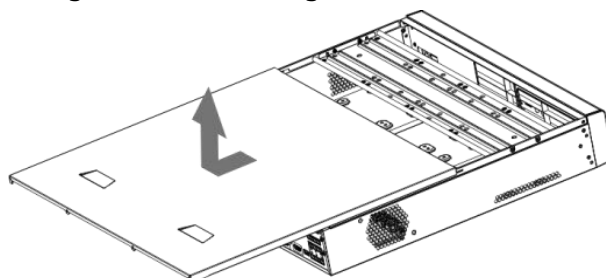
Step 3: Remove the screws on the sides of the HDD bracket and lift the bracket out.

Figure 2-18 Removing the bracket
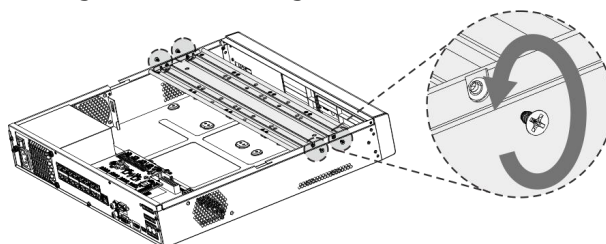
Step 4: Align the four screw holes on the HDD with the four holes on the bracket and tighten the screws. The HDD is fixed to the bracket.

Figure 2-19 Securing the HDD
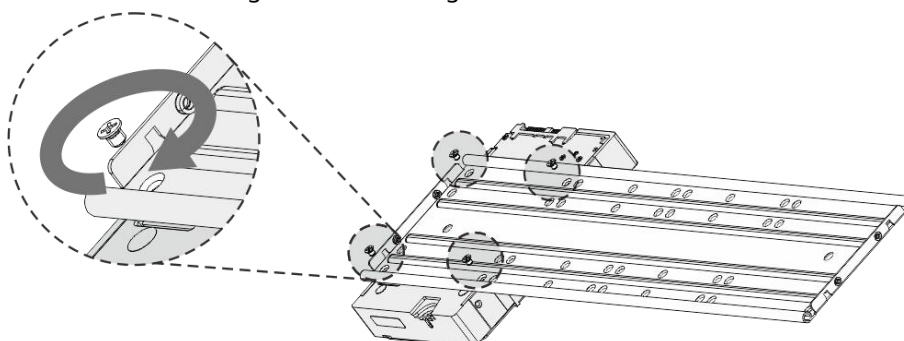
Step 5: Install the other HDDs.

Figure 2-20 Installing other HDDs
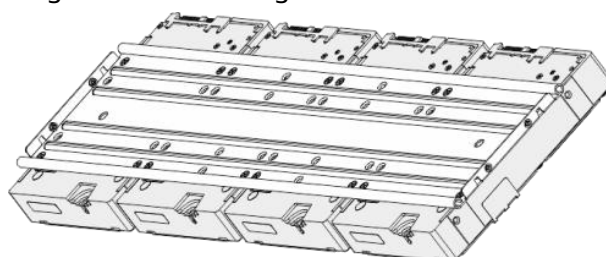
Step 6: Place the bracket on the device and tighten the screws on the sides of the bracket.

Figure 2-21 Tightening the screws
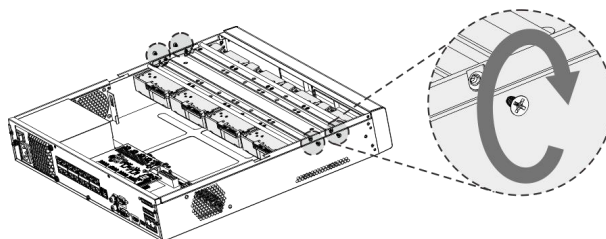
Step 7: Connect the data cable and power cable of the HDD to the device.

Figure 2-22 Connecting the cables
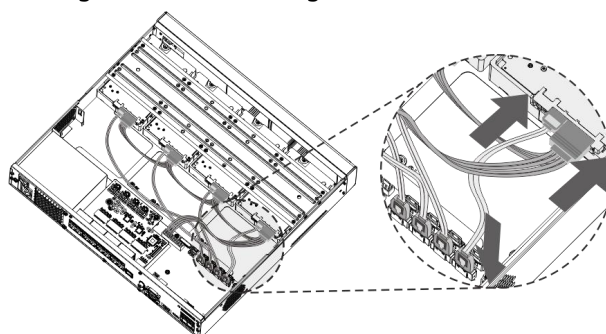
Step 8: Replace the cover and tighten the screws on the rear panel to complete the installation.

Figure 2-23 Replacing the cover
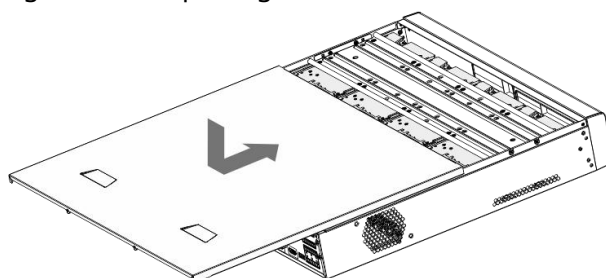
2.2.4

DH-XVR1Bxx-I/DH-XVR1BxxH-I/DH-XVR41xxC-I/DH-XVR41xxHS-I/D H-XVR51xxH-I/DH-XVR51xxH-I2/DH-XVR51xxH-I3/DH-XVR51xxH-4K L-I2/ DH-XVR51xxH-4KL-I3/DH-XVR51xxHE-I2/DH-XVR51xxHE-I3/DH-XVR51xxHE-4KL-I2/DH-XVR51xxHE-4KL-I3/DH-XVR51xxHS-I2/DH-X VR51xxHS-I3/DH-XVR51xxHS-4KL-I2/DH-XVR51xxHS-4KL-I3/DH-XV R71xxH-4K-I2/DH-XVR71xxH-4K-I3/DH-XVR71xxHE-4KL-I/DH-XVR71 xxHE-4K-I2/DH-XVR71xxHE-4K-I3

Procedure

Step 1: Remove the screws on the cover.

Figure 2-24 Removing the screws
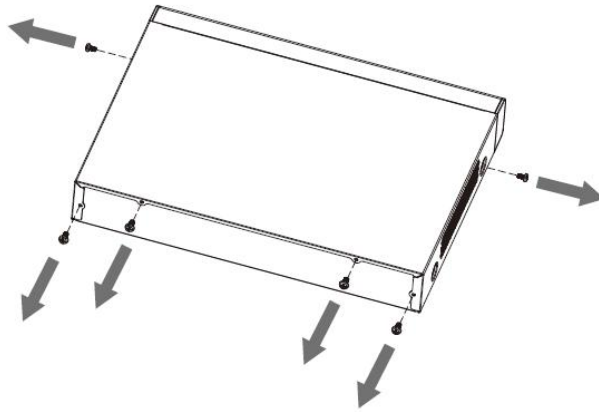
Step 2: Remove the cover.

Figure 2-25 Removing the cover
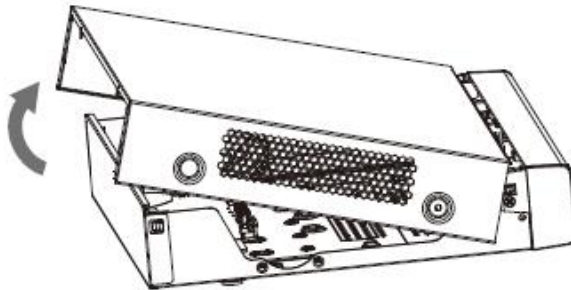
Step 3: Align the HDD screws with the holes on the back of the device and tighten them.

Figure 2-26 Tightening the screws
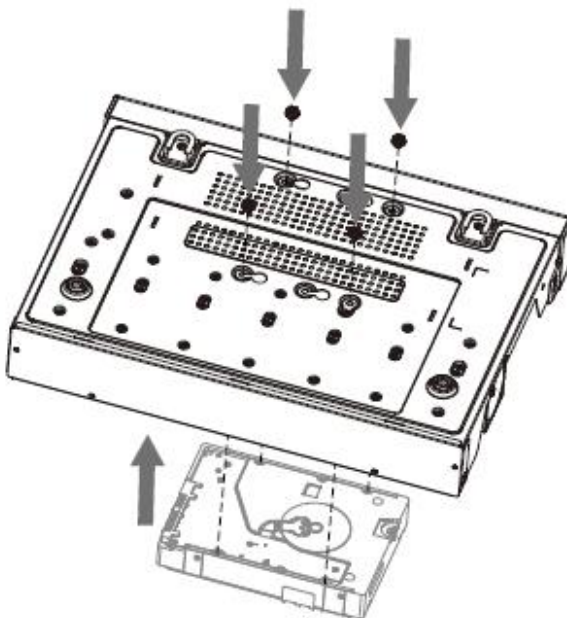
Step 4: Connect the HDD data cable and power cable to the motherboard.

Figure 2-27 Connecting the cables
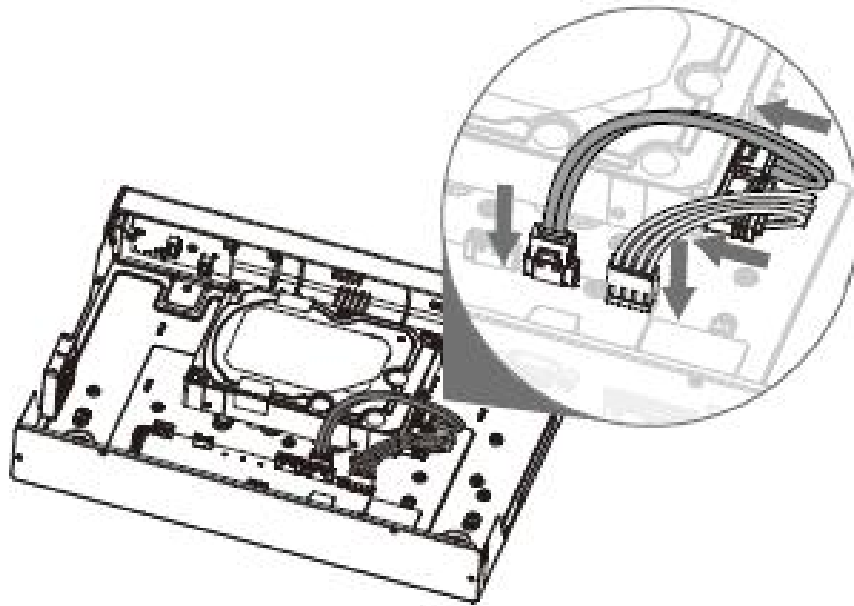
Step 5: Replace the lid.

Figure 2-28 Replacing the cover
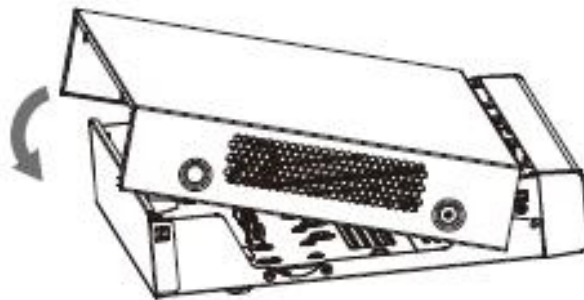
Step 6: Tighten the screws.

Figure 2-29 Tightening the screws
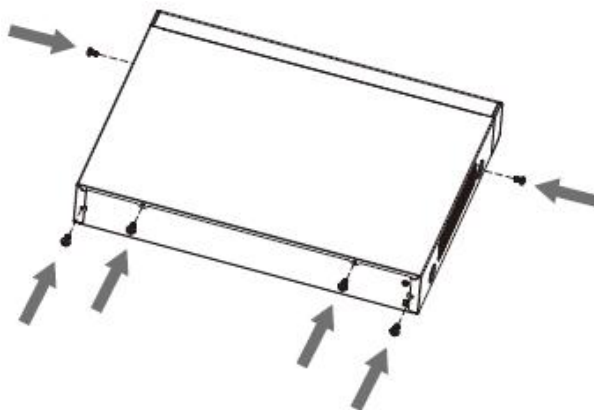
2.2.5 DH-XVR51xxC-I3/DH-XVR51xxC-4KL-I3

Procedure

Step 1: Remove the screws.

Figure 2-30 Removing the screws
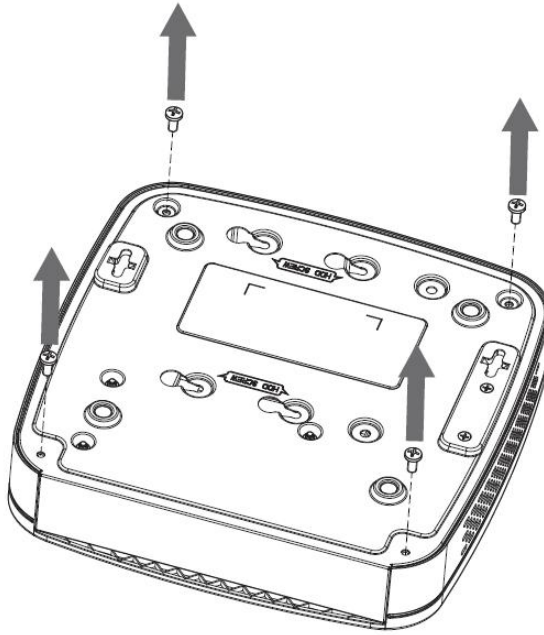
Step 2: Remove the cover.

Figure 2-31 Removing the cover
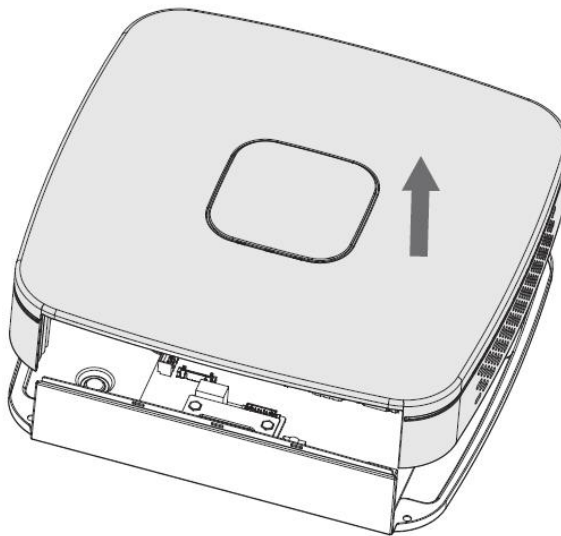
Step 3: Align the HDD screws with the holes on the DVR and tighten them.

Figure 2-32 Installing HDD
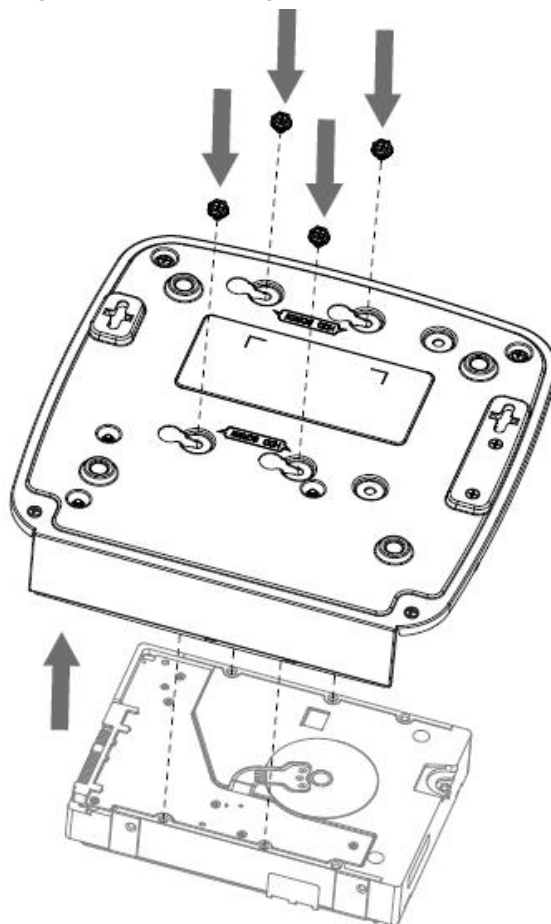
Step 4: Using the HDD cable and power cable, connect the HDD to the motherboard.

Figure 2-33 Connecting the cables
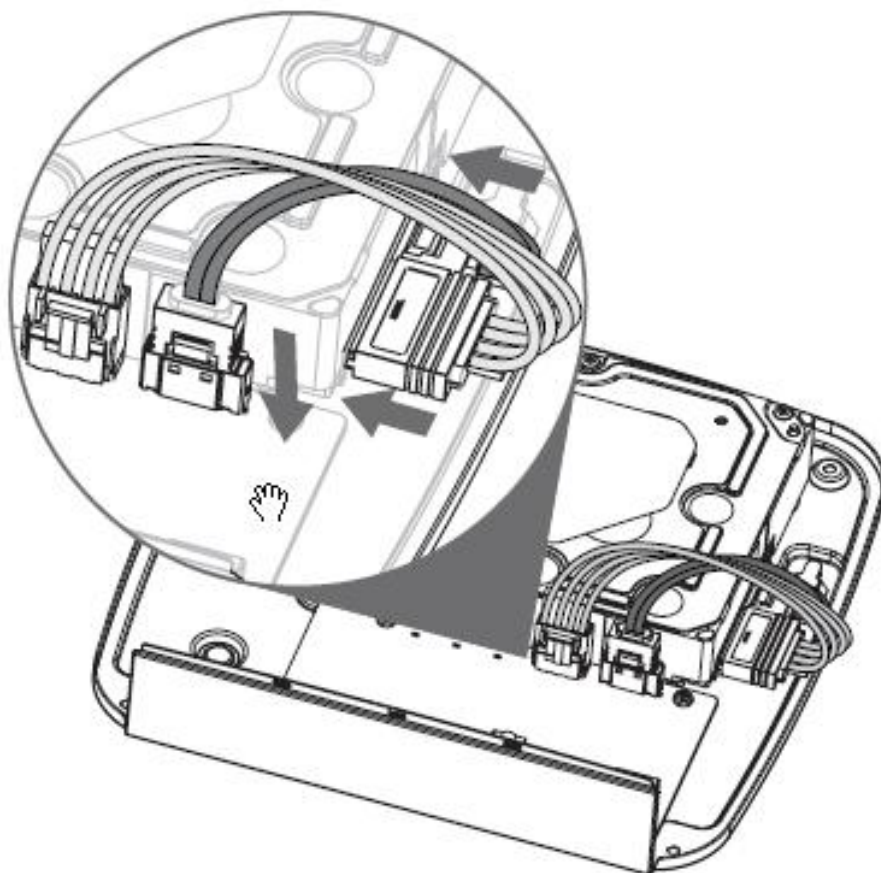
Step 5: Replace the lid.

Figure 2-34 Replacing the cover
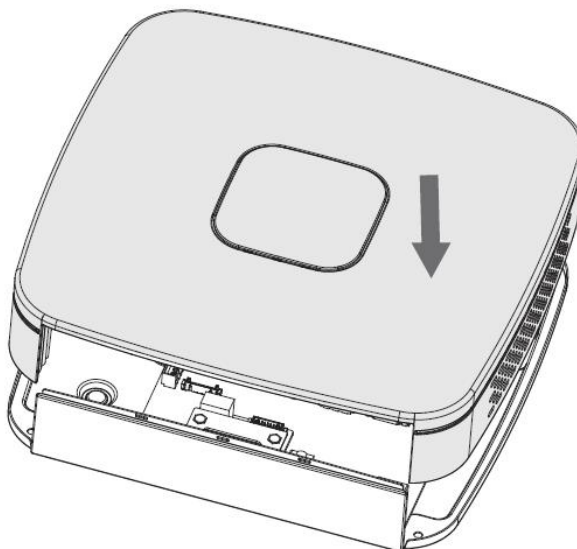
Step 6: Tighten the screws.

Figure 2-35 Tightening the screws
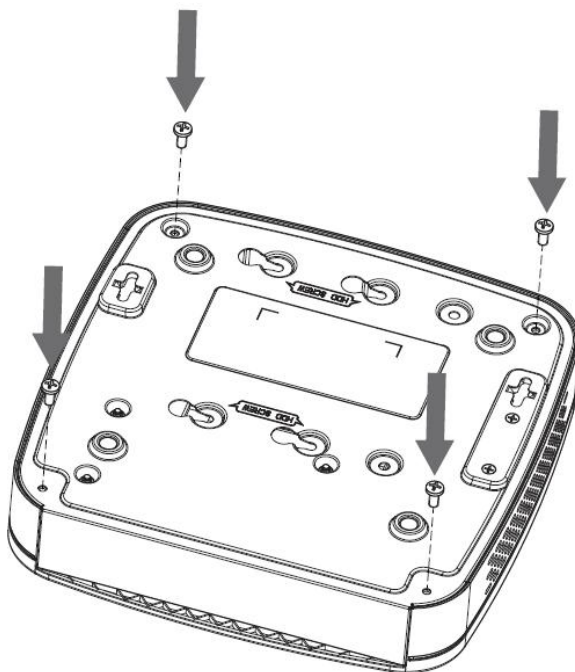
3 Device Overview

This section describes the various components of the device and how to use the remote control and mouse.

3.1 Front panel

3.1.1 DH-XVR51xxH-I

Figure 3-1 Front panel
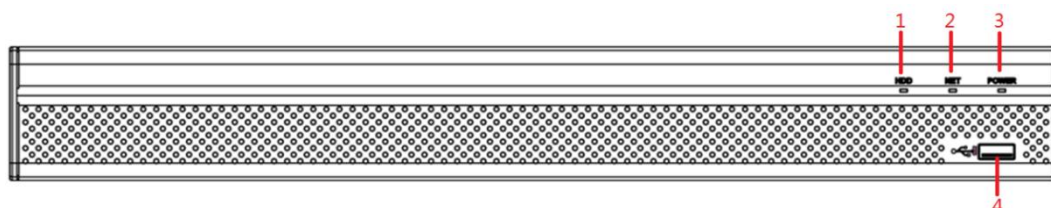
Table 3-1 Front panel description

N.	Door name	Function
1	HDD	It lights up blue when the HDD has an abnormality.
2	NET	It lights up blue when the network has an anomaly.
3	DIET	It lights up blue when the power is connected correctly.
4	USB port	Allows connection of peripherals such as USB storage drives, keyboards and mice.

3.1.2 DH-XVR71xxH-4K-I2/DH-XVR71xxH-4K-I3/DH-XVR71xxHE-4K-I2/DH-XVR71xxHE-4K-I3/DH-XVR71xxHE-4KL-I

Figure 3-2 Front panel
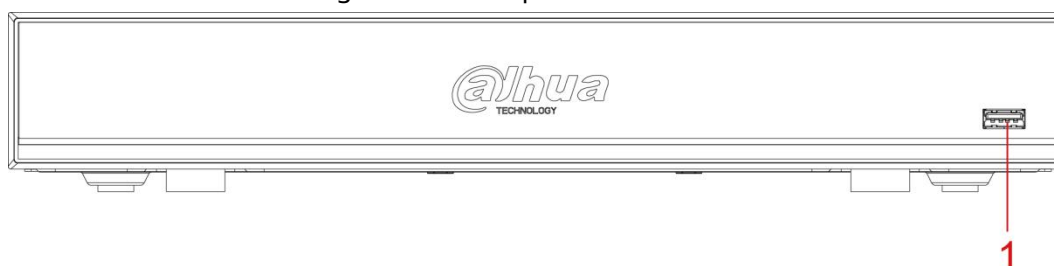
Table 3-2 Front panel description

N.	Door name	Function
1	USB port	Allows connection of peripherals such as USB storage drives, keyboards and mice.

3.1.3

DH-XVR72xxA-4KL-I/DH-XVR72xxAN-4K-I2/DH-XVR72xxA-4K-I2/DH-XVR72xxAN-4K-I3/DH-XVR72xxA-4K-I3

Figure 3-3 Front panel
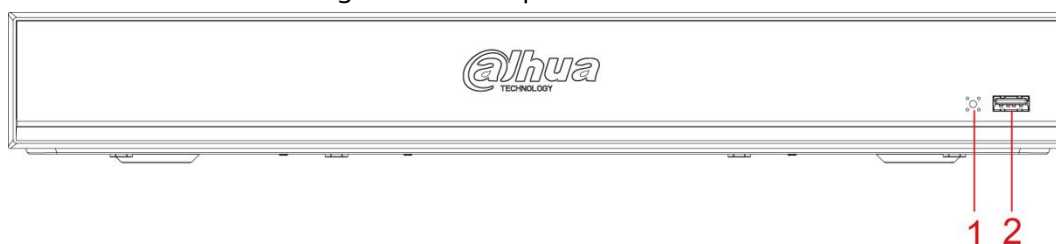
Table 3-3 Front panel description

N.	Door name	Function
1	IR Receiver	Infrared signal receiver of the remote control.
2	USB port	Allows connection of peripherals such as USB storage drives, keyboards and mice.

3.1.4 DH-XVR82xxA-4K-I/DH-XVR82xxA-4KL-I

Figure 3-4 Front panel
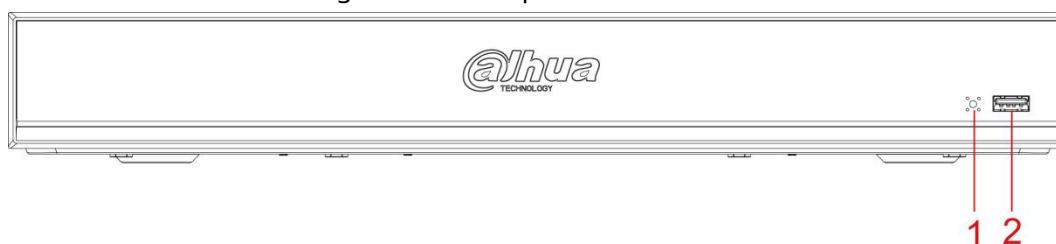
Table 3-4 Front panel description

N.	Door name	Function
1	IR Receiver	Infrared signal receiver of the remote control.
2	USB port	Allows connection of peripherals such as USB storage drives, keyboards and mice.

3.1.5

DH-XVR41xxC-I/DH-XVR41xxHS-I/DH-XVR42xxAN-I/DH-XVR42xxAN - I(V2.0)/DH-XVR51xxH-I2/DH-XVR51xxH-I3/DH-XVR51xxH-4KL-I2/DH - HS-I3/DH-XVR51xxHS-4KL-I2/DH-XVR51xxHS-4KL-I3/DH- XVR51xxH S-5M-I3/DH-XVR52xxA-I2/DH-XVR52xxA-I3/DH- XVR52xxA-4KL-I2/D H-XVR52xxA-4KL-I3/DH-XVR52xxAN-I2/DH- XVR52xxAN-I3/DH-XVR5 2xxAN-4KL-I2/DH-XVR52xxAN-4KL-I3/ DH-XVR52xxAN-5M-I3

Figure 3-5 Front panel
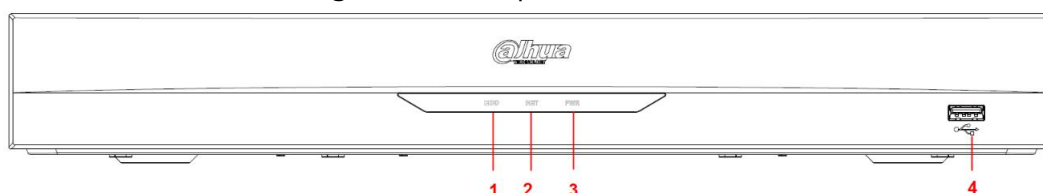
Table 3-5 Front panel description

N.	Door name	Function
1	HDD	It lights up when the HDD has an abnormality.
2	NET	It lights up when the network has an anomaly.
3	DIET	It lights up when the power is connected correctly.
4	USB port	Allows connection of peripherals such as USB storage drives, keyboards and mice.

3.1.6

DH-XVR78xxS-4K-I2/DH-XVR78xxS-4K-I3/DH-XVR78xxS-4KL-X-LP-V 2/

DH-XVR88xxS-4KL-I

Figure 3-6 Front panel
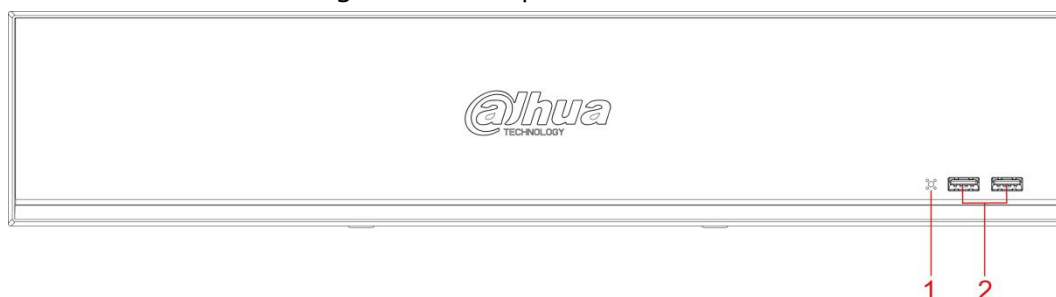
Table 3-6 Front panel description

N.	Door name	Function
1	IR Receiver	Infrared signal receiver of the remote control.
2	USB port	Allows connection of peripherals such as USB storage drives, keyboards and mice.

3.1.7 DH-XVR74xxL-4K-I2/DH-XVR74xxL-4K-I3

Figure 3-7 Front panel

Table 3-7 Front panel description

N.	Door name	Function
1	IR Receiver	Infrared signal receiver of the remote control.
2	USB port	Allows connection of peripherals such as USB storage drives, keyboards and mice.

3.1.8

DH-XVR54xxL-I2/DH-XVR54xxL-4KL-I2/DH-XVR54xxL-I3/DH-XVR54x xL-4KL-I

Figure 3-8 Front panel
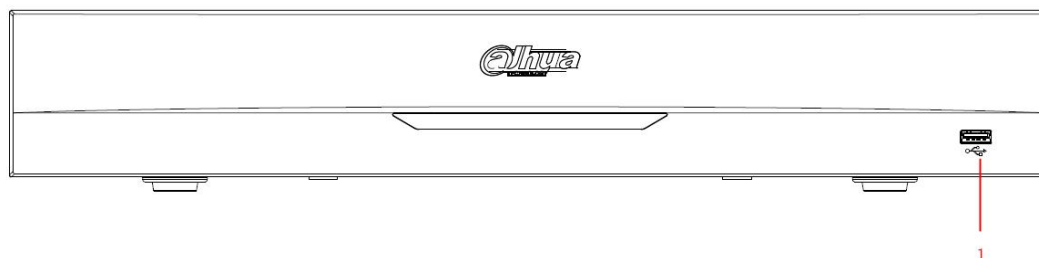
Table 3-8 Front panel description

N.	Door name	Function
1	USB port	Allows connection of peripherals such as USB storage drives, keyboards and mice.

3.1.9

DH-XVR58xxS-I2/DH-XVR58xxS-I3/DH-XVR58xxS-4KL-I2/DH-XVR58 xxS-4KL-I3/DH-XVR58xxS-4KL-I2-LP/DH-XVR58xxS-4KL-I3-LP

Figure 3-9 Front panel
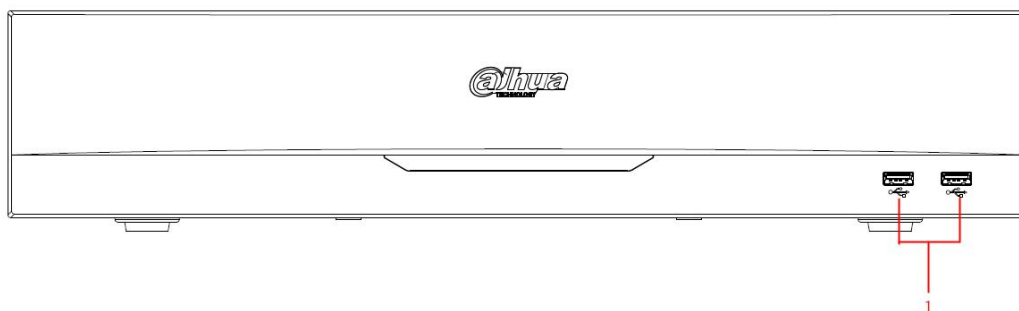
Table 3-9 Front panel description

N.	Door name	Function
1	USB port	Allows connection of peripherals such as USB storage drives, keyboards and mice.

3.1.10 DH-XVR1Bxx-I/DH-XVR1BxxH-I

Figure 3-10 Front panel
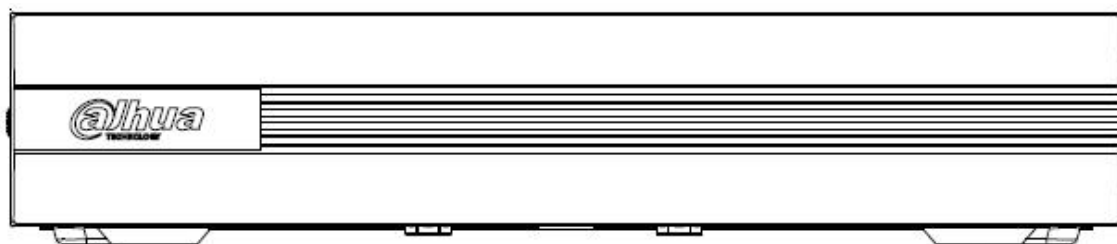
3.1.11 DH-XVR51xxC-I3/DH-XVR51xxC-4KL-I3

Figure 3-11 Front panel
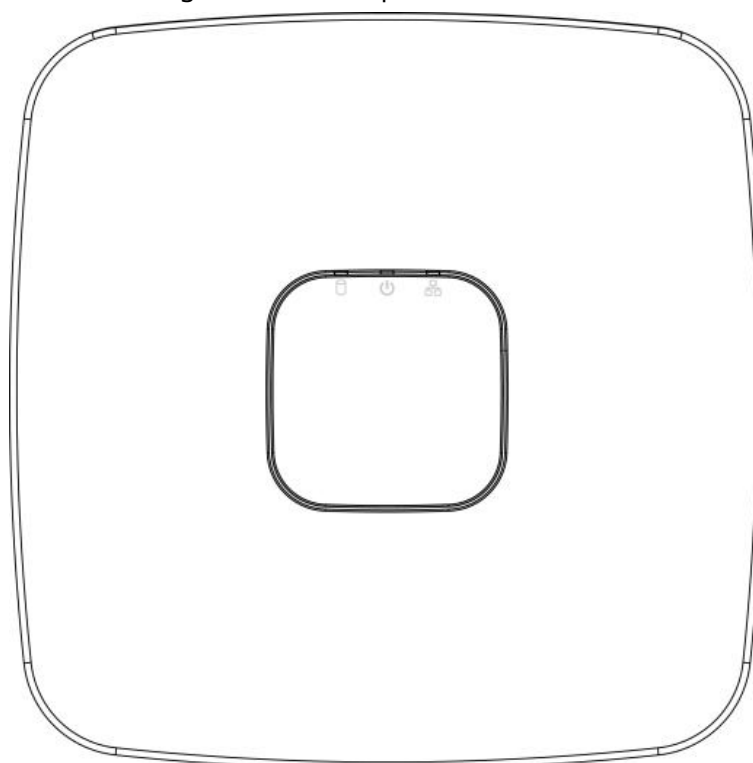
Table 3-10 Front panel description

Icon	Name	Function
	Status indicator of the HDD	● The indicator is off when the HDD is working normally. ● The indicator lights up blue when the HDD malfunctions.
	Status indicator of the power supply	● The indicator is off when the power connection is abnormal. ● The indicator lights up blue when the power is connected correctly.
	Network status indicator	● The indicator is off when the network connection is working properly.

Icon	Name	Function
		● The indicator lights up blue if there is an abnormality in the network connection.

3.2 Rear panel

3.2.1 DH-XVR51xxH-I/DH-XVR51xxH-I2/DH-XVR51xxH-I3/DH-XVR51xxH-4 KL-I2/DH-XVR51xxH-4KL-I3/DH-XVR51xxHE-I2/DH-XVR51xxHE-I3/D H-XVR51xxHE-4KL-I2/DH-XVR51xxHE-4KL-I3/DH-XVR71xxH-4K-I2/D H-XVR71xxH-4K-I3/DH-XVR71xxHE-4K-I2/DH-XVR71xxHE-4K-I3/DH-XVR71xxHE-4KL-I

Figure 3-12 Rear panel
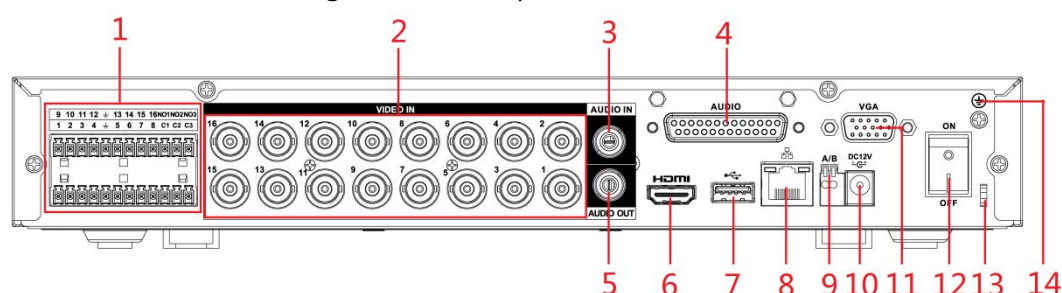
Table 3-11 Rear panel description

N.	Door name	Function
1	Alarm inputs 1-16	Four groups of alarm inputs (group 1: doors 1-4; group 2: doors 5-8; group 3: doors 9-12; group 4: doors 13-16). The doors receive signal from external alarm source. There are two types: NO (normally open) and NC (normally closed). When the alarm input device is connected to external power, make sure it is connected to the same ground as the DVR.
	Alarm outputs 1-3 (NO1-NO3; C1-C3)	● Three groups of alarm outputs (group 1: NO1-C1 ports; group 2: NO2-C2 ports; group 3: NO3-C3 ports). The ports send the alarm output signal to the alarm device. Please check whether the alarm device

N.	Door name	Function
		external alarm is powered. ● NA: Alarm output port normally open. ● C: Public end alarm output.
	⏚	Grounding.
2	Video input port	Allows you to connect an analog camera to the video signal input.
3	Audio input port	Receives audio output from devices such as microphones. Corresponds to video input port 1.
4	DB25 port	Connected to the audio splitter included in the package, it works as an audio input port that receives the signal from devices such as microphones. Corresponds to video input ports 2-16.
5	Audio output port	Transmits audio signal to external devices such as speakers.
6	HDMI port	Output port for high definition audio and video signal. The port transmits uncompressed high-definition video data and multi-channel audio to the display connected to the HDMI port.
7	USB port	Allows the connection of external devices, such as USB memory drives, keyboards and mice.
8	Network port	Allows connection to an Ethernet port.
9	RS-485 communication port	Allows connection to control devices such as PTZ for speed domes. The RS-485_A port is connected with cable A, the RS-485_B port with cable B.
10	Power port	Input power 12V DC.
11	VGA port	Sends analog video data to the display connected to the VGA port.
12	Power button	Turns the VCR on/off.
13	Securing the power cord	Use a cable tie to secure the power cable to the DVR, preventing it from coming loose.
14	⏚	Ground terminal.

3.2.2

DH-XVR41xxC-I/DH-XVR41xxHS-I/DH-XVR51xxHS-I2/DH-XVR51xxH S-I3/DH-XVR51xxHS-4KL-I2/DH-XVR51xxHS-4KL-I3/DH-XVR51xxHS-5M-I3

Figure 3-13 Rear panel
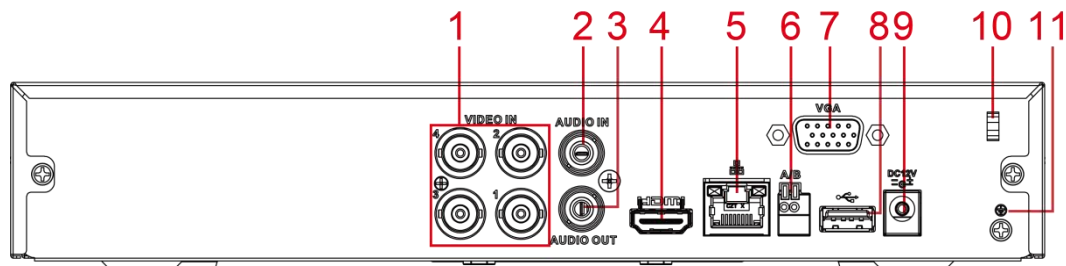
Table 3-12 Rear panel description

N.	Door name	Function
1	Entrance door video	Allows you to connect an analog camera to the video signal input.
2	Entrance door audio	Receives the audio output signal from devices such as microphones.
3	Audio output port	Transmits audio signal to external devices such as speakers.
4	HDMI port	Output port for high definition audio and video signal. The port transmits uncompressed high-definition video data and multi-channel audio to the display connected to the HDMI port.
5	Network port	Allows connection to an Ethernet port.
6	Door of communication RS-485	Allows connection to control devices such as PTZ for speed domes. The RS-485_A port is connected with cable A, the RS-485_B port with cable B.
7	VGA port	Sends analog video data to the display connected to the VGA port.
8	USB port	Allows the connection of external devices, such as USB memory drives, keyboards and mice.
9	Door of diet	Input power 12V DC.
10	Securing the power cord	If the power cord becomes loose, use a clamp to secure it to the DVR.
11	⏚	Ground terminal.

3.2.3

DH-XVR52xxA-I2/DH-XVR52xxA-I3/DH-XVR52xxA-4KL-I2/DH-XVR52 xxA-4KL-I3/DHXVR42xxAN-I/DH-XVR42xxAN-I(V2.0)/DH-XVR52xxA N-I2/DH-XVR52xxAN-I3/DH-XVR52xxAN-4KL-I2/DH-XVR52xxAN-4KL - I3/DH-XVR52xxAN-5M-I3/DH-XVR72xxA-4K-I2/DH-XVR72xxA-4K-I3/ DH-XVR72xxA-4KL-I/DH-XVR72xxAN-4K-I2/DH-XVR72xxAN-4K-I3

Figure 3-14 Rear panel
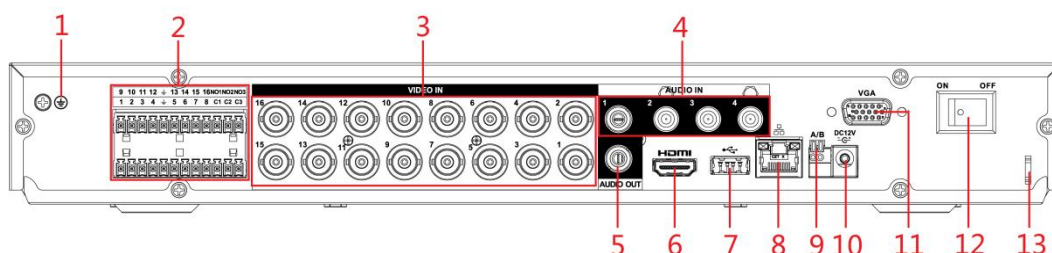
Table 3-13 Rear panel description

N.	Door name	Function
1	⏚	Ground terminal.
2	Alarm inputs 1-16	Four groups of alarm inputs (group 1: doors 1-4; group 2: doors 5-8; group 3: doors 9-12; group 4: doors 13-16). The doors receive signal from external alarm source. There are two types: NO (normally open) and NC (normally closed). 📖 When the alarm input device is connected to external power, make sure it is connected to the same ground as the DVR.
	Alarm outputs 1-3 (NO1-NO3; C1-C3)	● Three groups of alarm outputs. (group 1: NO1-C1 ports; group 2: NO2-C2 ports; group 3: NO3-C3 ports). The ports send the alarm output signal to the alarm device. Please make sure the external alarm device is powered. ● NA: Alarm output port normally open. ● C: Public end alarm output.
	⏚	Grounding.
3	Video input port	Allows you to connect an analog camera to the video signal input.
4	Audio input port	Receives the audio output signal from devices such as microphones.
5	Audio output port	Transmits audio signal to external devices such as

N.	Door name	Function
		speakers.
6	HDMI port	Output port for high definition audio and video signal. The port transmits uncompressed high-definition video data and multi-channel audio to the display connected to the HDMI port.
7	USB port	Allows connection of external devices such as keyboards, mice and USB storage drives.
8	Network port	Allows connection to an Ethernet port.
9	Communication port RS-485	Allows connection to control devices such as PTZ for speed domes. The RS-485_A port is connected with cable A, the RS-485_B port with cable B.
10	Power port	Input power 12V DC.
11	VGA port	Sends analog video data to the display connected to the VGA port.
12	Power button	Turns the VCR on/off.
13	Securing the power cord	If the power cord becomes loose, use a clamp to secure it to the DVR.

3.2.4 DH-XVR82xxA-4K-I/DH-XVR82xxA-4KL-I

Figure 3-15 Rear panel
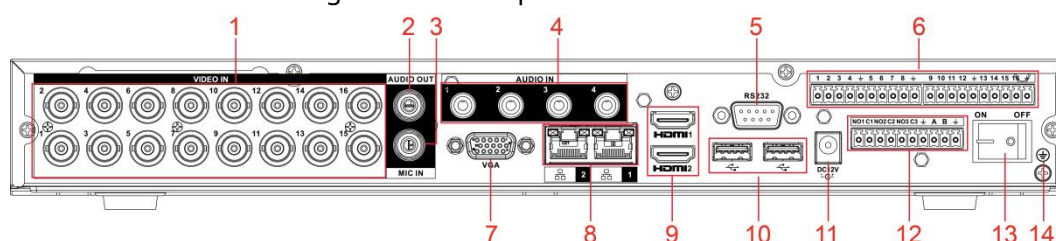
Table 3-14 Rear panel description

N.	Door name	Function
1	Video input port	Allows you to connect an analog camera to the video signal input.
2	Audio output port	Transmits audio signal to external devices such as speakers.
3	MIC IN	Bidirectional input port that receives analog audio output from devices such as microphones and pick-ups.
4	Audio input port	Receives the audio output signal from devices such as microphones.
5	RS-232 COM port for debugging	It is used for general communications debugging, to configure IP addresses or transfer transparent COM data.
6	Alarm inputs 1-16	4 groups of alarm inputs (group 1: ports 1-4;

N.	Door name	Function
		group 2: doors 5-8; group 3: doors 9-12; group 4: doors 13-16). The doors receive the signal from the external alarm source. There are two types: NO (normally open) and NC (normally closed). 📖 When the alarm input device is connected to external power, make sure it is connected to the same ground as the DVR.
	⏚	Ground terminal.
7	VGA port	Sends analog video data to the display connected to the VGA port.
8	Network port	Allows connection to an Ethernet port.
9	HDMI port	Output port for high definition audio and video signal. The port transmits uncompressed high-definition video data and multi-channel audio to the display connected to the HDMI port.
10	USB port	Allows connection of external devices such as keyboards, mice and USB storage drives.
11	Power port	Power input.
12	Alarm outputs 1-5 (NO1-NO5; C1-C5; NC5)	● 5 groups of alarm outputs (group 1: NO1-C1 ports; group 2: NO2-C2 ports; group 3: NO3-C3 ports; group 4: NO4-C4 ports; group 5: NO5, C5, NC5 ports). The ports send alarm output signal to the alarm device. Please make sure the external alarm device is powered. ● NA: Alarm output port normally open. ● C: Public end alarm output. ● NC: Alarm output port normally closed.
13	Power button	Turns the VCR on/off.
14	⏚	Grounding.

3.2.5

DH-XVR58xxS-I2/DH-XVR58xxS-4KL-I2/DH-XVR58xxS-I3/DH-XVR58xxS-4KL-I3/DH-XVR78xxS-4K-I2/DH-XVR78xxS-4K-I3/DH-XVR88xxS-4KL-I

Figure 3-16 Rear panel
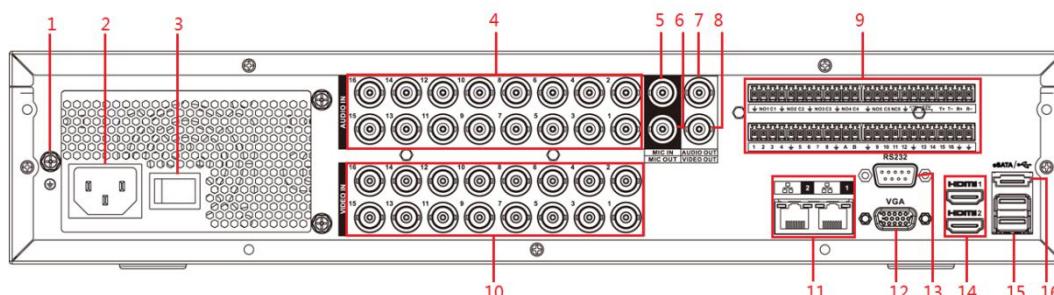
Table 3-15 Rear panel description

N.	Door name	Function
1	GND	Grounding.
2	Power port	Power input.
3	Button of diet	Turns the device on/off.
4	Audio input port	Receives analog audio output from devices such as microphones.
5	Audio input port (MIC IN)	Bidirectional input port that receives analog audio output from devices such as microphones or pick-ups.
6	Audio output port (MIC OUT)	Bidirectional output port that transmits analog audio signal to devices such as speakers.
7	Audio output port	Transmits analog audio signal to devices such as speakers.
8	Video output port	Allows you to connect video devices such as televisions.
9	Alarm inputs 1-16	● Four groups of alarm outputs (group 1: doors 1-4; group 2: doors 5-8; group 3: doors 9-12; group 4: doors 13-16). The doors receive the signal from the external alarm source. They are divided into two types: NO (normally open) and NC (normally closed). ● When the alarm input device is connected to external power, please make sure that the device and the DVR are connected to the same ground.
	Alarm outputs 1-5 (NO1-NO5; C1-C5; NC5)	● Five groups of alarm outputs. (group 1: NO1-C1 ports; group 2: NO2-C2 ports; group 3: NO3-C3 ports; group 4: NO4-C4 ports; group 5: NO5, C5, NC5 ports). The ports send out the alarm signal

N.	Door name	Function
		output to the alarm device. Check that the external alarm device is powered. ● NA: Alarm output port normally open. ● C: Public end alarm output. ● NC: Alarm output port normally closed.
	Communication port RS-485	It is used to connect control devices, such as PTZ for speed dome. The RS-485_A port is connected with cable A, the RS-485_B port is connected with cable B.
	Four-wire full-duplex RS-485 port (T+, T-, R+, R-)	Four-wire full-duplex 485 port. T+ and T- are the output wires; R+ and R- are the input wires.
	Check output of power supply (CTRL 12 V)	Controls the 12V DC power output. It is used to control the alarm output relay on/off.
	Output port for 12V power supply	Power external devices such as cameras and alarm devices. Please note that the current must be less than 1A.
	⏚	Grounding.
10	Video input port	Allows you to connect an analog camera to the video signal input.
11	Network port	Allows connection to an Ethernet port.
12	VGA video output	Analog video signal output. You can connect it to the monitor to display analog video.
13	RS-232 COM port for debugging	It is used for general communication debugging, configuring IP addresses or transferring transparent COM data.
14	HDMI port	Output port for high-definition audio and video signal. Outputs the same video source as the VGA port. Supports 4K video output and can be controlled by mouse. When the HDMI output resolution is 4K, the VGA outputs are disabled.
15	USB port	Allows connection of external devices such as keyboards, mice and USB storage drives.
16	eSATA port	External SATA port for connecting a device with SATA port. Please configure jumpers when connecting a HDD.

3.2.6

DH-XVR58xxS-4KL-I2-LP/DH-XVR58xxS-4KL-I3-LP/DH-XVR78xxS-4 KL-X-LP-V2

Figure 3-17 Rear panel
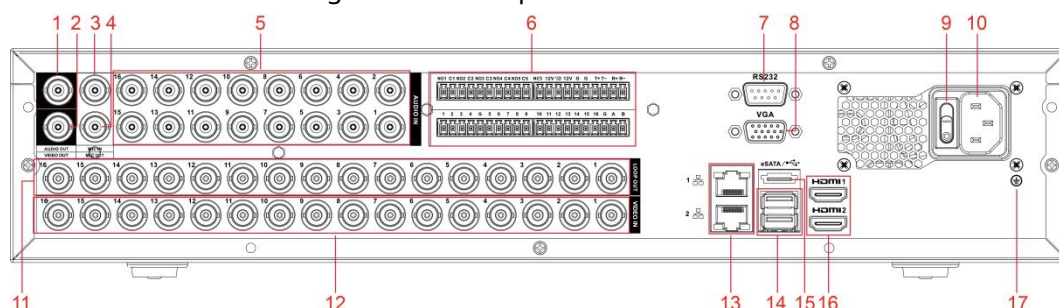
Table 3-16 Rear panel description

N.	Door name	Function
1	Audio output port	Transmits analog audio signal to devices such as speakers.
2	Video output port	Allows you to connect video devices such as televisions.
3	Audio input port (MIC IN)	Bidirectional input port that receives analog audio output from devices such as microphones or pick-ups.
4	Audio output port (MIC OUT)	Bidirectional output port that transmits analog audio signal to devices such as speakers.
5	Audio input port	Receives analog audio output from devices such as microphones.
6	Alarm inputs 1-16	● Four groups of alarm outputs (group 1: doors 1-4; group 2: doors 5-8; group 3: doors 9-12; group 4: doors 13-16). The doors receive the signal from the external alarm source. They are divided into two types: NO (normally open) and NC (normally closed). ● When the alarm input device is connected to external power, please make sure that the device and the DVR are connected to the same ground.
	Alarm outputs 1-5 (NO1-NO5; C1-C5; NC5)	● Five groups of alarm outputs. (Group 1: NO1-C1 ports; Group 2: NO2-C2 ports; Group 3: NO3-C3 ports; Group 4: NO4-C4 ports; Group 5: NO5, C5, NC5 ports). The ports output alarm signal to the alarm device. Please check whether the external alarm device is powered. ● NA: Alarm output port normally open. ● C: Public end alarm output. ● NC: Alarm output port normally closed.
	Communication port	It is used to connect control devices, such as PTZ cameras.

N.	Door name	Function
	RS-485	for speed dome. RS-485_A port is connected with cable A, RS-485_B port is connected with cable B.
	Four-wire full-duplex RS-485 port (T+, T-, R+, R-)	Four-wire full-duplex 485 port. T+ and T- are the output wires; R+ and R- are the input wires.
	Check output of Power supply (CTRL 12 V)	Controls the 12V DC power output. It is used to control the alarm output relay on/off.
	Output port for 12V power supply	Power external devices such as cameras and alarm devices. Please note that the current must be less than 1A.
	G	Grounding.
7	RS-232 COM port for debugging	It is used for general communication debugging, configuring IP addresses or transferring transparent COM data.
8	VGA video output	Analog video signal output. You can connect it to the monitor to display analog video.
9	Power button	Turns the device on/off.
10	Power port	Power input.
11	Loop output	Transmits the signal of the corresponding video input port.
12	Video input port	Allows you to connect an analog camera to the video signal input.
13	Network port	Allows connection to an Ethernet port.
14	USB port	Allows connection of external devices such as keyboards, mice and USB storage drives.
15	eSATA port	External SATA port for connecting a device with SATA port. Please configure jumpers when connecting a HDD.
16	HDMI port	Output port for high-definition audio and video signal. Outputs the same video source as the VGA port. Supports 4K video output and can be controlled by mouse. When the HDMI output resolution is 4K, the VGA output is disabled.
17	GND	Grounding.

3.2.7

DH-XVR54xxL-I2/DH-XVR54xxL-4KL-I2/DH-XVR54xxL-I3/DH-XVR54x
xL-4KL-I3/DH-XVR74xxL-4K-I2/DH-XVR74xxL-4K-I3

Figure 3-18 Rear panel (1)
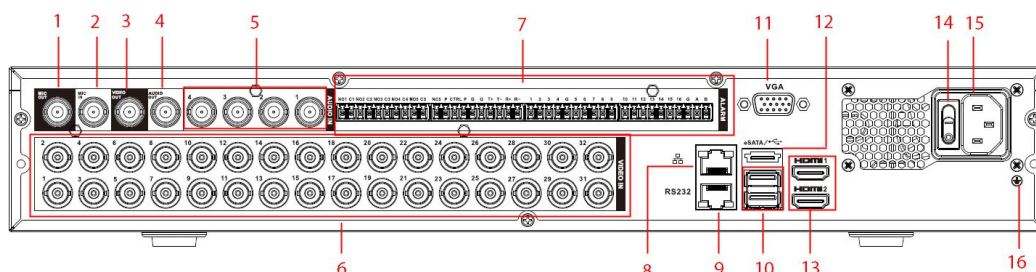
Figure 3-19 Rear panel (2)
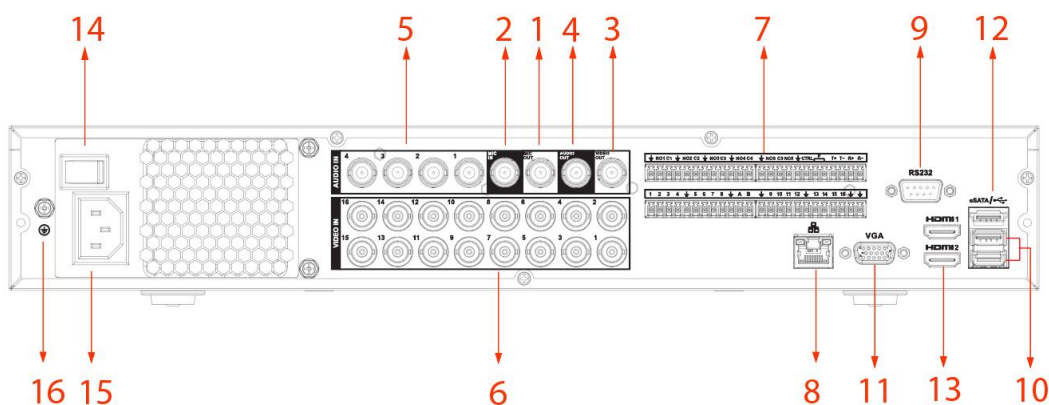
Figure 3-20 Rear panel (3)
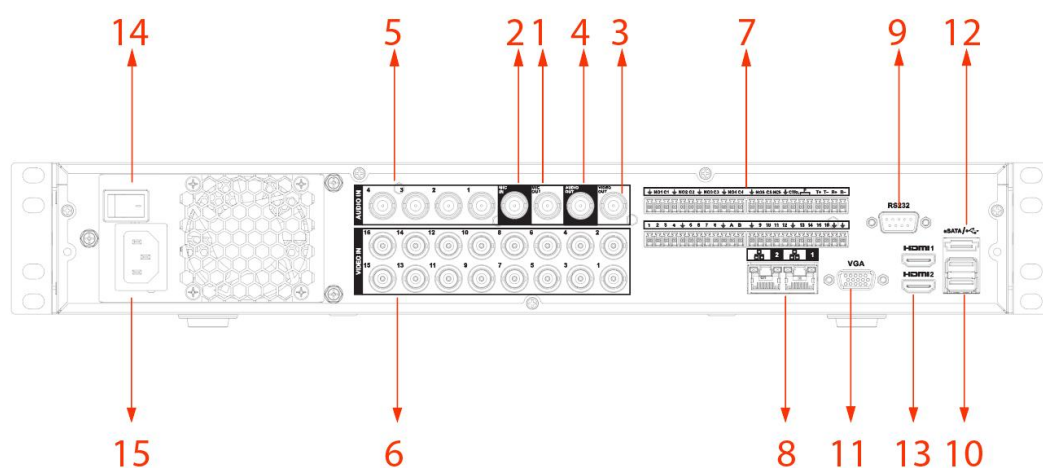
Table 3-17 Rear panel description

N.	Door name	Function
1	Exit door audio (MIC OUT)	Bidirectional output port that transmits analog audio signal to devices such as speakers.
2	Entrance door	Bidirectional input port that receives audio signal

N.	Door name	Function
	audio (MIC IN)	analog output from devices such as microphones or pick-ups.
3	Video output port	Allows you to connect video devices such as televisions.
4	Exit door audio	Transmits analog audio signal to devices such as speakers.
5	Entrance door audio	Receives analog audio output from devices such as microphones.
6	Entrance door video	Allows you to connect an analog camera to the video signal input.
7	Alarm inputs 1-16	● Four groups of alarm outputs (group 1: doors 1-4; group 2: doors 5-8; group 3: doors 9-12; group 4: doors 13-16). The doors receive the signal from the external alarm source. They are divided into two types: NO (normally open) and NC (normally closed). ● When the alarm input device is connected to external power, please make sure that the device and the DVR are connected to the same ground.
	Alarm outputs 1-5 (NO1-NO5; C1-C5; NC5)	● Five groups of alarm outputs. (Group 1: NO1-C1 ports; Group 2: NO2-C2 ports; Group 3: NO3-C3 ports; Group 4: NO4-C4 ports; Group 5: NO5, C5, NC5 ports). The ports output alarm signal to the alarm device. Make sure the external alarm device is powered. ● NA: Alarm output port normally open. ● C: Public end alarm output. ● NC: Alarm output port normally closed.
	Door of communication RS-485	It is used to connect control devices, such as PTZ for speed dome. The RS-485_A port is connected with cable A, the RS-485_B port is connected with cable B.
	RS-485 port full duplex a four wires (T+, T-, R+, R-)	Four-wire full-duplex 485 port. T+ and T- are the output wires; R+ and R- are the input wires.
	Check output of diet (CTRL 12V)	Controls the 12V DC power output. It is used to control the alarm output relay on/off.
	Output port for power supply 12V	Power external devices such as cameras and alarm devices. Please note that the current must be less than 1A.
	⏚	Grounding.
8	Network port	Allows connection to an Ethernet port.
9	RS-232 COM port for debugging	It is used for general communication debugging, configuring IP addresses or transferring transparent COM data.
10	USB port	Allows connection of external devices such as keyboards, mice and USB storage drives.

N.	Door name	Function
11	VGA video output	Analog video signal output. You can connect it to the monitor to display analog video.
12	eSATA port	External SATA port for connecting a device with SATA port. Please configure jumpers when connecting a HDD.
13	HDMI port	Output port for high-definition audio and video signal. Outputs the same video source as the VGA port. Supports 4K video output and can be controlled by mouse. When the HDMI output resolution is 4K, the VGA output is disabled.
14	Switch of ignition	Turns the device on/off.
15	Door of diet	Power input.
16	GND	Grounding.

3.2.8 DH-XVR1Bxx-I/DH-XVR1BxxH-I

Figure 3-21 Rear panel
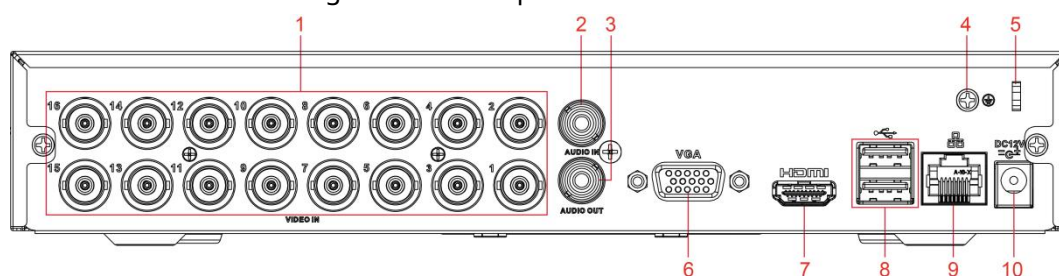
Table 3-18 Rear panel description

N.	Name of the brings	Function
1	Door of video input	Allows you to connect an analog camera to the video signal input.
2	Door of audio input	Receives the audio output signal from devices such as microphones.
3	Exit door audio	Transmits audio signal to external devices such as speakers.
4	GND	Grounding.
5	Fixing the cable of diet	If the power cord becomes loose, use a clamp to secure it to the DVR.
6	Video output VGA	Analog video signal output. You can connect it to the monitor to display analog video.
7	HDMI port	Output port for high-definition audio and video signal. Outputs the same video source as the VGA port. Supports 4K video output and can be controlled by mouse.

N.	Name of the brings	Function
		When the HDMI output resolution is 4K, the VGA output is disabled.
8	USB port	Allows the connection of external devices, such as USB memory drives, keyboards and mice.
9	Network port	Allows connection to an Ethernet port.
10	Door of diet	Input power 12V DC.

3.2.9 DH-XVR51xxC-I3/DH-XVR51xxC-4KL-I3

Figure 3-22 Rear panel
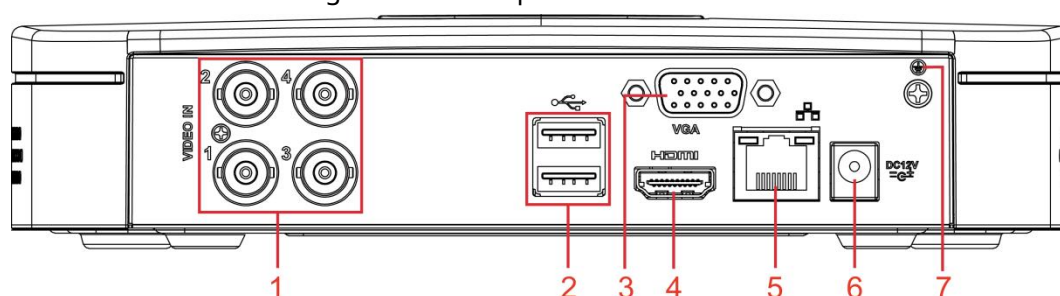
Table 3-19 Rear panel description

N.	Name of the brings	Function
1	Door of video input	Allows you to connect an analog camera to the video signal input.
2	USB port	Allows the connection of external devices, such as USB memory drives, keyboards and mice.
3	VGA port	Sends analog video data to the display connected to the VGA port.
4	HDMI port	Output port for high definition audio and video signal. The port transmits uncompressed high-definition video data and multi-channel audio to the display connected to the HDMI port.
5	Network port	Allows connection to an Ethernet port.
6	Door of diet	Input power 12V DC.
7	⏚	Ground terminal.

3.3 Using the remote control

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The remote control could be Not to be included Between the other accessories standard or In the packaging of the accessories. The remote control he comes provided Alone with some models.

Figure 3-23 Remote control
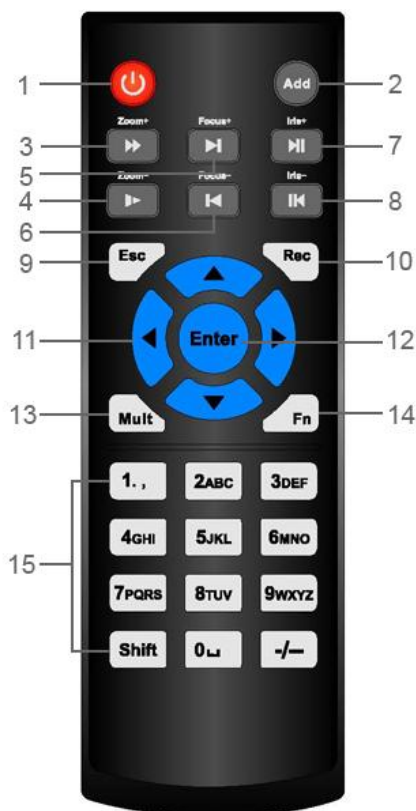
Table 3-20 Remote control description

N.	Name	Function
1	Button of diet	Press this button to turn the device on or off.
2	Address	Press the button to enter the serial number of the device, so you can check the device.
3	After you	Different forward speeds or normal playback.
4	Reproduction at slow motion	Slow motion playback at different speeds or normal playback.
5	Registration next	During playback, press this button to skip to the next video.
6	Registration previous	During playback, press this button to skip to the previous video.
7	Reproduction/ Break	● During normal playback, press this button to pause. ● When playback is paused, press this button to restart playback.

N.	Name	Function
		● In the live view window page, press this button to open the video search menu.
8	Reproduction backwards/pause	During reverse playback, press this button to pause.
		When reverse playback is paused, press this button to restart it.
9	Esc.	Allows you to return to the previous menu or cancel the current operation (closing the foreground page or control).
10	Record	● Start or stop manual recording. ● On the recording page, use the directional buttons to select the channel you want to record. ● Press and hold this button for at least 1.5 seconds to display the manual recording page.
11	Buttons of direction	Move left or right between currently active controls. During playback, the keys control the progress bar. Aux function (e.g. using the PTZ menu).
12	Button Send/Menu	● Confirm an operation. ● Go to button**OK**. ● Go to menu.
13	Window selector multiple	Allows you to switch between multi-window and single-window view.
14	Fn	● In single-channel monitoring mode, press this button to display the PTZ control and color setting functions. ● In the PTZ control page, switch to the PTZ control menu. ● In the motion detection screen, press this button together with the directional arrows to complete the setup. ● In text mode, press and hold this key to delete the last character. To use the delete function: Press and hold this key for 1.5 seconds. ● In the HDD menu, scroll through the HDD recording time and other information as indicated in the pop-up message.
15	Alphanumeric keys	● They allow you to enter passwords and numbers. ● They allow you to change channels.

N.	Name	Function
		● Press Shift to change the input method.

3.4 Using the mouse

Table 3-21 Using the mouse

Operation	Function
Left mouse click	If you are not already logged in, the password entry dialog box appears. On the live view window page, it allows you to access the main menu.
	Once you have selected a menu item, click on it to view its contents.
	Allows you to perform the control operation.
	Allows you to change the state of the checkbox or motion detection.
	Click the combo box to display the drop-down menu.
	In a text box, click a button on the panel to enter the corresponding number or alphabet letter (lowercase/uppercase). ● In alphabetical input mode: Click to insert a space and click ⬅ to delete the previous character. ● In numeric input mode: click click to delete and ⬅ to delete the previous character.
Double click with the left mouse button mouse	Allows you to perform a special control operation, such as double-clicking an item in the file list to play a video.
	In multi-window mode, double-click a channel to view it in full screen. Double-click the video again to return to multi-window mode.

Operation	Function
Right click	Right click on the live view window page to show the context menu. In other series products, the context menu may vary.
	Allows you to exit the current menu without saving any changes.
Click on the wheel of scrolling	In the numeric input box: Allows you to increase or decrease the numeric value.
	Allows you to scroll through the items in a combo box.
	Page up or page down.
Aim for select and move	Allows you to select the current control and move it.
Drag a box of selection holding pressed the button left mouse	Allows you to select a motion detection zone.
	Allows you to select the privacy mask zone.

4 Connection

This section describes the typical connection diagram and port connections.

4.1 Typical connection diagram

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There figure following it serves Alone as   reference.

Figure 4-1 Connection diagram
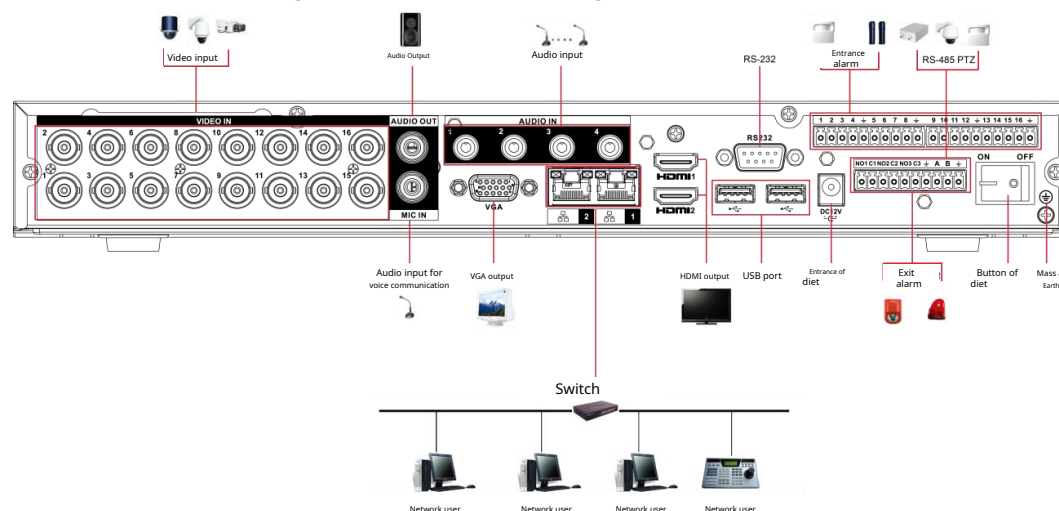
4.2 Connecting to video and audio inputs and outputs

4.2.1 Video inputs

The video input interface is BNC type. The input video format can be: PAL/NTSC BNC (1.0 VP-P, 75 Ω).

The video signal must comply with national standards.

The input video signal must have high SNR, low distortion, low interference, natural colors and adequate brightness.

Ensure the stability and reliability of the camera signal

The camera should be installed in a cool and dry place, avoiding harmful conditions such as exposure to sunlight or proximity to explosive or flammable substances.

The camera and DVR must have a common ground connection to ensure normal operation of the camera.

Ensure the stability and reliability of the transmission line

Use a high quality BNC connector with audio shielding. Select the appropriate BNC model according to the transmission distance.
If the distance is too long, you need to use twisted pair, and you can add video compensation devices or use fiber optics to ensure high video quality.

It is necessary to keep the video signal away from strong electromagnetic interference, especially high voltage current.

Check that the contact of the connection terminals is effective

The signal line and shielded cable must be fixed firmly and well connected. Avoid damaged or overlapped solder joints and oxidation.

4.2.2 Video Outputs

Video outputs include a BNC output (PAL/NTSC1.0 VP-P, 75 Ω), a VGA output and an HDMI output. The system supports BNC, VGA and HDMI outputs simultaneously.
If you are using a computer screen to replace your monitor, pay attention to the following:
● To limit screen aging, do not leave it on for long periods.
● Regularly degaussing your device will help keep it in good condition.
● Keep it away from devices that generate strong electromagnetic interference. Using a TV as a video output device is not a reliable alternative. It is also necessary to reduce the operating time and check the interference of the power supply and other devices. A poor quality TV can damage the device.

4.2.3 Audio input

The products in this series have a BNC audio input port.
Due to the high impedance of the audio input, an active audio pickup must be used.
Audio transmission is similar to video transmission. Try to avoid interference, damaged solder joints and loose contacts; keep away from high voltage.

4.2.4 Audio Output

The output audio signal value is generally greater than 200mV, 1kΩ (BNC or RCA). It can be directly connected to a low impedance earphone, active speaker or amplified audio device.

If the speaker and the pickup are close to each other, they are likely to cause triggers. In this case, the following countermeasures can be taken:
● Use a better, more directional pick-up.
● Reduce the speaker volume.
● Using materials with greater sound-absorbing characteristics in furnishings can reduce echo and improve acoustics.

● Adjust the layout of your speakers and pickups to reduce the emission of squeaking sounds.

4.3 Alarm input and output connection

Please read the following before making connections.

Alarm input

● Check that the alarm input is in grounded mode.

● The signal must be grounded, for the alarm input.

● The alarm input requires a low level signal.

● The alarm input mode can be set to NC (normally closed) or NO (normally open).

● If you connect two DVRs or a DVR and another device, use a relay to separate them.

Alarm output

The alarm output port cannot be directly connected to a high current load (must be less than 1A) to avoid large currents damaging the relay. Use contactor to connect between the alarm output port and the load. The next device that is connected to the port must meet the requirements of fireproof housing.

How to connect PTZ decoder

● Make sure the decoder uses the same ground connection as the DVR. Otherwise, there is a risk of not being able to control the PTZ. It is recommended to use shielded twisted pair cables and connect the shield to ground.

● Avoid high voltages. Check that the wiring is correct and take measures to protect against lightning.

● For very long signal cables, connect a 120 Ω resistor in parallel between lines A and B, at the end, to reduce feedback and ensure good signal quality.

● The A and B lines of the DVR's RS-485 port cannot be connected in parallel to the RS-485 port of other devices.

● The voltage between lines A and B of the decoder must be less than 5 V.

Make sure the front-end device is properly grounded

⚠️

A mass to Earth Not correct you can or provoke damage to the chip.

4.3.1 Presentation of alarm doors

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The doors of the entrances Of alarm they vary in base to the model purchased.

Figure 4-2 Alarm ports
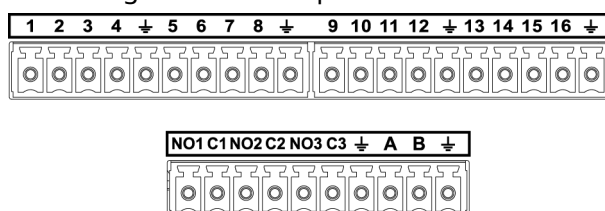
Table 4-1 Description of alarm ports

Icon	Description
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16	From ALARM 1 to ALARM 16. The alarm is activated when there is a low voltage level.
NO1 C1, NO2 C2, NO3 C3	There are four groups of normally open contact outputs (button activation/deactivation).
⏚	Ground cable.
485 A/B	RS-485 communication port. Used to control devices such as a decoder. If there are many PTZ decoders connected, connect a 120Ω resistor in parallel between lines A and B.

4.3.2 Alarm inputs

See the following figure for more information.
● Connect the NO (normally open) and NC (normally closed) type alarm inputs to ground.
● Connect the COM and GND ends of the alarm sensor in parallel (provide external power to the alarm sensor).
● Connect the ground of the DVR and the ground of the alarm sensor in parallel.
● Connect the NC port of the alarm sensor to the alarm input of the DVR (ALARM).
● Use the same ground as the DVR if you supply external power to the alarm device.

Figure 4-3 Alarm input
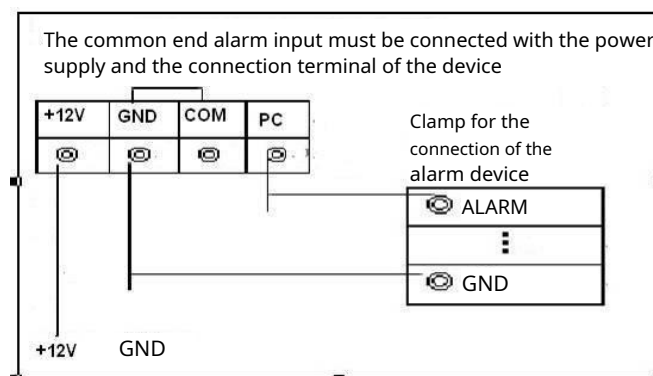
4.3.3 Alarm output

● Allows you to provide external power to the external alarm device.
● To avoid overloads, carefully read the relay parameter table below.

● The RS-485 A/B cable serves as the A/B cable of the PTZ decoder.

4.3.4 Relay parameters for alarm output

Do reference to the product actual For the information on the model of the rel And

Table 4-2 Relay parameters for alarm output

Model		HFD23/005-1ZS	HRB1-S-DC5V
Contact material		AgNi+ with plating in gold	AuAg10/AgNi10/CuNi30
Classification (resistance to loads)	30V DC 1A/125V AC 0.5A	24V DC 1A/125V AC 2A	24V DC 1A/125V AC 2A
	62.5VA/30W	250VA/48W	250VA/48W
	125V AC/60V DC	125V AC/60V DC	125V AC/60V DC
	2 A	2 A	2 A
Insulation	400VAC, 1 minute	500V AC ,1 minute	500V AC ,1 minute
	1000VAC, 1 minute	1000VAC, 1 minute	1000VAC, 1 minute
Activation time		5 ms max	5 ms max
Deactivation time			
Duration	1×10^7 times	5×10^6 times (300 times/min)	5×10^6 times (300 times/min)
	1×10^5 times	2.5×10^4 times (30 times/min)	2.5×10^4 times (30 times/min)
Operating temperature		From -30 to 70 °C	From -40 to 70 °C

5 Local configurations

Please read the following notes before using the device.

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- The illustrations reported In the manual they serve Alone as reference For there description from the related operations. The interfaces effective they could vary in base to the model purchased.
- The manual And document generic That has the scope Of present The product. Therefore, someone functions of the device described In the manual they could Not to be applicable to the model purchased.
- Conventions For the use of the mouse in a menu.
  - Click: In the menu, Do click a time with The mouse on a 'option For log in to the related settings.
  - Click with The key right: on a page any, Do click with The key right of the mouse For return to the level previous.

5.1 Initial settings

5.1.1 Startup

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- Make sure That there voltage Of entrance you satisfy the requirements Of diet of the device. Turn on The device After have connected correctly The cable Of diet.
- For protect The device, connect it Before to the cable, Therefore at the source Of diet.
- For guarantee The operation stable of the DVR And devices external to it connected, And for to prolong there duration of the HDD, Yes recommends Of Do reference to the rules national applicable on the 'use Of sources Of diet That they provide a voltage stable with interference from ripple reduced. And Is advisable the use Of a UPS.

Procedure

Step 1: Connect the device to the monitor. Step 2:

Insert the power cord into the device.

Step 3: Press the power button to turn on the device. The power indicator light will light up.

By default, the connected monitor displays the live view screen of the device. When you activate the device during a configured recording time slot, the system starts recording after powering on, displaying the icon indicating the recording status of the specified channels.

5.1.2 Initializing the device

Preliminary information

When you start your device for the first time, you need to set up your user login information.**admin**(admin) (the default user).

📖
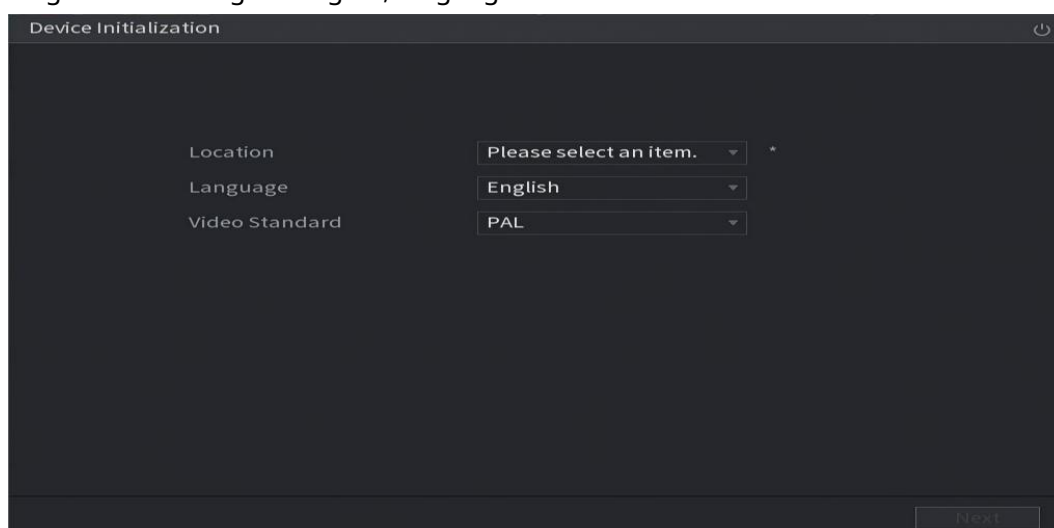
For protect   The device,   we suggest strongly   Of keep   there password administrator to the Safe And change it   periodically.

Procedure

Step 1: Turn on the device.

Figure 5-1 Setting the region, language and video standard
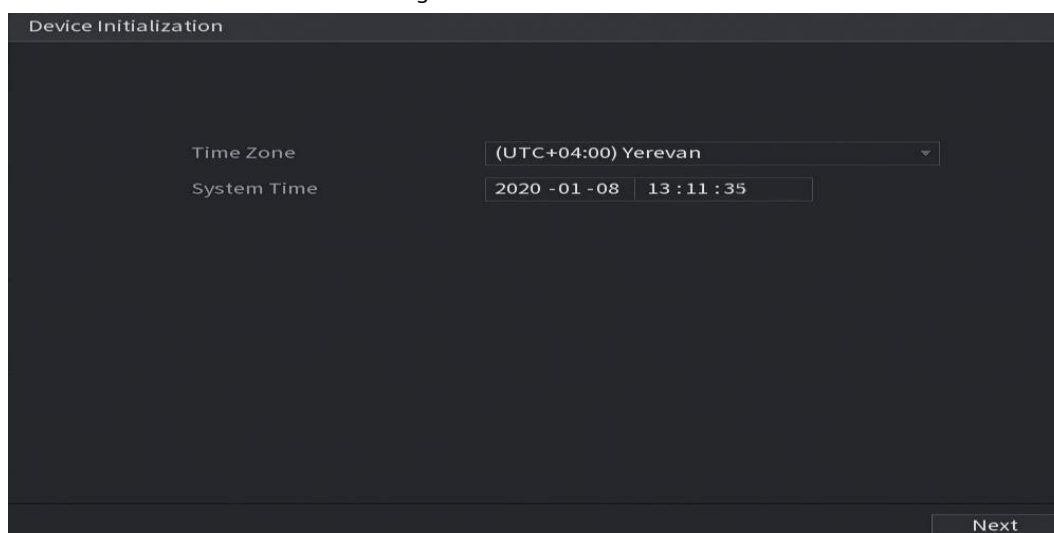
Step 2: Select your geographic area from the drop-down list (the language and video standard will be automatically matched to your location), then click**After you**(Next). You can change the language and video standard manually.

Step 3: Select the checkbox**I have read and accept all the conditions**(I have read and agree to all terms) and click Next.
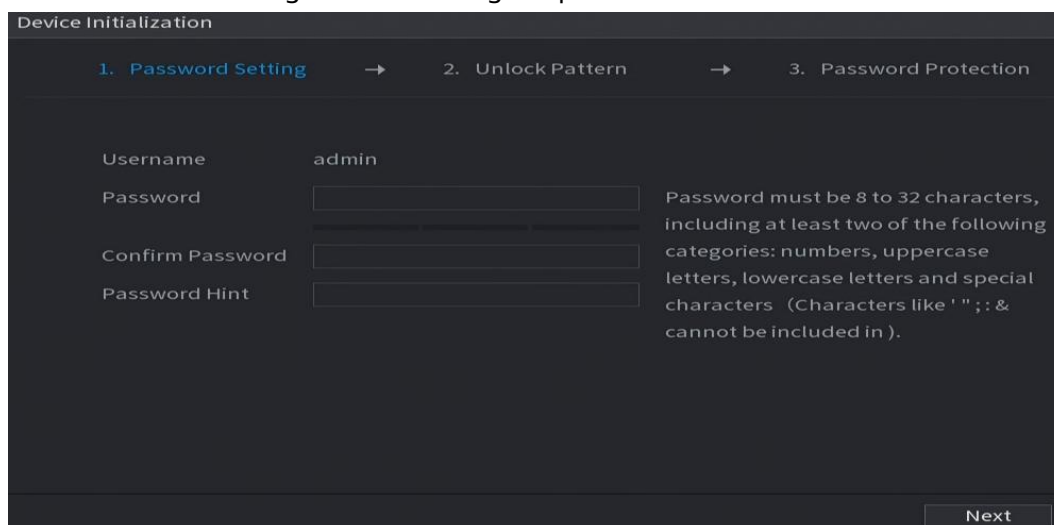
Figure 5-2 Now

Step 4: Select the time zone and configure the system time, then click**After you**(Next).

Figure 5-3 Entering the password

Step 5: Set up the administrator password information, then click**After you** (Next).

Table 5-1 Password information
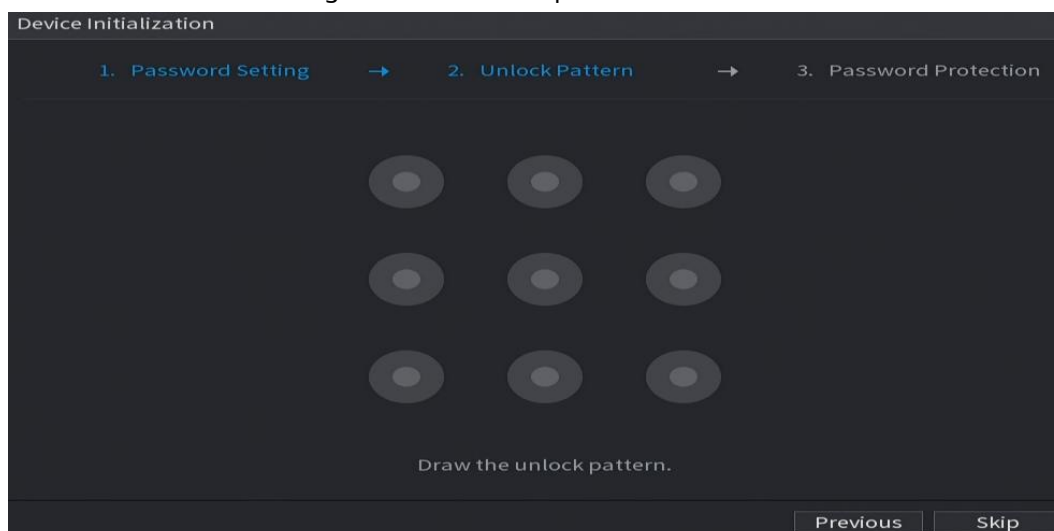
Parameter	Description
Username	The default username is**admin**.
Password	Enter the administrator password in the box**Password**.
Confirm password	The new password must be a string of 8 to 32 characters long, belonging to at least two of the following categories: numbers, letters and special characters (except "'", "'"", ";", ":" and "&").
Suggestion	In the box**Suggestion**(Prompt Hint), enter some information to remember your password. On the login interface, click to view the Helpful hint for password recovery.

Figure 5-4 Unlock sequence
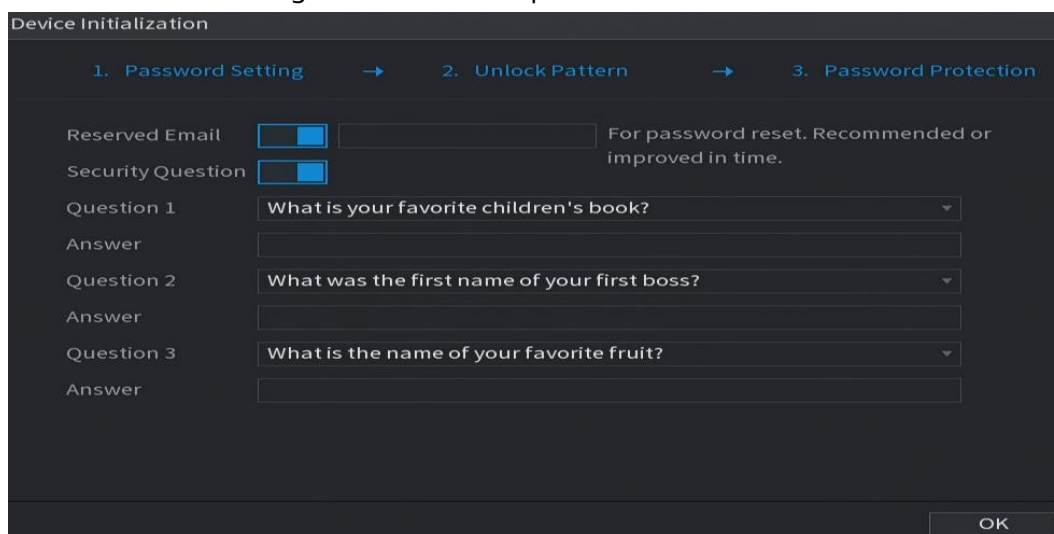
<u>Step 6:</u> Draw an unlock pattern.

Once the setup is complete, the page is displayed**Password protection**(Password Protection).

- There sequence from set up must include at least four points.
- Doing click on**Jump**(Skip), Apossible Not define any sequence Of unlock.
- A time configured there sequence Of unlock, this will come to used as method Of access default. If he comes jumped This ride, insert there password For to execute the access.

Figure 5-5 Password protection

<u>Step 7:</u> Configure the parameters for password protection.

Once setup is complete, if you forget your administrator password, you can reset it using your confidential email address or security questions.

If you prefer not to configure the settings, disable the email address and security questions on the interface.

Table 5-2 Password protection parameters

Password protection mode	Description
Private email	Enter your confidential email address. In the box**Private email**(Reserved Email), enter an email address for password reset requests. If you forget your administrator password, enter the security code received at your reserved email address to reset it.
Security questions	Set up security questions and answers. If you forget your password, enter the answers to your security questions to reset it.

Password protection mode	Description

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To set up your email or security questions at a later time, or to change your settings, select the option**Main Menu > ACCOUNT > Password Reset**(Main Menu > ACCOUNT > Password Reset).

Step 8: Click on**OK**to complete the setup.

Step 9: Select checkbox**I have read and accept all the conditions**(I have read and agree to all terms).

Step 10: Click on "**After you**" (Next).

The interface appears**Startup Wizard**(Startup Wizard).

5.1.3 Password recovery

When you forget your administrator account password, you can reset it using the following methods.

● If the password reset function is enabled, you can use your mobile phone to scan the reset QR code. For details, please refer to "5.1.3.2 Password Reset on Local Interface".

● If the password recovery function is disabled, there are two possibilities:
  - If you have set up security questions, you can use them to reset your password.

  - If security questions have not been set, the only solution is to use the reset button on the motherboard to restore the device to factory settings. For details, see "5.1.3.3 Using the reset button on the motherboard".

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The button Of reset Available Alone on some models.

5.1.3.1 Enabling the password recovery function

Procedure

Step 1: Select**Main menu**>**Account**>**Password reset**(Main Menu > Account > Password Reset).

Figure 5-6 Password recovery
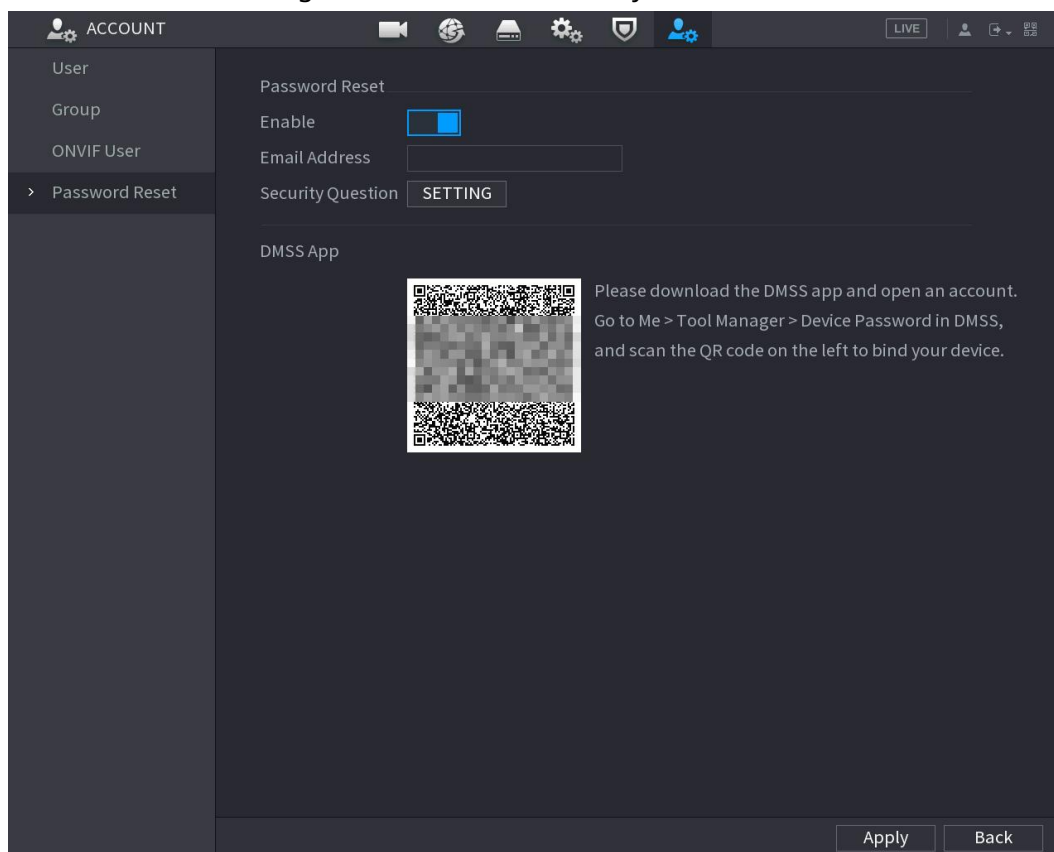
Step 2: Enable the password recovery function.

There function And activated Forsetting default.

Step 3: Click on**Apply**(Apply) to save the settings.

When the password recovery feature is disabled, you can recover your password in one of the following ways:

● If the device has a reset button, the password can be reset from the local interface or by using the reset button on the motherboard.

● If your device does not have a reset button, the password can only be reset from the local interface (be sure to set security questions).

5.1.3.2 Password reset on local interface

Procedure

Step 1: Go to the login page.

● If the user has configured an unlock pattern, the unlock pattern login page is displayed. Clicking on**Forgotten sequence**(Forgot Pattern), the password login page is displayed.

● If the user has not configured an unlock pattern, the password login page is displayed. Click on   to make the characters visible password.

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For log in using a account user different, Do click on Change user (Switch User) in the page Of access through sequence Of unlock, or select a other user from list Name user (User (name) in the page Of access through password.

Figure 5-7 Login (1)
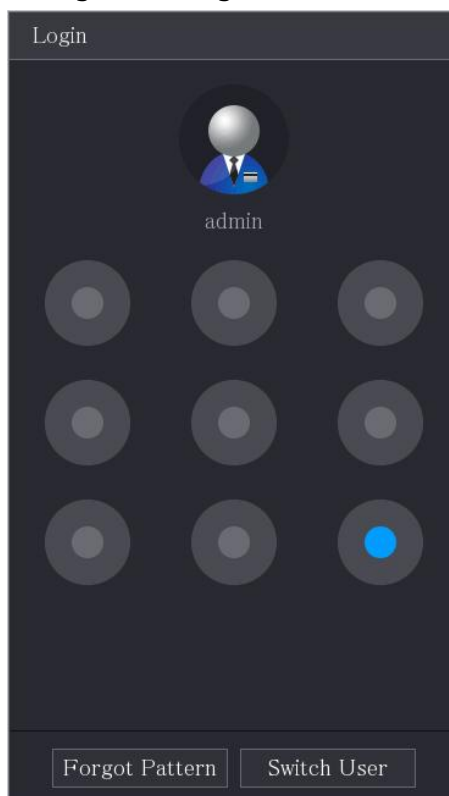
Figure 5-8 Access (2)
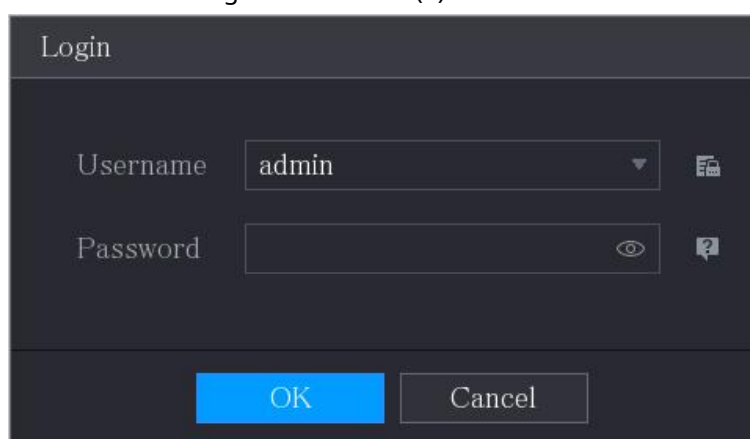
Step 2: Click on ▣ .

● If the user has set a private email address, the page is displayed **I notify** (Prompt).

● If the user has not set up a private email address, the email entry page is displayed. See step 3. Enter the email address, then click **After you** (Next) to view the page **I notify** (Prompt).

Figure 5-9 Notice

Note

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We need to collect your email address and device serial number in order
to reset device password safely. All the collected info is only used for the
purposes of verifying device validity and sending the security code.
Continue?

OK   Cancel
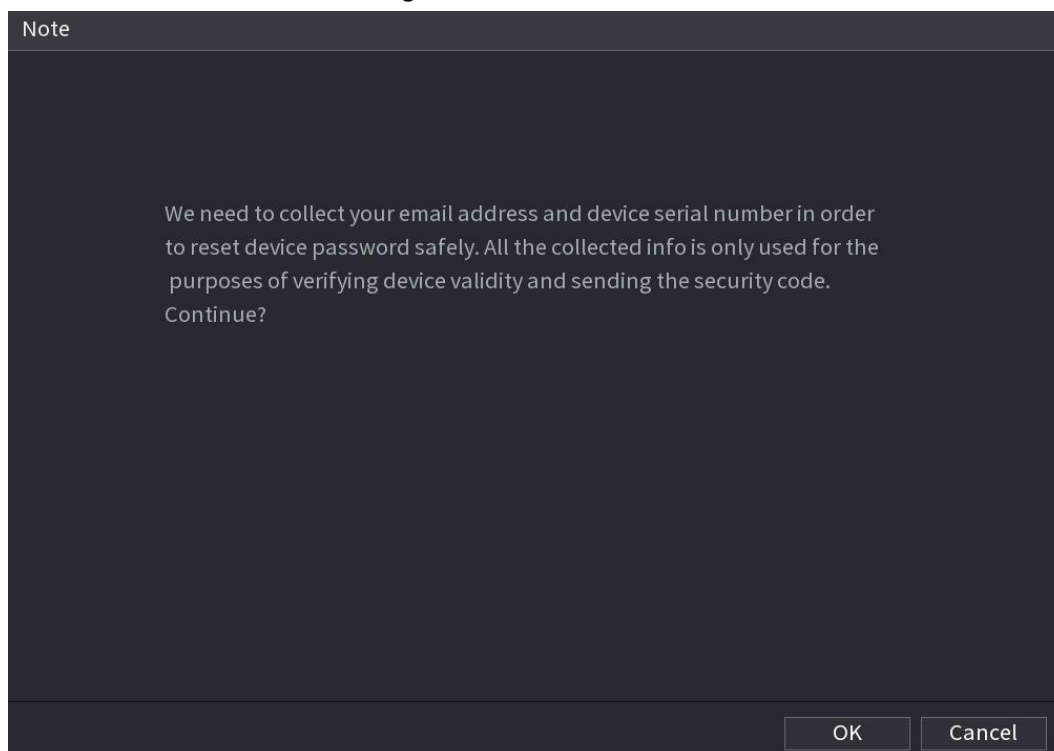
Step 3: Click on **OK**.

After have Done click on **OK**, The system to collect to the information For The restore from the password, as the address e-mail And the number Of series of the device. Light carefully the notify Before Of Do click on **OK**.

Figure 5-10 Recovery mode (email)

Password Reset

Reset Mode   Email

SN:

Notes (Only for admin):
 Option 1. Download the mobile phone client, go to
password resetting interface, and scan the QR code on the
left of the interface.
Mobile Client

Scan to download
Option 2. Please use any APP with scanning and recognition
function, scan the left QR code to get encryption strings.
And then send the strings to
support_rpwd@global.dahuatech.com.

The security code will be delivered to e***@163.com.

Security Code

Next   Cancel

Figure 5-11 Recovery mode (app)

Password Reset

Reset Mode   QR Code

SN: 52******5D36SC   55   Note (for admin only):
Please use an app to scan the left QR code or take a picture
of it using your phone. Send the content of the scan or the
picture of the QR code to after-sales service or your service
provider.
Get the security code and enter it below to reset your
password.

Security Code

Next   Cancel

<u>Step 4:</u> Reset your password.
- ● QR code
  Follow the on-screen instructions to receive the security code to your confidential email address. Enter the security code in the box**Security code**(Security Code).

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  - The code Of safety you can or to be received two times performing there scan of the same code QR. For receive again The code Of safety, update there page.
  - Why? And results valid, The code Of safety received to the own address e-mail must to be used within 24 hours For restore there password.
- ● App
  Select**QR code for device pairing**(QR Code for Binding Device) as**Recovery Mode**(Reset Mode), then follow the on-screen instructions to receive the security code on the DMSS app. Enter the security code in the box **Security code**(Security Code).
- ● Security questions
  1. How**Recovery Mode**(Reset Mode), choose**Security questions** (Security Questions).
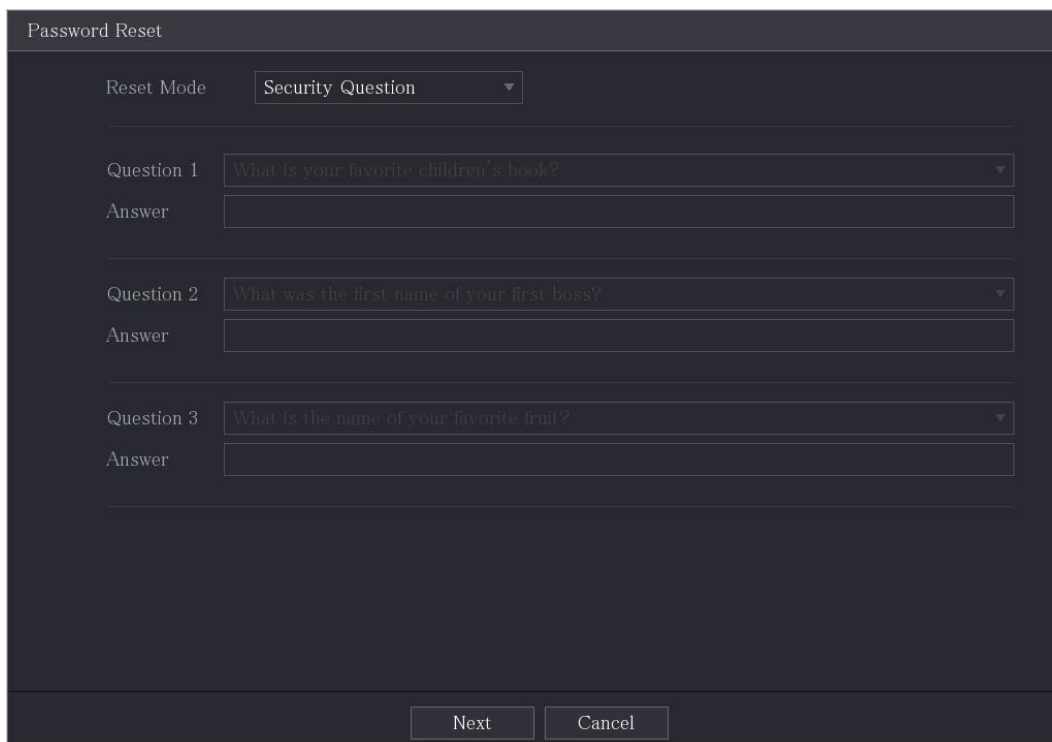
  📖
  If the request Of safety Not I am git to state configured, in the 'list **Type Of restore** (Reset type) Not I will be to present there voice **Requests Of safety** (Security Questions).
  2. Enter the correct answers in the box**Answer**(Answer).

Figure 5-12 Security questions
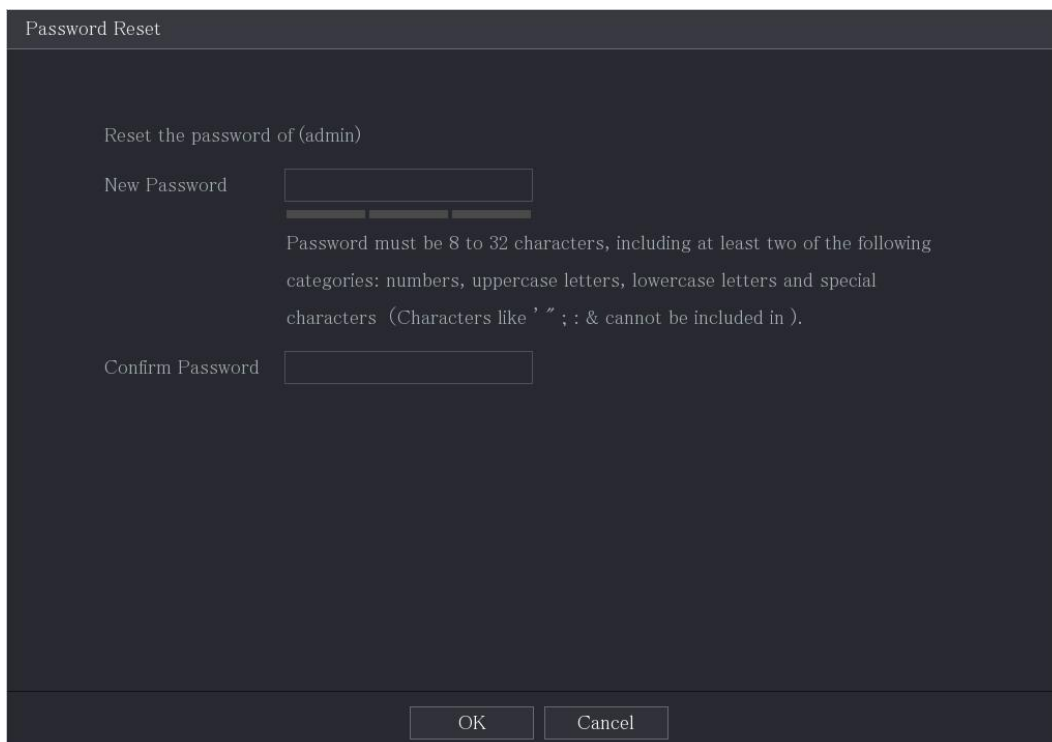
Step 5: Click on "**After you**" (Next).

Figure 5-13 New password

Step 6: Enter the new password in the box**New Password**(New Password) and re-enter it in the box**Confirm password**(Confirm Password).

Step 7: Click on**Save**(Save). Password recovery starts. Step 8: Click on**OK**.

A pop-up message appears asking if you want to sync your password to remote devices.

● Click on**Cancel**(Cancel) to complete the restore.

● Click on**OK**to view the synchronization information page.

Figure 5-14 Password synchronization

Password Reset

Reset the password of (admin)

New Password   ●●●●●●●●

Note   st two of the
                                                 vercase
Do you want to sync Password to remote device   cannot …
accessed by private protocol?

Confirm Pass

OK   Cancel

OK   Cancel
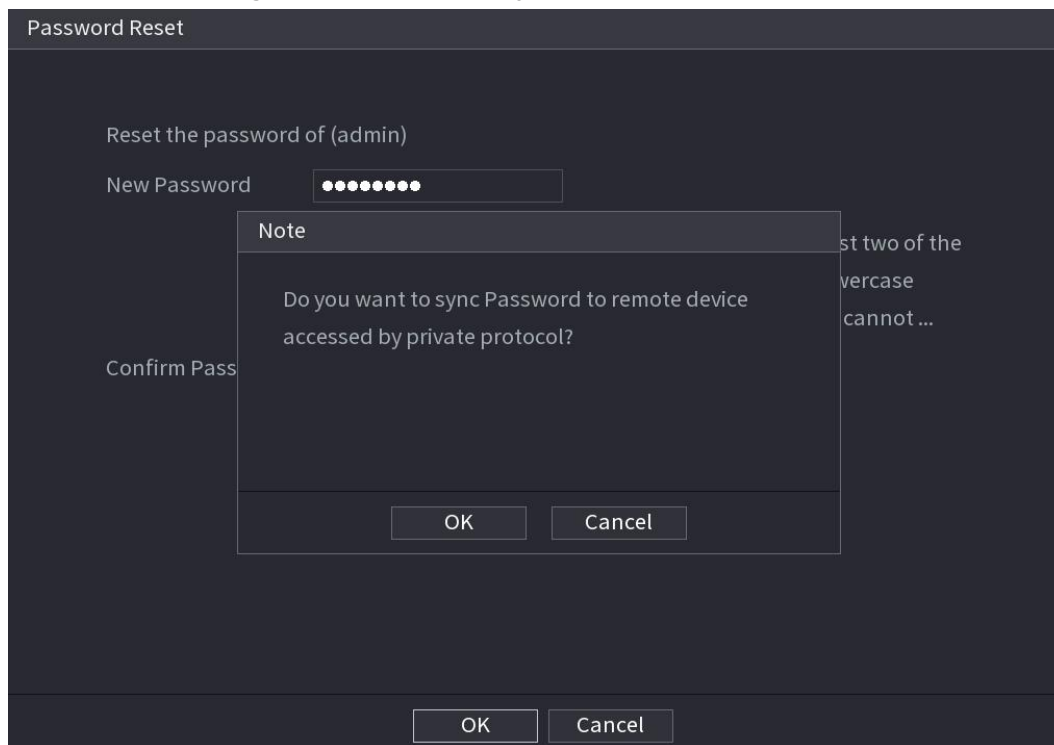
This   message appears Alone When I am present Also   the channels digital beyond to those analog.

Figure 5-15 Synchronization information

Sync Info

OK

1	Channel	IP Address	Results
1	8		Password:Succeed

OK
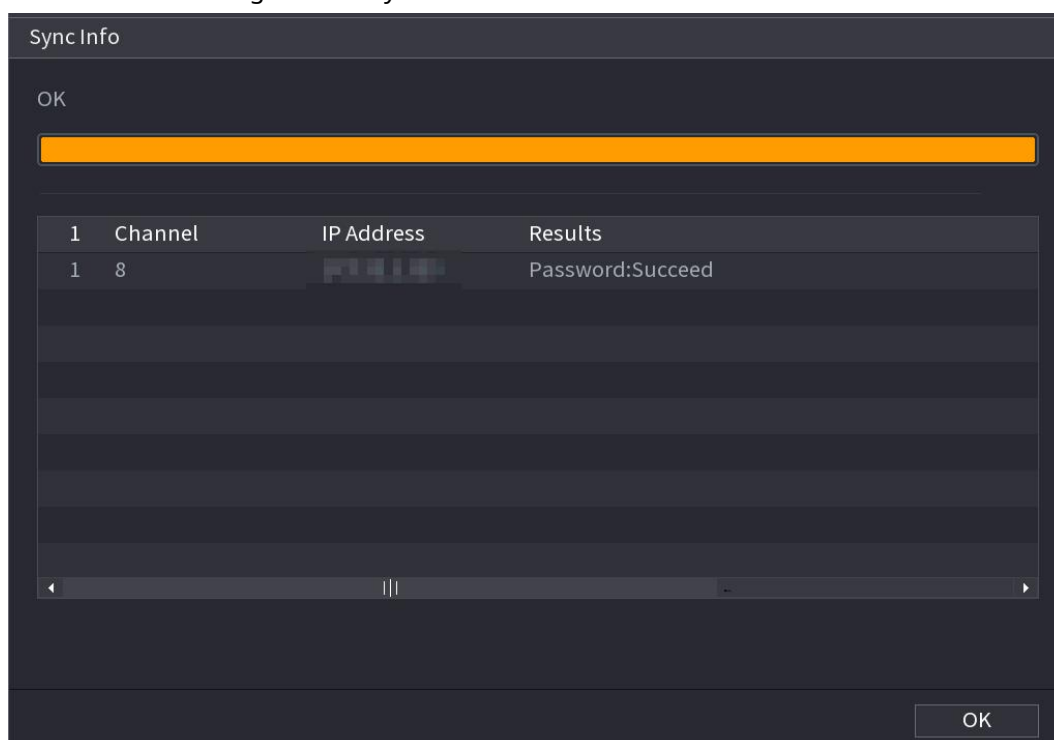
5.1.3.3 Using the reset button on the motherboard

Preliminary information

You can always use the reset button on the motherboard to factory reset your device.

📖

The button Of reset Available Alone on some models.

Procedure

Step 1: Disconnect the device from the power supply and remove the cover panel. For details on removing the cover panel, see "2.2 Installing the HDD". Step 2: Locate the reset button on the motherboard and hold it down for 5 to 10 seconds.

Figure 5-16 Reset button
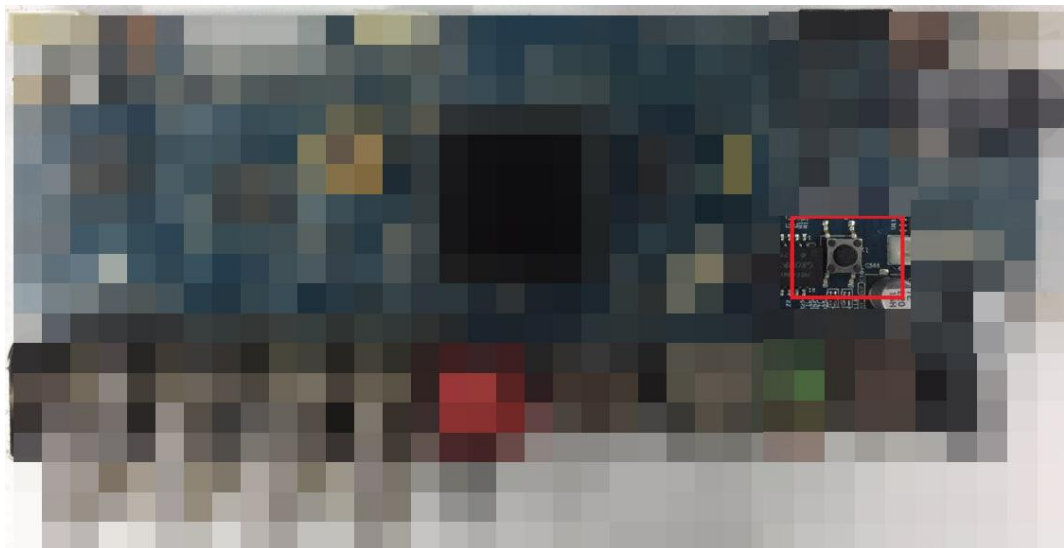
Step 3: Restart your device.

After the device restarts, the settings will be restored to factory defaults. You can then reset your password.

5.1.4 Configuration with the Startup Wizard

5.1.4.1 Activating the startup wizard

The startup wizard helps you configure basic device settings.

After initializing the device, the page is displayed**Startup Wizard**(Startup Wizard).

Figure 5-17 Startup Wizard
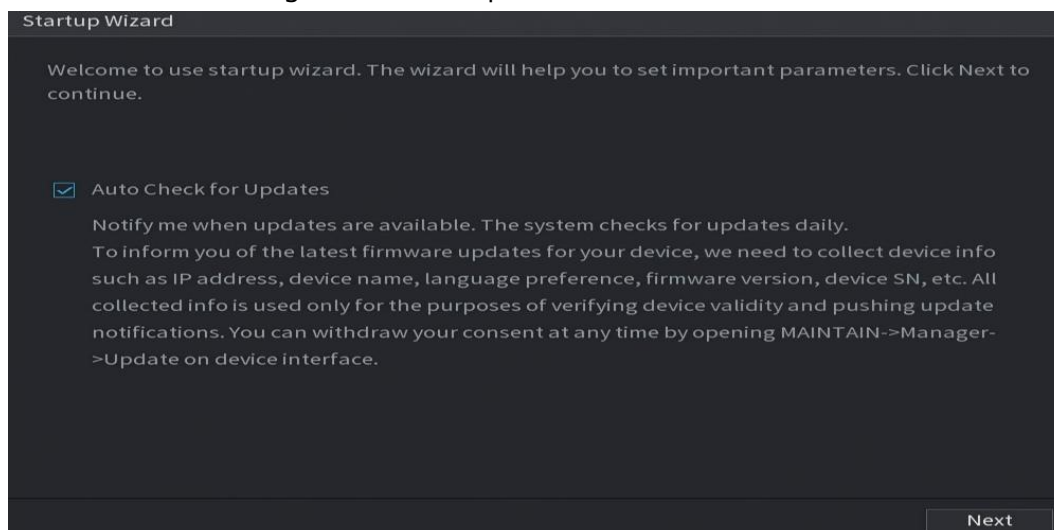
● If the user select the box Of check **Verify automatic of the Updates** (Self-check for updates), The system report automatically there presence Of updates.

● When there function he comes activated, The system collects information as address IP, name of the device, version of the Firmware And number Of series of the device For report promptly there presence Of updates. The information collections I am used Alone For to check there legitimacy to of the device And send the notifications Of update.

● If the user uncheck the box Of check **Verify automatic of the Updates** (Self-check for updates), The system Not report automatically there presence Of updates.

5.1.4.2 Configuring general settings

Preliminary information
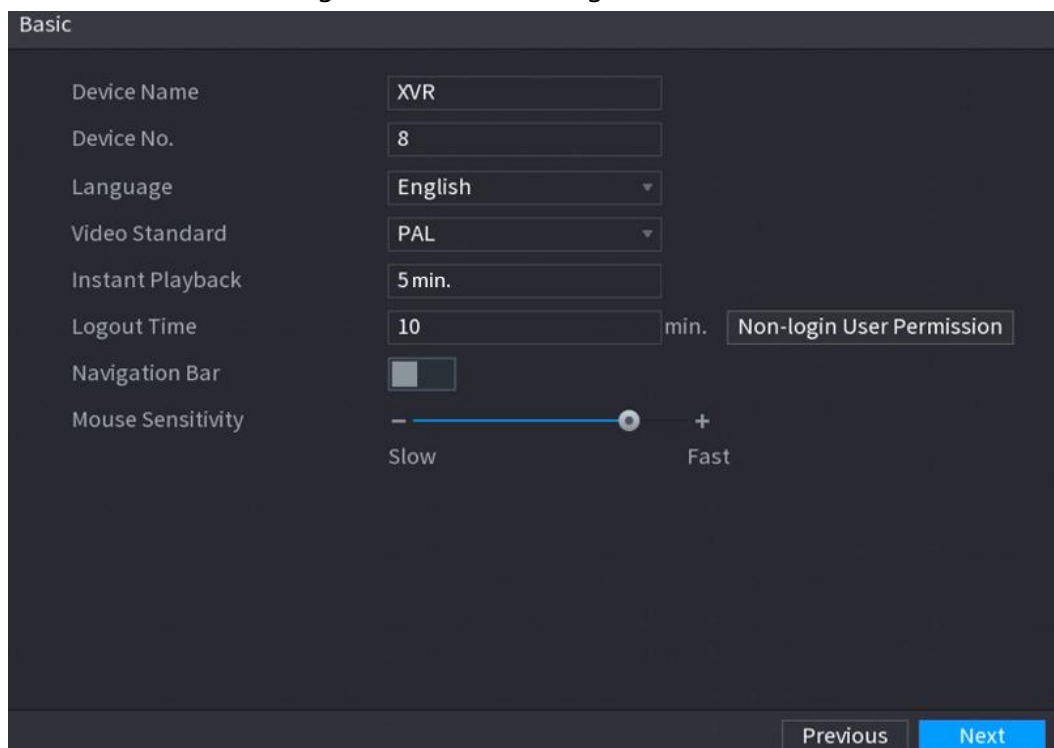
You can configure general device settings, such as device name, language, and instant play settings.

General settings can also be configured by selecting**Main menu**>**SYSTEM**> **General settings**>**Basic settings**(Main Menu > SYSTEM > General > Basic).

Procedure

Step 1: On the page**Startup Wizard**(Startup Wizard), click on**After you**(Next).

Figure 5-18 Basic settings

Step 2: Configure the basic settings parameters.

Table 5-3 Basic settings

Parameter	Description
Device name	Enter the device name.
Device number.	Please enter a device number.
Tongue	Select the system language for your device.
Video standards	Select**PAL**or**NTSC**depending on the actual situation.
Instant playback	In the box**Instant playback**(Instant Playback), enter the playback duration of recorded videos. On the live view control bar, click the instant play button to play a recorded video for the configured time.
Disconnection time	Enter the time for the device to go into standby mode. The device will automatically log out when it is not used for the configured period of time. In this case, you will need to log in to the device again. Values range from 0 to 60. A value of 0 indicates that the system never goes into standby. Click on**Monitor channel(s) after disconnection**(Monitor Channel(s) when logout). You can select the channels you want to continue monitoring even after you log out.
Navigation bar	Enable navigation bar. Clicking on the live view screen displays the navigation bar.
Mouse Sensitivity	Adjust the double-click speed by moving the slider. As the value increases, the double-click speed increases.
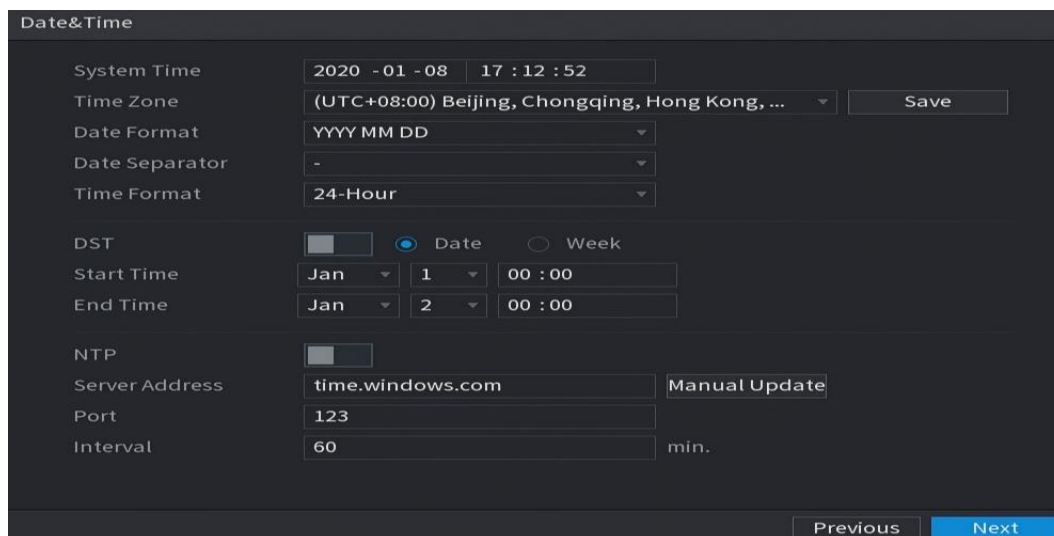
5.1.4.3 Configuring date and time settings

You can set the system date and time, time zone, daylight saving time, and NTP server activation. The date and time settings can also be configured by selecting**Main menu**>**SYSTEM**> **General settings**>**Date and time**(Main Menu > SYSTEM > General > Date & Time).

Procedure

Step 1: Once you have configured the general settings, click on**After you**(Next) on the page **General settings**(General).

Figure 5-19 Date and time

Step 2: Configure the date and time parameter settings.

Table 5-4 Date and time parameters

Parameter	Description
System time	Allows you to enter the system time. By clicking on the time zone list, you can select the desired setting. The time is automatically changed. ⚠️ Do not change the system time randomly to avoid problems with video search. It is recommended to change the system time outside of a recording period or by stopping recording first.
Jet lag	Allows you to select the system time zone.
Date format	Allows you to select the system date.
Date separator	Allows you to select the type of separator for the date.
Time format	You can select**12 HOURS**(12-HOUR) or**24 HOURS** (24-HOUR) as the time display format.
Daylight saving time	Allows you to activate the Daylight Saving Time function. Click on **Week**(Week) or**Date**(Dates).

Parameter	Description
Start date	Allows you to set the start and end date of daylight saving time.
End date	
NTP	Allows you to enable the NTP function to synchronize the device time with the NTP server. By enabling the NTP function, the device time is automatically synchronized with the server.
Server address	Allows you to enter the IP address or domain name of the NTP server. Click on **Manual update**(Manual Update) to immediately start synchronization with the server.
Brings	The system only supports TCP protocol, so the default port is 123.
Interval	Allows you to enter the time interval within which the device must synchronize its time with that of the NTP server. Values between 0 and 65535 are allowed.

5.1.4.4 Configuring Network Settings

Preliminary information

You can configure basic network settings, such as network mode, IP protocol version, and device IP address.

Network settings can also be configured by selecting **Main menu**>**NET**>**TCP/IP** (Main Menu > NETWORK > TCP/IP).

Procedure

Step 1: Once you have configured the date and time, click on **After you**(Next) on the page **Date and time** (Date & Time).

Figure 5-20 TCP/IP

Step 2: Configure network parameters.

Table 5-5 Network parameters

Parameter	Description
IP Version	In the list**IP Version**(IP Version) you can select**IPv4**or **IPv6**. Both versions are supported.
MAC address	Shows the MAC address of the device.
DHCP	Enable DHCP function. The IP address, subnet mask and default gateway cannot be changed when DHCP function is enabled. ● When DHCP is enabled, the IP address, subnet mask, and default gateway are automatically entered into the corresponding boxes. Otherwise, all fields will display 0.0.0.0. ● If you want to manually configure the IP information, please disable the DHCP function first. ● The IP address, subnet mask and default gateway cannot be changed if a PPPoE connection is active.

Parameter	Description
IP address	Enter the IP address and configure the corresponding subnet mask and default gateway.
Subnet Mask	
Default Gateway	The IP address and default gateway must be on the same segment Ofnet.
DHCPDNS	Allows you to enable the DHCP function to obtain the DNS address from the router.
Preferred DNS	In the box**Preferred DNS**(Preferred DNS), enter the DNS IP address.
Alternative DNS	In the box**Alternative DNS**(Alternate DNS), enter the IP address of the alternate DNS.
MTU	In the box**MTU**, enter a value for the network card. Values between 1280 and 1500 bytes are allowed. The default value is 1500. The recommended values for the MTU option are given below. ● 1500: This is the highest possible value for Ethernet packets. This value is usually selected when there is no PPPoE or VPN connection, and is also the default value for some routers, network adapters, and switches. ● 1492: Optimized value for PPPoE connections. ● 1468: Optimized value for DHCP function. ● 1450: Optimized value for VPN connections.
Virtual Host	It allows a single server to host multiple websites or applications by assigning different domain names to the same IP address.
Test	Click on**Head**(Test) to check if the entered IP address and gateway communicate with each other.

5.1.4.5 Configuring P2P settings

Preliminary information

To manage the device, you can add it to your phone's client or to the platform. P2P settings can also be configured by selecting**Main menu**>**NET**>**P2P**(Main Menu > NETWORK > P2P).

Check That The DVR is connected to Internet. Incase affirmative, The system show The value **Online** in the box **State** (Status) from the page P2P.

Procedure

Step 1: Once you have configured your network settings, click on**After you**(Next) on the page**Net** (Network).

Figure 5-21 P2P
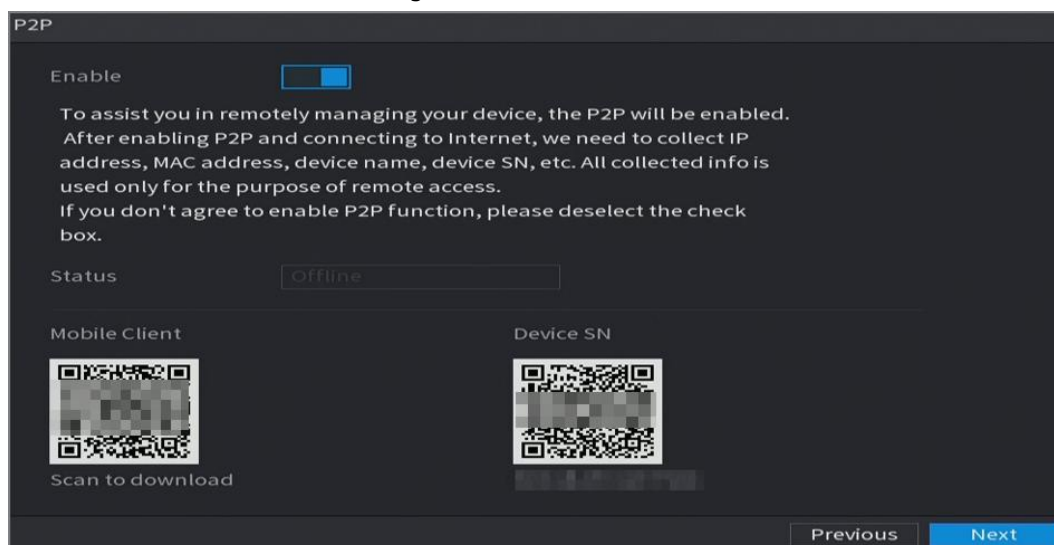
Step 2: Enable P2P function.

📖

A time activated there function P2P and carried out there connection to Internet, The system collects the information necessary all'access from remote, Between which the address e-mail, the address MAC AND The number Of series of the device.

Related Operations

You can add the device as follows.

● Mobile Client: Using your phone, scan the QR code to add your device to the mobile client. You can then start accessing your device.

● Platform: Get the device serial number by scanning the QR code. Log in to the P2P management platform and add the device serial number to the platform. Then you can log in and manage the device over the WAN. For more details, please refer to the P2P operation manual.

📖

● AND So possible to view The code QR of the client For devices mobile AND The number Of series of the device doing click on 🔲 in the 'corner superior right from the pages a time carried out the access to the menu principal.

● If there function he comes unchecked, The system show there page **Note** (Note). Choose if activate or less there function in base to the own needs.

Figure 5-22 Note
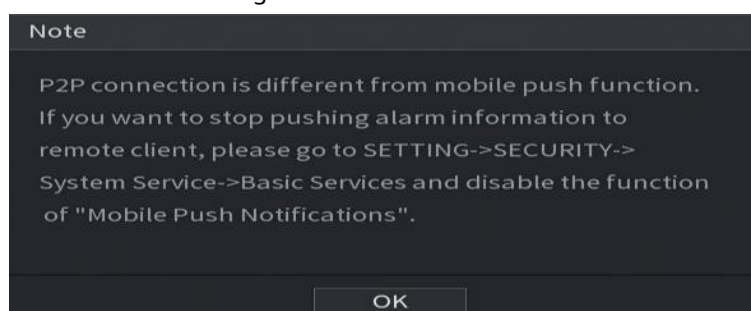
To describe the use of this feature, adding a device to the mobile client is used as an example.

The messages That follow they serve Alone as reference. For the instructions detailed, consult The manual d'use of the client For devices mobile.

1. Using your phone, scan the QR code under the writing **Mobile Client** (Mobile Client) to download the application.

2. On your phone, open the app and tap .

3. Touch **Device Management** (Device Manager).

4. Tap in the upper right corner.

The page asking you to initialize the device appears. The system displays a pop-up message reminding you to verify that the device has been initialized.

5. Touch **OK**.

● If the device has not been initialized, tap **Device initialization** (Device Initialization) to perform the initialization by following the instructions on the screen.

● If the device has been initialized, it can be added directly.

6. Touch **Add Device** (Add Device).

It is possible add devices wireless or wired. The manual USA the addition Of a device wired as example.

7. Touch **P2P**.

8. Enter the DVR name, user name and password, then scan the QR code under the text **SN device** (Device SN).

9. Touch **Start live preview** (Start Live Preview).

The device is added and appears on the mobile phone's live view page.

5.1.4.6 Configuring Encoding Settings

Preliminary information

You can configure the primary and secondary stream settings of the device.

Encoding settings can also be configured by selecting **Main menu** > **CAMERA** > **Coding** > **Audio/video** (Main Menu > CAMERA > Encode > Audio/Video).

Procedure

Step 1: Once you have configured your P2P settings, click on **After you** (Next) on the page **Audio/video** (Audio/Video).

Figure 5-23 Encoding

Step 2: Configure the main/secondary flow parameter settings.

Table 5-6 Parameter description

Parameter	Description
Channel	In the list**Channels**(Channel), select the channel you want to configure.
Smart Codec	Enable smart codec function. This function can reduce the video bitstream of unimportant recorded items to save storage space.
Type	● Main flow: in list**Type**(Type), select**General** (General),**MD**(motion detection) or**Alarm**(Alarm). ● Secondary flow: This setting is not configurable.
Compression	Select the encoding mode from the list**Compression** (Compression). ● H.265: Main Profile Encoding. This is the suggested setting. ● H.264H: High Profile Coding. Lightweight high definition video stream. ● H.264: Main Profile Encoding. ● H.264B: Baseline profile encoding. This setting requires a higher bit rate than other settings of the same definition.
Resolution	In the list**Resolution**(Resolution), select the video resolution. The maximum video resolution may vary depending on the model of the

Parameter	Description
	device.
Frequency of frames (FPS)	Sets the number of frames per second for the video. The higher the value, the better the image quality and clarity. The frame rate varies depending on the resolution. Typically, PAL format allows you to select values between 1 and 25; NTSC format, values between 1 and 30. However, the range of values you can actually select for the frame rate depends on the capabilities of your device.
Bit Rate Type	In the list**Bit Rate Type**, select**CBR**(constant transmission speed) or**VBR**(variable transmission speed). Selecting**CBR**, image quality cannot be configured; selecting**VBR**, you can configure the image quality.
Quality	This feature is available by selecting the option**VBR**in the list **Bitrate**. The higher the value, the better the image.
I-frame interval	The interval between two reference frames.
Bitrate (Kbps)	To change the image quality, select a value, or enter a custom one, in the drop-down list.**Transmission speed**(Bit Rate). The higher the value, the better the image.
Video	Enable the secondary stream function.
Audio	By clicking on**Other**(More), the page is displayed**Other**(More).
Audio source	● Audio: The function is enabled by default for the main stream. You need to manually enable it for the sub stream 1. After enabling this function, the recorded video file will be a composite audio and video stream.
Compression	● Audio Source: In the list**Audio source**(Audio Source), you can select the values**Local**(Local) or**HDCVI**. - Local: Audio signal is received from audio input. - HDCVI: Audio signal is received from HDCVI camera. ● Compression: Select the desired format from the list **Compression**(Compression).
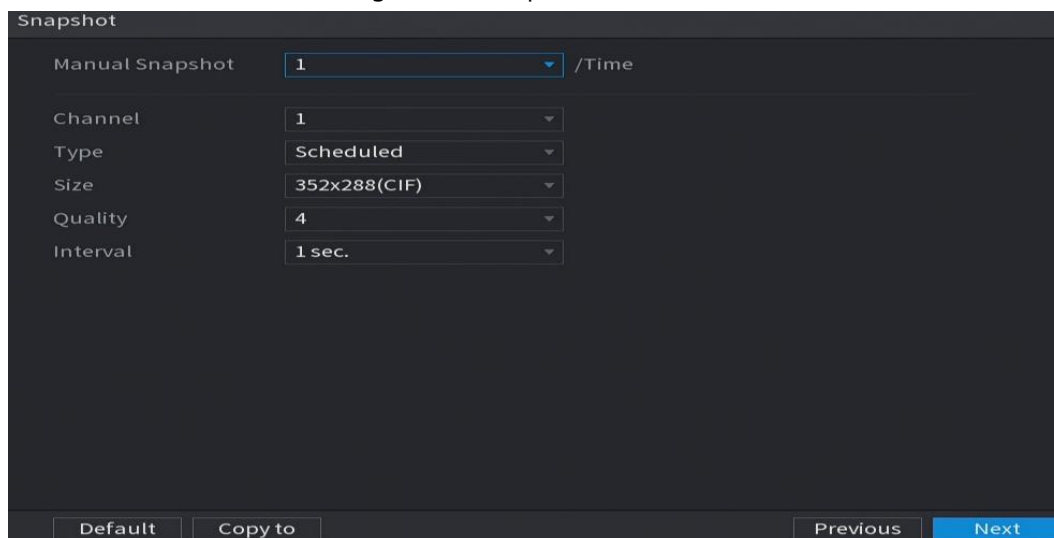
5.1.4.7 Configuring snapshot settings

You can configure basic snapshot settings, such as the number of snapshots taken each time, the channels that take snapshots, and the image size and quality. General settings can also be configured by selecting**Main menu**>**CAMERA**> **Coding**>**Snapshots**(Main Menu > CAMERA > Encode > Snapshot).

Procedure

Step 1: Once you have configured your encoding settings, click**After you**(Next) on the page **Coding**(Encode).

Figure 5-24 Snapshots

Step 2: Configure snapshot parameter settings.

Table 5-7 Snapshot parameters

Parameter	Description
Manual snapshot	In the list**Manual snapshot**(Manual Snapshot), select how many images you want to capture each time.
Channel	In the list**Channels**(Channel), select the channel you want to configure.
Type	In the list**Mode**(Mode), you can select**Human face** (Human Face) or**General**(General) as the type of event for which you want to capture snapshots. ● **Scheduled:**The snapshot is taken in the scheduled time slot. ● **Event (Event):**The snapshot is captured when an alarm event occurs, such as motion detection, video loss, or local alarm. ● **Face Snapshot:**Snapshot is taken when a face is detected. Face detection function is only supported by channel 1.
Dimensions	In the list**Dimensions**(Size), select a value for the image. The higher the value, the better the image.
Quality	You can set 6 levels of image quality. The higher the level, the better the image.
Interval	Allows you to configure or customize the snapshot frequency.

5.1.4.8 Configuring basic storage settings
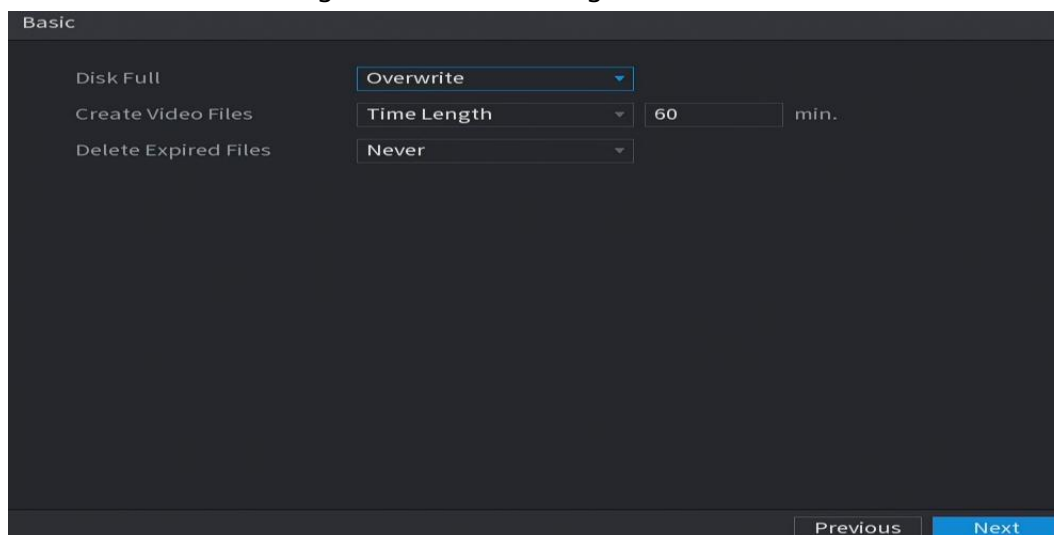
You can configure settings for when the HDD runs out of space, the length of recorded videos, and whether to automatically delete old files.

Basic storage settings can also be configured by selecting**Main menu**> **ARCHIVING**>**Basic settings**(Main Menu > STORAGE > Basic)**.**

Procedure

Step 1: Once you have configured your encoding settings, click**After you**(Next) on the page **Snapshots**(Snapshots).

Figure 5-25 Basic settings

Step 2: Configure basic storage settings parameters.

Table 5-8 Basic settings for archiving

Parameter	Description
Disk full	Allows you to configure settings related to the situation when all read/write disks are full. ● Select**Stop**(Stop) to stop recording. ● Select**Overwrite**(Overwrite) to overwrite the recorded video files, always starting from the oldest ones. 📖 Locked video recording files will not be overwritten.
Create video files	Allows you to configure the duration and file length of each recorded video.
Delete expired files	To delete old files, in the list**Delete expired files**(Delete Expired Files) select**Customize**(Custom) and set the time to keep old files.

5.1.4.9 Configuring Recorded Video Storage Schedule

You can configure the parameters of the recorded video schedule, such as the channels to record, alarm settings and the insertion period.

Recorded video storage settings can also be configured by selecting**Main menu**> **ARCHIVING**>**Programming**>**Registration**(Main Menu > STORAGE > Schedule > Record).

Procedure

Step 1: Once you have configured the basic storage settings, click on**After you**(Next) on the page**Basic settings**(Basic).

Figure 5-26 Registration
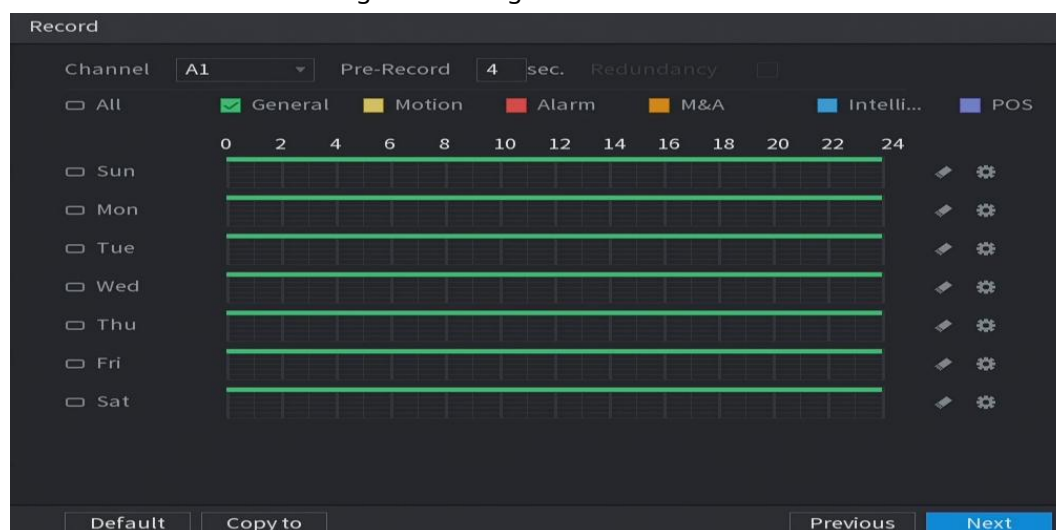
Step 2: Configure the recording settings parameters.

Table 5-9 Recording settings

Parameter	Description
Channel	In the list**Channels**(Channel), select a channel to record videos.
Pre-registration	In the list**Pre-registration**(Pre-record), set how long in advance recording should start.

Redundancy	If you have multiple HDDs installed on your device, you can set one of them as a redundancy disk to save the recorded files on different HDDs. If one of the HDDs gets damaged, you can recover the backup on the other disk.
	
	● Select**Main menu**>**ARCHIVING**>**Disk Management**(Main Menu > STORAGE > Disk Manager) and set one HDD as a redundant disk.
	● Select**Main menu**>**ARCHIVING**> **Programming**> **Registration**(Main Menu > STORAGE > Schedule > Record), then select the check box **Redundancy**((Redundancy).
	  - If the selected channel is not recording, the redundancy function will take effect the next time you record, even if the checkbox is not selected.
	  - If the selected channel is recording, the recorded files will be compressed and archived, then recording will restart according to the new schedule.
	
	📖
	● This feature is only available on some models.
	● The redundant hard drive backs up recorded videos but

Parameter	Description
	not snapshots.
Event type	Select the event type checkbox, choosing between **General**(General),**Movement**(Motion) (motion detection, video loss, tampering, diagnosis),**Alarm**(Alarm) (IoT alarms, local, from the alarm panel, external IPCs, offline IPCs), **Monitoring and alarms** (BUT),**Intelligent**(Intelligent) (IVS events, face detection) and**POS**.
Period	Allows you to set the period during which the configured recording setting is active. The system activates the alarm only during the set period.
Copy	Click on**Copy to**(Copy to) to copy the settings to other channels.

Step 3: Define the video recording time slot by dragging or changing. By default, recording is always on.

● Defining the time slot for dragging.

1) Select the event type checkbox.

Figure 5-27 Event Type

2) Define a time slot. The system supports a maximum of six time slots.

3) On the timeline, drag the bar to define a time slot. The device starts recording the selected event type in the set time slot.

Figure 5-28 Timeline
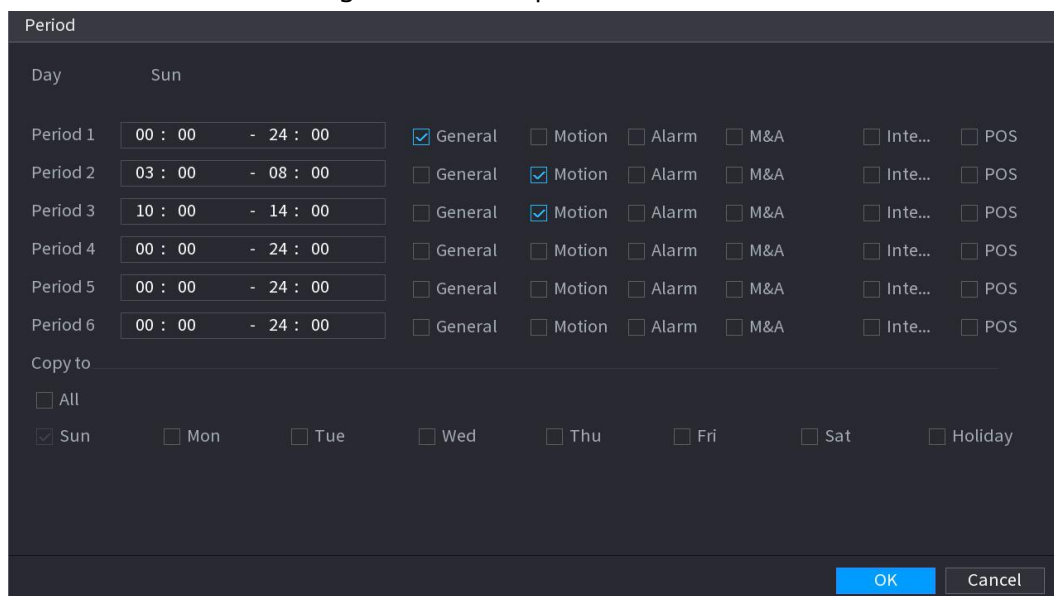
The color of the bar indicates the type of event active in a given time slot:

📖

● Priority to from the recordings if are present Overlaps between types the Of event: **BUT** > **Alarm** > **Intelligent** > **Movement** > **General** (BUT > Alarm > Intelligent > Motion > General).

● Select there box Of check of the type Of event, Therefore Do click on 🗑 For cancel there band timetable set.

● When Yes select there Voice **MD** (MD) or **Alarm** (Alarm), there box Of check of the ' other option he comes unchecked.

● Defining the time slot for editing. Take Sunday as an example.

1) Click on . ⚙

Figure 5-29 Time periods

2) Enter the time range of the time slot and select the event checkbox.

3) Click on**OK**to save the settings.

Step 4: Click on**OK**to complete the setup.

📖

- Do click on**Copy** (Copy) For copy the settings on others channels.
- A time Configure the settings Of programming from the recordings, And necessary to carry out the operations That follow For start there registration in base at the programming stability.
  - Activate the event Of alarm And configure the settings of the channel Of registration. For the details, consult there section "5.11 Settings of the events Of alarm ".
  - For activate there function Of registration, consult there section "5.10.1 Enablement of the check from the registration".

5.1.4.10 Configuring the snapshot storage schedule

Preliminary information

You can configure the parameters of snapshot storage schedule, such as channels for snapshot acquisition, alarm settings, and insertion period.

Snapshot storage settings can also be configured by selecting**Main menu**>**ARCHIVING**>**Programming**>**Snapshots**(Main Menu > STORAGE > Schedule > Snapshot).

Procedure

Step 1: Once you have configured your video recording settings, click**After you**(Next) on the page**Record**(Record).

Figure 5-30 Snapshots
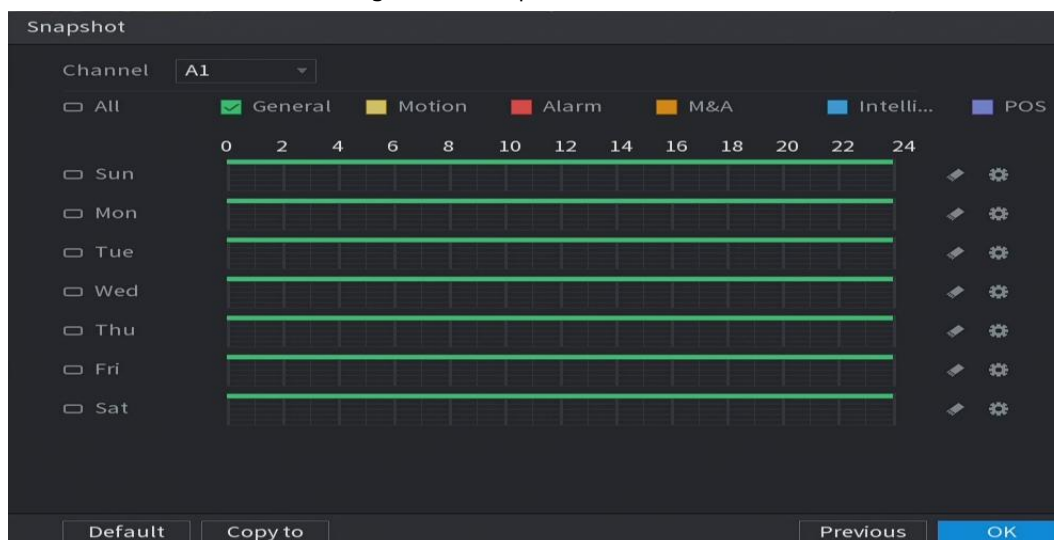
Step 2: Configure snapshot settings parameters.

Table 5-10 Snapshot settings

Parameter	Description
Channel	Select the snapshot acquisition channel from the list**Channels**(Channel).
Event type	Select the event type checkbox, which includes the options**General**(General),**Movement**(motion),**Alarm**(Alarm),**BUT**,**Intelligent**(Intelligent**POS**.
Period	Defines a time slot during which the configured snapshot settings are active. For details on setting a time slot, see "5.1.4.9 Configuring the Schedule of the archiving of recorded videos".
Copy	Click on**Copy**(Copy) to copy the settings to other channels.

Step 3: Click on**OK**. Step 4:

Click on**OK**.

The live view screen is displayed. The startup wizard setup is complete. You can start using your device.

Step 5: (Optional) Once the startup wizard is configured, if the resolution of the display connected to the HDMI port is different from the default resolution (1280 × 1024), a dialog box will appear. Choose whether or not to change the resolution.

Figure 5-31 Changing the resolution
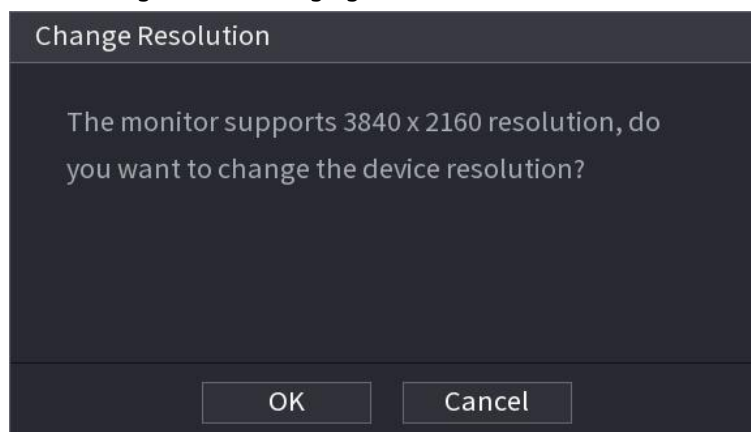
5.2 Live View

Once you log in to the device, the live view is displayed. The number of channels displayed depends on the model.

To access the live view screen from other pages, click on the top right [LIVE] in the corner of the screen.

Figure 5-32 Live view
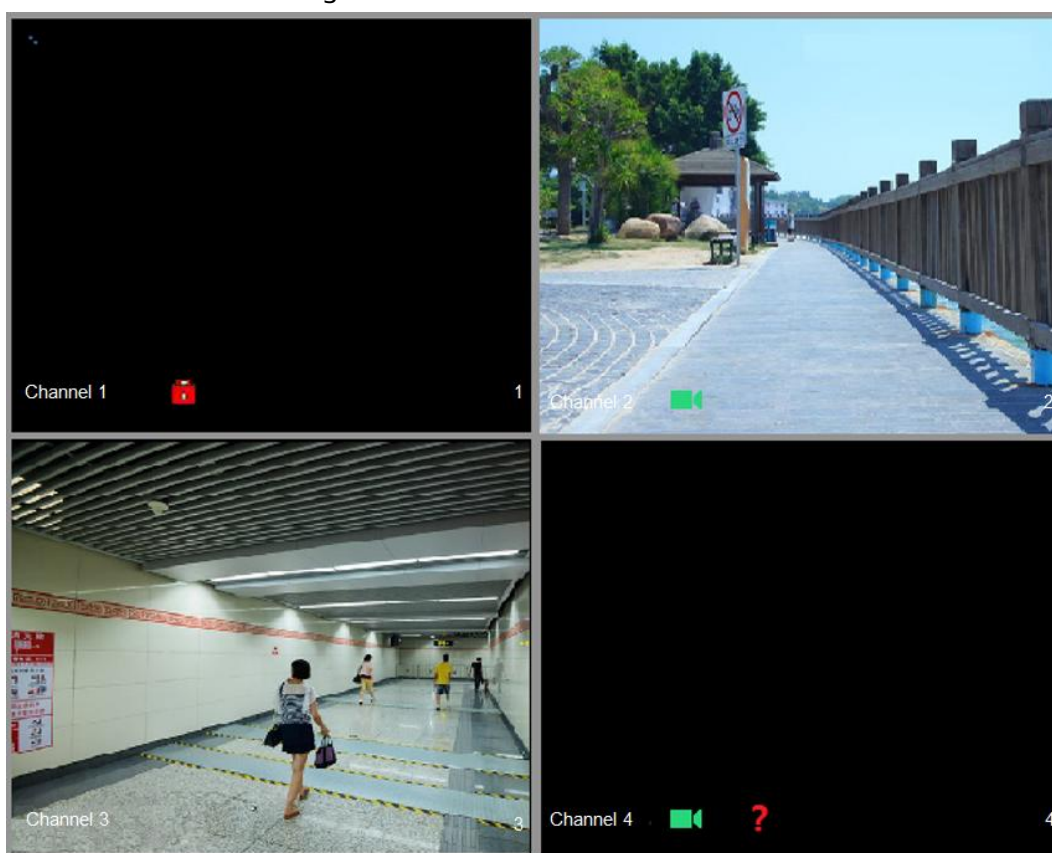
5.2.1 Live View Screen

You can view live video from any camera connected via a channel on your screen.
● By default, each channel window displays the system time, channel name and channel number. This setting can be changed by selecting**Main menu**>**CAMERA**>**Overlay**> **Overlay**(Main Menu > CAMERA > Overlay > Overlay).

● The number in the lower right corner represents the channel number. If the position or channel name is changed, you can recognize the channel number from this figure and perform operations such as searching and playing back recordings.

Table 5-11 Live view description

| Icon	Function
🎥	Indicates the recording status. The icon appears when recording a video.
🏃	The icon appears when motion is detected within the scene.
❓	The icon appears when video loss is detected.
🔒	The icon appears when monitoring of a channel is blocked.

📖
Forexchange there position Oftwo channels, drag there window Of a channel on the 'other channel.

5.2.2 Live View Control Bar

The live view control bar allows you to perform various operations, such as playback, zoom, real-time backup, manual snapshot taking, conversation, adding remote devices and switching streams.
To show the live view control bar, move the pointer to the top half of a channel window.

📖

If Not they come carried out operations For six seconds After there visualization from the bar Of check, this 'last disappears automatically.

Figure 5-33 Analog channel

Figure 5-34 Digital channel

Table 5-12 Control bar description

N.	Function	N.	Function	N.	Function
1	Reproduction immediate	4	Snapshot manual	7	Protection of privacy

N.	Function	N.	Function	N.	Function
2	Zoom digital	5	Deactivate audio	8	Conversation and audio
3	Registration snapshot	6	Quick Pick	9	Registration camera

5.2.2.1 Instant Playback

You can play from 5 seconds to 60 minutes before a recorded video. Clicking will bring up the instant playback page. Instant playback offers the following functions:

● you can move the cursor to choose from which moment playback should start;
● There are controls for playing, pausing and stopping playback;
● Information such as channel name and recording status icon are hidden during instant playback and will only be displayed when you exit;
● During playback, you cannot switch to split-screen view.
● To change the playback time, select**Main menu**>**SYSTEM**>**General**>**Basic**(Main Menu > SYSTEM > General > Basic), then enter in the box**Instant playback**(Instant Play) the requested playback time.

Figure 5-35 General Settings
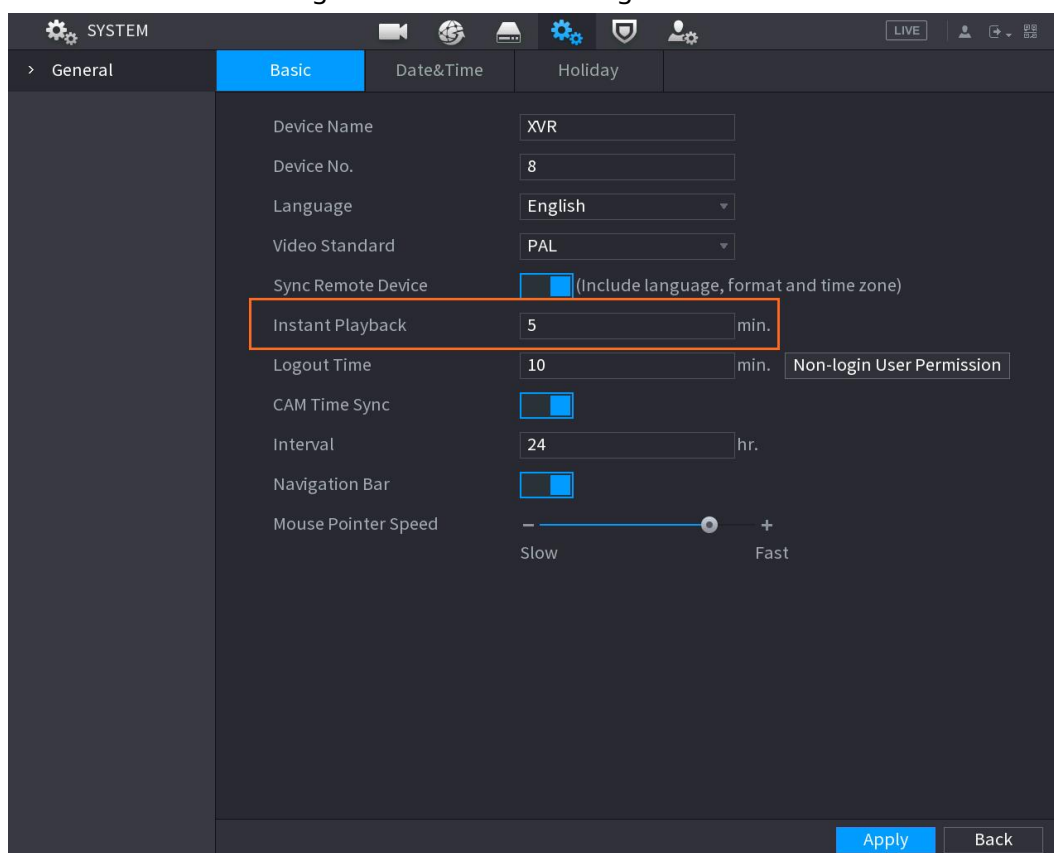
5.2.2.2 Digital Zoom

You can zoom in on a specific area of the image to see more detail in one of the following ways.

● Click on : the icon changes to . While holding down the left mouse button, select the area to be magnified. The area will be magnified after you release the left mouse button.

● Point the cursor to the center of the area you want to magnify and press the wheel to zoom in on the area.

● On some models, When the image he comes enlarged using The first method described, The level Of zoom of the area selected it turns out proportional respect at the window.

● When the image And enlarged, you can to be dragged in any direction For view it the other areas.

● Do click with The key right on the image enlarged For bring it back at the state original.

5.2.2.3 Instant registration

You can record the video of any channel and save it to a USB storage device. Click to start recording. To stop recording, click the icon again. The video clip is automatically saved to the connected USB storage device.

5.2.2.4 Manual snapshots

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

Click on to take snapshots. Snapshots are automatically saved in the connected USB storage device. You can view snapshots on your computer.

For modify The number Of snapshots, select **Menu principal** > **CAMERA** > **CODIFICA** > **Snapshots** , (Main Menu > ROOM > ENCODE > Snapshots), Therefore select a value in the list **Snapshot manual** (Manual Snap).

5.2.2.5 Muting (analog channel only)

You can mute the video by clicking on single . The function is supported in the channel view.

5.2.2.6 Quick Pick

Preliminary information

Select a person or motor vehicle as a target to quickly recall a recorded video when the target appears during playback.

📖

The functions they can vary in base to the model of the device.

Procedure

    Step 1: Drag your mouse to the top center of the video to reveal the live view control bar.

    Step 2: Click on   to block live view. The image shows automatically targets.

    Step 3: Click on   next to the targets.

    It is also possible to draw a target search area.

    Step 4: Configure search conditions and display the search results on the playback page.

5.2.2.7 Privacy Protection

Preliminary information

    To ensure privacy protection, the faces of the people captured in the video are blurred.

📖

The functions they can vary in base to the model of the device.

Procedure

    Step 1: Drag your mouse to the top center of the video to reveal the live view control bar.

    Step 2: Click on   to blur the faces of all people in the live view.

    On the playback page, click   to remove all face blurring effects.

5.2.2.8 Alarm light (supported on cameras with the corresponding function)

    Click on   to manually control the camera and activate the alarm light.

5.2.2.9 Siren (supported on cameras with the corresponding function)

    Click on   to manually activate the camera alarm siren.

5.2.2.10 Two-way conversation (digital channels only)

    You can create a voice interaction between your device and the remote device to handle emergencies more effectively. This feature is supported only if the remotely connected IPC device supports two-way conversation.

● By clicking on , the icon's appearance becomes 🎤 and the two-way conversation of the remote device is activated. Two-way conversation of other digital channels is deactivated.

● Click on 🎤 to turn off two-way conversation. Two-way conversation of other digital channels is restored.

5.2.2.11 Adding cameras (digital channels only)

You can view remote device information and add new remote devices to replace currently connected ones.

Clicking on displays the page **Camera List**. For detailed information about adding remote devices, see "5.7 Configuring Remote Devices".

5.2.3 Navigation bar

The icons on the navigation bar allow you to perform operations related to their respective functions. For example, you can access the main menu and change the way windows are split.

📖

For setting default, there bar Of navigation Add disabled. Not to appear to on the screen Of visualization live until And Not he comes enabled. For do it, select **Menu principal** > **SYSTEM** > **Settings general** > **Settings Of base** (Main Menu > SYSTEM > General > Basic), activate there bar Of navigation Add Do click on **Apply** (Apply).

Figure 5-36 Navigation bar

Table 5-13 Description of the navigation bar

Icon	Function
🏠	Opens the main menu.
◀	Expands or collapses the navigation bar.
▣▦▦▦▦	Allows you to select the display layout.
◁	Go to the previous screen.
▷	Go to the next screen.
↻	Enables the tour function. The icon's appearance becomes 🔄.
▼	Opens the PTZ control panel. For details, see "5.4 Controlling PTZ Cameras".
🎛	Opens the page **Image** (Image). 📖 The feature is only supported by single channel layout.
🔍	Opens the recording search page. For detailed information, please refer to "5.10 Playing Videos".

Icon	Function
	Opens the page**Alarm status**(Alarm Status) to view the device alarm status.
	Opens the page**Channel information**(Channel Info) to view information about each channel.
	Opens the page**Camera List**(Camera List). For details, see "5.7.1 Adding Remote Devices".
	Opens the page**Net**(Network). For details, see "5.16.1 Configuring Network Settings".
	Opens the page**Disk Management**(Disk Manager). For details, see "5.19.3 Configuring Disk Management".
	Opens the page**USB Management**(USB Management).

5.2.4 Context menu

You can quickly access some function pages, such as main menu, record search, PTZ settings, color settings and select window split mode.

Right-clicking on the live view screen will bring up the context menu.

When Yes logs in to any page from the menu Of choice quick, And possible return at the screen previous doing click with The key right on the screen current.

Figure 5-37 Shortcut menu
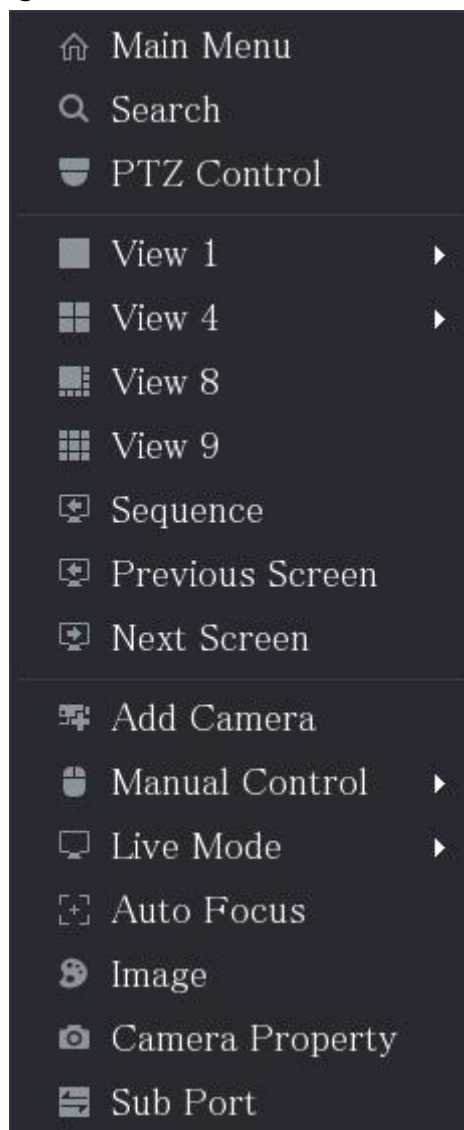
Table 5-14 Menu parameters

Function	Description
Main menu	Opens the page**Main menu**(Main Menu).
Research	Opens the page**REPRODUCTION**(PLAYBACK), where you can search and play recording files.
PTZ Control	Opens the page**PTZ**.
EPTZ	Select**Active**(On) to enable the EPTZ function, which allows you to zoom in and track targets that trigger intelligent events. [book icon] This feature is only available on some models.

Function	Description
View Layout	Allows you to configure the live view screen with a single-channel or multi-channel layout.
Previous screen	Click Previous Screen to open the previous screen. For example, if the window is divided into 4, the first screen shows channels 1 to 4, and clicking**Next screen**(Next Screen), you can view channels 5 to 8.
Next screen	
Add Camera	Opens the page**Camera List**(Camera List). For details, see "5.7 Configuring Remote Devices". This parameter appears in the right-click menu only after setting at least one channel of type**IP**on**Main menu**> **CAMERA**>**Channel type** (Main Menu > CAMERA > Channel Type).
Manual control	● By selecting**Registration mode**(Record Mode), you can configure the recording mode to **Automatic**(Car) or**Manual**(Manual), or stop recording. You can also enable or disable snapshot capture. ● By selecting**Alarm mode**(AlarmMode), you can configure the alarm output settings.
Live mode	● Select the option**General**(General) to set the default layout of the live view screen. ● Select**Face**(Face) to show snapshots of detected faces at the bottom of the live view screen.
Auto focus	Move the cursor over a channel window and right-click to open the context menu, then click **Auto focus**(Auto Focus). 📖 Not all cameras support this feature.
Image	Opens the page**Image**(Image), where you can adjust the color of the video image.
Camera Properties	Click to edit camera properties.
Secondary door	Click to switch to additional screen control.

5.2.5 AI-based preview mode

You can view snapshots of detected faces and comparison results between detected faces and faces in the database, as well as play back recorded image files.

To activate the AI preview mode, the face detection function must be enabled. For details, see "5.12.2.1 Face Detection".

Right-click on the live view screen to bring up the context menu, then select**Live mode**>**AI Mode**(Live Mode > AI Mode). At this point, the AI preview mode page is displayed.

Figure 5-38 Live View
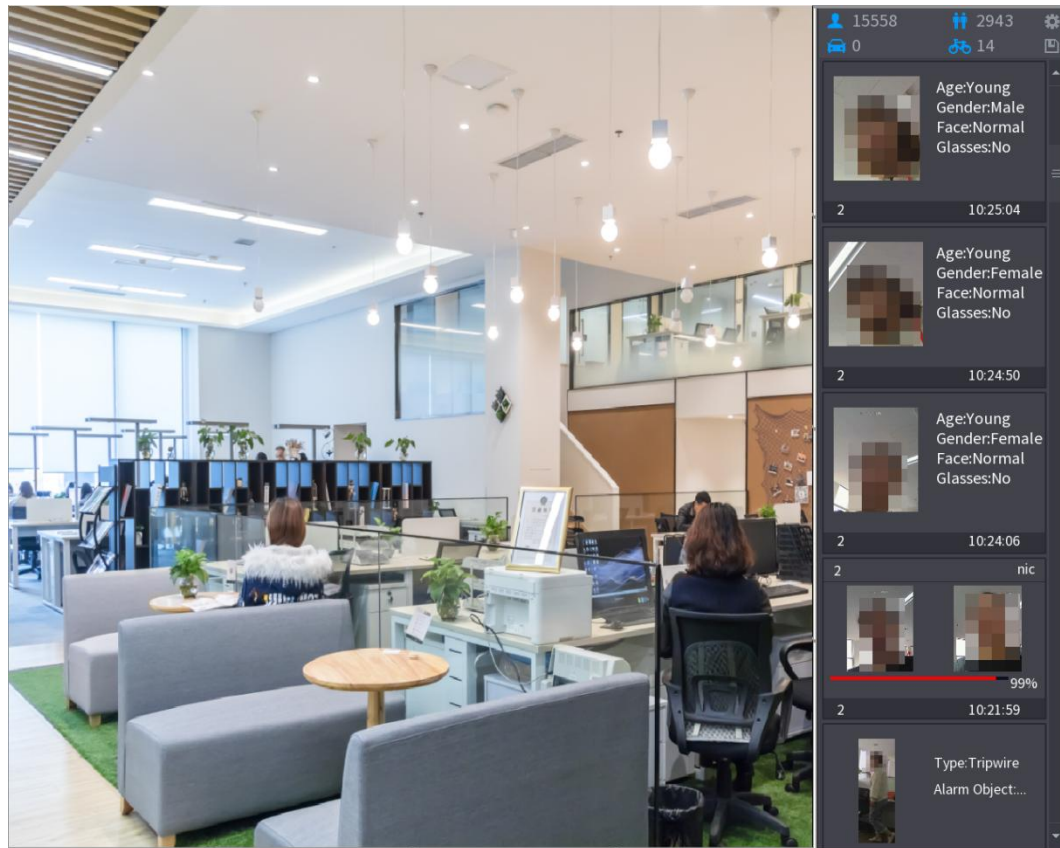
- **15558** : indicates the number of faces detected between 00:00 and midnight.

- **2943** : indicates the number of people detected between 00:00 and midnight.

- **0** : indicates the number of motor vehicles detected between the hours of 00:00 and midnight.

- **14** : indicates the number of non-motor vehicles detected between the hours of 00:00 and midnight.

- : Click this icon and select the facial attributes you want to display in the AI preview mode. A maximum of four attributes can be displayed.

- : Click this icon to export the count report in csv format. The information

  present in the report include date, start time, end time and the number of people, vehicles and faces. The report name is based on the following format: "device name_XVR_IA_statistics_start time_end time.csv".

Figure 5-39 Properties
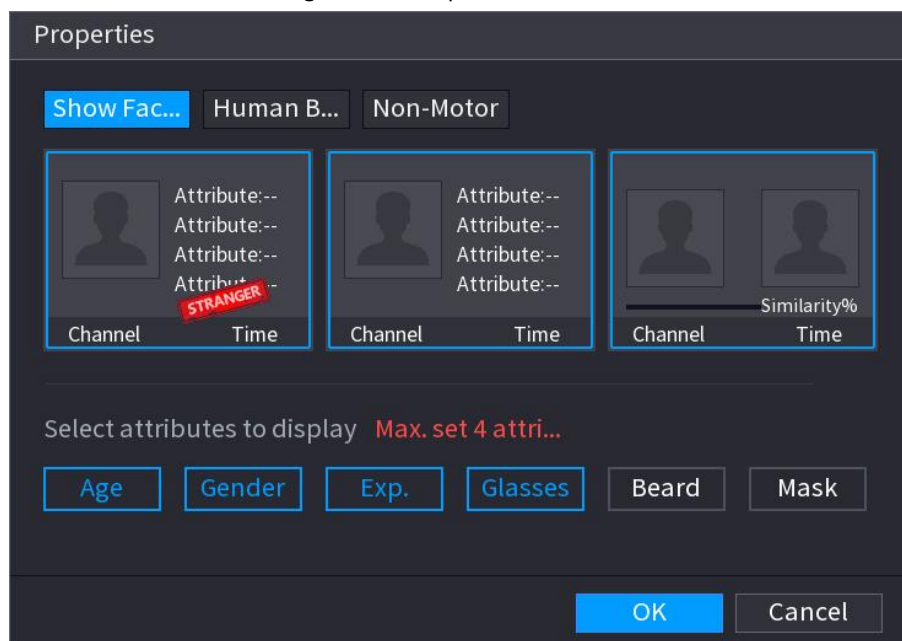
5.2.6 Channel Sequence

Preliminary information

You can adjust the sequence of channels shown on the live page according to your needs.

After a restore from the settings Offactory, there page Ofvisualization liveshow thereSequence of the channels default.

Procedure

Step 1: Right click on the live view page and select**Sequence** (Sequence).

📖

● A time selected the option **Sequence** (Sequence), The system show The number maximum Of subdivisions from the window supported from the DVR.

● There page displayed show Alone The name And The number Of channel of the devices remote added. 🟢 indicates That The device remote And line; 🔴 indicates That The device remote And offline.

Figure 5-40 Sequence

Step 2: Adjust the channel sequence.

● Drag a channel to the desired split.

● Drag a window subdivision onto another subdivision to change the sequence.

You can view the channel sequence by the channel number shown in the lower right corner of the split.

Figure 5-41 Editing the sequence
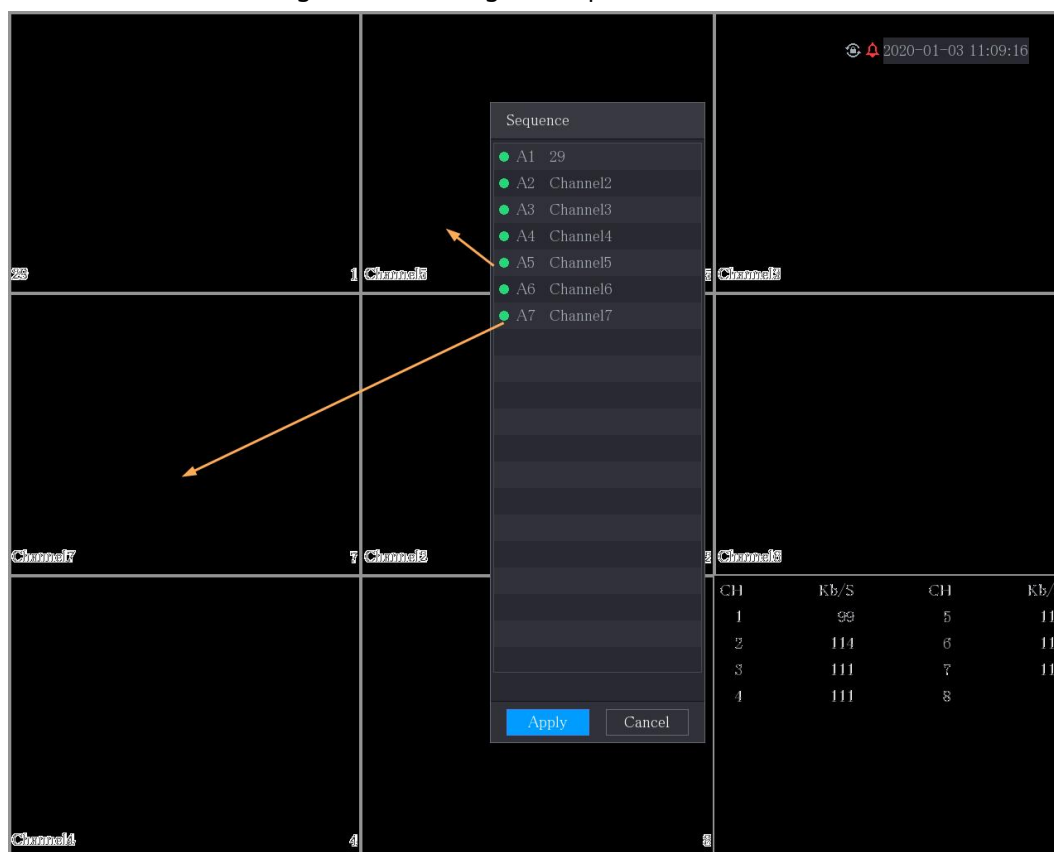
5.2.7 Color Settings

You can adjust the color effects of the video image, such as sharpness, brightness, and contrast. The parameters vary depending on the type of camera connected. The operations illustrated below take an analog channel as an example.

The parameters shown on the page vary depending on the camera.

In the live view screen, right-click the analog channel to pop up the context menu, then select**Image**(Image). The page is displayed. **Image**(Image).

Figure 5-42 Image

Table 5-15 Image settings

Parameter	Description
Model	If there is no connection, or if the connection fails, the message is displayed**unknown**(unknown); otherwise, the front-end device model is displayed.
Period	Allows you to divide the 24 hours into two time periods and configure the related color settings.
Actual time	Enable the function and set the duration of each period.
Sharpness	Adjusts the sharpness of the edges of the image. The higher the value, the more noticeable the edges of the image will be and the more noise there will be. The value can vary between 1 and 15. The default is 1.
Tone	Adjusts the hue of the image. Values range from 0 to 100. The default setting is 50.
Brightness	Adjusts the brightness of the image. The value can vary between 0 and 100. The default setting is 50. The higher the value, the brighter the image. You can adjust this value when the overall image seems too dark or too bright. However, the image may become blurry if the value is set too high.

Parameter	Description
	It is advisable to choose a value between 40 and 60.
Contrast	Adjusts the contrast of the image. The higher the value, the more obvious the contrast between the light and dark areas. You can adjust this value when the contrast is not obvious. However, if the value is set too high, the dark areas may become even darker and the light areas may become overexposed. If the value is too small, the image may become blurry. The value can vary between 0 and 100. The default setting is 50. It is recommended to choose a value between 40 and 60.
Saturation	Allows you to adjust the color hues. The higher the value, the lighter the color. This value does not affect the overall brightness of the image. The value can vary between 0 and 100. The default setting is 50. It is recommended to choose a value between 40 and 60.
Color mode	In the color mode list, you can choose an option from: Normal, Soft, Bright, Vivid, Neutral, Custom 1, Custom 2, Custom 3, and Custom 4. Sharpness, hue, brightness, contrast and saturation values will be automatically adjusted based on the selected color mode.
Image EQ	Enhance the image effect. Adjust the effect value. ● By clicking on 🔄, the image effect is optimized automatically. ● By clicking on 🔒, the effect settings are blocked. 📖 The function is supported by analog HD channels only.
Position	Adjusts the position in the channel window where the image is displayed. The value indicates pixels. The default value is 16. 📖 The function is supported by analog channels only.
Customize	Four color modes can be customized. 1. Click on**Customize**(Custom). The page is displayed. **Custom color**(Custom Color). 2. In the list**Color mode**(Color Mode), select a value, for example**Custom 1**. Then, configure the sharpness, hue, brightness, contrast and saturation settings. Selecting **All**(All) the configuration will be applied to all four custom color modes. 3. Click on**OK**. 4. On the page**Image**(Image), in the list**Color mode**

Parameter	Description
	(Color Mode), you can select the selected color mode.

5.2.8 Live View Settings

5.2.8.1 Configuring display settings

You can configure various display settings, such as time and channel name overlay, image transparency, and resolution.

Procedure

Step 1: Select**Main menu**>**VIEWING**>**Viewing**.(Main Menu > DISPLAY > Display)

Figure 5-43 Display settings
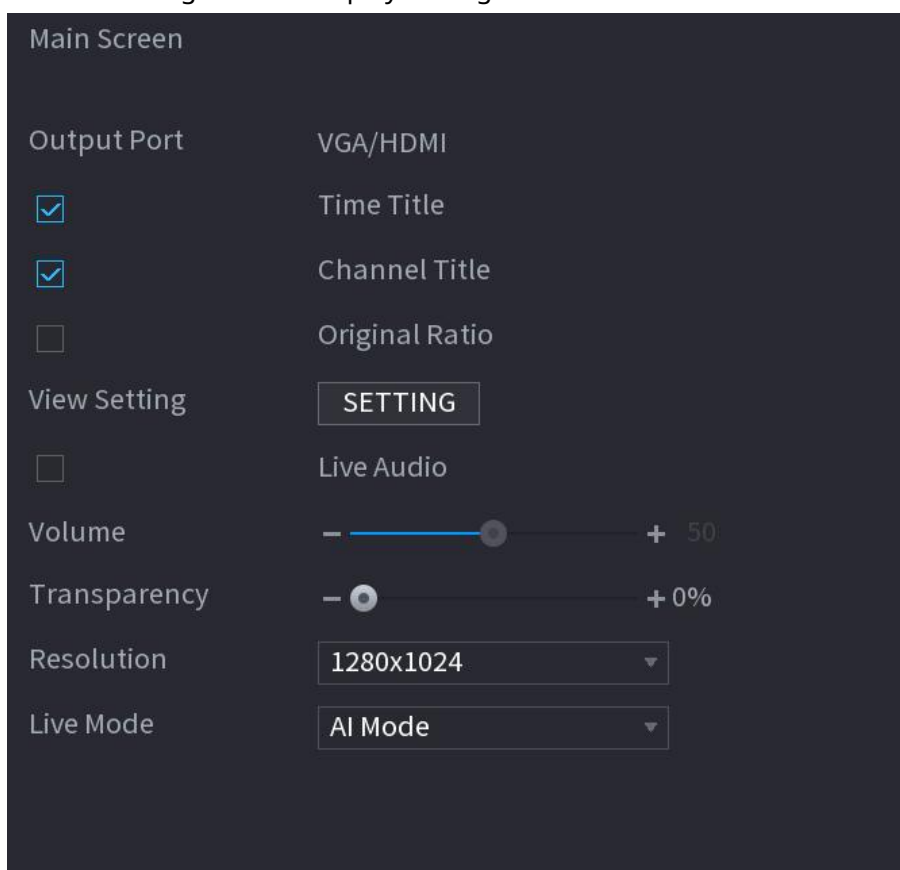
Step 2: Configure display parameter settings.

Table 5-16 Display parameters

Parameter		Description
Main screen	Exit door	Indicates the main screen port.
	Overlapping of the text	By selecting the checkbox **Time overlay** (Time Title), the system time is displayed in all channel windows on the home screen.

Parameter		Description
		live view. To hide the time, uncheck the checkbox.
	Channel Title	By selecting the checkbox **Channel Overlay**(Channel Title), channel name, channel number and recording status are displayed in all channel windows on the live view screen. To hide the time, uncheck the checkbox.
	Original proportions	By selecting the checkbox **Original proportions**(Original Ratio), the video image is displayed in its original size in the channels window.
	Settings of visualization	Click on**SETTINGS(**SETTING**)**to enable the AI rule, IVS target selection rectangle and SMD rule on the live page.
	Live audio	Select the checkbox**Live audio** (Live Audio) to enable the audio adjustment function in the channel window of the live view screen.
	Volume	Move the slider to adjust the live audio volume.
	Transparency	Allows you to configure the transparency of the graphical user interface (GUI). The higher the value, the more transparent the GUI will be.
	Resolution	Allows you to select the video resolution. The default resolution of the VGA and HDMI ports is 1280 × 1024. Some of the resolution options may not be supported by the HDMI port.
	Live mode	● General: No information is shown in the channels window. ● AI Mode: Snapshots of detected faces are displayed. This feature is only available on some models.
Secondary screen	Ability	Enable the additional screen function. Once the function is enabled, you can select the screen port

Parameter		Description
		additional. The other port is automatically assigned to the main screen.
	Exit door	Allows you to select either the VGA or HDMI port as the output for a secondary monitor. For example, selecting the HDMI port as the output for the additional display automatically makes the VGA port the primary display output.
	Resolution	Allows you to select the video resolution. The default resolution of the VGA and HDMI ports is 1280 × 720. Some of the resolution options may not be supported by the HDMI port.
	Show message	If you activate the option, the secondary screen shows messages of alarms that are activated.

● The main menu does not appear on the additional screen.
● If you do not activate the additional screen function, the VGA and HDMI ports show the same image.
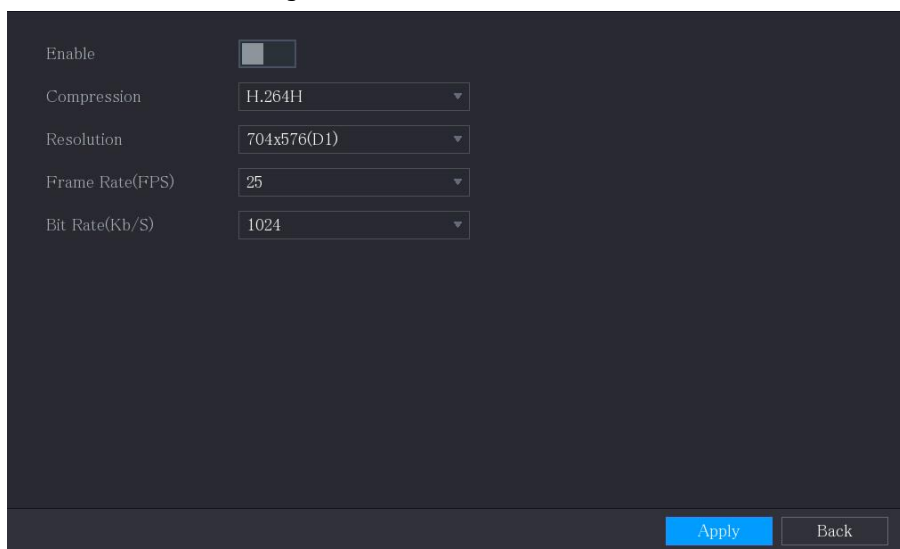
5.2.8.2 Configuring channel zero settings

You can view multiple video sources on one channel on the web side.

Procedure

Step 1: Select**Main menu**>**VIEWING**>**Channel Zero**(Main Menu > DISPLAY > Zero-Channel).

Figure 5-44 Channel zero

Step 2: Configure channel zero parameter settings.

Table 5-17 Channel zero parameters

Parameter	Description
Ability	Enable the zero channel function.
Compression	In the list**Compression**(Compression), select the video compression standard based on the capabilities of your device. The default is H.265.
Resolution	Select the video resolution from the list**Resolution**(Resolution). The default is 704 × 576 (D1).
Frequency of frames (FPS)	Select a value between 1 and 25 for PAL or 1 and 30 for NTSC. The actual range available depends on the capabilities of your device.
Speed of transmission (Kb/s)	The default is 1024 kbit/s. The actual available range depends on the device capabilities and frame rate.

Step 3: Click on**Apply**(Apply) to save the settings. On the live web page, click ⬜ ⊞ ⊞ ⊟ ⊞ ⊞ ⊞ ⊞ 25 and select one of the multi-channel mode to display local video image.

5.2.8.3 TV Setup

You can adjust the top, bottom, left, and right border margins, as well as the brightness of the monitor connected to the device's video output.

This   function   is Available   Alone on some models.

Procedure

Step 1: Select**Main menu**>**VIEWING**>**TV adjustment**(Main Menu > DISPLAY > TV Adjust).

Figure 5-45 TV Adjustment
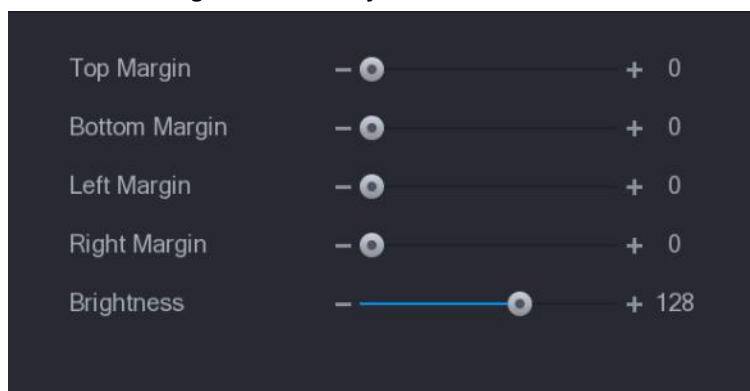
Step 2: Configure the parameters according to the actual situation. Step 3: Click on**Apply**(Apply) to complete the setup.

5.2.9 Configuring settings for the tour function

You can set up a tour of selected video channels to repeat playback. Videos are shown in turn based on the channel groups configured in the tour settings. The system shows a channel group for a specific period of time, then automatically switches to the next channel group.

Procedure

Step 1: Select**Main menu**>**VIEWING**>**Tour settings**(Main Menu > DISPLAY > Tour Settings).

Figure 5-46 Main screen
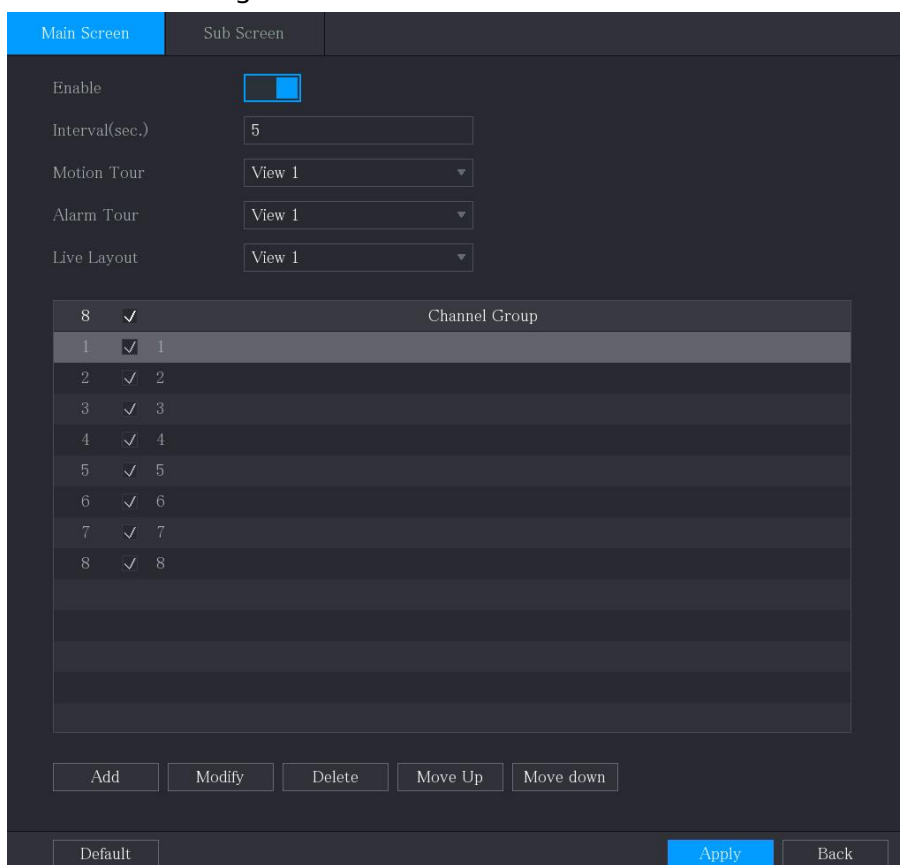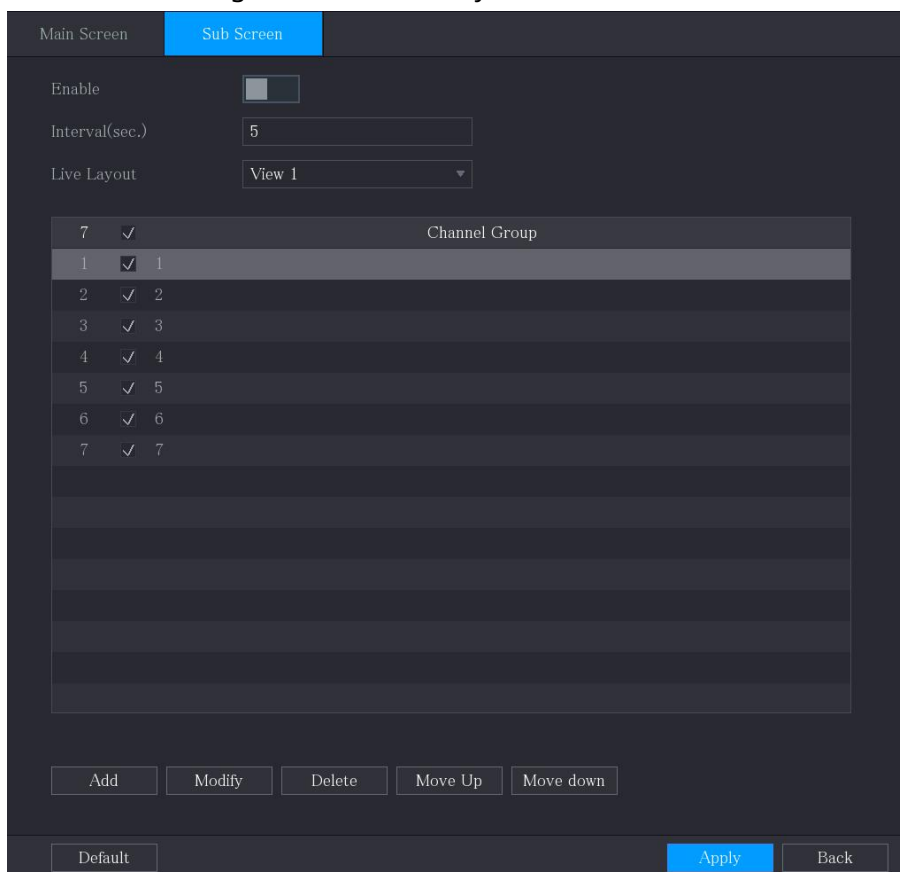
Figure 5-47 Secondary screen

Step 2: Configure the tour parameter settings for the**Main screen**(Main Screen) and for the**Secondary screen**(Sub Screen).

Table 5-18 Tour function parameters

Parameter	Description
Ability	Enable the tour function.
Interval (seconds)	Enter the duration of time each channel group will remain on screen. You can choose a value between 5 and 120 seconds; the default is 5 seconds.
Tour movement/tour alarm	Select View 1 or View 8 for options**Movement tour**(Motion Tour) and**Alarm tour**(Alarm Tour) (system alarm events).
Layout	In the list**Live View Layout**(Live Layout), select**View at 1**(View 1),**4-way view**(View 4),**8-eye view**(View 8) or another mode supported by your device.
Channel Groups	Show all channel groups based on the current window split settings. ● Adding a channel group: Click**Add**(Add) in the pop-up window **Add group**(Add group), then select the channels you want to group and click**Save**(Save). ● Deleting a channel group: Select the checkbox of a channel group and click**Delete**(Delete). ● Editing a channel group: Select the checkbox of a channel group and click**Edit**(Modify) or double

Parameter	Description
	click on the group. The dialog box appears**Edit channel group**(Modify Channel Group). You can change the channel grouping. ● Click on**Move up**(Move up) or**Move down**(Move down) to change the position of the channel group.

Step 3: Click on**Apply**(Apply) to save the settings.

● For activate or deactivate there function tour, use The key left of the mouse or press Shift For set up the icon in the 'corner in high to right from the screen Of visualization live on ⟳ (change from the Images admitted) or ⚙ (change from the Images Not admitted).

● On the bar Of navigation, Do click on 🖵 For enable The tour And Do click on 🖵 For disable it.

Related Operations

● Adding a channel group.

   1. Click on**Add**(Add).
   2. Select the channels to group for the tour.

   If Yes desires select more Of a channel, in the 'list **Layout visualization live**(Live Layout) Not select **View to 1**(View 1).

   3. Click on**OK**.

● Editing a channel group.
   Double-clicking on a channel group displays the page**Edit channel group** (Channel Group Modified). You can modify the channel group and click on**OK**to complete the setup.

5.2.10 Quick Actions Bar

You can quickly access the function modules on their title bars and the settings menus via the shortcut icons on the Quick Actions bar.
In this section, the functions**ALARM**(ALARM) and**CAMERA**(CAMERA) are used to exemplify how to quickly access other modules.

Shortcut icons on function title bars

Click on**ALARM**(Alarm) to open the page**ALARM**(Alarm).

Figure 5-48 Alarm
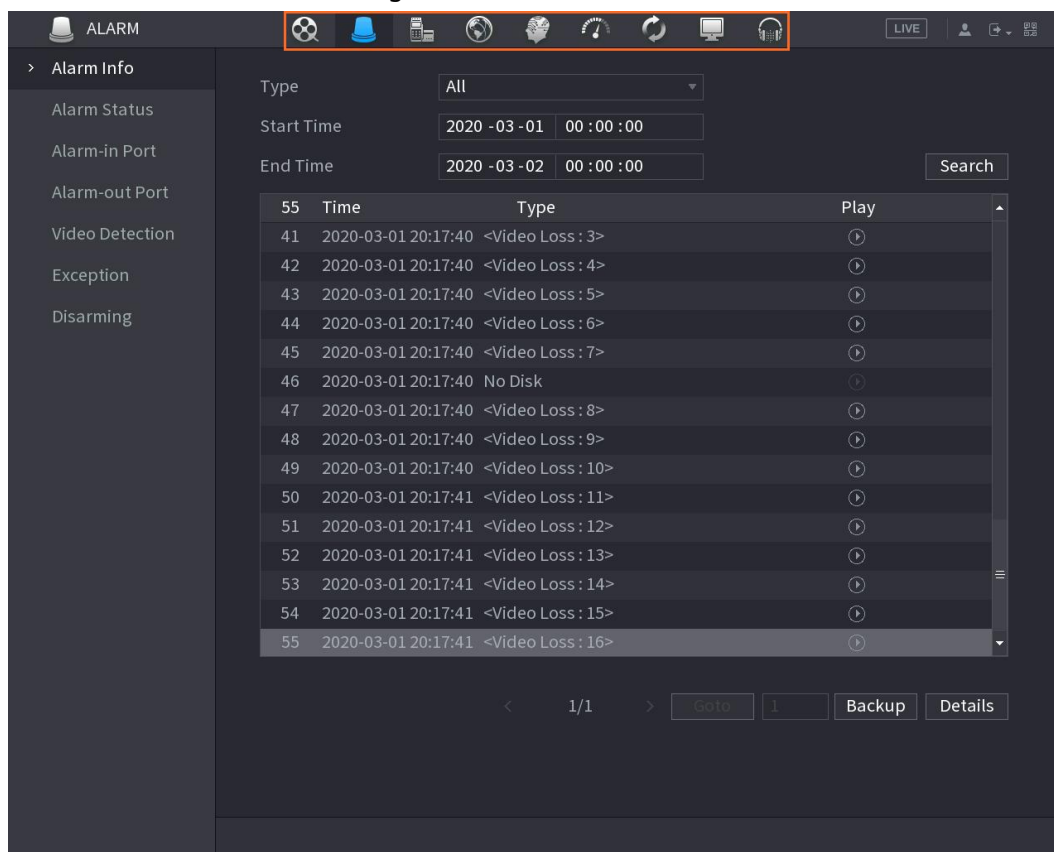
Table 5-19 Alarm parameters

Icon	Description
	Click on the icon to open the page**Research**(Search).
	Click on the icon to open the page**Alarm**(Alarm).
	Click on the icon to open the page**IA**.
	Click on the icon to open the page**POS**.
	Click on the icon to access the page**Net**(Network).
	Click on the icon to open the page**MAINTENANCE** (MAINTENANCE).
	Click on the icon to open the page**Backup**.
	Click on the icon to access the page**Viewing** (Display).
	Click on the icon to access the page**Audio**.

Shortcut icons on the settings menu

Click on**CAMERA**(CAMERA) to open the page**CAMERA**(ROOM).

Figure 5-49 Camera
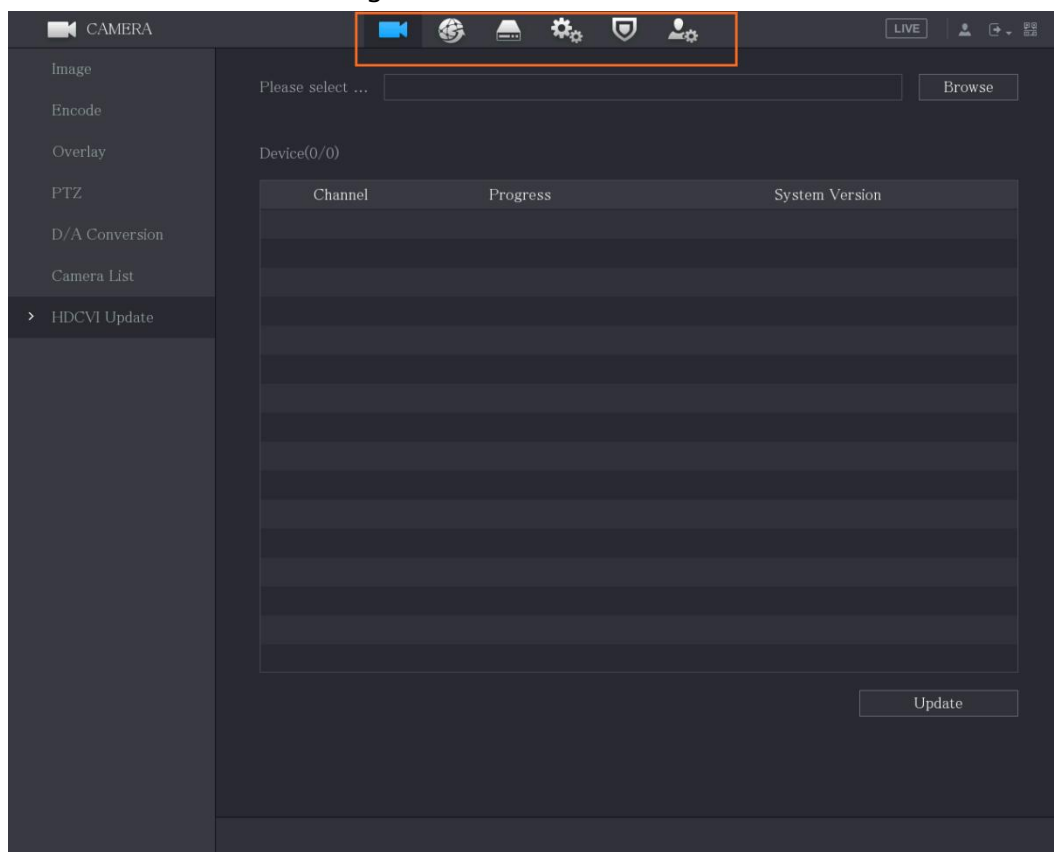
Table 5-20 Camera parameters

Icon	Description
	Click to open page**Camera**(Room).
	Click to access the page**Net**(Network).
	Click to access the page**Archiving**(Storage).
	Click to access the page**System**(System).
	Click to access the page**Safety**(Security).
	Click to access the page**Account**.

5.3 Opening the main menu

Right-click on the live view screen to open the context menu. Click**Main menu**(Main Menu), then log in to the system.

Figure 5-50 Main menu
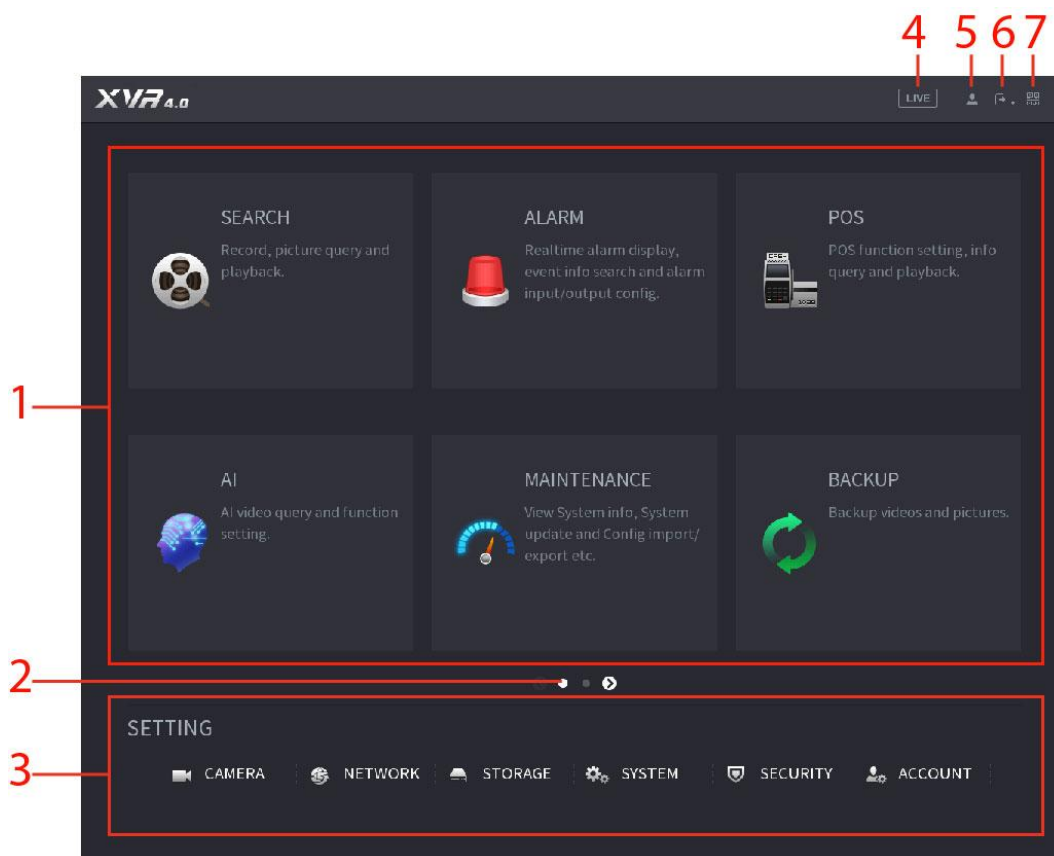
Table 5-21 Main menu description

N.	Icon	Description
1	Names of the functions	The names of nine functions are present:**RESEARCH**, (SEARCH) **ALARM**(ALARM),**POS**,**IA**(TO THE),**MAINTENANCE** (MAINTENANCE),**BACKUP, VIEWING**(DISPLAY), **IoT**And **AUDIO**. Click on a name to open the corresponding configuration page.
2	Icons for change page	The icon ⬚ indicates the current page of the main menu. click on ⬚ Click to move to the next page, or click to change ◀ or▶ pages.
3	Menu of the settings	It includes six configurations through which you can change settings and view information related to: camera, network, storage, system and account.
4	Live	Click on [LIVE] to access the screen live viewing.
5	👤	By moving the cursor over the 👤, the account is shown user icon in use.
6	➡	Click on ➡ to select the desired option from**You go out** (Logout),**Restart**(Reboot) or**Turn off**(Shutdown).
7	▦	View the QR code of the mobile client and device serial number. ● Mobile Client: Using your phone, scan the QR code to add your device to the client

N.	Icon	Description
		for mobile. At this point, you can access the device from your mobile phone. ● Device SN: Get the device serial number by scanning the QR code. Log in to the P2P management platform and add the device serial number to the platform. Then you can log in and manage the device over the WAN. For more details, please refer to the P2P operation manual. You can also configure the P2P function in the local settings.

5.4 PTZ Camera Control

Mechanical PTZ platforms support cameras, act as protective housings, and allow remote control. A PTZ system can move horizontally and vertically to provide a full view of the camera.

Before Ofuse   a system PTZ, to check Thatis connected to the device.

5.4.1 Configuring PTZ settings

Preliminary information

Before use, you need to configure PTZ connection.

● Local connection: RS-485 port to connect a speed dome or coaxial cable to connect a coaxial camera.

● Remote connection: local network.

Procedure

Step 1: SelectMain menu>CAMERA>PTZ(Main Menu > Camera > PTZ).

Figure 5-51 Access
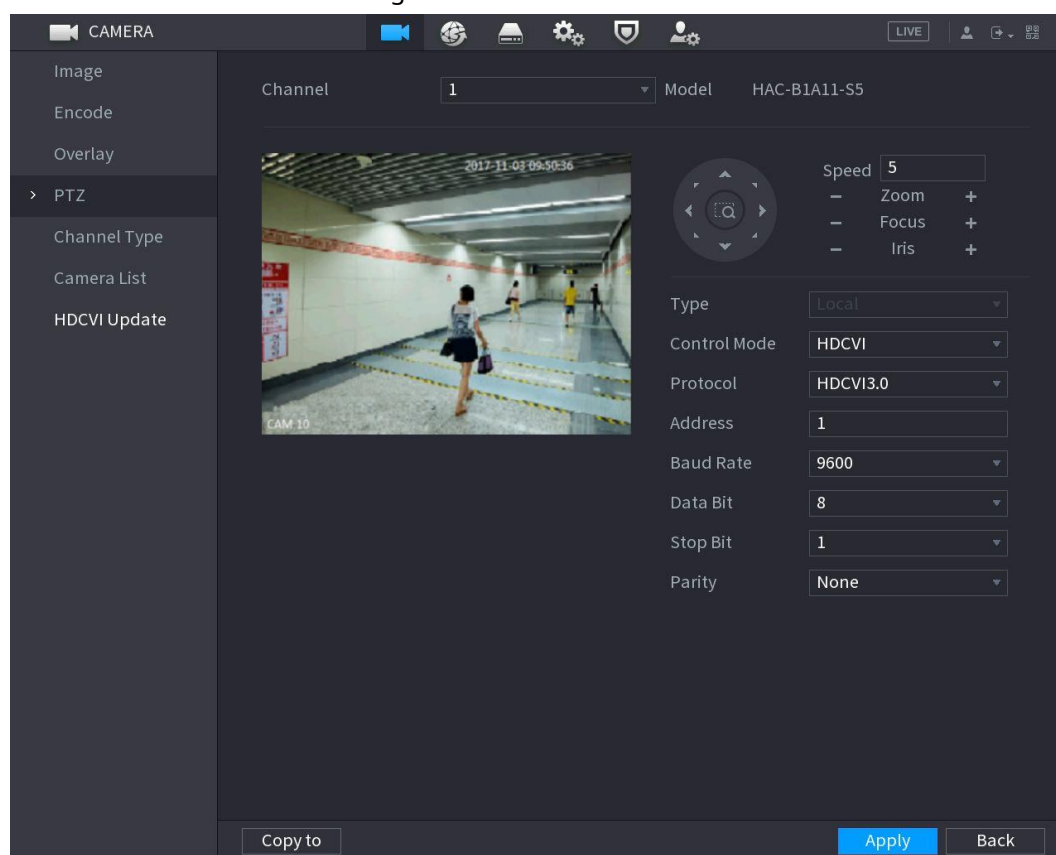
Step 2: Configure the parameter settings for PTZ connection.

Table 5-22 Description of parameters for PTZ connection

Parameter	Description
Channel	In the list**Channels**(Channel), select the channel you want to connect to the PTZ camera.
Type	● Local: Connection via RS-485 port or coaxial cable. ● Remote Device: Connect via network by adding the IP address of the PTZ camera on the device.
Control Mode	In the list**Control Mode**(Control Mode), select**Serial port**(Serial Port) or**HDCVI**. For HDCVI series products, select**HDCVI**. The control signal is sent to the PTZ system via the coaxial cable. In serial mode, the control signal is sent to the PTZ system via the RS-485 port.
Protocol	In the list**Protocol**, select the PTZ camera protocol. For example, select**HDCVI3.0**.
Address	In the box**Address**(Address), enter the address of the PTZ camera. The default value is 1. The address entered must match the one configured on the PTZ camera; otherwise, you will not be able to control the PTZ camera from the device.

Parameter	Description
Baud rate	In the list**Baud rate**(Baud Rate), select the baud rate of the PTZ camera. The default value is 9600.
Bits of data	The default value is 8.
Stop bits	The default is 1.
Equality	The default value is NONE.

Step 3: Click on**Apply**(Apply) to save the settings.

📖

Do click on**Copy on**(Copy to)For copy the settings on others channels.

5.4.2 Using the PTZ Control Panel

The PTZ control panel allows you to perform various operations, such as moving the camera in eight directions, adjusting the zoom, focusing the frame, and changing the iris settings.

Basic PTZ control panel

Right click on the live view screen and select**PTZ**. The system displays the PTZ control panel.

Figure 5-52 PTZ control panel
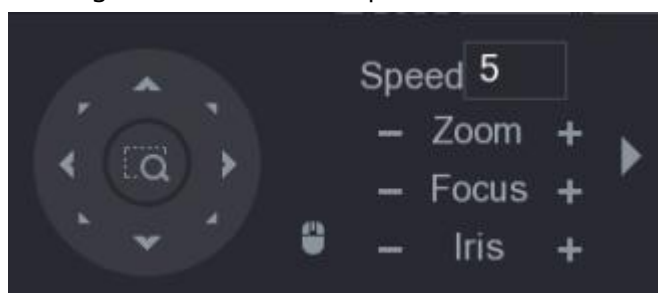
📖

The functions check come on buttons show yourself in grey Not I am supported from the system.

Table 5-23 PTZ control panel description

Parameter	Description
Speed	Allows you to control the speed of movements. As the value increases, the speed of movements increases.
Zoom	▬: Zoom out. ✚: Zoom in.
Focus	▬: Moves focus away. : ✚Moves focus closer.
Diaphragm	▬: darkens the image. ✚: brightens the image.
PTZ movement	Supports eight directions.

Parameter	Description
🔍	Quick positioning button. ● Placement: Click on 🔍 to access the quick positioning screen, then click any point on the live view screen to make the PTZ system rotate to that point and move it to the center of the screen. ● Zoom: On the quick positioning screen, drag to draw a box on the view. You can then zoom the box. - Drag up to zoom out and down to zoom in. - The smaller the box, the greater the zoom effect. 📖 This feature is only available on some models and can only be controlled using the mouse.
🖱	Click on 🖱 to control the four directions (left, right, up and down) of PTZ movement via mouse.
▶	Click on ▶ to expand the PTZ control panel.

Expanded PTZ control panel

On the basic PTZ control panel, click ▶ to expand the panel and access options Additional.

Figure 5-53 Expanded PTZ control panel
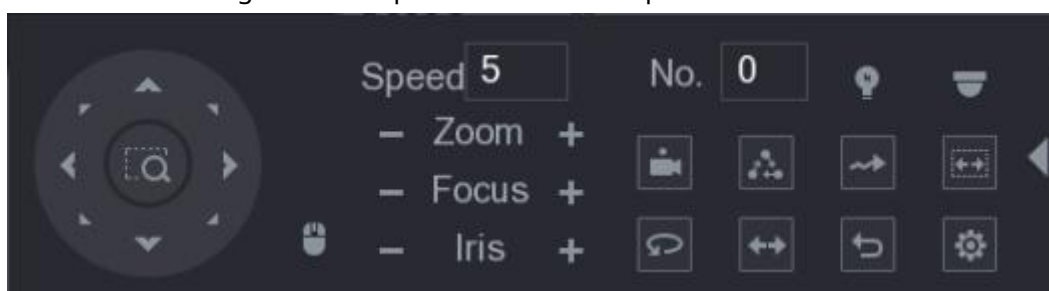
📖
● The functions check come on buttons show yourself in grey NotI am supported from the system.
● Do click with The key right For return to the panel Of check PTZ Of base.

Table 5-24 Expanded PTZ control panel description

Icon	Function
📷	Presets
⚙	Tour

Icon	Function
	Path
	Scan
	Additional functions
	Overview
	Reversal
	Reset
	Click on the icon**Auxiliary config.**(Auxiliary Config) to open the PTZ function setting page.
	Click on the icon**Open menu**(Enter Menu) to open the page **MENU USE**(OPERATION MENU).

5.4.3 Configuring PTZ functions

5.4.3.1 Configuring presets

Procedure

Step 1: On the expanded PTZ control panel, click   .

Figure 5-54 Presets
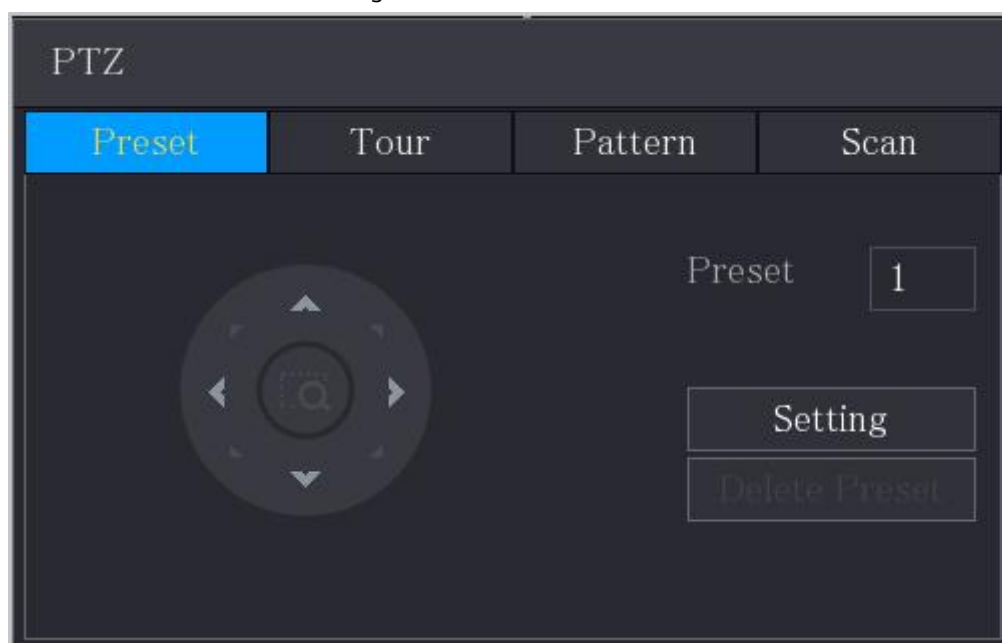
Step 2: Click the direction arrows until you reach the desired position. Step 3: In the box**Presets**, enter the value that represents the desired position. Step 4: Click on **Settings**(Setting) to complete the preset setting.

5.4.3.2 Configuring presets

Procedure

Step 1: On the expanded PTZ control panel, click Step 2: 　⚙　.

Click on the tab**Tour**.

Figure 5-55 Tour
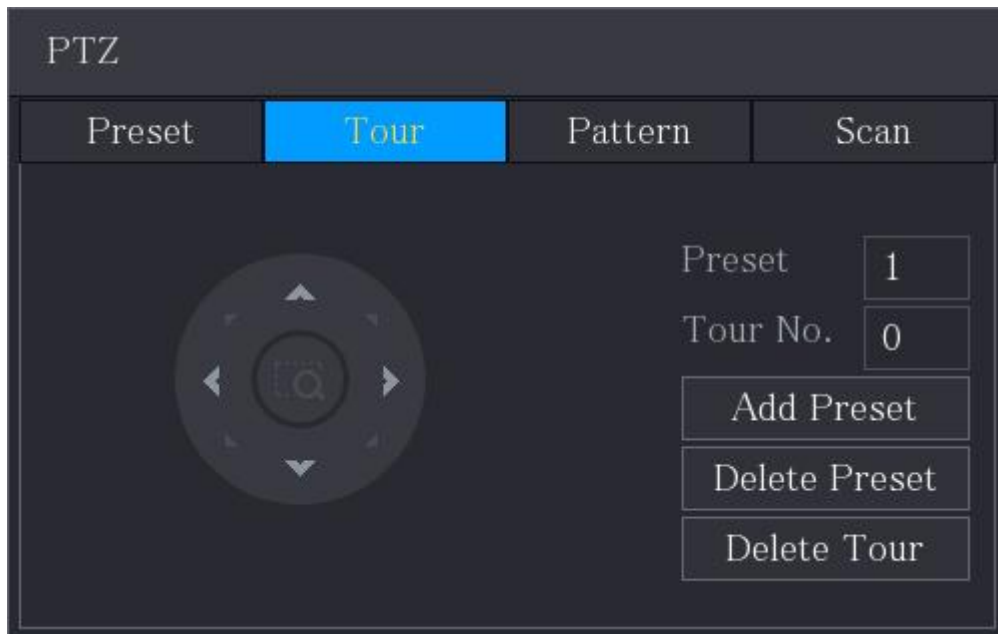
Step 3: In the box**No. of tours**(Tour No.), enter the tour number.

Step 4: In the box**Presets**, enter the preset number. Step 5: Click on

Add presets((Add Preset). Step 6: The preset is added to the tour.

📖

● A possible repeat there procedure For add others presets.
● Do click on**Delete preset** (Delete (Presets) For eliminate The preset from the tour. A possible
　repeat the operation For eliminate others presets. Some protocols Not they support
　the elimination.

5.4.3.3 Configuring sequences

Procedure

Step 1: On the expanded PTZ control panel, click Step 2: 　⚙　.

Click on the tab**Sequence**(Patterns).

Figure 5-56 Sequence
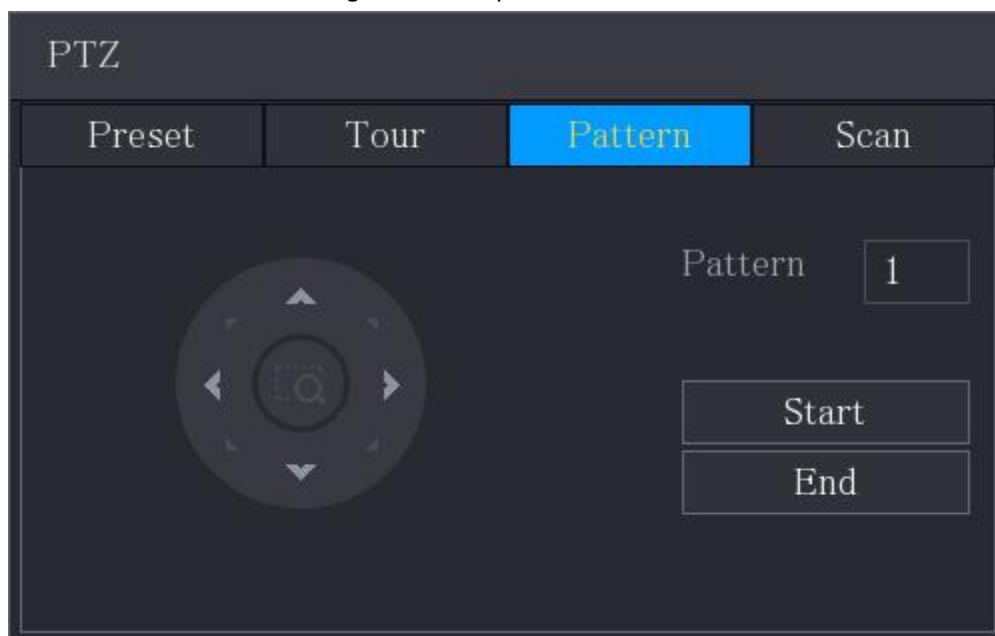
Step 3: In the box**Sequence**(Pattern), enter the sequence number.

Step 4: Click on**Start**(Start) to perform the set movements. You can access the PTZ control panel to perform operations such as zoom, focus, iris, and pan.

Step 5: On the page**PTZ**, click on**End**(End) to complete the setup.

5.4.3.4 Scan Configuration

Procedure

Step 1: On the expanded PTZ control panel, click Step 2: ⚙ .

Click on the tab**Scan**(Scan).

Figure 5-57 Scan
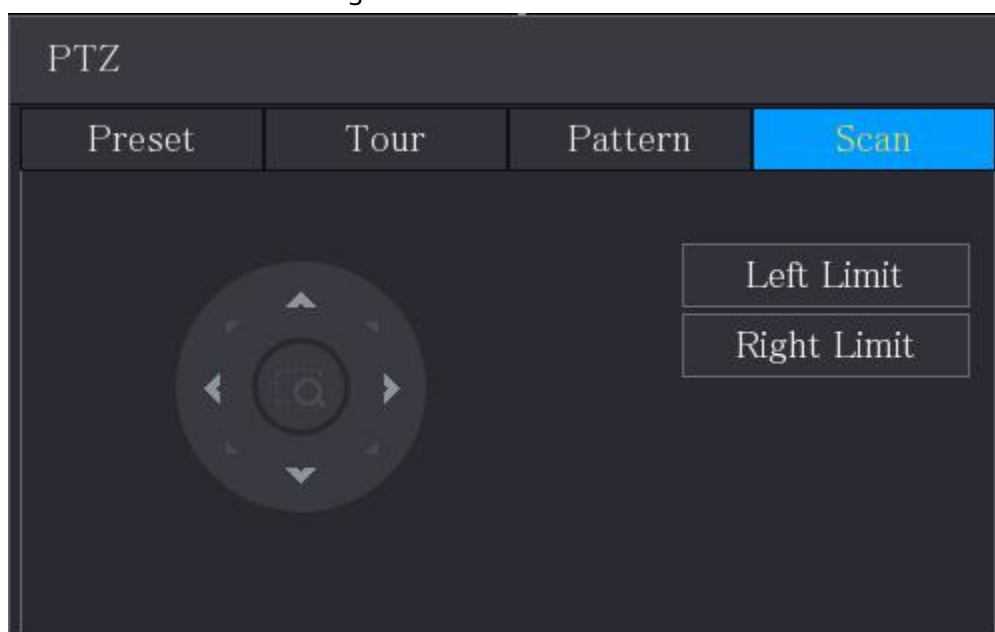
Step 3: Click the direction arrows to place the left and right boundaries.

5.4.4 Calling PTZ functions

Once the PTZ settings are configured, you can invoke the PTZ monitoring functions from the expanded PTZ control panel.

Figure 5-58 Expanded PTZ control panel
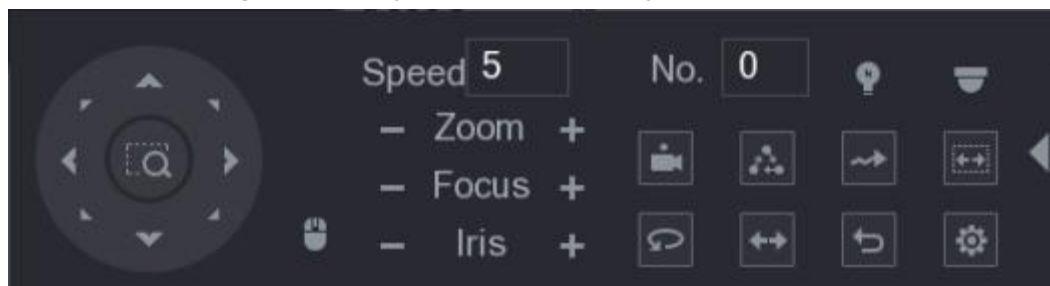
5.4.4.1 Recalling presets

Procedure

Step 1: On the expanded PTZ control panel, enter the preset number to recall in the box**N.**(No.). Step 2: Click on Step 3: Click again

to recall the preset.

to stop recalling the preset.

5.4.4.2 Recalling tours

Procedure

Step 1: On the expanded PTZ control panel, enter the tour number to recall in the box**N.**(No.). Step 2: Click on Step 3: Click again

to recall the tour.

to stop the tour recall.

5.4.4.3 Recalling sequences

Procedure

Step 1: On the expanded PTZ control panel, enter the sequence number to be recalled in the box**N.**(No.). Step 2: Click on

to recall the sequence.

Step 3: The PTZ camera moves repeatedly following the set sequence. Step 4: Click again to stop recalling the sequence.

5.4.4.4 Recalling automatic scan

Procedure

Step 1: On the expanded PTZ control panel, enter the perimeter number to be recalled in the box**N.**(No.). Step 2: Click on

.

Step 3: The PTZ camera scans along the set perimeter. Step 4: Click again to stop automatic scanning.

5.4.4.5 Calling up automatic overview

Procedure

Step 1: On the expanded PTZ control panel, click ⊡ to start the movement Horizontal.
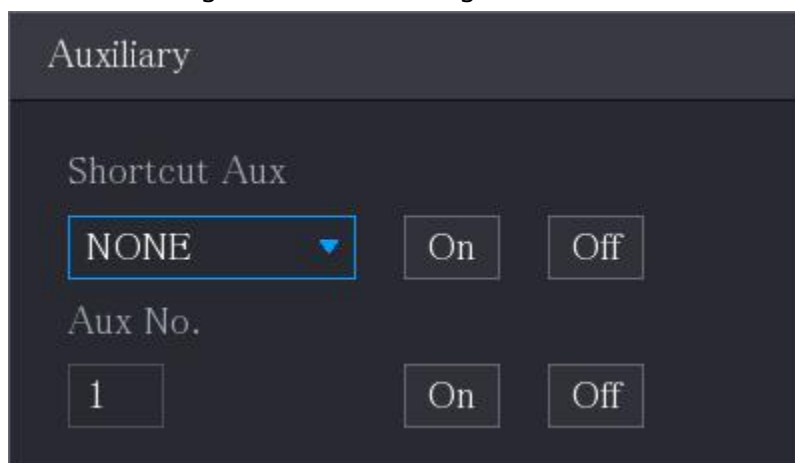
Step 2: Click again ⊡ to stop the movement.

5.4.4.6 Using the AUX button

On the expanded PTZ control panel, click ⊡.

● In the list**Aux Shortcut**(Shortcut Aux), select the option that corresponds to the applied protocol.

● In the box**N. Aux**(Aux No.), enter the number that corresponds to the AUX switch on the decoder.

Figure 5-59 AUX Settings

5.4.5 Opening the OSD menu

With a coaxial camera, you can open the OSD menu using the expanded PTZ control panel.

Procedure

Step 1: On the expanded PTZ control panel, click ⊡.

Figure 5-60 PTZ menu
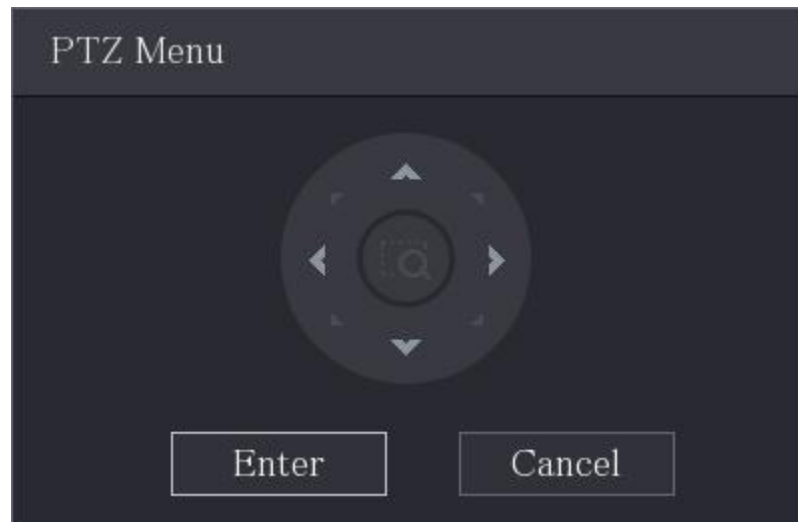
Step 2: Click on**Sign in**(Enter).

Figure 5-61 OSD
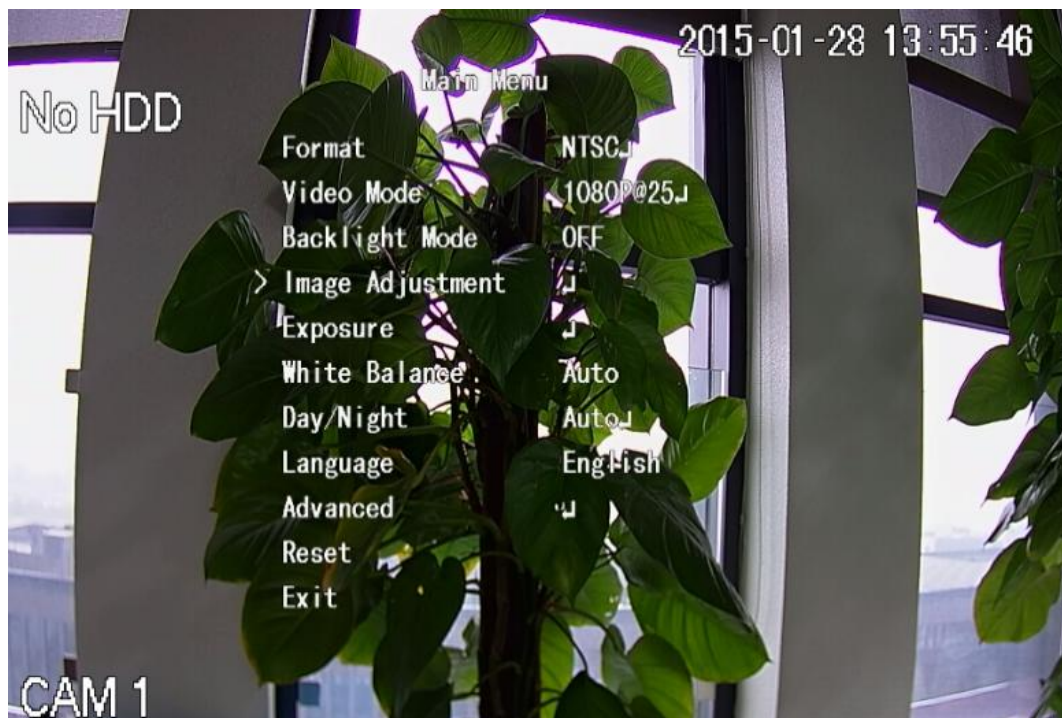
Step 3: On the page**PTZ menu**(PTZ Menu), click the arrow button to select parameters on the screen.

Step 4: Click on**Insert**(Enter) to complete the setup.

5.5 Configuring EPTZ settings

You can enable EPTZ functions in live view to track and zoom in on targets that trigger smart events, so you can observe their changes in detail.

Prerequisites

Configure intelligent events. For details, see "5.12 AI Features".

Preliminary information

📖

Not Apossible enable, disable nAnonfigure the settings EPTZ on the cameras.

Procedure

Step 1: In the main menu, click on [LIVE] to access the live view page, then right click to select**EPTZ**and click on**Active**(On). Step 2: Configure the parameters.

Click on**Trace rule**(Draw Rule) to access the IVS page, then click**Add**(Add) to add rules and to configure the EPTZ connection parameters.

Figure 5-62 EPTZ function configuration
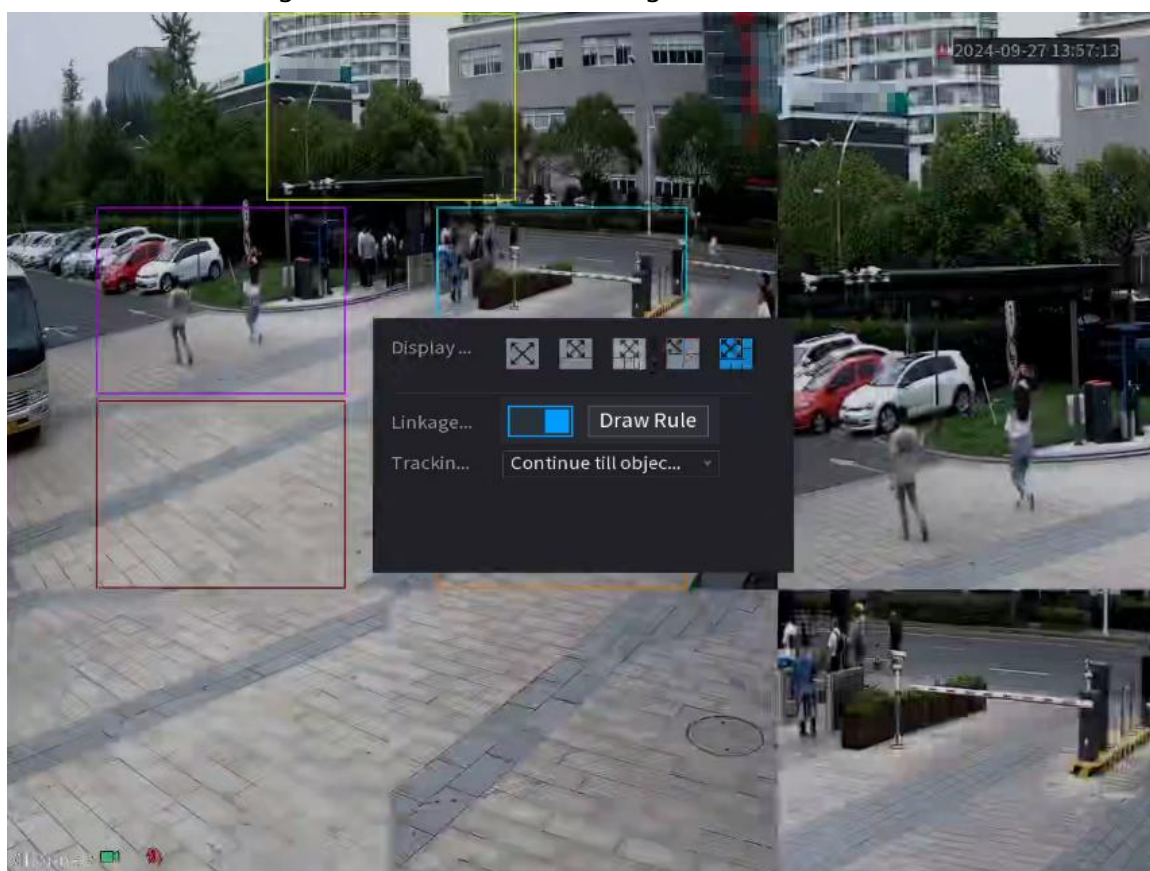
Table 5-25 Parameter description

Parameter	Description
Mode Viewing	Select the number of channels to monitor. Full Screen, 1 + 1, 1 + 3 and 1 + 5 modes are available. The default setting is Full Screen. The view pane can be modified in various ways, such as being resized, zoomed, and moved.
Trace link	Once the function is activated**Trace link**(Linkage Track), intelligent events are tracked by the PTZ system. The function is disabled by default.
Trace rule	Allows you to track IVS rules and modify their connection parameters.

Parameter	Description
Tracking duration	● **Customized**((customized)**:**allows you to manually select the tracking duration. For example, if you set a value between 30 and 60 seconds, if after tracking object A for 30 seconds, object B appears, the camera will start tracking object A; if no other objects appear while object A is being tracked, the camera will stop tracking object A after 60 seconds. ● **Continue until the object disappears**(Continue till object disappears)**:**The camera stops tracking when the detected object disappears from the image.

Figure 5-63 Configuring rules
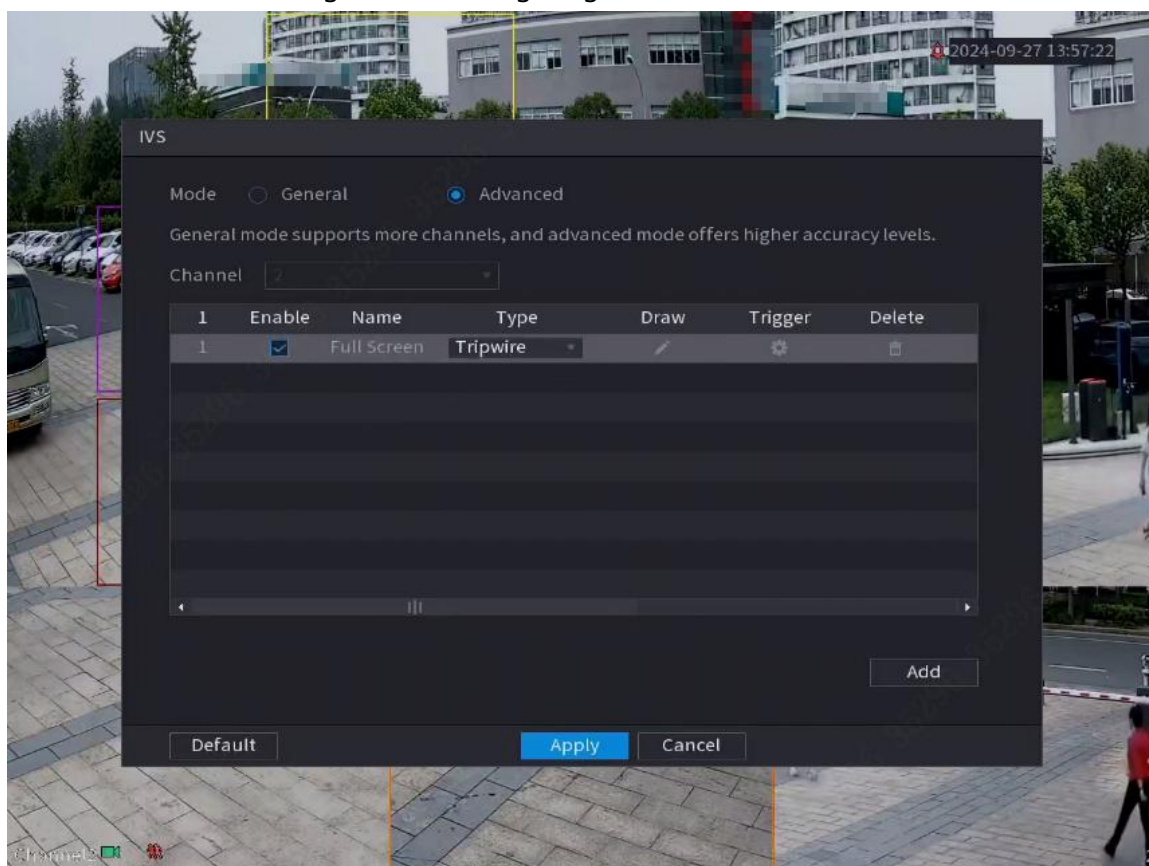
5.6 Configuring Camera Settings

5.6.1 Configuring Image Settings

You can configure image settings, such as saturation, contrast, brightness and sharpness, for all connected cameras.

5.6.1.1 General image settings

In general, you can follow the procedure below to configure image settings.

Procedure

Step 1: Select**Main menu**>**CAMERA**>**Image**(Main Menu > Camera > Image).

Figure 5-64 Analog channel
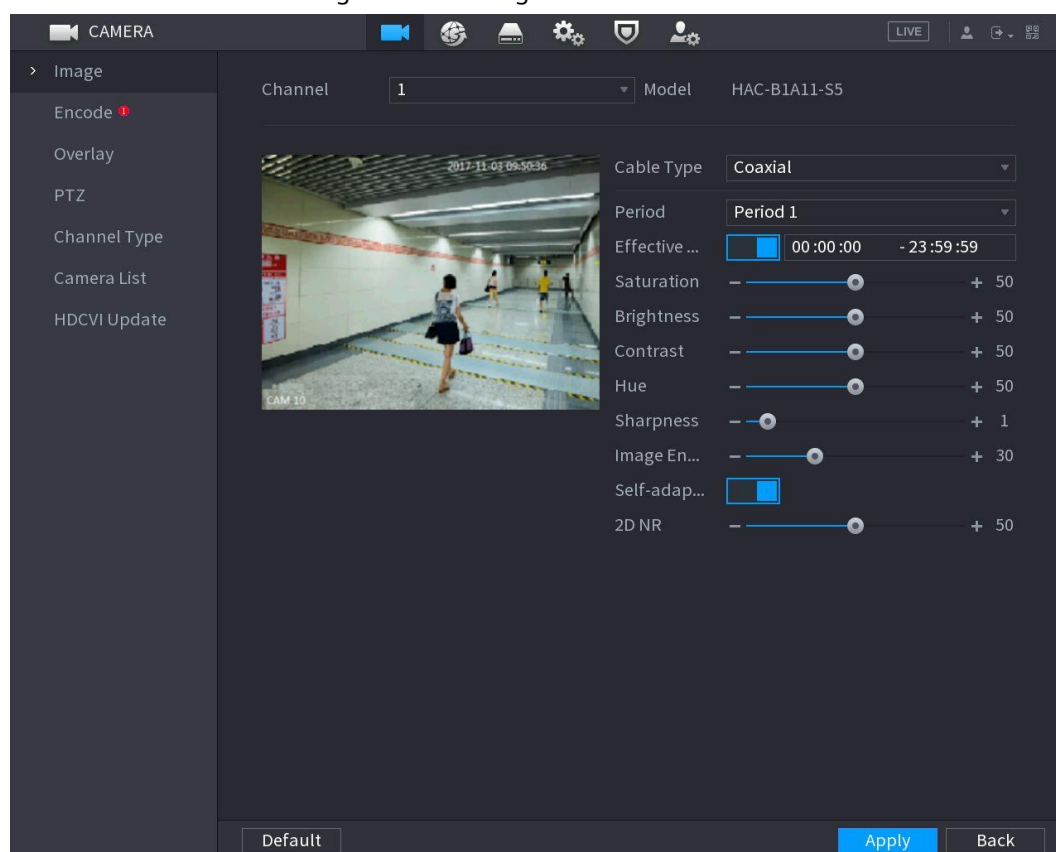
Figure 5-65 Digital channel
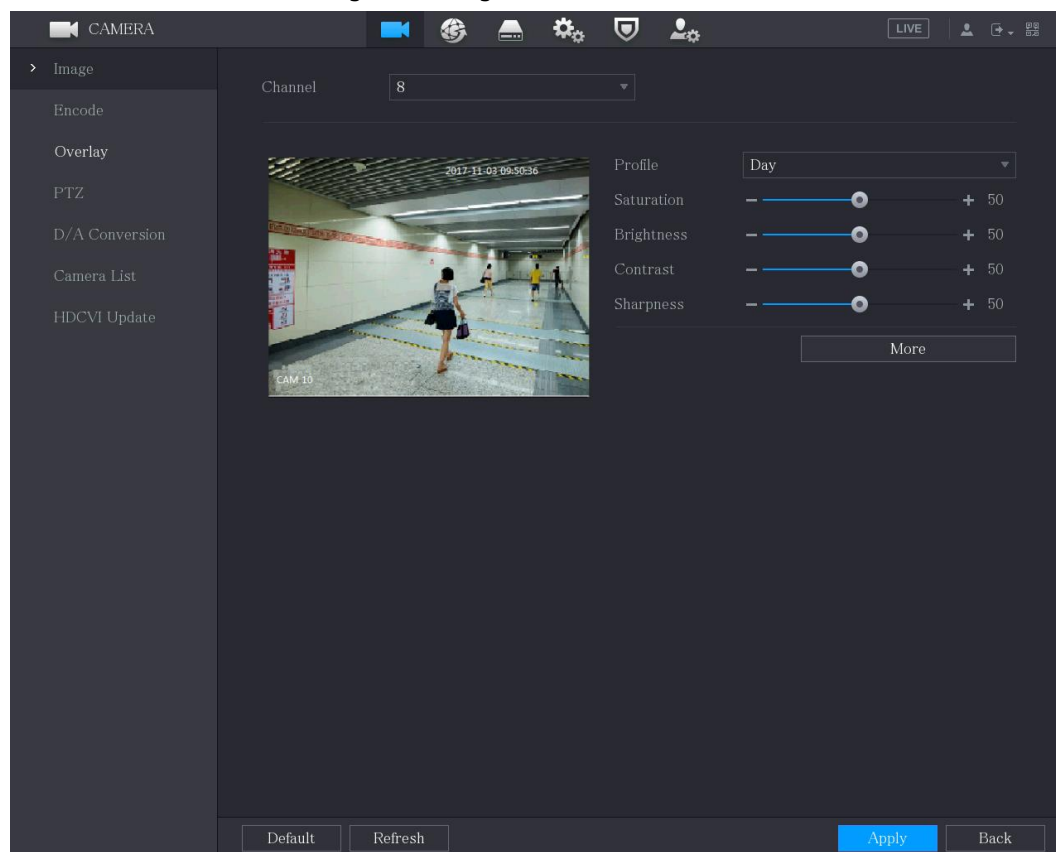
Step 2: Configure image parameter settings.

On the digital channel page, click on**Other**(More) to show additional parameters.

Table 5-26 Description of parameters for image setting

Parameter	Description
Channel	In the list**Channels**(Channel), select the channel you want to configure.
Cable type	In the list**Cable type**(Cable Type), select the type of cable used by the camera. 📖 This feature is only available on some models.
Period	In the list**Period**(Period), select a period for the image settings. The image settings will only be used during the selected period.
Effective period	Activate the effectiveness period. In the box**Effective period**(Effective Time), enter the start and end time of the selected period.
Saturation	Allows you to adjust the color hues. The higher the value, the lighter the color. This value does not affect the overall brightness of the image. The value can vary between 0 and 100. The default setting is 50. It is recommended to choose a value between 40 and 60.
Contrast	Allows you to adjust the contrast of the image. The higher the value

Parameter	Description
	set, the more obvious the contrast between light and dark areas will be. You can adjust this value when the contrast is not obvious. However, if the value is set too high, the dark areas may become even darker and the light areas may become overexposed. If the value is too small, the image may become blurry. The value can vary between 0 and 100. The default setting is 50. It is recommended to choose a value between 40 and 60.
Brightness	Adjusts the brightness of the image. The higher the value, the brighter the image. You can adjust this value when the overall image seems too dark or too bright. However, the image may become blurry if the value is set too high. The value can vary between 0 and 100. The default setting is 50. It is recommended to choose a value between 40 and 60.
Tone	Allows you to adjust the hue of the image. The value can vary between 0 and 100. The default setting is 50.
Sharpness	Adjusts the sharpness of the edges of the image. The higher the value, the more noticeable the edges of the image will be and the more noise there will be. The value can vary between 1 and 15. The default is 1.
Improvement of the image	Adjusts the image definition. The higher the value, the sharper the image, but with increased noise.
Self-adaptive NR	Adjusts the noise of a single image. This function will only be applied when it is active.
NR 2D	Reduces image noise. The higher the value, the better the image.
Configuration file	In the list**Configuration file**(Config File), select**Day** (Day),**Night**(night), **Normal**(Normal) or**Changes according to the period** (Switch By Period). The system will configure the parameters accordingly. ● Day: The configuration is applied during the day. ● Night: The configuration is applied at night. ● Normal: The configuration is applied day and night. ● Change based on time period: By selecting this option, you need to configure the sunrise and sunset time of the place of use.
Mirror	By enabling this function, the left and right sides of the video image are swapped. The function is disabled by default.
Noise reduction 3D	This function applies to images with a frame rate value set to at least 2. It reduces noise by using the information between two frames. The higher the value, the better the effect.
Reversal	● In the list**Overturning**(Flip), you can select**180°**to change the video image display. ● The default setting is**No rollover**((No Flip).

Parameter	Description
Light	In the list**Light**(Light), select**Close**(Close) or**Ability**(Enable) to choose whether or not to use backlight compensation.
Scene Mode	Sets the white balance to adjust the overall tone of the image. The default setting is**Automatic**(Car). ● Auto: Automatically applies white balance to the colors in the image so that they appear normally. ● Sunny: applies values suitable for sunny environments. ● Night: Apply values suitable for night scenarios. ● Custom: Allows you to manually adjust the parameters **Red gain**(Red Gain) and**Blue gain**(Blue Gain).
Day and night	Allows you to configure the color and black and white modes of the image. This setting is not affected by configuration files. The default setting is**Automatic**(Car). ● Color: The camera only displays color images. ● Automatic: Based on variables such as overall brightness and whether or not IR light is present, the camera displays images in color or black and white. ● B/W: The camera displays only black and white images. ● Time-based: The camera displays images based on the set sunrise and sunset times.

Step 3: Click on**Apply**(Apply) to complete the setup.

5.6.1.2 Illuminator Supported Settings

If the camera supports light switching, you can configure the lights to complete the image settings.

Procedure

Step 1: Select**Main menu**>**CAMERA**>**Image**(Main Menu > CAMERA > Image).

Figure 5-66 Analog channel with illuminator support
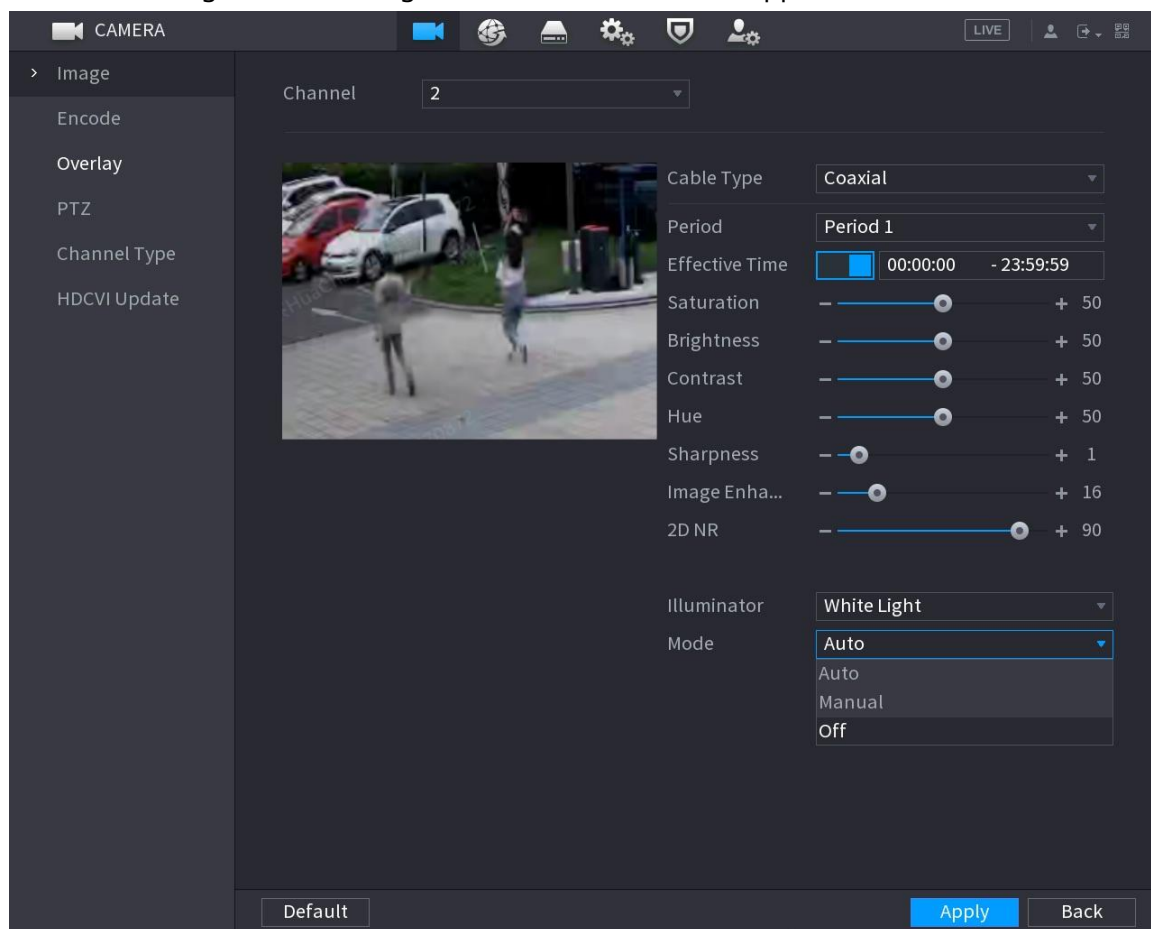

Step 2: Configure the illuminator according to your needs.

On the analog channel pages, you can select an illuminator and its mode.

Table 5-27 Illuminator

Parameters	Description
White light	There are three modes you can select. ● Automatic: White light is automatically activated and adjusted. ● Manual: You need to manually activate the white light. ● Off: The white light is turned off.
IR Mode	There are three modes you can select. ● Automatic: The infrared light is automatically activated and adjusted. ● Manual: You need to manually activate the infrared light. ● Off: The infrared light is turned off.
Smart Illuminator	The device automatically selects white light or infrared light.
Programming illuminator	It allows you to configure time slots by selecting the white light, infrared mode or intelligent illuminator options, indicated by the colors yellow, orange and blue respectively, according to your needs. By default, it is selected

Parameters	Description
	the smart lighting option for all time slots. ● Select a mode for each time slot. ● Select up to 6 time slots. 📖 In illuminator programming, when XVR starts and camera is recognized, you need to reset the camera mode based on current system time and scheduled mode.

📖

The options light white, mode to infrared And lighting intelligent they come Configure For there camera; there programming of the 'illuminator For the XVR.

Step 3: Click on **Apply**(Apply) to complete the setup.

5.6.2 Configuring Encoding Settings

Procedure

Step 1: Select**Main Menu**>**CAMERA**>**Coding**>**Audio/video**(Main Menu > CAMERA > Encode > Audio/Video).

Figure 5-67 Audio/video
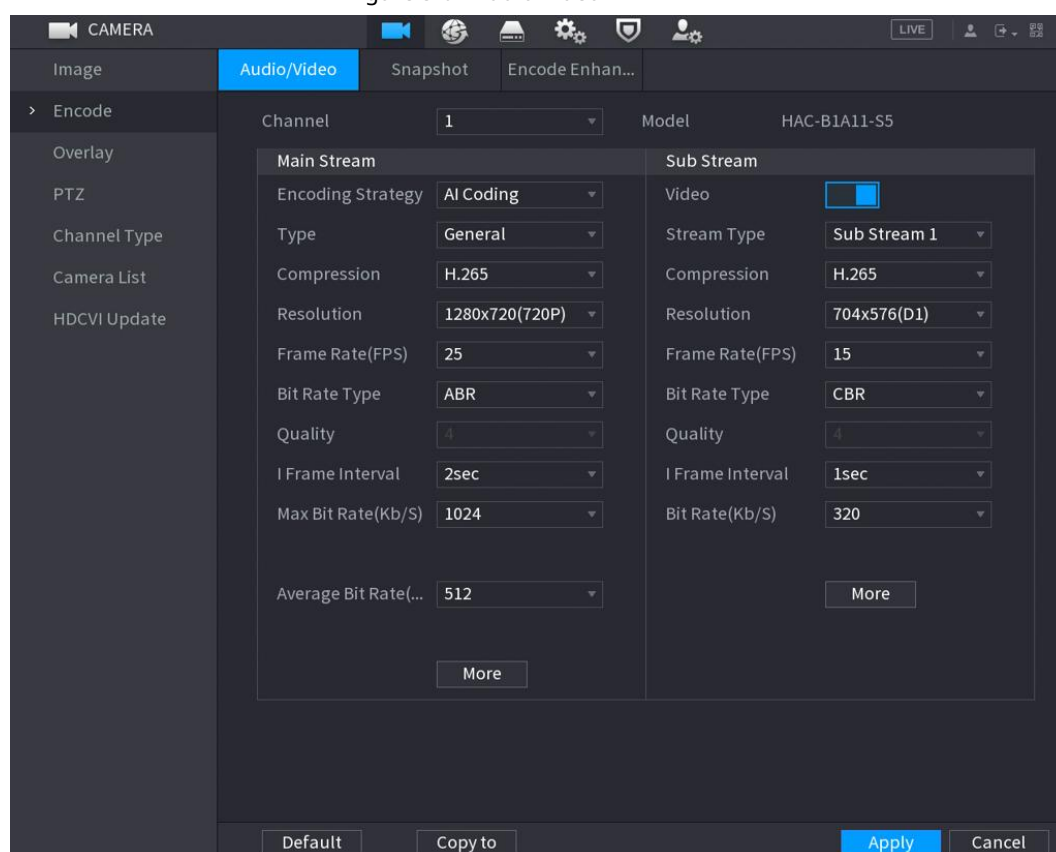
Step 2: Configure the main/secondary flow parameter settings.

Table 5-28 Description of main and secondary flow parameters

Parameter	Description
Channel	In the list**Channels**(Channel), select the channel you want to configure.
Coding strategy	● General: A generic encoding strategy is used. ● Smart Codec: Enable the smart codec function. This function can reduce the video bitstream of unimportant recorded items to save storage space. ● AI Encoding: Enable AI encoding function. This function can reduce the video bitstream of unimportant recorded items to save storage space.
Type	● Main flow: in list**Type**(Type), select **General**(General),**Movement**(Motion) or**Alarm** (Alarm). ● Secondary flow: This setting is not configurable.
Compression	Select the encoding mode from the list**Compression** (Compression). ● H.265: Main Profile Encoding. This is the suggested setting. ● H.264H: High Profile Coding. Lightweight high definition video stream. ● H.264: General Profile Coding. ● H.264B: Baseline profile encoding. This setting requires a higher bit rate than other settings of the same definition.
Resolution	In the list**Resolution**(Resolution), select the video resolution. Maximum video resolution may vary depending on device model.
Frame Rate (FPS)	Sets the number of frames per second for the video. The higher the value, the better the image quality and clarity. The frame rate varies depending on the resolution. Typically, PAL format allows you to select values　between 1 and 25; NTSC format, values　between 1 and 30. However, the range of values　you can actually select for the frame rate depends on the capabilities of your device.
Bit Rate Type	Configure the video data transmission rate control method. ● **CBR**(constant transmission speed): the transmission speed changes little and does not deviate much from the set value. We recommend selecting**CBR**when the monitoring environment is subject to only small

Parameter	Description
	changes. ● **VBR**(variable transmission speed): the transmission speed changes depending on the monitored scenes. We recommend selecting**VBR**when the monitoring environment is subject to significant changes. ● **ABR**(average transmission speed): The transmission speed is adjusted to find a compromise between bandwidth and improved image quality. 📖 The**Transmission speed type**(Bit Rate Type) can only be set to**ABR**if the**Coding strategy**(Coding Strategy) selected is**AI Coding**(AI Coding).
Quality	This feature is available by selecting the option**VBR** in the list**Transmission speed type**(Bit Rate Type). The higher the value, the better the image quality.
I-frame interval	The interval between two reference frames.
Max transmission speed	This feature is available by selecting the option**ABR** in the list**Transmission speed type**(Bit Rate Type). It is possible to configure the parameter**Max transmission speed**(Max Bit Rate) based on the option**Reference transmission speed**(Reference Bit Rate). In this way, the bit rate changes depending on the monitored scene, but the maximum bit rate remains close to the set value.
Transmission speed (Kb/s)	Select a value, or enter a custom one, in the drop-down list **Transmission speed type**(Bit Rate Type) to change the image quality. The higher the value, the better the image.
Average transmission speed	Select a value, or enter a custom one, in the drop-down list **Average transmission speed**(Average Bit Rate) to change the image quality. The higher the value, the better the image.
Video	Enable the secondary stream function.
Audio	Click on**Other**(More) to view the page**Other**(More).
Audio source	● Audio: The function is enabled by default

Parameter	Description
Compression	for main stream. You need to enable it manually for sub stream 1. After enabling this function, the recorded video file will be a composite audio and video stream. ● Audio Source: In the list**Audio source**(Audio Source), you can select the values**Local**(Local) or**HDCVI**. ● Audio Format: Select the desired format from the list **Compression**(Compression).

Step 3: Click on**Apply**(Apply) to complete the setup.

Do click on**Copy on**(Copy to) For copy the settings on others channels.

5.6.3 Configuring snapshot settings

Procedure

Step 1: Select**Main Menu**>**CAMERA**>**Coding**>**Snapshots**(Main Menu > CAMERA > Encode > Snapshot).

Figure 5-68 Snapshots
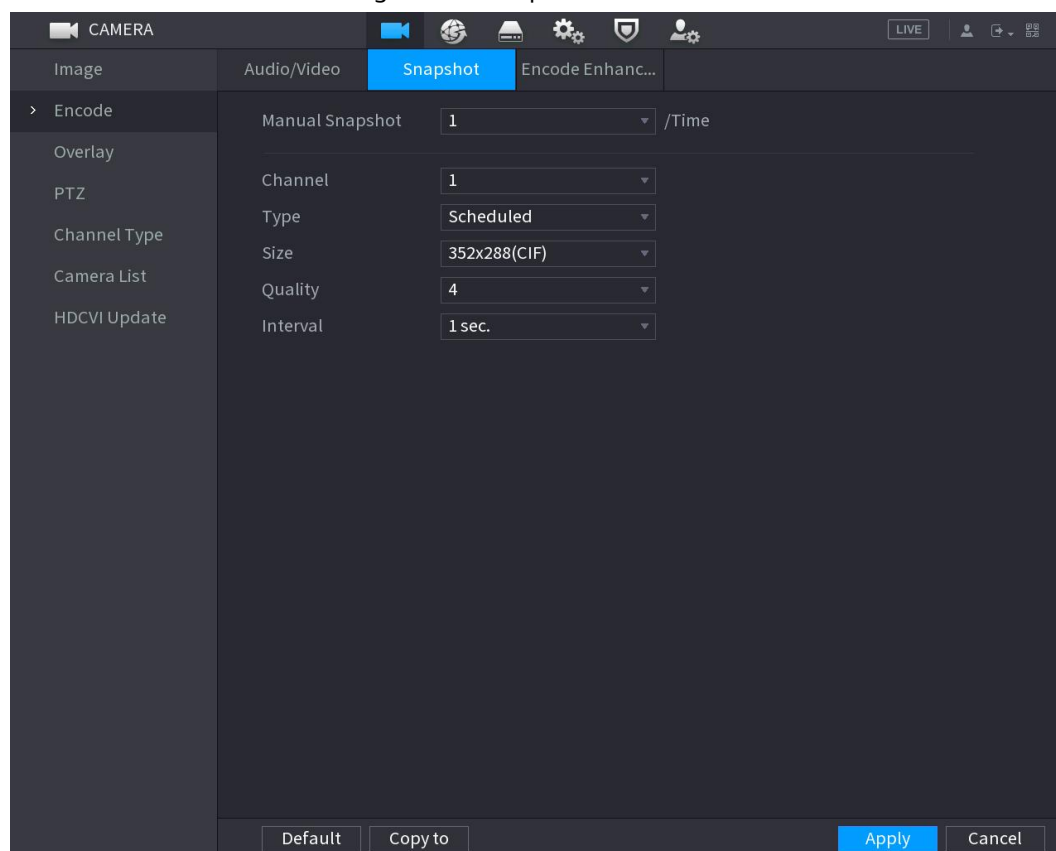
Step 2: Configure snapshot parameter settings.

Table 5-29 Snapshot parameters

Parameter	Description
Manual snapshot	Select how many snapshots you want to take each time.
Channel	Select the channel for which you want to configure settings.
Type	You can select**Scheduled event**(Scheduled Event) or **Face snapshot**(Face Snapshot) as the type of event for which you want to take a snapshot. ● **Planned**((Scheduled)**:**The snapshot is taken in the scheduled time slot. ● **Event:**The snapshot is captured when an alarm event occurs, such as motion detection, video loss, or local alarm. ● **Face snapshot**(Face Snapshot)**:**Snapshot is taken when a face is detected. Face detection function is only supported by channel 1. Features may vary depending on your device model.
Dimensions	Select a value for the image. The higher the value, the better the image.
Quality	You can set 6 levels of image quality. The higher the value, the better the image quality.
Interval	Allows you to configure or customize the snapshot frequency. You can select values from one snapshot per second to one snapshot every 7 seconds. The maximum value is one snapshot every 3600 seconds.

Step 3: Click on**Apply**(Apply) to complete the setup.

Do click on**Copy on**(Copy to) For copy the settings on others channels.

5.6.4 Configuring Encoding Enhancement

You can enable this feature to get more FPS in the encoding settings (see section "5.6.2 Configuring encoding settings"). While encoding enhancement is active, you will not be able to use the additional screen (see section "5.2.8.1 Configuring display settings") and AI features (see section "5.12 AI features").

Select**Main Menu**>**CAMERA**>**Coding**>**Encoding improvement**(Main Menu > CAMERA > Encode > Encode Enhancement).

Figure 5-69 Encoding improvement
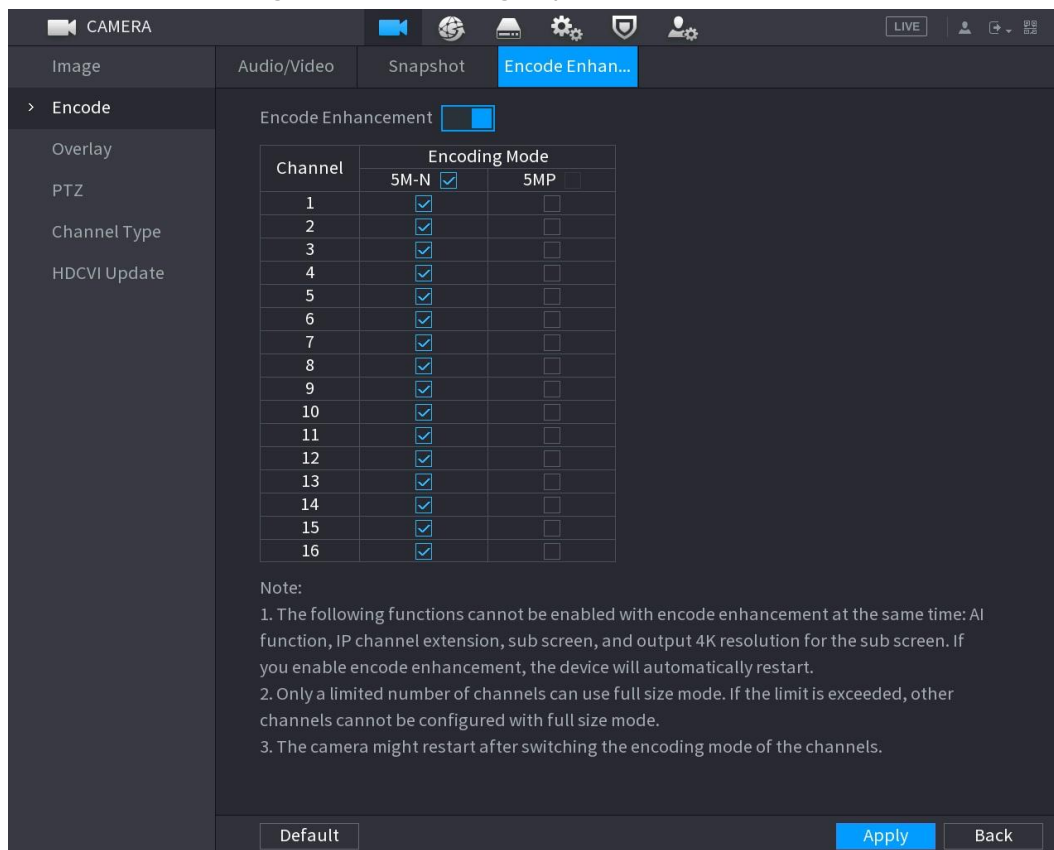
Click the switch to enable the function.

● When connecting a new generation 4K camera, you can enable the option**4K-N** to switch from non-live 4K viewing to live 4K-N viewing with encoding.

● When connecting a 5MP camera, you can enable the option**Encoding improvement** (Encode Enhancement) to select 12.5 frames and 5MP encoding resolution.

The number Of channels supported from XVR with the setting to 5MP And 12.5 frames Depends from the measurement effective.

Table 5-30 Encoding modes

Parameters	Description
5M-N	Set the camera to 5MP, 25 frames, and 5M-N encoding resolution, with a maximum frame rate of 12.
5 MP	Set the camera to 5MP, 12.5 frames and 5MP encoding resolution, with a maximum frame rate of 6.

● There configuration from the coding Yes suitable automatically at the mode to set.

● The button For there selection complete he comes shown Alone on devices That they support everyone the channels.

5.6.5 Configuring Overlay Settings

You can configure the system time and channel name to be overlaid on each channel window in the live view screen.

Procedure

Step 1: SelectMain Menu>CAMERA>Overlay>Overlay (Main Menu > CAMERA > Overlay > Overlay).

Figure 5-70 Overlay
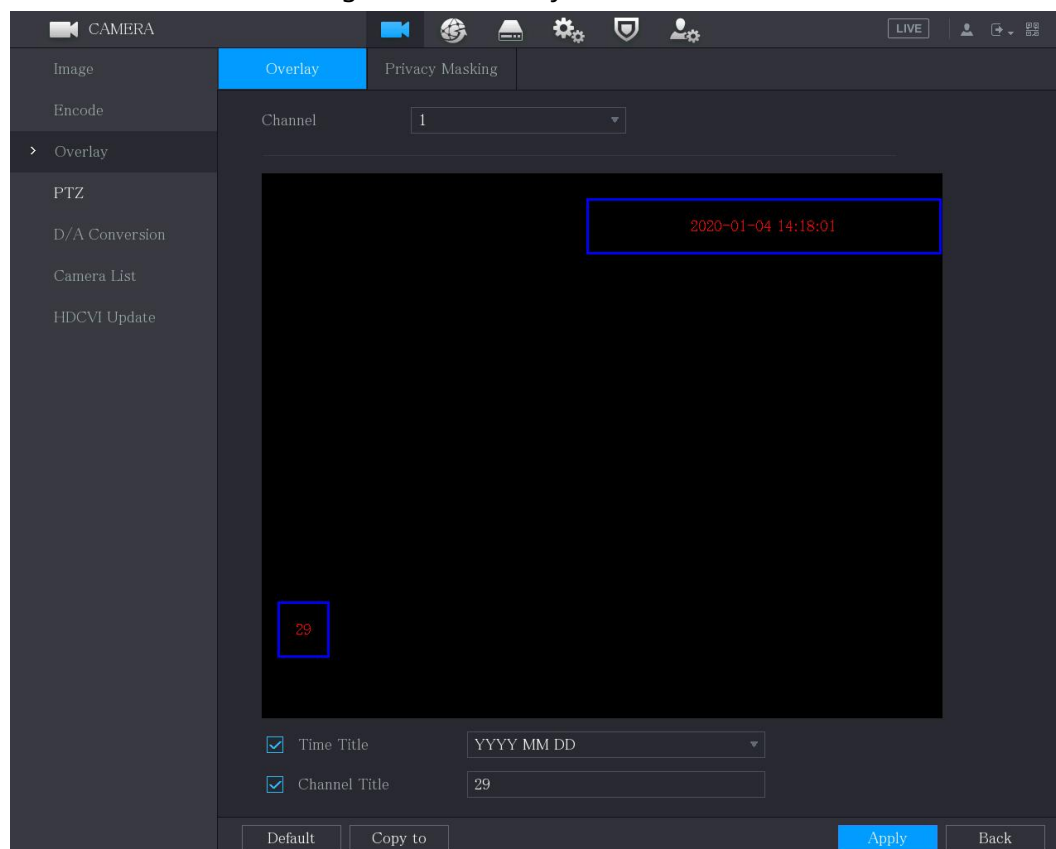
Step 2: Configure the text overlay parameter settings.

Table 5-31 Overlay parameters

Parameter	Description
Channel	In the listChannels(Channel), select the channel you want to configure.
Overlay of the hour	Select the checkboxTime overlay(Time Title) to show the system time on each channel window in the live view screen. In the listTime overlay(Time Title), select the time display format.
Channel Title	Select the checkboxChannel Overlay(Channel Title) to show the channel name on each of the channel windows in the live view screen. In the boxChannel Overlay(Channel Title), enter the name of the selected channel.

Step 3: Click onApply(Apply) to complete the setup.

Do click on **Copy on** (Copy to) For copy the settings on others channels.

5.6.6 Configuring Blurred Area Settings

Procedure

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

Figure 5-71 Privacy Masking
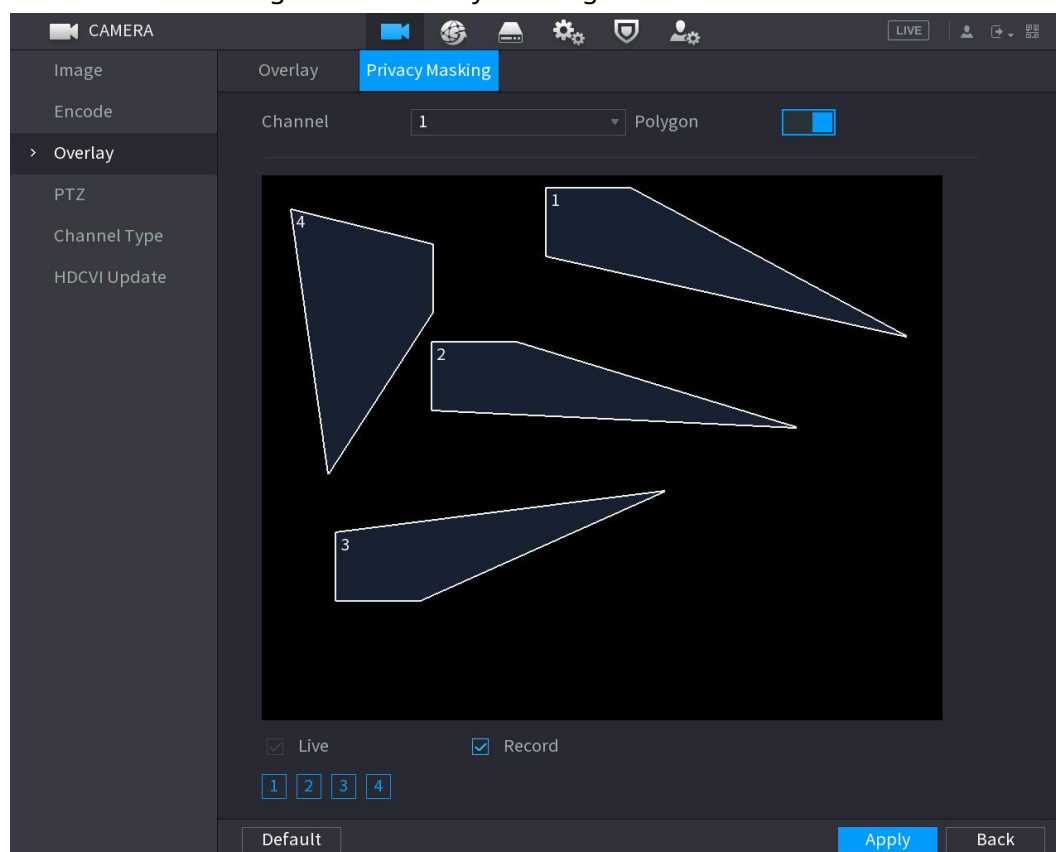
Step 2: Configure the parameter settings of the blurred areas.

Table 5-32 Description of parameters for blurred areas

Parameter	Description
Channel	In the list**Channels**(Channel), select the channel you want to configure.
Polygon	Click on [ ] to enable the polygon function, which allows to trace blurred areas of polygonal shape. ● Features may vary depending on your device model. ● This feature is only supported by one channel at a time.

Parameter	Description
Live Record	● Preview: Select the checkbox**In real time**(Live) to apply the configured masking block to the selected channel window in the live view screen. ● Registration: Select the checkbox**Record**(Record) to apply the configured masking block to the selected channel window during recording. To set up the cover block, follow these steps: 1. Select the checkbox**In real time**(Live) or**Record** (Record) or select both. The icons "1", "2", "3", "4″ are activated. 2. Click the icons to select blocks. 3. A black polygonal block appears. 4. Drag the block to the area you want to cover and adjust the size of the block. A total of 4 covering blocks can be configured.

Step 3: Click on**Apply**(Apply) to complete the setup.
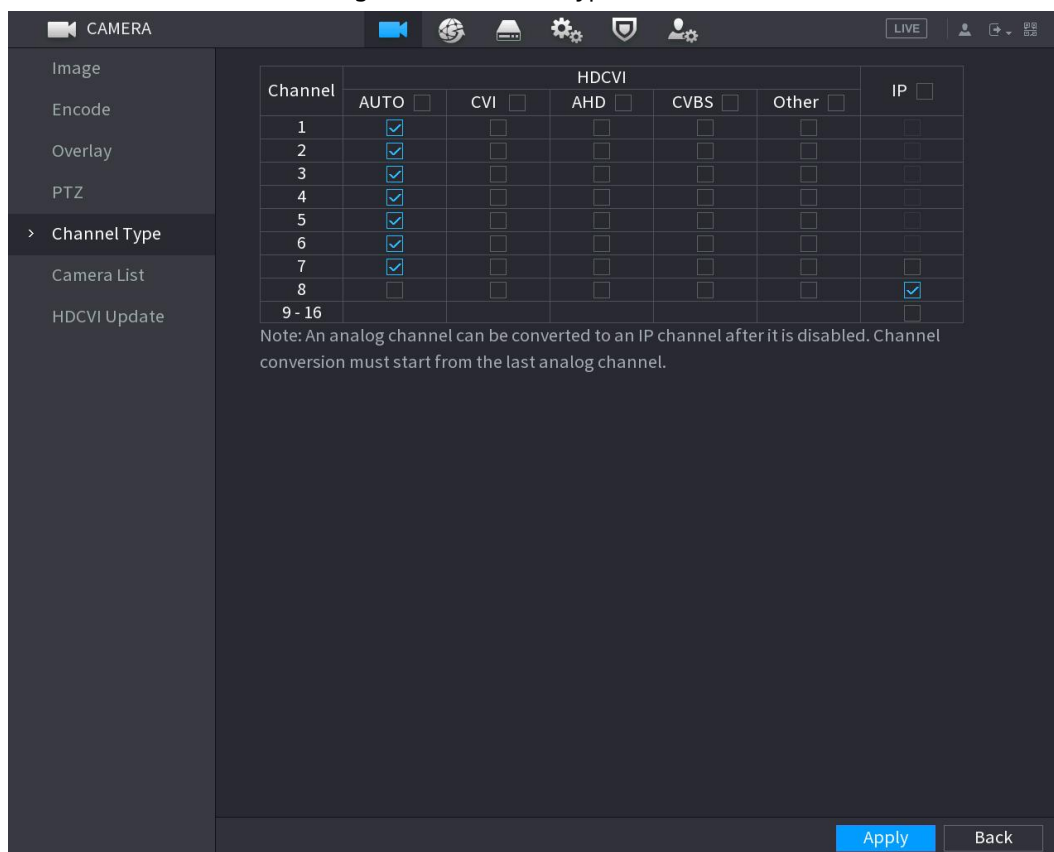
5.6.7 Channel type configuration

You can configure the channel type as**Analog**(Analog) or channel**IP**.

Procedure

Step 1: Select**Main menu**>**CAMERA**>**Channel type**(Main Menu > CAMERA > Channel Type).

Figure 5-72 Channel type

Step 2: Set up channels.

● Analog Channel: Select the transmission type such as CVI, AHD, CVBS, and then follow the on-screen instructions to complete the settings.

● IP Channel: You can enable IP channels by disabling the corresponding analog channels. The device also provides IP channels, such as **17–64** in 0.

📖

● THE channels from 17 to 64 they serve exclusively For there camera IP At the interval change in base to the model purchased.

● There choice of the channels For cameras analog or IP it happens in sequence. To example, For select the channels For the use with cameras IP, it is necessary choose to start from the last number Of channel **16**. This he wants say That Not At possible choose directly The channel **15**, without have Before selected The channel **16**.

Step 3: To complete the settings, click on **Apply** (Apply) and follow the instructions on the screen.

5.6.8 Coaxial Camera Update

Procedure

Step 1: Select **Main menu**>**CAMERA**>**HDCVI Update** (Main Menu > CAMERA > HDCVI Update).
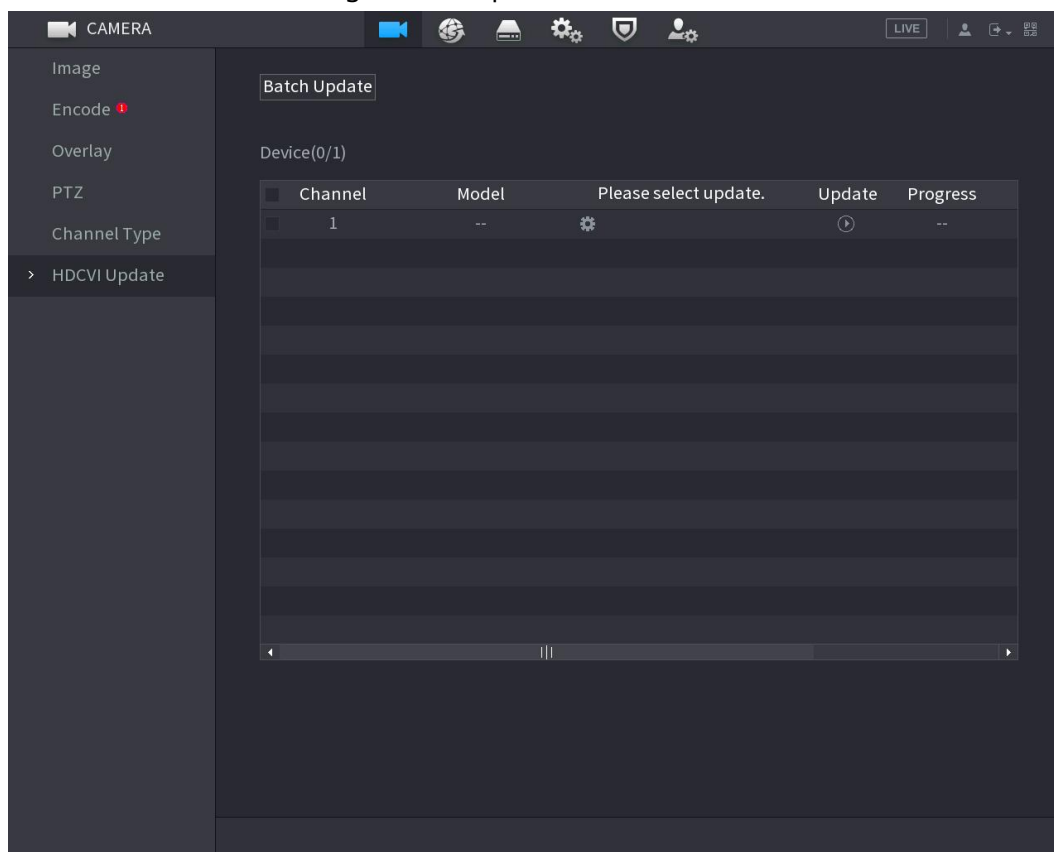
Figure 5-73 Update

● Batch update

    1. Select the checkbox of the channel you want to update, and then click **Batch update**(Batch Update) to select the files to update.

    2. Click on**OK**.

● Update

    1. To select the files to update, click   in**Select update.** (Please select update.).

    2. Click on**OK**.

Step 2: If the update is successful, a message appears notifying you that the update is complete.

5.7 Configuring remote devices

5.7.1 Adding Remote Devices

This function Available After have set The typeOf channel or The channel IP as indicated in the section previous. Consult "5.6.7 Configuration of the typeOf channel ".

You can add remote devices by adding the IP address.

Select**Main menu**>**Camera**>**Camera List**>**Add Camera**(Main Menu > Camera > Camera List > Add Camera).

Figure 5-74 Adding a camera
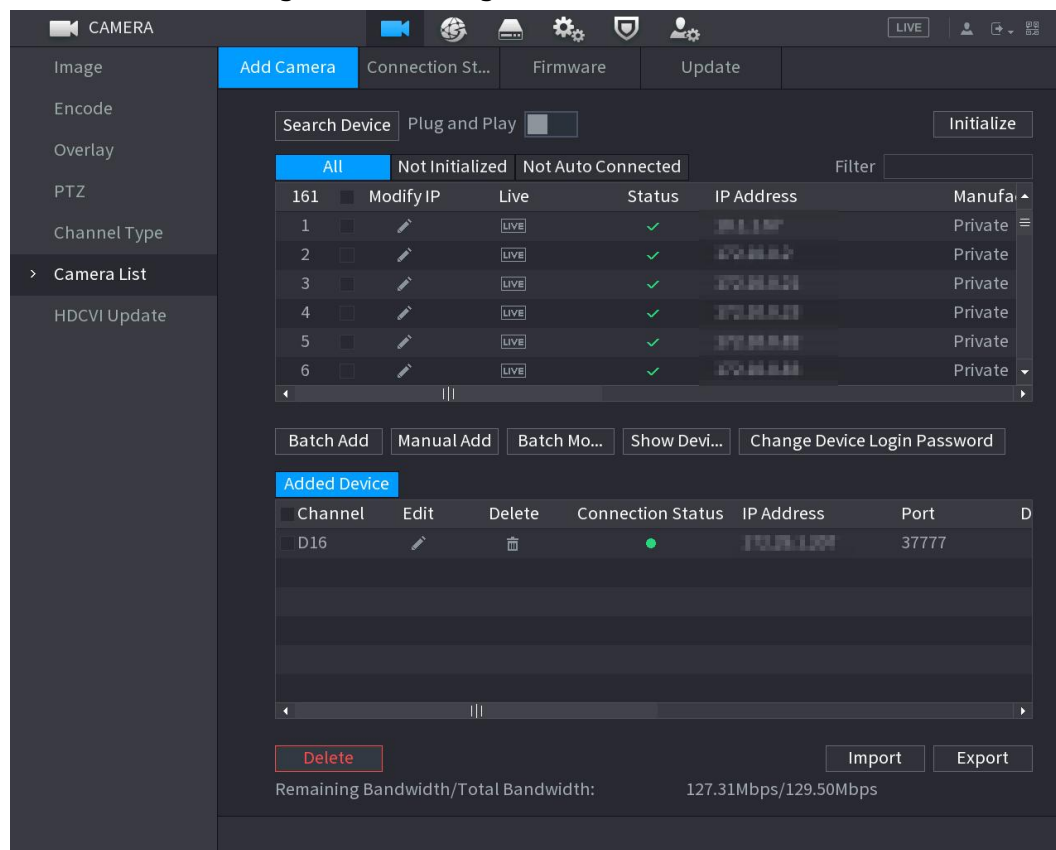
Table 5-33 Parameters

Parameter	Description
Device Search	Click on**Search Device**(Search Device), so that the searched devices are displayed in the searched devices list.
Not initialized	By clicking on**Not initialized**(Not Initialized), uninitialized devices among the searched ones are displayed in the searched devices list.
Not connected automatically	By clicking on**Not automatically connected**(Not Auto connected), devices that do not automatically connect among those searched are displayed in the list of searched devices.
Initialize	Select the uninitialized devices from the uninitialized devices list, and then click**Initialize**(Initialize) to start its initialization.
Filter	In the list**Filter**(Filter), select the type of remote device to display in the searched devices list. ● None: Allows you to display all device types. ● IPC: Allows you to view cameras. ● DVR: Allows you to view all storage devices, such as NVR, DVR and HCVR. ● OTHER: Allows you to view devices that are not IPCs or DVRs.

Parameter	Description
Device List wanted	Allows you to view searched devices. You can view device information such as status and IP address.
Added in series	In the area**List of searched devices**(Searched Device List), select the device to add in series.
Manual addition	Add the device manually by configuring settings such as IP address and channel selection.
Serial change IP	Allows you to change the IP address of devices in series.
Device List added	Allows you to view added devices. You can edit and delete devices and view their information.
Plug and play	When you enable Plug and Play, the DVR automatically adds remote devices on the same subnet. ● If any remote devices are not initialized, the DVR will automatically initialize them before adding them. ● You can click on ⚙ to set the validity period of the Plug and Play. For example, if you set a validity period of 1 hour, Plug and Play will be automatically disabled after 1 hour.
Show password device	Select an added camera, then click**Show device password**(Show Device Password) to display its password.
Change password of access of the device	Select an added camera, then click**Change device login password**(Change Device Login Password) to change its password.
Delete	Select the checkbox of an added device and click **Delete**(Delete) to remove an added device.
It matters	Select the devices you are looking for, then click**It matters**(Import) to import devices in series.
Export	Select the devices you are looking for and click**Export**(Export). The exported device information is saved to the USB storage device.
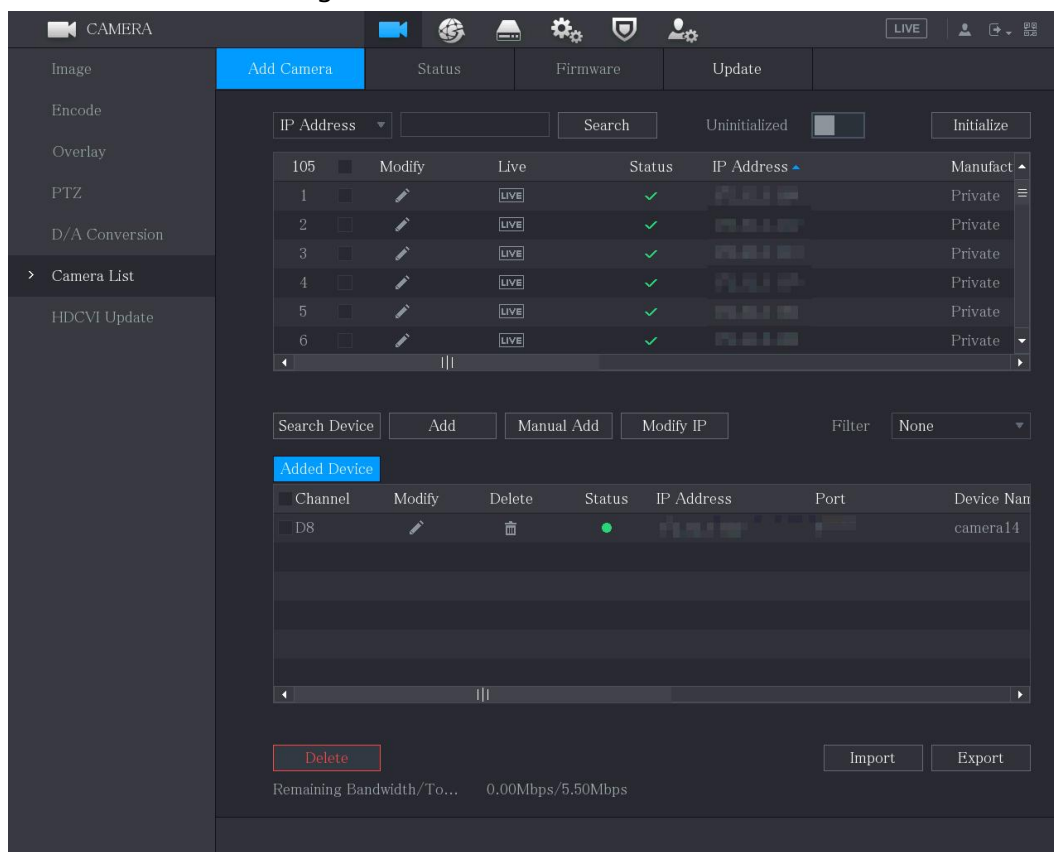
5.7.1.1 Initializing Remote Devices

After initializing a remote device, you can view the real-time video of each camera channel and change its login password and IP address.

Procedure

Step 1: Click on**Search Device**(Search Device). The found devices are shown in the table.

Figure 5-75 Search results
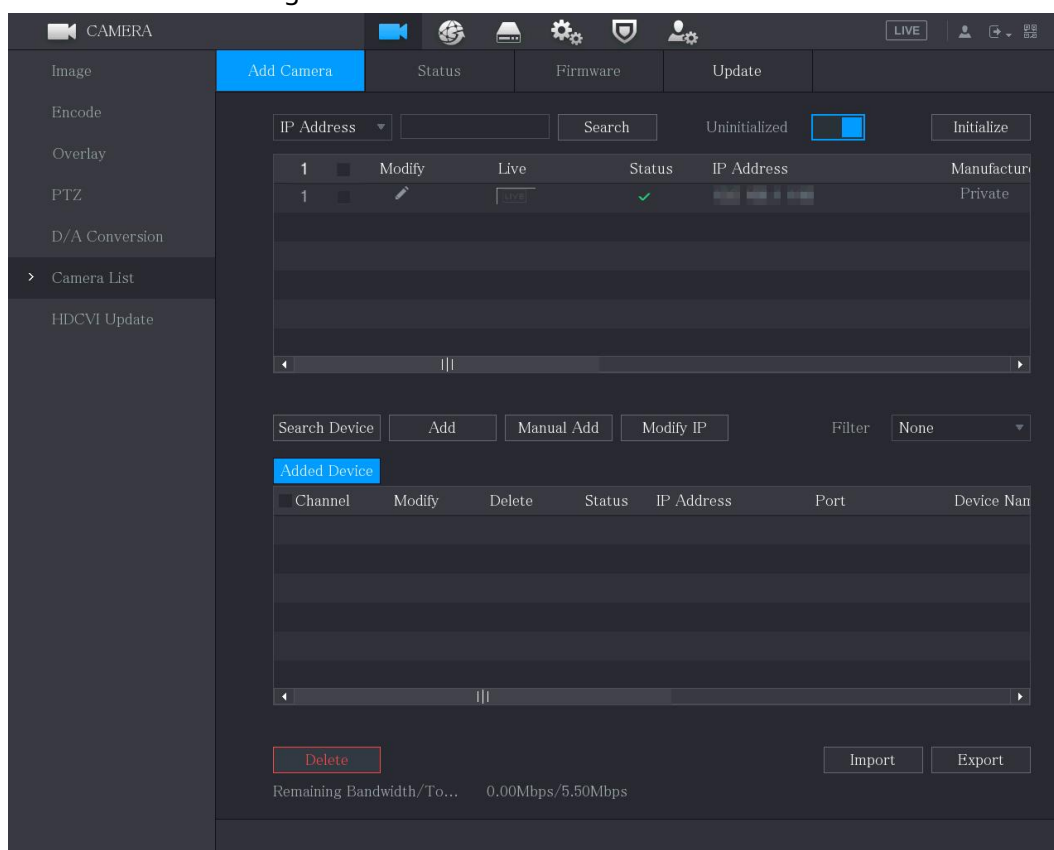
Step 2: Activate the option**Not initialized**(Uninitialized).

The system shows uninitialized devices.

Figure 5-76 Uninitialized devices
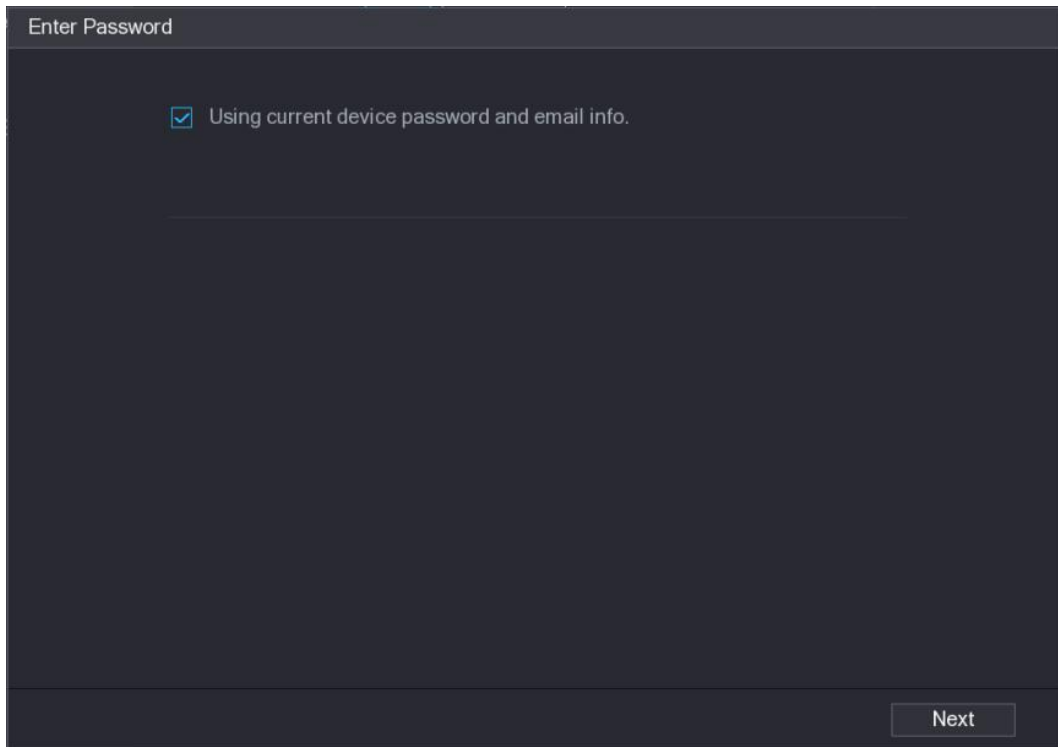
Step 3: Select the uninitialized devices to initialize. Step 4: Click on**Initialize**(Initialize).

Figure 5-77 Entering the password
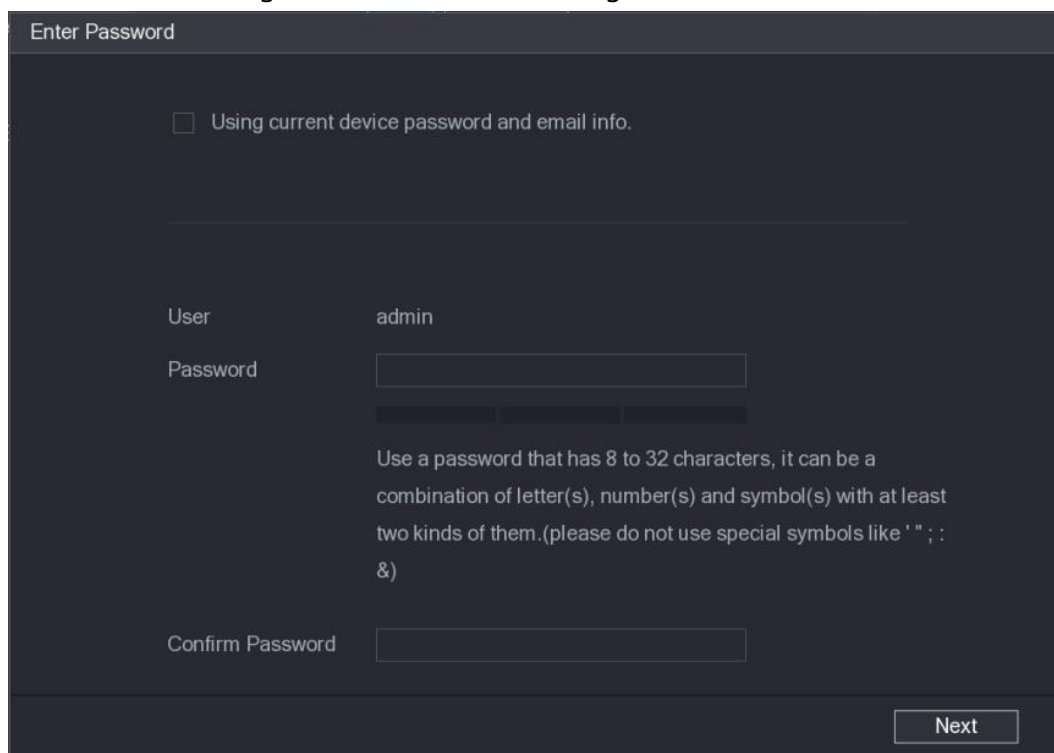
Step 5: Set up your password and email information.

📖

If Yes select **USA** from the **password** **And** the 'e-mail **currents** of the **device** (Using current device password and e-mail information), The device remote uses in automatic the information on password And address e-mail currents. In such way Not And necessary set up Of new password And address e-mail And to possible jump This ride.

1) Uncheck the checkbox**Using the device's current password and email**(Using current device password and email info).

Figure 5-78 – Password setting
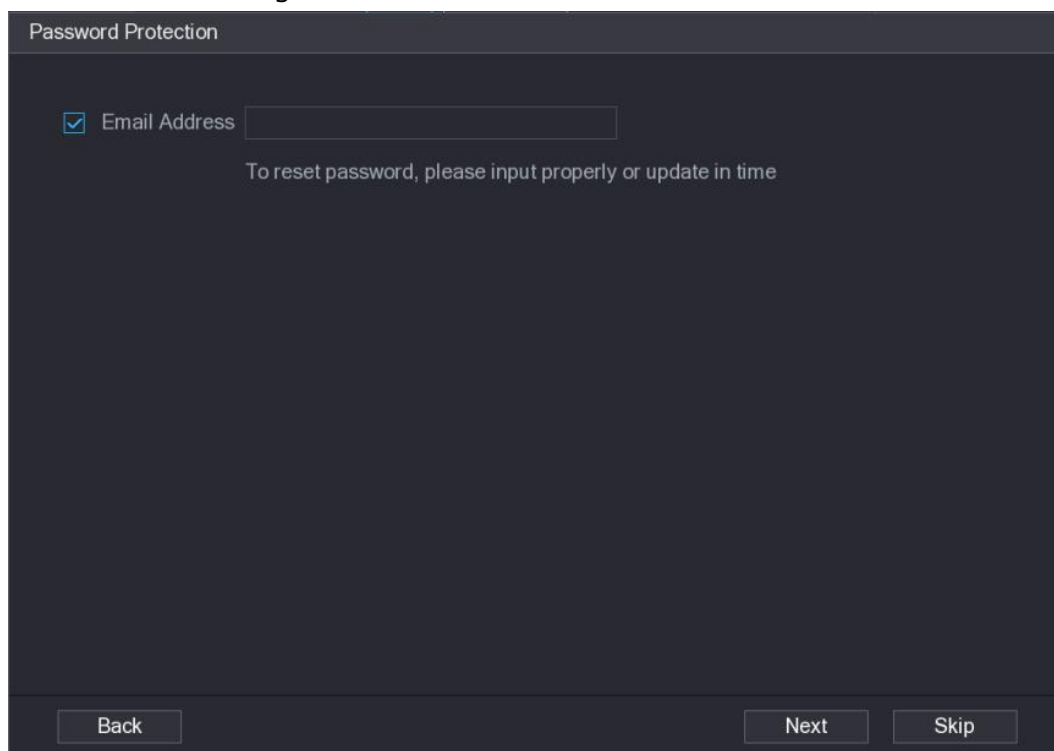
2) Configure the password setting parameters.

Table 5-34 Password parameters

Parameter	Description
User	The default option is admin.
Password	The password must contain between 8 and 32 characters, not spaces, of at least two different types chosen from uppercase letters, lowercase letters, numbers and special characters (excluding ' " ; : &).
Confirm password	Please enter a secure password based on the indicator below.

3) Click on**After you**(Next).

Figure 5-79 – Password Protection
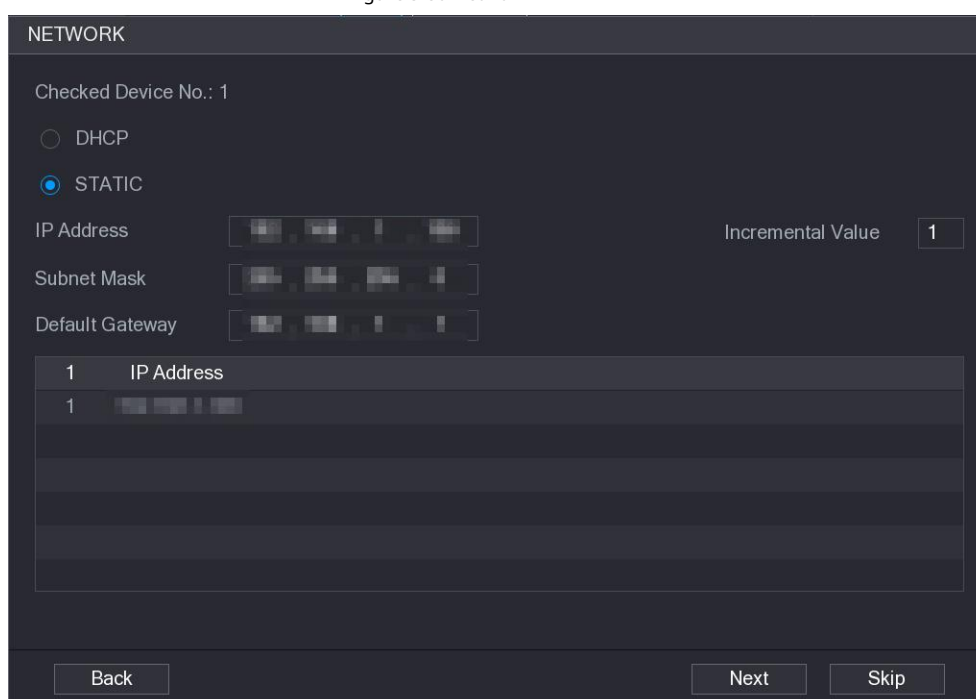
4) Select the Email Address box and enter your email address for future password resets.

Doing   click   on**Jump**(Skip), Apossible Notdefine a address e-mail Reserved.

Step 6: Click on**After you**(Next).

Figure 5-80 Network

Step 7: Configure the IP address.

● By selecting the checkbox**DHCP**, the system will automatically assign an IP address to the remote device.

● By selecting the checkbox**STATIC**(STATIC), you need to enter IP address, subnet mask, default gateway and incremental value. The system will assign the address IP to remote devices by progressively increasing the last digits of the IP address as the devices initialize in series.

When Yes configure the address IP Form of devices remote Than Not Yes they find on the same segment Of net, After there configuration these will belong at the same segment Of net.

Step 8: Click on**After you**(Next).

Initialization starts.

Figure 5-81 Initialization completed
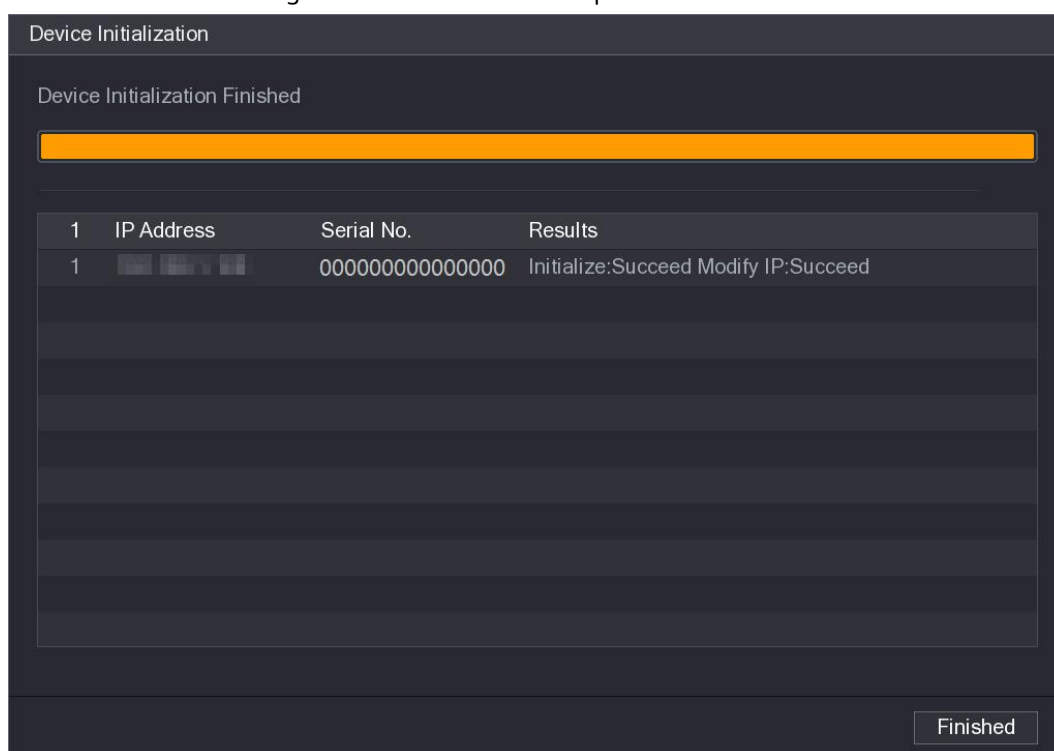
Step 9: Click on**Finished**(Finished) to complete the setup.

5.7.1.2 Automatically adding remote devices

Procedure

Step 1: On the page**Registration**(Registration), click on**Search for devices**(Device Search).

The found devices are displayed.

Figure 5-82 - Searching for a device
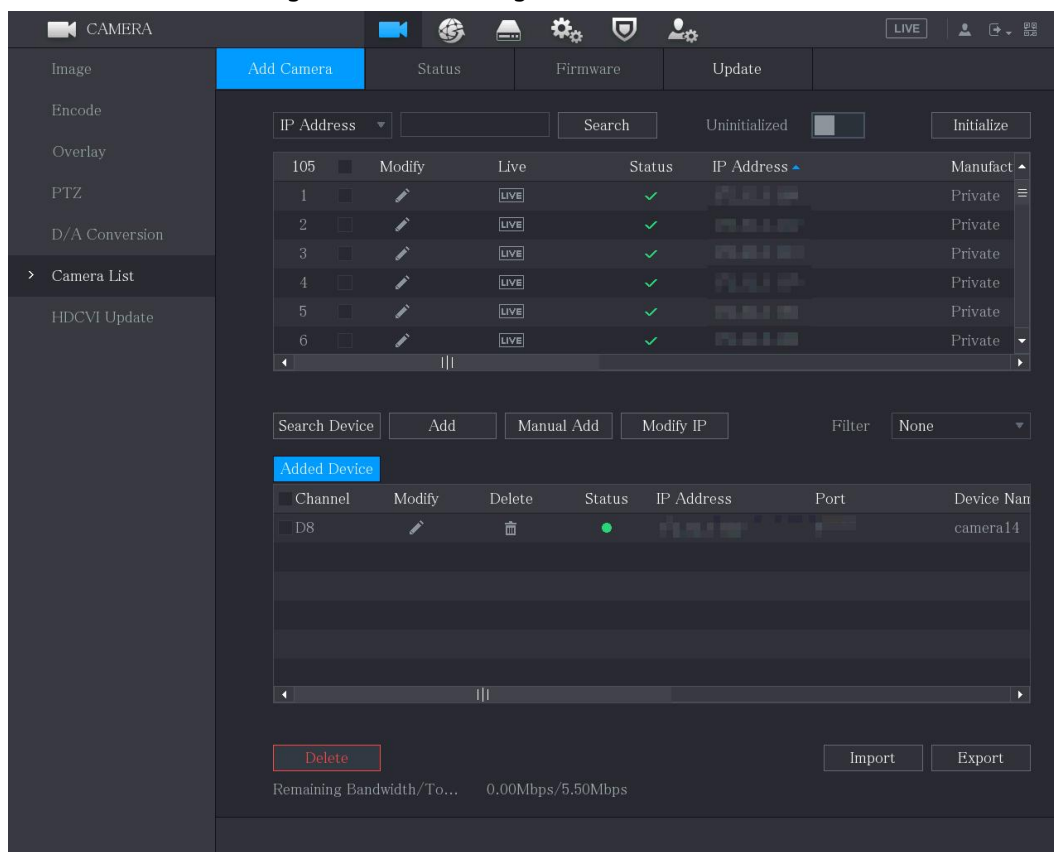
Step 2: Select the device checkbox. Step 3: Click on **Add**(
Add).

The device is added to the area **Device added**(Added Device).

📖
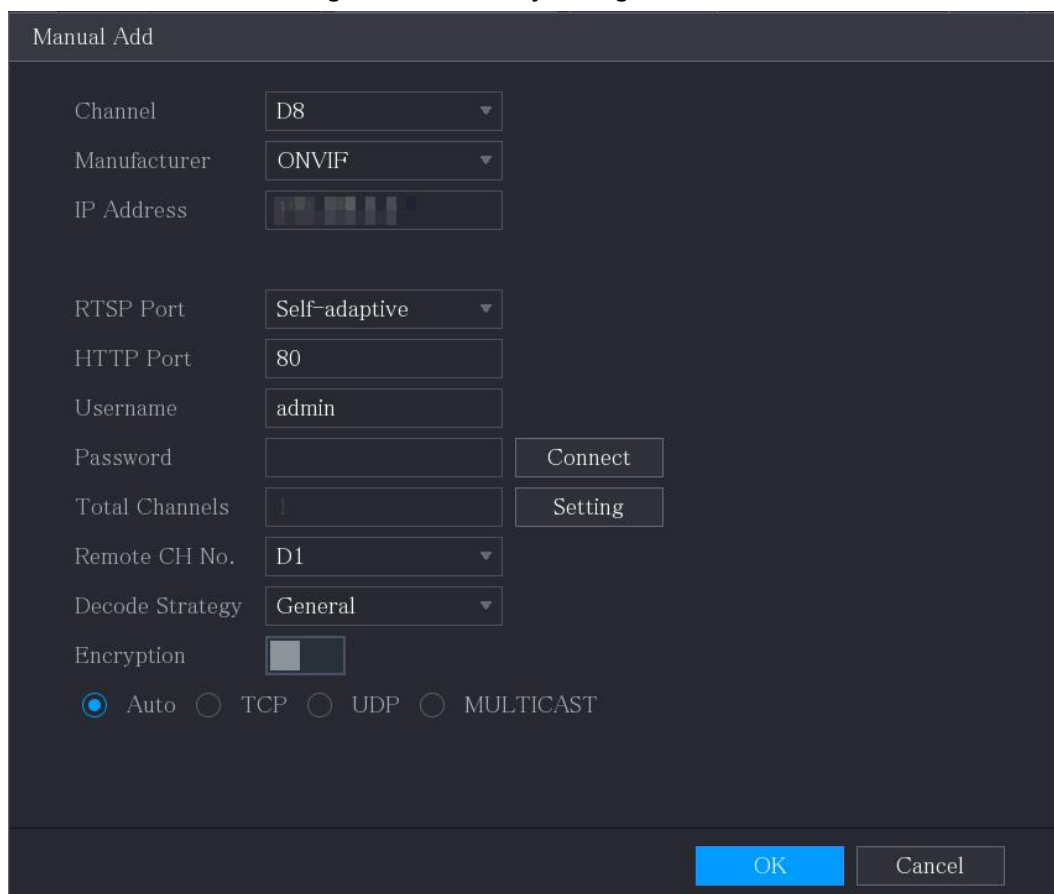
- Furthermore Apossible Do double click on the device Foradd it in the 'area **Device added** (Added Device).
- Apossible add devices in series.

5.7.1.3 Manually adding remote devices

Procedure

Step 1: On the page **Add Camera**(Add Camera), click on **Manual addition** (Manual
Add).

Figure 5-83 Manually adding

Step 2: Configure settings for manually adding device parameters.

Table 5-35 Description of manual parameter addition

Parameter	Description
Channel	From the list**Channel**(Channel), select the device channel to use for connecting the remote device.
Producer	From the list**Producer**(Manufacturer), select the manufacturer of the remote device.
IP address	In the box**IP address**(IP Address), enter the IP address of the remote device. The default is 192.168.0.0, which the system cannot connect to.
RTSP port	The default value is 554. You can enter a value according to your actual situation.
HTTP Port	The default value is 80. You can enter a value according to the actual situation. If you enter a different value, such as 70, you must add it after the IP address when accessing the device via browser.
TCP Port	The default value is 37777. You can enter a value according to your actual situation.

Parameter	Description
Username	Enter the username of the remote device.
Password	Enter the password of the remote device user.
Remote channel no.	Enter the remote channel number of the remote device you want to add.
Decoder Strategy	In the list**Decoder Strategy**(Decoder Strategy), select **Default**(Default), Realtime or**Fluid**(Fluent).
Protocol type	● If the remote device is added using a private protocol, the default type is**TCP**. ● If you add the remote device using ONVIF protocol, the system supports**Automatic**(Car),**TCP**,**UDP**or **MULTICAST**. ● If the remote device is added through other manufacturers, the system supports**TCP**And**UDP**.
Encryption	If the remote device is added via ONVIF protocol, selecting the checkbox**Encryption**(Encryption) the transmitted data will be encrypted. 📖 To use this option, you need to enable the HTTPS function for the remote IP camera.

Step 3: Click on**OK**to save the settings.

📖

● A possible NO add manually Alone a device at the time.

● 🟢 indicates That connection And success And 🔴 indicates That connection Not And success.
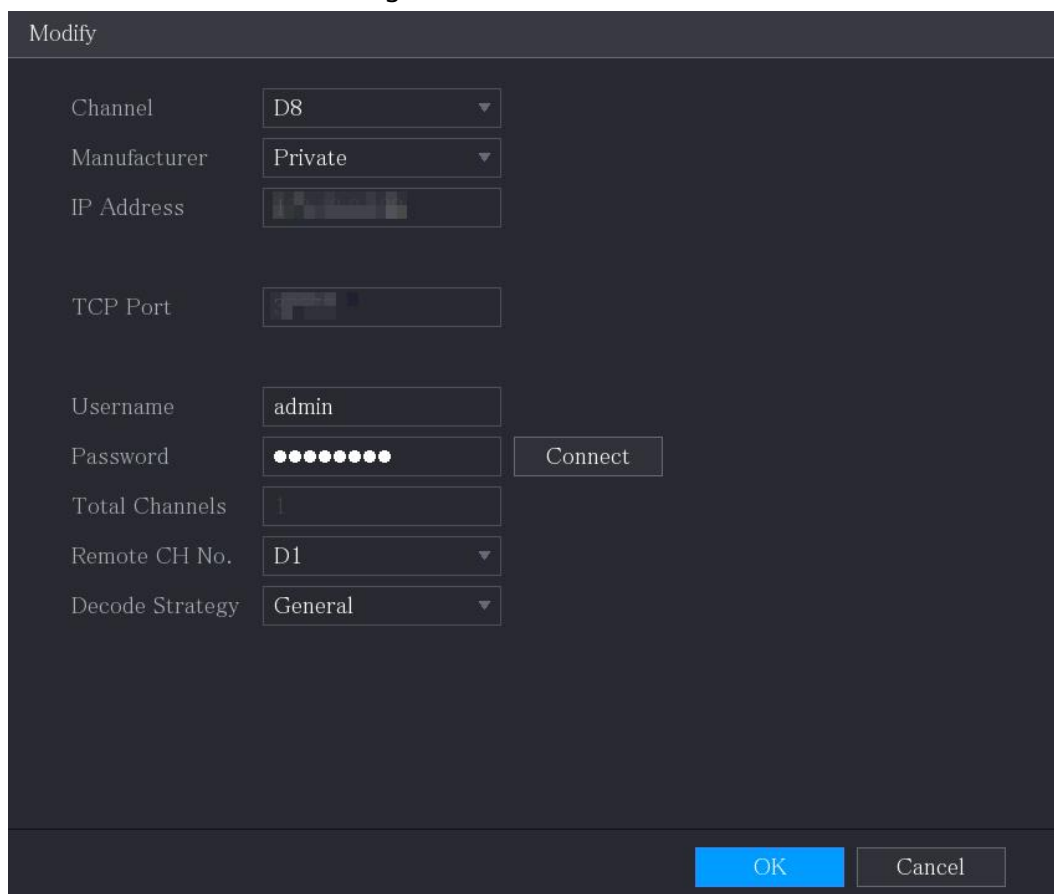
5.7.1.4 Modifying or Removing Remote Devices

You can edit and delete added devices.

● Edit remote devices.

1. Click or click on a device.

Figure 5-84 Edit

2. In the list**Channels**(Channel), select the channel you want to edit.

3. Click on**OK**to save the settings.

● Delete remote devices one by one or in series.

- Click on [trash icon] to delete a device.

- Select the check box of the devices you want to delete, and then click**Delete** (Delete).

5.7.1.5 Changing the IP address

You can change a single IP address or multiple IP addresses of remote devices at once.

[book icon]
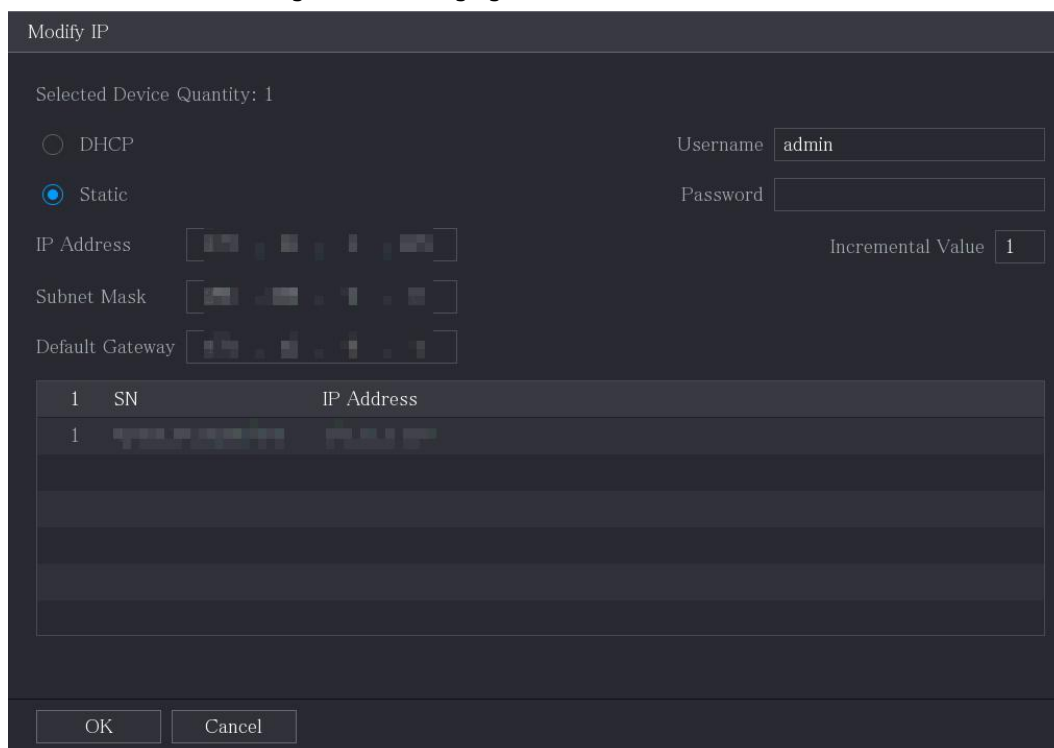
AN possible modify   Alone the address IP from the cameras   initialized.

● Changing a single IP address

1. In the list area**Devices wanted**(Searched Device), click change IP [pencil icon] on the device of which address.

Figure 5-85 Changing the IP address

2. Configure the settings for IP address, subnet mask, default gateway, user name and password.

3. Click on**OK**to save the settings.
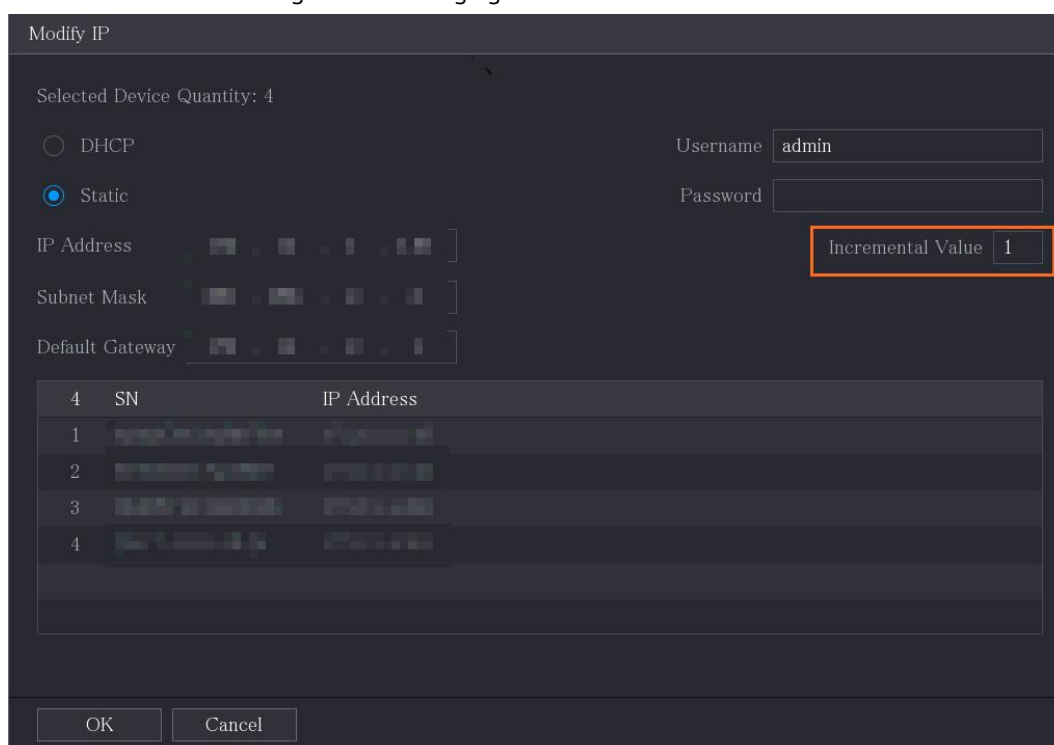
● Changing the IP address in series

1. In the Searched Device list, select the device whose IP address you want to change serially.

2. Click .

Figure 5-86 Changing the IP address

3. Set an incremental value.

📖

The system to add to the value incremental to the fourth segment of the addresses IP of the devices selected.

4. Configure the settings for initial IP address (IP address is assigned sequentially), subnet mask, default gateway, user name and password.
5. Click on **OK** to save the settings.

5.7.1.6 Exporting IP Address

Preliminary information

You can export the added IP address to the USB storage device.

📖

The information exported I am Saved In the file.csv That includes address IP, number Of brings, number of the channel, producer, name user And password.

Procedure

Step 1: Insert the USB storage device into the USB port on the device. Step 2: Click on **Export** (Export).

Figure 5-87 Navigation
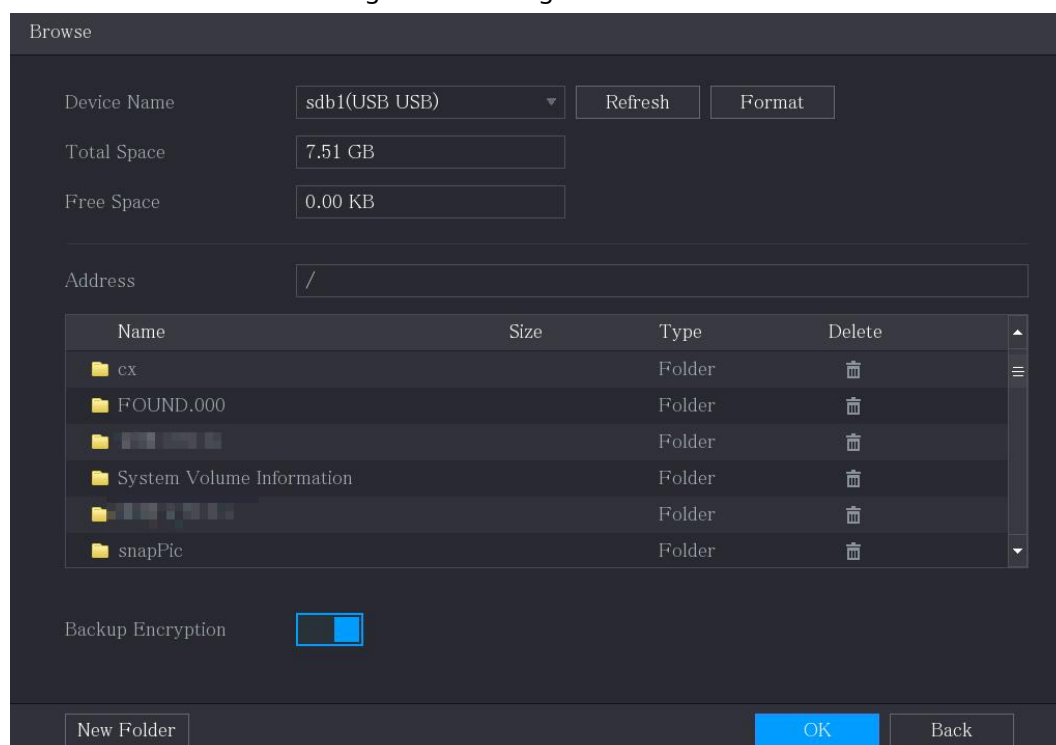
Step 3: Configure the save path. Step 4: Click on **OK** to save the settings.

A pop-up message "Successfully exported" appears. Step 5: Click on **OK**.

📖

When Yes export a address IP, there box Of check **Encryption Of backup** (Backup (Encryption) And select For option default. The information on the file they include the address IP, there brings, The number of the channel, The producer, The name user And password.

- If Yes select there box Of check **Encryption Of backup** (Backup Encryption), he comes carried out The backup of the format file.
- If Yes un check there box Of check **Encryption Of backup** (Backup Encryption), The format of the file And v. In such case, they could occur losses Of data.

5.7.1.7 Importing the IP address

You can add remote devices by importing their IP address information.

Procedure

Step 1: Insert the USB storage device into the USB port on the device. Step 2: Click on **It matters** ((Import).

Figure 5-88 Navigation
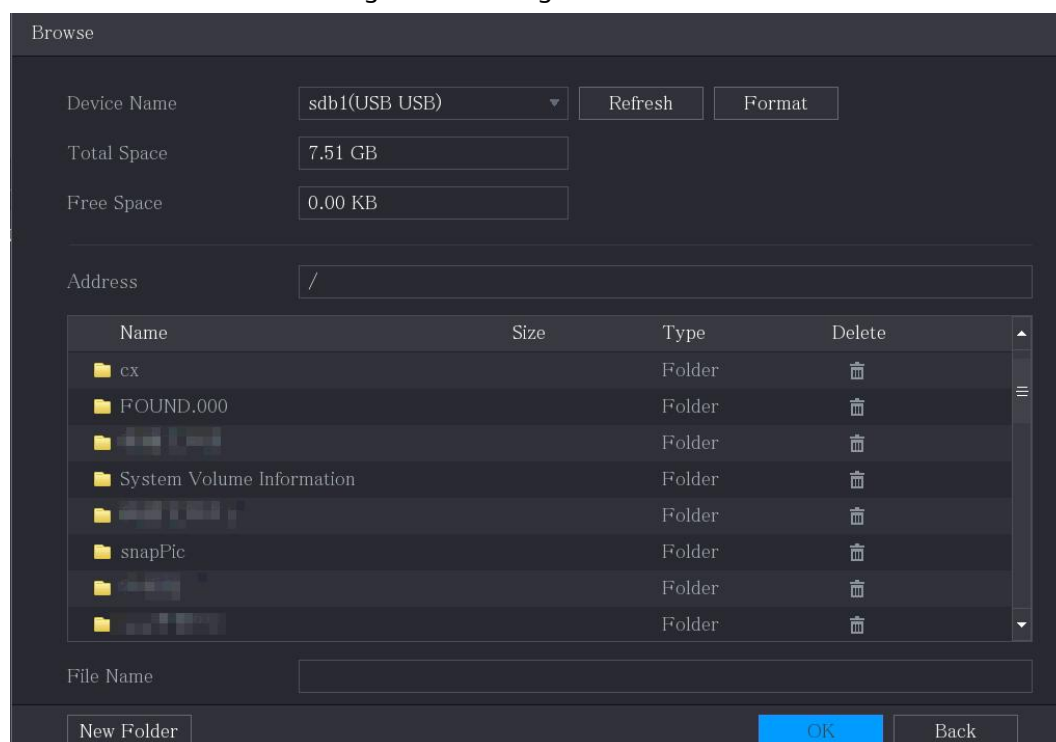
Step 3: Select the file to import. Step 4: Click on **OK** to start the import.

Step 5: Once the import is complete, a message appears notifying you that the operation was successful.

⚠️

- A No, possible modify The file.csv exported. Lend Attention to Not change The format of the file, otherwise Not I will be able to to be imported why And Not valid.
- There tongue of the file.csv must to correspond at the tongue of the device.
- The import And the export through protocol customized Not I am supported.

📖

If the address IP from import exists gi to in the device, The system viewer to a message That asks if overwrite The content existing.

- Do click on **OK** For substitute The content existing.
- Do click on **Cancel** (Cancel) For add it as device separate in the area **Device added** (Added Device).

5.7.2 Remote Device Management

You can view the status of remote devices and update them.

5.7.2.1 Status View

You can view device information such as connection status, IP address, motion detection, video loss detection, camera name and manufacturer.

Select**Main menu**>**Camera**>**Camera List**>**State**(Main Menu > Camera > Camera List > Status).

5.7.2.2 Viewing firmware information

You can view the device firmware information such as channel number, IP address, manufacturer, system version, video input, audio input and alarm input.
Select**Main menu**>**Camera**>**Camera List**>**Firmware**(Main Menu > Camera > Camera List > Firmware).

Figure 5-89 Firmware

5.7.2.3 Remote Device Updates

Procedure

Step 1: SelectMain menu>Camera>Camera List>Update (Main Menu > Camera > Camera List > Update).
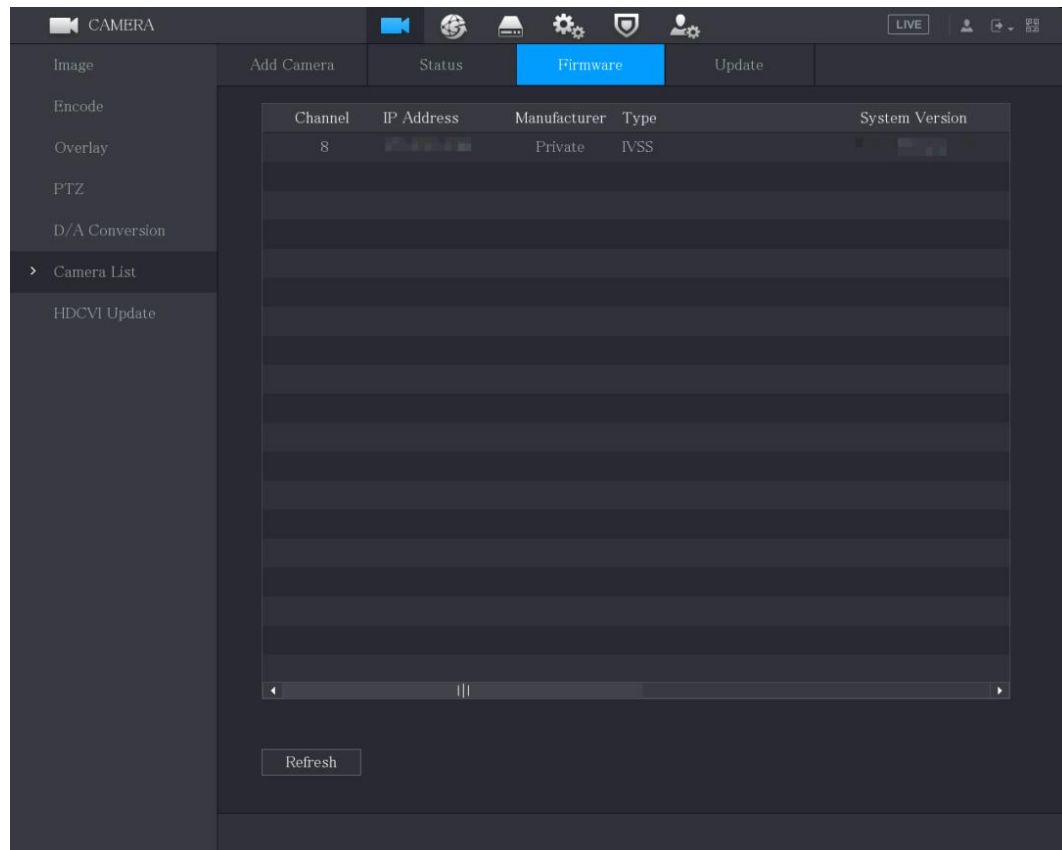
Figure 5-90 Update
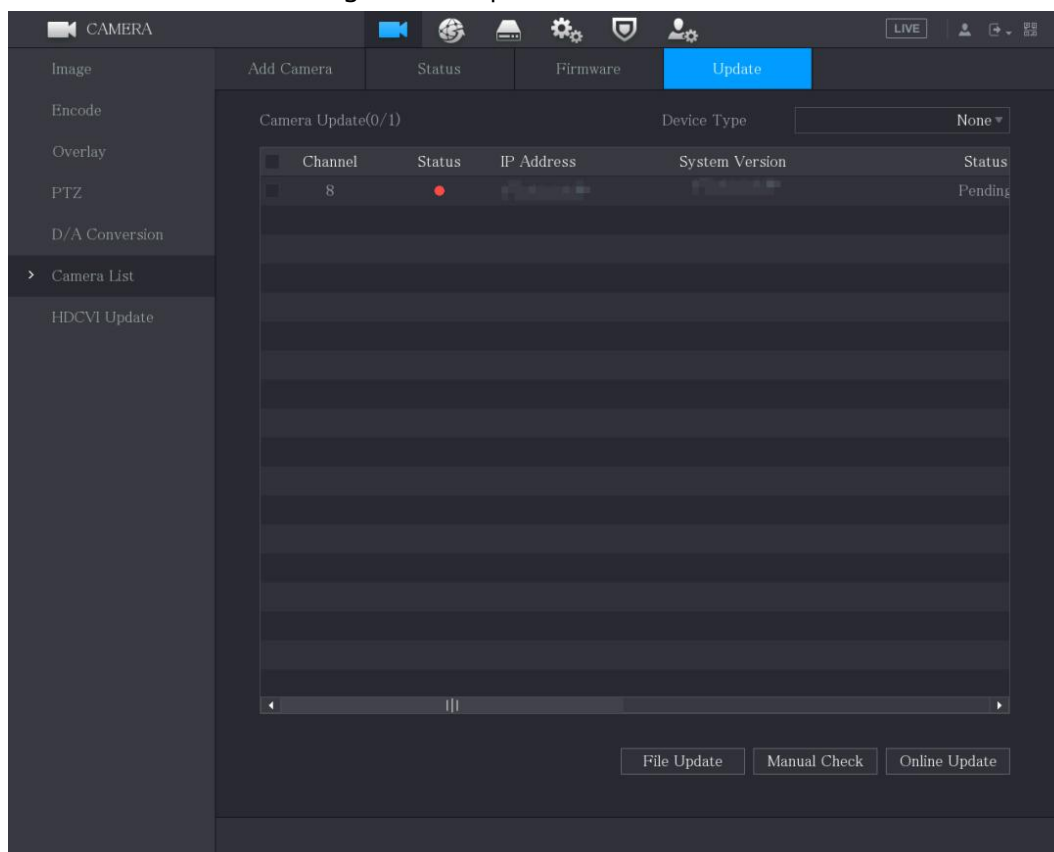
Step 2: Update your device.

● File Update

1. Insert a USB storage device containing the update files into the USB port on your device.

2. Select the devices to update.

3. Click Update file.

4. Select the update files and click**Apply**(Apply).

● Online update

1. Click on**Detect**(Detect) or select the checkbox of the device you want to update and click**Manual verification**(Manual Check). The system starts searching for new versions on the online server.

2. Select the checkbox of all devices that have an updated version.

3. Click Online Update.

- The system viewer to a message That indicates The completion correct of the update.
- A possible use this list Type (Type) For filter the devices in way from find them quickly.

5.8 Configuring recording settings

You can record videos manually or automatically, and configure recording settings to main stream and sub stream respectively.

5.8.1 Enabling Recording Control
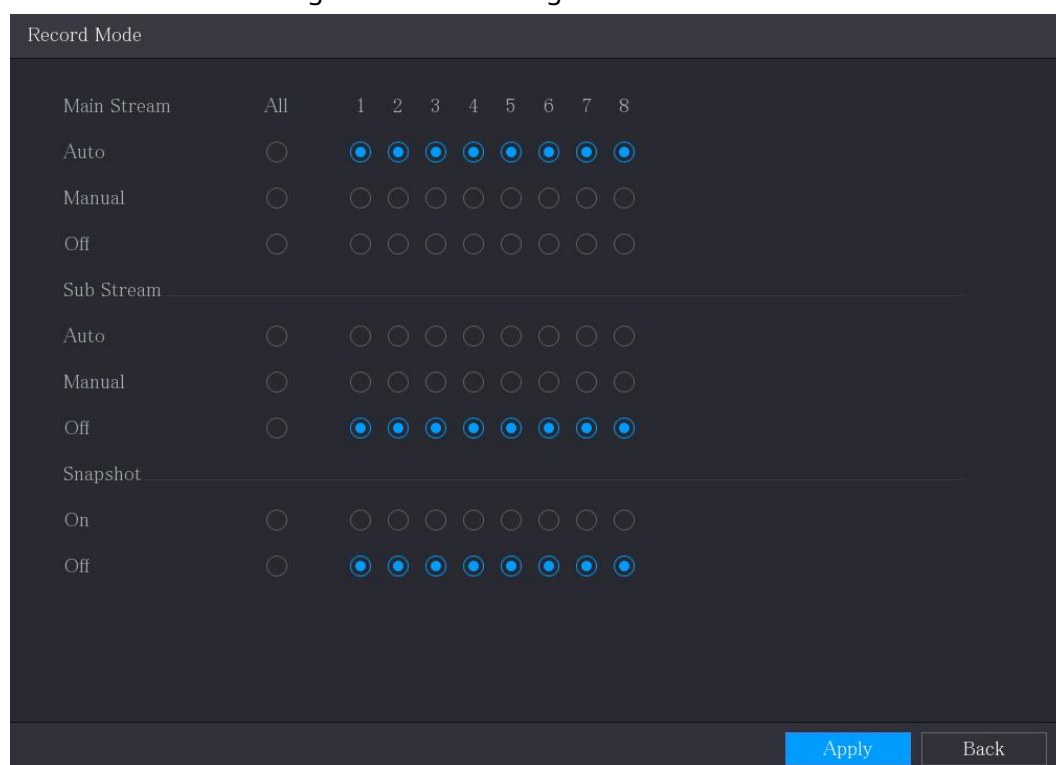
Preliminary information

- The operations Of registration manual require   That the user is gifted from the Permissions Of access to the settings   Of **ARCHIVING**   (STORAGE).
- Check   That The disc rigid installed on the device   is correctly   formatted.

Procedure

Step 1: Right-clicking on the live view screen displays the context menu. From the context menu, select**Manual control**>**Check registration** (Manual Control > Record Control).

Figure 5-91 Recording mode

Step 2: Configure recording control parameter settings.

Table 5-36 Description of recording control parameters

Parameter	Description
Channel	Allows you to view the connected analogue channels and digital channels. You can select a single channel, or select the option **Everyone**(All)

Parameter	Description
Flow main/flow secondary	● **Automatic:**Allows you to record automatically at the scheduled time and according to the type defined in the scheduled recording program. ● **Manual:**The system records continuously 24 hours a day for the selected channel. ● **Stop:**The system does not record.
Snapshots	Enable or disable scheduled snapshots for the channels in question.

Step 3: Click on**Apply**(Apply).

5.8.2 Configuring Recorded Video Storage Schedule

You need to configure the recorded video storage schedule so that the recorded video can be saved. For details, please refer to "5.1.4.9 Configuring Recorded Video Storage Schedule".

5.9 Configuring snapshot settings

5.9.1 Configuring snapshot activation

Snapshots are divided into scheduled snapshots, event-triggered snapshots, and face detection-triggered snapshots. When both are enabled, the event-triggered snapshot takes priority.

● If no alarm events occur, the system performs the scheduled snapshot.
● If alarm events occur, the system takes the event-triggered snapshot.

5.9.1.1 Configuring scheduled snapshot
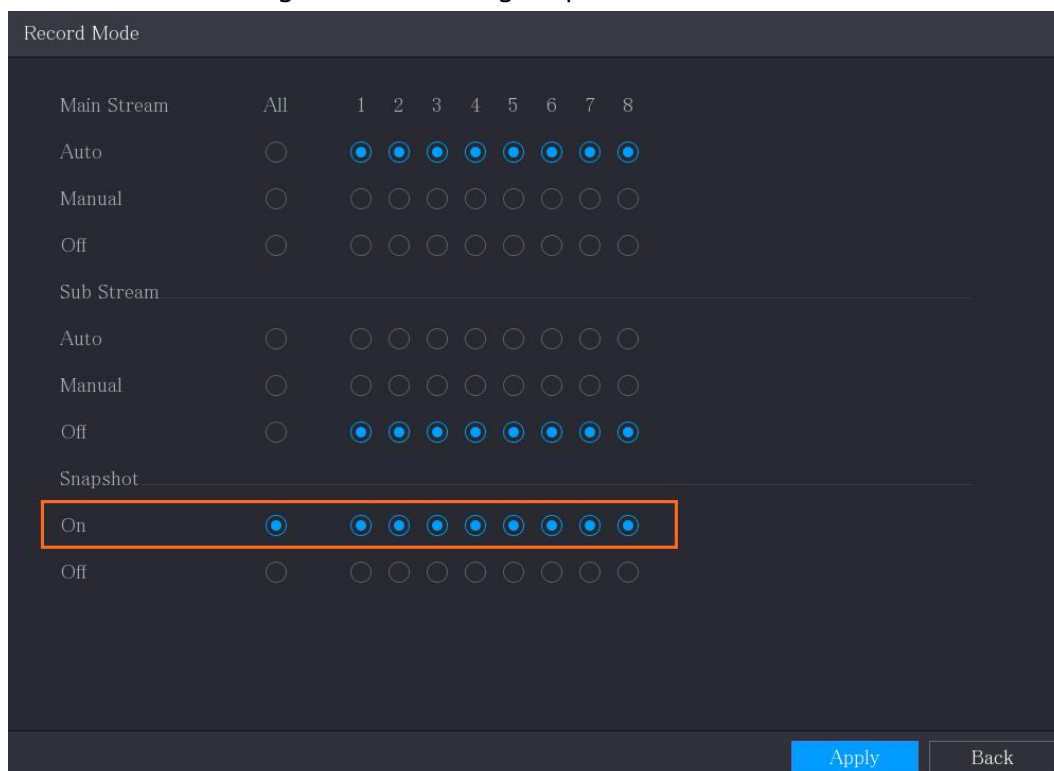
Procedure

Step 1: Right-clicking on the live view screen will bring up the context menu.

Step 2: From the context menu, select**Manual control**>**Check registration** (Manual Control > Record Control).
Step 3: In the area**Snapshot**(Snapshot), enable channel snapshot if needed.

Figure 5-92 Enabling snapshot

Step 4: Select**Main Menu**>**CAMERA**>**Coding**>**Snapshots**(Main Menu > CAMERA > Encode > Snapshot).

Step 5: In the list**Type**(Type), select**Planned**(Scheduled) and then configure the other parameters.

Figure 5-93 Type List

Step 6: Click on**Apply**(Apply) to save the settings.

● If you have configured snapshot scheduling, the setup is complete.
● If you have not configured the snapshot schedule, see "5.1.4.10 Configuring the snapshot storage schedule".
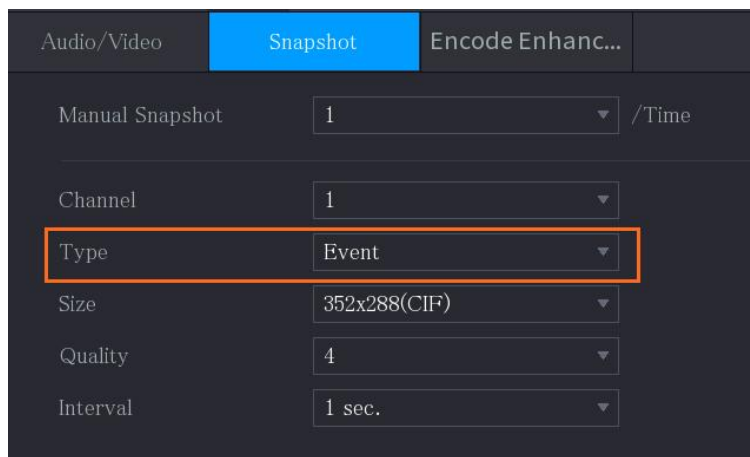
5.9.1.2 Configuring Event Triggered Snapshots

Procedure

Step 1: Select**Main menu**>**CAMERA**>**Coding**(Main Menu > CAMERA > Encode).

Step 2: In the list**Type**(Type), select**Event**(Event) and then configure the other parameters.
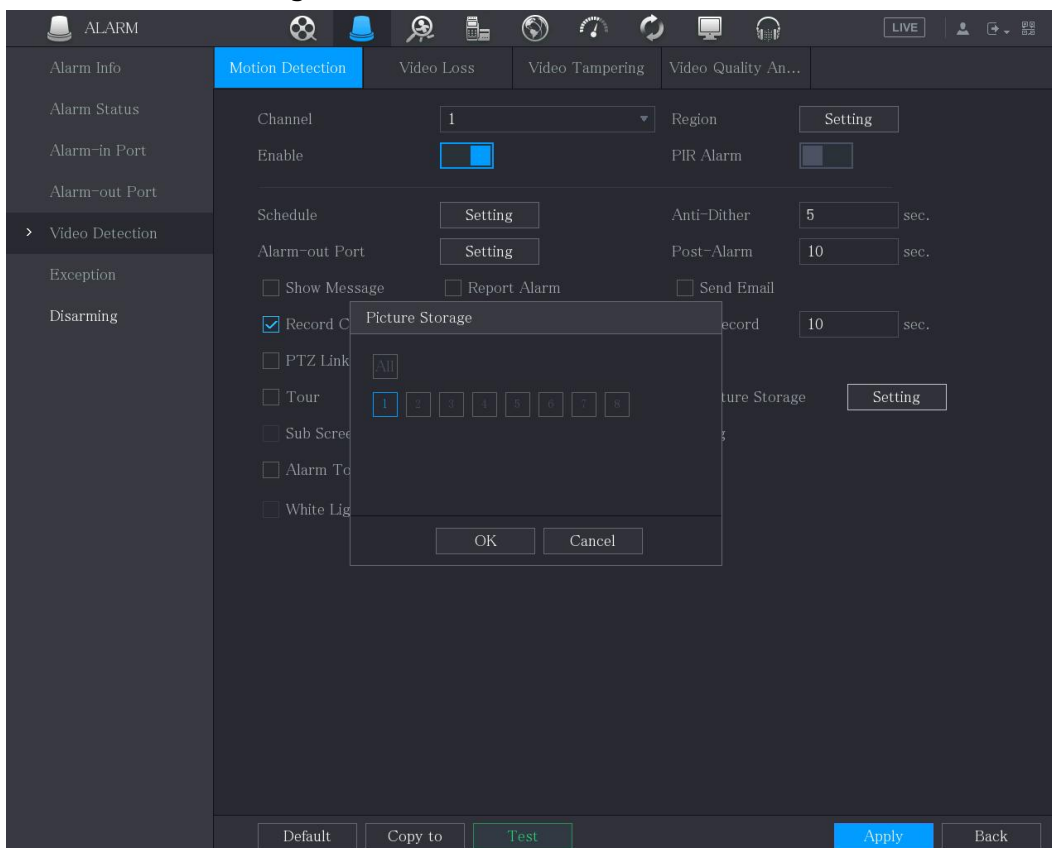
Figure 5-94 Event

Step 3: Select**Main menu**>**ALARM**>**Video detection**(Main Menu > ALARM > Video Detection) and select the event type to configure. For example: select the tab **Motion detection**(Motion Detection).

Figure 5-95 Motion detection

Step 4: Click on**Settings**(Setting) next to the checkbox**Image storage**(Picture Storage) and select the corresponding channel. Step 5: Click on**Apply**(Apply).

5.9.2 Configuring snapshot storage schedule
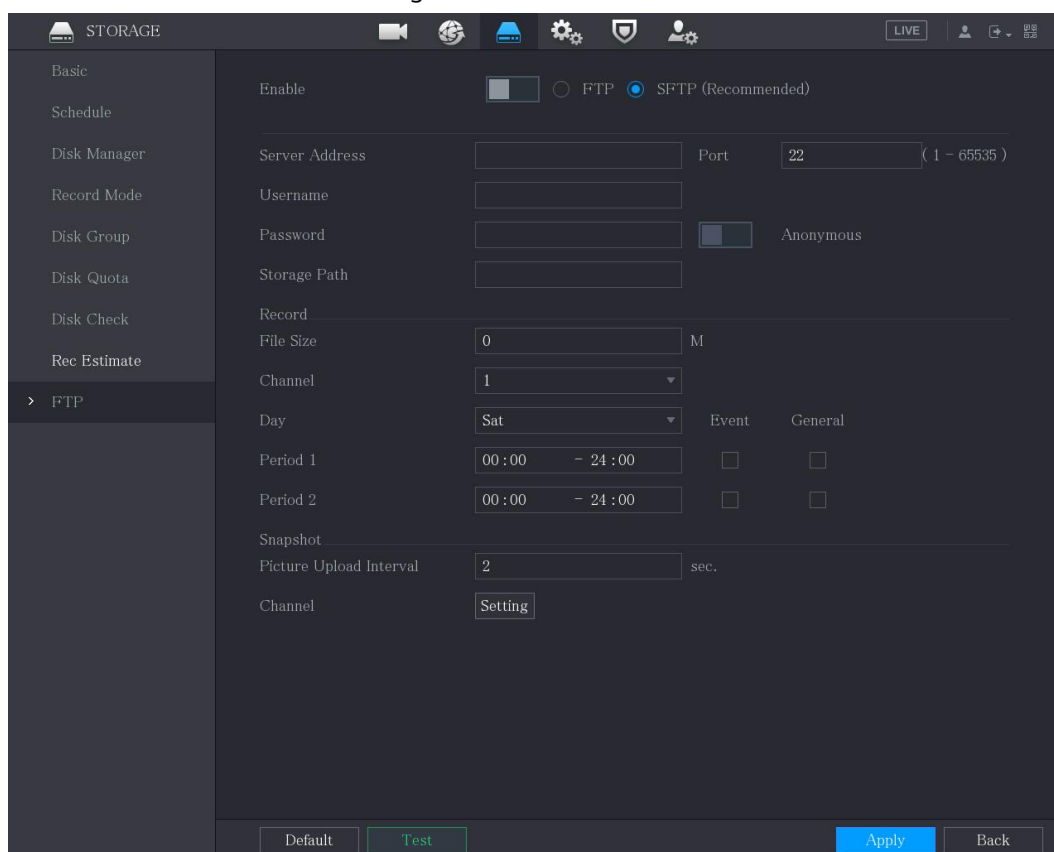
You need to configure the snapshot storage schedule so that the snapshot can be saved. For details, see "5.1.4.10 Configuring the Snapshot Storage Schedule".

5.9.3 Backup snapshots to FTP

Procedure

Step 1: Select**Main menu**>**ARCHIVING**>**FTP**(Main Menu > STORAGE > FTP).

Figure 5-96 FTP

Step 2: Enable the FTP function and configure the parameters. For details, see "5.19.9 Configuring FTP Storage Settings".

Snapshots will be uploaded to FTP for backup.

5.10 Video playback

5.10.1 Enabling Recording Control
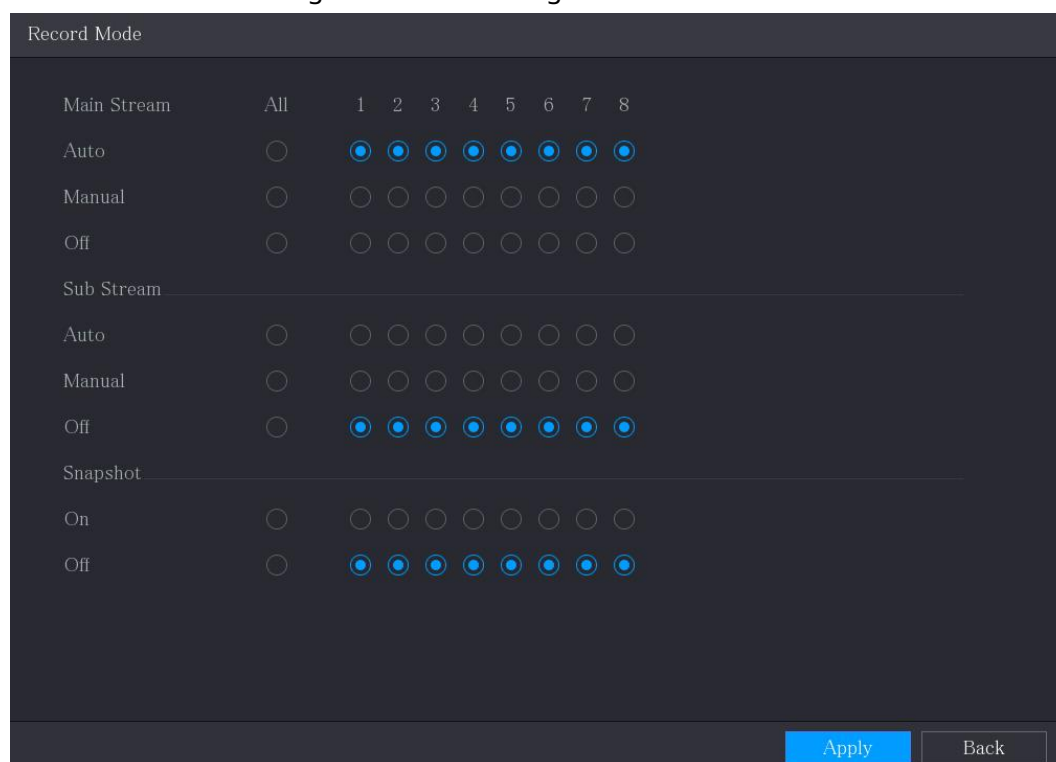
Preliminary information

⚠️

● The operations Of registration manual require   That the user is gifted from the Permissions Of access to the settings   Of **ARCHIVING**   (STORAGE).
● Check   That The disc rigid installed on the device   is correctly   formatted.

Procedure

Step 1: Right-clicking on the live view screen displays the context menu. From the context menu, select**Manual control**>**Recording mode** (Manual Control > Record Mode).

Figure 5-97 Recording mode

Step 2: Configure recording control parameter settings.

Table 5-37 Description of recording control parameters

Parameter	Description
Channel	Allows you to view the connected analogue channels and digital channels. You can select a single channel, or select the option **Everyone**(All)
Main flow/Secondary flow	● **Automatic:**Allows you to record automatically at the scheduled time and according to the type defined in the scheduled recording program.

Parameter	Description
	● **Manual:**The system records continuously 24 hours a day for the selected channel. ● **Stop:**The system does not record.
Snapshots	Enable or disable scheduled snapshots for the channels in question.

5.10.2 Instant Playback

You can use the instant playback function to play the previous 5 seconds to 60 minutes of the recorded video in any channel. For details of the instant playback function, please refer to "5.2.2.1 Instant Playback".

5.10.3 Video Playback

You can search and play the recorded video saved on your device.
Select**Main menu**>**Near**(Main Menu > Search).

Figure 5-98 Video Search
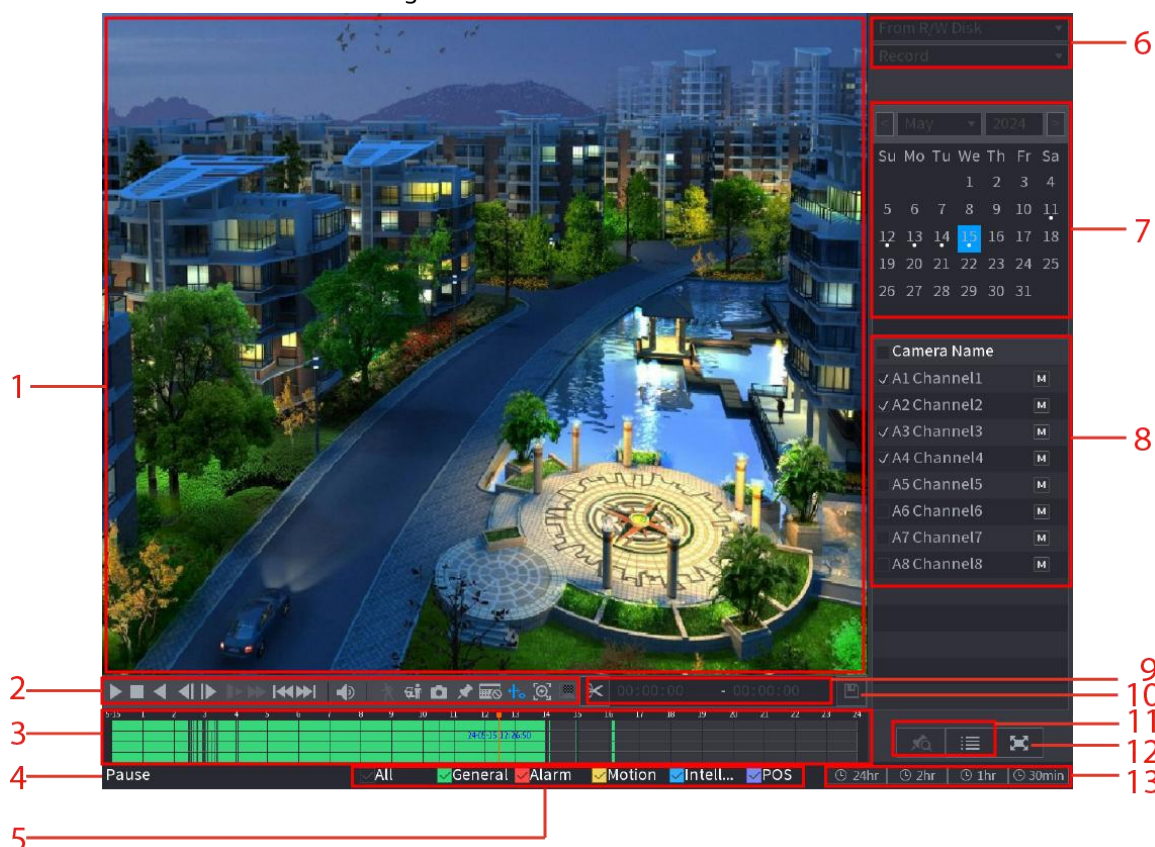
Table 5-38 Video search description

N.	Function	Description
1	Window of visualization	Allows you to view the searched recorded image or video. Supports single-channel, 4-channel, 9-channel and 16-channel simultaneous playback.

N.	Function	Description
		📖 When playing in a single channel, click and hold the selected area to zoom in. The area will be zoomed in after releasing the left mouse button. To exit zooming, right-click on the image.
2	Control bar reproduction	Allows you to control playback.
3	Time bar	Allows you to view the type and time period of the current recorded video. ● In the 4-channel view layout, there are 4 time bars, while in the other layouts there are 4 time bars. display only 1 bar is displayed. ● Click the colored area to start playing for a certain period of time. ● When configuring settings, rotate the wheel on the time bar to zoom from 0. When playback is in progress, rotate the wheel on the time bar to zoom from the time point where playback is currently in progress. ● Time bar colors: Green indicates general type, red indicates external alarm, yellow indicates motion detection, blue indicates intelligent events, and purple indicates POS events. ● For some models, clicking the empty area of the timeline will automatically move the system to the next time point where there is recorded video. ● By holding down the time bar, the mouse pointer will change to a hand and you can drag to view the playback at the desired point. ● You can drag the vertical orange line on the timeline to quickly view playback in frame format. ● While playing a video in single-channel mode, you can move the mouse pointer over the timeline to view thumbnail images of the desired video moment. ● While playing a video, you can select other channels as per your needs. The time bar of the newly added channels will be added to the time bar of the basic channels.

N.	Function	Description
		previous. The type and time period of the newly added channels are the same as the first basic channels.
4	State of the reproduction	It includes two states of reproduction:**Play**(Play) and **Break**(Breaks).
5	Registration type	Select the checkbox to determine the type of recording to search for.
6	Search type	Select the content to play. You can select**Registration**(Record),**Image**(Picture) and **Sub-period**(Subperiod).
7	Calendar	By clicking on the date you want to search for, the time bar displays the corresponding recording. Dates with recordings or snapshots have a filled circle below the date.
8	Layout of visualization and selection of the channel	● In the list**Camera name**(Camera Name), select the channels to play. ● The window division depends on how you select channels. For example: if you select one channel, playback is displayed in a single-channel view, while if you select two to four channels, playback is displayed in a four-channel view. The maximum number is eight channels. ● Click on ▣ to change flow. ▣ indicates the flow main and ⓢ the secondary flow.
9	Video Merge	Joins a section of the recorded video and saves it.
10	Backup	Backs up recorded video files.
11	Viewing list	This area includes**Tag list**(Tag List) and**File list**(File List). ● ▣: By clicking on the icon**Tag list**(Tag List), the list of tagged recorded videos is displayed. Double-click the file to start playback. ● ▤: By clicking on the icon**File list**(File List), the list of searched recorded videos is displayed. You can lock the files.
12	Full screen	Click on ▣ for full screen viewing. In full screen mode, pointing to the bottom of the screen will display the timeline. Right click on the screen to exit full screen mode.
13	Bar unit storm	You can select 24 hours, 2 hours, 1 hour or 30 minutes as the time bar unit. The time bar display changes according to the setting.

5.10.3.1 Introduction to the playback controls bar

You can perform operations such as controlling the playback speed, adding bookmarks, and taking snapshots using the playback control bar.

Figure 5-99 Playback control bar

There function Of reproduction backwards And speed to Of reproduction they could vary in base at the version of the product. AND furthermore possible contact The support technician For consult the information on the version hardware.

Figure 5-39 Description of playback control bar

Icon	Function
▶, ⏸	Play/Pause. During playback you can toggle between play and pause.
⏹	Stop playback. During playback, you can click the button **Stop** to interrupt her.
◀, ⏸	Play backwards. ● During playback, click the button **Play back** (Play Backward) to play the recorded video backwards, the button changes to ; click ⏸ ⏸ to stop the reproduction ● During playback, click play ▶ to start the forward.
◀∣, ∣▶	Previous and next frame. ● When playback is paused, click ◀∣ or on ∣▶ For play the recorded video one frame at a time. ● When playing a recorded video frame by frame, click to start forward playback. ▶
∣▶	Slow motion playback. ● During playback, click ∣▶ to set the speed slow motion playback to Slow X1/2, Slow X1/4, Slow X1/8 or Slow X1/16. ● During fast playback, click playback ∣▶ to slow down the speed or increase it.
▶▶	Fast playback. ● During playback, click ▶▶ to set the speed fast playback on FastX2, FastX4, FastX8 or FastX16. ● During slow motion playback, click ▶▶ For

Icon	Function
	increase the slow playback speed.
⏮, ⏭	Previous day and next day. Click on ⏮ or click on ⏭ to reproduce the day previous or next of the currently recorded video.
🔊 ─○─	Adjusts the playback volume.
🚶	Enable the smart search function.
👥	Add filter criteria for smart search. You can select**Person**(Human),**Vehicle**(Vehicle) or deselect all. After clicking the icon, you can also draw the region of interest. For details, see "5.10.5 Quick Search Playback".
📷	In full-screen mode, click 📷 to acquire a snapshot and save it to your USB storage device or portable hard drive.
📌	Adds a tag for the recorded view.
🖥	Show or hide POS information. While playing a single channel, click to show or hide the For POS information on the screen.
📐	During playback, click this icon to show or hide the AI rulers.
🔲	Make a quick selection in the recorded video when the searched target appears in the playback. For details, see "5.2.2.6 Quick Pick".
▒	Face blurring is applied to ensure privacy protection. For details, see "5.2.2.7 Privacy Protection".

5.10.3.2 Selecting the search type

You can search recorded videos, video clips or snapshots from hard drive or external storage devices.

● **From read/write disk:**Play recorded videos or snapshots from your device's hard drive.

Figure 5-100 From read/write disk

From R/W Disk ▼

Record ▼

● **From I/O device:**Play recorded videos from an external storage device. Click on **Browse**(Browse) and select the saving path of the recorded video file to play. Double-click the video file or click to start playing. ▶

Figure 5-101 From I/O device
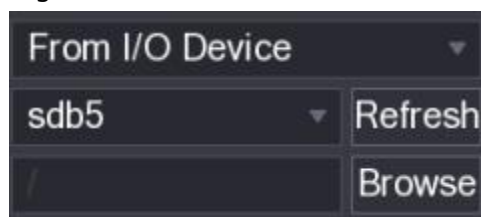
5.10.3.3 Making clips from recorded videos

During playback, trim specific sections of recorded videos and save them to USB storage device.

Procedure

Step 1: Select a recorded video to play.
- Click to start playback from the beginning.
- Double-click anywhere in the colored area of the timeline to start playback.

Step 2: Click the time bar to select the start time, then click start clipping. ✂ For

Figure 5-102 Clip
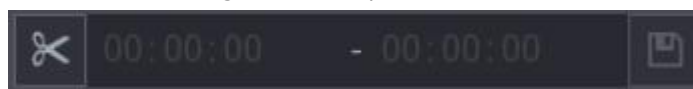
Step 3: Click the time bar to select the start time, then click stop clipping. ✂ For

Step 4: Click on 🖫.

📖

- Possible to carry out clip of video of a single channel or of more channels.
- Possible to execute The backup of a maximum of 1024 file at the time.
- Not Possible to execute clip come on file selected in **List** file (File List).

5.10.3.4 Backup Recorded Videos

You can backup recorded video files or video clips on the go to a USB storage device.

Procedure

Step 1: Select the recorded video you want to backup. You can select the following two file types:
- Recorded video file: By clicking , the area appears **File list** (File List). Select the files you want to backup.
- Join video files. For details on joining video files, see "5.10.3.3 Making Clips from Recorded Videos".

Step 2: Click on . 🖫

Figure 5-103 Backup

Step 3: Click on **Backup**.

If Not Yes wishes to execute The backup of the file, uncheck there box Of check.

5.10.3.5 EPTZ Playback Setup

Enable EPTZ functions during playback to track and zoom in on targets that trigger intelligent events, so you can observe changes in target details.

Preliminary information

● EPTZ link functions can only be enabled in single-channel and four-channel playback modes. They cannot be turned on or off when playing recordings with more than four channels.

● When selecting four-channel playback, you can enable the EPTZ link functions of only one channel at a time.

Procedure

Step 1: In the main menu, click on [LIVE] to access the live view page, then right click to select **EPTZ** and click on **Active**(On).

Step 2: Select a channel and click on [icon] below the channel list.

Step 3: Click on [toggle] to enable the ePTZ function and configure the parameters.

Figure 5-104 EPTZ playing
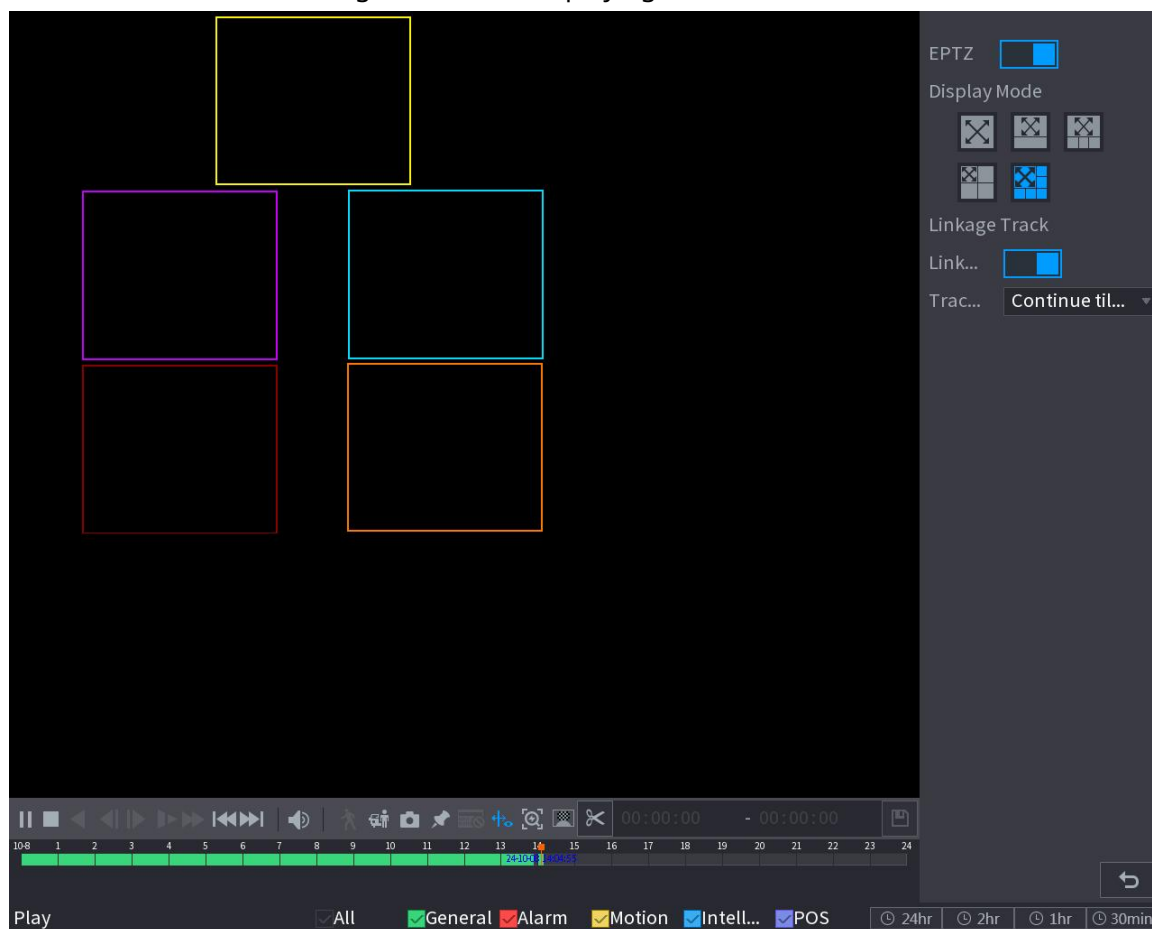
Table 5–40 Parameter description

Parameter	Description
Mode Viewing	Select the number of channels to monitor. Full Screen, 1 + 1, 1 + 3 and 1 + 5 modes are available. The default setting is Full Screen. The view pane can be modified in various ways, such as being resized, zoomed, and moved.
Trace link	Once the function is activated**Trace link**(Linkage Track), intelligent events are tracked by the PTZ system. The function is disabled by default.
Tracking duration	● **Customized**((customized)**:**allows you to manually select the tracking duration. For example, if you set a value between 30 and 60 seconds, if after tracking object A for 30 seconds, object B appears, the camera will start tracking object A; if no other objects appear while object A is being tracked, the camera will stop tracking object A after 60 seconds. ● **Continue until the object disappears**(Continue till object disappears)**:**The camera stops tracking when the detected object disappears from the image.

📖

If And te enabled The nnection EPTZ For a channel, this setting will remain to enabled After The erm from the reproduction. When Yes produces again The video For that channel, the effect EPTZ will come to Still displayed.

5.10.4 Smart Search

Preliminary information

During playback, you can scan a specific area to see if any motion has been detected. The system will display images of the motion detected in the recorded video.

📖

This function Available Alone on some models.

To use the Smart Search function, you need to enable the motion detection function for the channel by selecting **Main menu**>**ALARM**>**Video detection**> **Motion detection**(Main Menu > ALARM > Video Detection > Motion Detection).

Procedure

Step 1: Select**Main menu**>**NEAR**(Main Menu > SEARCH).

Step 2: In the list**Camera name**(Camera Name), select the channels to play. Step 3: Click or double-click anywhere in the colored area of the timeline to start playback.

Step 4: Click on .

A grid appears on the screen.

📖

● There research intelligent And pported Alone from the channel single.

● If Yes hey select more channels, Do double click on the window of the channel For to view Alone that channel on the screen, after which And to possible start to use there function Of research intelligent.

Step 5: Drag the pointer to select the search area.

📖

The area from the grill supports 22×18(PAL) And 22×15(NTSC).

Step 6: Click on the icon to add filter criteria. You can select the box **Person**(Human),**Vehicle**(Vehicle) or deselect all.

● Human: Display motion alarm if there is human presence during the selected time and search area.

● Vehicle: Displays motion alert if there are vehicles during the selected time and search area.

● Unchecked: Display motion alarm if both people and vehicles are present during the selected time and search area.

Step 7: Click on .

Step 8: The screen starts playing the moving parts of the recorded video for the selected search area.

Step 9: Click on ![icon] to exit smart search during playback.

5.10.5 Quick Search Playback

When playing the video, you can quickly search for detected targets and view their images, as well as the time and date the targets appeared.

Preliminary information

📖

This function And supported Alone from the reproduction to single channel.

Procedure

Step 1: In the main menu, click on real LIVE to access the viewing page in time.

Step 2: Right-click on the real-time view screen to select**Near**(Search) and go to the playback page.

Step 3: Select a single channel and click on ▶ to play the video.

📖

There line of the time And displayed in green For The period Of time registered.

● Quick Pick. For details, see section "5.2.2.6 Quick Pick".
● Search the region of interest in the recordings.
  1. Click the icon to set the filter criteria. You can select **Person**(Human), Vehicle, or deselect all.
  2. Click on**Redraw rule**(Redraw Rule) at the top left of the screen to draw the region of interest and click**Near**(Search).

Figure 5-105 Redraw rule
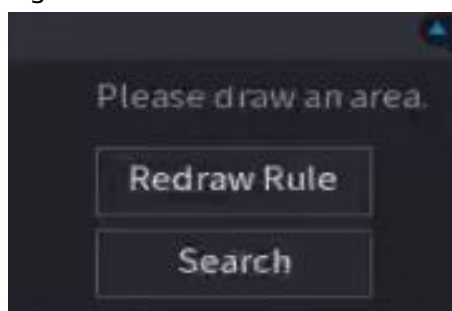
The search results are shown in the list on the right.

Figure 5-106 Search results
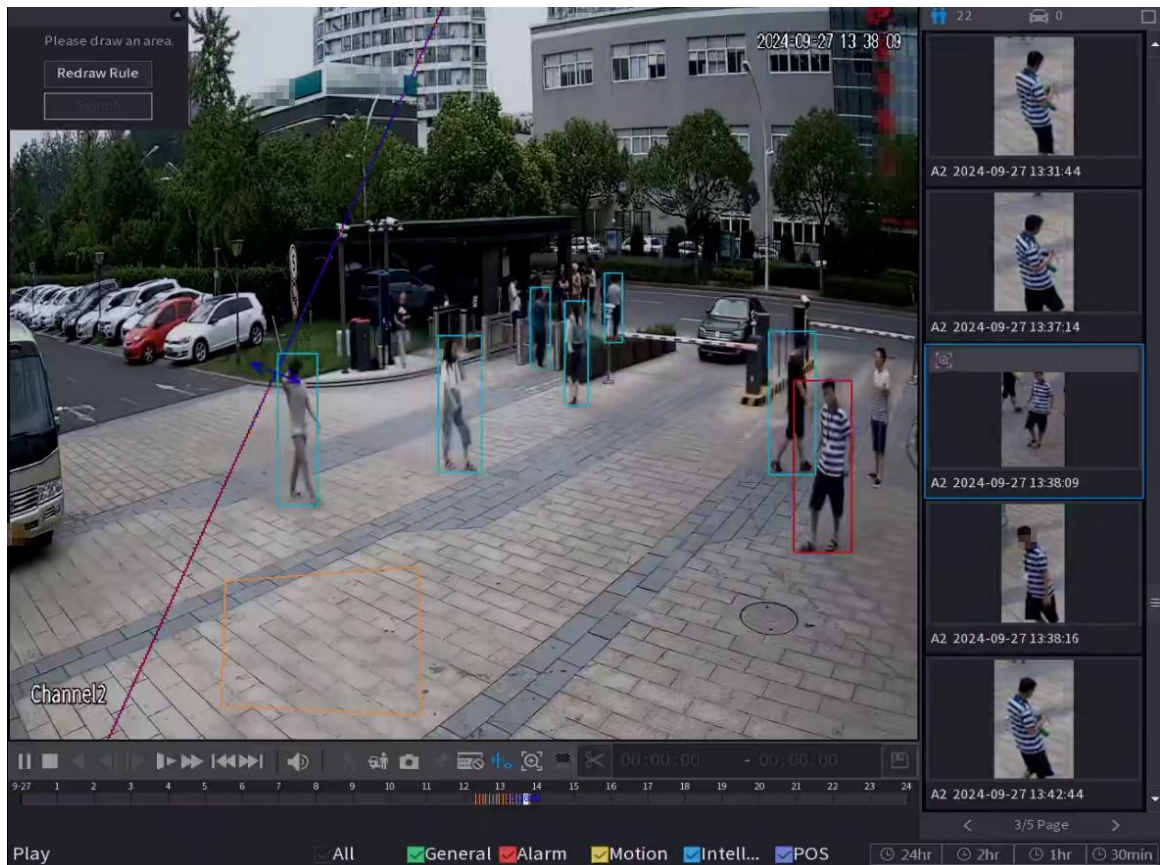
3. By clicking [icon] on the list on the right, the targets will be selected automatically.

4. Move the mouse near the subject box and click [icon] to access the search results page. You can set search conditions such as channel and period. By clicking on**Near**(Search), the search results will be displayed on the right screen.

Figure 5-107 Search results
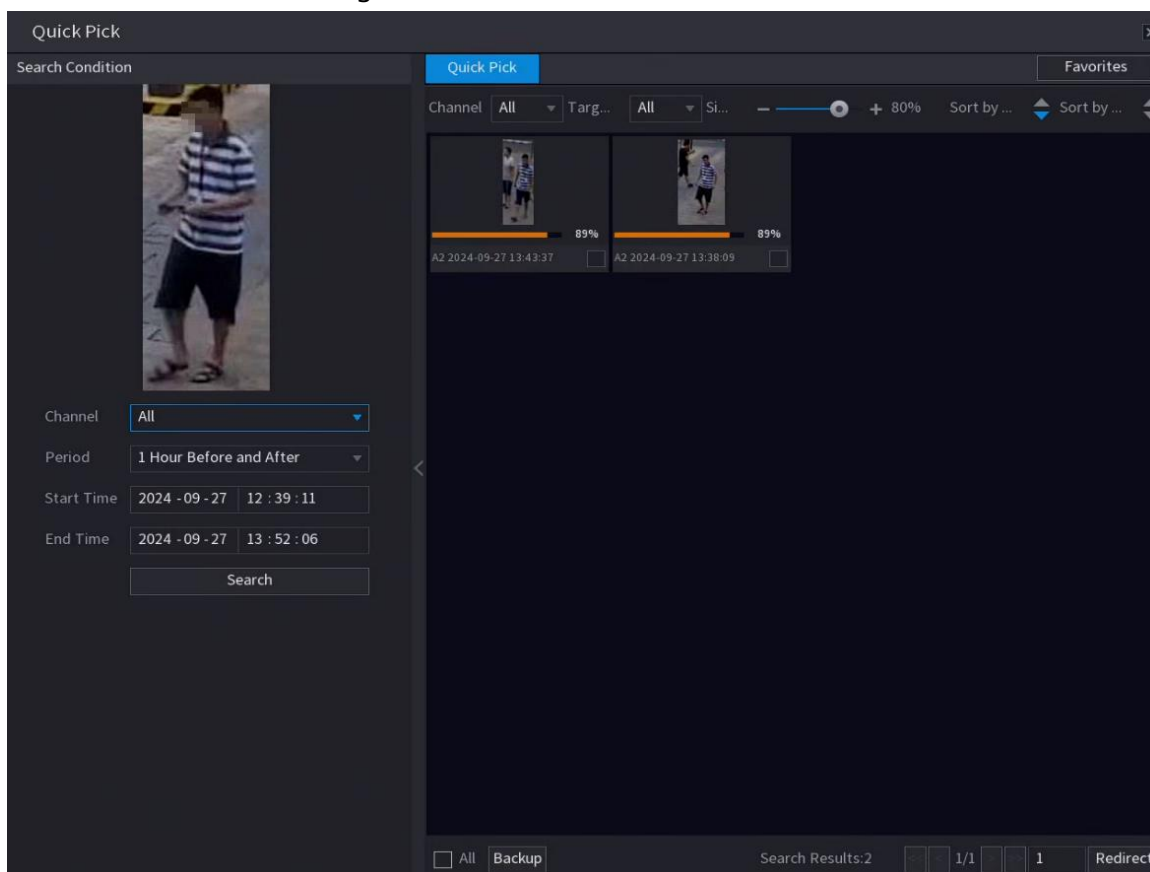
Related Operations

By hovering your mouse over a search result, you can:

● By clicking on , you can add the result to your favorites. You can add up to 1,000 items in favorites.

● By clicking on , you can add the result to the hidden items.

● Click on near **Order by time**(Sort by Time) or **Sort by analogy**(Sort by Similarity) to reorder search results by time or similarity.

5.10.6 Displaying AI rule during playback

To use AI Ruler mode, follow these steps:

Procedure

Step 1: Select **Main menu** > **NEAR**(Main Menu > SEARCH).

Step 2: In the list **Camera name**(Camera Name), select the channels to play. Step 3: Click or double-click anywhere in the colored area of the timeline to start playback.

You can view the AI rule during playback. The feature is enabled by default.

📖

Do click on ➕ ForHIDE there rule IA.

Figure 5-108 Playback
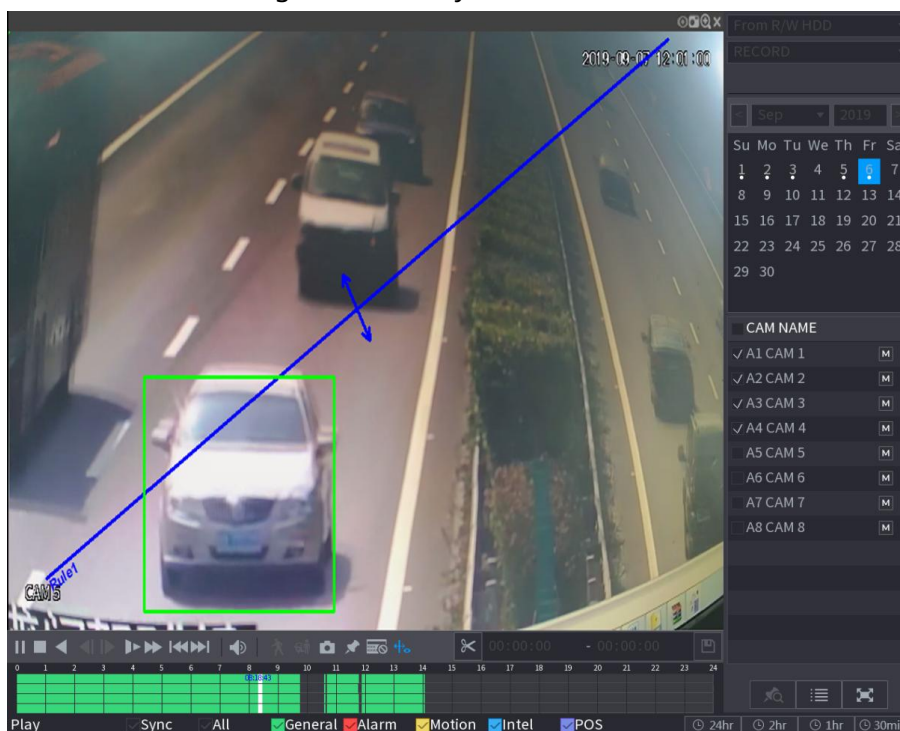
5.10.7 Mark and play videos

You can mark the recording at a point that you consider important. This way you can easily find the marked recording by searching the time and the name of the mark.

Bookmark a video

1. Select**Main menu**>**NEAR**(Main Menu > SEARCH).
2. In playback mode, click .

Figure 5-109 Adding a tag

3. In the box**Tag name**(Tag Name), enter a name.
4. Click on**OK**.

This marked video file is displayed in**Tag list**(Tag List).

Playing tagged videos

📖

This function **is** **not** supported in the reproduction to channel **single.**

1. In the list**Camera name**(Camera Name), select a channel.
2. Click .

Figure 5-110 Tagged video list
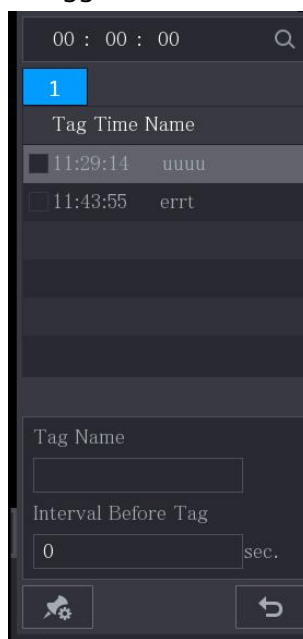
3. Double-click the file you want to play.
4. To search for the marked video by time, in the box**NEAR**(SEARCH) at the top of the page, enter the time, and then click .

Playing time before tag

You can configure the tagged video to play a predefined number of seconds of your choosing before the tagged time.

1. In the box**Tag name**(Tag Name), enter a tagged video name.
2. In the box**Interval before tag**(Interval Before Tag), enter the number of seconds.
3. Click .

Playback begins the indicated number of seconds before the marked time.

📖

If **And** indicated a number **Of** seconds Before of the time **marked,** there**reproduction** **start that** number **Of** seconds Before of the time **marked.** **Incase** on the contrary, he comes reproduced **All** **The** **material present.**

Tagged Video Management

On the page**Tag list**(Tag List), click on .

Figure 5-111 Tag Management

● By default, all tagged videos from the selected channel are handled.
● To search for tagged video, select the channel number from the list**Channel**(Channel), enter the time in the boxes**Start time**(Start Time) and**End time**(End Time), then click on**Near** (Search).

● All tagged videos are displayed in chronological order.
● To change the name of a tagged video, double-click the tagged video and the dialog box will appear.**Edit tags**(Modify Tag).
● To delete the tagged video, select the tagged video and then click**Delete** (Delete).

All'opening from the page **Management tags**Tags Management), therereproduction I will betomass inbreak until all'exit from the page. If Thevideo marked inreproduction he comes deleted, therereproduction I will start tofrom thefirst video withtagin **List tags**Tags List).

5.10.8 Playing Snapshots

You can search and play snapshots.

Procedure

Step 1: Select**Main menu**>**NEAR**(Main Menu > SEARCH). Step 2: In the list**Search type**(Search Type), select**Image**(Picture). Step 3: In the list**Channel**(Channel), select a channel number. Step 4: In the area**Calendar**(Calendar), select a date. Step 5: Click on .

The system starts playing snapshots based on the selected intervals.

5.10.9 Playing multiple parts

Preliminary information

You can cut the recorded video files into multiple parts and play them simultaneously to save your time.

This function Available Alone onsome models.

Procedure

Step 1: Select**Main menu**>**NEAR**(Main Menu > SEARCH).

Step 2: In the list**Search type**(Search Type), select**Sub-period**(Subperiod); in the Split Mode list, select**4**,**9**or**16**.

Figure 5-112 Subperiod
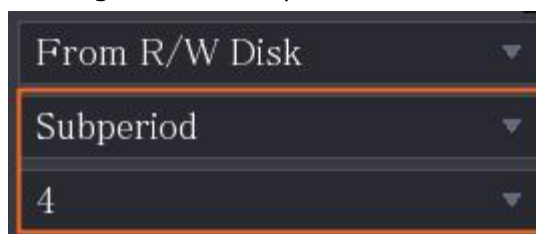
Step 3: In the area**Calendar**(Calendar), select a date.

Step 4: In the list**Camera name**(Camera Name), select a channel.

This function supported Alone In the single channel.

Step 5: Start playing the parts.

● By clicking , playback restarts from the beginning.

● Double-clicking anywhere on the timeline: playback starts from the point you click.

Figure 5-113 Time bar
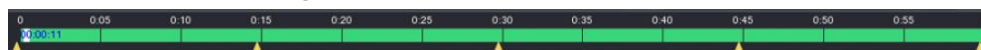
Each one filevideo registered must have a duration Of at least five minutes. If a filevideo registered hard less Of 20 minutes but Yes wishes Anyway divide it in four windows, The system regulate to automatically The number Of windows For guarantee That everything part hard more Of five minutes. In This case And possible That in someone windows Not come visualize Images.

5.10.10 Using the file list

You can view all videos recorded in a certain period of time from any channel in **File list**(File List).

Procedure

Step 1: Select**Main menu**>**NEAR**(Main Menu > SEARCH). Step 2: Select one or more channels. Step 3: Click on .

Figure 5-114 File list
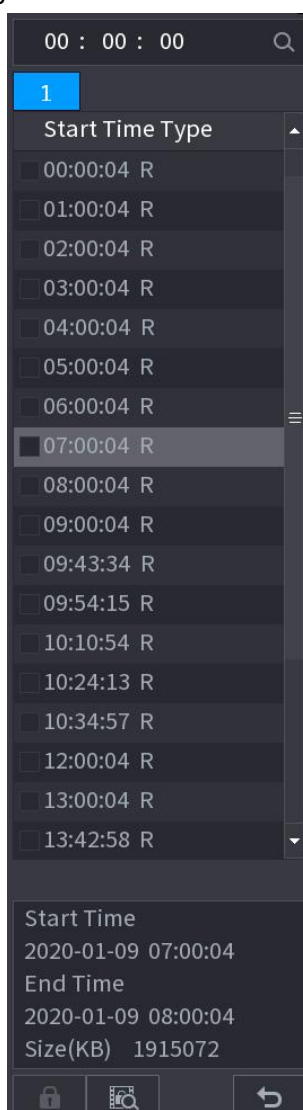
Step 4: Start playback

● By clicking on , by default playback restarts from the first file.

● By clicking on any file, the system plays that file.

📖

● In the field of the hour in the part superior from the page with the list of the file, A possible insert the time specification in which look for The file from view.

● In the area List file A possible to view 128 file.

● Type Of file: **R** indicates a video registered generic; **TO** indicates a video registered with alarms external; **M** indicates a video registered with events Of detection of the movement; **THE** indicates a video registered with events intelligent.

● Do click on ↩ For return at the page with The calendar And the list of the names from the cameras.

Related Operations

● To block the recorded video, on the page**File list**(File List), select the checkbox of the recorded video, then click . The locked videos will not be taken into account.

📖

The Video Register in phase Of writing or overwrite Not they can to be blocked.

● To view blocked information, click .

● To unlock the recorded video, on the page**File Lock**(File Lock), select the recorded video, then click**Unlock**(Unlock).

Figure 5-115 File Lock

2		CH	Type	Start Time	End Time	Size(KB)
1	■	1	R	2019-12-01 08:00:00	2019-12-01 09:00:00	35072
2	□	1	R	2020-01-04 06:00:00	2020-01-04 07:00:00	35712

Unlock   Cancel
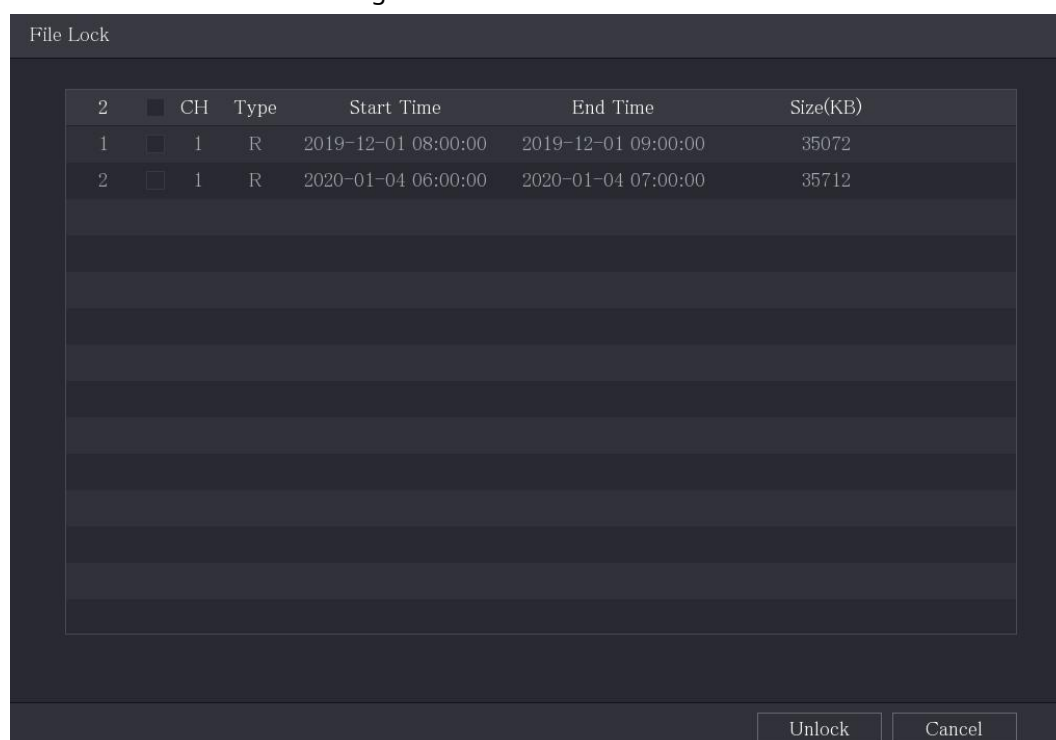
5.11 Alarm Event Settings

5.11.1 Alarm information
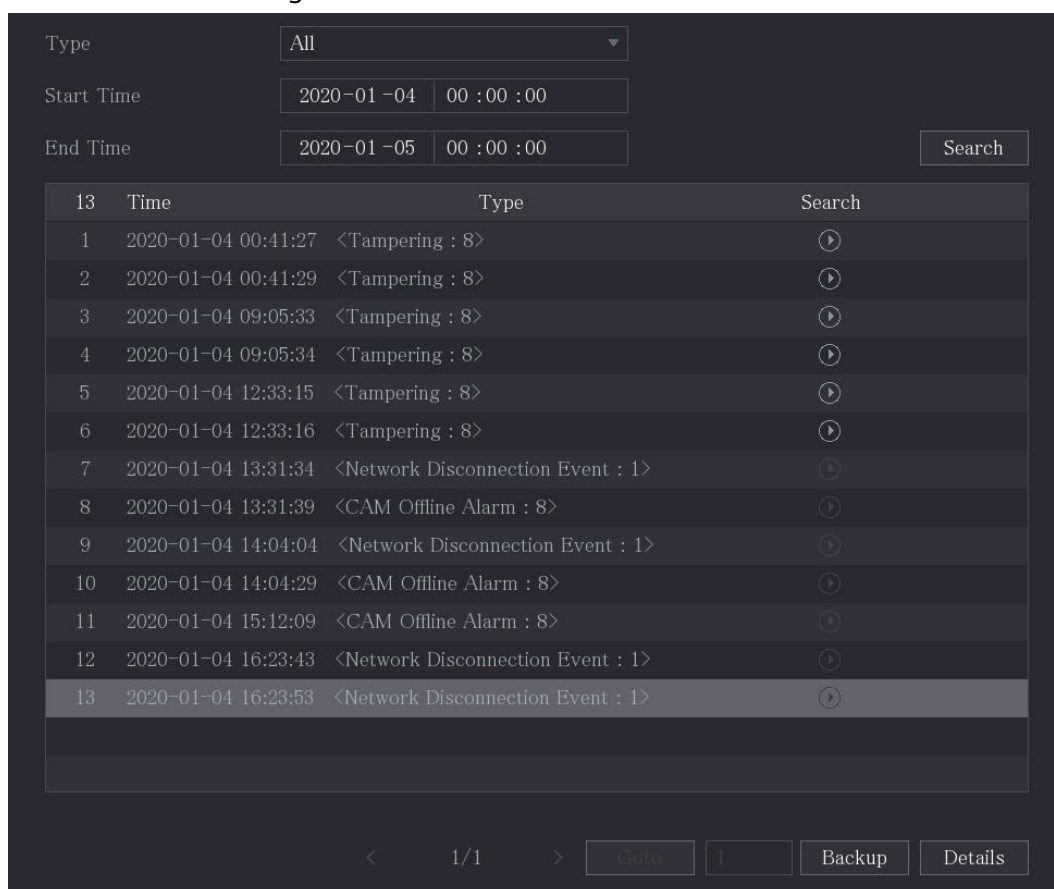
5.11.1.1 About Alarm Search

You can search, view and backup alarm information.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Alarm information**>**Register**(Main Menu > ALARM > Alarm Info > Log).

Figure 5-116 Alarm information

Step 2: In the list**Type**(Type), select the type of event, then in the boxes**Start time** (Start Time) and**End time**(End Time), enter the specific time. Step 3: Click on**Near**(Search). The search results will be displayed.

Step 4: Click on**Backup**to back up your search results to your external storage device.

📖

● Do click on ▶ For to reproduce The video registered of the event Of alarm.
● Select   a event A Do click on**Details** (Details) For to view   the information detailed   of the event.

5.11.1.2 Search the Analysis List

You can search for video quality anomalies via the analysis list.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Alarm information**>**Analysis list**(Main Menu > ALARM > Alarm Info > Analytics List).

Figure 5-117 Analysis list
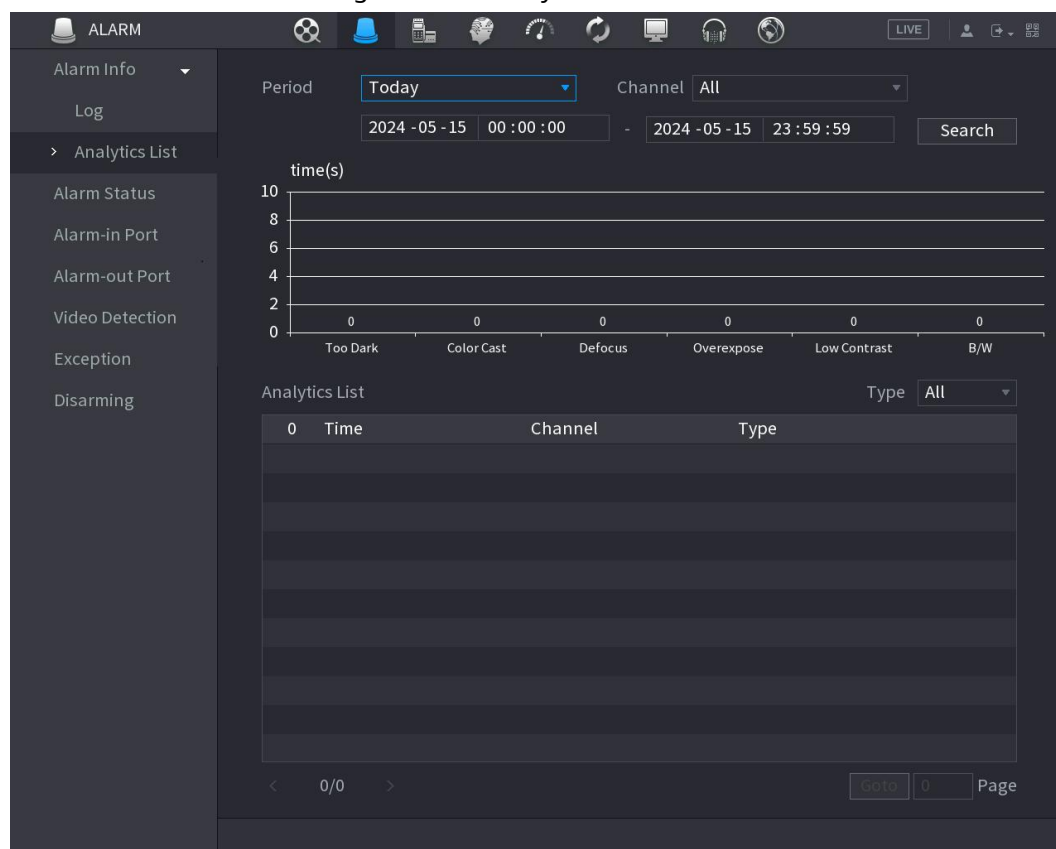
Step 2: Select from the drop-down list**Period**(period) and**Channel**(Channel), then click on **Near**(Search).

In the analysis list you can view the time, channel and type of anomaly. Step 3: By selecting**Type**(Type) a certain type of anomaly will be displayed.

5.11.2 Alarm input settings

You can configure the alarm settings for each channel individually or apply the settings to all channels and then save them. For details, see "4.3 Connecting to Alarm Input and Output".
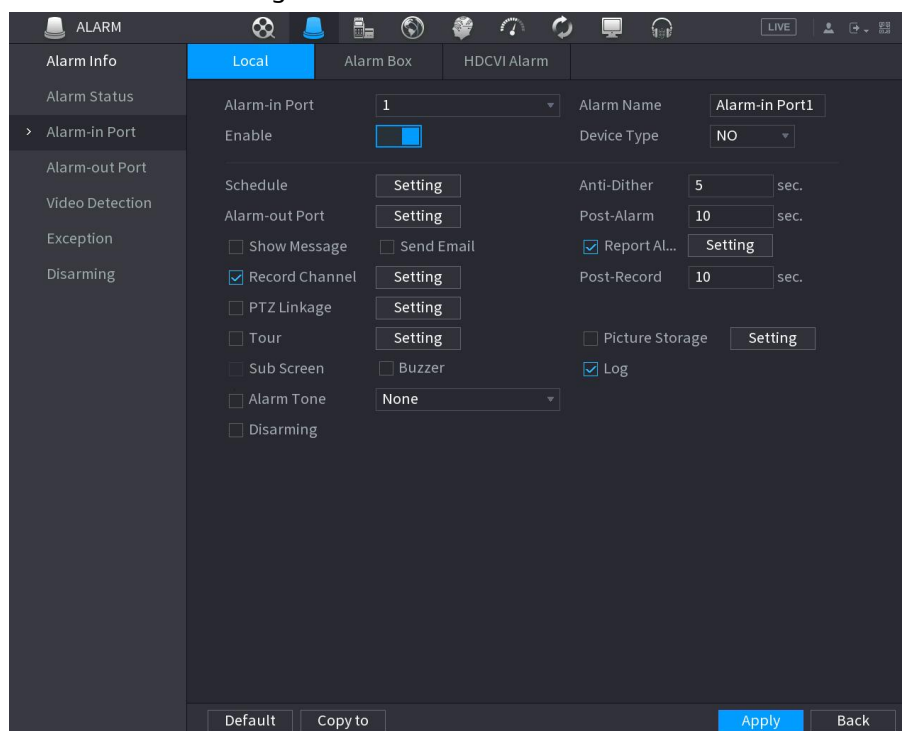
5.11.2.1 Configuring local alarms

You can connect the alarm device to the alarm input port of the device. When the alarm is triggered on the alarm device, the alarm information is uploaded to the device, which then outputs local alarms as configured in this section.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Alarm input port**>**Local**(Main Menu > ALARM > Alarm-in Port > Local).

Figure 5-118 Local alarm

Step 2: Configure settings for local alarms.

Table 5-41 Local alarm settings

Parameter	Description
Alarm input port	Select the channel number.
Alarm name	Enter the name of the custom alarm.
Ability	Enable or disable the local alarm function.
Device type	In the list**Device type**(Device Type), select**NO**or **NC**as a type of voltage output.
Planning	Click on**Settings**(Settings) to configure the parameters. Define the period for motion detection activation. For details, see "5.11.4.1 Configuring Motion Detection Settings".
Anti-dithering	Configure the time period from the end of event detection to the end of alarm.
Alarm output port	Click on**Settings**(Settings) to configure the parameters.

Parameter	Description
	● Local Alarm: Enables alarm triggering via alarm devices connected to the selected output port. ● Alarm Extension: Enables alarm triggering via the connected external alarm device. ● Wireless Siren: Enables alarm triggering via devices connected through USB gateway or camera gateway.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cleared. The value is between 0 and 300 seconds, while the default value is 10.
Show message	Select the checkbox**Show Messages**(ShowMessage) to enable the display of messages on the user's local host computer.
Alarm Report	Select the checkbox**Alarm Report**(Report Alarm), then click **Settings**(Setting) next to**Alarm report**Report Alarm) to select**Private protocol**(Private Protocol) or**HTTP**In the **Protocol type**(Protocol Type). You can make the system upload the alarm signal to the network (including alarm center) when alarm events occur.
Send email	Select the checkbox**Send email**(Send Email) to have the system send an email notification in case of alarm events. To use this feature, make sure that the email function is enabled in the item**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).
Record channel	Select the channels you want to record. The selected channels start recording when an alarm event occurs. Local alarm recording and automatic recording must be enabled.
PTZ connection	Click on**Settings**(Setting) to display the PTZ page. Enable PTZ linkage actions, such as selecting the preset to be recalled when an alarm event occurs.
Post registration	Defines the delay time for the device to turn off recording after the alarm is cleared. The value ranges from 10 to 300 seconds, while the default value is 10.
Tour	Select the checkbox**Tour**to enable a tour of selected channels.
Image storage	Select the checkbox**Snapshot**(Snapshot) to take a snapshot of the selected channel. To use this feature, select**Main menu**>**CAMERA**>**Coding**>**Snapshot**(Main Menu > CAMERA > Encode > Snapshot), then in the list**Type**(Type) select

Parameter	Description
	Event(Event).
Secondary screen	Select the checkbox to enable this function. When an alarm event occurs, the extra screen shows the settings configured in the item**Main menu**>**DISPLAY**> **Tour setup**>**Secondary screen**(Main Menu > DISPLAY > Tour Setting > Sub Screen). ● This feature is only available on some models. ● To use this feature, the extra screen must be enabled.
Video matrix	Select the checkbox to enable this function. When an alarm event occurs, the video output port uses the settings configured in**Main menu**> **DISPLAY**>**Tour setup**(Main Menu > DISPLAY > Tour Setting). This feature is only available on some models.
Acoustic signal	Select this checkbox to enable the device to beep.
Log	Select this checkbox to have the device record local alarm information.
Disconnection	After enabling this function, you can connect a switch to the alarm input port to control disarming.

Step 3: Click on**Apply**(Apply) to complete the setup.

● Do click on**Default** (Default) For restore the setting default.
● Do click on**Copy** (Copy) in, in the window Of dialogue **Copy in**(Copy to), select the channels additional on which copy the settings Of alarm local, Therefore Do click on **Apply** (Apply).

5.11.2.2 Configuring alarms from the alarm panel

You can connect the alarm box to the RS-485 port of the device. When the alarm is detected by the alarm box, the alarm information is uploaded to the device, which then outputs alarms as configured in this section.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Alarm input port**>**Alarm panel**(Main Menu > ALARM > Alarm-in Port > Alarm Box).

Figure 5-119 Alarm panel

Step 2: In the list**Alarm panel**(Alarm Box), select the alarm box number corresponding to the address number configured via the DIP switch on the alarm box. Step 3: In the list**Alarm input port**(Alarm-in Port), select the alarm input port on the alarm panel.

Step 4: Configure settings for other alarm panel parameters. Step 5: Click on**Apply**(Apply) to complete the setup.

Do click on**Default** (Default) For restore the setting default.

5.11.2.3 Configuring Alarms from External IP Cameras

Procedure

Step 1: Select**Main menu**>**ALARM**>**Alarm input port**>**External camera**(Main Menu > ALARM > Alarm-in Port > CAM Ext).

Figure 5-120 External camera

Step 2: Configure alarm input settings from external IPC. Step 3: Click on**Apply**(Apply) to complete the setup.

📖

- Do click on**Default** (Default) For restore the setting default.
- Do click on**Copy on**(Copy to) For copy the settings on others channels.
- Do click on**Update** (Refresh) For update the settings configured.

5.11.2.4 Configuring Alarms for Offline IP Camera

You can configure alarm settings in case the IP camera is offline.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Alarm input port**>**Offline camera**(Main Menu > ALARM > Alarm-in Port > CAM Offline).

Figure 5-121 Offline camera

Step 2: Configure alarm input settings from IPC offline. Step 3: Click on**Apply**(Apply) to complete the setup.
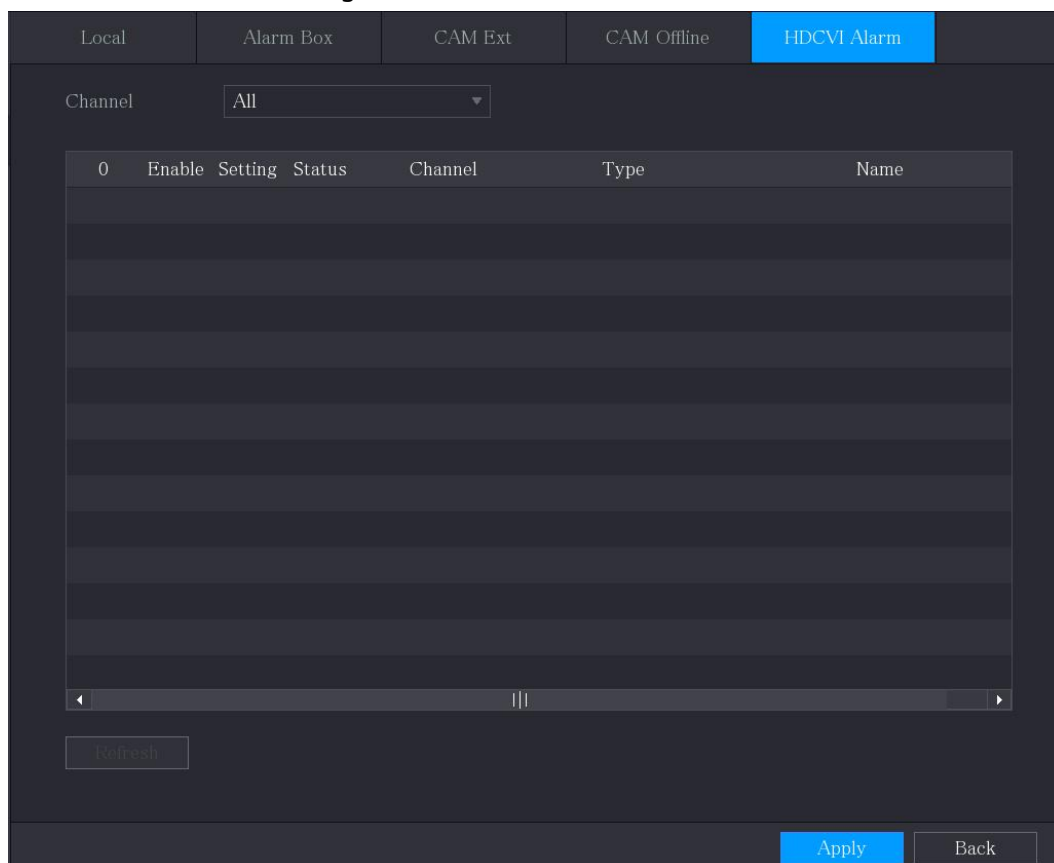
📖

- ● Do ₍click₎ on**Default** (Default) For restore the setting default.
- ● Do ₍click₎ on**Copy on**(Copy to) For copy the settings on others channels.

5.11.2.5 Configuring Alarms from HDCVI Devices

Procedure

Step 1: Select**Main menu**>**ALARM**>**Alarm input port**>**HDCVI Alarm** (Main Menu > ALARM > Alarm-in Port > HDCVI Alarm).

Figure 5-122 HDCVI Alarm

Step 2: In the list**Channel**(Channel), select a channel or**All**(All). Step 3: Click on .

Step 4: Configure settings for other alarm panel parameters. Step 5: Click on**OK**to save the settings.

Step 6: Click on**Apply**(Apply) to complete the setup.

5.11.3 Alarm Output Settings
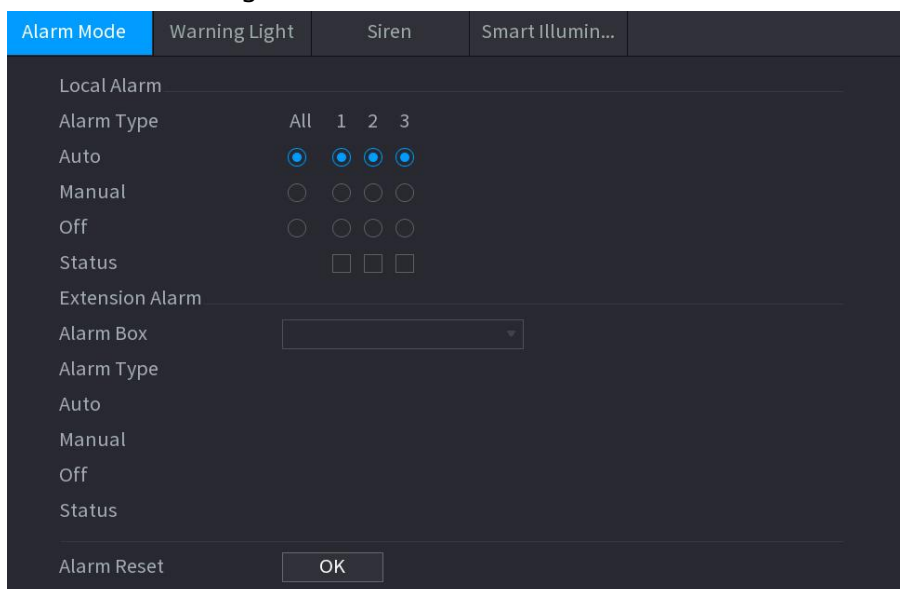
5.11.3.1 Alarm Output Configuration

When the device triggers alarms, the connected alarm device generates alarms as configured in this section. You can connect to the output port of the device or via wireless connection.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Alarm input port**>**Alarm mode**(Main Menu > ALARM > Alarm-in Port > AlarmMode).

Figure 5-123 Alarm mode

Alarm Mode	Warning Light	Siren	Smart Illumin...	

Local Alarm
Alarm Type   All   1   2   3
Auto   ●   ●   ●   ●
Manual   ○   ○   ○   ○
Off   ○   ○   ○   ○
Status   □ □ □
Extension Alarm
Alarm Box
Alarm Type
Auto
Manual
Off
Status

Alarm Reset   [OK]

Step 2: Configure alarm output settings.

- **Automatic:**When an alarm event is triggered on the device, the connected alarm device generates alarms.
- **Manual:**The alarm device is forced to keep alarms active.
- **Stop:**The alarm output function is not enabled.

Table 5-42 Alarm output settings

Parameter		Description
Local alarm	Alarm type	Select the alarm type for each alarm output port.
	State	Indicates the status of each alarm output port.
Alarm Extension	Alarm panel	Select the alarm panel number corresponding to the address number configured via the DIP switch on the alarm panel.
	Alarm type	Select the alarm type for each alarm output port.
	State	Indicates the status of each alarm output port.
Alarm reset		Click on**OK**to disable all alarm output states.

Step 3: Click on**Apply**(Apply) to save the settings.

5.11.3.2 Alarm light configuration

Preliminary information

When the motion detection alarm is triggered, the system connects to a camera with alarm light.

📖

For use this function, And cessary connect at least a camera with spy Of alarm to the device.

Procedure

Step 1: Select **Main menu**>**ALARM**>**Alarm output port**>**Alarm light** (Main Menu > ALARM > Alarm-out Port > Warning Light).

Figure 5-124 Alarm lamp

Step 2: Configure the alarm light parameter settings.

Table 5-43 Alarm lamp parameters

Parameter	Description
Channel	In the list **Channel**(Channel), select a channel connected to a camera with an indicator light.
Delay	Defines the delay time for the device to turn off the alarm after the alarm is cleared. The value is between 5 and 30 seconds, while the default value is 5 seconds.
Mode	Set the alarm mode of the alarm light to **Always on** (Always on) or **Flicker**(Flicker).
Frequency of the flicker	When setting the alarm mode of the alarm light to **Flashing**(Flash), you can select the flashing frequency between **Low**(Low), **Average**(Middle) and **High**(High).

Step 3: Click on **Apply**(Apply) to complete the setup.

5.11.3.3 Siren Configuration

Preliminary information

When the motion detection alarm is triggered, the system connects to a camera to generate an audible alarm.

📖
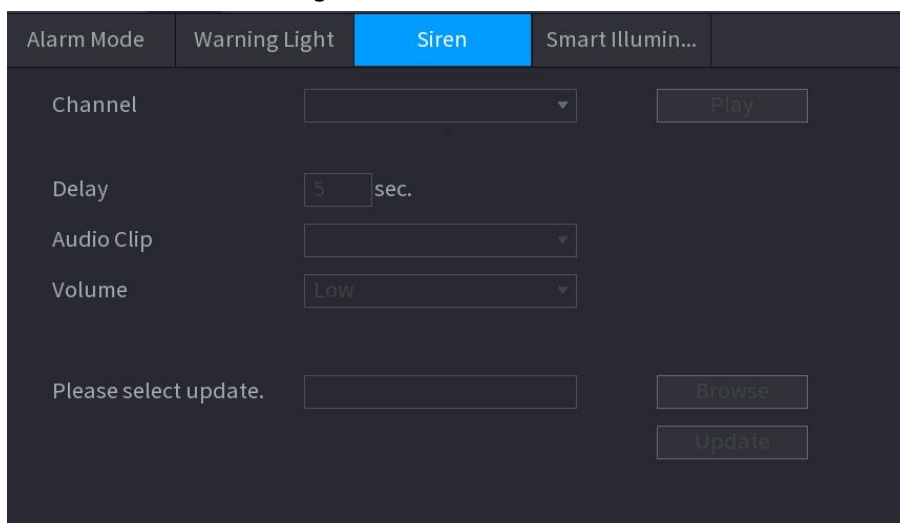
For use this function, And cessary connect at least a camera with function audio.

Procedure

Step 1: Select **Main menu**>**ALARM**>**Alarm output port**>**Siren**(Main Menu > ALARM > Alarm-out Port > Siren).

Figure 5-125 Siren

Step 2: Configure the settings for the siren parameters.

Table 5-44 Siren parameters

Parameter	Description
Channel	In the list**Channel**(Channel), select a channel connected to a camera that supports the audio function.
Play	Click on**Play**(Play) to manually activate the IP camera and play the audio file.
Delay	Defines the delay time for the device to turn off the alarm after the alarm is cleared. The value is between 5 and 30 seconds, while the default value is 5 seconds.
Audio clips	Select the audio clip for the siren sound. The default is**Clip 1**.
Volume	Select the volume for the audio clip. You can select the volume between **Bass**(Low),**Medium**(Middle) and**High**(High).
Clip Update audio	Import the update audio file (.bin or .wav) to update the camera's alarm audio file.

Step 3: Click on**Apply**(Apply) to complete the setup.

Related Operations

You can update the camera audio files on the local interface.

1. Prepare a USB device or other external storage device and connect it to your device.

2. Click on**Browse**((Browse).

3. Select the audio file to update (.bin or .wav).

4. Click on**OK**to return to the mermaid page.

5. Click on**Update**(Upgrade) to update the camera's alarm audio file.

Figure 5-126 Navigation

5.11.3.4 Smart lighting setup

Preliminary information

The smart lighting connection action can last for a certain period of time even after the event ends.

Foruse   this   function, Andcessary connect at least a   camera   withfunction Of lighting   intelligent.

Procedure

Step 1: SelectMain menu>ALARM>Alarm output port>Smart lighting(Main Menu > ALARM > Alarm-out Port > Smart Illumination).

Figure 5-127 Intelligent lighting

Step 2: Select a channel and then set the delay. Step 3:
Click onApply(Apply).

The illuminator remains on during the set delay following the end of the linked event.

5.11.4 Video Detection

Video detection uses computer vision and image processing technology. The technology analyzes video images to detect obvious changes, such as moving objects and blurring. When such changes are detected, the system triggers alarms.
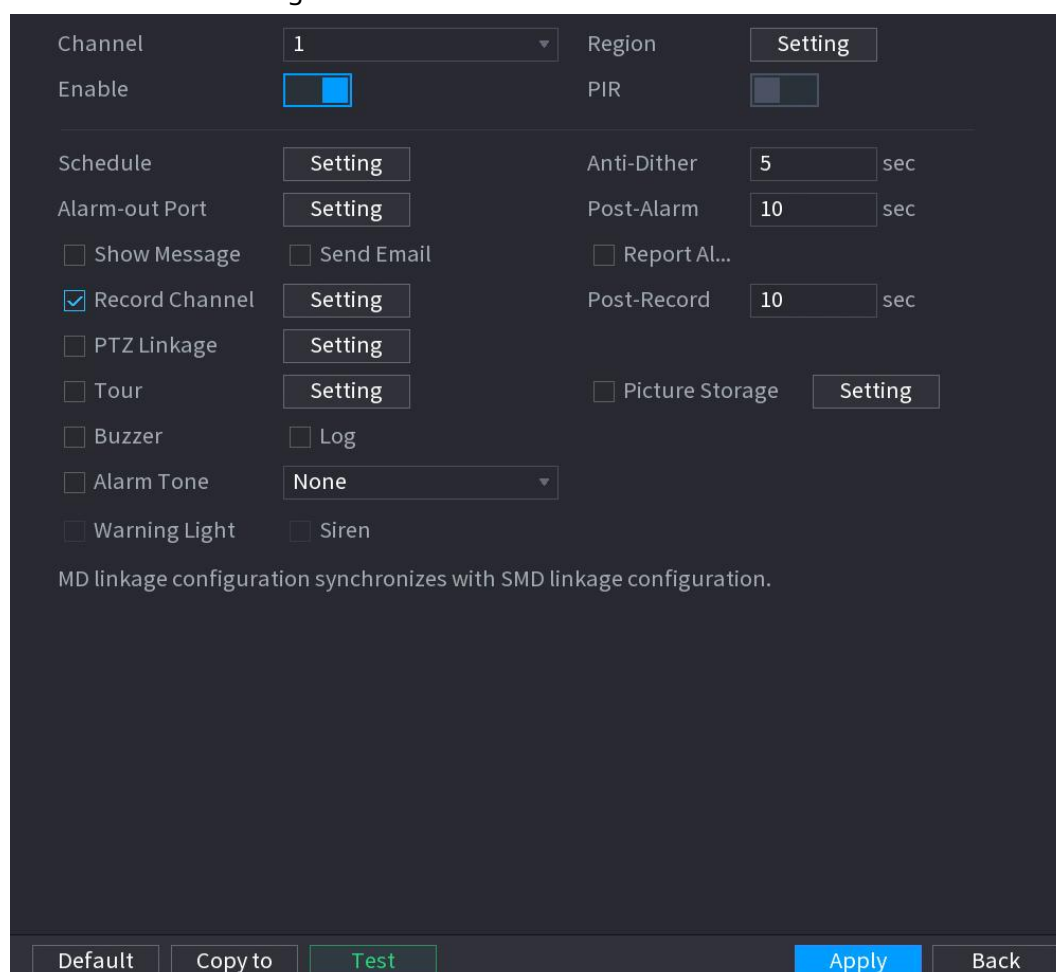
5.11.4.1 Configuring motion detection settings

When an object appears moving at a speed sufficient to reach the predefined sensitivity level, the system activates the alarm.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Video detection**>**Motion detection**(Main Menu > ALARM > Video Detection > Motion Detection.

Figure 5-128 Motion detection

Step 2: Configure settings for motion detection parameters.

Table 5-45 Motion detection parameters

Parameter	Description
Channel	Select a channel to set motion detection

Parameter	Description
	in the list**Channels**(Channel).
Region	Click on**Settings**(Setting) to define the motion detection area.
Ability	Enable or disable the motion detection function.
Infrared alarm passive (PIR)	The PIR function helps improve the accuracy and validity of motion detection. It can filter out false alarms triggered by objects such as falling leaves or insects. The detection range of the PIR function is smaller than the field angle. PIR function is enabled by default if it is supported by the cameras. Enabling PIR function will automatically enable motion detection to generate motion detection alarms; if PIR function is not enabled, motion detection may be less effective. accurate resulting in false positives. ● You can enable PIR function only when the channel type is CVI. ● If the camera does not support PIR function, it will not be available. ● If the device does not support PIR function, it will not be displayed on the page.
Planning	Define the period for which motion detection is activated.
Anti-dithering	Configure the time period from the end of event detection to the end of alarm.
Alarm output port	Click on**Settings**(Settings) to configure the parameters. ● General Alarm: Enables alarm activation via alarm devices connected to the selected output port. ● External Alarm: Enables alarm triggering via the connected external alarm device. ● Wireless Siren: Enables alarm triggering via devices connected through USB gateway or camera gateway.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cleared. The value is between 0 and 300 seconds, while the default value is 10. Entering the value 0 will cause no delay.
Show message	Select the checkbox**Show Messages**(Show Message) to enable the display of messages on the user's local host computer.
Alarm Report	Select the checkbox**Alarm Report**(Report Alarm), then click **Settings**(Setting) next to**Alarm report** Report Alarm) to select **Private protocol**(Private Protocol) or **HTTP**In the**Protocol type**(Protocol Type). You can make the system upload the alarm signal to the network (including alarm center) when alarm events occur.

Parameter	Description
Send email	Select the checkbox**Send email**(Send Email) to have the system send an email notification in case of alarm events. To use this feature, make sure that the email function is enabled in the item**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).
Record channel	Select the channels you want to record. The selected channels start recording when an alarm event occurs. Motion detection recording and automatic recording functions must be enabled.
PTZ connection	Click on**Settings**(Setting) to display the PTZ page. Motion detection can only trigger PTZ presets.
Post registration	Defines the delay time for the device to turn off recording after the alarm is cleared. The value ranges from 10 to 300 seconds, while the default value is 10.
Tour	Select the checkbox**Tour**to enable a tour of selected channels.
Image storage	Select the checkbox**Snapshot**(Snapshot) to take a snapshot of the selected channel. To use this feature, select**Main menu**>**CAMERA**>**Coding**>**Snapshot**(Main Menu > CAMERA > Encode > Snapshot), then in the list**Type**(Type) select **Event** (Event).
Secondary screen	Select the checkbox to enable this function. When an alarm event occurs, the extra screen shows the settings configured in the item**Main menu**>**DISPLAY**> **Tour**>**Secondary screen**(Main Menu > DISPLAY > Tour > Sub Screen). ● This feature is only available on some models. ● To use this feature, the extra screen must be enabled.
Video matrix	Select the checkbox to enable this function. When an alarm event occurs, the extra screen shows the settings configured in the item**Main menu**>**DISPLAY**>**Tour** (Main Menu > DISPLAY > Tour).

Parameter	Description
	This feature is only available on some models.
Acoustic signal	Select this checkbox to enable the device to beep.
Log	Select this checkbox to have the device record local alarm information.
Alarm tone	Select this option to enable audio/alarm tone transmission in response to a motion detection event.
Alarm light	Select this checkbox to enable the camera alarm light alarm.
Siren	Select this checkbox to enable the camera audio alarm.

Step 3: Click on**Apply**(Apply) to save the settings.

- Do click on**Default** (Default) For restore the setting default.
- Do click on**Copy in**(Copy to) in the window Of dialogue **Copy in**(Copy to), select the channels additional on which copy the settings Of detection of the movements, Therefore Do click on**Apply** (Apply).
- Do click on**Test** For try the settings.

5.11.4.1.1 Setting the motion detection area

Procedure

Step 1: Click on**Settings**(Setting) next to the option**Area**(Region). Step 2: Place your cursor in the top center of the page.

Figure 5-129 Detection settings
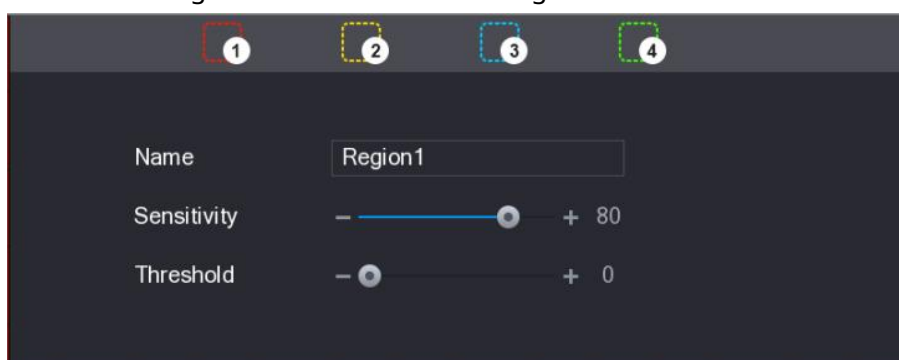
Step 3: Configure area settings. A total of four areas can be configured.

1. Select an area, for example by clicking .

2. Click and hold the mouse on the screen to select the region to detect.

The selected area is displayed in the color that represents it.

3. Configure the parameters.

Table 5-46 Detection area setting

Parameter	Description
Name	Enter a name for the area.
Sensitivity	Each area of each channel has an individual sensitivity value. As the value increases, the easier it becomes to activate the alarm.
Theshold	Adjust the motion detection threshold. Each area of each channel has an individual threshold.

When in a any from the four areas he comes detected a movement, The channel corresponding to the 'area activate to the alarm Of detection of the movement.

Step 4: Right click on the screen to exit the region setting page.

Step 5: On the page**Motion detection**(Motion Detection), click**Apply**(Apply) to complete the settings.

5.11.4.1.2 Setting the motion detection period

Preliminary information

The system active the alarm Alone In the period established.

Procedure

Step 1: Click on**Settings**(Setting) next to the entry**Planning**(Schedule).

Figure 5-130 Settings
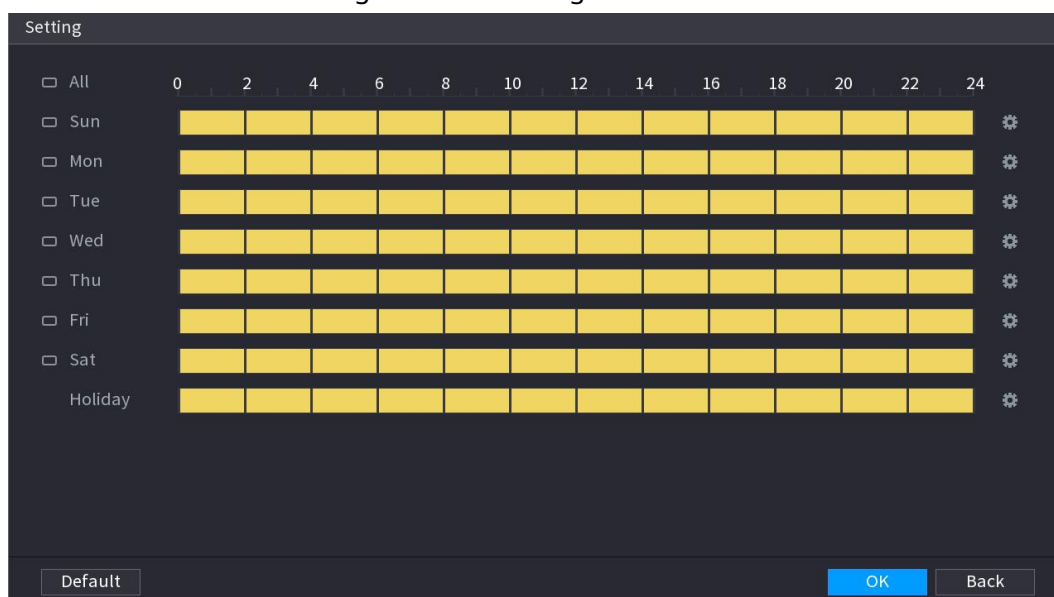
Step 2: Define the motion detection period. By default, recording is always on.

● Defining the time slot for dragging.

● Defining the time slot for editing. Take Sunday as an example.
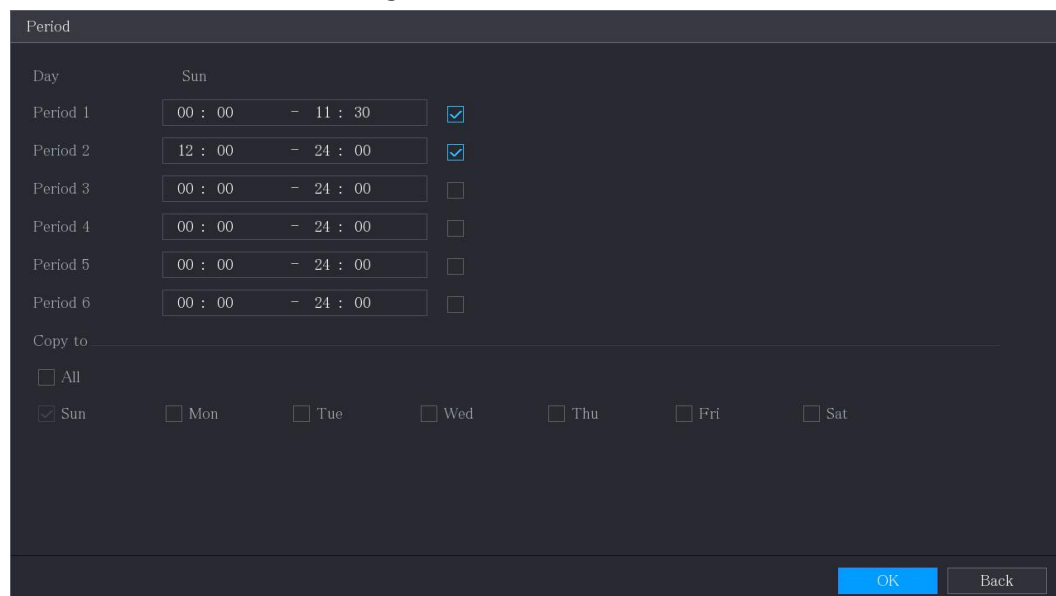
1) Click on   .

Figure 5-131 Period

2) Enter the time range for the period, then select the checkbox to enable the settings.

3) Click on**OK**to save the settings.

Step 3: On the page**Motion detection**(Motion Detection), click**Apply**(Apply) to complete the settings.

5.11.4.2 Configuring Video Loss Settings

When video signal loss occurs, the system will trigger the alarm.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Video detection**>**Video loss**(Main Menu > ALARM > Video Detection > Video Loss).

Figure 5-132 Video loss

Step 2: Configure the settings for video loss detection parameters. For details, see "5.11.4.1 Configuring Motion Detection Settings".

For the activation PTZ, to difference of the detection of the movement, The detection from the loss video And degree Of activate presets, tour And sequence PTZ.

Step 3: Click on**Apply**(Apply) to complete the setup.

- Do click on**Default** (Default) For restore the setting default.
- Do click on**Copy in**(Copy to) in the window Of dialogue **Copy in**(Copy to), select the channels additional on which copy the settings Of detection of the movements, Therefore Do click on**Apply** (Apply).

5.11.4.3 Configuring Anti-Tamper Settings

If the camera lens is covered or due to external factors such as sunlight, the system will display monochrome images and monitoring cannot continue normally. To avoid such situations, you can configure the tampering alarm settings.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Video detection**>**Video tampering** (Main Menu > ALARM > Video Detection > Video Tampering).

Figure 5-133 Video tampering

Step 2: Configure the settings for the tampering detection parameters. For details, see "5.11.4.1 Configuring Motion Detection Settings".

For the activation PTZ, to difference of the detection of the movement, The detection from the loss video And degree Of activate presets, tour And sequence PTZ.

Step 3: Click on **Apply**(Apply) to complete the setup.

● Do click on **Default** (Default) For restore the setting default.
● Do click on **Copy in**(Copy to) in the window Of dialogue **Copy in**(Copy to), select the channels additional on which copy the settings Of detection of the movements, Therefore Do click on **Apply** (Apply).

5.11.4.4 Scene Change Configuration

Preliminary information

When the detected scene changes, the system performs alarm linkage actions.
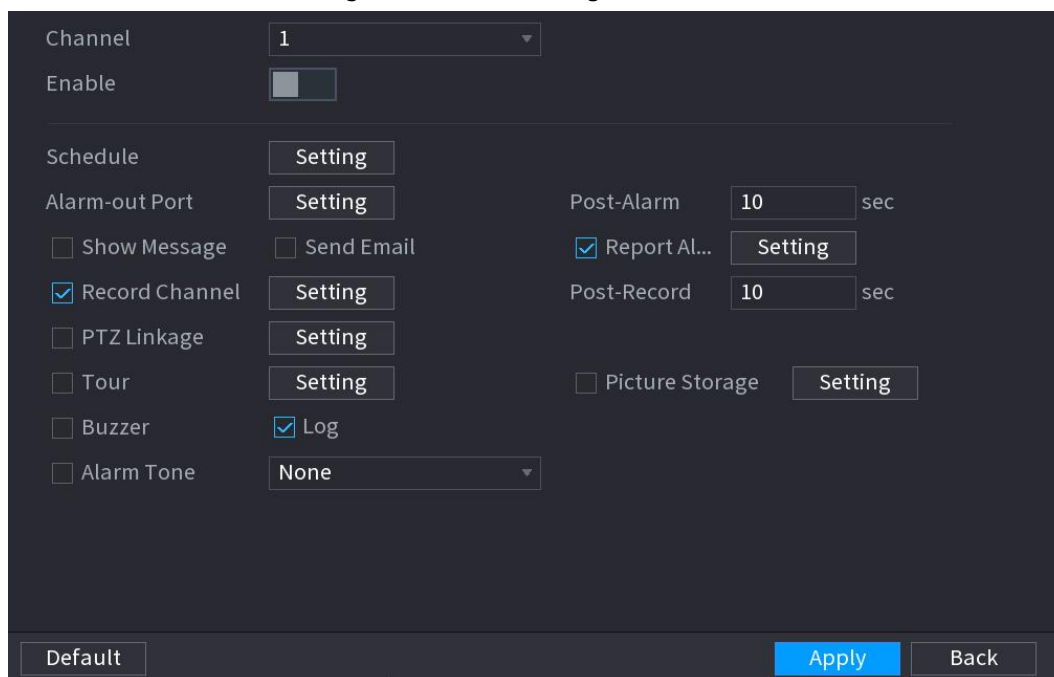
The functions they can vary in base to the model of the device.

Procedure

Step 1: Select **Main menu**>**ALARM**>**Video detection**>**Scene change**(Main Menu > ALARM > Video Detection > Scene Changing).

Figure 5-134 Scene change

Step 2: Configure the settings for scene change detection parameters. For details, see "5.11.4.1 Configuring Motion Detection Settings".

📖

For the activation PTZ, to difference of the detection of the movement, The detection Of change scene And degree Of activate presets, tour And sequence PTZ.

Step 3: Click on **Apply**(Apply) to complete the setup.

📖

Do click on **Default** (Default) For restore the setting default.

5.11.4.5 Configuring Video Quality Analysis

Preliminary information

If the video image appears blurry, overexposed or has color casts, the system will trigger alarm linkage actions.
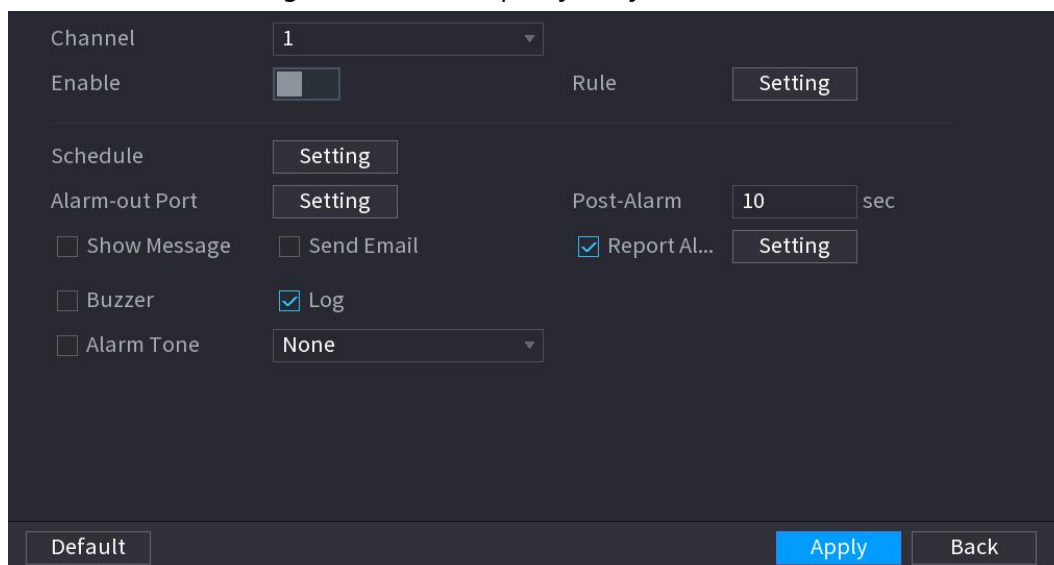
📖

The functions they can vary in base to the model of the device.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Video detection**>**Video quality**(Main Menu > ALARM > Video Detection > Video Quality).

Figure 5-135 Video quality analysis

Step 2: Click on**Settings**(Setting) next to**Rule**(Rule) to set the rule for video quality analysis, then click**OK**.

Figure 5-136 Video quality analysis types
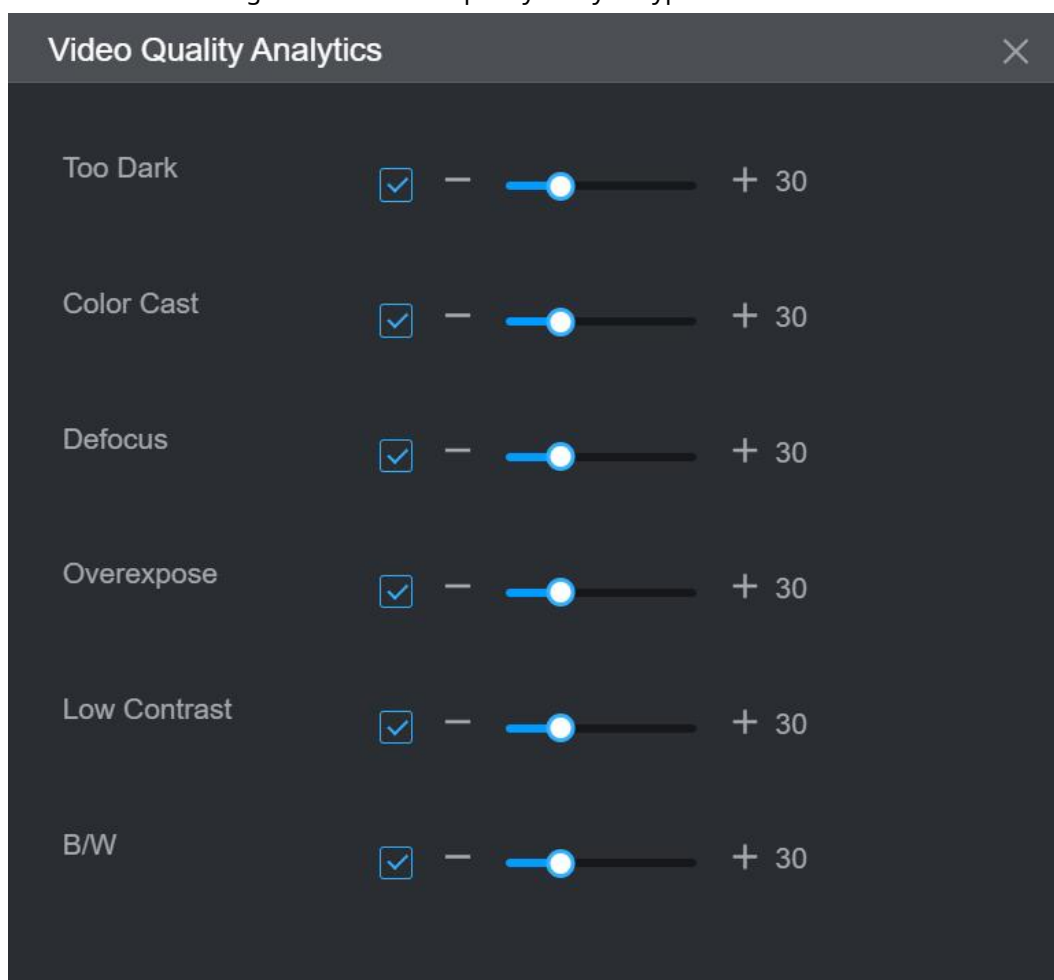
Table 5-47 Video quality analysis parameters description

Type	Description
Too dark	The light is dim and many objects cannot be seen.

Type	Description
Dominant chromatic	Some colors in the image differ from actual colors.
Blurry	Incorrect focus results in a blurry or unclear image.
Overexposures one	Excessive overexposure of the image due to excessive lighting or incorrect settings.
Bass contrast	The difference in brightness between different areas is minimal and results in a flat image, making it difficult to spot people, vehicles or other details.
B/W	When the image becomes black and white it appears blurry or difficult to distinguish details.

Step 3: Click on**Apply**(Apply).

5.11.5 System Events
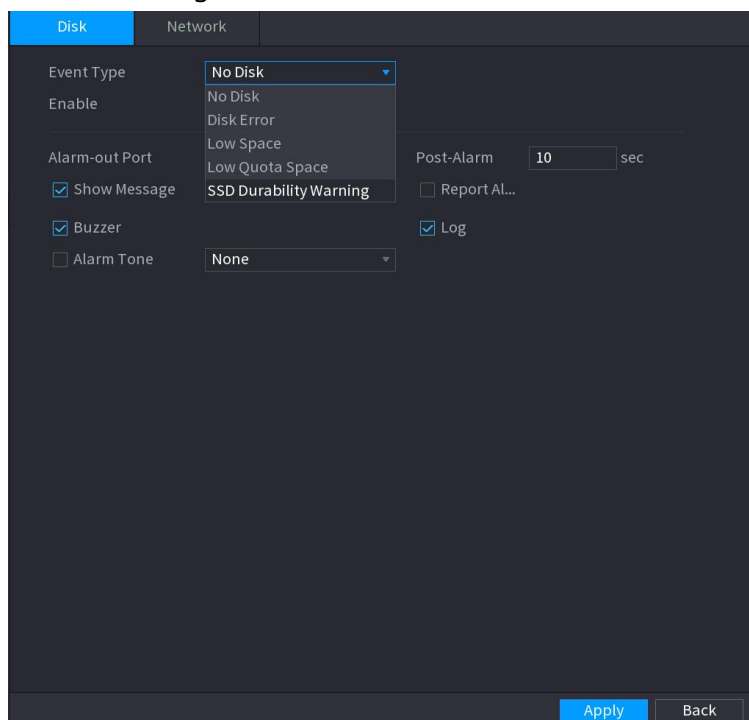
You can configure alarm output for three types of system events (hard disk, network, and user). When a system event occurs, the system will trigger alarms as configured in this section.

5.11.5.1 Configuring Hard Disk Event Settings

Procedure

Step 1: Select**Main menu**>**ALARM**>**Exception**>**Disc**(Main Menu > ALARM > Exception > Disk).

Figure 5-137 Disk Events

Step 2: Configure settings for the hard disk event.

Table 5-48 Settings for hard disk event

Parameter	Description
Event type	In the list**Event type**(Event Type), select**No disc**(No Disk),**Disk error**(Disk Error),**Not enough space**(Low Space),**Insufficient quota space**(Low Quota Space) or**SSD Endurance Warnings**(SSD Durability Warnings) as event type.
Ability	Enable or disable the hard disk event detection function.
Alarm output port	Click on**Settings**(Settings) to configure the parameters. ● Local Alarm: Enables alarm triggering via alarm devices connected to the selected output port. ● Alarm Extension: Enables alarm triggering via the connected external alarm device. ● Wireless Siren: Enables alarm triggering via devices connected through USB gateway or camera gateway.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cleared. The value is between 10 and 300 seconds, while the default value is 10.
Show message	Select the checkbox**Show Messages**(ShowMessage) to enable the display of messages on the user's local host computer.
Alarm Report	Select the checkbox**Alarm Report**(Report Alarm), then click **Settings**(Setting) next to**Alarm report**Report Alarm) to select **Private protocol**(Private Protocol) or**HTTP**In the **Protocol type**(Protocol Type). You can make the system upload the alarm signal to the network (including alarm center) when alarm events occur.
Send email	Select the checkbox**Send email**(Send Email) to have the system send an email notification in case of alarm events. □ To use this feature, make sure that the email function is enabled in the item**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).
Acoustic signal	Select this checkbox to enable the device to beep.
Log	Select this checkbox to have the device record local alarm information.
Alarm tone	Select this option to enable audio/alarm tone transmission in response to a hard disk alarm event.

Step 3: Click on**Apply**(Apply) to complete the setup.

5.11.5.2 Configuring Network Event Settings

Procedure

Step 1: Select**Main menu**>**ALARM**>**Exception**>**Net**(Main Menu > ALARM > Exception > Network).

Figure 5-138 Network

Step 2: Configure settings for the Network event.

Table 5-49 Network event settings

Parameter	Description
Event type	In the list**Event type**(Event Type), select**Offline**,**IP Conflict**(IP Conflict) or**MAC conflict**(MAC Conflict) as event type.
Ability	Enable or disable the network event detection function.
Alarm output port	Click on**Settings**(Settings) to configure the parameters. ● General Alarm: Enables alarm activation via alarm devices connected to the selected output port. ● External Alarm: Enables alarm triggering via the connected external alarm device. ● Wireless Siren: Enables alarm triggering via devices connected through USB gateway or camera gateway.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cleared. The value is between 10 and 300 seconds, while the default value is 10.
Show message	Select the checkbox**Show Messages**(Show Message) to enable the display of messages on the user's local host computer.
Send email	Select the checkbox**Send email**(Send Email) to have the system send an email notification in case of alarm events. 📖 To use this feature, make sure that the email function is enabled in the item**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).

Parameter	Description
Acoustic signal	Select this checkbox to enable the device to beep.
Log	Select this checkbox to have the device record local alarm information.
Post registration	Recording continues for a certain time even after the alarm ends. The value varies from 10 to 300 seconds.
Alarm tone	Select this option to enable audio/alarm tone transmission in response to a network event.

Step 3: Click on**Apply**(Apply) to complete the setup.

5.11.6 Disarming configuration

You can disable all alarm link actions as needed.

Procedure

Step 1: Select**Main menu**>**ALARM**>**Disconnection**(Main Menu > ALARM > Disarming).

Step 2: Enable**Disconnection**(Disarming) or**Disable for period**(Disarm by Period).
- **Disarming:**Select**Disconnection**(Disarm) and click Apply.
- **Disable for period:**
  1. To configure periods, select**Active**(Arm) and click on**Settings** (Setting) next to**Disconnection duration per period**(Duration of Disarm by Period).

Figure 5-139 Disarming
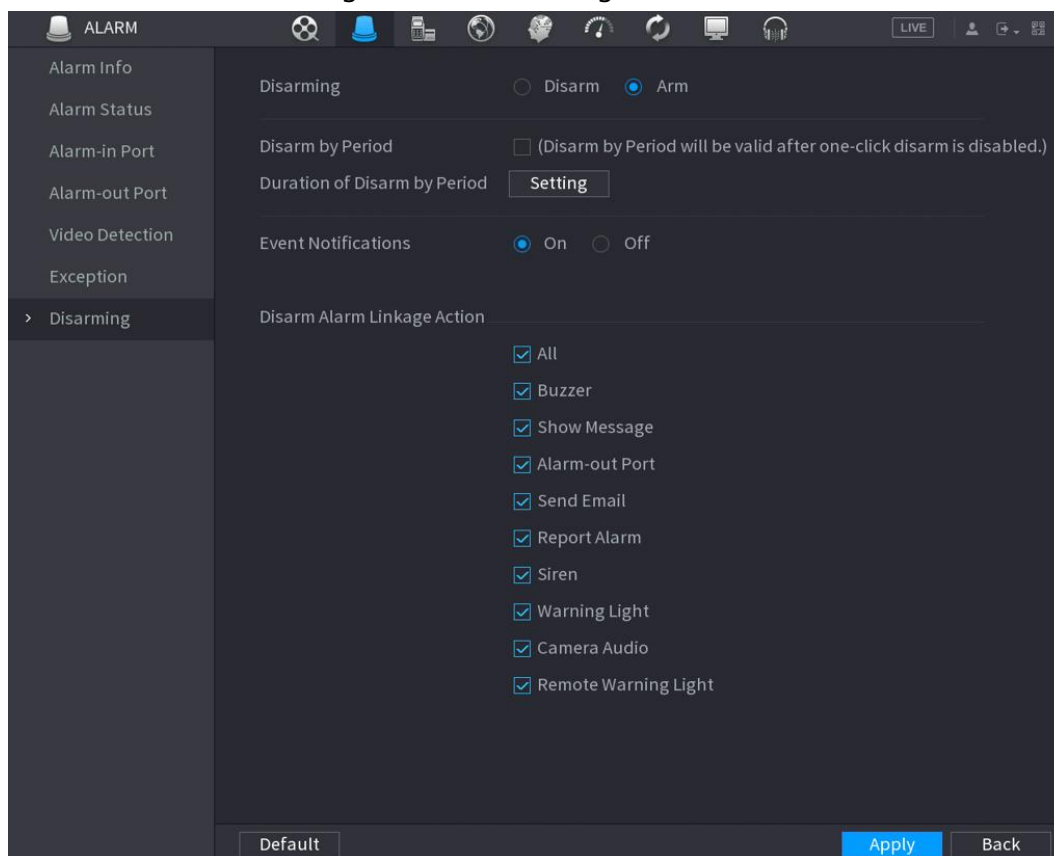
2. Drag the mouse to select time segments. Green segments indicate that
disarming is enabled.

Figure 5-140 Disarm by period

📖
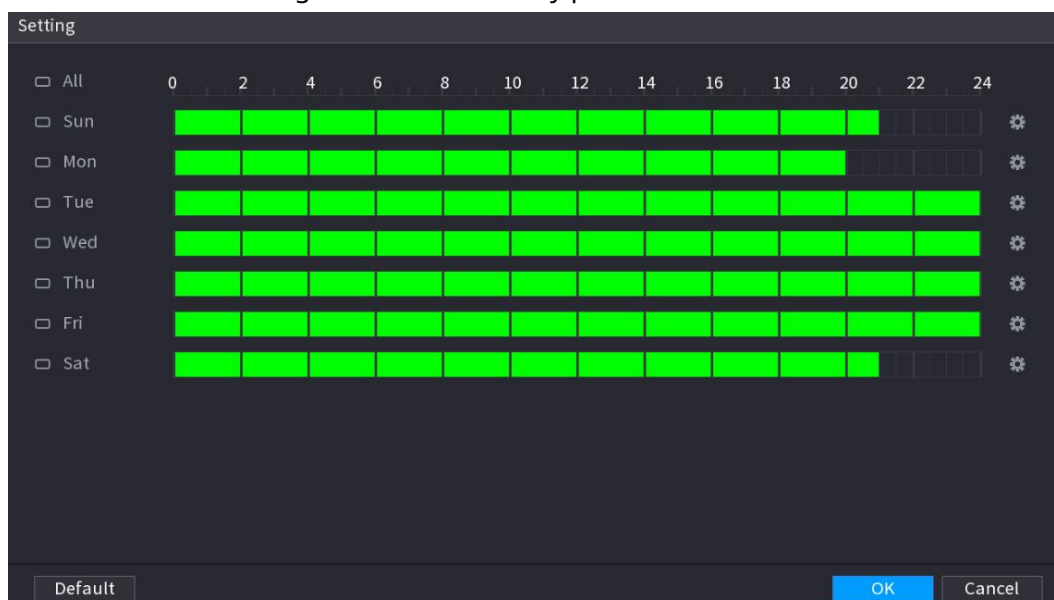
AND more possible Do click on ⚙ For set up the periods Of time. To the maximum And possible set up 6 periods to the day.

3. Select **Off** next to **Event Notifications**(Event Notifications) to disable event notifications.

Enabling **Disconnection**(Disarming), if you disable event notifications, they will not be sent to clients, including the mobile app, platform, and cloud platform.

4. Select the alarm link actions to disarm.

📖

By selecting **All** (All), all the actions Of connection alarm they will be deactivated.

5. Click on **Apply**(Apply).

5.12 AI Features

5.12.1 Configuring AI Mode

To use AI functions, you need to enable the corresponding AI mode.

Procedure

Step 1: Select **Main menu**>**IA**>**Parameters**>**AI Mode**(Main Menu > AI > Parameter > AI Mode).

Figure 5-141 AI Mode
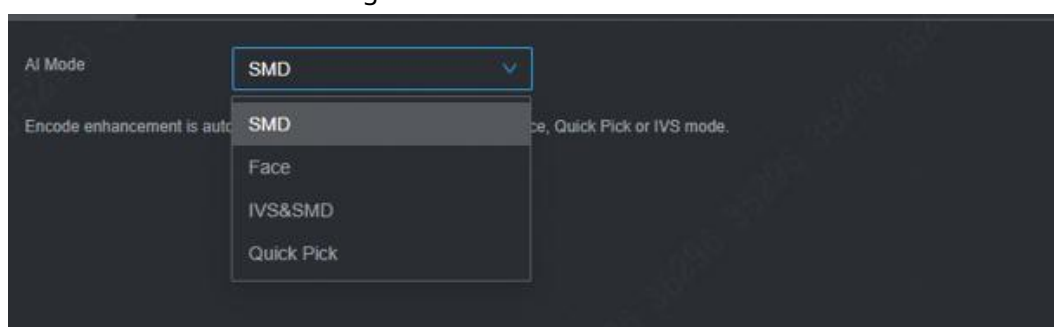
Step 2: Select an AI mode.

● **SMD:**Only SMD is available.

● **Face:**Only face detection and face recognition are available.

● **IVS and SMD:**Only IVS (Intelligent Video System) and SMD (Intelligent Motion Detection) are available.

● **Quick Pick:**Only Quick Pick is available.

📖

Not possible Po enable simultaneously SMD, detection of the face, recognition of the face, IVS And Quick Pick.

5.12.2 For Pro AI series

📖

He comes applied a blur to the faces For to respect the regulations in force.

The AI module provides face detection, face recognition and IVS functions in addition to video structuring. These functions take effect after configuration and activation. Deep learning is used and precise alarms can be created.

● Face Detection: The device can analyze faces captured by the camera and link the configured alarms.

● Face Recognition: The device can compare the captured faces with the face database and link the configured alarms.

● IVS: IVS process and analyze images of people and vehicles to extract key information to match preset rules. When detected behaviors match the rules, the system triggers alarms. IVS can avoid false alarms by filtering factors such as rain, light, and animals.

● Video structuring: The device can detect and extract key features of the human body and non-motor vehicles in the video, and then build a structured database. You can search for targets with certain features. For example, you can search for people wearing a yellow short-sleeved shirt.

5.12.2.1 Face detection

The device can analyze the images captured by the camera to detect whether there are faces. You can search and filter the recorded videos by faces and play them back.

📖

If Yes select To The through device, At that time And possible use a alone function at the same time For the same channel to choice Between detection And recognition of the face, function IVS And structuring video.

5.12.2.1.1 Configuring face detection parameters

Alarms are generated based on the configured parameters.

Procedure

Step 1: Select**Main menu**>**IA**>**Parameters**>**Face detection**(Main Menu > AI > Parameter > Face Detection).

Figure 5-142 Face detection

Step 2: In the list**Channel**(Channel), select a channel on which to configure the face detection function, and then enable it.

Step 3: Select**AI via camera**(AI by Camera) or**AI via device**(AI by Device) as a type of artificial intelligence.

● **AI via camera:**This option only works for certain AI cameras. The camera will do all the AI   analysis and provide the results to the DVR.

● **AI via Device:**The camera only takes care of transmitting the normal video stream to the DVR, while the DVR takes care of the analysis via AI.

Step 4: Click on**Settings**(Settings) next to the drawing areas**Rule**(Rule) to filter the destination.

You can configure two targets for the filter (maximum size and minimum size). If the target is smaller than the minimum size or larger than the maximum size, no alarm occurs. The maximum size must be larger than the minimum size.

Step 5: Configure scheduling and connection parameters.

Table 5-50 Description of scheduling and connection parameters

Parameter	Description
Planning	Define the detection activation period.
Alarm output port	Click on**Settings**(Settings) to configure the parameters. ● General Alarm: Enable general alarm and select the alarm output port. ● External alarm: Connect the alarm panel to the device and then activate it. ● Wireless Siren: Connect the wireless gateway to the device and then activate it. When an alarm event occurs, the system connects the

Parameter	Description
	peripheral alarm devices connected to the selected output port.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cancelled. The selectable time range is from 0 to 300 seconds. Entering the value 0 will mean no delay.
Show message	Select the checkbox**Show Messages**(Show Message) to enable the appearance of alarm messages on the user's local host computer.
Alarm Report	Select the checkbox**Alarm Report**(Report Alarm), then click **Settings**(Setting) next to**Alarm report**Report Alarm) to select**Private protocol** (Private Protocol) or**HTTP**In the **Protocol type**(Protocol Type). You can make the system upload the alarm signal to the network (including alarm center) when alarm events occur. ● This feature is only available on some models. ● It is necessary to configure the corresponding parameters in the alarm control panel.
Send email	Select the checkbox**Send email**(Send Email) to have the system send an email notification in case of alarm events. To use this feature, make sure the email function is turned on voice enabled**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).
Record channel	Select the channels you want to record. The selected channels start recording when an alarm event occurs. The intelligent event recording function and automatic recording function must be enabled.
PTZ connection	Click on**Settings**(Setting) to display the PTZ page. To use this function, you need to configure PTZ operations.
Post registration	Defines the delay time for the device to turn off recording after the alarm is cleared. The value ranges from 10 to 300 seconds.
Tour	Select the checkbox**Tour**to enable a tour of the

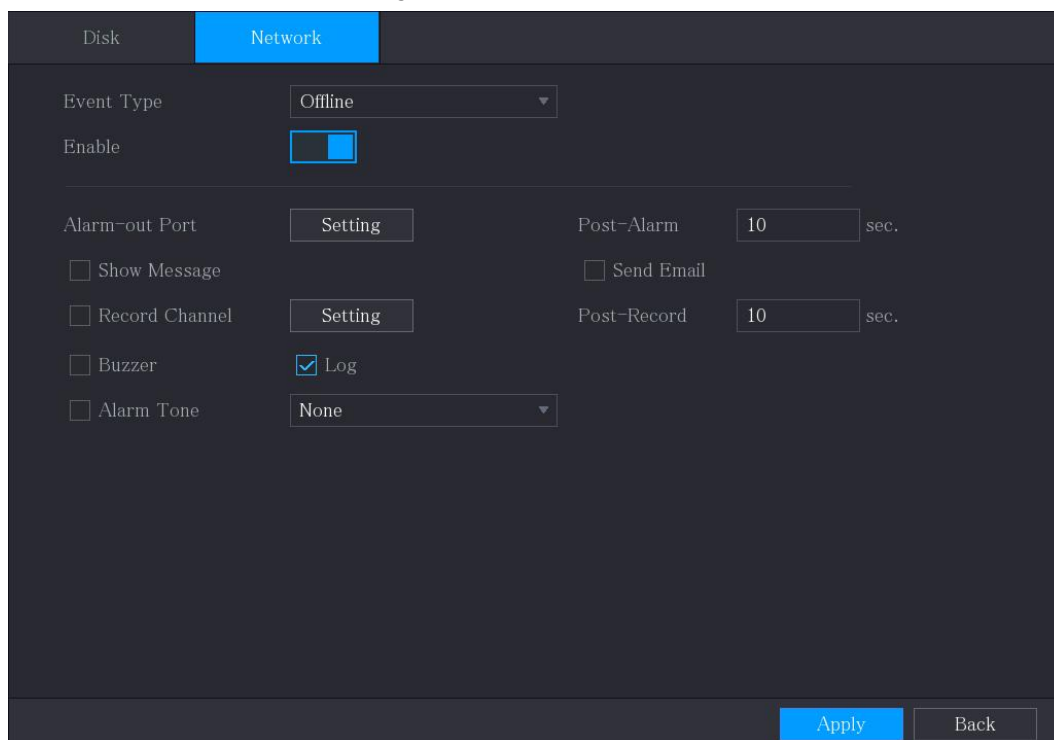| Parameter	Description
	selected channels. ● To use this feature, you need to configure your tour settings. ● When the tour ends, the live view screen returns to the previous view layout.
Image storage	Select the checkbox**Image storage** (Picture Storage) to take a snapshot of the selected channel. To use this feature, make sure the snapshot function is enabled for**Intel**in**Main menu**>**ARCHIVING**>**Planning**>**Snapshot**(Main Menu > STORAGE > Schedule > Snapshot).
Video matrix	Select the checkbox to enable this function. When an alarm event occurs, the video output port will show the settings configured in**Main menu**>**TOUR**> **Extra screen**(Main Menu > DISPLAY > Tour > Extra Screen). ● This feature is only available on some models. ● To use this feature you need to enable the additional screen.
Acoustic signal	Select this checkbox to enable the device to beep.
Log	Select this checkbox to have the device record local alarm information.
Alarm tone	Select this option to enable audio transmission in response to a face detection event.
Alarm light	Select this checkbox to enable the camera alarm light alarm.
Siren	Select this checkbox to enable the camera audio alarm.
Smart lighting	Select this checkbox to enable intelligent camera lighting.

<u>Step 6:</u> Click on**Apply**(Apply) to complete the setup.
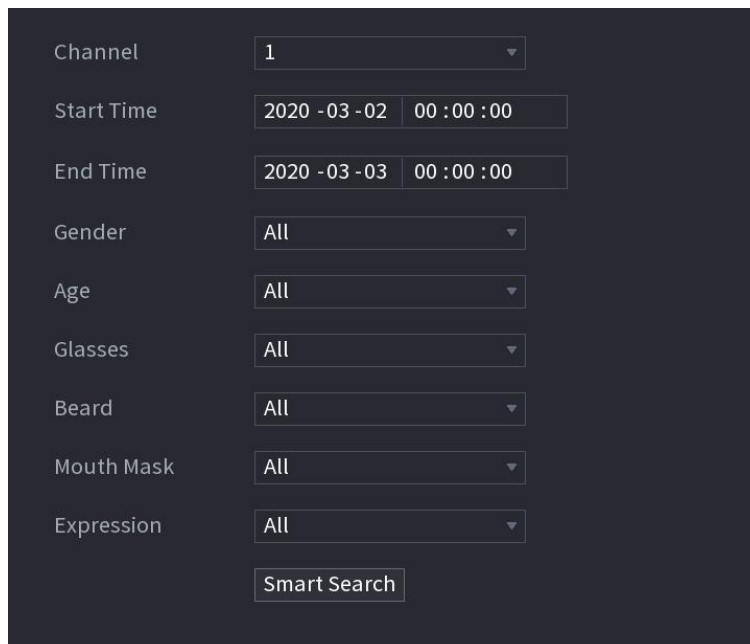
5.12.2.1.2 Search and playback of detected faces

You can search for detected faces and play them back.

Procedure

Step 1: Select**Main menu**>**IA**>**AI Research**>**Face detection**(Main Menu > AI > AI Search > Face Detection).

Figure 5-143 Face detection

Step 2: Select the channel, enter the start time and end time, then set the gender, age and whether you wear glasses, a beard and a mask.

Step 3: Click on**Smart Search**(Smart Search). The results will be displayed.

Figure 5-144 Search results
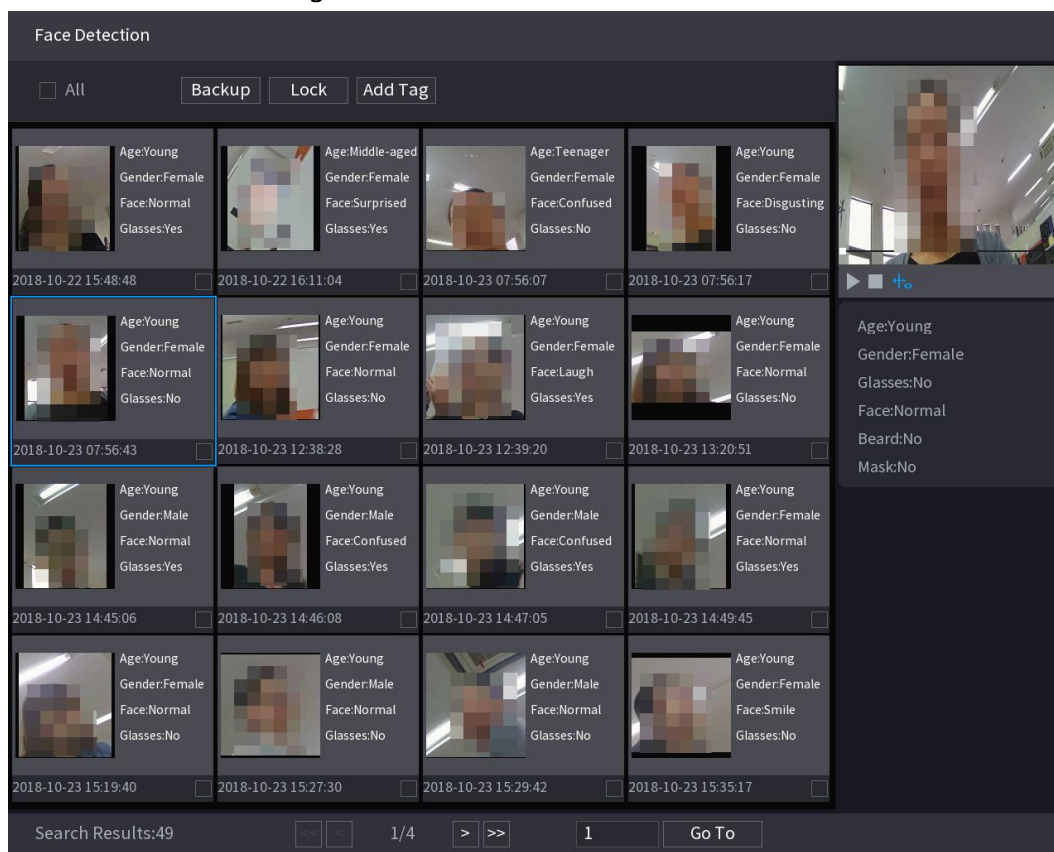
Step 4: Select the face to reproduce.

Figure 5-145 Recorded information
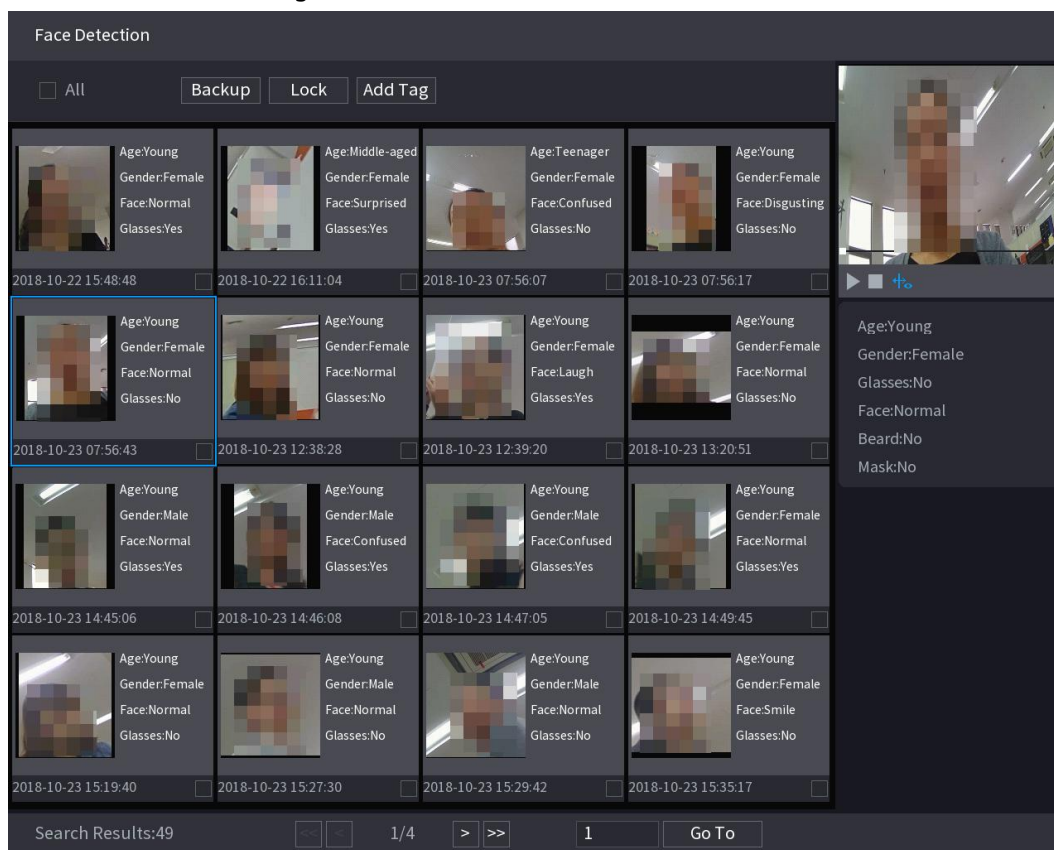
Step 5: Click on detected ▶ to start playing snapshots containing faces and registered.

📖

Do double click on the page from the reproduction Forpass Betweenthere reproduction toscreen entire Athat in miniature.

You can also perform the following operations on the recorded files.

● To export the database file (.csv) to the external storage device, select the files, click**Export**(Export), then select the save path.

● To backup recorded files to external storage device, select the files, click**Backup**, select the save path and file type, then click**Start**(Start).

Figure 5-146 Backup

File Backup

Device Name	sdb1(USB USB)	▼ 14.92 GB/14.93 GB(Free/Total)
Path	XVR/2018-10-23/	Browse
☑ Video	☐ Picture	File Type DAV ▼

1	Cha...	Type	Start Time	End Time	Size(KB)
1	✓ 2	R	2018-10-23 12:38:25	2018-10-23 12:38:44	4890

6.48 MB(Space Needed)   Start

● To lock files and make them impossible to overwrite, select the files, then click **Block**(Lock).
● To add a tag to the file, select the files and then click**Add tags**(Add Tag).

5.12.2.2 Face recognition

Face recognition is available in AI preview mode and smart search.

● AI Preview Mode: Allows you to compare the detected faces with the face database and view the results.
● Smart Search: Allows you to search for faces by attributes or portraits.

📖

- If Yes select ₜₒ ₜₕthrough device, ₐₜ ₜₕₐₜ ₜᵢₘₑ Apossible use a ₐₗₒₙₑ function at the same time For the same channel to choice ᵦₑₜwₑₑₙ detection And recognition ₒf ₜₕₑ face, function IVS And structuring video.
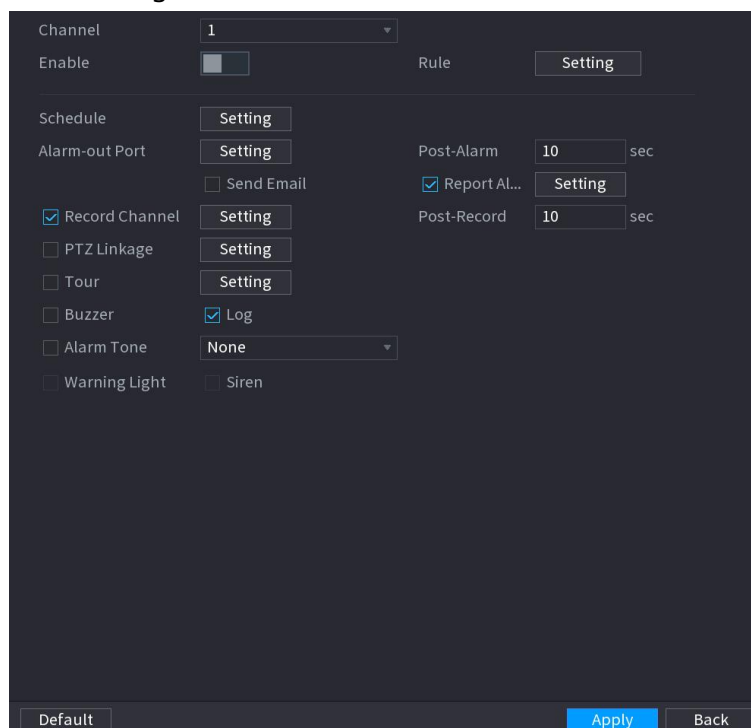- Before Of enable ₜₕₑᵣₑ function Of recognition ₒf ₜₕₑ face For a ₜₕₑ channel, And necessary enable The detection ₒf ₜₕₑ face.

5.12.2.2.1 Creating a face database

You need to create a face database to compare the detected faces with the faces in the database. The device supports creating up to 20 databases and registering 100,000 faces.
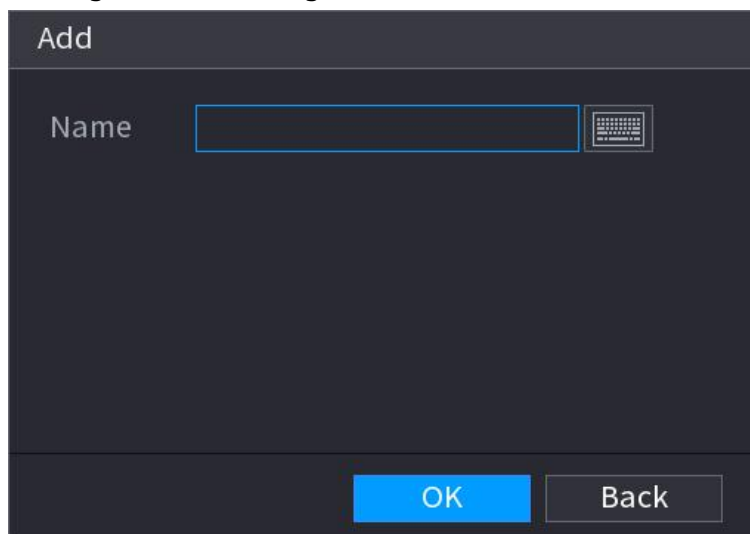
Procedure

Step 1: Select**Main menu**>**IA**>**Database**>**Face database setup**(Main Menu > AI > Database > Face Database Config).

Step 2: In**Type**(Type), you can select**Local**(Local) or**Remote**(Remote).

- **Local:**Allows you to view existing face databases or add one to the DVR.
- **Remote:**If you have a camera with face recognition function, you can select it to view existing face databases or add one to the camera. Step 3: Click on**Add**(Add).

Figure 5-147 Adding a face database

Step 4: Enter the name of the face database and click**OK**.

Related Operations

- For me to edit The name end the database, click on 🖉.
- To view database details and add new faces to the database, click 📋.
- Select the database and then click**Modeling**(Modeling). The system will extract the attributes of face images from the database for future comparison.
- Click on**Update**(Refresh) to update the database.
- Click on**It matters**(Import) or**Export**(Export) to import/export the database.
- To delete the database, select it and click**Delete**(Delete).

Figure 5-148 Database configuration
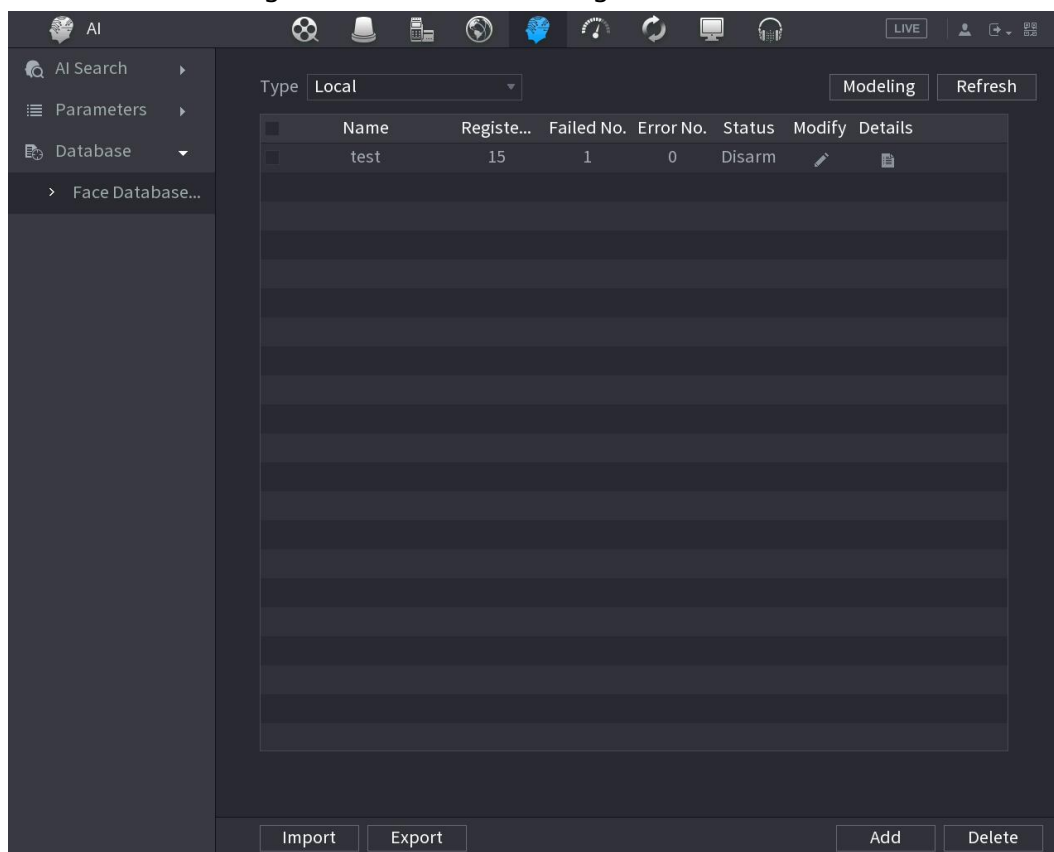
5.12.2.2.2 Adding Face Images

You can add face images to existing databases one by one or in batches, or add from detected faces.
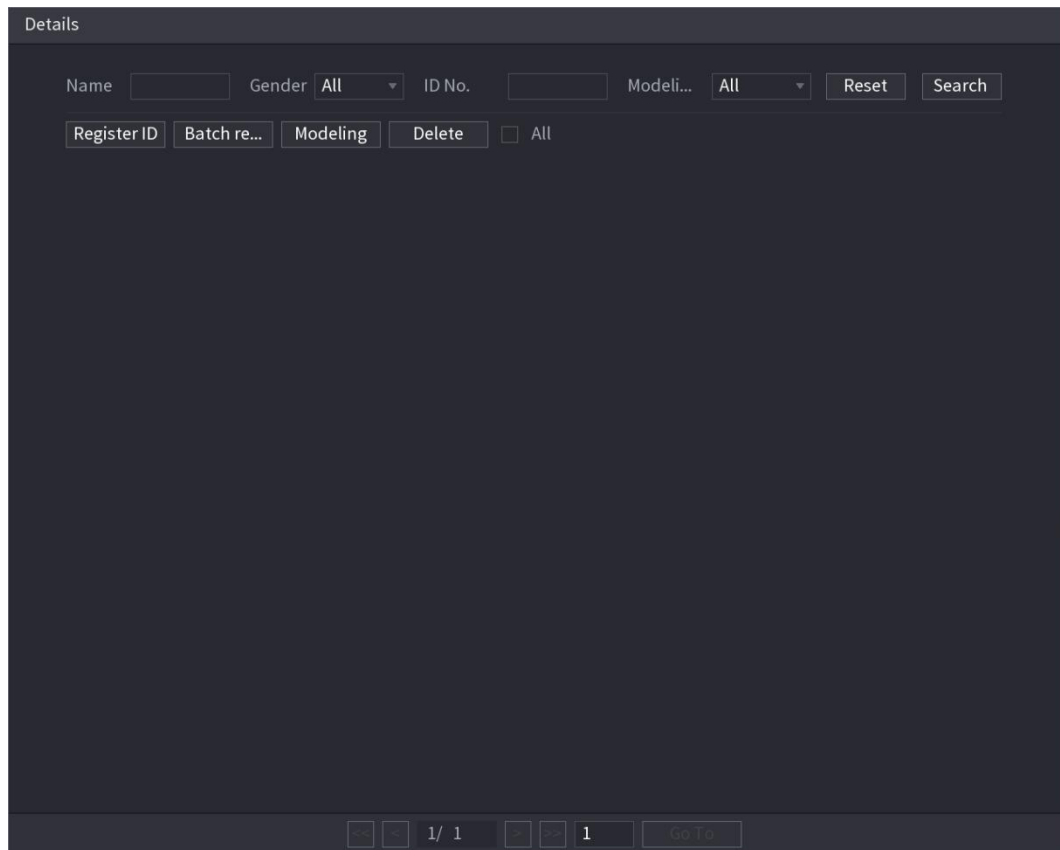
For add the images of the faces a at the time or in series, And necessary acquire the images from the device Of archiving USB. There size of the image must to be inferior to 256K with a resolution included Between 200×200And 6000×5000.

Adding a face image
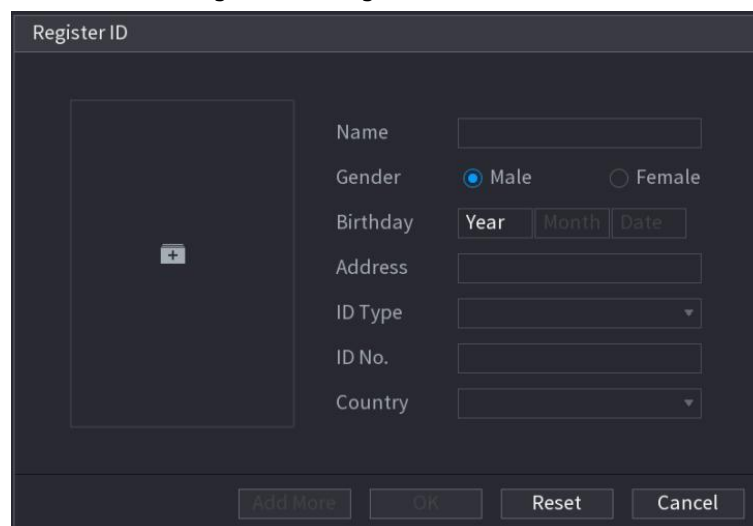
1. Select **Main menu**>**IA**>**Database**>**Face database setup**(Main Menu > AI > Database > Face Database Config).

2. Click on the database you want to configure.

Figure 5-149 Details

3. Click on**Register ID**(Register ID).

Figure 5-150 Register ID
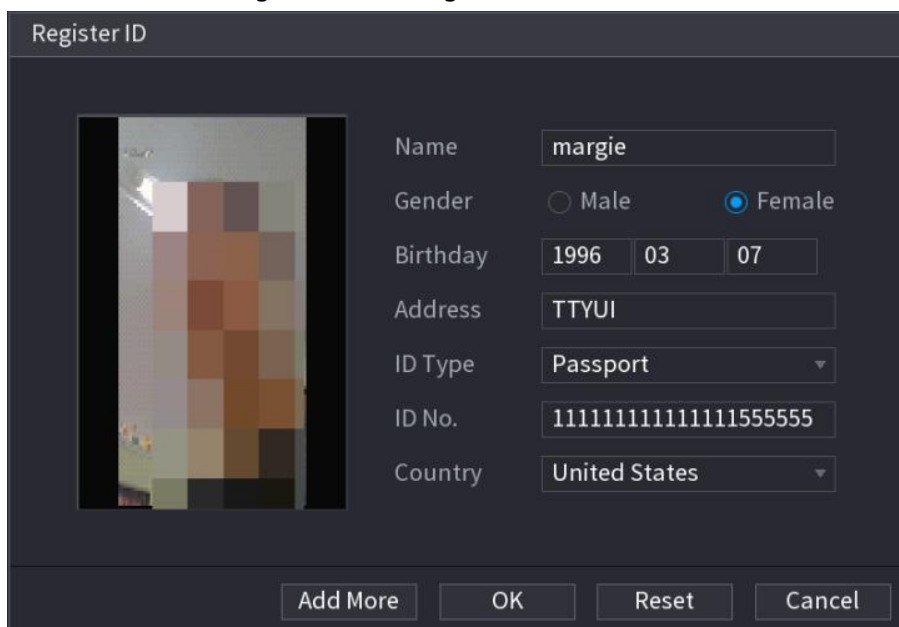
4. Click on [+] to add a face image.

Figure 5-151 Navigation
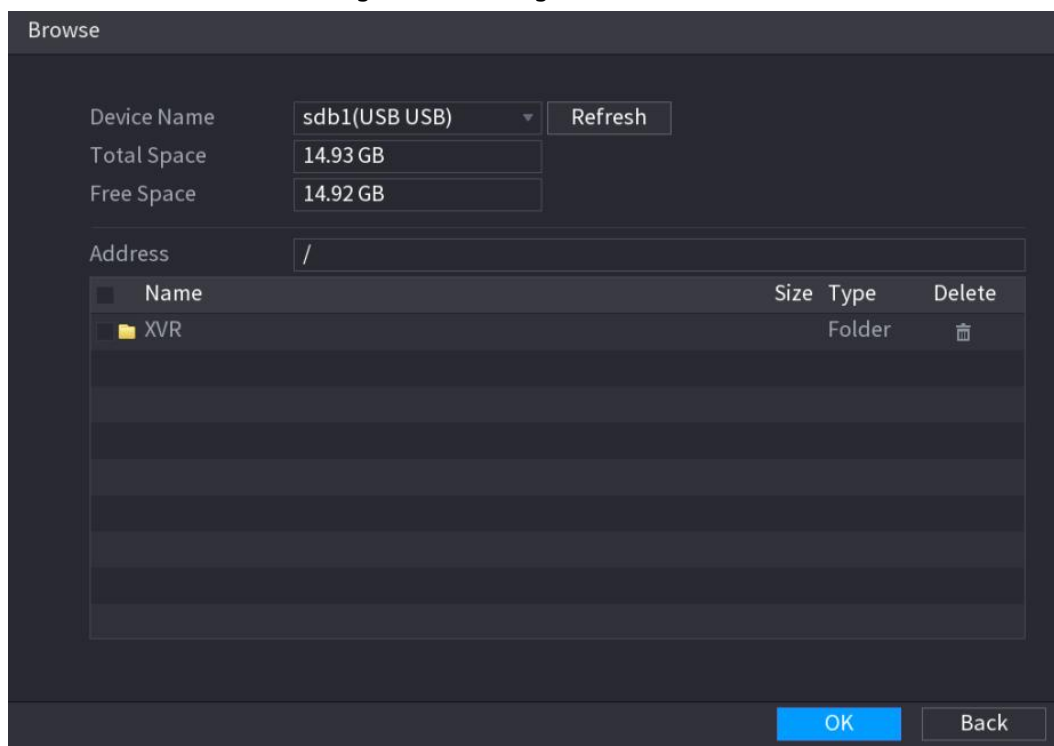
5. Select a face image and enter the registration information.

Figure 5-152 ID Registration
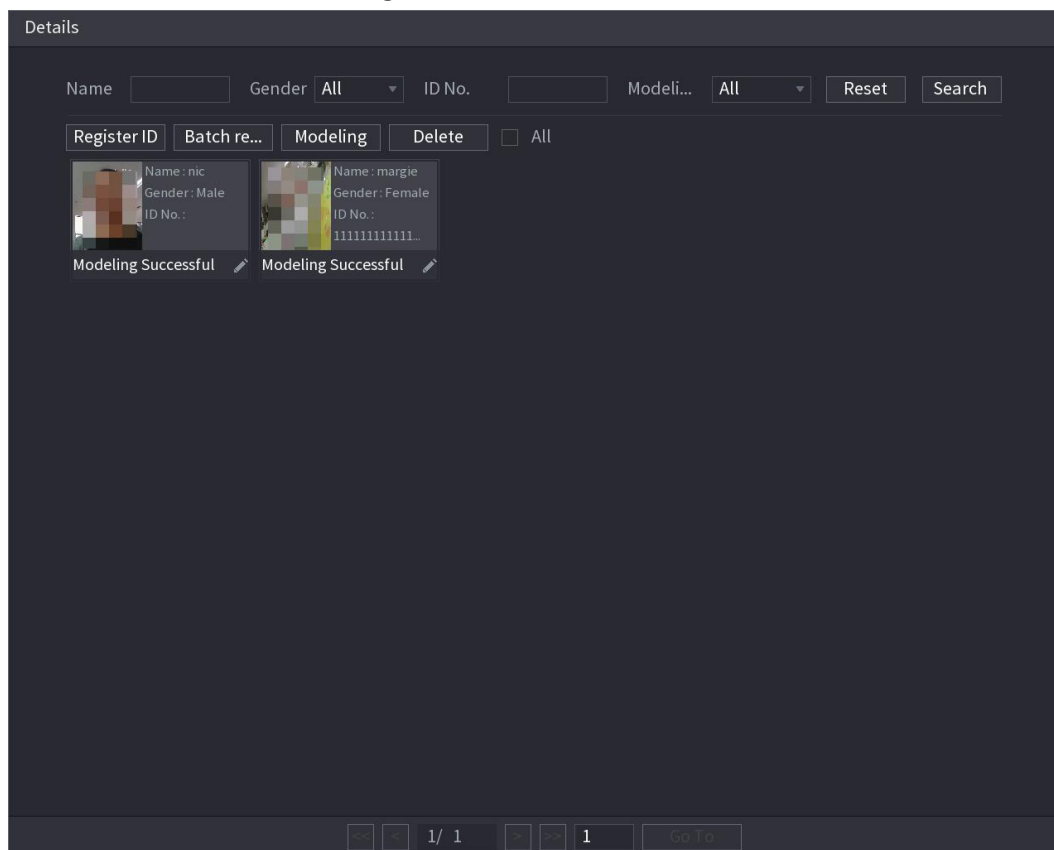
6. Click on**OK**.

The system confirms that registration was successful.

7. On the page**Details**(Details), click on**Near**(Search).

The system confirms that the modeling was successful.

$\square$

If _he comes_ displayed a system That_indicates That_there_modeling And_course, wait some moment And_therefore Do Of_new _click on_**Near** (Search). If _there_modeling Not_succeeds, the image _of the_ face registered Not_you can_o_t_o be used For_The_recognition _of the_ face.

Figure 5-153 Details

Adding Face Images in Series

1. Name the face image.

Figure 5-51 ID Registration

Name format	Description
Name	Enter your name.
Type	Enter 1 or 2. 1 stands for male and 2 stands for female.
Date of birth	Enter numbers in yyyy-mm-dd format.
Village	Enter the country abbreviation. For example: CN for China.
Document type	1 represents the identity card; 2 represents the passport; 3 represents the password in use by an officer.
N. ID	Enter the document number.
Address	Enter the address.

2. On the page**Details**(Details), click on**Serial Recording**(Batch Registration).

Figure 5-154 Batch recording
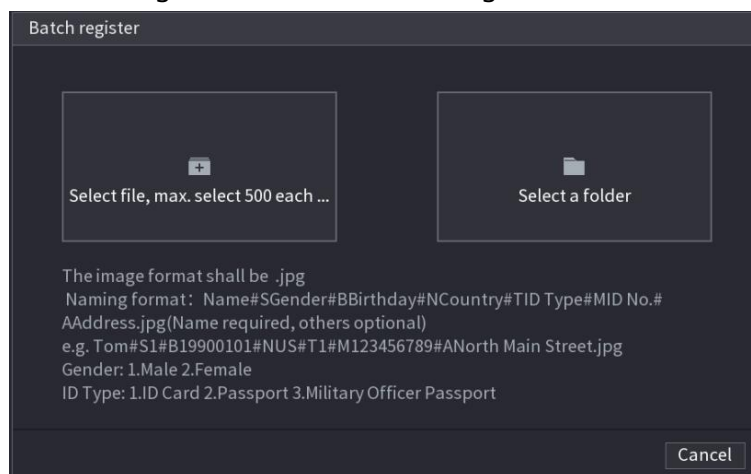
3. Click on**Select Files, select up to 500 files at a time**(Select file, max select 500 each time) or on**Select a folder**(Select a Folder) to import face images.
4. Click on**OK**to complete the serial registration.

Adding detected faces

1. Right-click on the real-time view screen and select **Real-time mode**>**AI Mode**(Live Mode > AI Mode).

Figure 5-155 Real-time display in AI mode
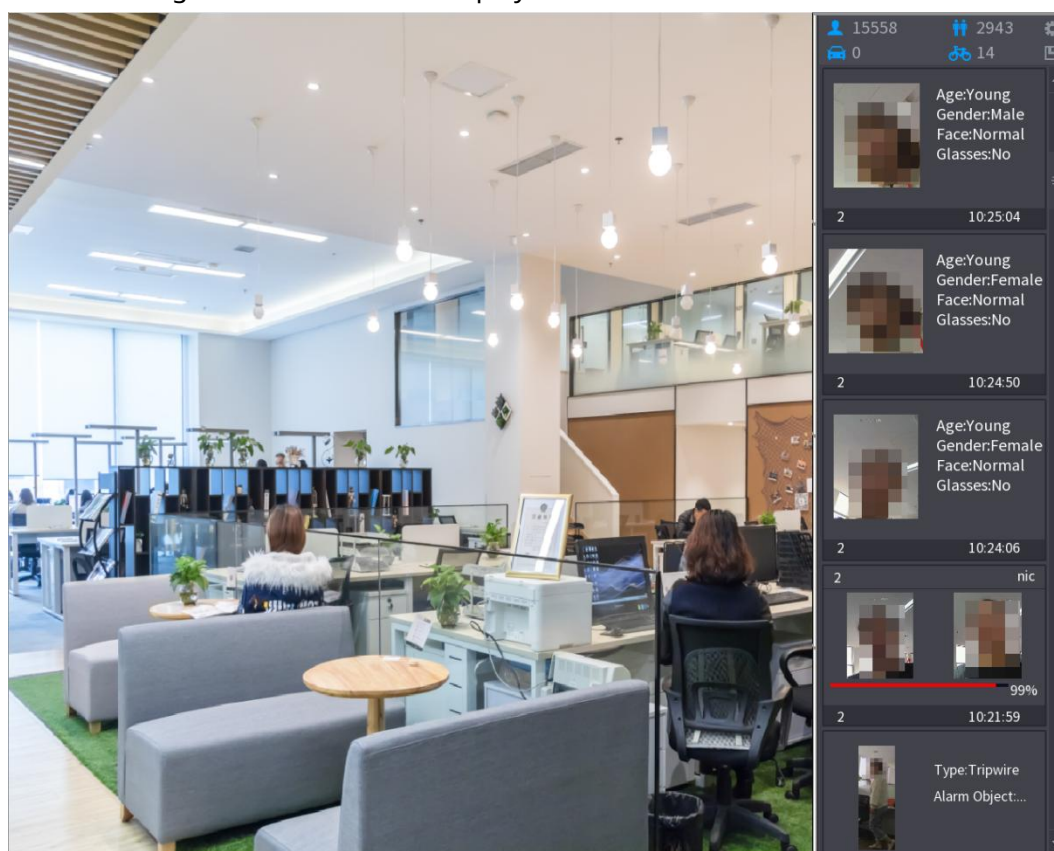
2. Double-click the detected face snapshot to add.

Figure 5-156 Playback
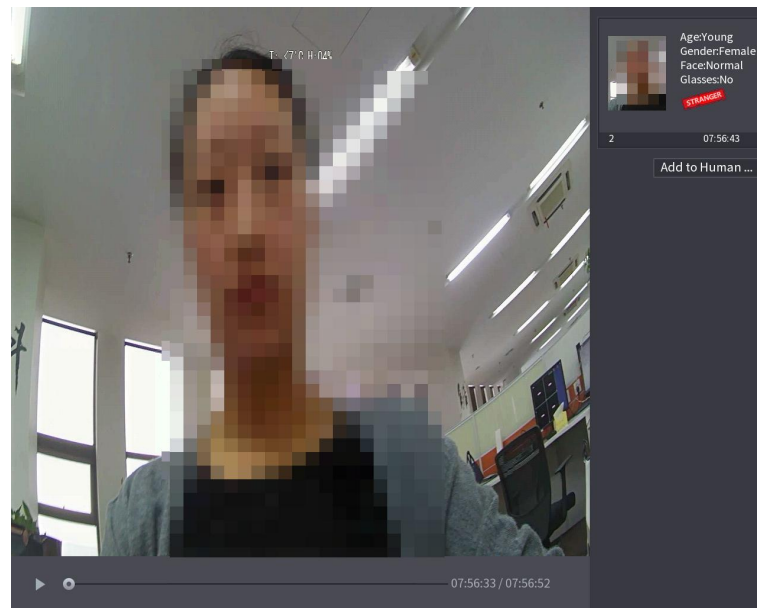
3. Click on**Add to Face Database**(Add to Human Face Database).

Figure 5-157 ID Registration
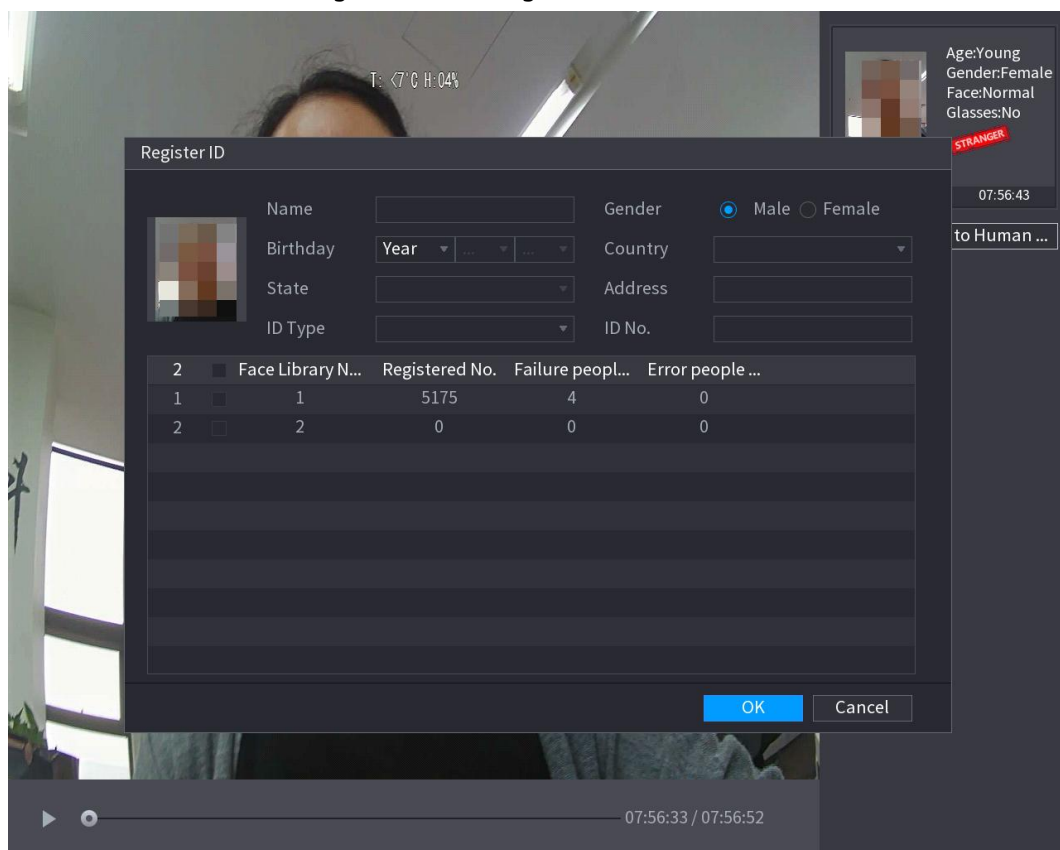
4. Select the face database and enter the document information.

5. Click on**OK**to complete the registration.
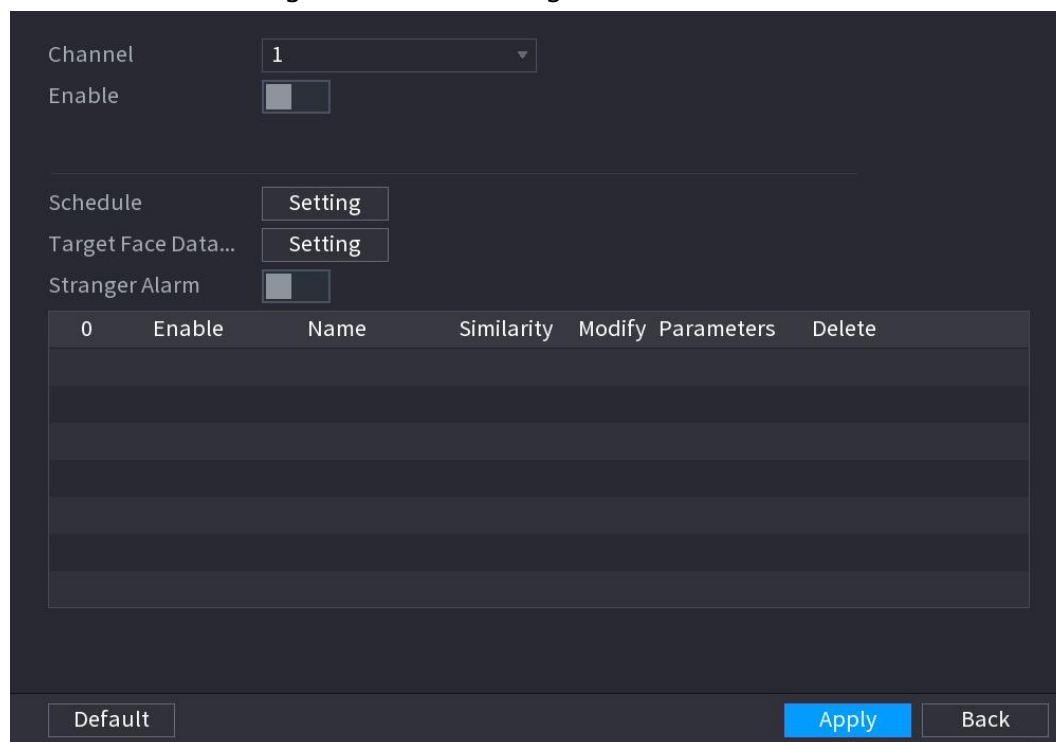
5.12.2.2.3 Configuring Face Recognition

You can compare the detected faces with those in the database to judge whether the detected face is in the database. The comparison result will be displayed on the AI mode real-time display screen and smart search page, and will link the alarms.

Procedure

Step 1: Select**Main menu**>**IA**>**Parameters**>**Face recognition**(Main Menu > AI > Parameter > Face Recognition).

Figure 5-158 Face recognition
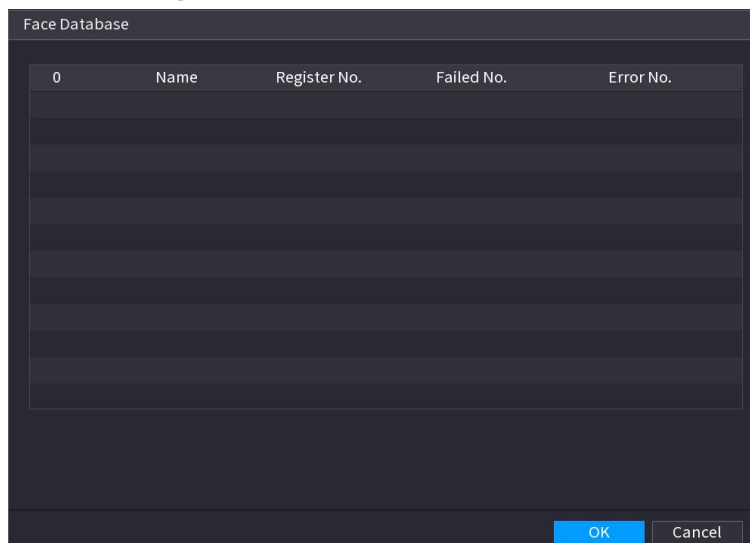
Step 2: In the list**Channel**(Channel), select a channel on which to configure the face recognition function and then enable it.

Step 3: Set the**Planning**(Schedule). For details, please refer to "5.11.4.1.2 Setting the Motion Detection Period".

Step 4: Set up**Target Face Database**(Target Face Database).

　　1) Click on**Settings**(Settings).

Figure 5-159 Face database
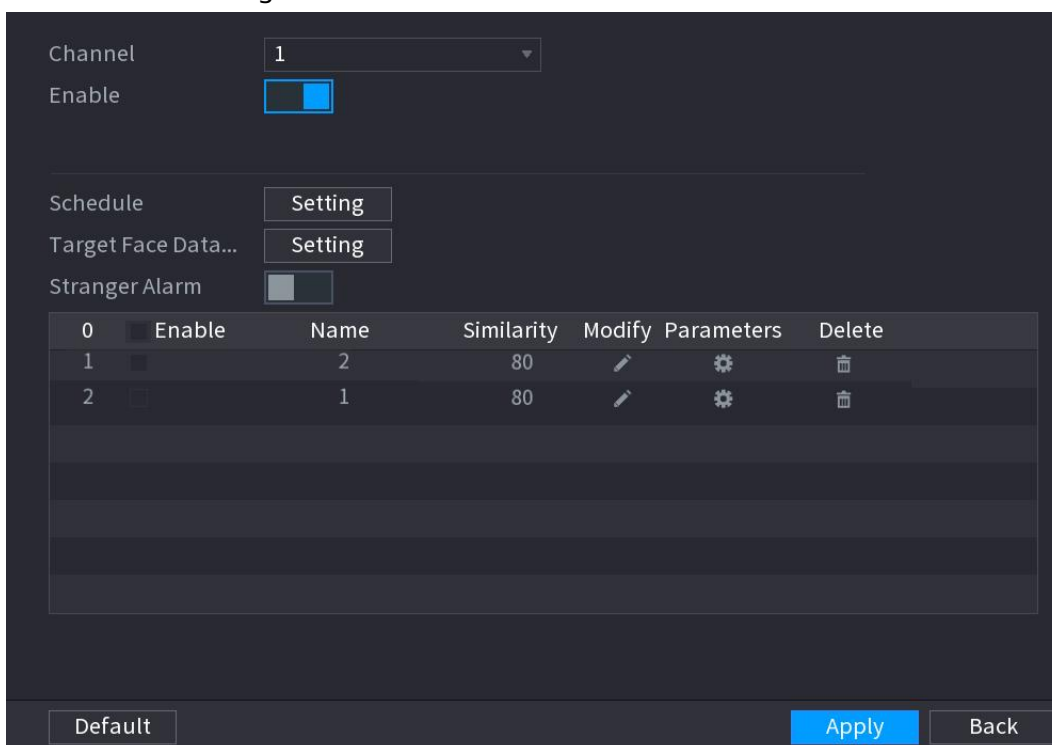
2) Select one or more face databases.

3) Click on**OK**.

The selected face database is listed.

Figure 5-160 Selected Face Database

Step 5: Configure the added face database.

● To change the analogy, click . The lower the number, the easier it will be to trigger the alarm link.

● To delete the face database, click .

● To set the alarm link, click .

● Once you have finished setting up, click on**OK**.

Step 6: (Optional) Enable the**Unknown mode**(Stranger Mode).

1) Enable Unknown mode ([toggle]) . If the detected faces do not belong to the database, the system marks the face as "Unknown".

2) To set the alarm link, click**Settings**(Settings).

3) Once you have finished setting up, click on**OK**.

Step 7: Click on**Apply**(Apply) to complete the setup.

Once the face recognition function is enabled, right-click on the live view screen and select**Real-time mode**> **AI Mode**(Live Mode > AI Mode).

● If the detected face is contained in the enabled face database, the analogy result is displayed.

● If the detected faces do not belong to the database, the face is marked as "Unknown".

Figure 5-161 Result of the analogy
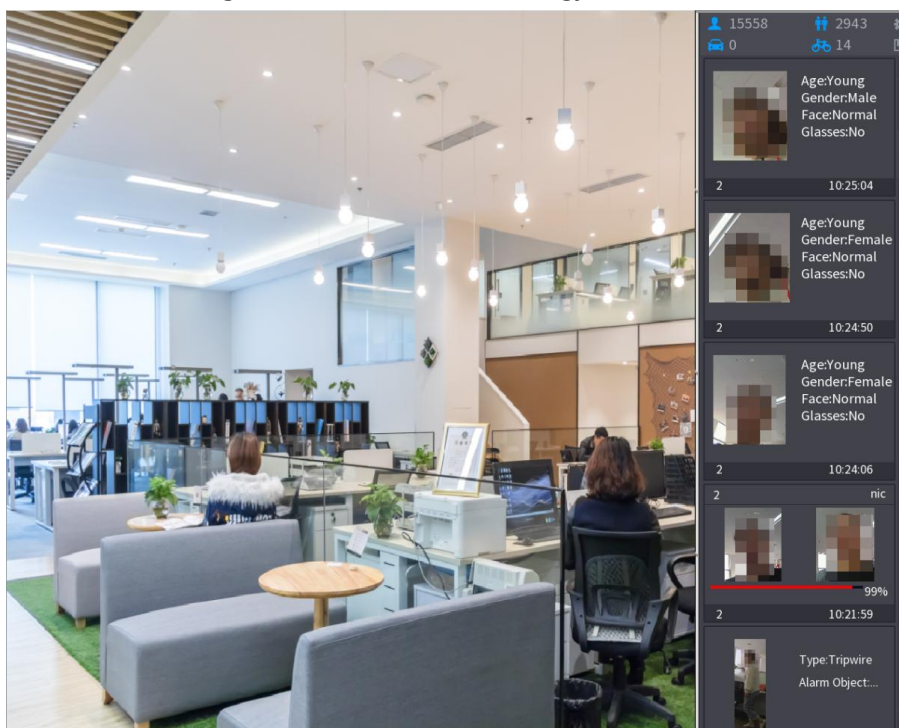
5.12.2.2.4 Intelligent search for face recognition
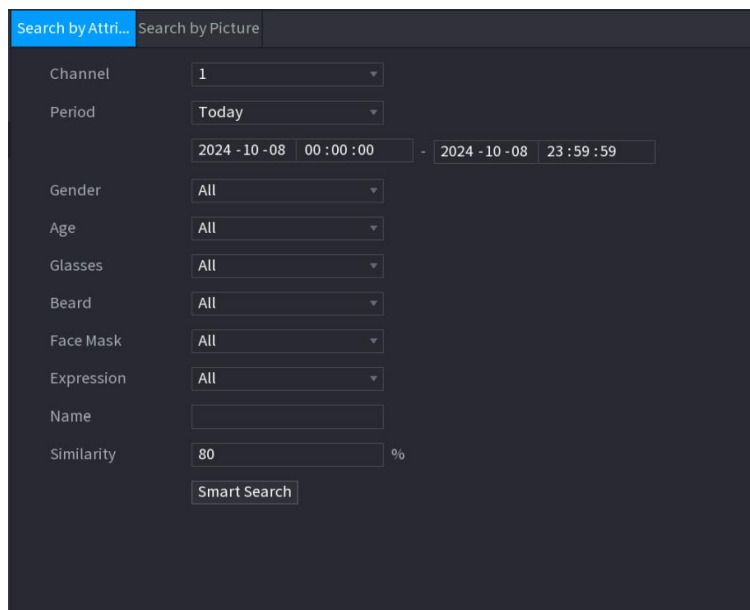
You can compare the detected faces with the face database and play them back.

● Search by Attributes: Search the face database based on facial attributes.

● Search by Image: Search the face database based on uploaded face images.

Search by attributes
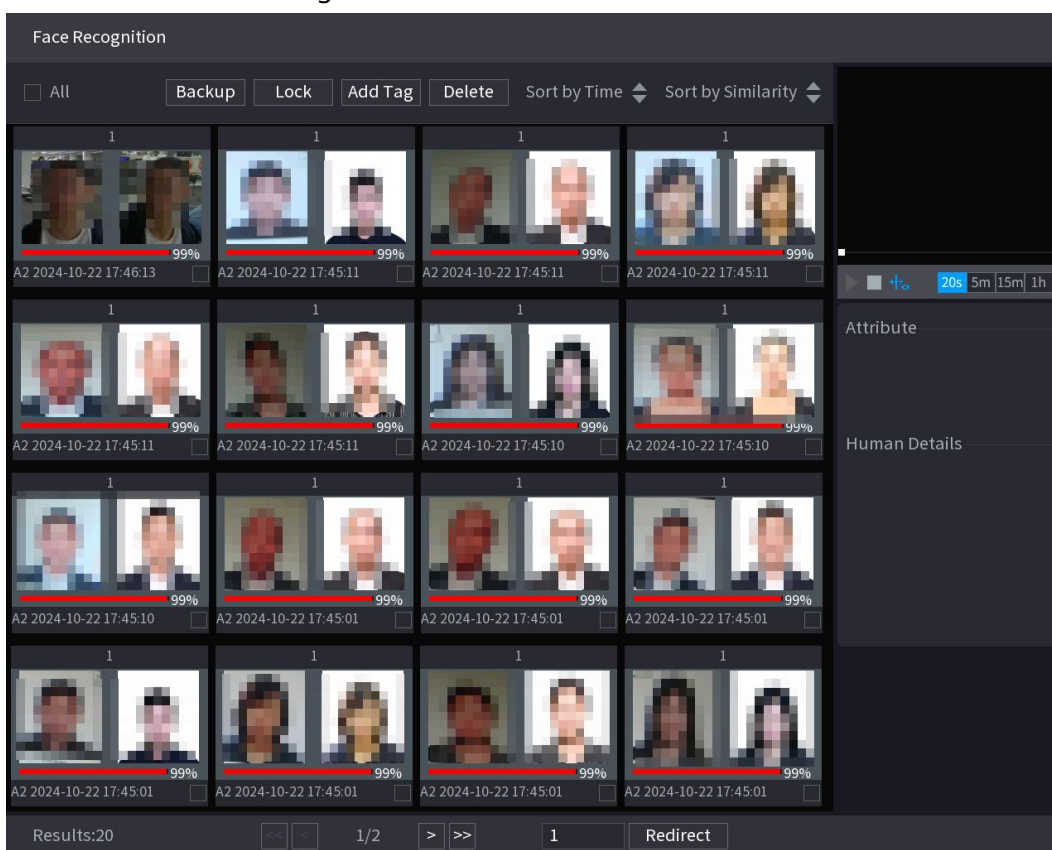
1. Select**Main menu**>**IA**>**AI Research**>**Face recognition**>**Search by attributes** (Main Menu > AI > AI Search > Face Recognition > Search by Attributes).

Figure 5-162 Search by attributes

2. Select the channel and set parameters such as start time, end time, gender, age, glasses, beard, mask, expression, name and likeness as needed.

3. Click on**Smart Search**(Smart Search).

Figure 5-163 Smart Search

4. Click on the image you want to play.

Figure 5-164 Recorded information
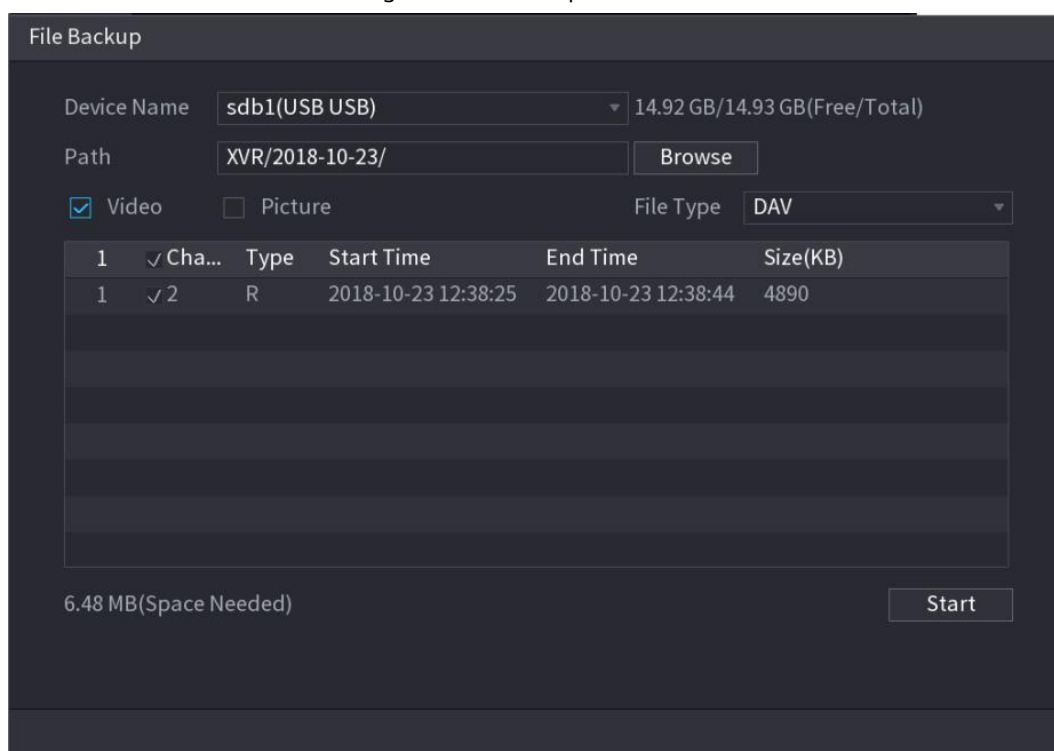

5. Click to play the recorded video.

Do double click on the page from the reproduction Forpass Betweenthereifreproduction toscreen entire And that in miniature.

You can also perform the following operations on the recorded files.

● To export the database file (.csv) to the external storage device, select the files, click **Export**(Export), then select the save path.

● To backup recorded files to external storage device, select the files, click**Backup**, select the save path and file type, then click **Start**(Start).

Figure 5-165 Backup

● To lock files and make them impossible to overwrite, select the files, then click **Block**(Lock).
● To add a tag to the file, select the files and then click**Add tags**(Add Tag).

● To reorder the search results by time or similarity, click ⬍ next to **Order by time**(Sort by Time) or**Sort by analogy**(Sort by Similarity).

Search by image

1. Select**Main menu**>**IA**>**AI Research**>**Face recognition**>**Search by image** (Main Menu > AI > AI Search > Face Recognition > Search by Picture).

Figure 5-166 Search by image

2. Upload face images from**Face database**(Face Database) or from**Local upload** (Local Upload).

AIt is possible load to the maximum 30Images at the time and It is possible look for to the maximum 8 Images at the time.

● Face database

a. Click Face Database.

Figure 5-167 Face database
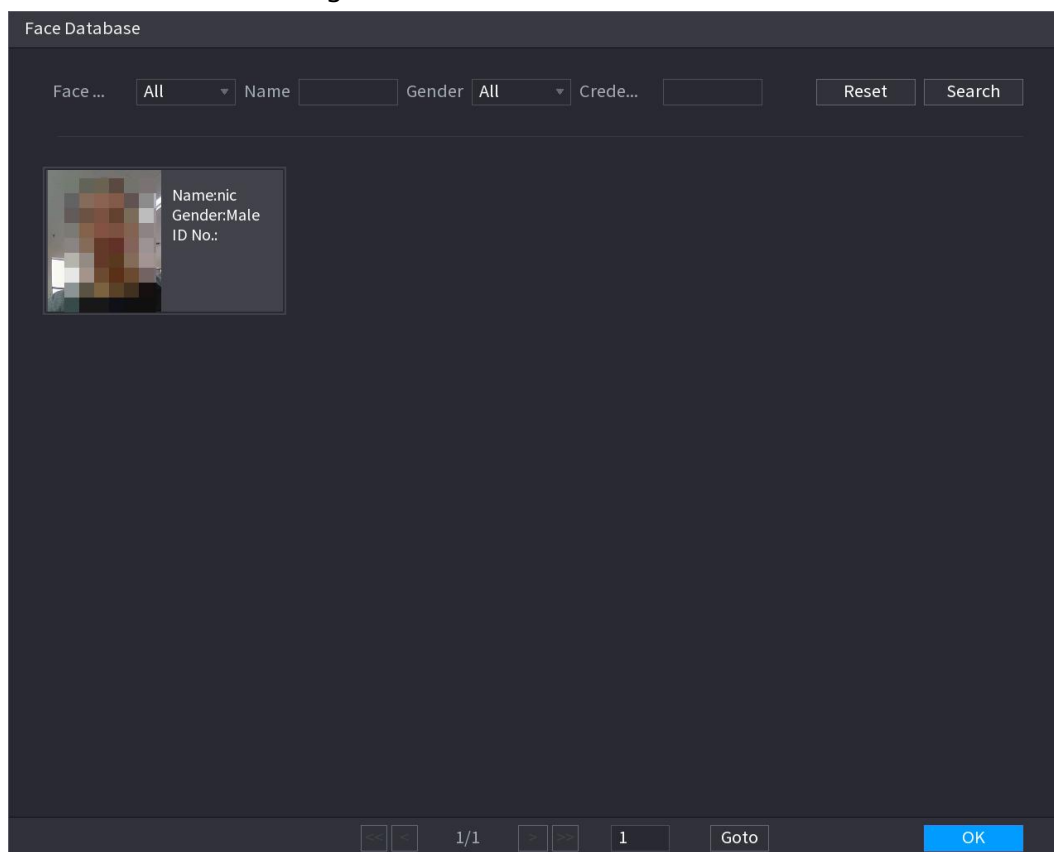
b. Set the search parameters by selecting the face database and gender, then entering the name and document number as needed.

c. Click on**Near**(Search) to display results that meet the requirement.

📖

Do click on**Reset** (Reset) Forcancel the parameters Of research.

d. Select the image and click on**OK**.

Figure 5-168 Image loaded
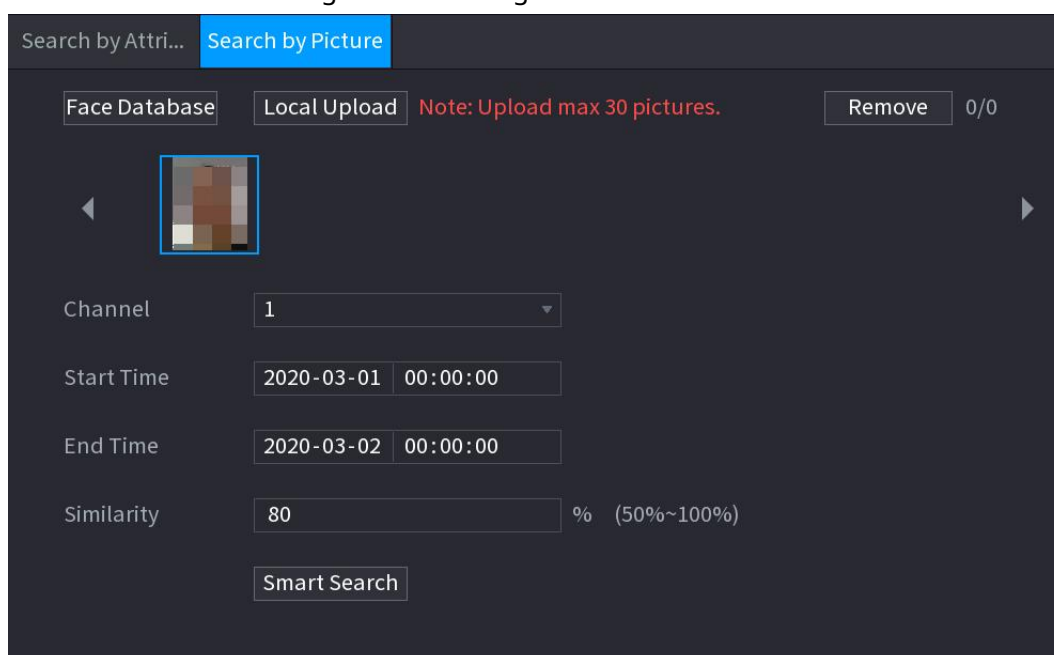
● Local upload

Connect the USB storage device (with face images) to your device, then click**Local upload**(Local Upload). Then select the image from the USB storage device and click**OK**. The selected face images are loaded.

3. After loading face images, continue to configure other parameters (channel, start time, end time and analogy).

4. Click on**Smart Search**(Smart Search). The search results are displayed.

Figure 5-169 Search results
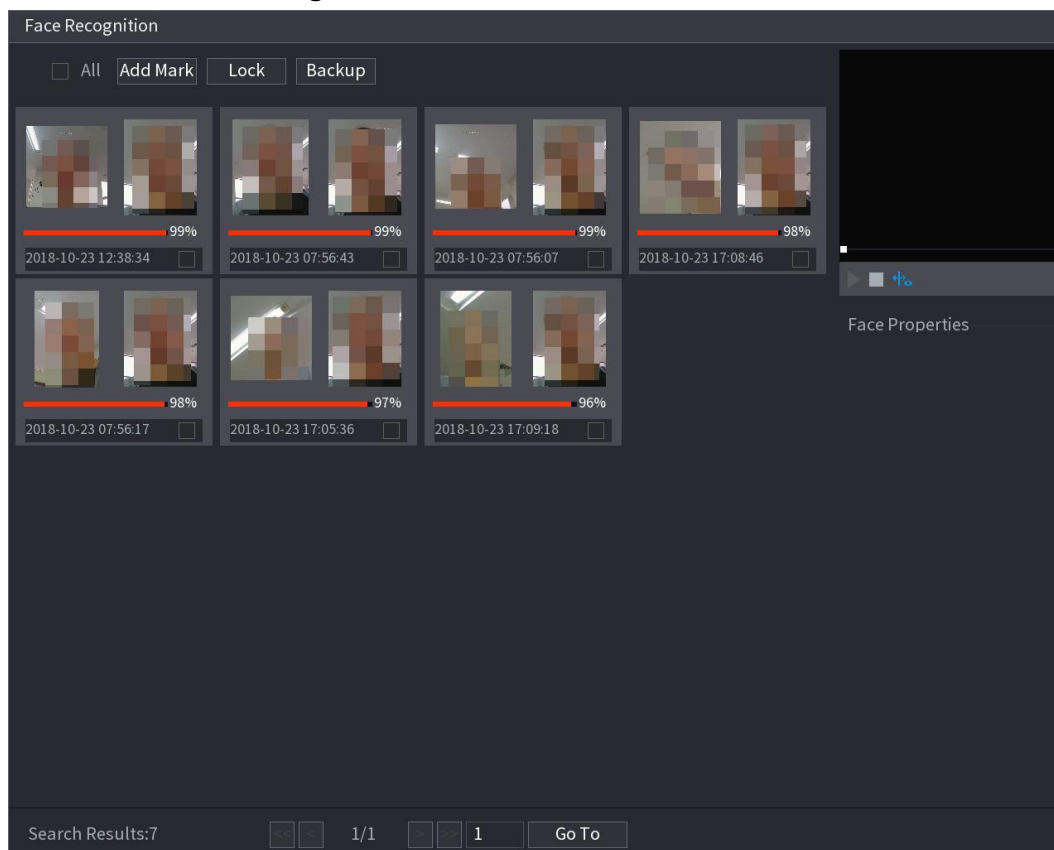
5. Select the face image to play.

Figure 5-170 Playback

6. Click to play the recorded video.

📖

Do double click on the page from the reproduction For pass Between there reproduction to screen entire And that in miniature.

You can also perform the following operations on the recorded files.

● To add a tag to the file, select the files and then click **Add tags**(Add Tag).

● To lock files and make them impossible to overwrite, select the files, then click **Block**(Lock).

● To backup recorded files to external storage device, select the files, click **Backup**, select the save path and file type, then click **Start**(Start).

Figure 5-171 Backup

5.12.2.3 IVS Function

The IVS function processes and analyzes images to extract key information to match pre-set rules. When detected behaviors match the rules, the system triggers alarms.

If You select through device, possible use a alone function at the same time Forthe same channel to choice detection recognition of the face, function IVS And structuring video.

5.12.2.3.1 IVS Parameter Configuration

Alarms are generated based on the configured parameters.

Procedure

Step 1: Select **Main menu**>**IA**>**Parameters**>**IVS**(Main Menu > IA > Parameter > IVS).

Figure 5-172 IVS
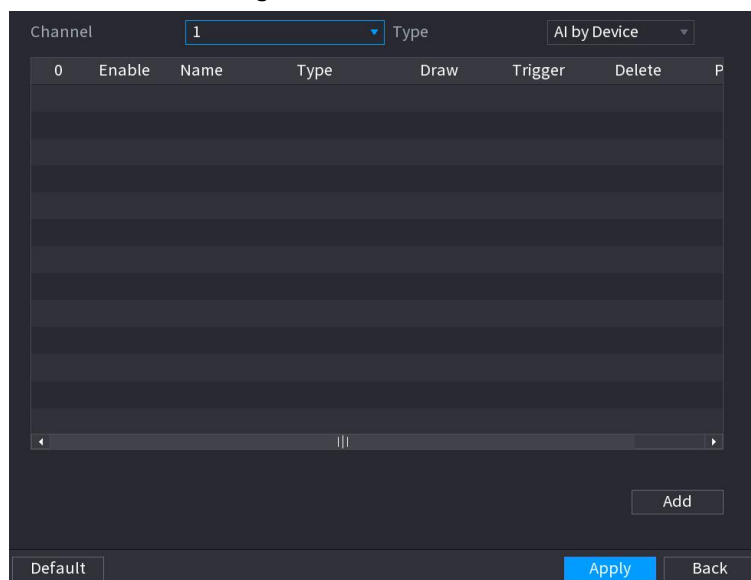
Step 2: In the list**Channel**(Channel), select the channel for which you want to configure the IVS function. Step 3: In**Type**(Type), you can select between AI by Camera and AI by Device.

● **AI via camera:**This option only works for certain AI cameras. The camera will do all the AI   analysis and provide the results to the DVR.
● **AI via Device:**The camera only takes care of transmitting the normal video stream to the DVR, while the DVR takes care of the analysis via AI.

Step 4: Click on**Add**(Add).

Figure 5-173 Adding Rule
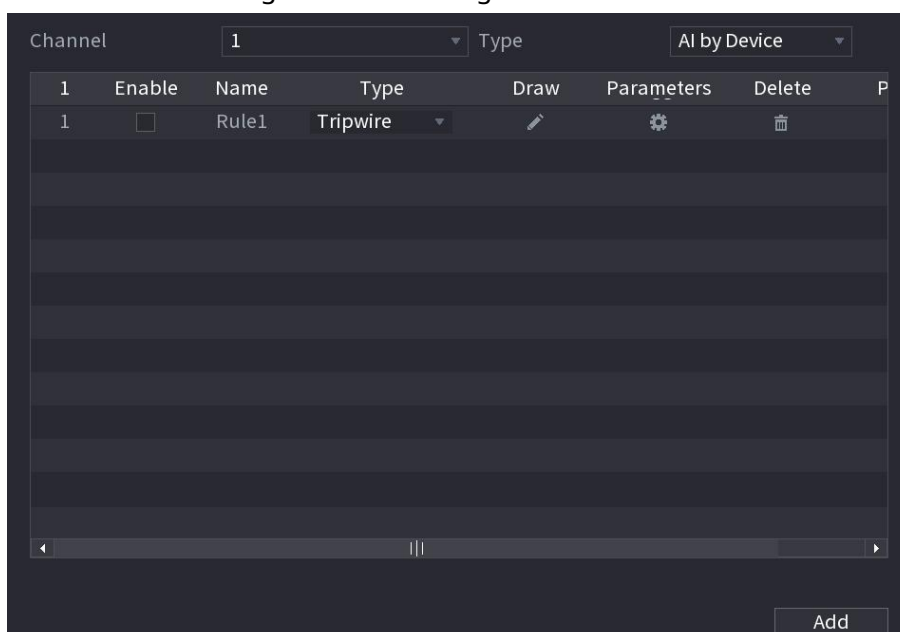
Step 5: Configures the parameters for the selected rule. For more details on configuring the line crossing or intrusion rule, see "5.12.2.3.2 Configuring Line Crossing Rules" and "5.12.2.3.3 Configuring Intrusion Rules".

Step 6: Select the rule's checkbox to enable it.

Step 7: Click on**Apply**(Apply) to complete the setup.

5.12.2.3.2 Configuring line crossing rules

Preliminary information

When the target object crosses the line in the defined direction, the system triggers alarms.

● You can configure the crossing line as a straight line or a broken line.

● Support one-way detection or two-way line crossing.

● Supports multiple crossing lines in the same scenario to meet complexity needs.

● Supports size filter for target.

Procedure

Step 1: In the added rule line, in the list**Type**(Type), select**Crossing the line**(Tripwire).

Figure 5-174 Line crossing
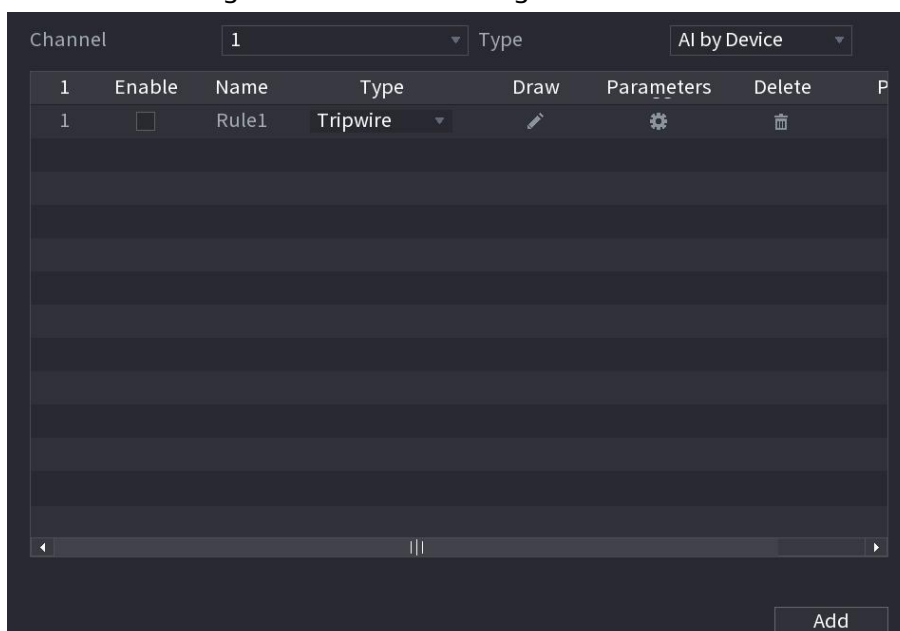
Step 2: Draw a crossing line.

1) In the list**Channel**(Channel), select the channel for which to configure rules.

2) Click on .

The monitoring screen appears to configure line crossing rules.

Figure 5-175 Line crossing rule
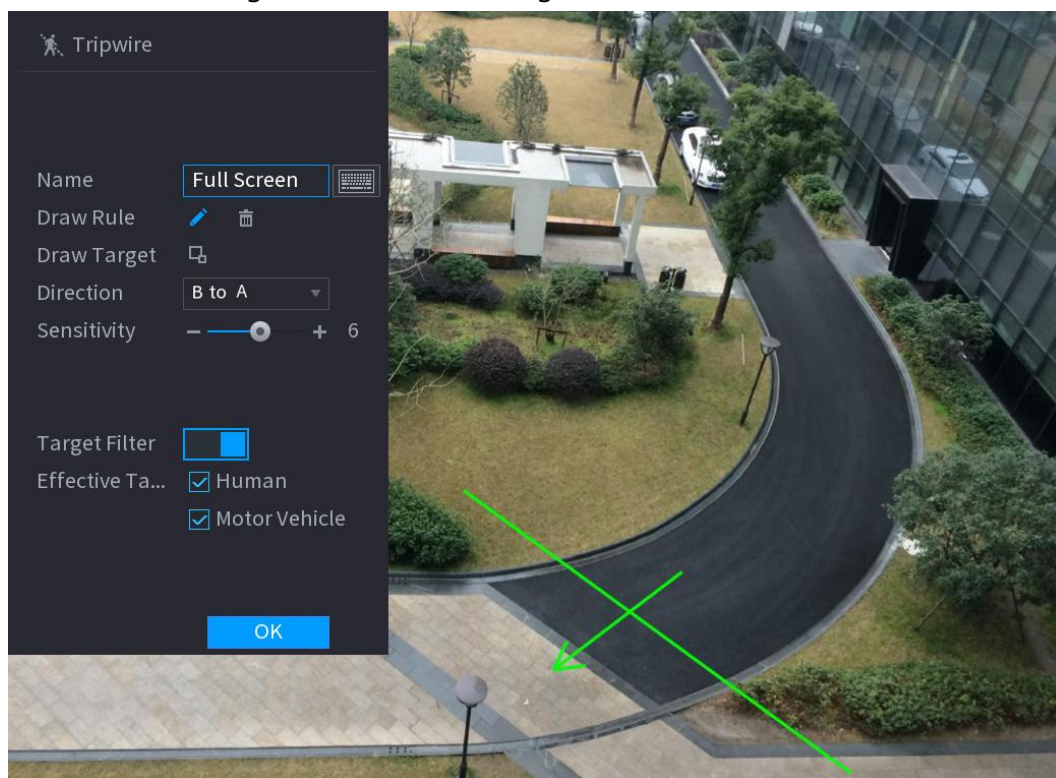
3) Click on   to draw the minimum or maximum size to filter the target.

The system triggers an alarm only when the size of the detected target is between the maximum and minimum size.

4) Configure the parameters.

Table 5-52 Line crossing parameters

Parameter	Description
Name	Enter the name of the custom ruler.
Direction	Set the line crossing direction. You can select **from A to B**(A to B) (from left to right),**from B to A**(B to A) (from right to left) and**Both** (Both).
Sensitivity	Configure the detection sensitivity. The higher the value, the easier it will be to trigger an alarm, but at the same time the false alarm rate will be higher.
Target filter Actual target	Click on , then select the actual target. For option default are selected**Person**(Human) and**Motor vehicle** (Motor Vehicle). The system automatically identifies the person and motor vehicle that appear within the monitoring range.

5) Using the mouse, draw a crossing line. The crossing line can be a straight line, a broken line, or a polygon.

6) Click on**OK**to save the settings.
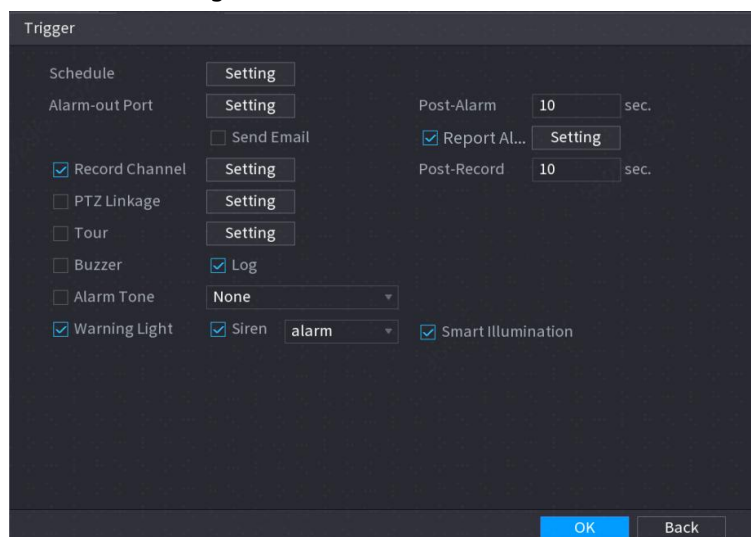
<u>Step 3:</u> To set the actions to be activated, click on   .

Figure 5-176 Activation

Step 4: Configure activation parameters.

Table 5-53 Description of scheduling and connection parameters

Parameter	Description
Planning	Define the detection activation period.
Alarm output port	Click on**Settings**(Settings) to configure the parameters. ● General Alarm: Enable general alarm and select the alarm output port. ● External alarm: Connect the alarm panel to the device and then activate it. ● Wireless Siren: Connect the wireless gateway to the device and then activate it. When an alarm event occurs, the system connects the peripheral alarm devices connected to the selected output port.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cancelled. The selectable time range is from 0 to 300 seconds. Entering the value 0 will mean no delay.
Show message	Select the checkbox**Show Messages**(Show Message) to enable the appearance of alarm messages on the user's local host computer.
Alarm Report	Select the checkbox**Alarm Report**(Report Alarm), then click **Settings**(Setting) next to**Alarm report**Report Alarm) to select**Private protocol** (Private Protocol) or**HTTP**In the **Protocol type**(Protocol Type). You can make the system upload the alarm signal to the network (including alarm center) when alarm events occur. 📖 ● This feature is only available on some models. ● It is necessary to configure the corresponding parameters in the alarm control panel.

Parameter	Description
Send email	Select the checkbox**Send email**(Send Email) to have the system send an email notification in case of alarm events. 📖 To use this feature, make sure the email function is turned on voice enabled**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).
Record channel	Select the channels you want to record. The selected channels start recording when an alarm event occurs. 📖 The intelligent event recording function and automatic recording function must be enabled.
PTZ connection	Click on**Settings**(Setting) to display the PTZ page. 📖 To use this function, you need to configure PTZ operations.
Post registration	Defines the delay time for the device to turn off recording after the alarm is cleared. The value ranges from 10 to 300 seconds.
Tour	Select the checkbox**Tour**to enable a tour of selected channels. 📖 ● To use this feature, you need to configure your tour settings. ● When the tour ends, the live view screen returns to the previous view layout.
Image storage	Select the checkbox**Image storage** (Picture Storage) to take a snapshot of the selected channel. 📖 To use this feature, make sure the snapshot function is enabled for**Intel**in**Main menu**>**ARCHIVING**>**Planning**>**Snapshot**(Main Menu > STORAGE > Schedule > Snapshot).
Video matrix	Select the checkbox to enable this function. When an alarm event occurs, the video output port

Parameter	Description
	Shows the settings configured in**Main menu**>**TOUR**> **Extra screen**(Main Menu > DISPLAY > Tour > Extra Screen). ● This feature is only available on some models. ● To use this feature you need to enable the additional screen.
Acoustic signal	Select this checkbox to enable the device to beep.
Log	Select this checkbox to have the device record local alarm information.
Alarm tone	Select this option to enable audio transmission in response to a face detection event.
Alarm light	Select this checkbox to enable the camera alarm light alarm.
Siren	Select this checkbox to enable the camera audio alarm.
Smart lighting	Select this checkbox to enable intelligent camera lighting.

Step 5: Click on**OK**to save the settings.

Step 6: Select the checkbox**Ability**(Enable) and click on**Apply**(Apply). The line crossing detection function is active. When the target object crosses the line in the defined direction, the system triggers alarms.

5.12.2.3.3 Configuring Intrusion Rules

Preliminary information

When the target enters and exits the defined detection area, or when it appears in the defined area, the system triggers alarms.

● You can define the shape and number of intrusion areas.

● Supports behavior detection of targets entering and exiting intrusion areas.

● Supports detecting moving target behaviors in intrusion areas. The number of areas and duration can be configured.

● Supports size filter for target.

Procedure

Step 1: In the added rule line, in the list**Type**(Type), select**Intrusion** (Intrusion).

Figure 5-177 Intrusion
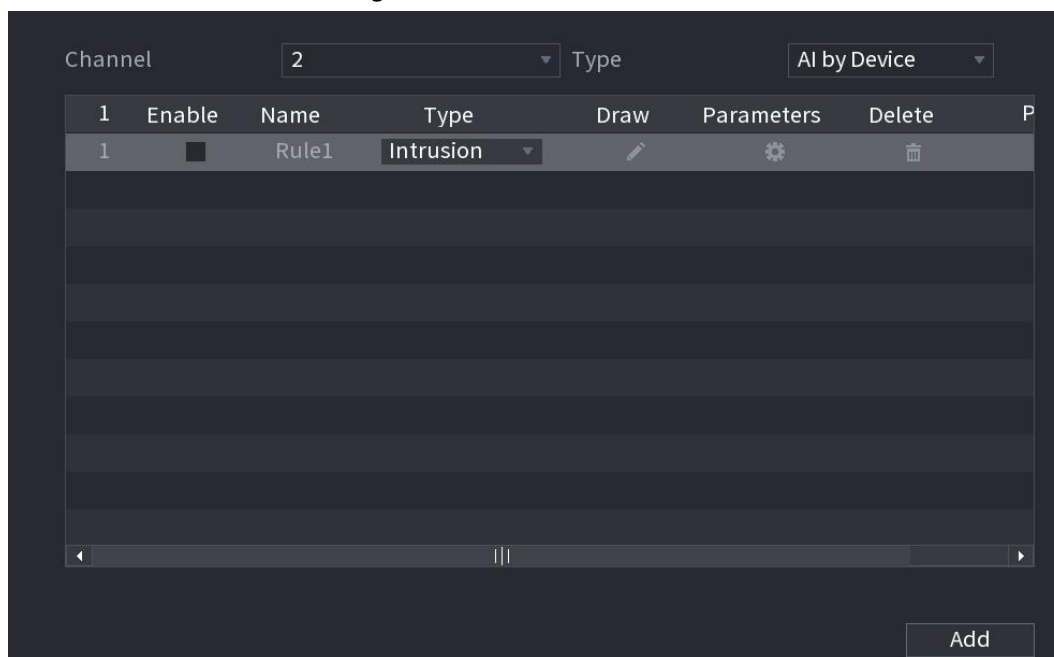
Step 2: Draw an area.

1) In the list**Channel**(Channel), select the channel for which to configure rules.

2) Click on .

Figure 5-178 Intrusion rule
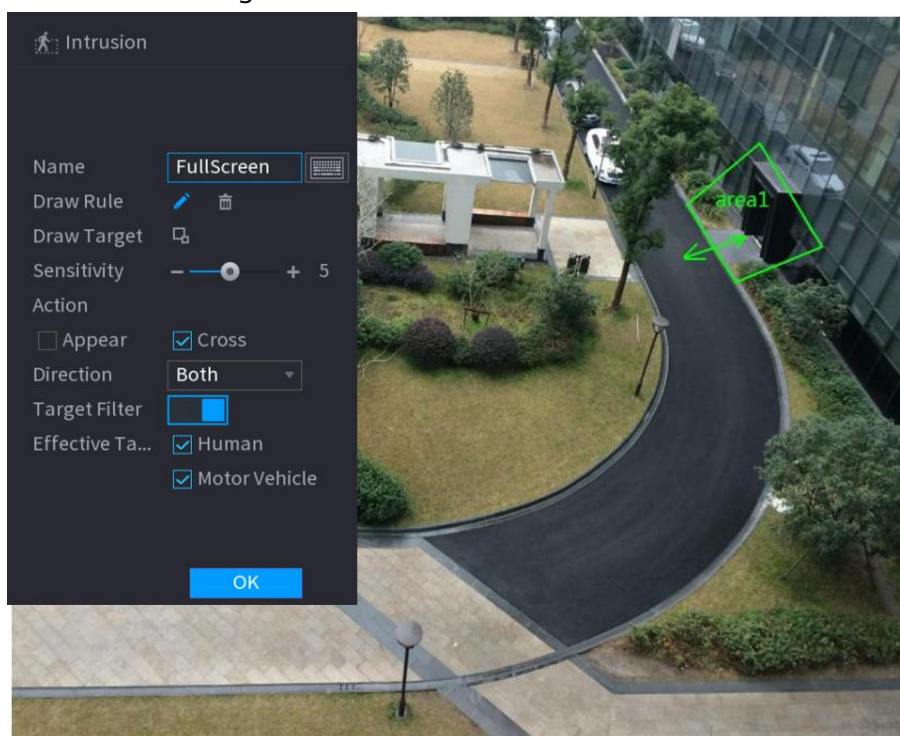
3) Configure the settings for the drawing definition rules parameters.

Table 5-54 Intrusion parameters

Parameter	Description
Name	Enter the name of the custom ruler.
Sensitivity	Configure the detection sensitivity.

Parameter	Description
	The higher the value, the easier it will be to trigger an alarm, but at the same time the false alarm rate will be higher.
Action	Set the intrusion action, including the appearance and crossing area.
Direction	Set the intrusion direction. You can select**Entrance** (Enter), **Exit**(Exit) and**Both**(Both).
Target filter	Click on ▭, then select the actual target. For option
Actual target	default are selected**Person**(Human) and**Motor vehicle** (Motor Vehicle). The system automatically identifies the person and motor vehicle that appear within the monitoring range.

4) Use the mouse to draw an area.

5) Click on**OK**to save the settings.

Step 3: To set the actions to be activated, click on ⚙.

Step 4: Select the checkbox**Ability**(Enable) and click on**Apply**(Apply). The intrusion detection function is active. When the target enters and exits the area, or appears in the defined area, the system will trigger alarms.
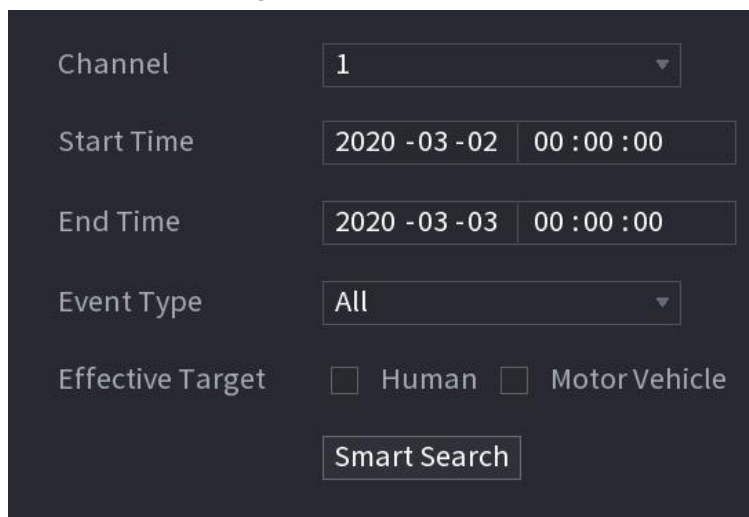
5.12.2.3.4 Intelligent search for IVS function

You can search for smart events and play them.

Procedure

Step 1: Select**Main menu**>**IA**>**AI Research**>**IVS**(Main Menu > AI > AI Search > IVS).

Figure 5-179 IVS

Step 2: In the list**Channel**(Channel), select the channel where to search for events, then set other parameters such as start time, end time, event type and alarm subject.

Step 3: Click on**Smart Search**(Smart Search). Results that meet your search criteria are displayed.

Figure 5-180 Search results
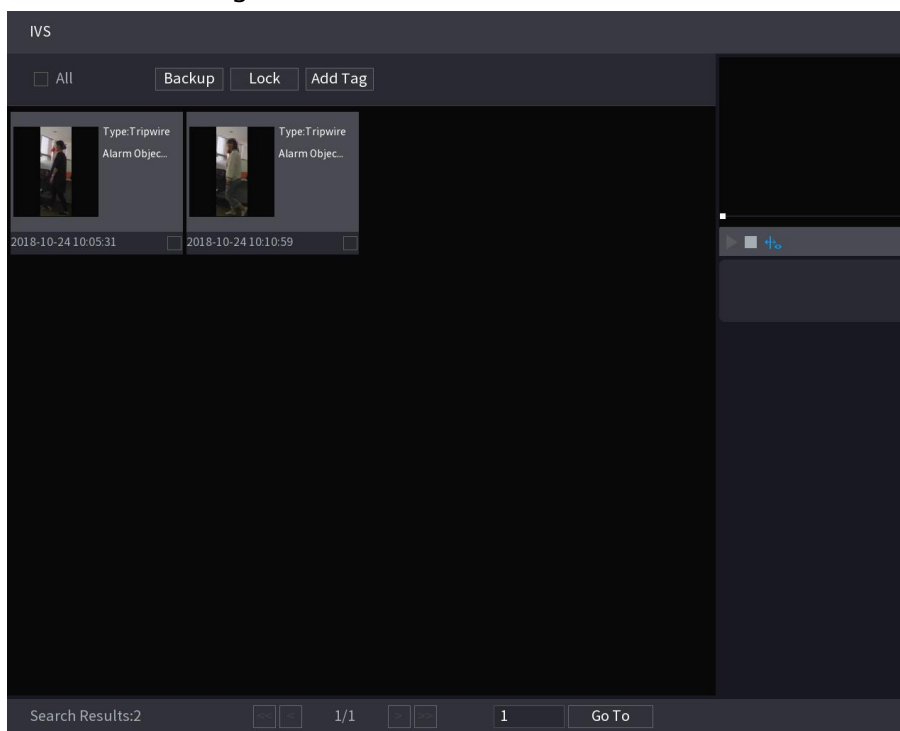
Step 4: Click on the image to play.

Figure 5-181 Playback
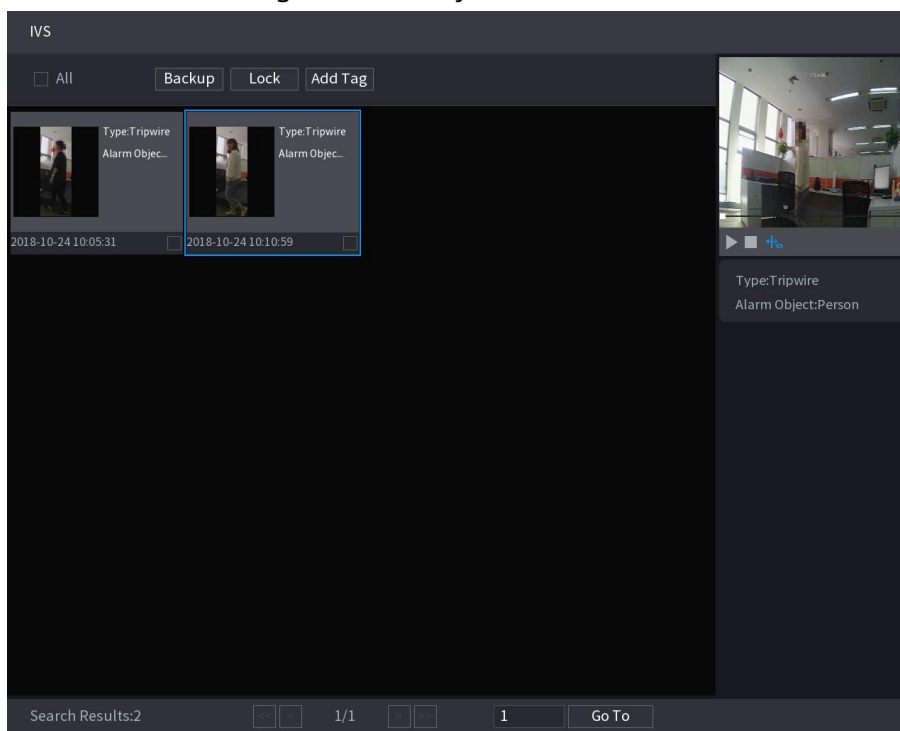
Step 5: Click on ▶ to play the recorded video.

Do double click on the page from the reproduction Forpass Betweenthere reproduction to screen entire Andhat in miniature.

You can also perform the following operations on the recorded files.

● To backup recorded files to external storage device, select the files, click**Backup**, select the save path and file type, then click**Start**(Start).

Figure 5-182 Backup
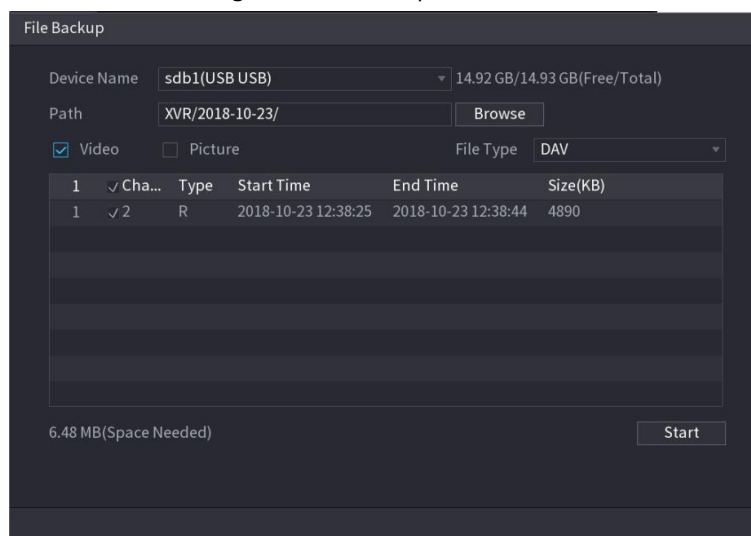
● To lock files and make them impossible to overwrite, select the files, then click **Block**(Lock).
● To add a tag to the file, select the files and then click**Add tags**(Add Tag).

5.12.2.4 Video structuring

The device can detect and extract key features of the human body and non-motor vehicles in the video, and then build a structured database. It is possible to search for targets with certain features.

5.12.2.4.1 Configuring Video Structuring

Procedure

Step 1: Select**Main menu**>**IA**>**Parameters**>**Video structuring**(Main Menu > IA > Parameter > Video Structuring).

Figure 5-183 Video structuring
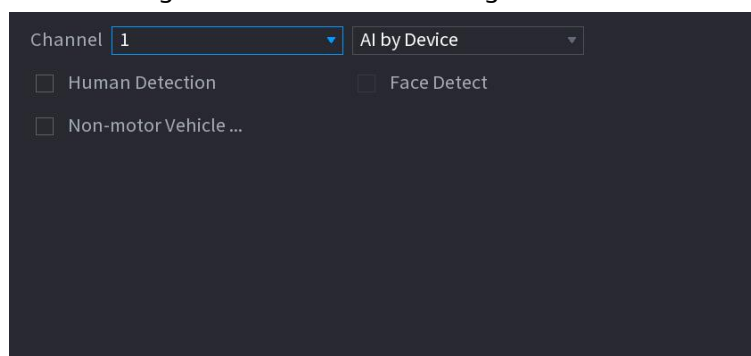
Step 2: In the list**Channel**(Channel), select a channel on which to configure the video structuring function, and then enable it.

Step 3: In**Type**(Type), you can select between AI by camera and AI by Device.

- ● **AI via camera:**This option only works for certain AI cameras. The camera will do all the AI   analysis and provide the results to the DVR.
- ● **AI via Device:**The camera only takes care of transmitting the normal video stream to the DVR, while the DVR takes care of the analysis via AI.

Step 4: You can select between**Person detection**(Human Detection),**Face detection**(Face Detect) and**Non-motor vehicle**(Non-motor vehicle).

- ● **Presence detection:**By selecting this option, the device will analyze all the characteristics of the human body present in the video, including upper part, upper color, lower part, lower color, gender, age and the presence of hats, bags and umbrella. It is possible to search for the target with these specific characteristics.

- ● **Face Detection:**First, you need to select**Person detection** (Human Detection), then select this option. By selecting this option, if a human face appears in the video, then the face recognition function will be activated in the human body detection results and some additional facial features will be indicated, including the expression and whether the person is wearing glasses, a mask, and a beard. You can search for the target with these specific features.

- ● **Non-motor vehicle:**By selecting this option, then the device will analyze all the characteristics of the non-motor vehicle, including type, color of the vehicle, number of people on board and the presence of a helmet. It is possible to search for the target with these specific characteristics.

Step 5: Click on**Apply**(Apply).
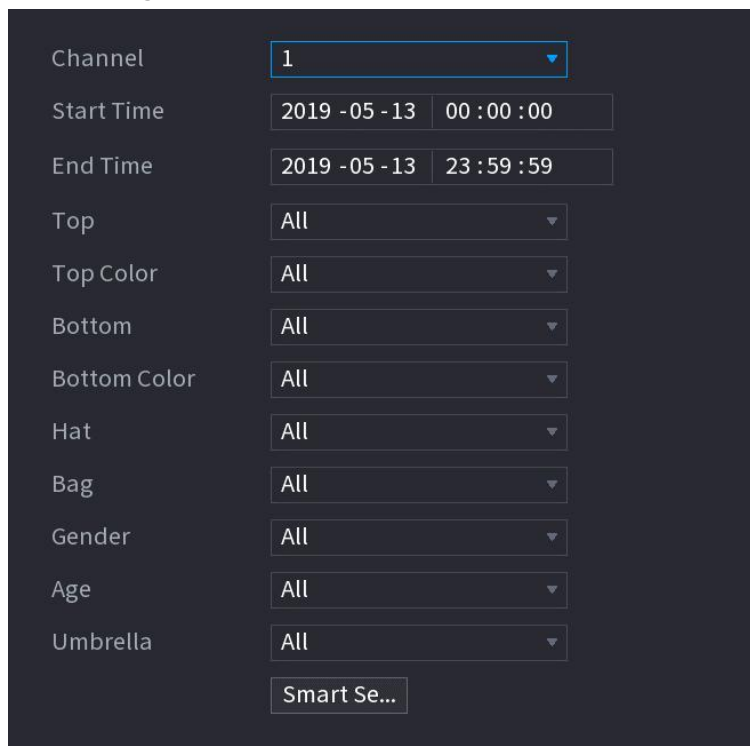
5.12.2.4.2 Smart Search for Video Structuring

You can search for the desired target that has certain characteristics of the body or non-motor vehicle.

Person detection

1. Select**Main menu**>**IA**>**AI Research**>**Person detection**(Main Menu > AI > AI Search > Human Body Detection).

Figure 5-184 Person detection

2. Select the channel and time, then select one or more features.
3. Click on**Smart Search**(Smart Search).
   ● If you select only**Person detection**(Human Detection) and is not selected**Face detection**(Face Detect) in**Main menu**>**TO THE**>**Parameters**>**Video structuring**(Main Menu > AI > Parameters > Video Structuring), only human body features will be displayed in the results.

   ● If you select**Person detection**(Human Detection) and**Face detection**(Face Detect) in **Main menu**>**TO THE**>**Parameters**>**Video structuring**(Main Menu > AI > Parameters > Video Structuring), and there is a face in the video, the facial features will also be displayed in the results.
4. By selecting one or more results you can:
   ● Click on**Export**(Export) to export them to the USB device.
   ● Click on**Backup**to backup to DVR.
   ● Click on**Lock**(Lock) so that it cannot be overwritten or deleted.
   ● Click on**Add Tags**(Add Tag) to assign a name if necessary.
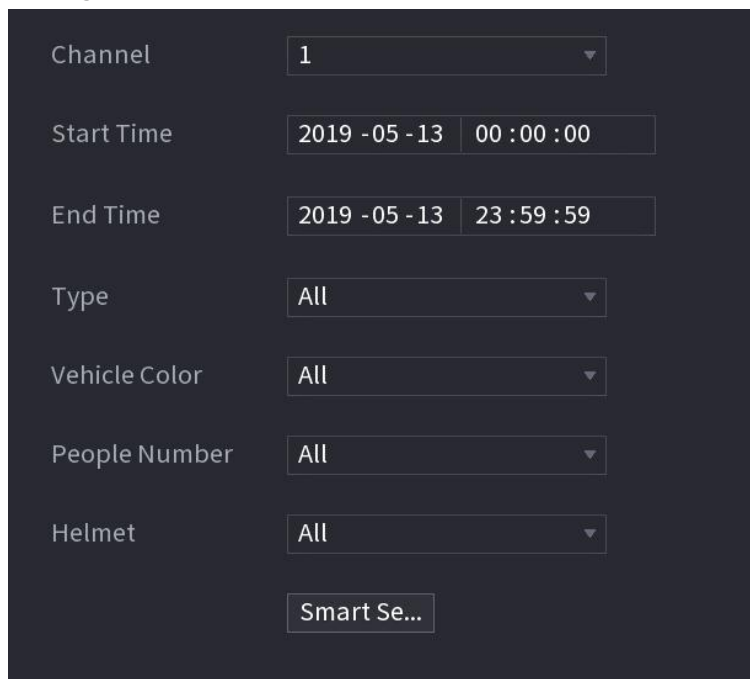
Non-motor vehicle detection:
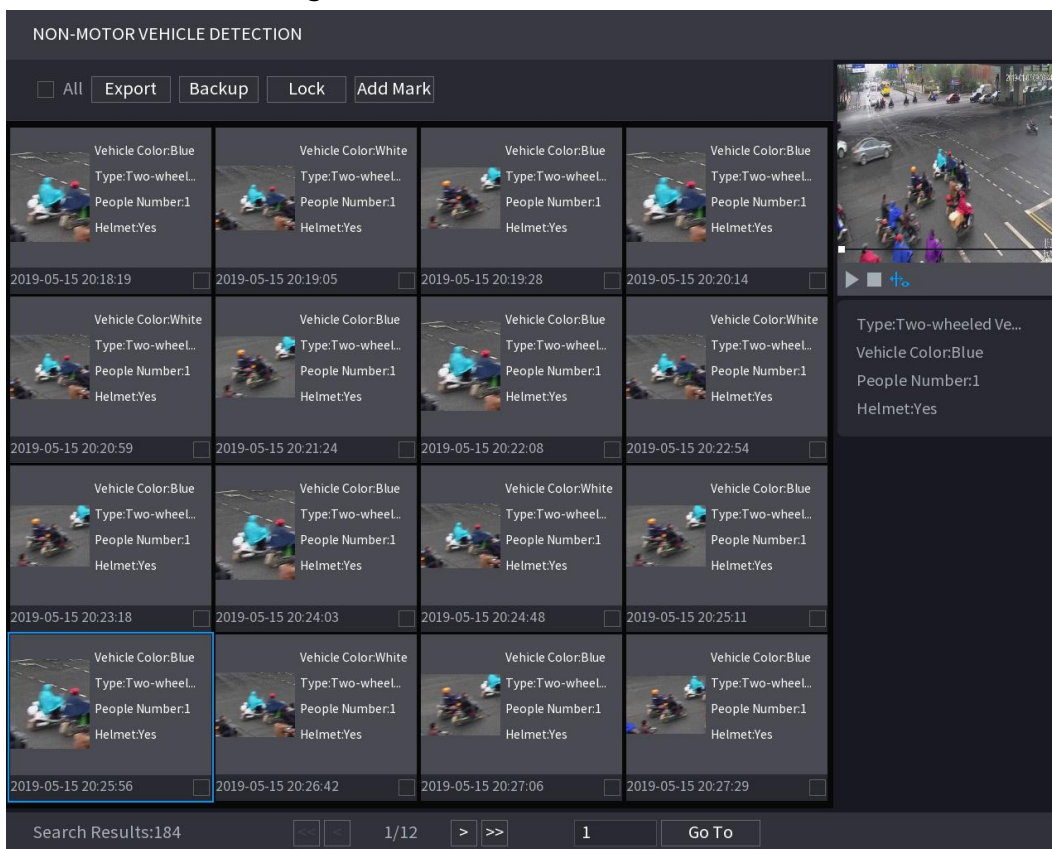
1. Select**Main menu**>**IA**>**AI Research**>**Non-motor vehicle detection**(Main Menu > AI > AI Search > Non-motor Vehicle Detection).

Figure 5-185 Non-motor vehicle detection

2. Select the channel and time, then select one or more features.

3. Click on**Smart Search**(Smart Search).

Figure 5-186 Search results

4. By selecting one or more results you can:

   ● Click on**Export**(Export) to export them to the USB device.

   ● Click on**Backup**to backup to DVR.

   ● Click on**Lock**(Lock) so that it cannot be overwritten or deleted.

● Click on**Add Tags**(Add Tag) to assign a name if necessary.

5.12.2.5 Quick Pick

The device is able to quickly identify targets, whether they are people or vehicles.

5.12.2.5.1 Quick Pick Configuration

Procedure

Step 1: Select**Main menu**>**IA**>**Parameters**>**Quick Pick**(Main Menu > AI > Parameter > Quick Pick).

Figure 5-187 Quick Pick
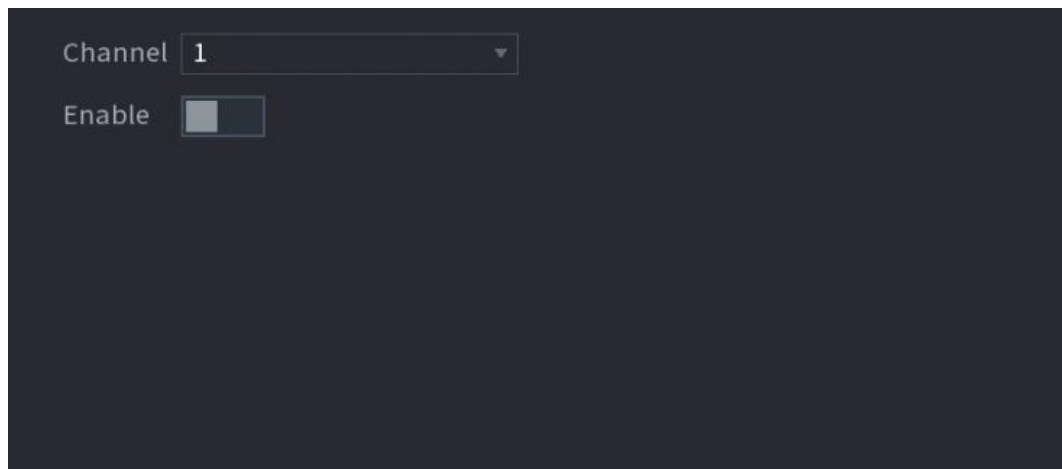
Step 2: From the drop-down list, select the**Channel**(Channel) where to configure the Quick Pick function and then enable it.

Step 3: Click on**Apply**(Apply).

5.12.2.5.2 Smart Search for Quick Pick

You can upload images from external devices and quickly search for people and vehicles to playback.

Procedure

Step 1: Select**Main menu**>**IA**>**AI Research**>**Quick Pick**(Main Menu > AI > AI Search > Quick Pick).

Step 2: Click on**Local upload**(Local Upload) to upload local images that contain the target you want to search for.

📖

- I am supported to the maximum 20 Images.
- Select the Images Not necessary Add click on **Remove** (Remove) For eliminate them.

Figure 5-188 Local upload

Step 3: Select **Channel**(Channel),**Period**(Period),**Start time**(Start Time) and **End time** (End Time) from the drop-down list. Step 4: Click on **Near**(Search).

Step 5: From the drop-down list, select **Device Name**(Device Name) and then the images in the list.

Figure 5-189 Navigating through images locally

Step 6: Click on **OK**.

Figure 5-190 Search results
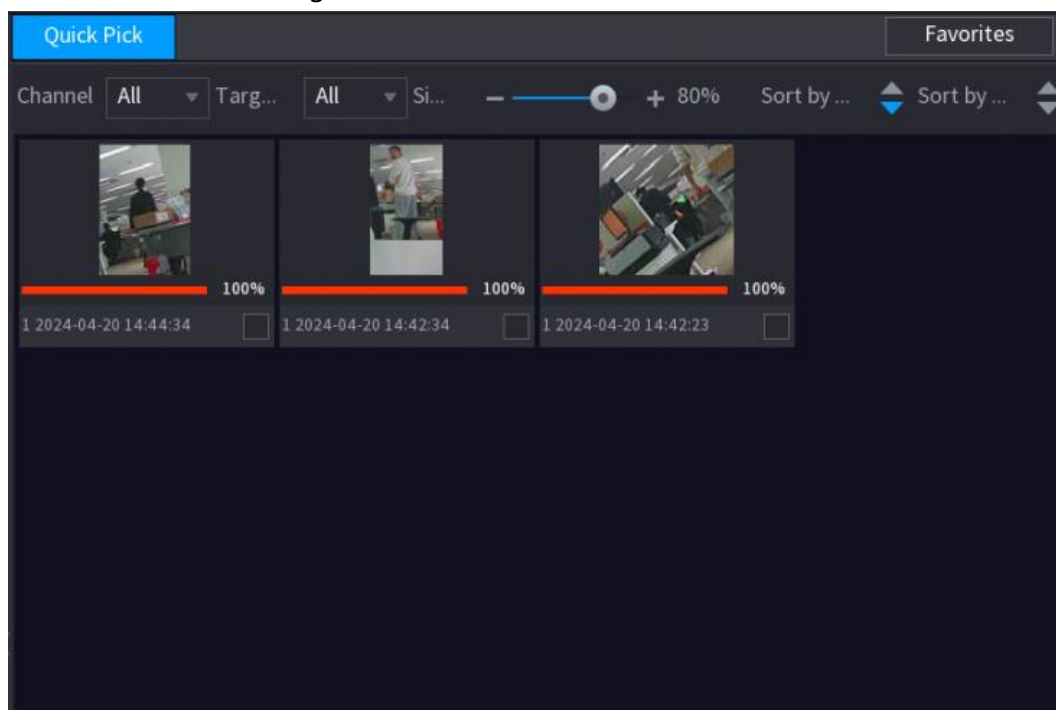
Step 7: Select the result to check and click on ▶ to play the recorded video

on the right side.

● Double-click the video page to switch between full-screen and windowed playback.

Figure 5-191 Playing the recorded video

Table 5-55 Main menu description

Icon	Description
	Click on to pause the video.
	Click on to stop the video.
	Click on to select whether to display the guideline intelligent.
	Click on to quickly select the target.
	Select to view playback in the corresponding time interval.
	Drag your mouse over the search results and click to add the result to your**Favorites**((Favorites).

● Click on**Backup**to backup recorded videos to favorites.

5.12.3 For Lite AI series

The AI　module enables SMD (Smart Motion Detection) and IVS (Intelligent Video System) functions. These functions take effect after configuration and activation. Deep learning is used and precise alarms can be created. Only one of the two options can be enabled at a time on the same channel.

● SMD: The device is able to detect and classify people and vehicles in the image.
● IVS: IVS process and analyze images of people and vehicles to extract key information to match preset rules. When detected behaviors match the rules, the system triggers alarms. IVS can avoid false alarms by filtering factors such as rain, light, and animals.

● Face Detection: The device can analyze faces captured by the camera and link the configured alarms. This function is only available for XVR5X-I and XVR7X-I series.
● Face Recognition: The device can compare the captured faces with the face database and link the configured alarms. This function is only available for XVR7X-I series.

On some models, the functions SMD, detection of the face, recognition of the face AI, IVS Not they can to be activate at the same time.

5.12.3.1 SMD
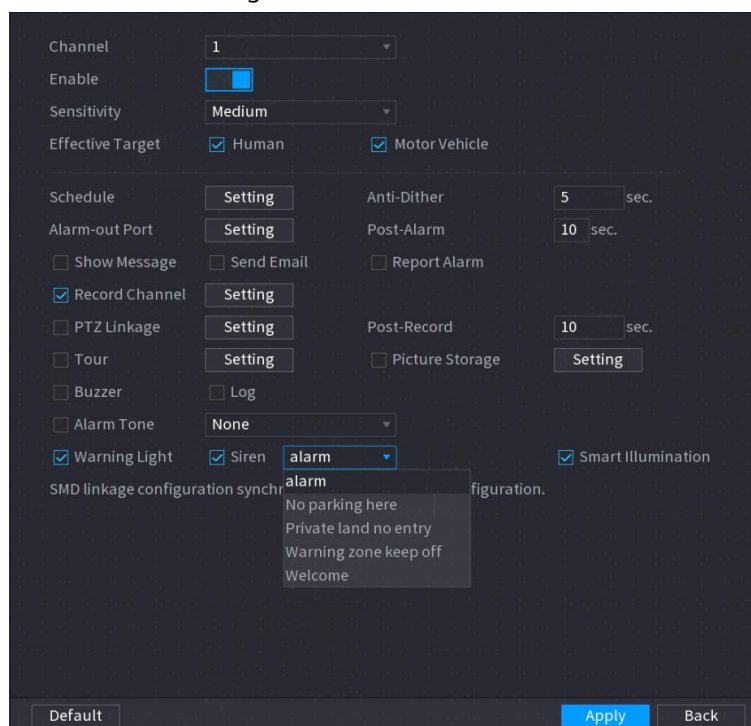
The device is able to detect and classify people and vehicles in the image.

5.12.3.1.1 Configuring SMD parameters

Procedure

Step 1: Select**Main menu**>**IA**>**Parameters**>**SMD**(Main Menu > IA > Parameters > SMD).

Figure 5-192 SMD

Step 2: In the list**Channel**(Channel), select a channel on which to configure the face detection function, and then enable it.

Step 3: Set the sensitivity for intelligent motion detection, then select a person, a motor vehicle, or both as the actual target.

Step 4: Configure the anti-dithering period.

Anti-dithering period means the period from the end of motion detection to the end of alarm linkage action.

Step 5: Configure other parameters.

Table 5-56 Description of scheduling and connection parameters

Parameter	Description
Planning	Define the detection activation period.
Alarm output port	Click on**Settings**(Settings) to configure the parameters.

Parameter	Description
	● General Alarm: Enable general alarm and select the alarm output port. ● External alarm: Connect the alarm panel to the device and then activate it. ● Wireless Siren: Connect the wireless gateway to the device and then activate it. When an alarm event occurs, the system connects the peripheral alarm devices connected to the selected output port.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cancelled. The selectable time range is from 0 to 300 seconds. Entering the value 0 will mean no delay.
Show message	Select the checkbox**Show Messages**(Show Message) to enable the appearance of alarm messages on the user's local host computer.
Alarm Report	Select the checkbox**Alarm Report**(Report Alarm), then click **Settings**(Setting) next to**Alarm report**Report Alarm) to select**Private protocol** (Private Protocol) or**HTTP**In the **Protocol type**(Protocol Type). You can make the system upload the alarm signal to the network (including alarm center) when alarm events occur. 📖 ● This feature is only available on some models. ● It is necessary to configure the corresponding parameters in the alarm control panel.
Send email	Select the checkbox**Send email**(Send Email) to have the system send an email notification in case of alarm events. 📖 To use this feature, make sure the email function is turned on voice enabled**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).
Record channel	Select the channels you want to record. The selected channels start recording when an alarm event occurs. 📖 The intelligent event recording function and automatic recording function must be enabled.
PTZ connection	Click on**Settings**(Setting) to display the PTZ page. 📖

Parameter	Description
	To use this function, you need to configure PTZ operations.
Post registration	Defines the delay time for the device to turn off recording after the alarm is cleared. The value ranges from 10 to 300 seconds.
Tour	Select the checkbox**Tour**to enable a tour of selected channels. ● To use this feature, you need to configure your tour settings. ● When the tour ends, the live view screen returns to the previous view layout.
Image storage	Select the checkbox**Image storage** (Picture Storage) to take a snapshot of the selected channel. To use this feature, make sure the snapshot function is enabled for**Intel**in**Main menu**>**ARCHIVING**>**Planning**>**Snapshot**(Main Menu > STORAGE > Schedule > Snapshot).
Video matrix	Select the checkbox to enable this function. When an alarm event occurs, the video output port will show the settings configured in**Main menu**>**TOUR**> **Extra screen**(Main Menu > DISPLAY > Tour > Extra Screen). ● This feature is only available on some models. ● To use this feature you need to enable the additional screen.
Acoustic signal	Select this checkbox to enable the device to beep.
Log	Select this checkbox to have the device record local alarm information.
Alarm tone	Select this option to enable audio transmission in response to a face detection event.
Alarm light	Select this checkbox to enable the camera alarm light alarm.
Siren	Select this checkbox to enable the camera audio alarm.
Smart lighting	Select this checkbox to enable lighting.

Parameter	Description
	smart camera.

Step 6: Click on**Apply**(Apply) to complete the setup.
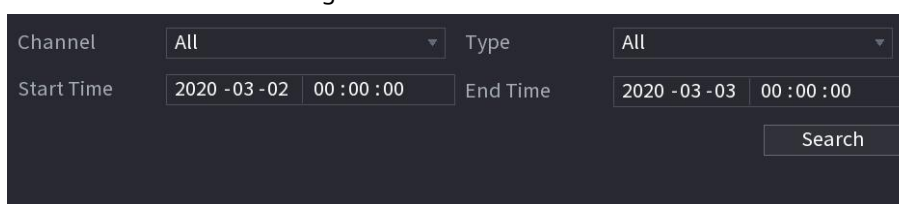
5.12.3.1.2 Searching for SMD reports

You can search your detection history by channel, object type, and time.

Procedure

Step 1: Select**Main menu**>**IA**>**AI Research**>**SMD**(Main Menu > AI > AI Search > SMD).

Figure 5-193 SMD

Step 2: Select the channel, enter the start time and end time, then select the desired object type.
Step 3: Click on**Near**(Search). The
results will be displayed.

5.12.3.2 Configuring the IVS function

The IVS function processes and analyzes images to extract key information to match pre-set rules. When detected behaviors match the rules, the system triggers alarms.
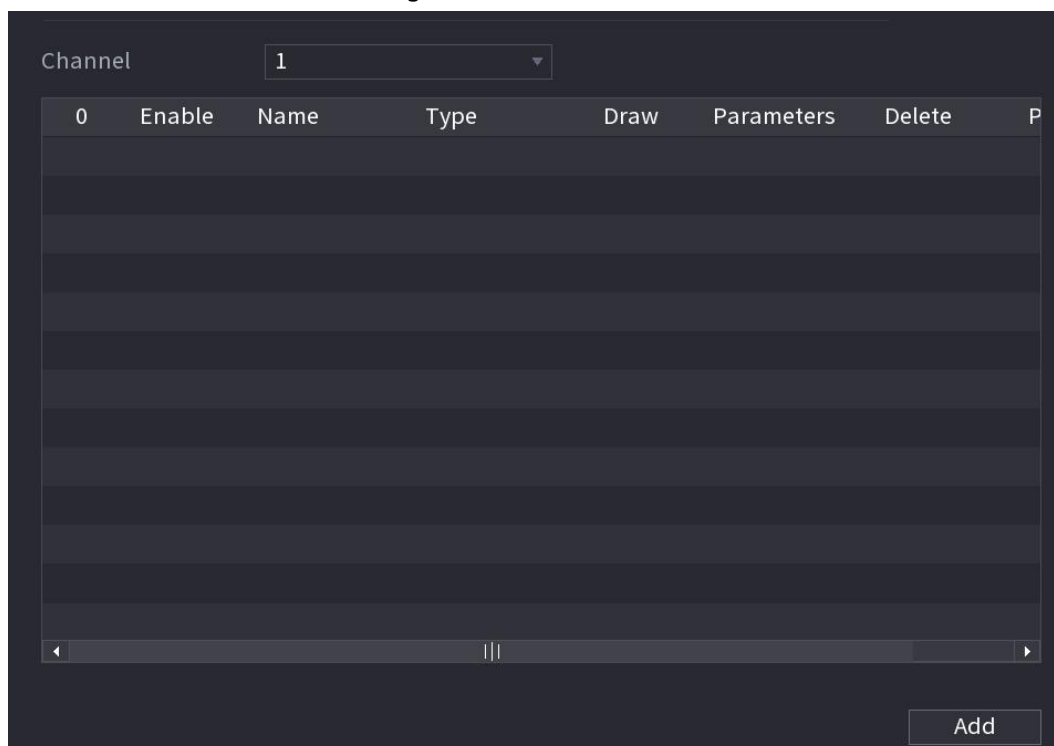
5.12.3.2.1 IVS Parameter Configuration

Alarms are generated based on the configured parameters.

Procedure

Step 1: Select**Main menu**>**IA**>**Parameters**>**IVS**(Main Menu > IA > Parameter > IVS). Enabling AI mode will improve the detection accuracy, but will reduce the video stream capacity that the DVR can process.

Figure 5-194 IVS

Step 2: In the list**Channel**(Channel), select the channel for which you want to configure the IVS function. Step 3: Click on**Add**(Add).

Step 4: Configure the parameters for the selected rule. For more details on configuring the line crossing or intrusion rule, see "5.12.2.3.2 Configuring Line Crossing Rules" and "5.12.2.3.3 Configuring Intrusion Rules".

Step 5: Select the rule's checkbox to enable it. Step 6: Click on **Apply**(Apply) to complete the setup.
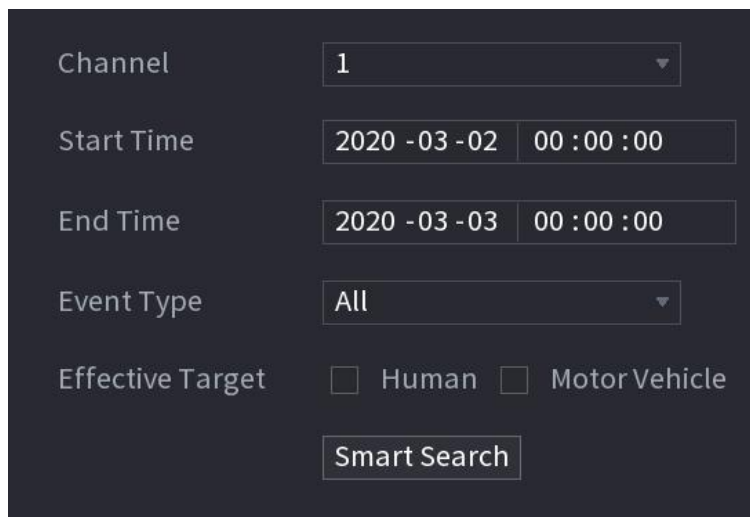
5.12.3.2.2 Intelligent search for IVS function

You can search for smart events and play them.

Procedure

Step 1: Select**Main menu**>**IA**>**AI Research**>**IVS**(Main Menu > AI > AI Search > IVS).

Figure 5-195 IVS

Step 2: In the list**Channel**(Channel), select the channel where to search for events, then set other parameters such as start time, end time, event type and alarm subject.
Step 3: Click on**Smart Search**(Smart Search). Results that meet your search criteria are displayed.

Figure 5-196 Search results
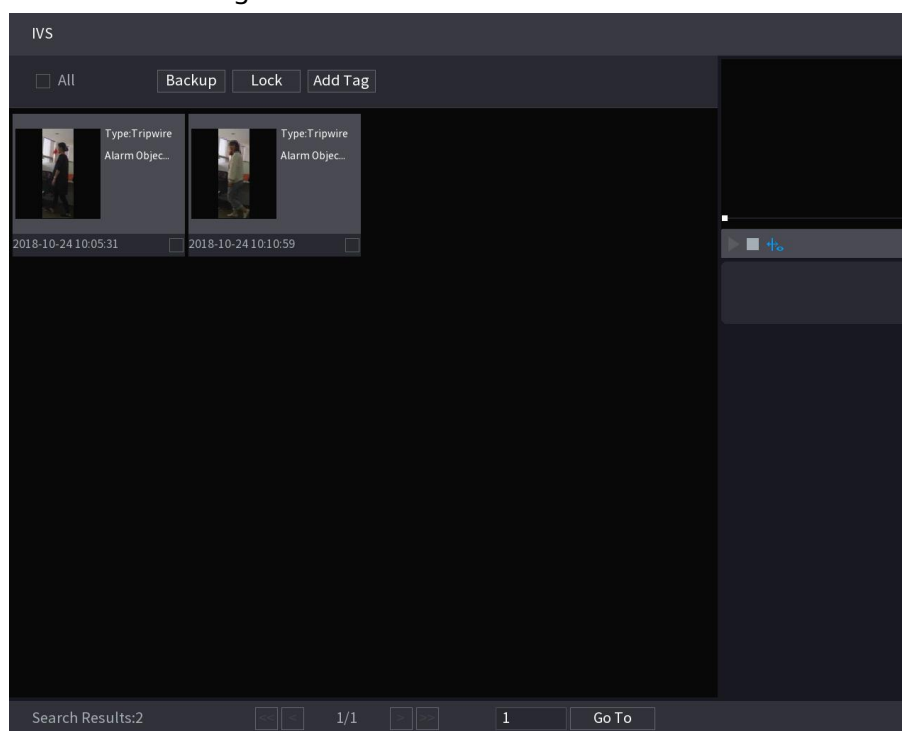
Step 4: Click on the image to play.

Figure 5-197 Playback
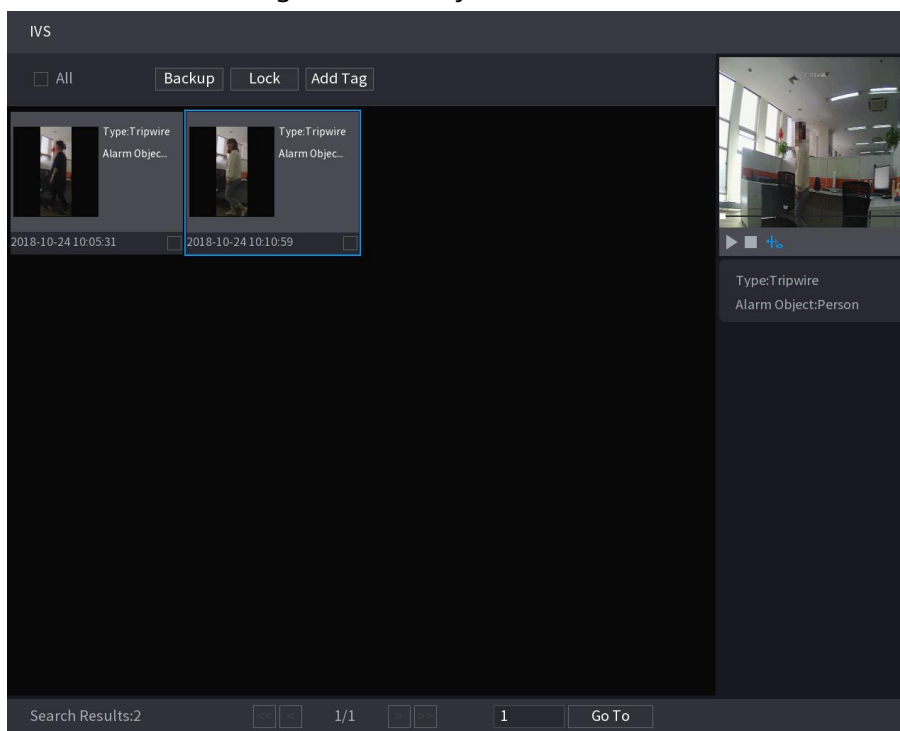
Step 5: Click on ▶ to play the recorded video.

Do **double** click on the page from the reproduction **For pass** Between there reproduction to screen entire At that in miniature.

You can also perform the following operations on the recorded files.

● To backup recorded files to external storage device, select the files, click**Backup**, select the save path and file type, then click**Start**(Start).

Figure 5-198 Backup
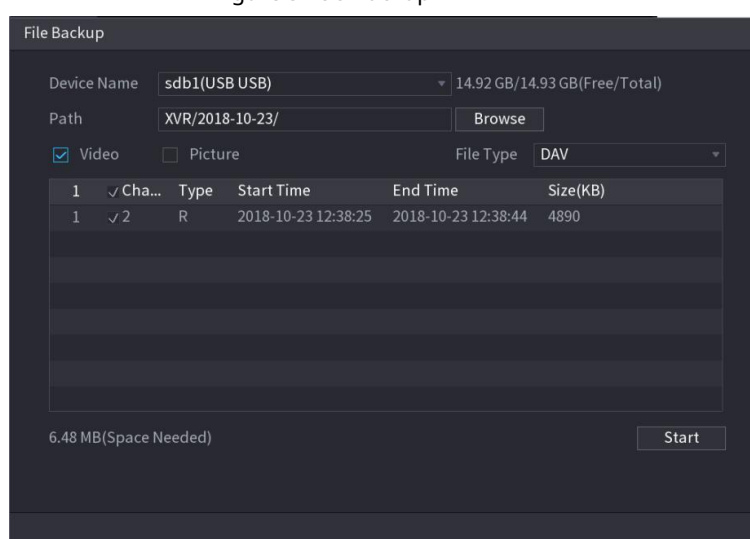
● To lock files and make them impossible to overwrite, select the files, then click **Block**(Lock).

● To add a tag to the file, select the files and then click**Add tags**(Add Tag).

5.12.3.3 Face Detection (XVR5X-I and XVR7X-I series only)

Some series of devices can analyze the images captured by the camera to detect whether there are faces. You can search and filter the recorded videos by faces and play them back. For details, please refer to "5.12.2.1 Face Detection".

If Yes select TO THE through device, At that time Apossible use a alone function at the same time Forthe same channel to choice Between detection And recognition of the face And function IVS.

5.12.3.4 Face Recognition (XVR7X-I series only)

Face recognition is available in AI preview mode and smart search. For details, see "5.12.2.2 Face recognition".

5.12.3.5 Quick Pick

5.12.3.5.1 Quick Pick Configuration

Procedure

Step 1: Select**Main menu**>**IA**>**Parameters**>**Quick Pick**(Main Menu > AI > Parameter > Quick Pick).

Figure 5-199 Quick Pick
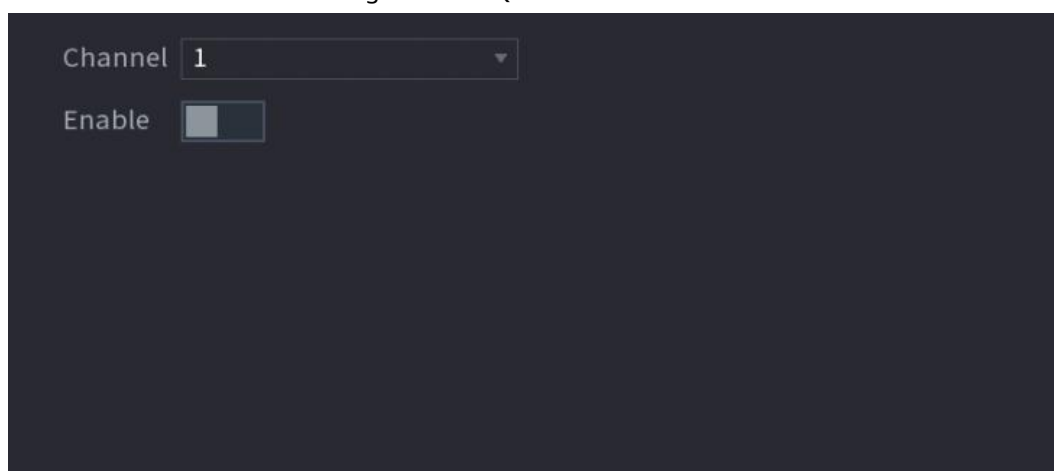
Step 2: From the drop-down list, select the**Channel**(Channel) where to configure the Quick Pick function and then enable it.

Step 3: Click on**Apply**(Apply).

5.12.3.5.2 Smart Search for Quick Pick

You can upload images from external devices and quickly search for people and vehicles to playback.

Procedure
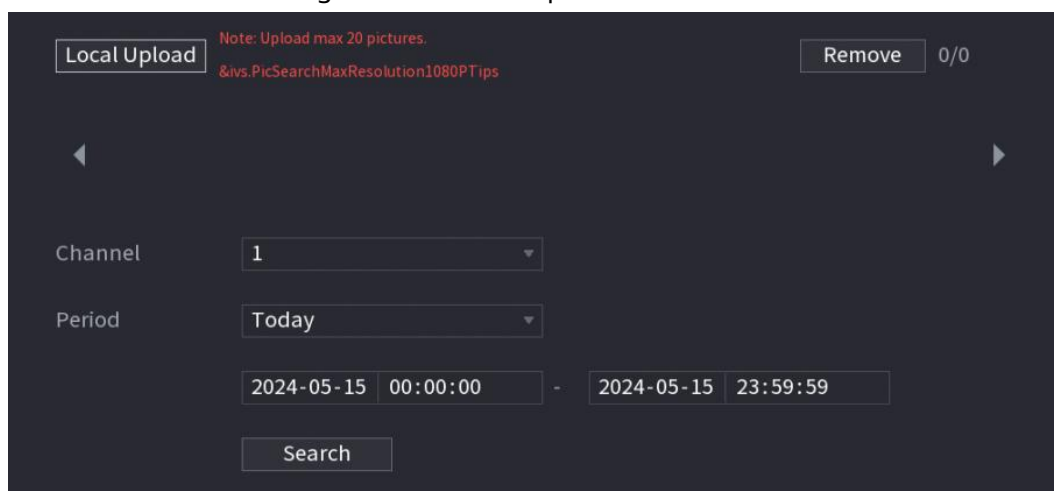
Step 1: Select**Main menu**>**IA**>**AI Research**>**Quick Pick**(Main Menu > AI > AI Search > Quick Pick).

Step 2: Click on**Local upload**(Local Upload) to upload local images that contain the target you want to search for.

● I am supported to the maximum 20 Images.

● Select the Images Not necessary Add Do click on**Remove** (Remove) For eliminate them.

Figure 5-200 Local upload

Step 3: Select**Channel**(Channel),**Period**(Period),**Start time**(Start Time) and**End time** (End Time) from the drop-down list. Step 4: Click on**Near**(Search).

Step 5: From the drop-down list, select**Device Name**(Device Name) and then the images in the list.

Figure 5-201 Navigating through images locally
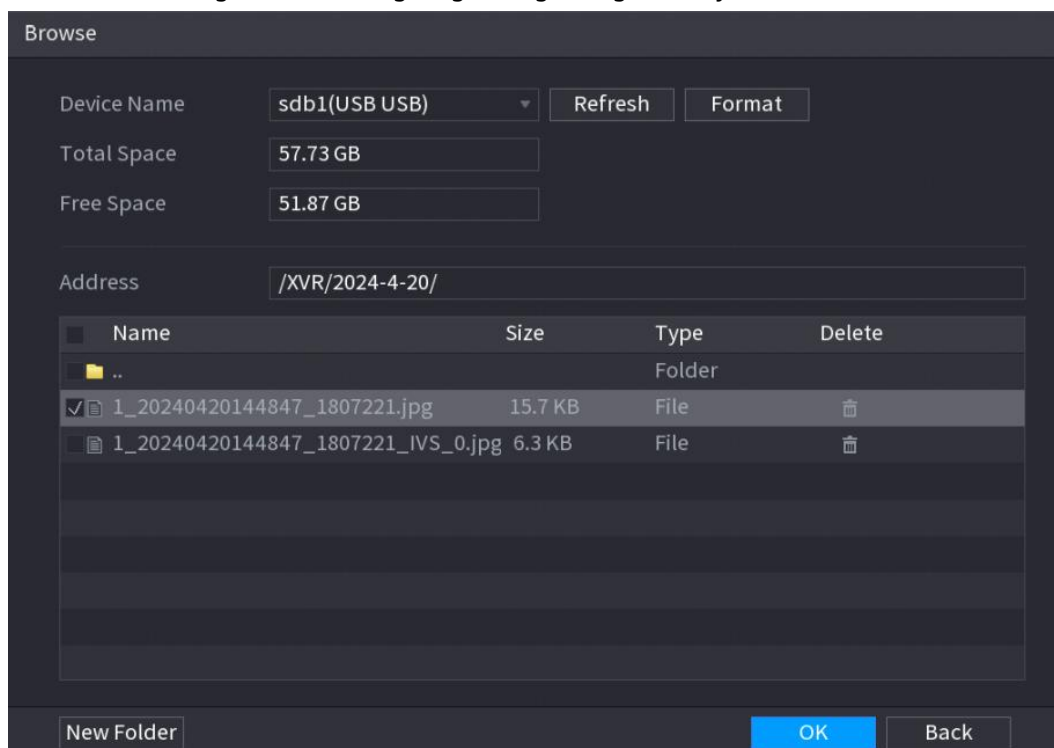
Step 6: Click on**OK**.

Figure 5-202 Search results
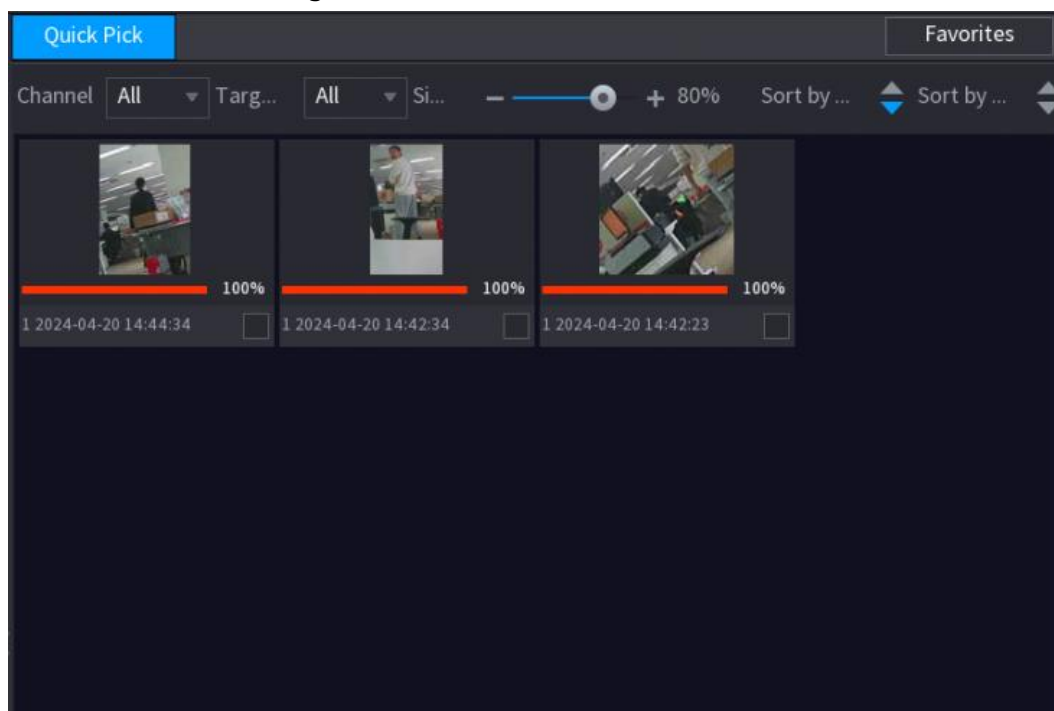
Step 7: Select the result to check and click on   to play the recorded video

on the right side.

● Double-click the video page to switch between full-screen and windowed
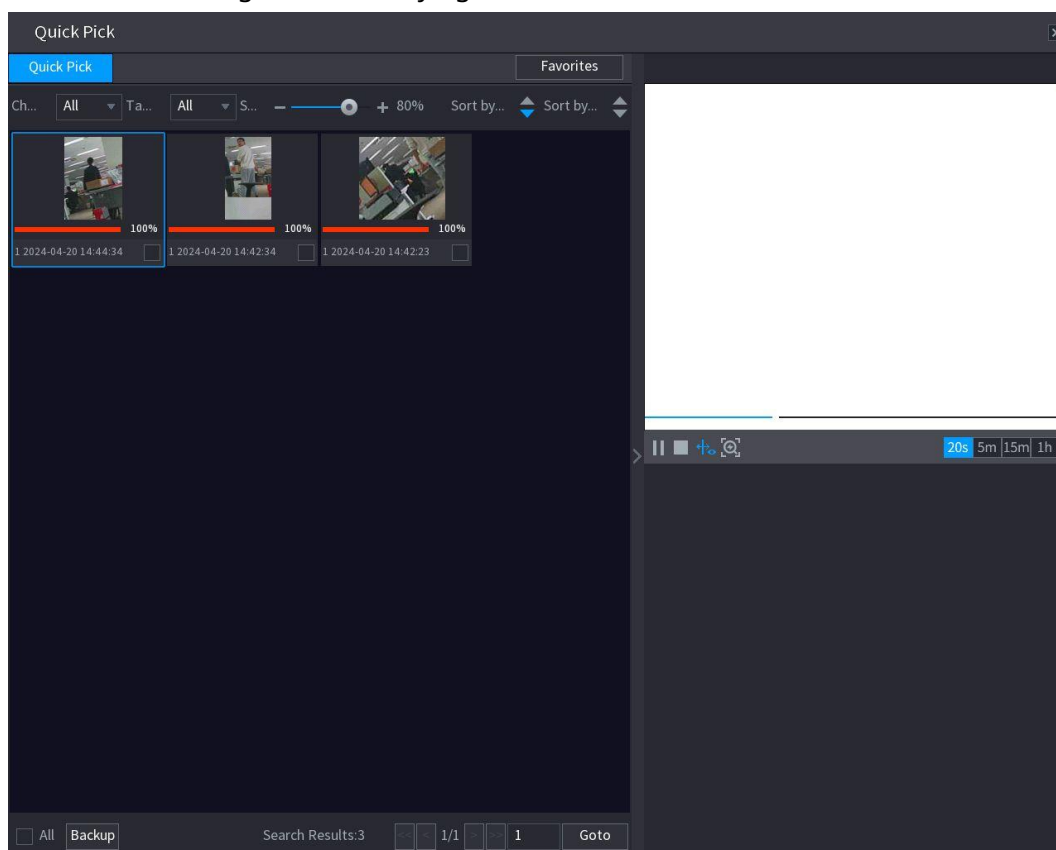playback.

Figure 5-203 Playing the recorded video
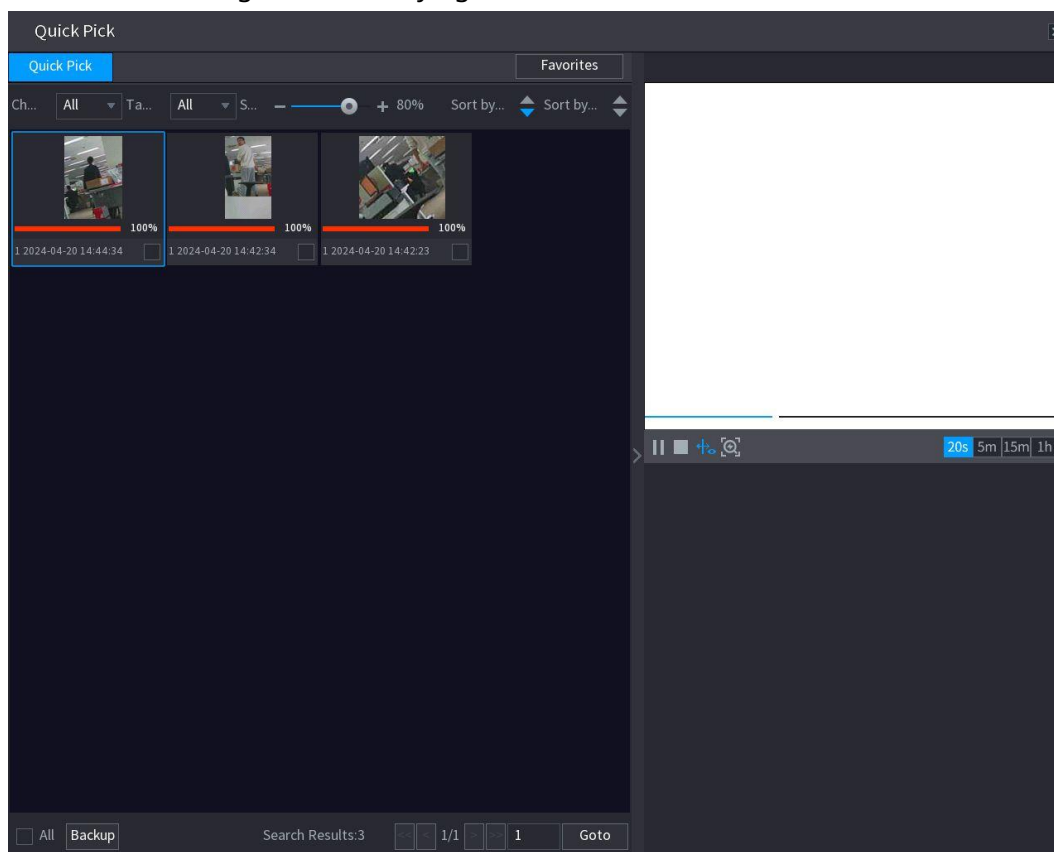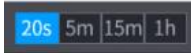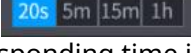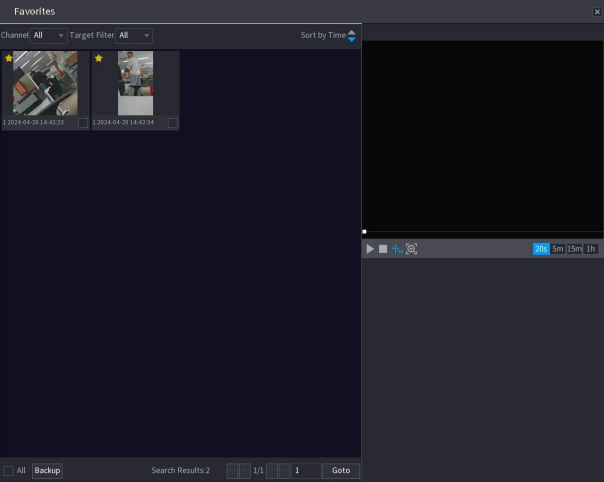
Table 5-57 Main menu description

Icon	Description
	Click on to pause the video.
	Click on to stop the video.
	Click on to select whether to display the guideline intelligent.
	Click on to quickly select the target.
	Select to view playback in the corresponding time interval.
	Drag the mouse over the search results and click For add result to**Favorites**((Favorites).

Icon	Description

● Click on**Backup**to backup recorded videos to favorites.

5.12.4 IVS Mode Configuration

In some models it is possible to switch between the general mode and the advanced mode of the IVS function in**Main menu**>**IA**>**Parameters**>**IVS**(Main Menu > AI > Parameters > IVS. Advanced mode provides higher detection accuracy than General mode, but supports fewer channels for IVS function. Function may vary by model.

Figure 5-204 IVS Mode
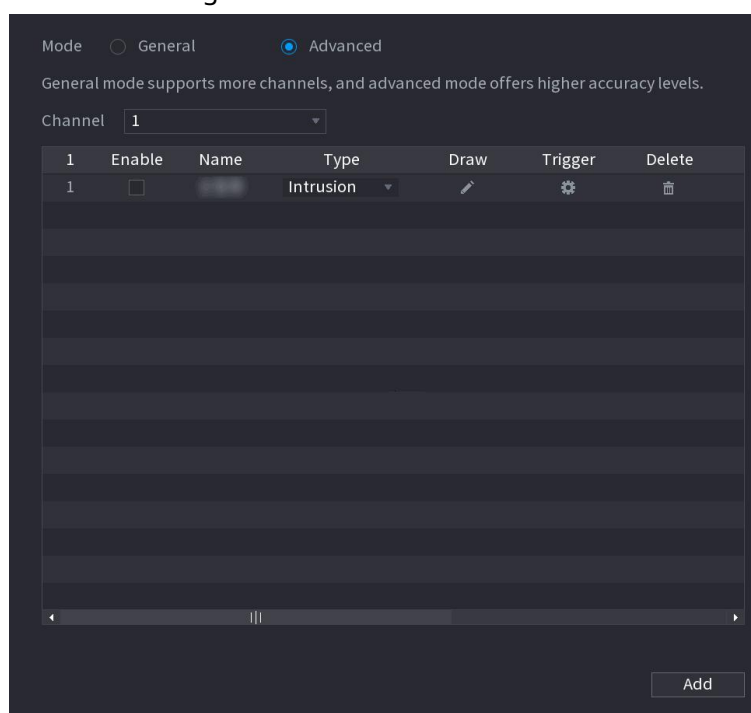
5.12.5 Configuring Smart Scheduling

Preliminary information

There are two ways a channel can enable AI features.

● General Mode: You can enable only one AI function for the designated channel during different periods of each day of the week.

● Schedule Mode: You can enable multiple AI functions for the designated channel during different periods of each day of the week.

● This section introduces how to enable scheduling mode.

Figure 5-205 Planning mode
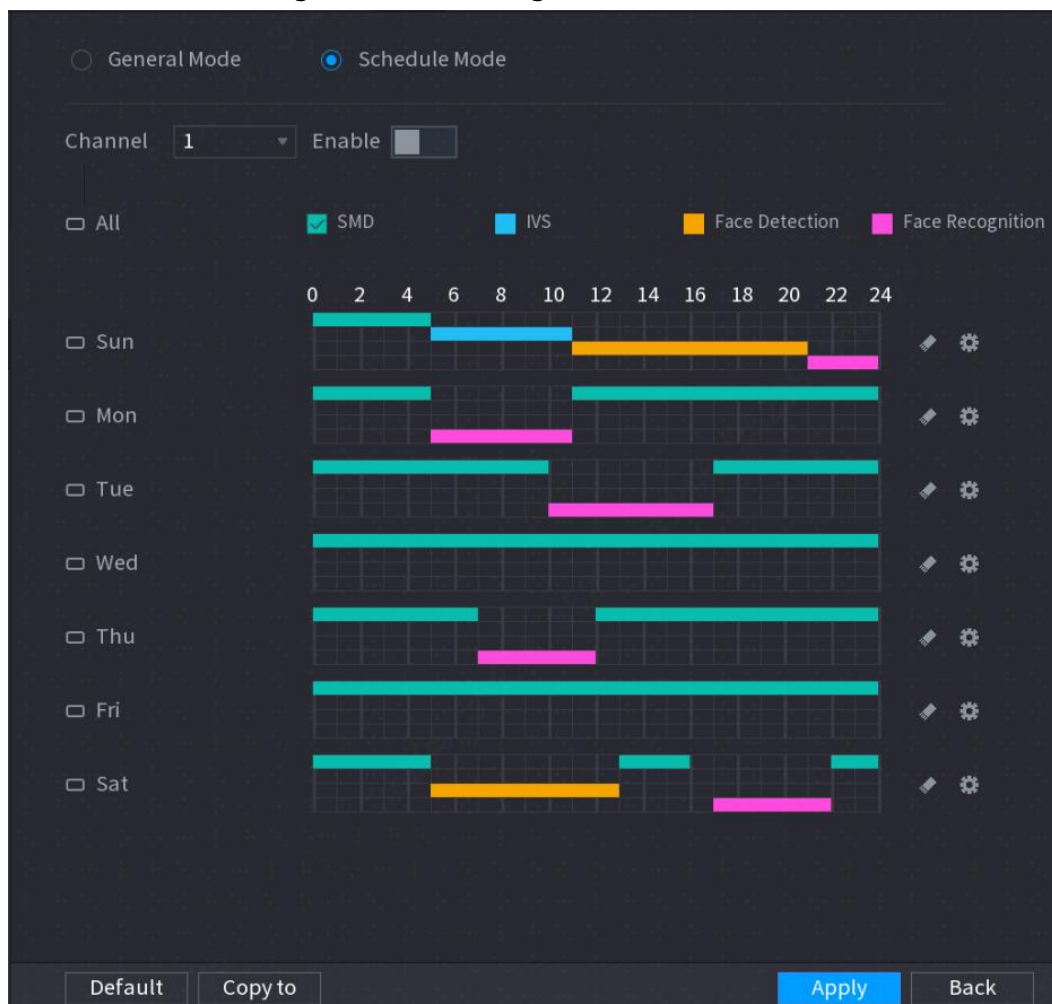
Procedure

Step 1: Select**Main menu**>**IA**>**Parameters**>**AI Mode**(Main Menu > AI > Parameter > AI Mode).

Step 2: Select**Planning mode**(Schedule Mode).

The configurations from the functions Of intelligence artificial in the mode to general And the mode to Of planning I am independent. The changes carried out in a mode to Not influence on the configurations of the other mode to

Step 3: Select a channel and click on Step 4: ▭▭ .

Define the periods of the AI functions.

● Defining the time slot for dragging.

1. Select the AI function checkbox.

Figure 5-206 AI function

2. On the timeline, drag the bar to define a time slot.
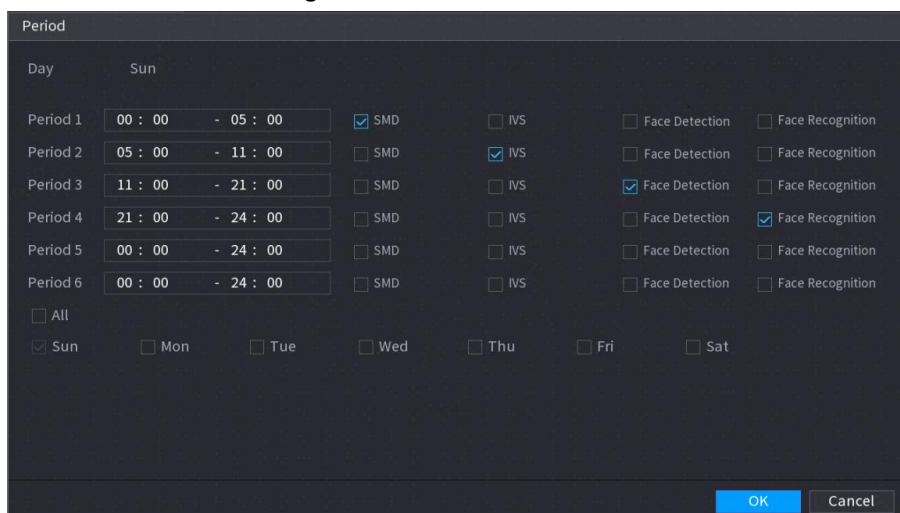
You can set up to 6 periods for each day of the week. For each period, you can enable an AI function.

● Defining the time slot for modification.

1. Click .

Figure 5-207 Period

2. Configure the time range for each period, then select the AI function to enable during each period.

It is possible to select **All** (All) to apply the settings to everyone the days from the week or select days specific.

3. Click on **OK**.

Step 5: Click on **Apply** (Apply).

5.13 IoT Function

5.13.1 Configuring Sensor Settings

External sensors can be connected wirelessly via the USB gateway device or by connecting to a camera gateway. After connection, alarm events can be triggered via external sensors.

5.13.1.1 Connecting the sensor via the device

📖
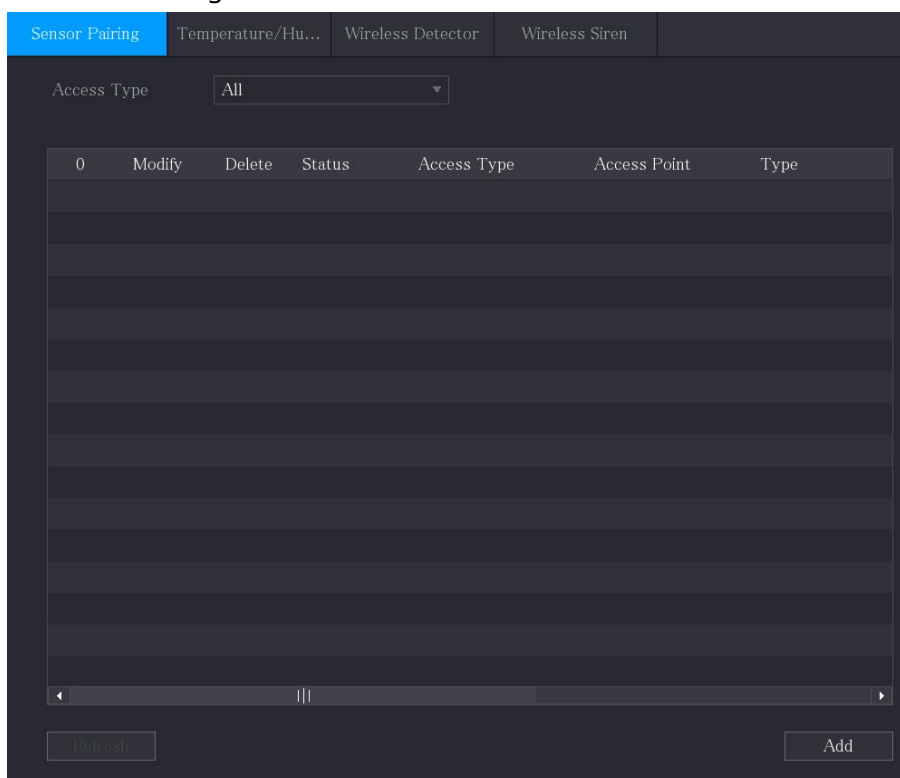
There function A supported Alone from the device with gateway USB.

Procedure

Step 1: Select**Main menu**>**IoT**>**Management**>**Sensor Association**(Main Menu > IoT > Management > Sensor Pairing).
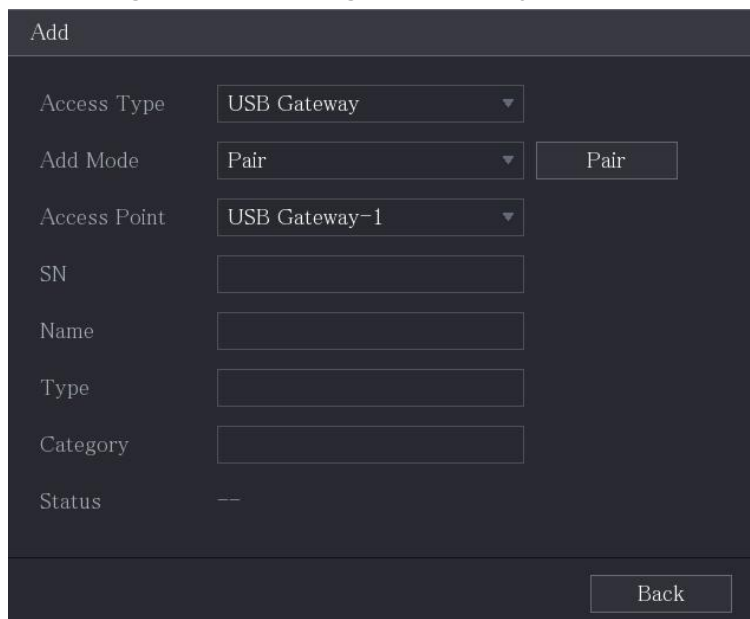
Figure 5-208 Sensor association

Step 2: In the list**Type of access**(Access Type), select**USB Gateway**(USB Gateway). Step 3: Click on**Add**(Add).
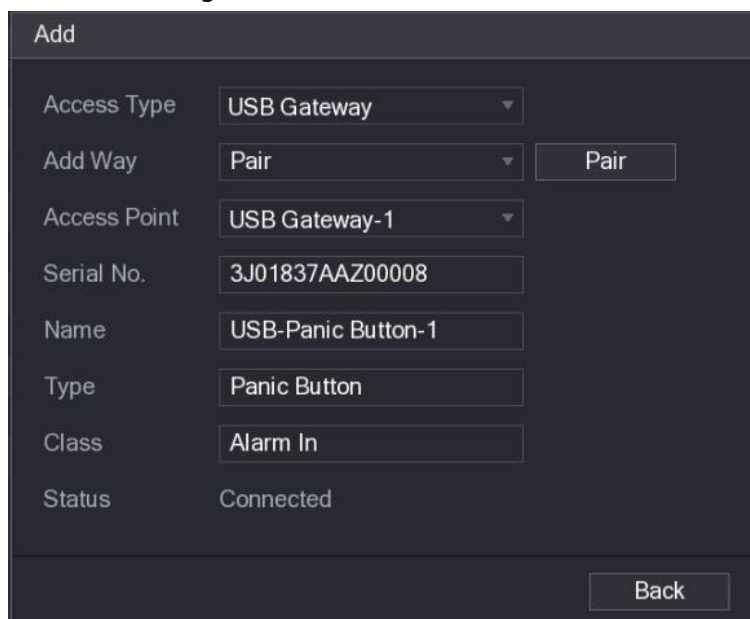
Figure 5-209 Adding USB Gateway

Step 4: Click on**Associate**(Pair).

Figure 5-210 Association

Step 5: Click on**Backwards**(Back) to exit the association page.

Do click on ![pencil]Formodify Thename of the sensor Add Do click on ![trash]Foreliminate the information on the sensor.

Figure 5-211 Sensor association

5.13.1.2 Connecting the sensor via camera with gateway
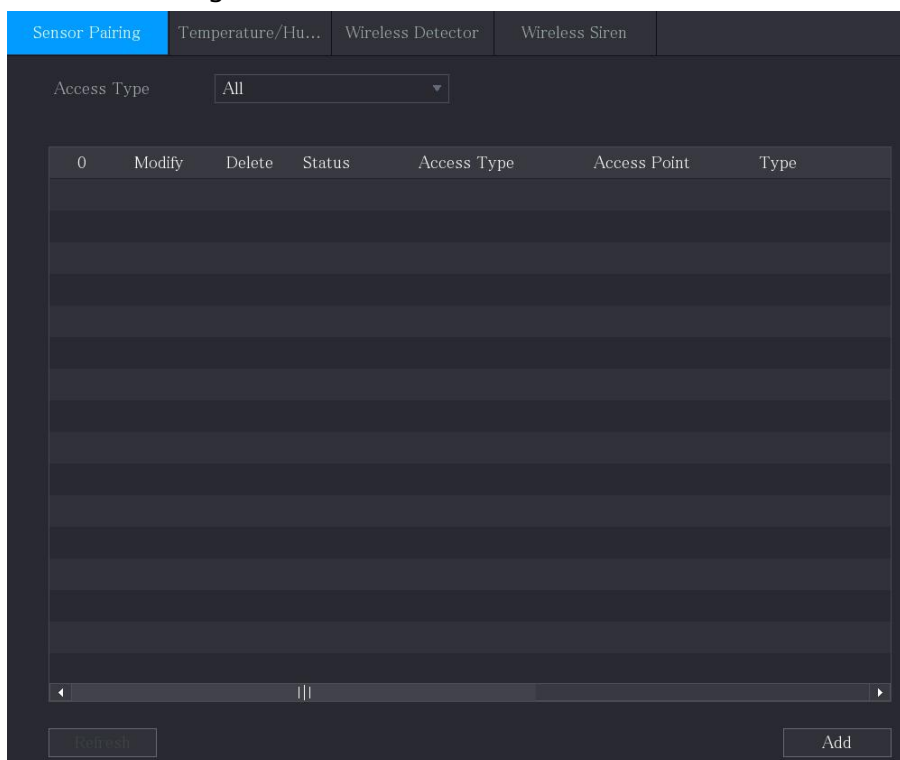
There function Andupported Alone froan camera withgateway USB.

Procedure

Step 1: SelectMain menu>IoT>Management>Sensor Association(Main Menu > IoT > Management > Sensor Pairing).

Figure 5-212 Sensor association
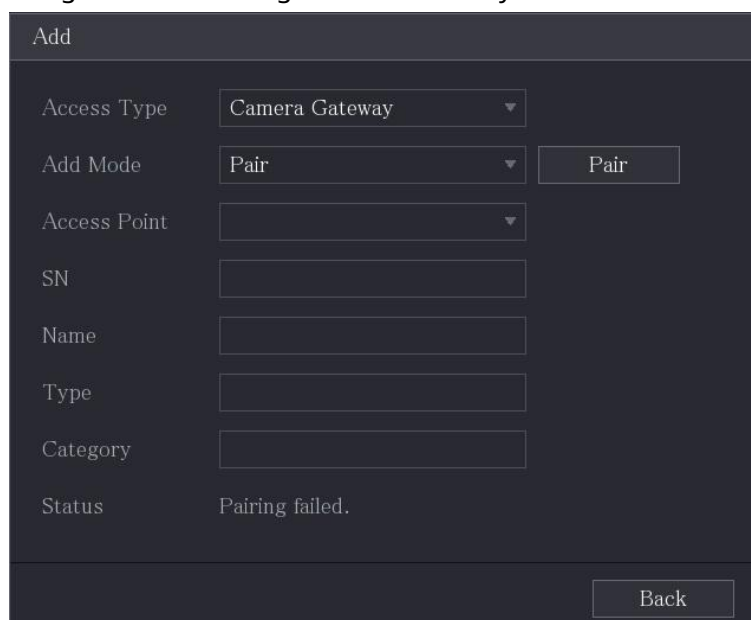
Step 2: In the list**Type of access**(Access Type), select**Gateway Camera**(Camera Gateway).

Step 3: In the list**Channels**(Channel), select the channel connected to the camera.
Step 4: Click on**Add**(Add).

Figure 5-213 Adding Camera Gateway

Step 5: Click on**Associate**(Pair).
The device starts pairing the sensor.

Figure 5-214 Association

Step 6: Click on **Backwards**(Back) to exit the association page.

● To change the sensor name, click .

● To delete the device, click .

Figure 5-215 Sensor association
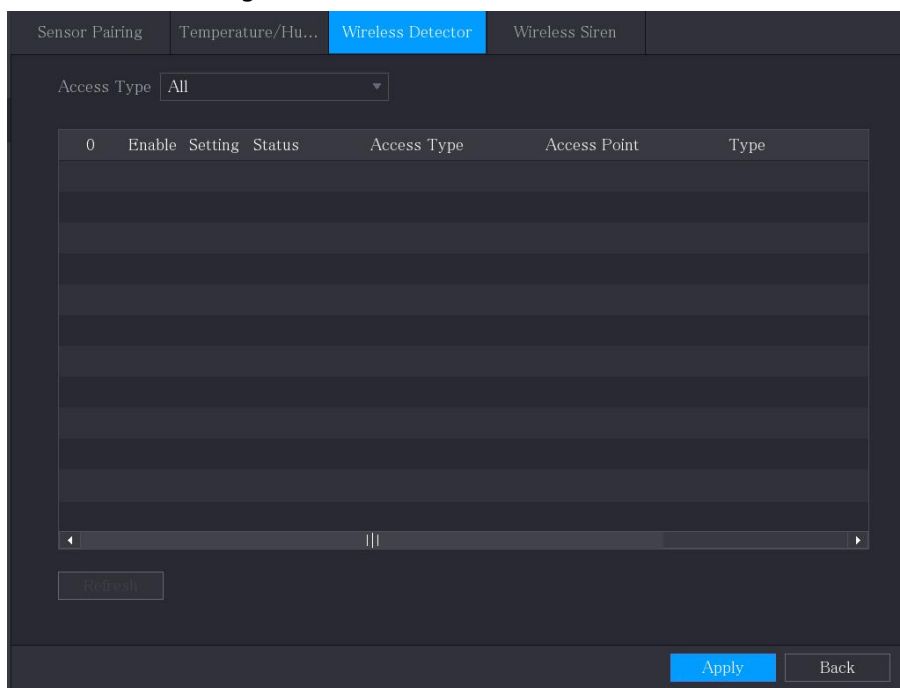
5.13.1.3 Alarm Connection Configuration

Procedure

Step 1: Select**Main menu**>**IoT**>**Management**>**Wireless detection**(Main Menu > IoT > Management > Wireless Detector).

Figure 5-216 Wireless detector

Step 2: In the list**Type of access**(Access Type), select**USB Gateway**(USB Gateway). **Camera Gateway**(Camera Gateway) or**All**(All).

When **TypeOfaccess** (Access type) Are**Gateway camera** (Room Gateways), And possible select Channel (Channel) Forfilter thestate of the detector wireless present.
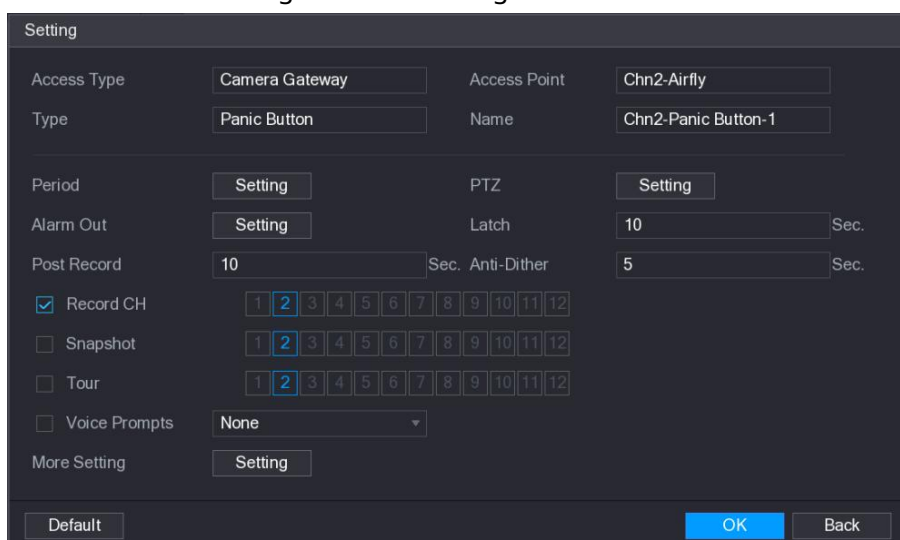
Step 3: Click on .

Figure 5-217 Settings

Step 4: Configure alarm link settings.

Table 5-58 Alarm link settings

Parameter	Description
Name	Enter the name of the custom alarm.
Planning	Click on**Settings**(Settings) to configure the parameters. Define the period for motion detection activation. For details, see "5.11.4.1.2 Setting the Motion Detection Period".
PTZ connection	Click on**Settings**(Setting) to display the PTZ page. Enable PTZ linkage actions, such as selecting the preset to be recalled when an alarm event occurs.
Alarm output port	Click on**Settings**(Settings) to configure the parameters. ● Local Alarm: Enables alarm triggering via alarm devices connected to the selected output port. ● Alarm Extension: Enables alarm triggering via the connected external alarm device. ● Wireless Siren: Enables alarm triggering via devices connected through USB gateway or camera gateway.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cleared. The value is between 0 and 300 seconds, while the default value is 10.
Post registration	Defines the delay time for the device to turn off recording after the alarm is cleared. The value ranges from 10 to 300 seconds, while the default value is 10.
Anti-dithering	Configure the time period from the end of event detection to the end of alarm.
Record channel	Select the channels you want to record. The selected channels start recording when an alarm event occurs. The functions of recording in case of IoT alarms and that of automatic recording must be enabled. For details, See sections "5.1.4.9 Configuring Recorded Video Storage Schedule" and "5.10.1 Enabling Recording Control".
Snapshots	Select the checkbox**Snapshot**(Snapshot) to take a snapshot of the selected channel. To use this feature, select**Main menu**> **CAMERA**>**Coding**>**Snapshot**(Main Menu > CAMERA > Encode > Snapshot), then in the list**Type**(Type) select **Event** (Event).
Tour	Select the checkbox**Tour**to enable a tour of selected channels.

Parameter	Description
Alarm tone	Select this option to enable audio/voice messaging transmission in response to a motion detection event.
Other settings	● Show message: Select the checkbox**Show Messages**(Show Message) to enable the display of messages on the user's local host computer. ● Beep: Select this checkbox to enable the device to beep. ● Video Matrix: Select the checkbox to enable this function. When an alarm event occurs, the extra screen will show the settings configured in the item**Main menu**> **DISPLAY**>**Tour**(Main Menu > DISPLAY > Tour). This feature is only available on some models. ● Send Email: Enable the system to send an email notification when alarm events occur. To use this feature, make sure the email function is turned on voice enabled**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email). ● Log: Select this checkbox to have the device log local alarm information. ● Extra screen: Select the checkbox to enable this function. When an alarm event occurs, the extra screen shows the settings configured in the item**Main menu**>**DISPLAY**>**Tour**> **Secondary screen**(Main Menu > DISPLAY > Tour > Sub Screen). ● This feature is only available on some models. ● To use this feature, the extra screen must be enabled.

Step 5: Click on**OK**to save the settings.

Step 6: On the page**Wireless detector**(Wireless Detector), click**Apply**(Apply) to complete the settings.

5.13.2 Configuring the Temperature and Humidity Camera

You can view, search and export temperature and humidity data detected by the camera equipped with dedicated sensors and configure alarm event settings.

To use this feature, make sure at least one camera with temperature and humidity sensor is connected to your device.

5.13.2.1 Enabling the detection function

You need to enable IoT function for the first time when you enter this page.

Procedure

Step 1: In the main menu, select**IoT**>**Management**>**Temperature/Humidity**(IoT >
Management > Temperature/Humidity).

Figure 5-218 Temperature/Humidity
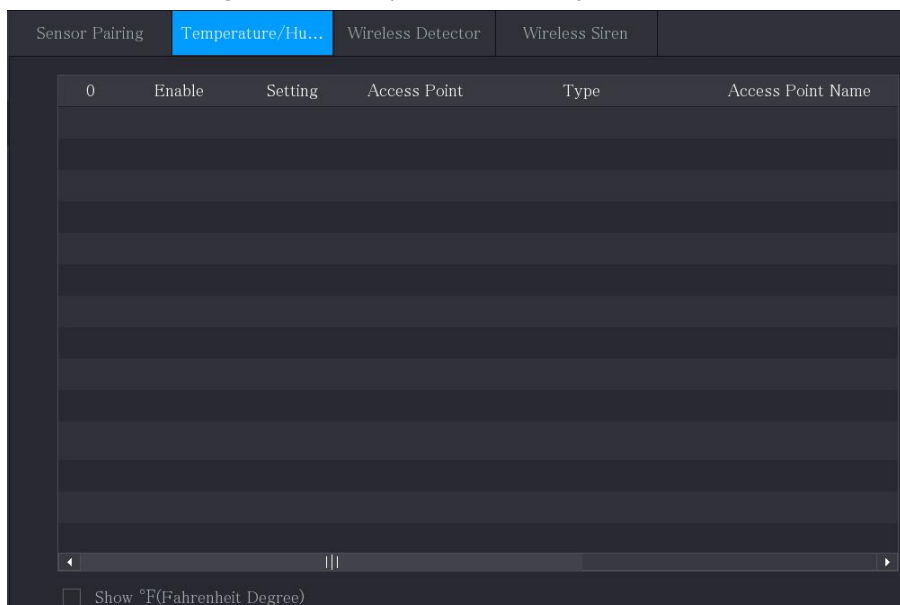
Step 2: Select the checkbox**Ability**(Enable) to activate the IoT function.

Figure 5-219 Enabling
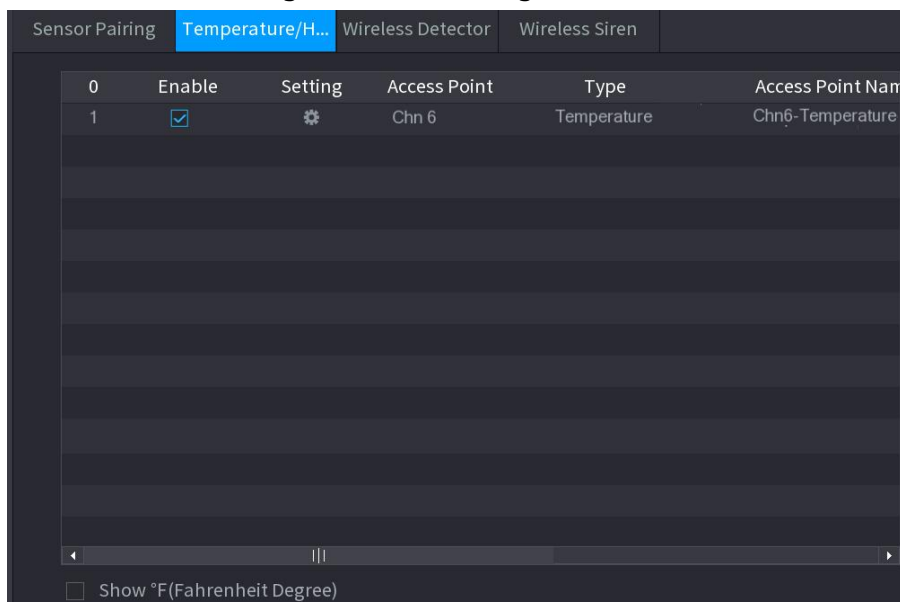
The device starts to detect temperature and humidity data from the camera and displays
it on the page**Real-time viewing**(Real-time Display). Step 3: (Optional) Set the
temperature display mode. Selecting**Show °F (degrees Fahrenheit)**(Show °F (Fahrenheit
Degree)), the temperature will be displayed in Fahrenheit degrees in the tab**Real-time
viewing**(Real-time Display).

5.13.2.2 Displaying temperature and humidity data

After enabling the IoT function, you can view the temperature and humidity data on the page **Real-time viewing**(Real-time Display).

In the box**Update interval**(Refresh Interval), select the interval at which the data is refreshed. For example, you can select**5 sec**.

You can also view the temperature and humidity data in graphical form by selecting the checkbox**View graph**(Display Chart).

Figure 5-220 Graph
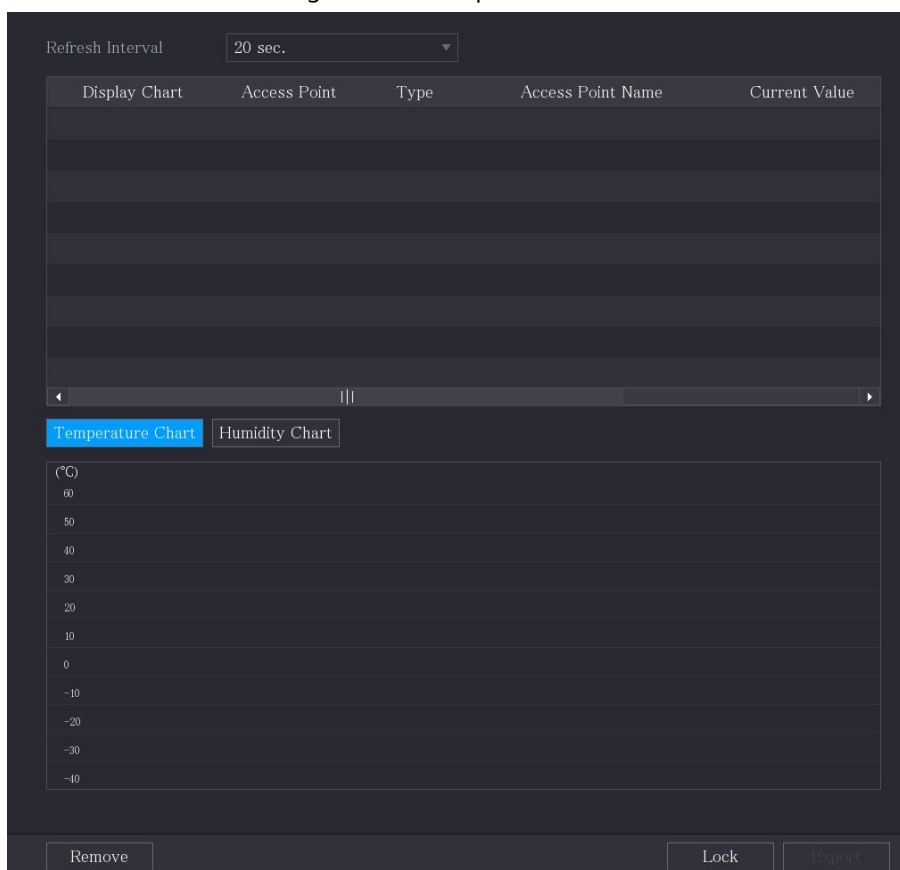
Do click on**Remove** (Remove) For eliminate the data.

5.13.2.3 Exporting Temperature and Humidity Data

You can export temperature and humidity data in .bmp format. The example in this section is based on exporting humidity data.

Procedure

Step 1: Prepare a USB device and connect it to your device.

Step 2: On the page**Real-time viewing**(Realtime Display), click on the tab **Humidity**(Humidity).

Figure 5-221 Humidity
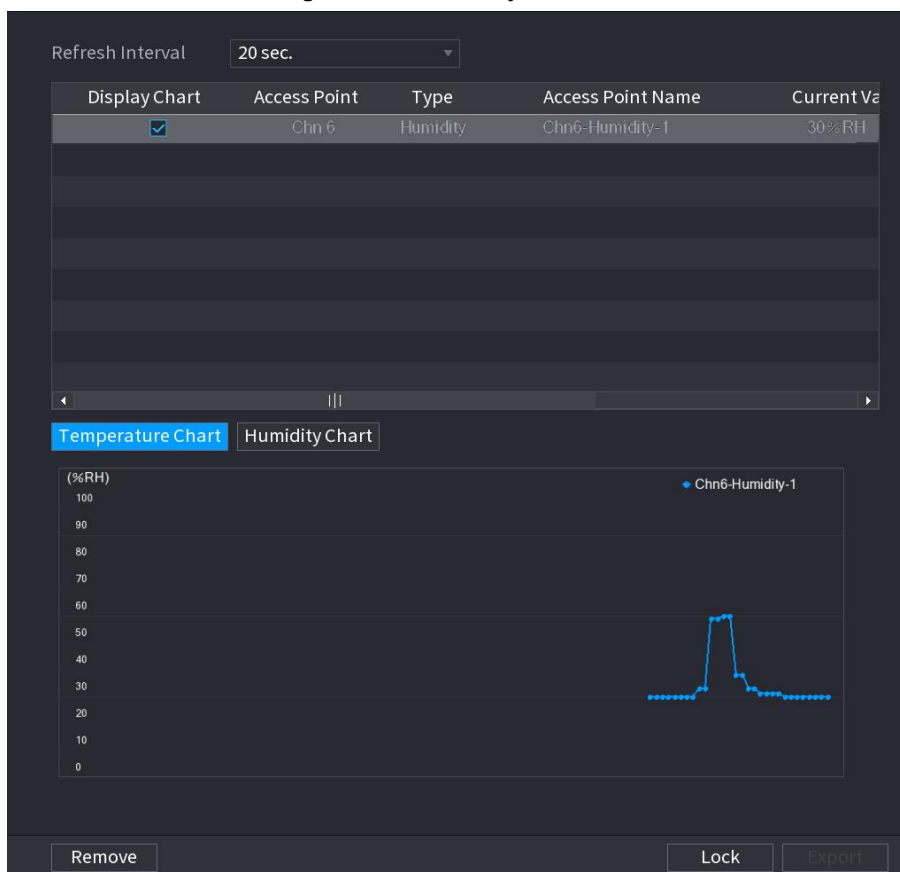
Step 3: Click on**Lock**(Lock) to lock the data. The
export button is enabled.

Step 4: Click on**Export**(Export). The system starts exporting data. Step
5: Click on**OK**.

The data is then located on the USB device.

5.13.2.4 Alarm Connection Configuration

You can configure alarm linkage settings for temperature and humidity data.

5.13.2.4.1 Configuring the alarm connection for temperature data

Procedure

Step 1: On the main page, select**IoT**>**Management**>**Temperature/Humidity**(IoT >
Management > Temperature/Humidity).

Figure 5-222 Temperature/Humidity
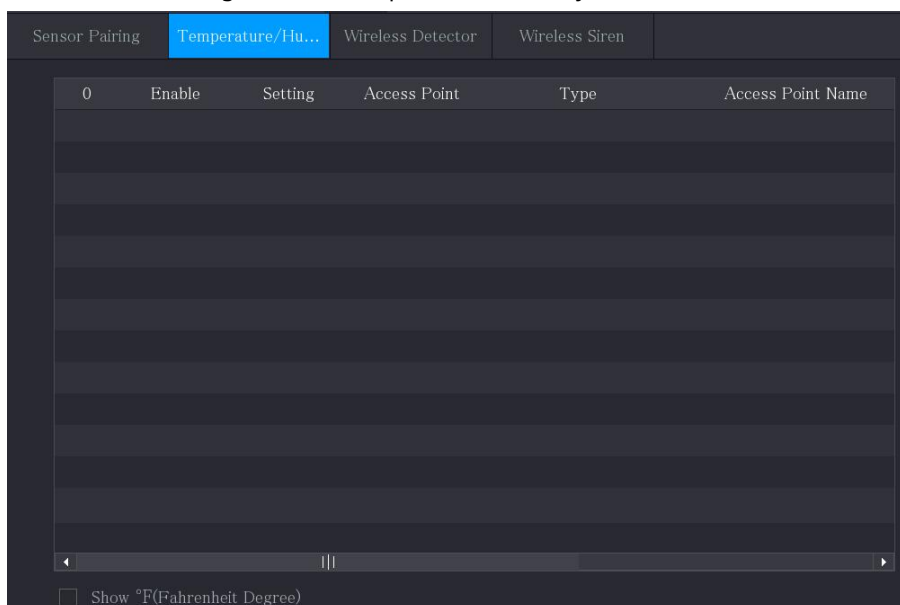
Step 2: On the line with the temperature information, click on .

Figure 5-223 Settings

Step 3: Configure alarm link settings.

Table 5-59 Alarm link settings description

Parameter	Description
Access point	Indicates the channel to which the camera is connected.
Type	The default option is**Temperature**(Temperatures).
Position name of detection	Set the name of the detection location.
Channel Preview	Select the channel to preview to enable monitoring of the access point channel. This channel can be the access point channel or any other channel as needed.

Parameter	Description
Event type	Select the event type as**High**(High) or**Bass**(Low) and set the upper and lower temperature limit respectively. For example, selecting the event type as**High**(High) and setting the upper limit to**28**, the alarm is activated when the temperature reaches 28 °C.
Upper limit	
Ability	Enable the alarm function.
Planning	Click on**Settings**(Settings) to configure the parameters. Define the period for motion detection activation. For details, see "5.11.4.1.2 Setting the Motion Detection Period".
PTZ connection	Click on**Settings**(Setting) to display the PTZ page. Enable PTZ linkage actions, such as selecting the preset to be recalled when an alarm event occurs.
Alarm output port	Click on**Settings**(Settings) to configure the parameters. ● Local Alarm: Enables alarm triggering via alarm devices connected to the selected output port. ● Alarm Extension: Enables alarm triggering via the connected external alarm device. ● Wireless Siren: Enables alarm triggering via devices connected through USB gateway or camera gateway.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cleared. The value is between 0 and 300 seconds, while the default value is 10.
Post registration	Defines the delay time for the device to turn off recording after the alarm is cleared. The value is between 10 and 300 seconds, while the default is 10.
Anti-dithering	Configure the time period from the end of event detection to the end of alarm.
Record channel	Select the channels you want to record. The selected channels start recording when an alarm event occurs. 📖 IoT alarm recording and automatic recording functions must be enabled. For details, see the sections" 5.1.4.9 Configuring Recorded Video Storage Schedule" and "5.10.1 Enabling Recording Control".
Snapshots	Select the checkbox**Snapshot**(Snapshot) to take a snapshot of the selected channel. 📖 To use this feature, select**Main menu**> **CAMERA**>**Coding**>**Snapshot**(Main Menu > CAMERA > Encode > Snapshot), then in the list**Type**(Type) select **Event** (Event).

Parameter	Description
Tour	Select the checkbox**Tour**to enable a tour of selected channels.
Alarm tone	Select this option to enable audio/voice messaging transmission in response to a motion detection event.
Other settings	● Show message: Select the checkbox**Show Messages**(ShowMessage) to enable the display of messages on the user's local host computer. ● Beep: Select this checkbox to enable the device to beep. ● Video Matrix: Select the checkbox to enable this function. When an alarm event occurs, the extra screen will show the settings configured in the item**Main menu**> **DISPLAY**>**Tour**(Main Menu > DISPLAY > Tour). 📖 This feature is only available on some models. ● Send Email: Enable the system to send an email notification when alarm events occur. 📖 To use this feature, make sure the email function is turned on voice enabled**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email). ● Log: Select this checkbox to have the device log local alarm information. ● Extra screen: Select the checkbox to enable this function. When an alarm event occurs, the extra screen shows the settings configured in the item**Main menu**> **DISPLAY**>**Tour**> **Secondary screen**(Main Menu > DISPLAY > Tour > Sub Screen). 📖 ● This feature is only available on some models. ● To use this feature, the extra screen must be enabled.

Step 4: Click on**Save**(Hello) to save the settings.

5.13.2.4.2 Configuring alarm settings for humidity data

You can configure the alarm event by setting the humidity data.

Procedure

Step 1: On the main page, select**IoT**>**Management**>**Temperature/Humidity**(IoT > Management > Temperature/Humidity).

Figure 5-224 Temperature/Humidity
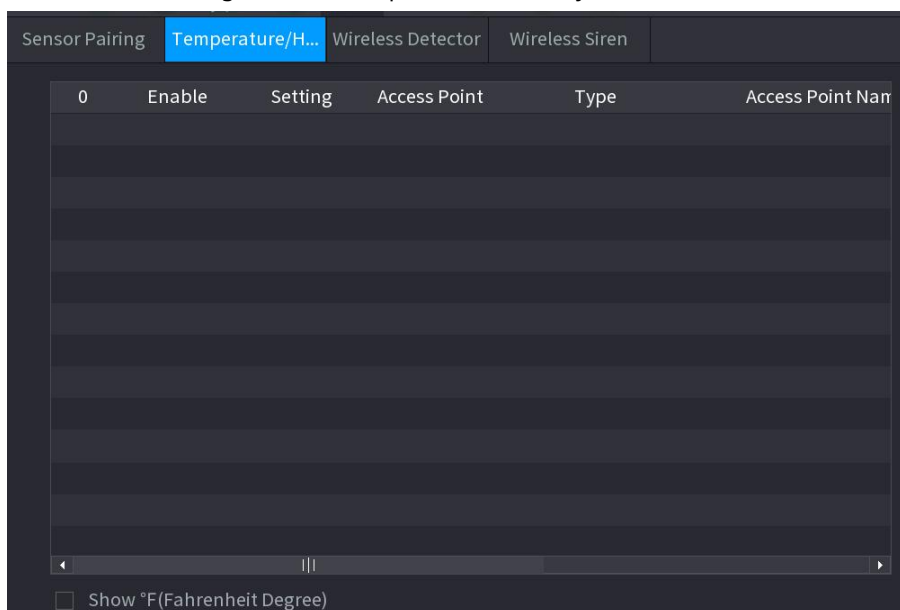
Step 2: On the line with the humidity information, click on ![gear icon].

Figure 5-225 Settings
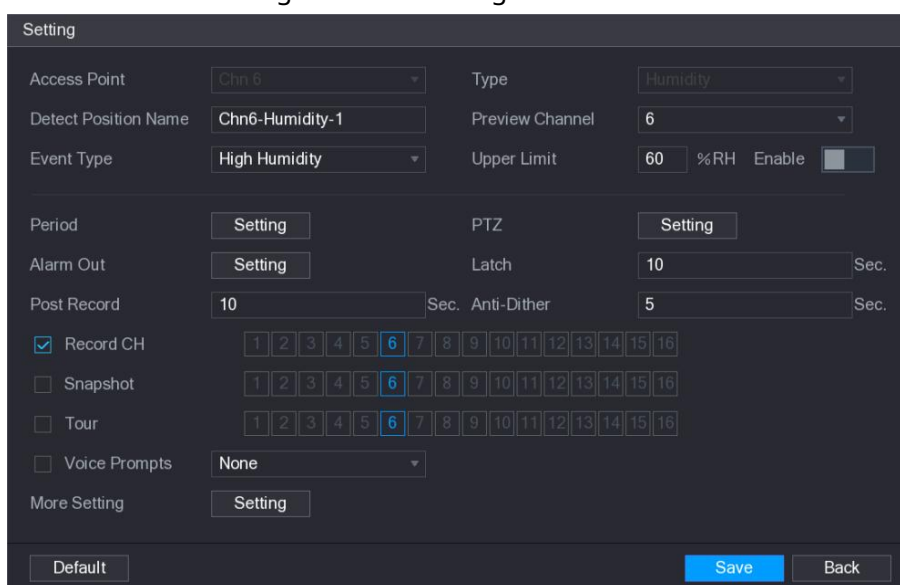
Step 3: Configure the settings of the following parameters.

Table 5-60 Alarm Settings

Parameter	Description
Access point	Indicates the channel to which the camera is connected.
Type	The default option is**Humidity**(Humidity).
Position name of detection	Set the name of the detection location.
Channel Preview	Select the channel to preview to enable monitoring of the access point channel. This channel can be the access point channel or any other channel as needed.
Event type	Select the event type as**High humidity**((high humidity)

Parameter	Description
Upper limit	or**Low humidity**(Low Humidity) and set the upper and lower humidity limit respectively. For example, selecting the event type as**High humidity**(High Humidity) and setting the upper limit to **60**, the alarm is activated when the humidity reaches 60 relative humidity.
Ability	Enable the alarm function.
Planning	Click on**Settings**(Settings) to configure the parameters. Define the period for motion detection activation. For details, see "5.11.4.1.2 Setting the Motion Detection Period".
PTZ connection	Click on**Settings**(Setting) to display the PTZ page. Enable PTZ linkage actions, such as selecting the preset to be recalled when an alarm event occurs.
Alarm output port	Click on**Settings**(Settings) to configure the parameters. ● Local Alarm: Enables alarm triggering via alarm devices connected to the selected output port. ● Alarm Extension: Enables alarm triggering via the connected external alarm device. ● Wireless Siren: Enables alarm triggering via devices connected through USB gateway or camera gateway.
Post-alarm	Defines the delay time for the device to turn off the alarm after the external alarm is cleared. The value is between 0 and 300 seconds, while the default value is 10.
Post registration	Defines the delay time for the device to turn off recording after the alarm is cleared. The value ranges from 10 to 300 seconds, while the default value is 10.
Anti-dithering	Configure the time period from the end of event detection to the end of alarm.
Record channel	Select the channels you want to record. The selected channels start recording when an alarm event occurs. The functions of recording in case of IoT alarms and that of automatic recording must be enabled. For details, see sections" 5.1.4.9 Configuring the "Scheduling Recorded Video Storage" and "5.10.1 Enabling Recording Control".
Snapshots	Select the checkbox**Snapshot**(Snapshot) to take a snapshot of the selected channel. To use this feature, select**Main menu**> **CAMERA**>**Coding**>**Snapshot**(Main Menu > CAMERA > Encode > Snapshot), then in the list**Type**(Type) select

Parameter	Description
	Event(Event).
Tour	Select the checkbox**Tour**to enable a tour of selected channels.
Alarm tone	Select this option to enable audio/voice messaging transmission in response to a motion detection event.
Other settings	● Show message: Select the checkbox**Show Messages**(ShowMessage) to enable the display of messages on the user's local host computer. ● Beep: Select this checkbox to enable the device to beep. ● Video Matrix: Select the checkbox to enable this function. When an alarm event occurs, the extra screen will show the settings configured in the item **Main menu**>**DISPLAY**>**Tour**(Main Menu > DISPLAY > Tour). 📖 This feature is only available on some models. ● Send Email: Enable the system to send an email notification when alarm events occur. 📖 To use this feature, make sure that the email function is enabled in the item**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email). ● Log: Select this checkbox to have the device log local alarm information.

Step 4: Click on**Save**(Hello) to save the settings.

5.13.2.5 IoT Information Search
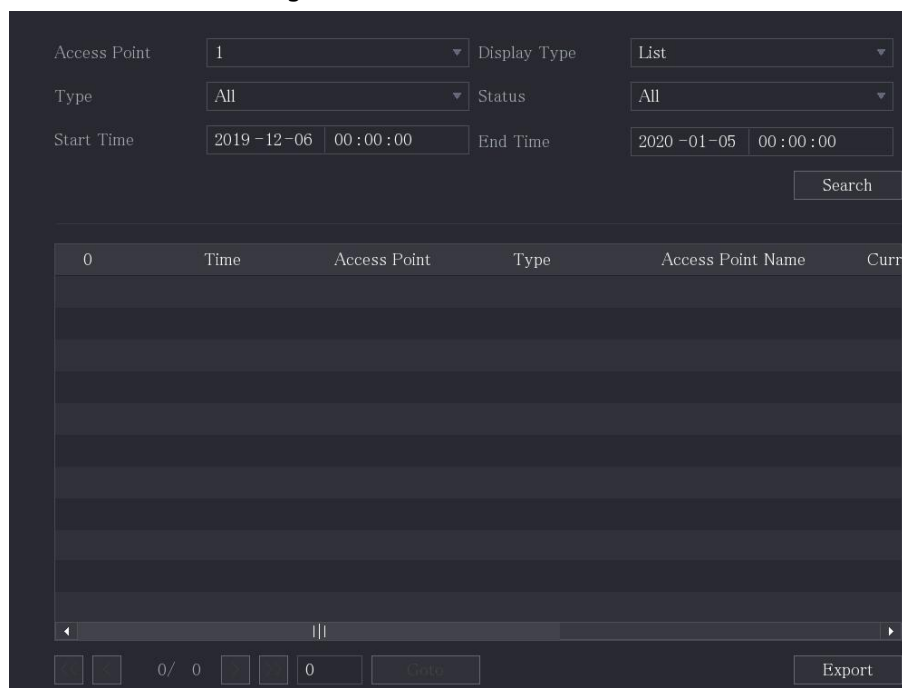
Prerequisites

To back up your data, you need to prepare a USB device and connect it to your device.

Procedure

Step 1: On the main page, select**IoT**>**IoT Research**(IoT > IOT Search).

Figure 5-226 IoT Search

Step 2: Configure parameter settings.

Table 5-61 IoT Search Parameters

Parameter	Description
Access point	Indicates the channel to which the camera is connected.
Type of visualization	In the list**Display type**(Display Type), select**List** (List) or**Graph**(Diagram).
Type	Select the type of information you want to search for. You can select from **Humidity**(Humidity) or**Temperature**(Temperatures).
State	Select the status of the information to search. This feature is available by selecting the option**List**(List) in the list**Display type**(Display Type).
Start date	Enter the start time and end time for the information you want to search for.
End date	

Step 3: Click on**Near**(Search).

The system starts the search based on the parameters you set. When the search is complete, the results are displayed.

Figure 5-227 List
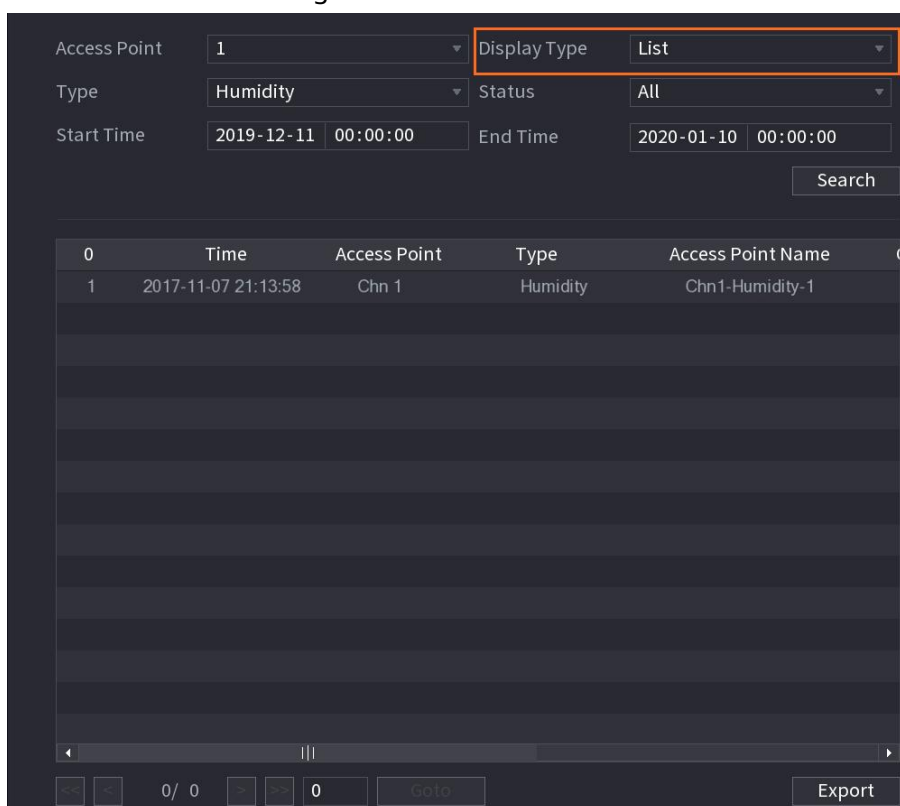
Figure 5-228 Graph
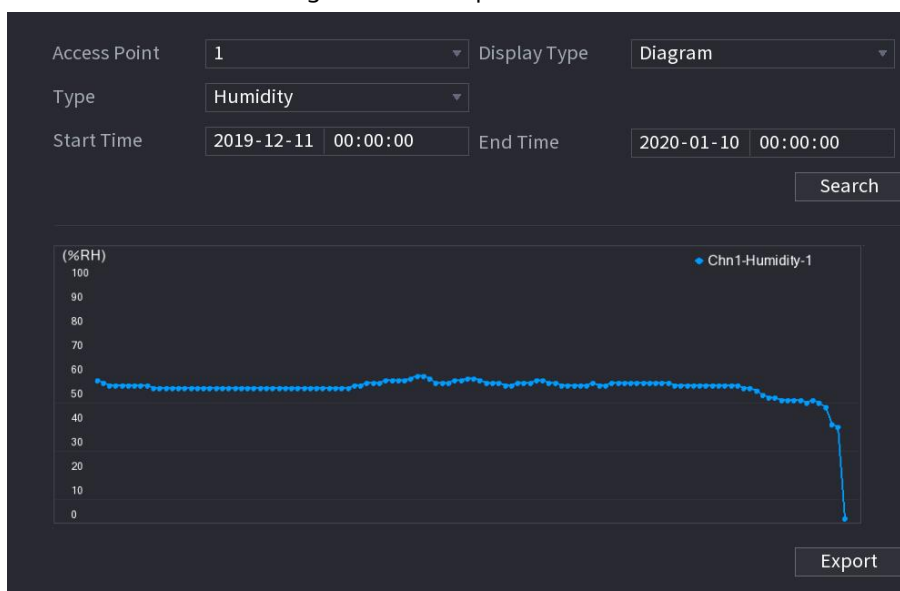
Step 4: Click on **Export**(Export). The system starts exporting data. Step

5: Click on **OK**.

The data is then located on the USB device.
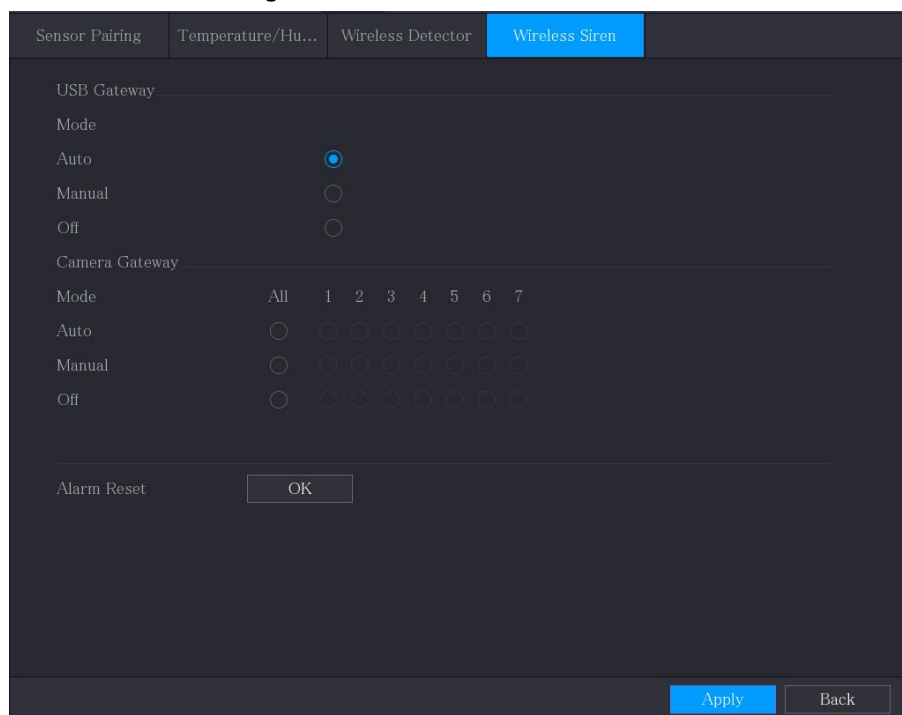
5.13.3 Wireless Siren Setup

You can connect the wireless siren to the device so that when an alarm event occurs on the device, the wireless siren will generate an alarm.

Procedure

Step 1: Select**Main menu**>**IoT**>**Management**>**Wireless siren**(Main Menu > IoT > Management > Wireless Siren).

Figure 5-229 Wireless siren

Step 2: Configure wireless alarm output settings.

Table 5-62 Wireless alarm output parameters

Parameter	Description
USB Gateway, Gateway of the camera	● **Automatic:**Automatically trigger alarm if the alarm output function for wireless siren is enabled for specific events. ● **Manual:**Activate the alarm immediately. ● **Off:**Does not activate the alarm.
Alarm stop	Click on**OK**to deactivate all wireless siren alarm output states.

Step 3: Click on**Apply**(Apply) to save the settings.

5.14 POS

You can connect the device to the POS (Point of Sale) and receive information from it. This function applies to scenarios such as supermarket POS. When the connection is established, the device can access the POS information and display the overlay text in the channel window.

There reproduction from the information POS in the reproduction local And visualization from the information POS in the screen   Of visualization in time   real they support Alone there mode to to channel single And mode to four   channels. There visualization from the screen   Of monitoring And reproduction on the web they support there mode to multichannel.

5.14.1 Searching Transaction Records

Preliminary information

The system supports there research For approximation.

Procedure

Step 1: Select**Main menu**>**POS**>**POS Search**(Main Menu > POS > POS Search).

Figure 5-230 POS Search

Step 2: In the box**POS Search**(POS Search), enter information such as the transaction number on the receipt, the amount, or the product name.

Step 3: In the boxes**Start time**(Start Time) and**End time**(End Time), enter the time period to search and the POS transaction information.

Step 4: Click on**Near**(Search).

The results of the searched transactions are displayed in the table.

5.14.2 Configuring POS settings

Procedure

Step 1: Select**Main menu**>**POS**>**POS Settings**(Main Menu > POS > POS Setting).

Figure 5-231 POS Settings
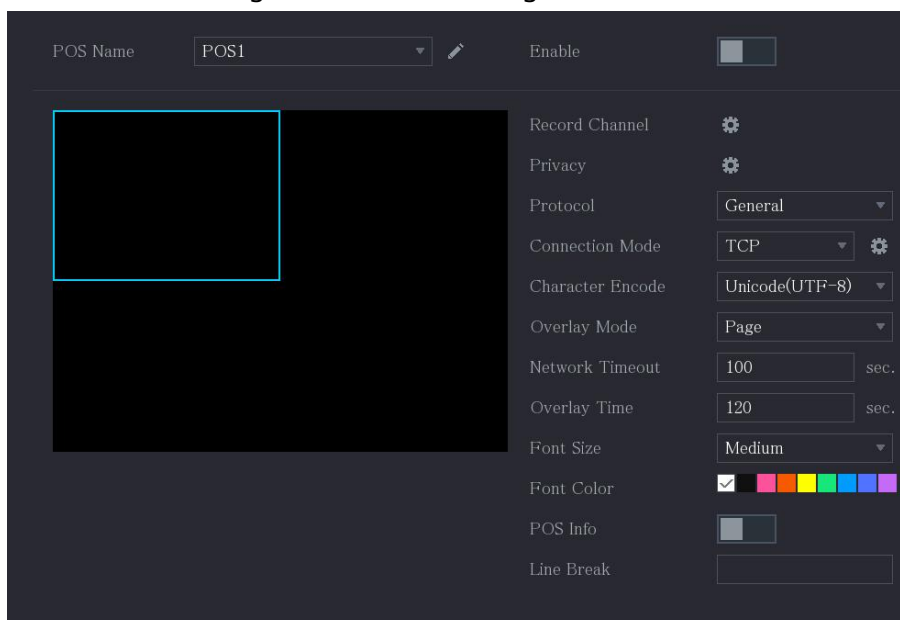
Step 2: Configure POS parameter settings.

Table 5-63 POS Parameters

Parameter	Description
POS Name	In the list**POS Name**(POS Name), select the POS device you want to configure. To change the POS name, click on . ![pencil icon] POS name supports 21 Chinese characters or 63 alphabetic characters.
Ability	Activate the POS function.
Record channel	Select the channels you want to record. The selected channels start recording when an alarm occurs. The POS alarm recording and automatic recording functions must be enabled. For details, see sections "5.1.4.9 Configuring the "Scheduling Recorded Video Storage" and "5.10.1 Enabling Recording Control".
Privacy	Access the privacy content.
Protocol	The default option is**POS**Different devices use different protocols.
Connection Mode	In the list**Connection type**(Connect Type), select the

Parameter	Description
	connection protocol type. Click on the IP ⚙ to access Address page. In the Source IP box, enter the IP address (the POS connected to the device) that sends the messages.
Character encoding	Select a character encoding mode.
Overlay Mode	In the list**Overlay Mode**(Overlay Mode), select**Page**(Page) or**ROLL**(Scrolling). ● If you select**Page**(Page), when there are 16 lines of information the page is turned. ● If you select**ROLL**(Scrolling), when there are 16 lines of information the page scrolls up. The first line to disappear is the top one. 📖 When the local preview mode is split into 4 parts, the overlay information is replaced when there are 8 lines.
Network timeout	If the network is not working properly and cannot be restored after the entered timeout limit, the POS information will not be displayed normally. When the network is restored, the latest POS information will be displayed.
Overlay duration	Enter the duration for displaying POS information. For example: Enter 5, the POS information will disappear from the screen after 5 seconds.
Font size	In the Font Size list, select**Small** (Small),**Medium**(Medium) or**Great**(Large) to select the text size of the POS information
Font color	In the color bar, click to select the color for the POS information text.
POS Information	By enabling the POS Information function, the POS information is displayed on the real-time view screen.
Line break	No configuration is required. The system switches to a new line 1 second after no data is received. If you enter a line delimiter, the system switches to a new line when the overlay information identifies the line delimiter (hexadecimal). For example, if the line delimiter is F and the overlay information is 123F6789, the local preview and web overlay information are displayed as: 123 6789

Step 3: Click on**Apply**(Apply).

5.15 Configuring backup settings

5.15.1 USB Device Operations

When you insert a USB storage device into the USB port of the device, it is detected and the page appears.**Backup Device Found**(Backup Device Found), which provides a link to perform backup and update operations.

Figure 5-232 Backup device
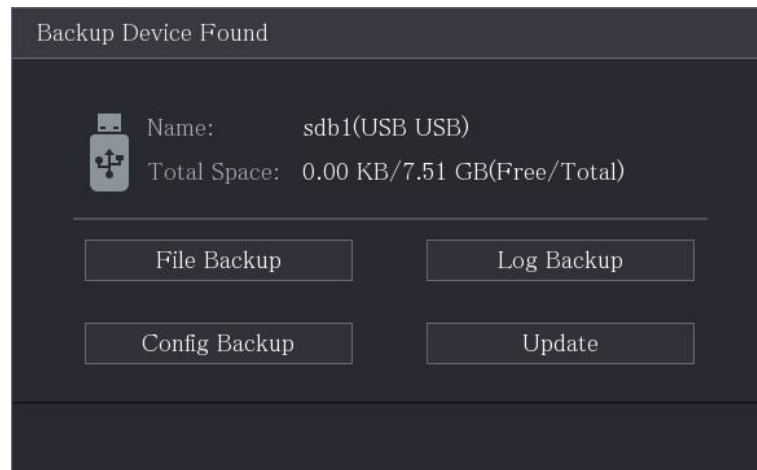
5.15.2 File Backup

You can backup your recorded videos and snapshots.

Procedure

Step 1: Select**Main menu**> ((Main Menu)**Backup**.

Figure 5-233 Backup

Step 2: Configure backup parameter settings.

Table 5-64 Backup parameters

Parameter	Description
Device name	In the list**Device Name**(Device Name), select the channel to which you want to back up your files.
Formatting	Click on**Format**(Format). ● If the capacity of the external storage device is less than 2TB, you can select the formatting type from**FAT32** or**NTFS**. ● If the capacity of the external storage device is equal to or greater than 2TB, you can only select the formatting type **NTFS**.
Path	Click on**Browse**(Browse). Select the path where to search for files.
Record channel	In the list**Recording channel**(Record Channel), select the channel to search for files.
Type	In the list**Type**(Type), select the type of file to search.
Remove masking Privacy	When you backup face masked videos, the mosaic on the face will be removed automatically.
Start date	Enter the start time and end time of the files you want to search for.
End date	
File format	In the list**File format**(File Format), select the file format to search among**DAV**And**MP4**.

Step 3: Click on**Near**(Search) to search for files that match the configured settings. The results are shown in the table.

Step 4: Select the files to backup.

Step 5: Click on**Backup**to backup the selected files to the configured path.

Do click on**Remove** (Remove) For eliminate everyone the sults from the research.

The system will display a backup progress bar. When the backup is complete, a message will be displayed.

Figure 5-234 Navigation
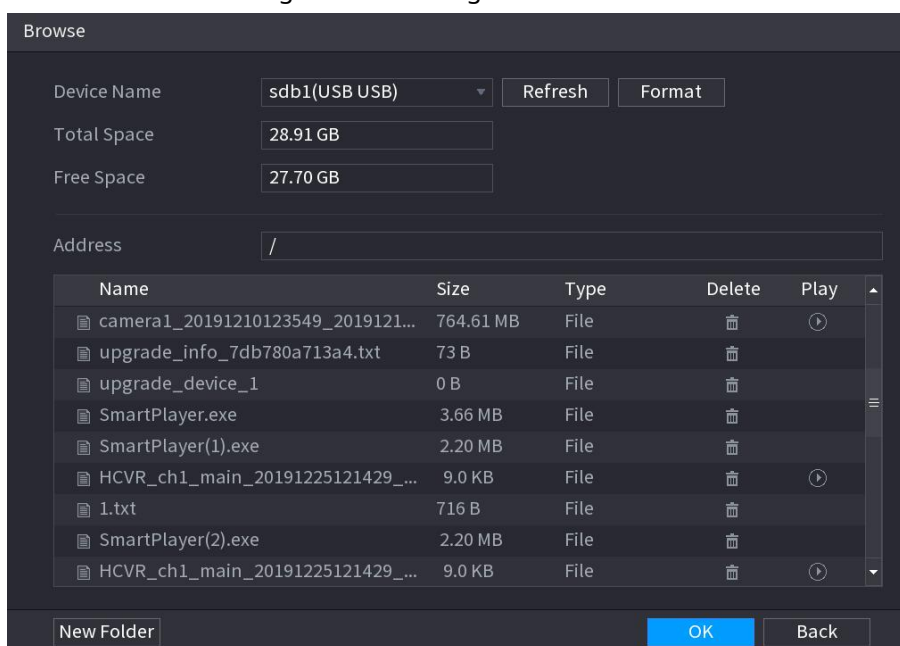
Step 6: Click on**OK**.

5.16 Network Management

5.16.1 Configuring network settings

You can ensure network operation between your device and other devices by configuring network settings.

5.16.1.1 Configuring TCP/IP Settings

Select**Main menu**>**NET**>**TCP/IP**(Main Menu > NETWORK > TCP/IP), then configure the settings for the device such as IP address and DNS according to your network environment. For details, see "5.1.4.4 Configuring Network Settings".
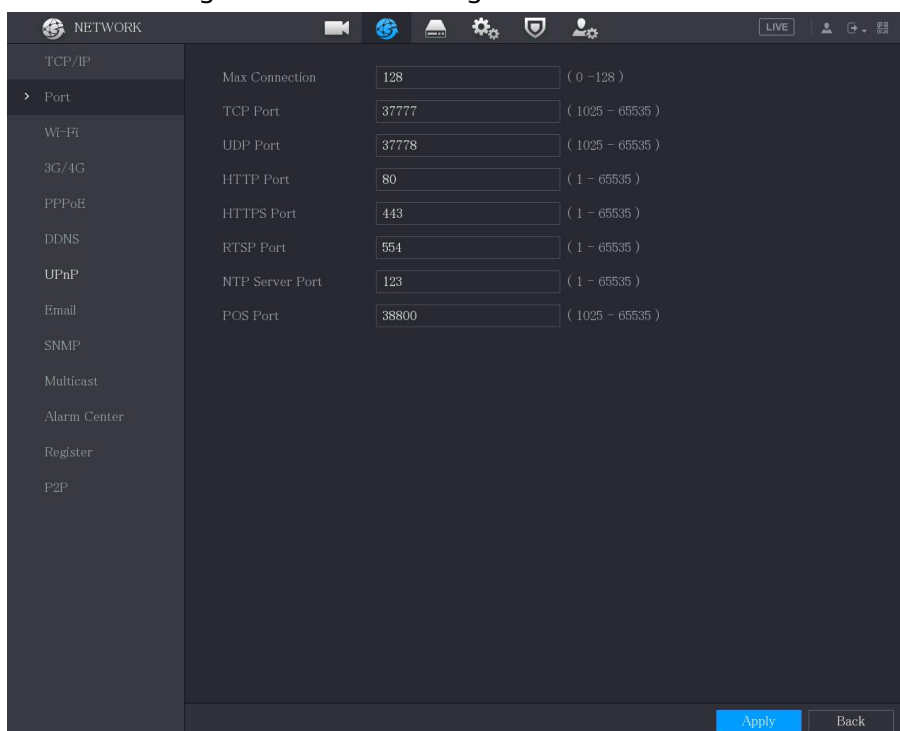
5.16.1.2 Configuring TCP/IP Settings

You can configure the maximum number of accesses allowed to the device from the client, such as the web interface, platform, and mobile client, and configure the settings for each port.

Procedure

Step 1: Select**Main menu**>**NET**>**Brings**(Main Menu > NETWORK > Port).

Figure 5-235 Port Configuration

Step 2: Configure connection parameter settings.

Table 5-65 Connection parameters

Parameter	Description
Maximum connections	Maximum number of logins allowed for clients accessing the device at the same time, for example from the web, platform and mobile phone. Select a value between 1 and 128. The default value is 128.
TCP Port	The default value is 37777. You can enter a value according to your actual situation.
UDP port	The default value is 37778. You can enter a value according to your actual situation.
HTTP Port	The default value is 80. You can enter a value according to the actual situation. If you enter a different value, such as 70, you must add it after the IP address when accessing the device via browser.
RTSP port	The default value is 554. You can enter a value according to your actual situation.

Parameter	Description
POS holder	Data transmission. Allowed values are from 1 to 65535. The default value is 38800.
NTP Server Port	The default value is 123. You can enter a value according to your actual situation.
HTTPS Port	HTTPS communication port. The default value is 443. You can enter a value according to the actual situation.

Step 3: Click on**Apply**(Apply) to complete the setup.

5.16.1.3 Configuring Wi-Fi connection settings

You can establish a wireless connection between your device and other devices in the same network through Wi-Fi settings, making it easier to connect and move your devices.

There function Asupported Alone from the device withmodule Wi-Fi.

Procedure

Step 1: Select**Main menu**>**NET**>**Wi-Fi**(Main Menu > NETWORK > Wi-Fi).

Figure 5-236 Wi-Fi (1)
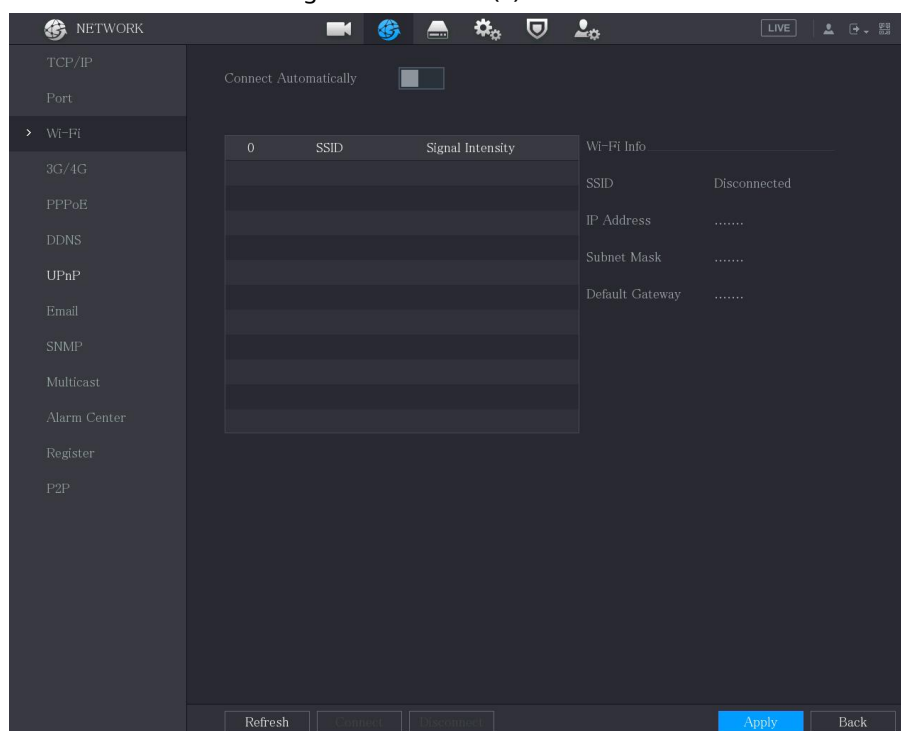
Figure 5-237 Wi-Fi (2)
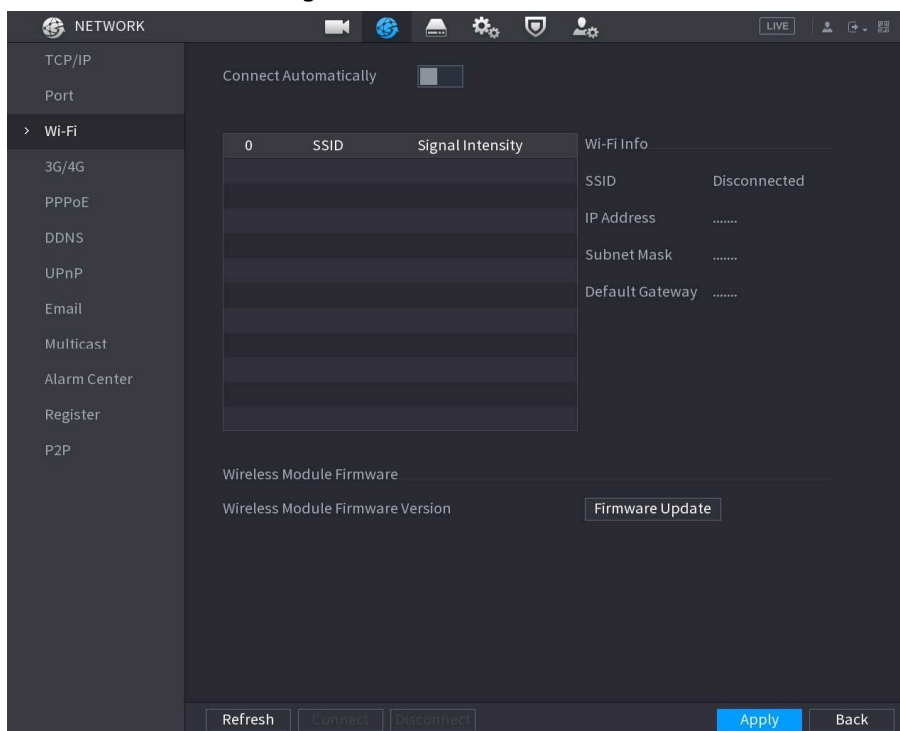
Step 2: Configure Wi-Fi connection parameter settings.

Table 5-66 Wi-Fi connection parameters

Parameter	Description
Connect automatically	Allows automatic connection. When your device restarts, it will automatically connect to the nearest hotspot that it was previously connected to.
Update	Refresh the hotspot list. Auto-adapt function, such as adding a password, is supported if this setting has been configured previously.
Connect	Select a hotspot from the list, then click**Connect** (Connect). ● To reconnect to the same hotspot, first disconnect and then reconnect. ● To connect to a different hotspot, first disconnect from the hotspot you are currently connected to, and then connect to the new hotspot.
Disconnect	To disconnect from a hotspot, click**Disconnect**(Disconnect).

Step 3: (Optional) Click on**Firmware Update**(Firmware Update), select the firmware file, then click**OK**.

Step 4: Click on**Apply**(Apply) to complete the setup.

Once the device is connected to the Wi-Fi hotspot, in the area**Wi-Fi Information**(Wi-Fi Info), the current hotspot, IP address, subnet mask, and default gateway are displayed.

∘━

For a improve connection Of net, Yes recommends Of connect The module 3G/4G/WiFi to the panel front, if present on the device.

5.16.1.4 Configuring 3G/4G settings

5.16.1.4.1 Via 3G/4G wireless module

You can connect a 3G/4G wireless module to the USB port of your device and then access the device via the IP address provided by the module.

📖

This function And available Alone on some models.

Procedure

Step 1: Connect the 3G/4G wireless module to the USB port of the device.

Step 2: Select **Main menu**>**NET**>**3G/4G**>3G/4G (Main Menu > NETWORK > 3G/4G > 3G/ 4G).

Figure 5-238 3G/4G
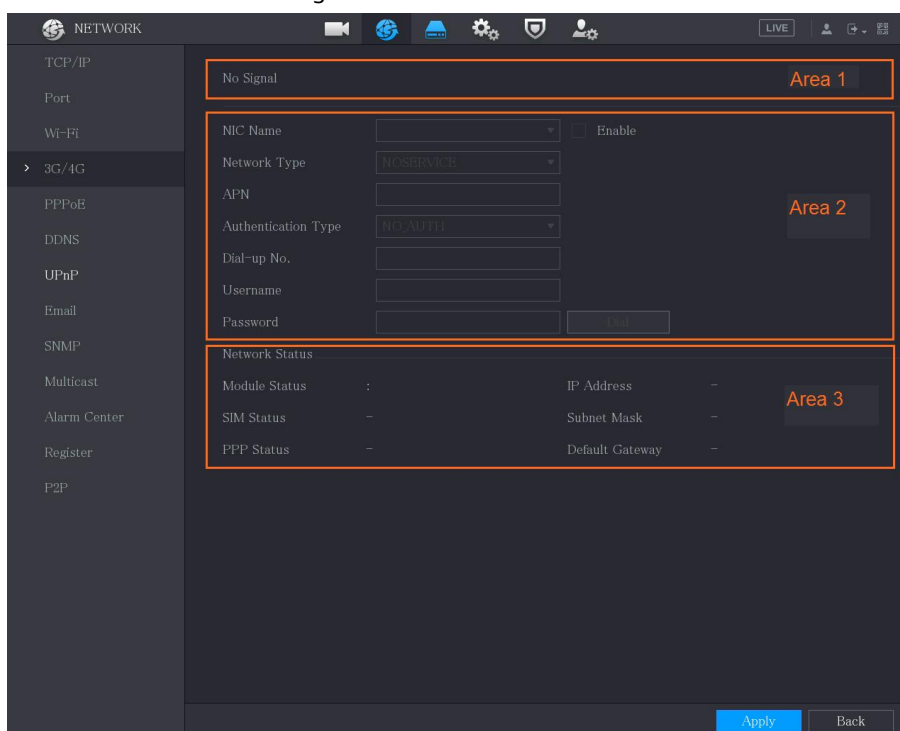
The 3G/4G page includes three areas:

● Area 1: Signal strength display.

● Area 2: Viewing module configurations.

● Area 3: View connection status.

📖

The information of the Area 2 they come visualize After there connection of the module 3G/4G, While the information of the 'Area1 And the Area 3 they come visualize Alone After the enablement from the function 3G/4G.

Step 3: The device starts identifying the wireless module and displays the recognized information for the parameters in Area 2.
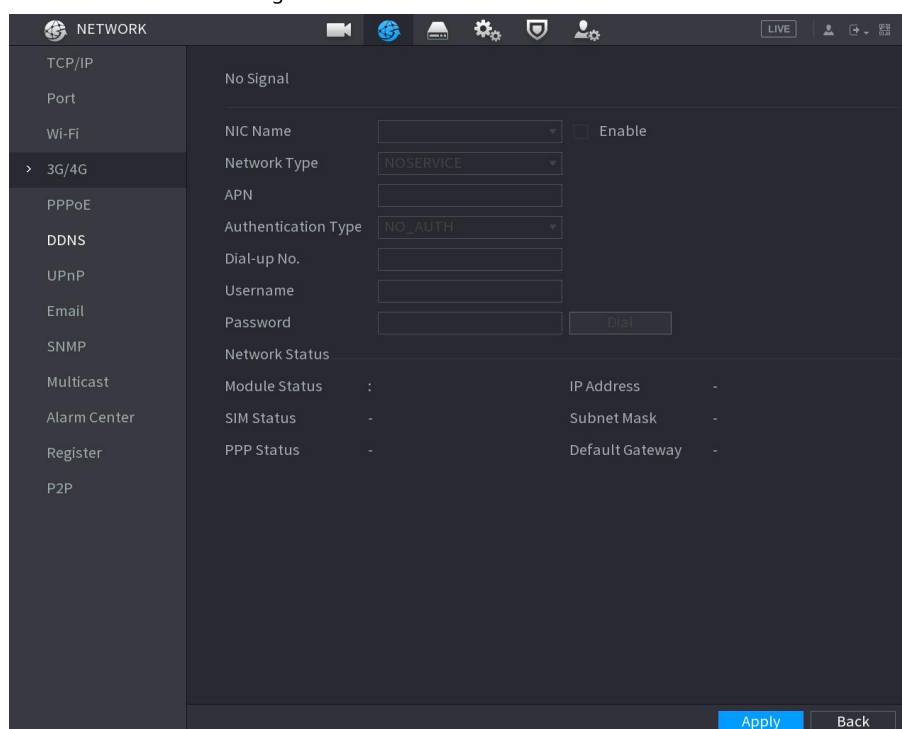
Table 5-67 Recognized information

Parameter	Description
NIC Name	Displays the name of the Ethernet adapter.
Network type	View the network type. A different type represents a different provider.
APN	View the default APN number.
Access number telephone.	View the default telephone access number.
Authentication type	Authentication method. You can select **DAD**, **CHAP** or **NO_AUTH**.
Username, Password	Enter your authentication username and password.

Step 4: Select the checkbox **Ability**(Enable). Step 5: Click on **Compose**(Dial) to start the connection.

Once the connection is established, the result is displayed in the area **Wireless network**(Wireless Network).

Figure 5-239 Wireless network

Step 6: Click on **Apply**(Apply) to complete the setup.

5.16.1.4.2 Via the external unit
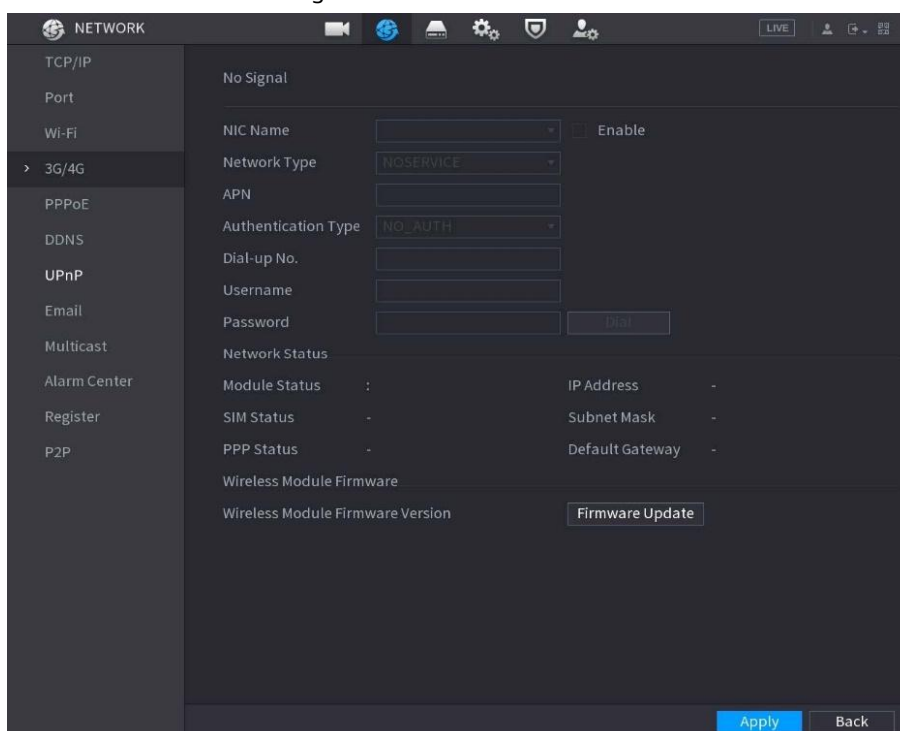
You can connect in 3G/4G via an external unit.

Procedure

Step 1: Connect the external drive to the USB port on your device.

Step 2: Select**Main menu**>**NET**>**3G/4G**(Main Menu > NETWORK > 3G/4G > 3G/4G).

Figure 5-240 3G/4G

Step 3: Configure the settings. For details, see Table 5-67.

Step 4: Click on**Firmware Update**(Firmware Update), select the firmware file, then click**OK**.

Figure 5-241 Firmware update
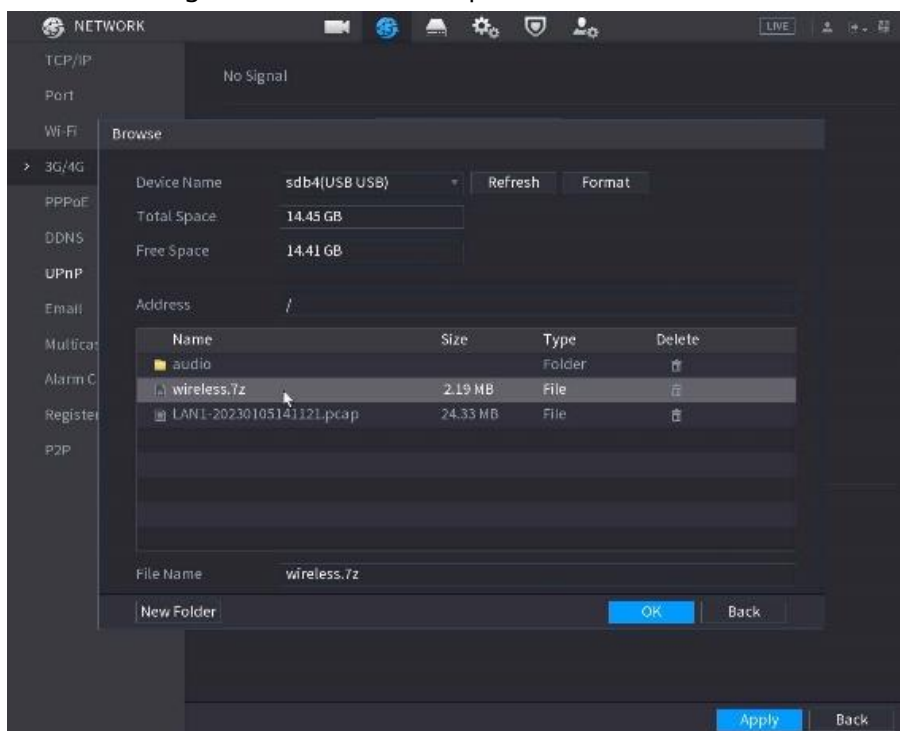
Step 5: Click on**Apply**(Apply) and wait for the firmware to be installed.
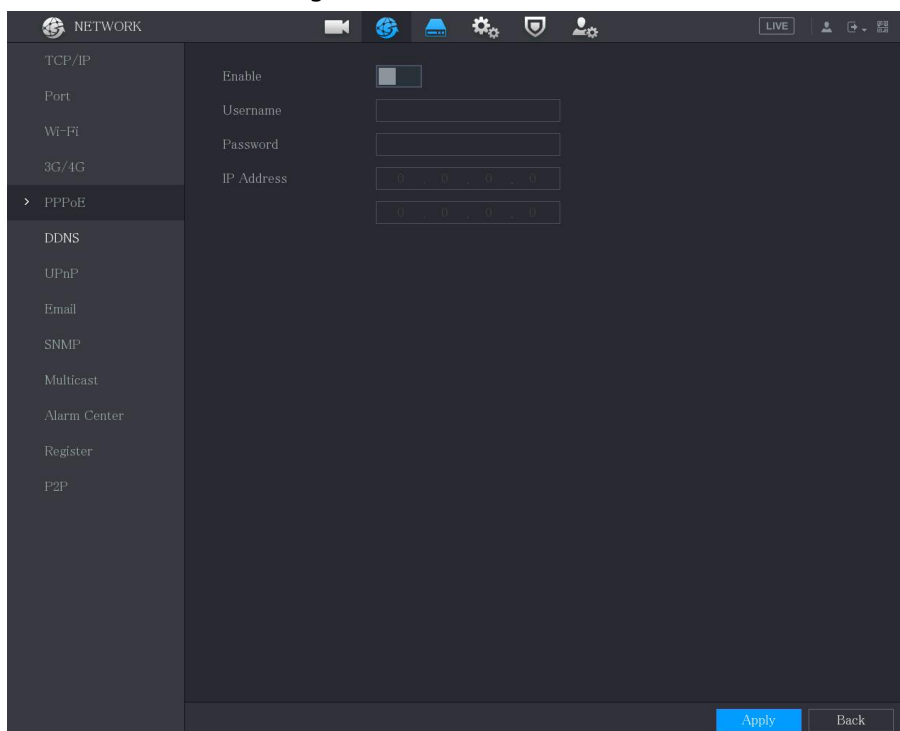
5.16.1.5 Configuring PPPoE Settings

Another way to connect your device to the network is via PPPoE protocol. You can establish a network connection by configuring PPPoE settings to assign a dynamic IP address to the device in the WAN. To use this function, you must first obtain the user name and password from your Internet service provider.

Procedure

Step 1: Select**Main menu**>**NET**>**PPPoE**(Main Menu > NETWORK > PPPoE).

Figure 5-242 PPPoE

Step 2: Enable the PPPoE function.

Step 3: In the fields**Username**(Username) and**Password**, enter the username and password provided by your Internet service provider.

Step 4: Click on**Apply**(Apply) to complete the setup.

A message appears indicating that the saving was successful. The IP address is displayed on the PPPoE page. You can use this IP address to access the device.

When there function PPPoE And enabled, the address IP in the page **TCP/IP** Not you can o to be modified.

5.16.1.6 Configuring DDNS Settings

When the IP address of the device changes frequently, the DDNS function can dynamically update the correspondence between the domain on the DNS and the IP address, ensuring that the device can be accessed via the domain.

Prerequisites

Check whether the device supports the DDNS type and access the website provided by the DDNS service provider to register the information, such as domain, from the computer located in the WAN.

📖
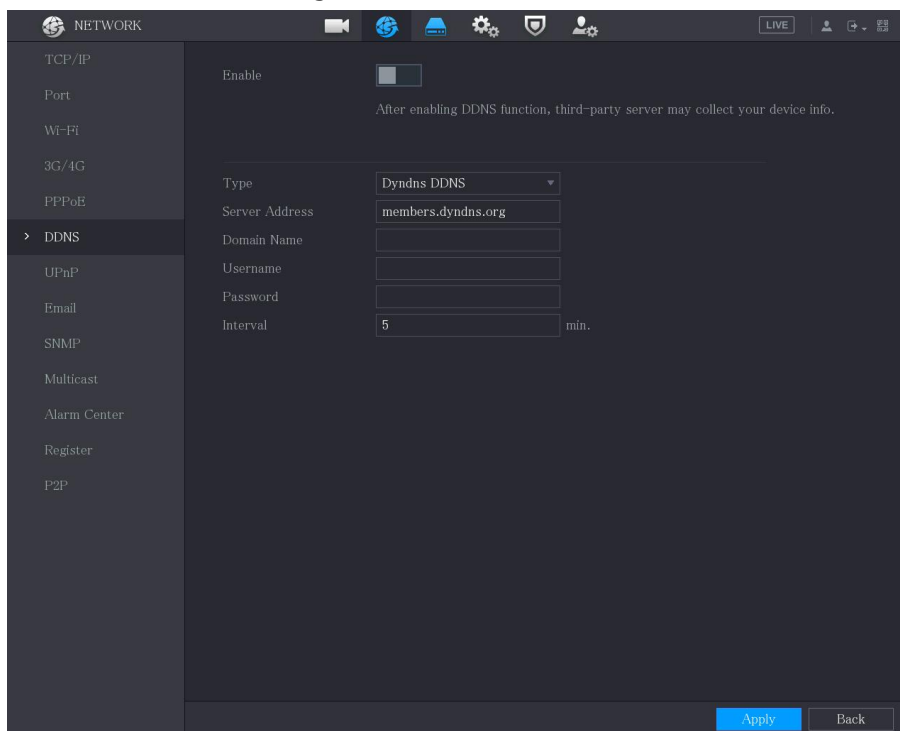
A time registered The site DDNS and performed the access, I will be to possible to view the information Of everyone the devices connected under This name.

Procedure

Step 1: Select**Main menu**>**NET**>**DDNS**(Main Menu > NETWORK > DDNS).

Figure 5-243 DDNS

Step 2: Configure DDNS parameter settings.

Table 5-68 DDNS parameters

Parameter	Description
Ability	Enable DDNS function. 📖 Once you enable the DDNS function, third-party servers will be able to collect information about your device.
Type	Type and address of the DDNS service provider.
Server Address	● Type: Dyndns DDNS; address: members.dyndns.org ● Type: NO-IP DDNS; address: dynupdate.no-ip.com ● Type: CN99 DDNS; address: members.3322.org
Domain Name	Domain name to register DDNS service provider website.
Username	Enter the username and password you received from the DDNS service provider. You need to register (by entering your username and password) on the DDNS service provider's website.
Password	
Interval	Enter the desired time period for DDNS update.

Step 3: Click on**Apply**(Apply) to complete the setup.

> Enter the domain name into your computer's browser, then press**Enter**.
> If the device web page appears, setup is successful. Otherwise, setup is
> unsuccessful.
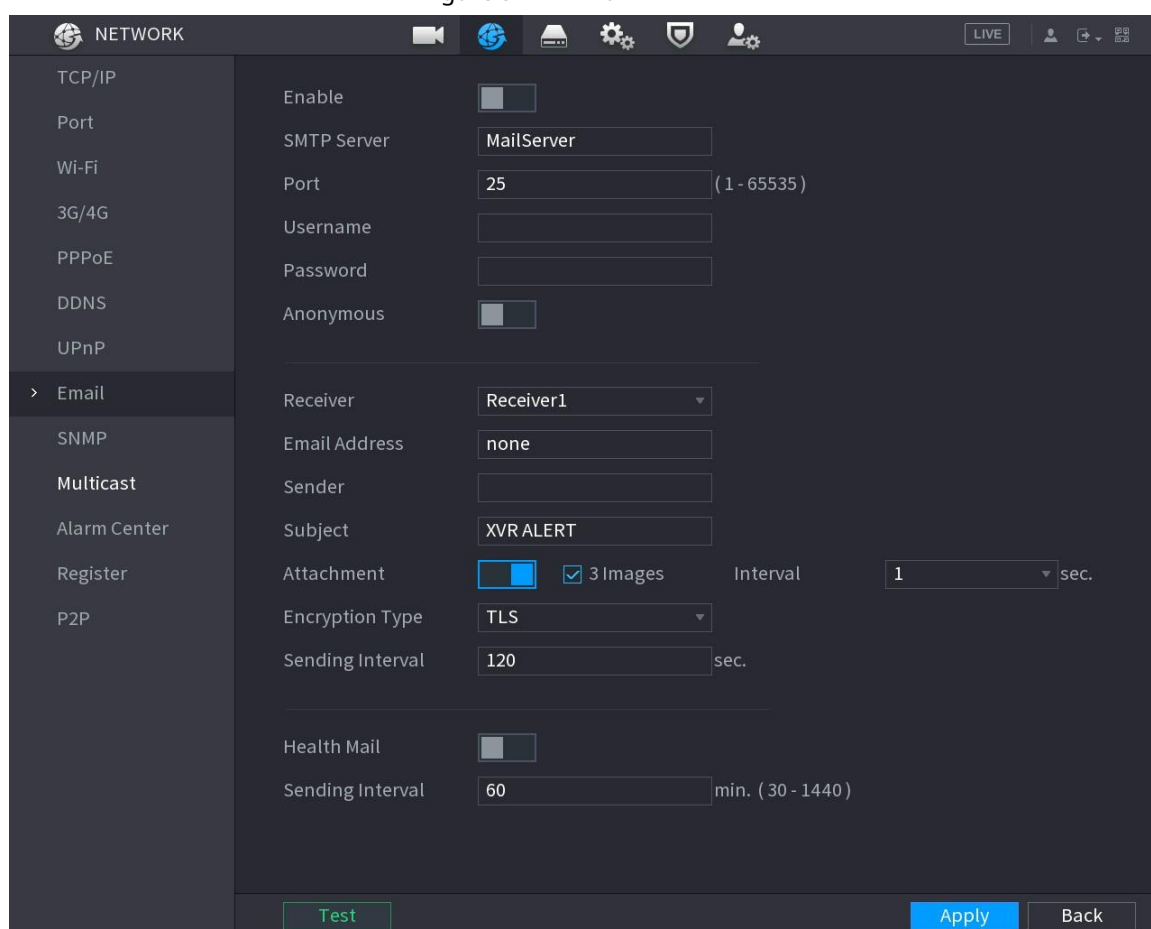
5.16.1.7 Configuring Email Settings

You can configure email settings so that the system sends a notification message when alarm events occur.

Procedure

Step 1: Select**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).

Figure 5-244 Email

Step 2: Configure settings for email parameters.

Table 5-69 Email parameters

Parameter	Description
Ability	Activate the email function. After enabling the feature, there is a risk that data will be sent to the specified email address.
SMTP Server	Enter the SMTP server address of the sender's email account.
Brings	Enter the SMTP server port value. The default value

Parameter	Description
	is 25. You can enter a value according to your actual needs.
Username Password	Enter the username and password of the sender's email account.
Anonymous	If you enable the anonymity feature, you can log in anonymously.
Recipient	In the list**Recipient**(Receiver), select the number of the recipient to whom you want to send the notification. The device supports up to three mail recipients.
E-mail address	Enter the email address of the mail recipients.
Sender	Enter the sender's email address. You can enter up to three senders separated by a comma.
Object	Enter the subject of the email. Chinese characters and alphanumeric characters are supported. You can enter up to 64 characters.
Attached	Enable the ability to insert attachments. When an alarm event occurs, the system can attach snapshots to the email.
3 images	Enable 3 images feature. The system acquires 3 images as attachments for the main text.
Interval	The amount of time between sending the 3 images.
Encryption type	Select encryption type:**NOBODY**(IT IS NOT),**SSL**or**TLS**. 📖 For SMTP server, the default encryption type is**TLS**.
Send interval (sec.)	This value indicates the time interval between emails sent by the system for the same type of alarm event; i.e. the system does not send emails for every alarm event. This setting allows you to avoid excessive sending of emails caused by frequent alarm events. Values range from 0 to 3600. A value of 0 indicates that there is no sending.
Test Email	Enable the integrity test function. The system sends a test email to check the connection status.
Send interval (min.)	This is the time interval that elapses for sending the test email. Values range from 30 to 1440. A value of 0 indicates that there is no sending.
Test	Click Test to test the email sending function. If the configuration is correct, the recipient's email account will receive the email. 📖 Before testing, click on**Apply**(Apply) to save the settings.

Parameter	Description

Step 3: Click on**Apply**(Apply) to complete the setup.

5.16.1.8 Configuring UPnP Settings

You can map the relationship between LAN and WAN to access the device on the LAN via the IP address on the WAN.

Prerequisites

● Login to your router to set the WAN port and allow the IP address to connect to the WAN.

● Enable the UPnP function on your router.

● Connect the device to the router's LAN port to connect to the LAN.

● Select**Main menu**>**NET**>**TCP/IP**(Main Menu > NETWORK > TCP/IP), configure the IP address in the router's IP address range or enable the DHCP function to obtain an IP address automatically.

Procedure

Step 1: Select**Main menu**>**NET**>**UPnP**(Main Menu > NETWORK > UPnP).

Figure 5-245 UPnP
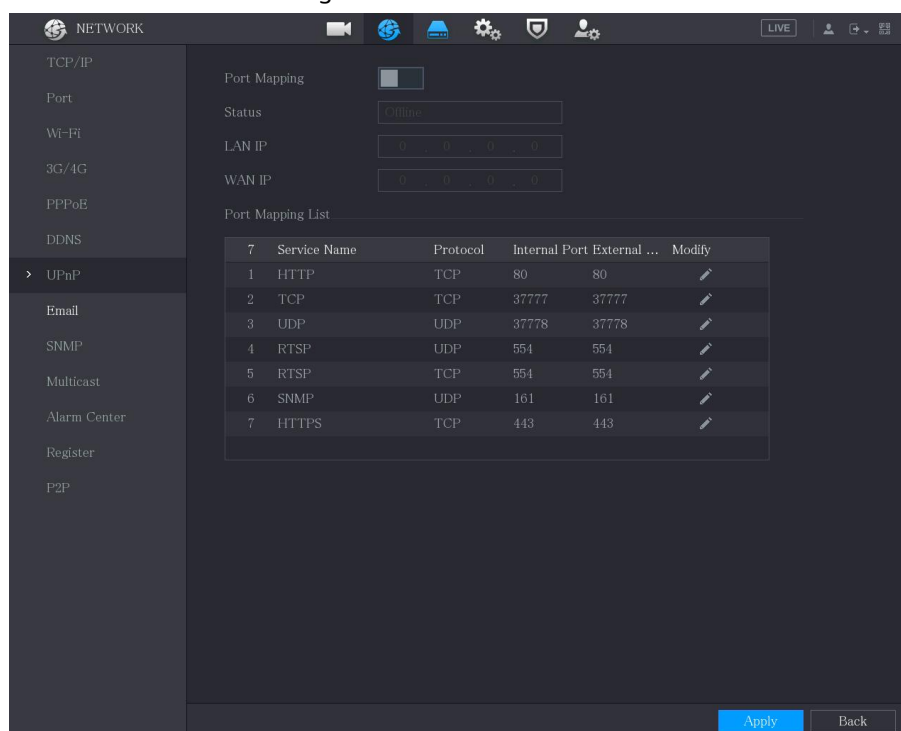
Step 2: Configure UPnP parameter settings.

Table 5-70 UPnP parameters

Parameter	Description
Port Mapping	Enable UPnP function.

Parameter	Description
	After enabling, intranet services and ports will be mapped to extranet, so proceed with caution.
State	Indicates the status of the UPnP function. ● Offline: The function could not be activated. ● Online: The function has been activated successfully.
LAN IP	Enter the router's IP address on the LAN. Once the mapping is completed, the system automatically obtains the IP address without the need for any configuration.
IP WAN	Enter the router's IP address on the WAN. Once the mapping is completed, the system automatically obtains the IP address without the need for any configuration.
Mapping List doors	The settings in the PAT table match the router's UPnP PAT table. ● Service Name: Name of the network server. ● Protocol: Type of protocol. ● Int. Port: Indicates the internal port mapped to the device. ● Port Port: Indicates the external port mapped to the router. ● To avoid conflicts, when setting the external port, try to use ports 1024 to 5000 and avoid the most frequently used ports 1 to 255 and system ports 256 to 1023. ● If several devices are connected to the LAN, try to define the mapping ports so that they do not have the same external port. ● When defining a mapping relationship, ensure that the mapping ports are not occupied or restricted. ● The internal and external TCP and UDP ports must be the same and cannot be changed. ● To change the external port, click .

Step 3: Click on**Apply**(Apply) to complete the setup.

In your browser, enter http://*WAN IP: External IP port*.Allows you to access the device in the LAN.

5.16.1.9 Configuring SNMP Settings

You can connect your device to some software such as MIB Builder and MG-SOFT MIB Browser to manage and control your device from the software. This feature is only available on some models.
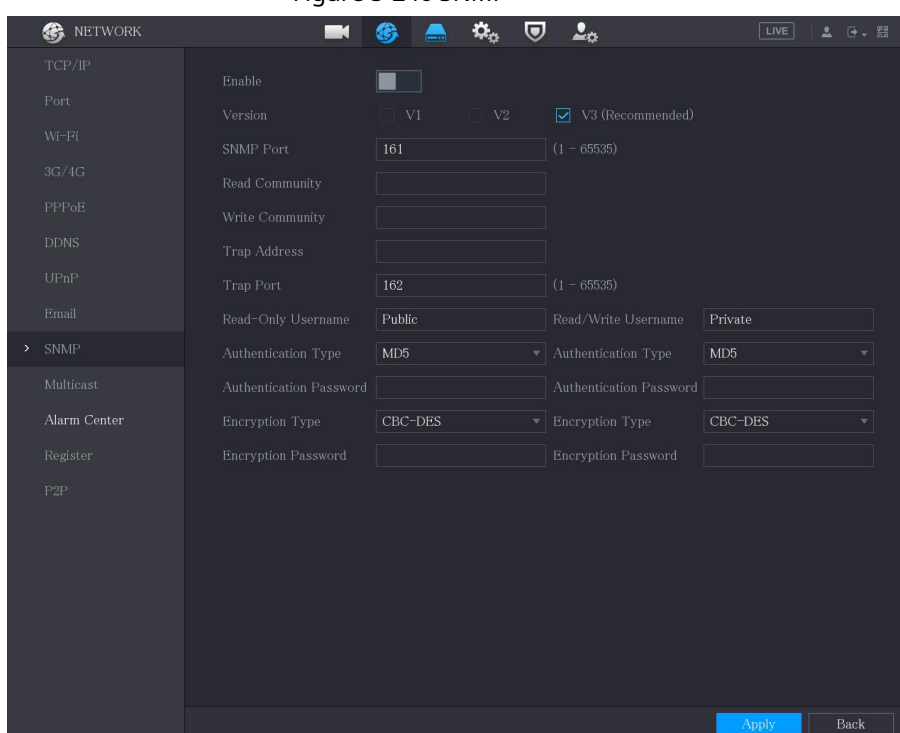
Prerequisites

● Install SNMP management and control software, such as MIB Builder and MG-SOFT MIB Browser

● Please request the MIB files corresponding to the current version from technical support.

Procedure

Step 1: Select**Main menu**>**NET**>**SNMP**(Main Menu > NETWORK > SNMP).

Figure 5-246 SNMP

Step 2: Configure SNMP parameter settings.

Table 5-71 SNMP parameters

Parameter	Description
Ability	Enable the SNMP function.
Version	Select the check box for the SNMP versions in use. 📖 The default version is**V3**. Select version V1 or V2 at your own risk.
SNMP port	Indicates the monitoring port on the agent program.
Read community	Indicates the read/write strings supported by the agent program.
Shared writing	

Parameter	Description
Trap address	Indicates the destination address to which the agent program sends Trap information.
Trap door	Indicates the destination port to which the agent program sends Trap information.
Read-only user name	Enter the user name that is authorized to access the device and has "Read Only" permission.
Username read/write	Enter the user name that is authorized to access the device and has "Read & Write" permission.
Authentication type	Includes MD5 and SHA types. The system automatically recognizes them.
Authentication password	Enter the password for the authentication type and encryption type. The password length must not be less than eight characters.
Encryption password	
Encryption type	In the list**Encryption type**(Encryption Type), select the encryption type. The default is CBC-DES.

Step 3: Compile the two MIB files with MIB Builder.

Step 4: Run MG-SOFT MIB Browser to load the module from the build. Step 5: In the MG-SOFT MIB browser, enter the IP of the device to be managed, then select the version number to query.

Step 6: In MIB MG-SOFT Browser, expand the tree-structured directory to view the device configurations, such as the number of channels and the software version.
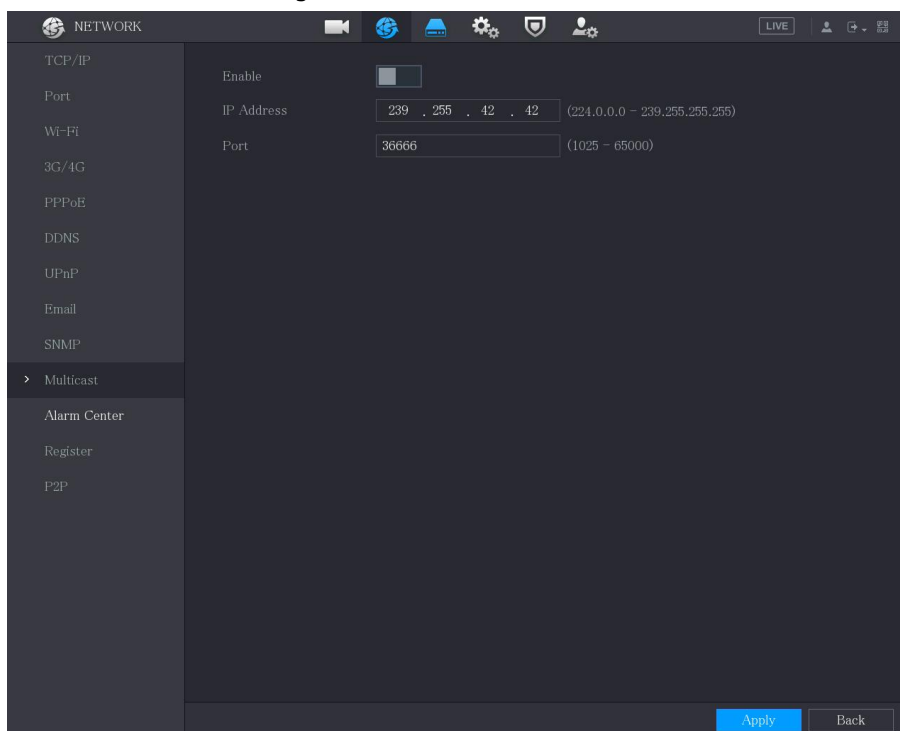
5.16.1.10 Configuring Multicast Settings

When you access the device from the network to view the video, if you exceed the access limit, the video will not be displayed. You can use the multicast function to group the IPs and solve the problem.

Procedure

Step 1: Select**Main menu**>**NET**>**Multicast**(Main Menu > NETWORK > Multicast).

Figure 5-247 Multicast

Step 2: Configure multicast parameter settings.
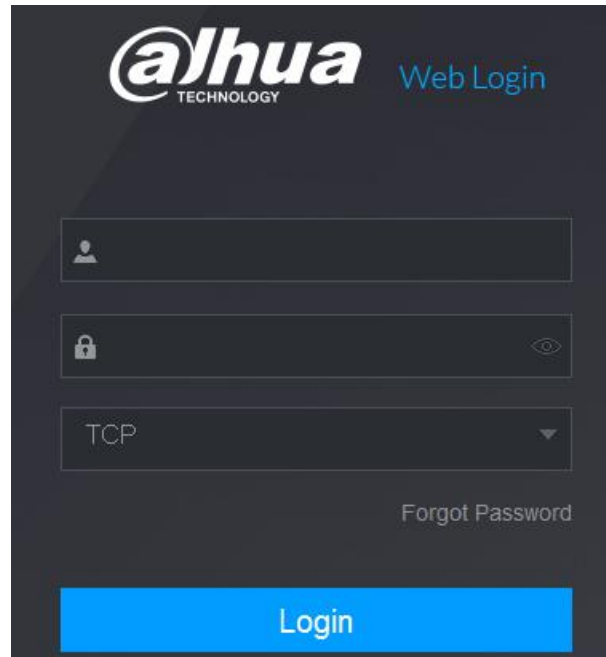
Table 5-72 Multicast parameters

Parameter	Description
Ability	Enable the Multicast function.
IP address	Enter the IP address to use for Multicast. The IP address must be between 224.0.0.0 and 239.255.255.255.
Brings	Enter the port for Multicast. The port range must be between 1025 and 65000.

Step 3: Click on**Apply**(Apply) to complete the setup. You can use

the Multicast IP address to access the web.

In the Web Login dialog box, in the list**Type**(Type), select**MULTICAST**. The Multicast IP

address will be obtained automatically and logged in. You can then view the video via the

Multicast function.

Figure 5-248 Access
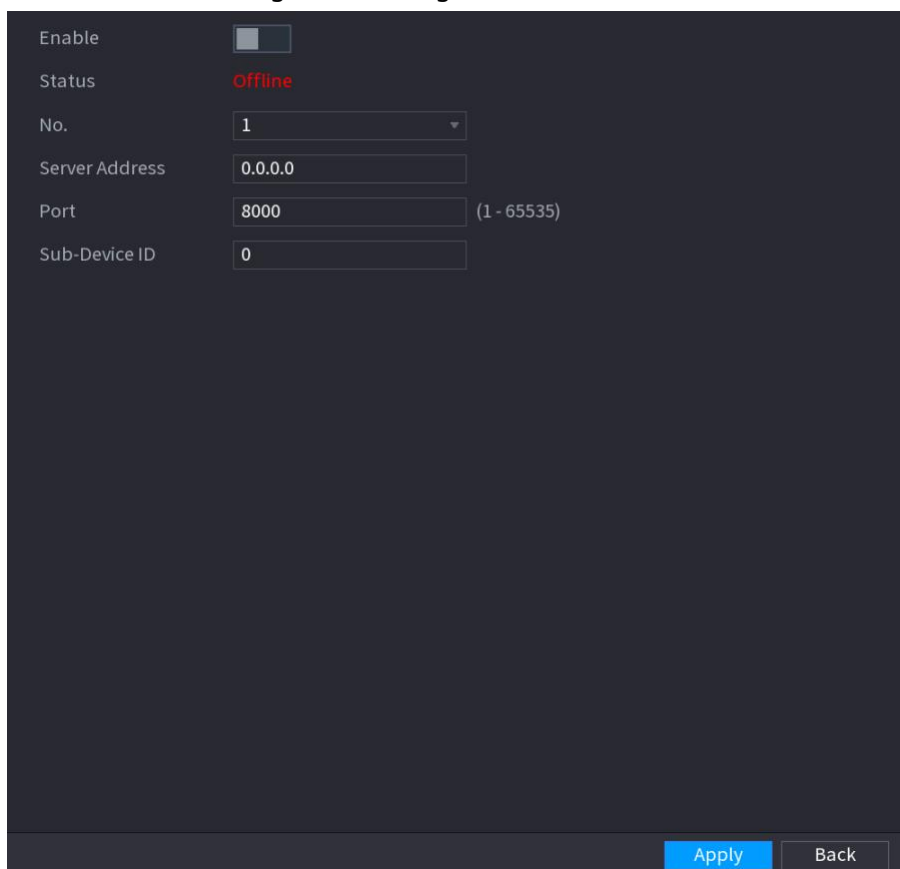
5.16.1.11 Configuring Recording Settings

You can register your device on the specified proxy server, which acts as an intermediary to facilitate client software access to the device.

Procedure

Step 1: Select **Main menu**>**NET**>**Registration**(Main Menu > NETWORK > Register).

Figure 5-249 Registration

Step 2: Configure recording parameter settings.

Table 5-73 Recording parameters

Parameter	Description
Ability	Activate the recording function.
State	View connection status.
N.	The default is 1.
Server Address	Enter the server IP address or server domain to register on.
Brings	Enter the server port.
Device ID secondary	This ID is assigned by the server and used for the device.

Step 3: Click on**Apply**(Apply) to complete the setup.
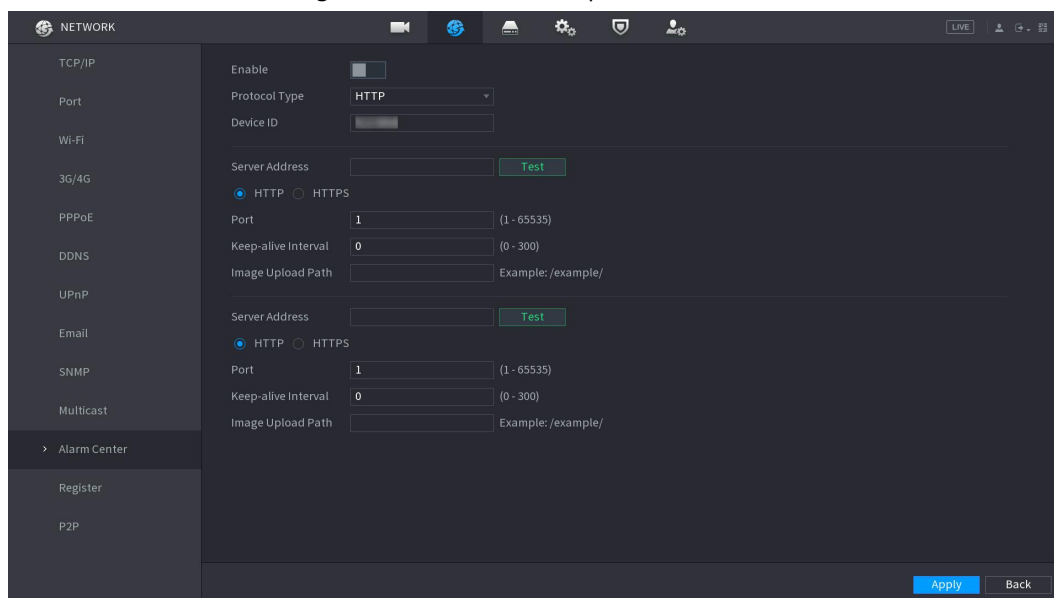
5.16.1.12 Configuring Alarm Control Panel Settings

You can configure the alarm center server to receive the uploaded alarm information. To use this function, you need to check the checkbox**Alarm Report** (Report Alarm). For details on alarm event settings, see "5.11 Alarm Event Settings".

Procedure

Step 1: Select**Main menu**>**NET**>**Alarm control center**(Main Menu > NETWORK > Alarm Center).

Figure 5-250 Alarm control panel

Step 2: Click on ![toggle] to enable the function, then select the protocol type.

You can select**Private protocol**(Private Protocol) or**HTTP**The

default setting is**HTTP**. Step 3: Configure the parameters.

When selecting**HTTP**, you need to enter the server address, port and then select **HTTP**or **HTTPS**, as needed.

Table 5-74 Alarm control panel parameters

Parameter	Description
Device ID	You can enter the device identification number. 📖 This feature is only available if you select**HTTP**as a type of protocol.
Server Address Brings	The IP address and communication port of the computer on which the alarm client is installed. Click the button**Head**(Test) to check whether the entered server address and port are connected correctly. After clicking the button, the test results will be displayed. 📖 It supports 2 server configuration.
Keep-alive interval	Enter the keep-alive interval that keeps the connection between the device and the server alive.
Path of Image upload	Enter the address for image storage. By default, the address is not assigned.

Step 4: Click on**Apply**(Apply) to complete the setup.

5.16.1.13 Configuring P2P settings

You can manage devices by using P2P technology to download the application and register devices. For details, see "5.1.4.5 Configuring P2P Settings".

5.16.2 Configuring Network Test Settings

5.16.2.1 Network Test

You can test the network connection status between your device and other devices.

Procedure
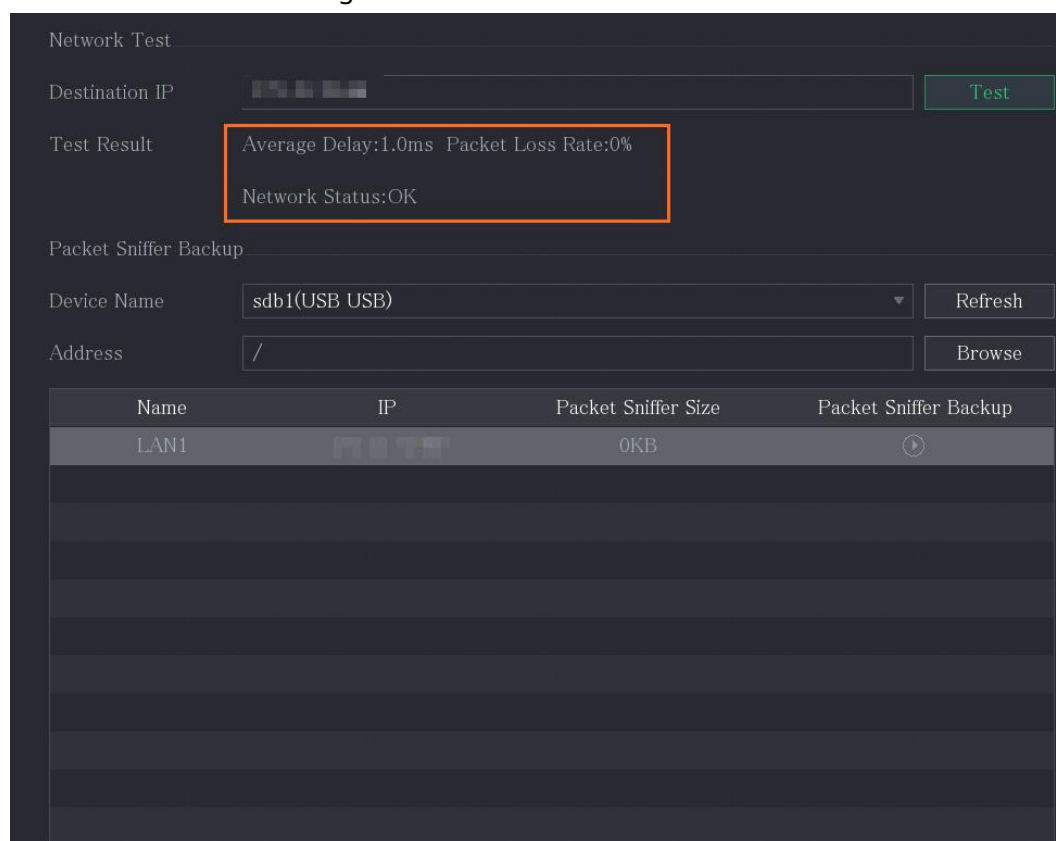
Step 1: Select**Main menu**>**MAINTENANCE**>**Network Detection**>**Head**(Main Menu > MAINTENANCE > Network Detection > Test)

Step 2: In the box**Destination IP**(Destination IP), enter the IP address. Step 3: Click on**Head**(Test).

After the test is complete, the system displays the results. You can check values such as average delay, packet loss, and network status.

Figure 5-251 Test results

5.16.2.2 Packet Acquisition and Backup
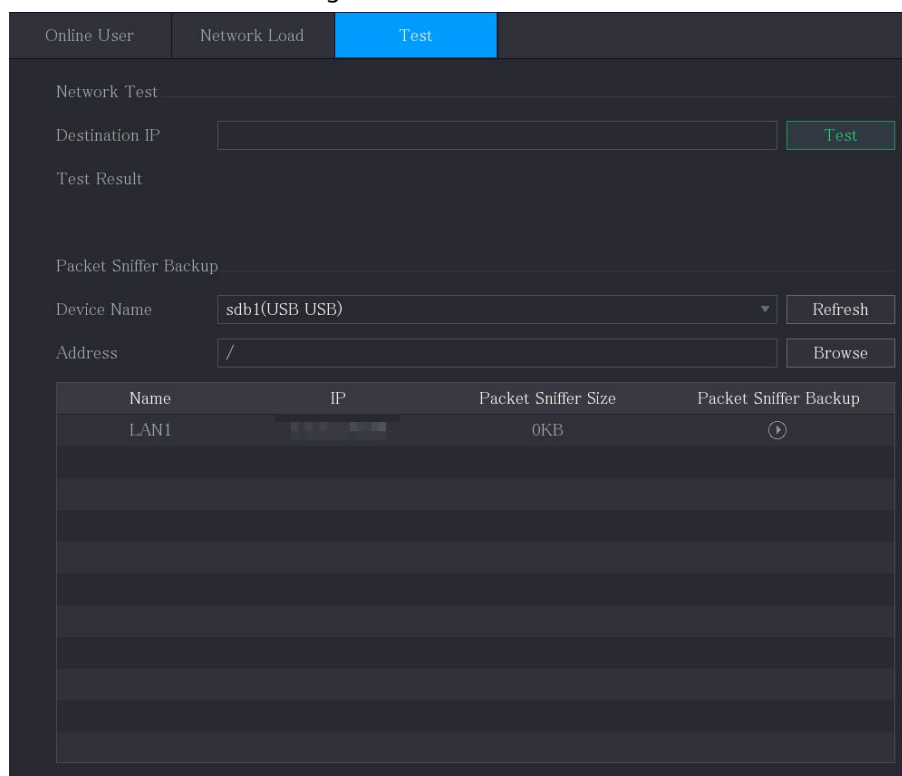
Packet capture includes operations such as capturing, resending, and modifying data sent and received during network transmission. When a network anomaly occurs, you can perform

packet capture and backup to USB storage device. The data can be sent to technical support for network environment analysis.

Procedure

Step 1: Select**Main menu**>**MAINTENANCE**>**Network Detection**>**Head**(Main Menu > MAINTENANCE > Network Detection > Test)

Figure 5-252 Test

Step 2: Connect a USB storage device to the device. Step 3: Click on **Update**(Refresh).

The device starts detecting the USB storage device and displays its name in the field **Device Name**(Device Name).

Step 4: Select the path of the data to be acquired and backed up.

      1) In the Packet Sniffer Backup area, click Browse.

Figure 5-253 Navigation
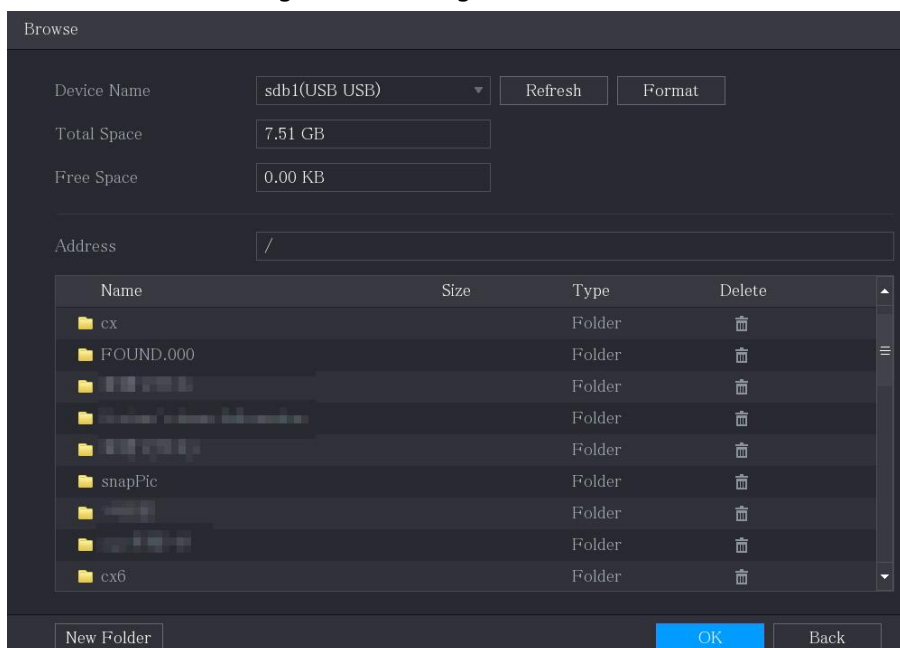
2) Select the path.

📖

● If Yes they connect more devices Of archiving USB to the device, And possible
to carry out there selection from list **Name device** (Device Name).
● Do click on Update (Refresh) For to view the space total, the space free And
the list of the file In the device Of archiving USB selected.
● If the space Not And sufficient, Do click on 🗑 For eliminate the file Not necessary.
● Do click on **New folder** (New (folder) For create a new folder In the device
Of archiving USB.

3) Click on **OK** to save your route selection settings.

Step 5: Click on [icon] to start packet capture and perform backup.

📖

● And possible acquire Alone The package data Of a LAN at the time.
● After the start of the acquisition, And possible go out from the page **Head** (Test) For carry out
other operations, which access web And monitoring.

Step 6: Click on [icon] to stop the acquisition.

The backup data is saved in the selected path with the name type "LAN time-
name.pcap". You can open it using Wireshark software.

Figure 5-254 Data backup
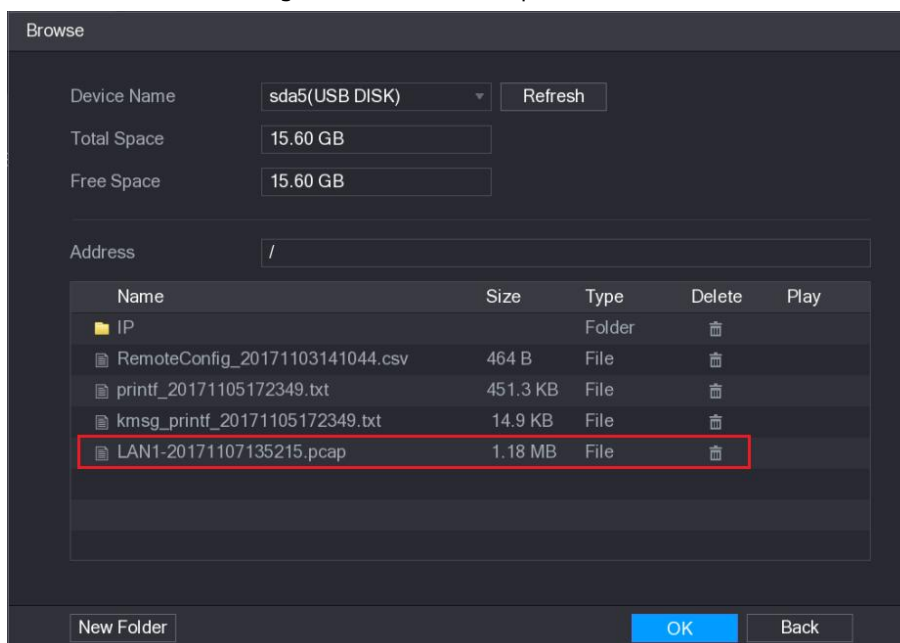
5.17 Configuring account settings

You can add, edit, and remove ONVIF user and user accounts and groups, as well as set security questions for the administrator account.

- For The name user And possible use until to 31 characters, While The name group supports until to 15 characters. The name user you can or to be compound from letters, numbers, "_", "@", ".".
- A possible define 64 users And 20 groups to the maximum. The groups predefined Of name "User" And "Administrator" Not they can to be removed. A possible set up others groups And configure it the permissions. However, the account administrator Not you can or to be set in way random.
- The account they can to be managed For utilities singles or groups Of users And they names Not they can to be repeated. Everything is user must belong to a group And each user belongs to a Alone group.

5.17.1 User Account Setup

5.17.1.1 Adding a user account

Procedure

Step 1: Select **Main menu**>**ACCOUNT**>**User**(Main Menu > ACCOUNT > User).

Figure 5-255 User
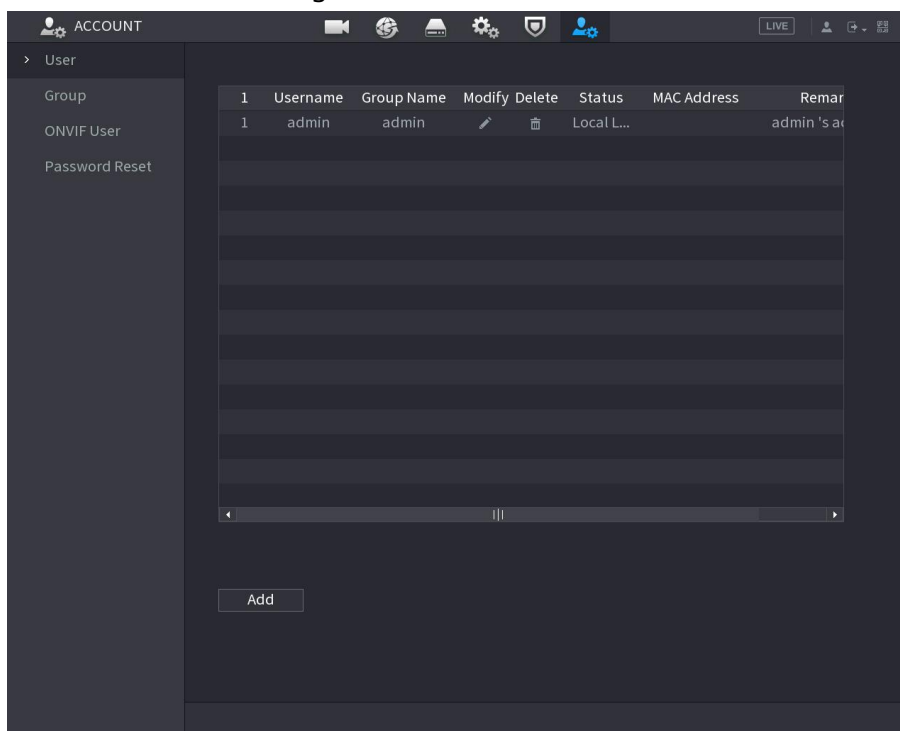
Step 2: Click on**Add**(Add).

Figure 5-256 Adding a user

Step 3: Configure the parameter settings to add a user.

Table 5-75 Description of parameters for adding a user

Parameter	Description
Username	Enter your account username and password.
Password	
Confirm password	Please enter your password again.
Comments	Enter a description of the account.
User MAC address	Enter the user MAC address.

Parameter	Description
Group	Select a group for the user. User rights must be included in group permission.
Period	Click on**Settings**(Settings) to configure the parameters. Set a time period during which the new account can access the device. The new account will not be able to access the device beyond the set time period.
Password expiration	Set the password validity period.
Permissions	In the area**Permissions**(Permission), select the checkboxes in the tabs**System**(System),**Reproduction**(Playback) and **Monitor**. To ensure better account management, it is recommended to give common users lower level permissions than advanced users.

Step 4: Click on**OK**to complete the setup.

Related Operations

Set the authorization period.

1. Click on**Settings**(Setting) next to the entry**Period**(Period).

Figure 5-257 Settings
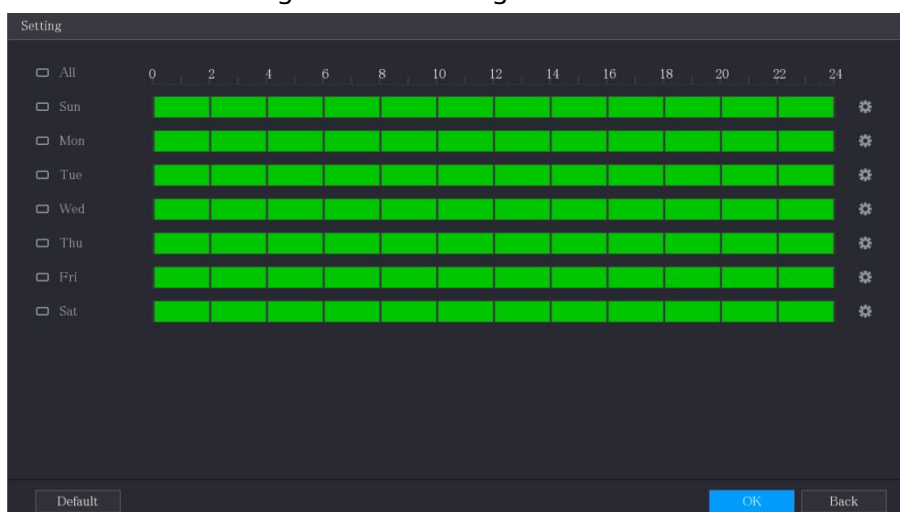
2. Set the authorization period. By default, logging is always active.

● Defining the time slot for dragging.
  - Defining a specific day of the week: On the timeline, select the period of activity by clicking on the blocks.
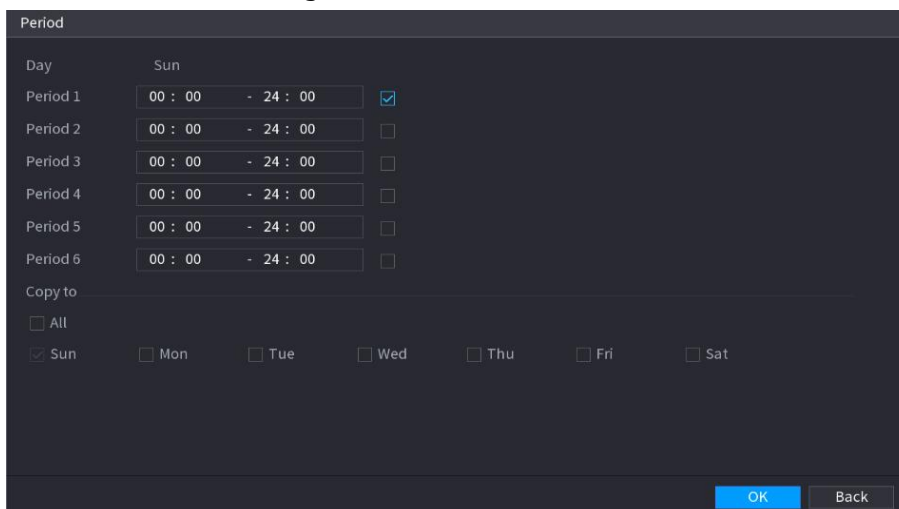
- Defining multiple days of the week: By clicking on ▢ before each day, the symbol changes to . On the timeline of a selected day, click the blocks to select the periods of activity; every day with the symbol 🔗 they will have the same settings.
- Definition of all days of the week: By clicking on**All**(All), all symbols ▢ change in . On the one-day timeline, click on the blocks to select the periods of activity; all days will have the same settings.

● Defining the time slot for modification.

a. Click . ⚙

Figure 5-258 Period

b. Enter the time range for the period, then select the checkbox to enable the settings.

- There are six periods to set each day.
- Under**Copy**(Copy), select**All**(All) to apply the settings to all days of the week or select specific days.

c. Click on**OK**to save the settings.

3. Click on**OK**.

5.17.1.2 Editing a user account

Procedure

Step 1: Select**Main menu**>**ACCOUNT**>**User**(Main Menu > ACCOUNT > User).

Figure 5-259 User
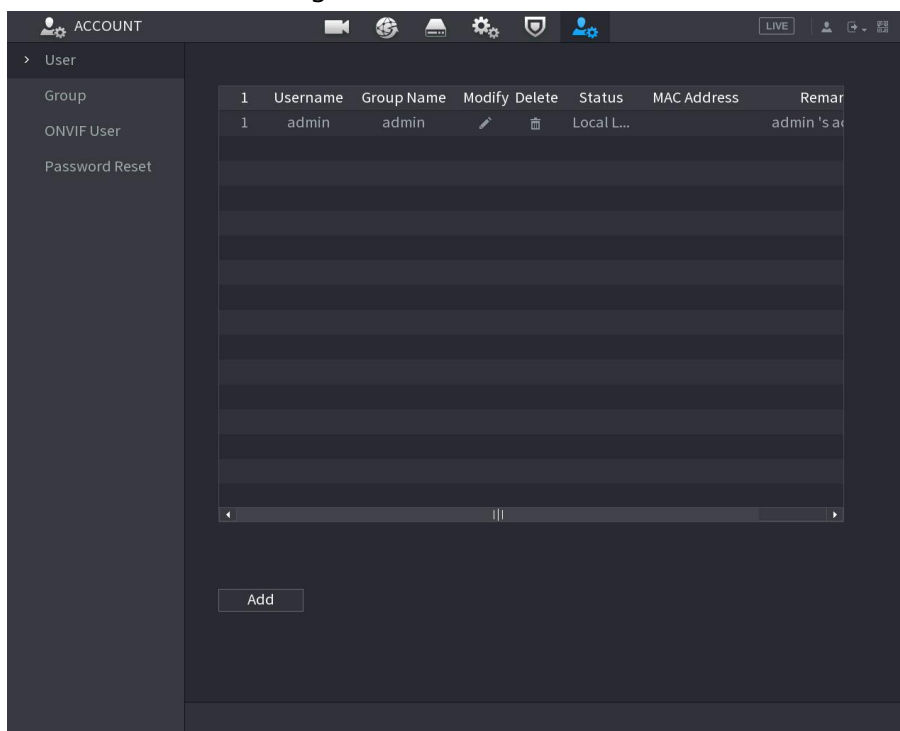
Step 2: Click on   ✏️   on the user account to be modified.

Figure 5-260 Edit

Step 3: Change settings related to password, user name, user group, user MAC address, notes, password validity period and permissions.

📖

There new password must to be a string long from 8 to 32 characters, belonging to at least two from the following categories: numbers, letters And characters specials (to exception Of "'", "''", ";", ":" And).

For administrator account, you can enable/disable unlock pattern and change password hint.

● To use the unlock pattern, enable**Unlock Scheme**(Unlock Pattern), click , draw a pattern on the page**Unlock scheme**(Unlock Pattern), then click on**Save**(Save) to save the setting.
● Enter the password hint text in the field**Password hint** (Password Hint).

Step 4: Click on**OK**to complete the setup.

5.17.1.3 Deleting a user account

Procedure

Step 1: Select**Main menu**>**ACCOUNT**>**User**(Main Menu > ACCOUNT > User).

Figure 5-261 User
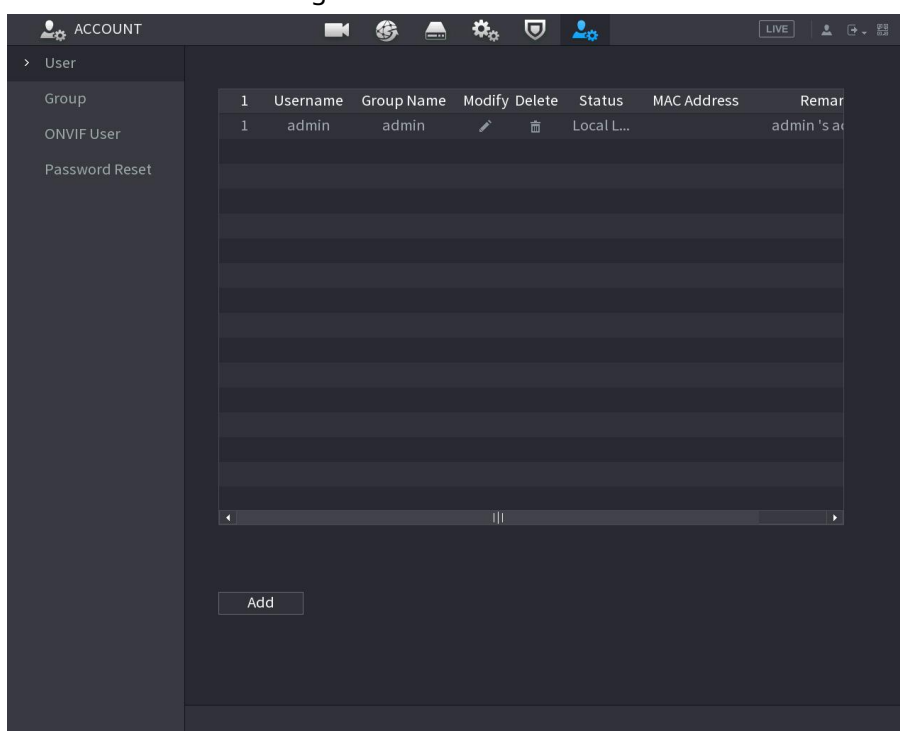
Step 2: Click on   on the user account to delete.
Step 3: Click on**OK**to delete a user account.

5.17.2 Account Group Configuration

5.17.2.1 Adding a group

Procedure
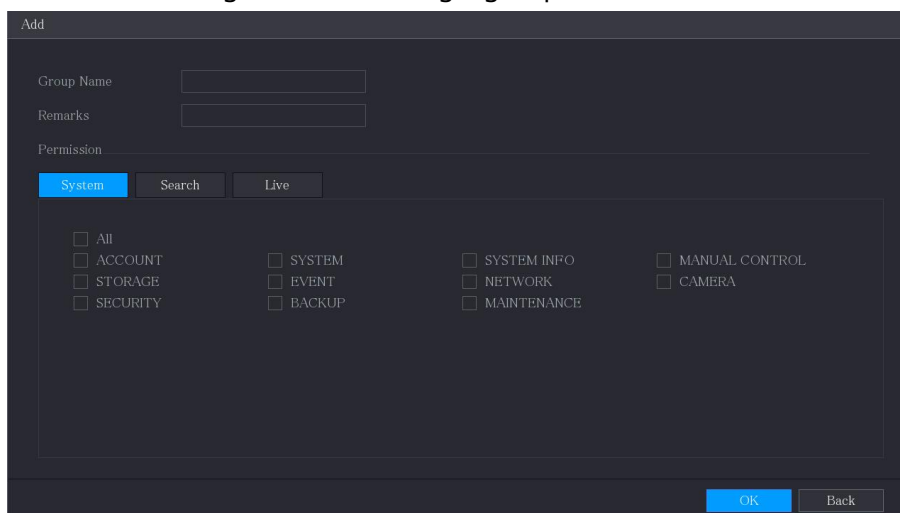
Step 1: Select**Main menu**>**ACCOUNT**>**Group**(Main Menu > ACCOUNT > Group).

Figure 5-262 Group
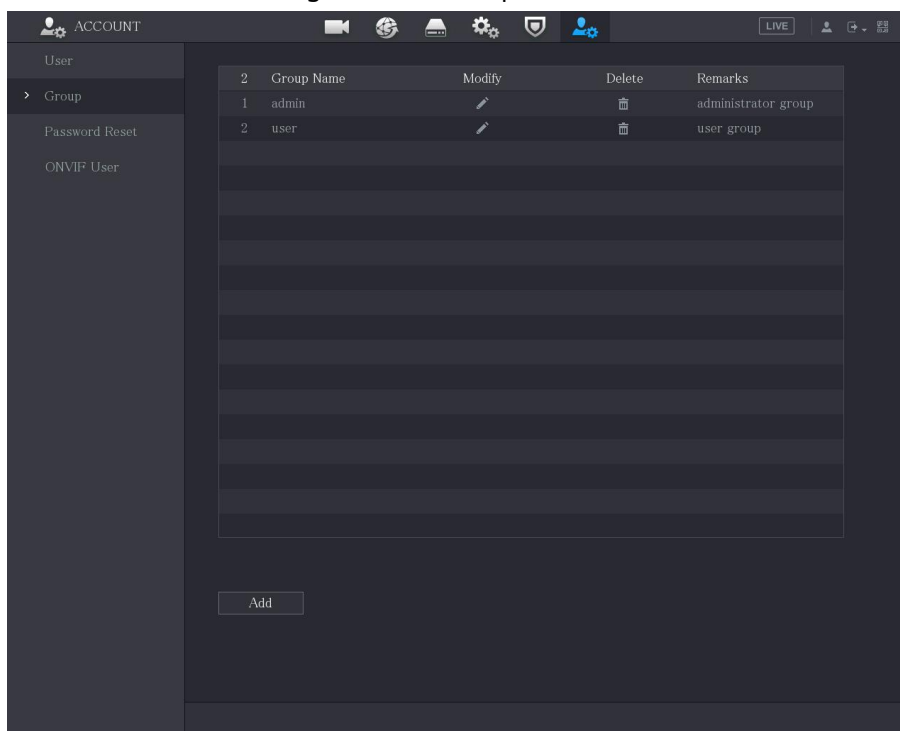
Step 2: Click on**Add**(Add).

Figure 5-263 Adding a group

Step 3: Configure the parameter settings to add a group.

Table 5-76 Parameters for adding a group

Parameter	Description
Group name	Enter a name for the group.
Comments	Optionally enter a note. Enter a description of the account.
Permissions	In the area**Permissions**(Permission), select the checkboxes in the tabs**System**(System),**Reproduction** (Playback) and**Monitor**.

Step 4: Click on**OK**to complete the setup.

5.17.2.2 Editing a group

Procedure

Step 1: Select**Main menu**>**ACCOUNT**>**Group**(Main Menu > ACCOUNT > Group).

Figure 5-264 Group
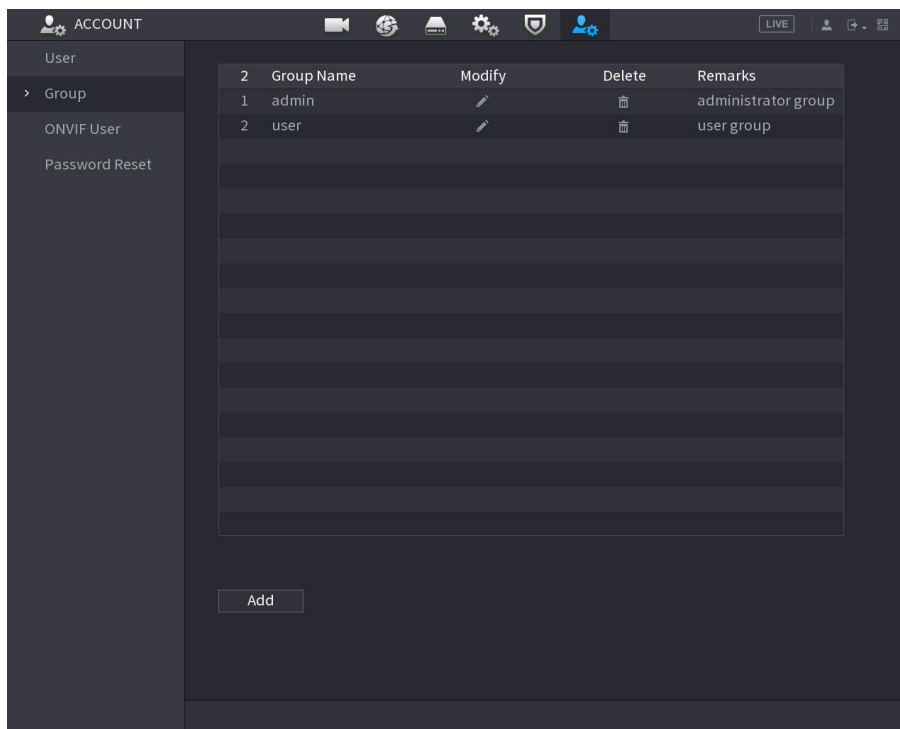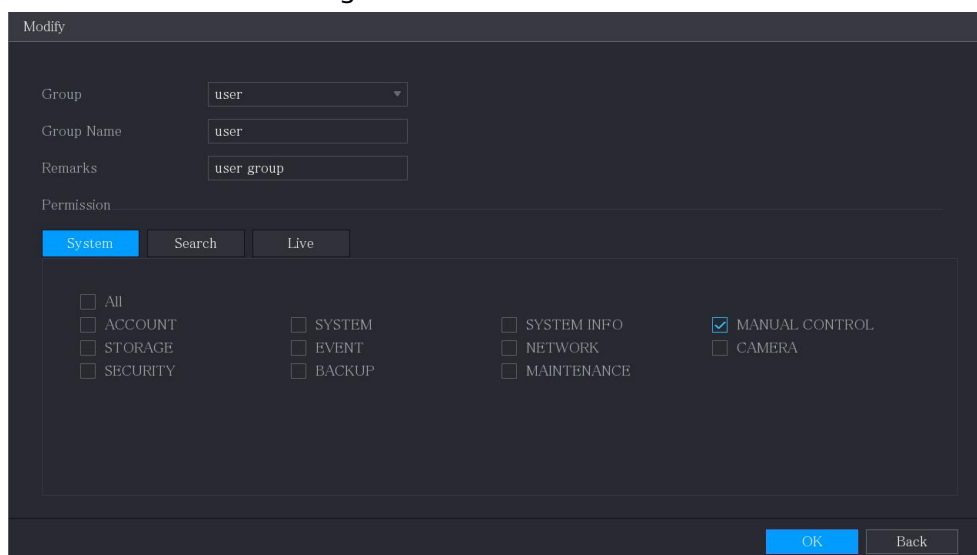
Step 2: Click on [icon] on the account group to modify.

Figure 5-265 Edit

Step 3: Change settings for group name, notes, and permissions. Step 4:

Click on**OK**to complete the setup.

5.17.2.3 Deleting a group

Procedure

Step 1: Select**Main menu**>**ACCOUNT**>**Group**(Main Menu > ACCOUNT > Group).

Figure 5-266 Group
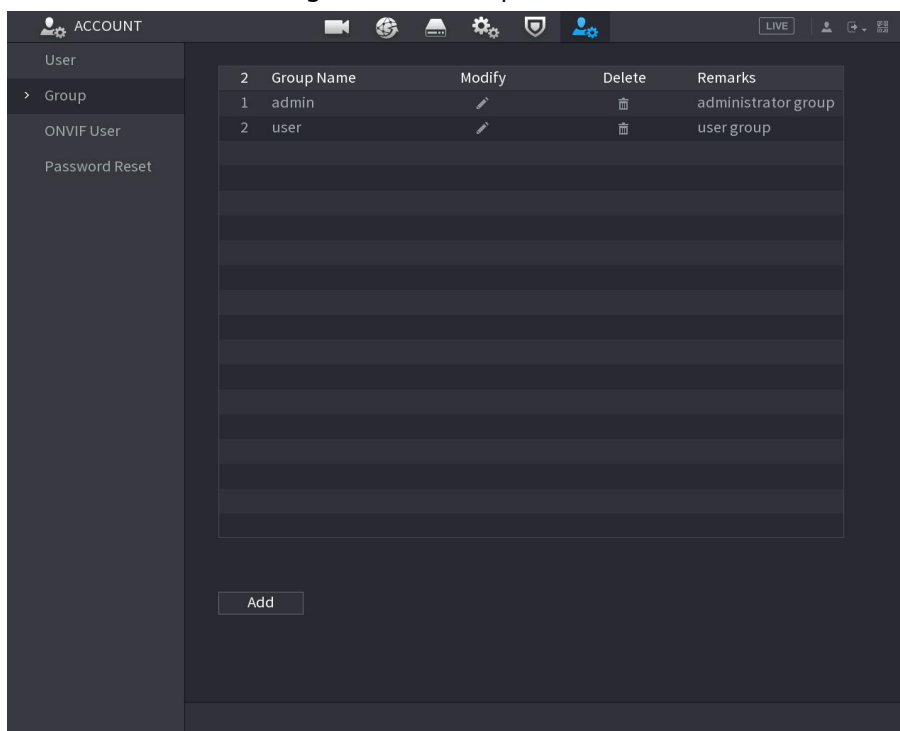
Step 2: Click on 🗑 on the user account to delete.

Step 3: Click on**OK**to delete a group.

5.17.3 ONVIF User Configuration

Preliminary information

The device produced by other company can connect to the device via ONVIF protocol with authorized ONVIF account.

📖

The account administrator he comes created ForTheusers ONVIF right away After the initialization of the device.

Procedure
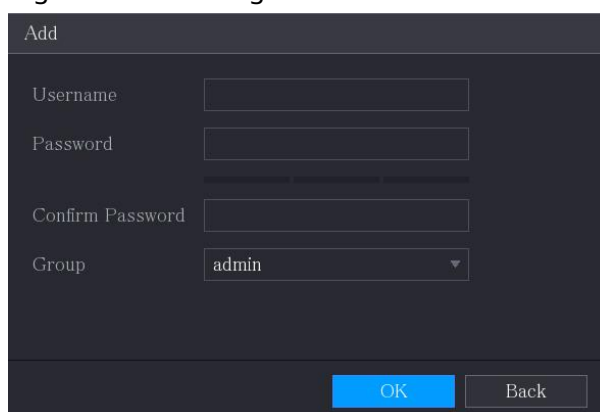
Step 1: Select**Main menu**>**ACCOUNT**>**ONVIF User**(Main Menu > ACCOUNT > ONVIF User).

Figure 5-267 ONVIF User
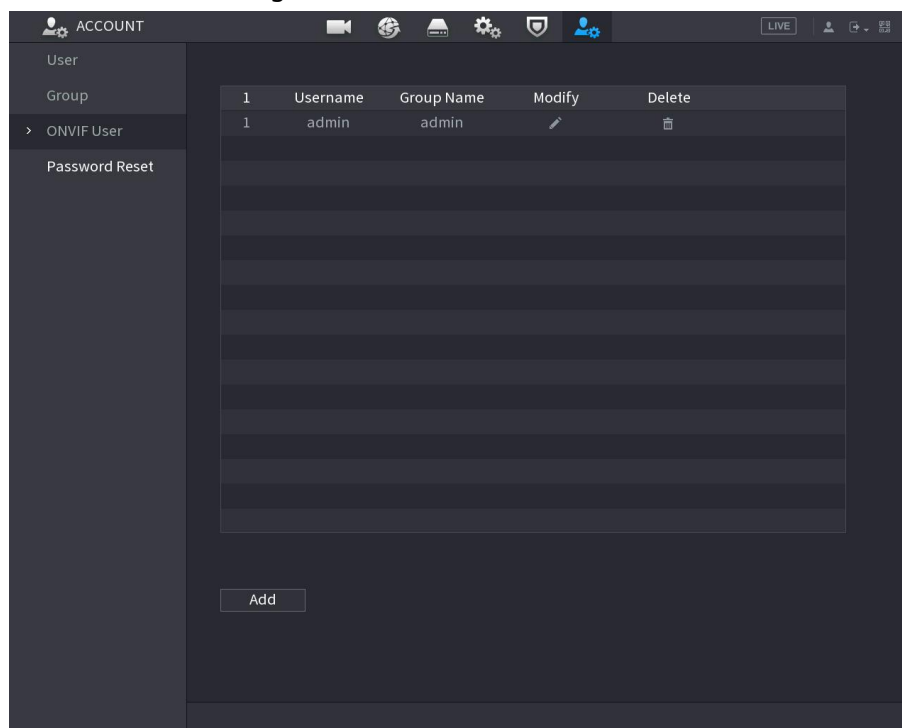
Step 2: Click on**Add**(Add).

Figure 5-268 Adding ONVIF user

Step 3: Enter your username, password and select the group to which you want to add the account. Step 4: Click on**OK**to save the settings.

Do click on ✏ For modify the account; Do click on 🗑 For eliminate the account.
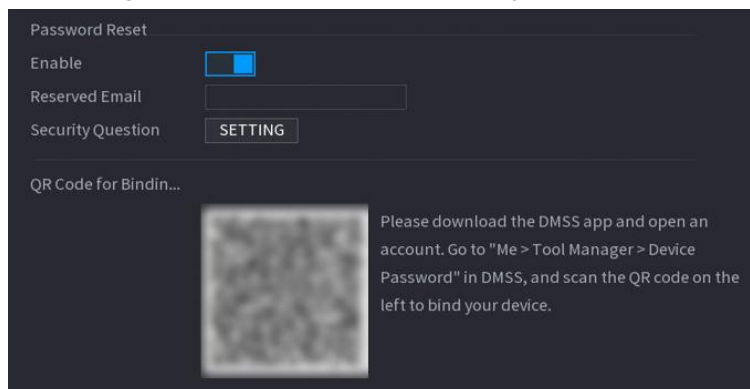
5.17.4 Password recovery

Enable the password reset function and set up the linked email address and security questions to use to reset your password. You can reset your password by scanning the QR code with a mobile phone

Procedure

Step 1: Select**Main menu**>**ACCOUNT**>**Password recovery**(Main Menu > ACCOUNT > Password Reset).

Figure 5-269 – Password Recovery

Step 2: Click on next to**Ability**(Enable) to enable the restore function of the password.

Step 3: Enter an email address to receive the security code used to reset your password.

Step 4: Set up security questions and answers. Step 5: Click on**OK**.

5.18 Audio Management

The audio management function allows you to manage audio files and set up playback schedule. When an alarm event occurs, you can trigger the audio file.

5.18.1 Configuring audio files

You can add audio files, listen to them, rename and delete them as well as configure their volume.

Procedure

Step 1: Select**Main menu**>**AUDIO**>**File Management**(Main Menu > AUDIO > File Management).

Figure 5-270 File Management
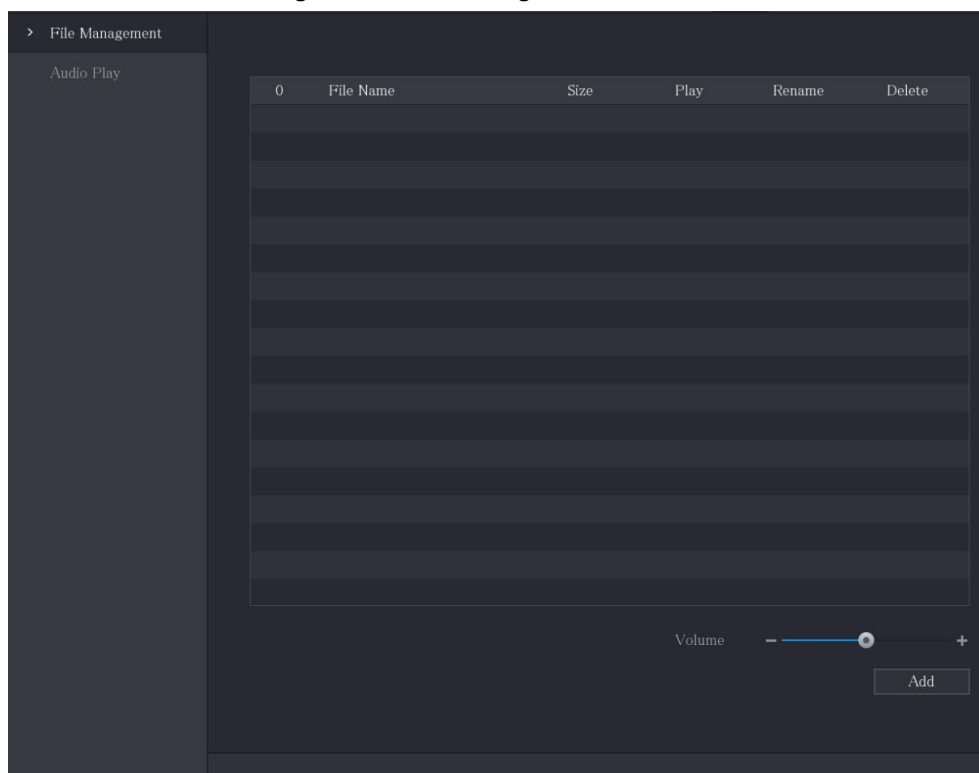
Step 2: Click on**Add**(Add).

Figure 5-271 Adding a file
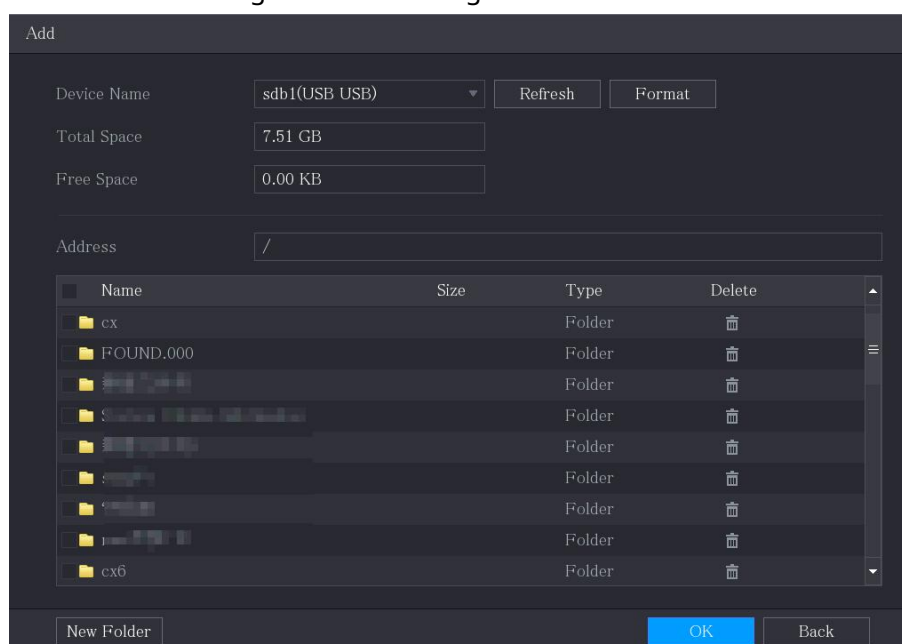
Step 3: Select the audio file types to import.

Step 4: Click on**OK**to start importing audio files from the USB storage device.

Step 5: Once the import is complete, the audio files will be displayed on the page.**File Management** (File Management).

Figure 5-272 Importing a file

	File Name	Size	Play	Rename	Delete
1	softmusic.mp3	2.14 MB	⊙	✎	🗑

The imported audio files are automatically saved to your hard drive, so you don't need to connect a USB storage device to retrieve the file next time.

● To play the audio file, click ⊙.
● To rename the audio file, click ✎.
● To delete the audio file, click 🗑.
● To decrease or increase the playback volume, move the slider left or right.

5.18.2 Configuring playback schedule for audio files

You can configure settings to play audio files during the defined period of time.

Procedure

<u>Step 1:</u> Select**Main menu**>**AUDIO**>**Audio playback**(Main Menu > AUDIO > Audio Play).

Figure 5-273 Audio playback

Period	File Name	Interval	Loop	Output...
00 : 00 − 24 : 00	None	60 min.	0	Mic
00 : 00 − 24 : 00	None	60 min.	0	Mic
00 : 00 − 24 : 00	None	60 min.	0	Mic
00 : 00 − 24 : 00	None	60 min.	0	Mic
00 : 00 − 24 : 00	None	60 min.	0	Mic
00 : 00 − 24 : 00	None	60 min.	0	Mic

<u>Step 2:</u> Configure the schedule parameter settings.

Table 5-77 Scheduling parameters

Parameter	Description
Period	Enter the time in the field**Period**(Period). Select the checkbox to enable the settings. You can configure up to six periods.
File name	In the list**File name**(File Name), select the audio file to play for the configured period.

Parameter	Description
Interval	In the box**Interval**(Interval), enter the frequency in minutes at which to repeat playback.
Repeat	Configure how many times to repeat playback in the defined period.
Exit door	It includes two options: MIC and Audio. The default is MIC. The MIC function shares the same port with the intercom function and the intercom function has priority.

- The of end from the reproduction audio determined from the size of the file audio And from the interval configured.
- Priority to Of reproduction: **Event alarm** > **Intercom** > **File**audio > **I listen Of**trial (Alarm event > Talkback> Audio file> Trial listening.

Step 3: Click on**Apply**(Apply) to complete the setup.

5.19 Storage Management
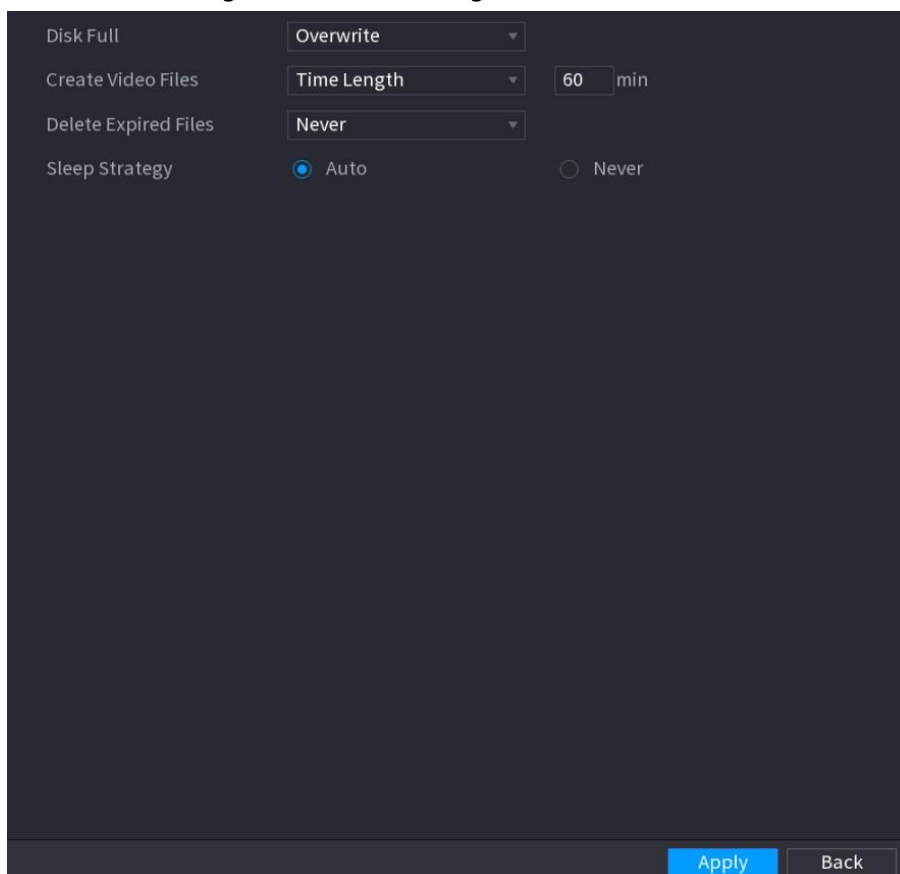
Storage management function manages stored resources, such as recorded video files and storage space. The function tries to simplify operation and optimize storage space.

5.19.1 Configuring basic settings

Procedure

Step 1: Select**Main menu**>**ARCHIVING**>**Base**(Main Menu > STORAGE > Basic).

Figure 5-274 Basic configurations

Step 2: Configure the basic settings parameter settings.

Table 5-78 Basic settings parameters

Parameter	Description
Disk full	Configure settings in case all read/write disks are full. ● Select**Stop**(Stop) to stop recording. ● Select**Overwrite**(Overwrite) to overwrite the recorded video files, always starting from the oldest ones.
Create video files	Allows you to configure the duration and file length of each recorded video.
Delete expired files	Configure whether to delete older files and, if so, after how many days.
Suspension Strategy	Configure the hard disk sleep strategy by selecting**Automatic**(Car) or**Never**(Never).

Step 3: Click on**Apply**(Apply) to complete the setup.

5.19.2 Configuring Recording and Snapshot Schedule

The system starts recording and takes snapshots according to the configured schedule. For details, see "5.1.4.9 Configuring Recorded Video Storage Schedule" and "5.1.4.10 Configuring Snapshot Storage Schedule".

5.19.3 Configuring Disk Management

Allows you to view hard disk information, format the hard disk, and configure the hard disk type using the hard disk management function.

Procedure

Step 1: Select**Main menu**>**ARCHIVING**>**Hard Disk Management**(Main Menu > STORAGE > HDD Disk Manager).

In the table, you can view the information of the hard disk in use, such as the device name, hard disk type, status, total and free space, and the serial number of the hard disk port.

Figure 5-275 Disk Management
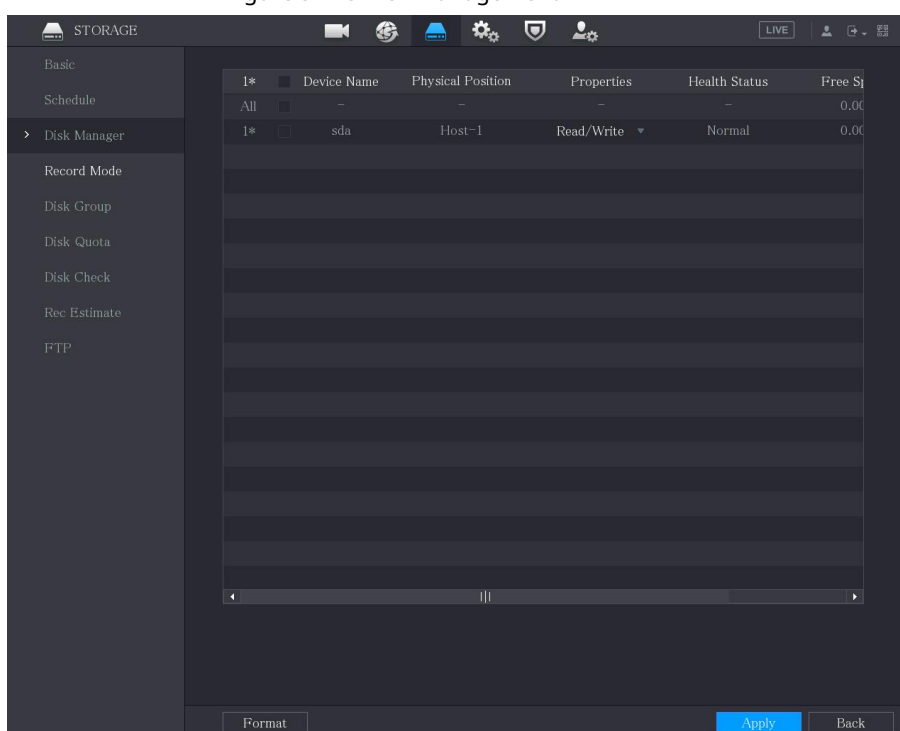
Step 2: Configure hard disk management settings.

● Setting the hard disk type: In the list**Property**(Properties), select **Reading/ Writing**(Read/Write),**Read only**(Read Only), then click on**Apply** (Apply) to save the settings.

● Format hard disk: Select the hard disk to format, click **Format**(Format) and enable**Clear Disk Database**hard drive (Clear HDD database) in the pop-up message, then click**OK**and enter the administrator password

in the dialog box. Click again**OK**and then follow the on-screen instructions to complete the formatting.

● Be careful as formatting your hard drive will erase all data on the disk.

Figure 5-276 Note
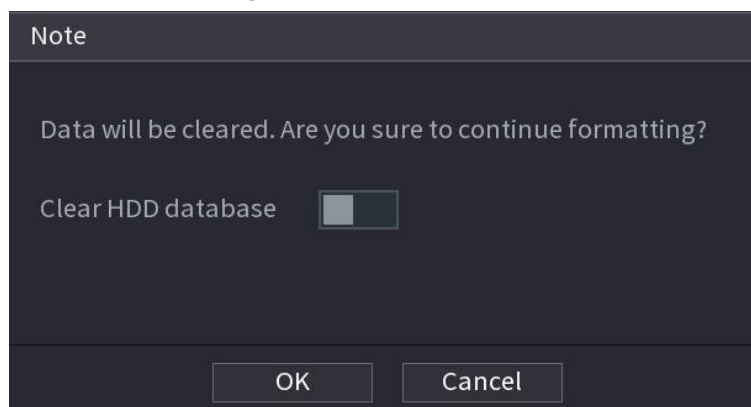
5.19.4 Recording Setup

The recording types are automatic and manual. You can configure the recording type for the main and secondary stream. See section "5.8 Configuring the recording settings".

5.19.5 Configuring advanced settings

Create a group for your hard drive and save the main stream, sub stream and snapshot of the designated channels in the created group.

Preliminary information

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● If there page indicates That there mode to of the disc rigid current A group share, Do click on **Pass by** at the **mode to** **Group discs** (Switch yo Disk Group (Mode), Therefore configure The group Of discs rigid.

● A possible enable there mode to Group Of discs or Group share. The system requires Of restart The device When Yes change mode to

Procedure

Step 1: Select**Main menu**>**ARCHIVING**>**Group of disks**>**Group of disks** (Main Menu > STORAGE > Disk Group > Disk Group).
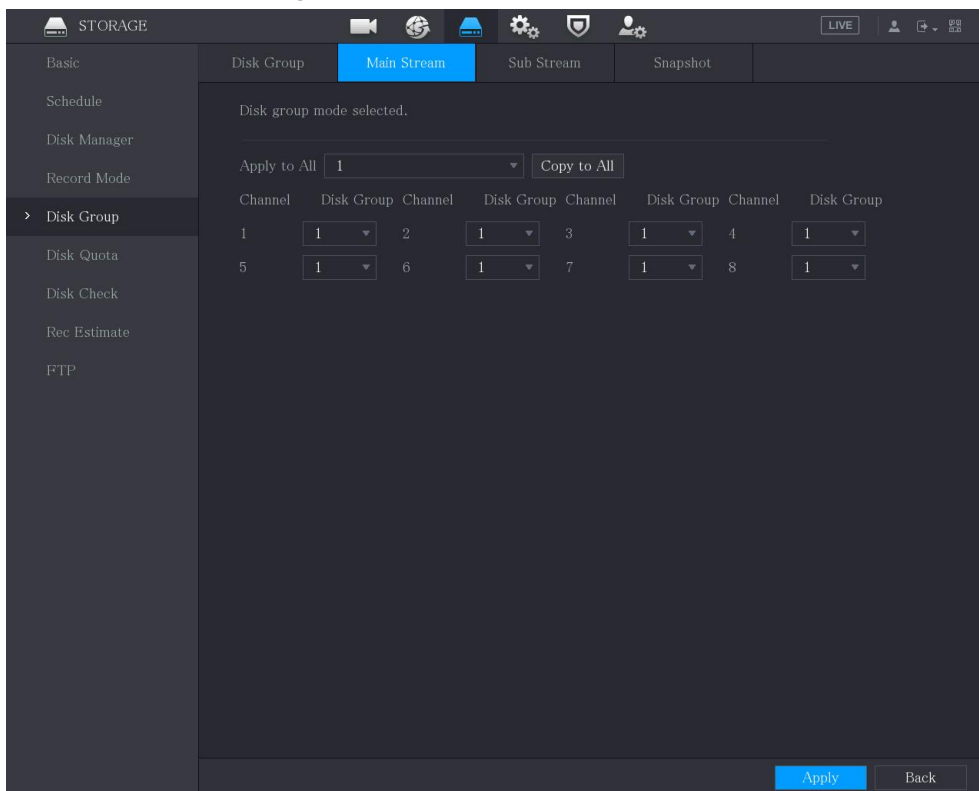
Figure 5-277 Disk Group
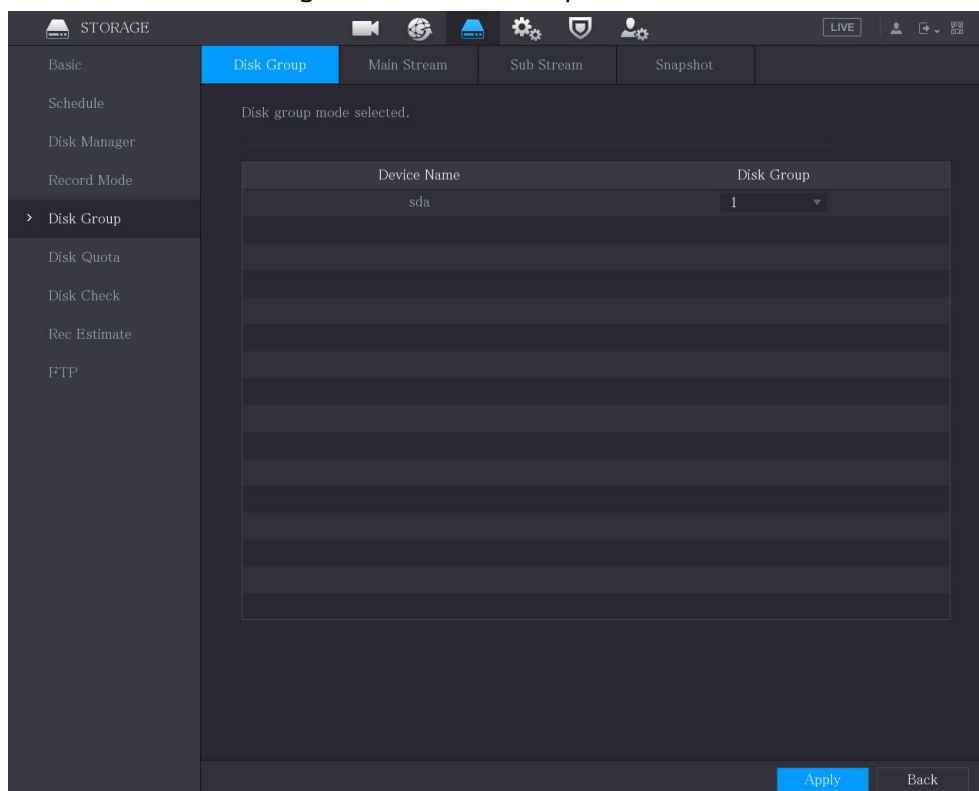
Step 2: Select the group for each hard disk, then click**Apply**(Apply) to complete the settings.

Step 3: When you have finished configuring the disk group, click the tabs respectively**Main flow**(Main Stream),**Secondary flow**(Sub Stream) and**Snapshot**(Snapshot), to configure saving information for main stream, substream and snapshots of different channels on different hard disk groups.

Figure 5-278 Main flow
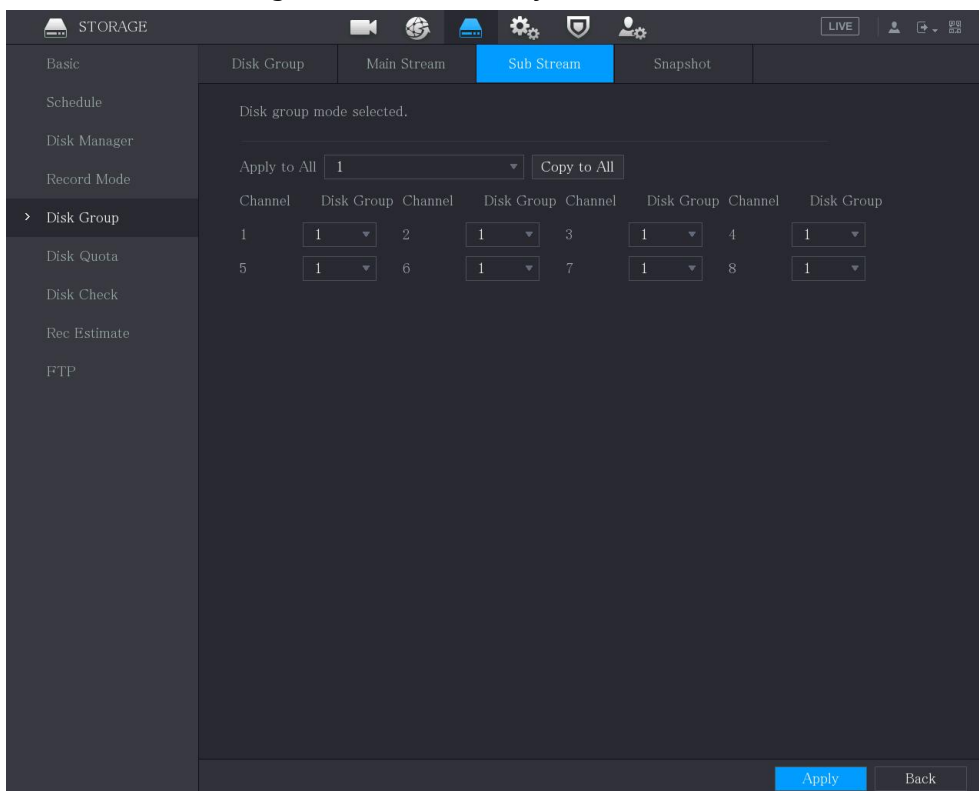
Figure 5-279@Secondary flow

Figure 5-280 Snapshot
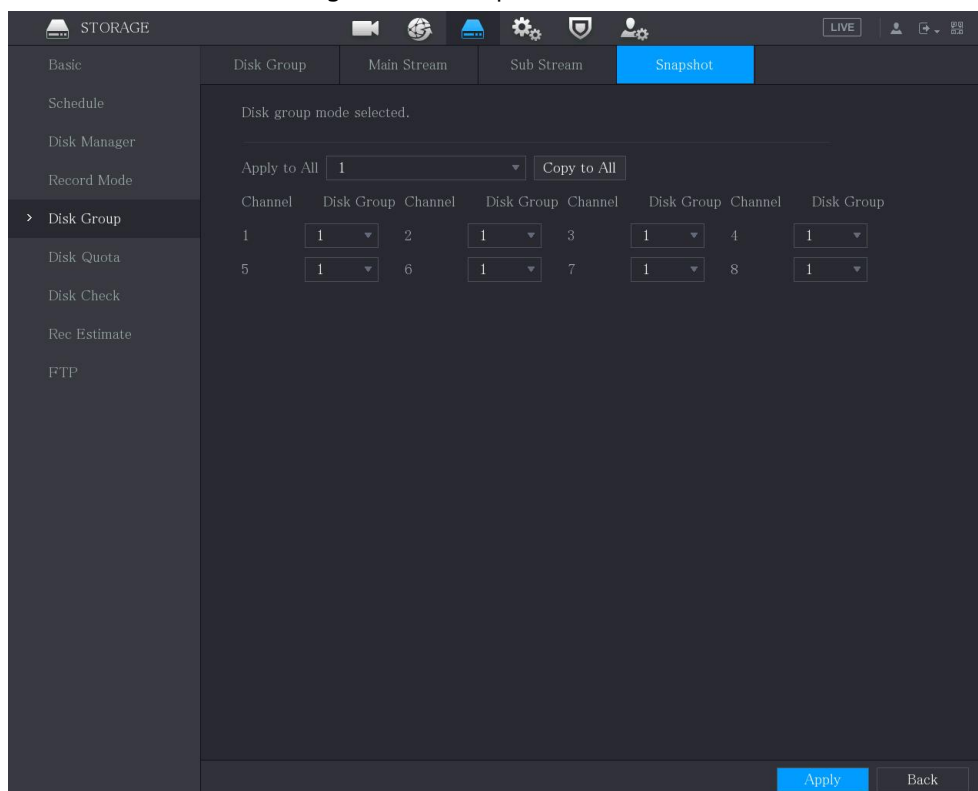
Step 4: Click on**Apply**(Apply) to complete the setup.

5.19.6 Configuring disk quota

By configuring the quota, you assign fixed storage capacity to each channel and distribute each channel's storage space based on needs.

Preliminary information

⚠️

● If he comes displayed on the page **Mode to Group Of discs selected** (Disk group fashion selected), Do click on **Pass by to Mode to share** (Switch you Share (Mode) And before configure there share.

● A No possible enable there mode to Group Of discs or Group share. The system requires Of restart The device When Yes change mode to

Procedure

Step 1: Select**Main menu**>**ARCHIVING**>**Disk Quota**(Main Menu > STORAGE > Disk Quota).

Step 2: Configure disk quota.
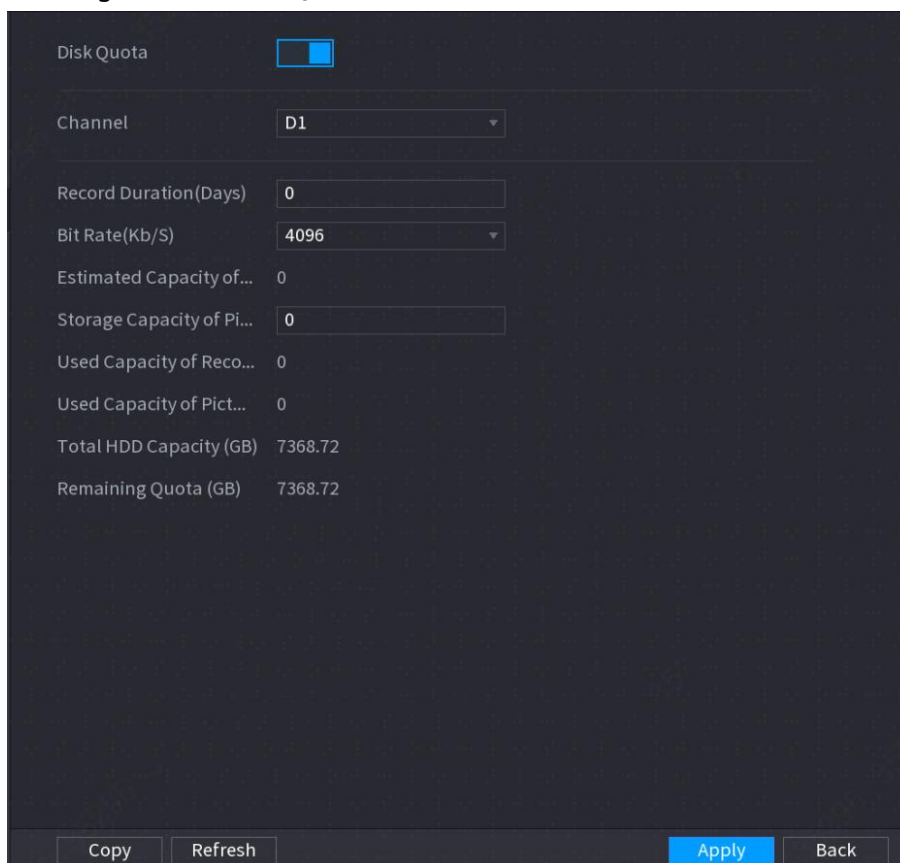
● For devices with only one hard drive, click ![toggle], select a channel and then configure the parameters such as recording duration, bit rate, image storage capacity.

Figure 5-281 Disk Quota (device with one hard disk)

● For devices that support at least 2 hard drives, you can change the quota mode between version 1 and version 2.
  - **V1:**Select a channel and configure the disk quota for each disk. **V2:**
  - Select a channel and then configure parameters such as recording duration, bit rate, image storage capacity.

Figure 5-282 Version 1

Figure 5-283 Version 2

Step 3: Click on**Apply**(Apply).

5.19.7 Configuring hard disk detection settings

📖

This function A~~nd~~vailable Alone on some models.

The hard disk detection function detects the current state of the disk and checks its performance so that any defective disks can be replaced.

5.19.7.1 Checking the hard disk

Preliminary information

You can detect the hard disk through key area detection and global detection.

● Key Area Detection: Allows you to perform a check of the files stored on the hard disk. Detected bad sectors can be repaired by formatting. If there are no files on the hard disk, the system cannot detect bad sectors.

● Global Detection: Allows Windows to perform a check of your entire hard drive, which takes longer and potentially affects the disk where the video is being recorded.

Procedure

Step 1: Select**Main menu**>**ARCHIVING**>**Group of disks**>**Manual verification** (Main Menu > STORAGE > Disk Group > Manual Check).

Figure 5-284 Manual verification
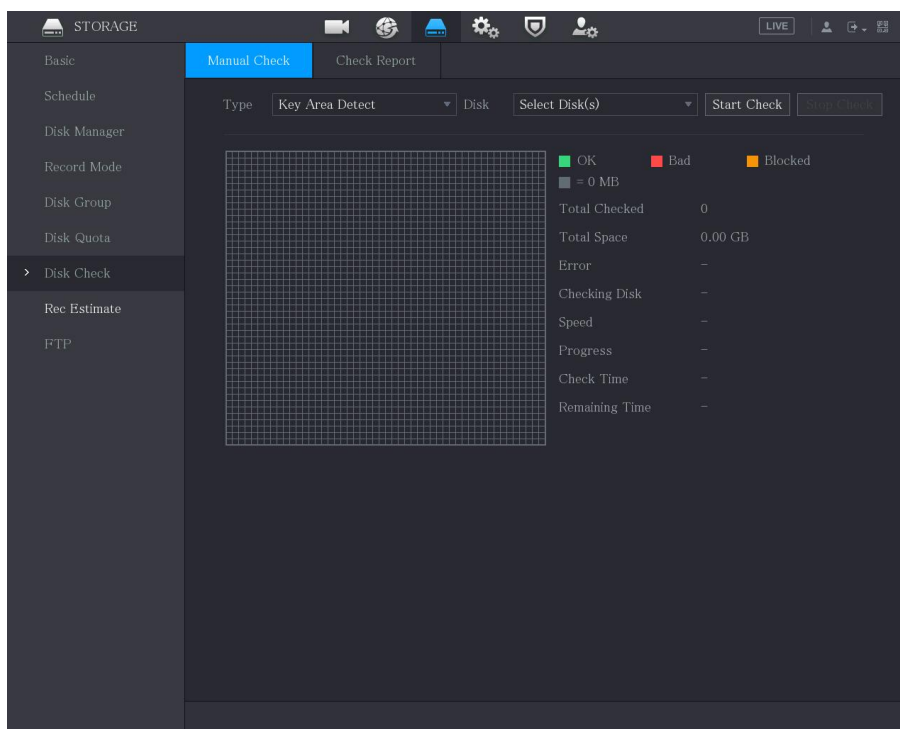
Step 2: In the list**Type**(Type), select**Key area detection**(Key Area Detect) or **Global Verification**(Global Check); in the list**Disc**(Disk), select the hard disk where you want to perform the check.

Step 3: Click on**Start verification**(Start Check).

The system starts checking the hard drive.

During there verify, Do click on**Break** (Pauses) For put in break there verify, Do click on **Continues** (Continued) For take up again there verify Add click on**Stop** verify (Stop (Detect) For stop there verify.

Figure 5-285 Starting the verification
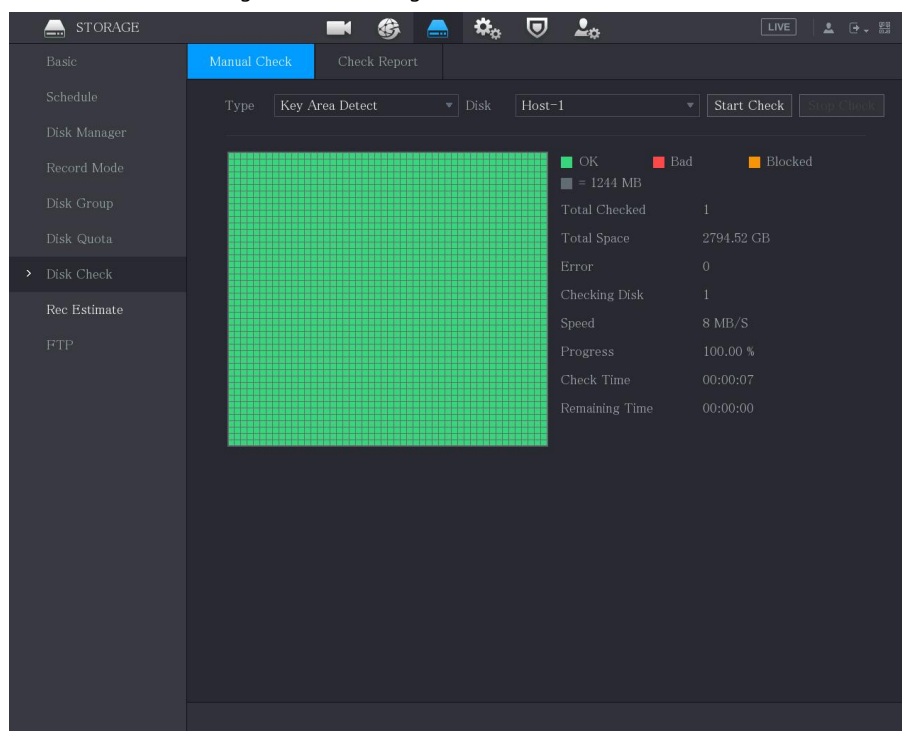
5.19.7.2 Viewing Test Results

Once the test is complete, you can view the reports to check for any issues and replace any faulty hard drives to avoid data loss.

Procedure

Step 1: Select**Main menu**>**ARCHIVING**>**Check disks**>**Verification Report** (Main Menu > STORAGE > Disk Check > Check Report).

Figure 5-286 Verification report

Step 2: Click on [ ].

You can view the detection results and SMART reports.

Figure 5-287 Results
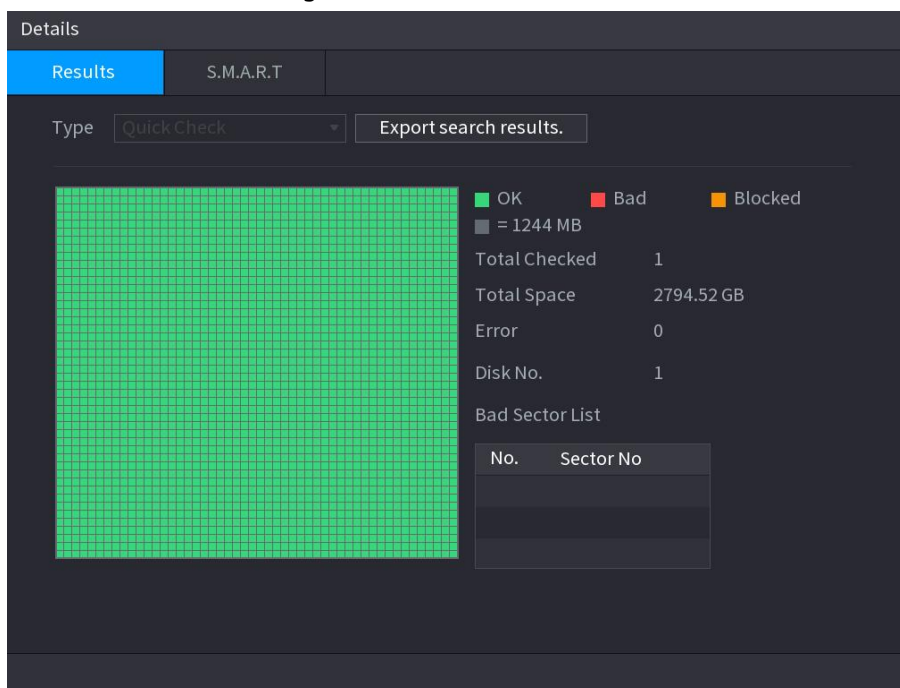
Figure 5-288 SMART
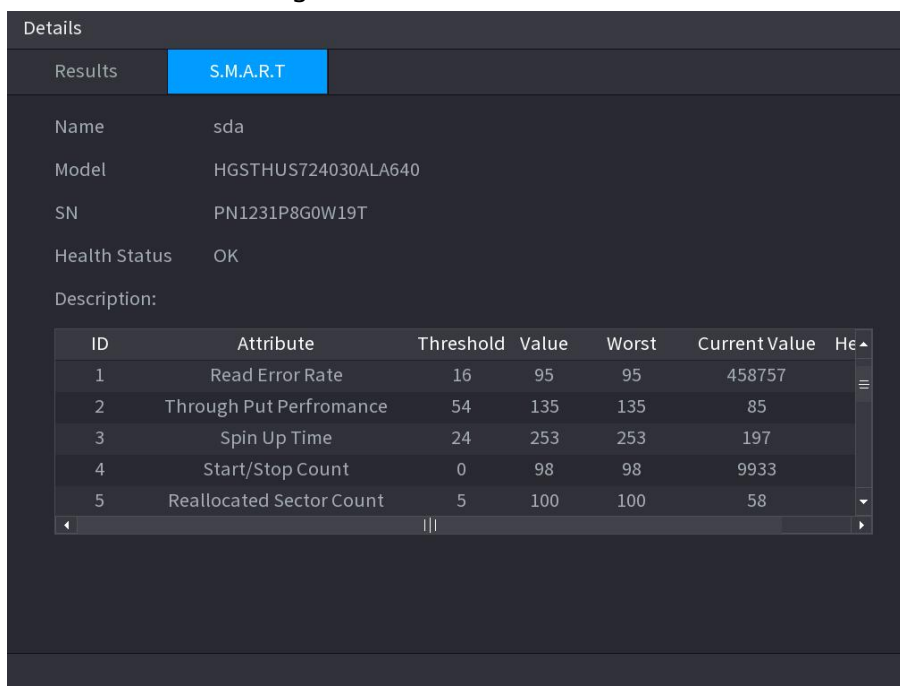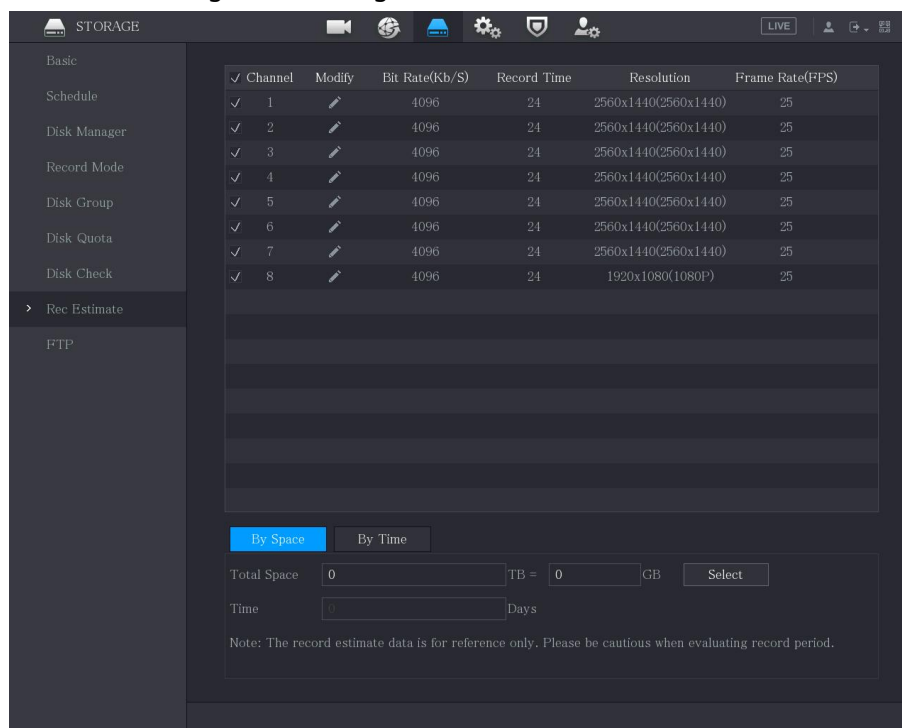
5.19.8 Configuring the registration estimate

The recording estimate function can calculate the recordable video length based on the hard disk capacity and calculate the required capacity based on the recording length.

Procedure

Step 1: Select**Main menu**>**ARCHIVING**>**Estimated registration**(Main Menu > STORAGE > Rec Estimate).

Figure 5-289 Registration estimate

Step 2: Click on ✎.

You can configure the resolution, frame rate, bit rate and recording duration for the selected channel.

Step 3: Click on **OK** to save the settings.

The system will then calculate the amount of time available for storage based on your channel settings and hard drive capacity.

📖
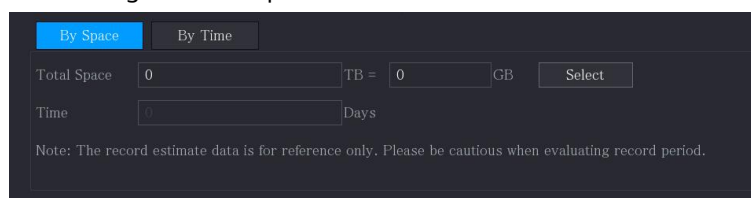
Do click on **Copy on** (Copy to) For copy the settings on others channels.

Related Operations

● Calculate recording time.

1. On the page **Registration estimate** (Rec Estimate), click on the tab **Based on space** (By Space).

Figure 5-290 Space-based calculation
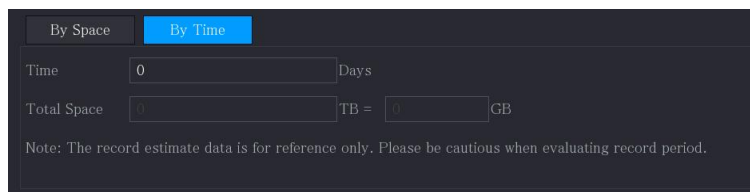
2. Click on **Select** (Select).

3. Select the check box of the hard disk on which you want to perform the calculation.

In the card **Based on the time** (By Time), in the box **Time** (Time), the time is displayed recording duration.
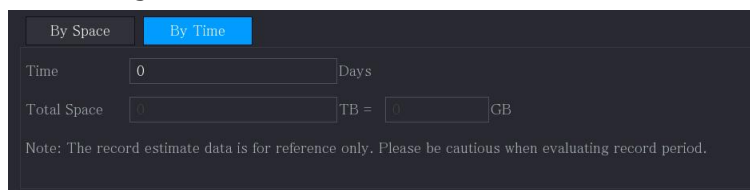
Figure 5-291 Time-based calculation

● Calculate hard drive capacity for storage.
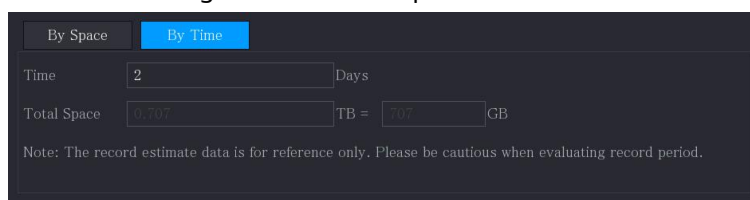
1. On the page**Registration estimate**(Rec Estimate), click on the tab**Based on the time**(By Time).

Figure 5-292 Time-based calculation

2. In the field**Time**(Time), enter the desired recording duration.
In the field**Total space**(Total Space), the capacity of the hard disk is displayed necessary.

Figure 5-293 Total space

5.19.9 Configuring FTP Storage Settings

You can store and view the recorded videos and snapshots on the FTP server.

Prerequisites

Purchase or download an FTP server and install it on your computer.
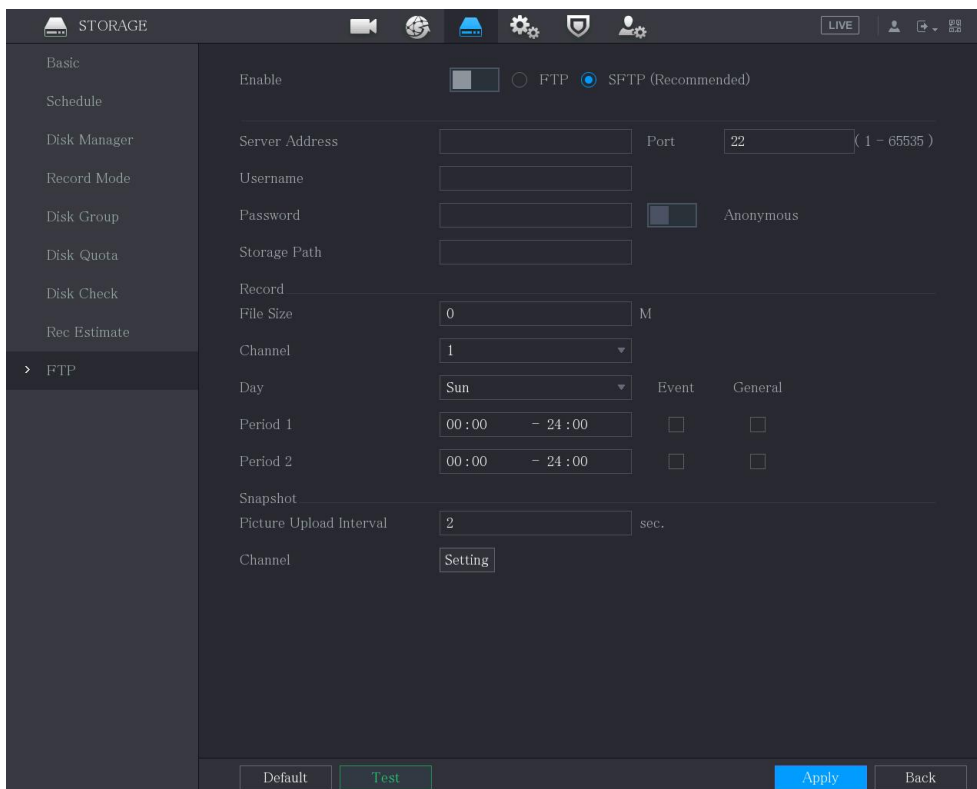
The new user FTP must to be provided Of Permissions Of writing, otherwise Not I will be to possible load on the server video And images register.

Procedure

Step 1: Select**Main menu**>**ARCHIVING**>**FTP**(Main Menu > STORAGE > FTP).

Figure 5-294 FTP

Step 2: Configure FTP settings parameter settings.

Table 5-79 FTP Settings Parameters

Parameter	Description
Ability	Enable the FTP upload function.
FTP type	● FTP: Text transmission. ● SFTP: Encrypted transmission (recommended)
Server Address	IP address of the FTP server.
Brings	● FTP: The default value is 21. ● SFTP: The default value is 22.
Anonymous Username Password	Enter your username and password to log in to the FTP server. Enable the anonymity feature to be able to log in anonymously without entering your username and password.
Path of archiving	Allows you to create folders on the FTP server. ● If the user does not enter the name of the remote directory, the system automatically creates folders based on the IP address and time. ● If the user enters the name of the remote directory, the system first creates a folder with the given name under the root directory of the FTP server, then automatically creates folders based on the IP address and time.
File size	Enter the length of the recorded video to upload. ● By entering a length shorter than the actual length of the recorded video, only a part of it can be uploaded.

Parameter	Description
	● By entering a length greater than the actual length of the recorded video, the entire recorded video can be uploaded. ● By entering a length of 0, the entire recorded video will be loaded.
Interval of loading the images (sec.)	● If this interval is greater than the capture interval, the system loads the most recent snapshot. For example, if the upload interval is 5 seconds and the capture interval is 2 seconds per snapshot, the system loads the most recent snapshot every 5 seconds. ● If this interval is less than the acquisition interval, the system uploads a snapshot for each acquisition interval. For example, if the upload interval is 5 seconds and the acquisition interval is 10 seconds per snapshot, the system uploads snapshots every 10 seconds. ● To configure the snapshot upload interval, select **Main menu**>**CAMERA**>**Coding**> **Snapshot**(Main Menu > CAMERA > Encode > Snapshot).
Channel	Select the channel to which you want to apply the FTP settings.
Day	Select the day of the week and the time period in which the upload of recorded files should take place. You can define two periods for each day of the week.
Period 1, Period 2	
Registration type	Select the recording type (Alarm, Smart, Motion Detection or General) you want to upload. The selected recording type will be uploaded during the configured period.

Step 3: Click on**Head**(Test).

The system displays a pop-up message indicating the success of the operation. If the operation fails, check your connection or network settings.

Step 4: Click on**Apply**(Apply) to complete the setup.

5.20 Security Center

You can set security options to increase the protection of your device and use it much more safely.

5.20.1 Security status

Security scan provides a comprehensive view of the security status of the device. You can analyze the status of the user, service, and security module to get detailed information about the security status of the device.

User and service tracking

🕮

The icon green indicates the state Of integrity to of the device scanned, While the icon orange indicates a state That presents risks.

● Login Authentication: When there is a risk in login authentication, the icon will be orange to indicate that there is a problem. You can click on**Details**(Details) to view the detailed description of the risk.

● Security Configuration: When there is a risk in the device configuration, the icon will be orange to indicate that there is a problem. You can click on**Details**(Details) to view the detailed description of the risk.

Figure 5-295 Security Status
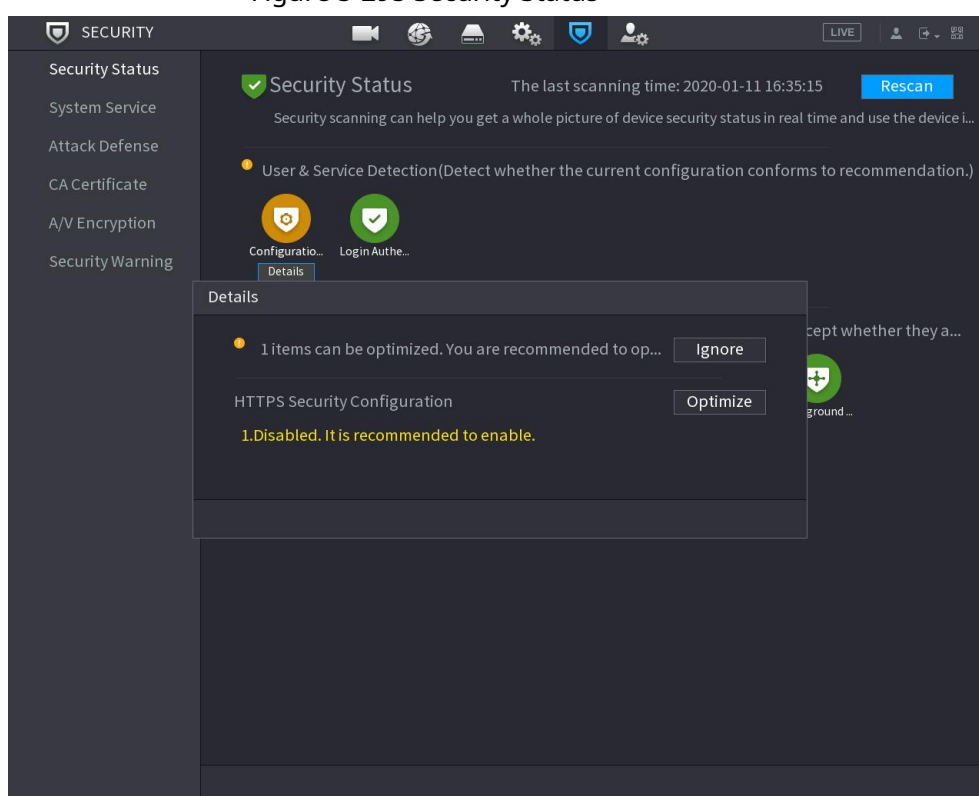
Security Module Scanning

This area displays the execution status of the security modules. For details on the security modules, move the mouse pointer over the icon to display on-screen instructions.

Security Status Scan

You can click on**Rescan**(Rescan) to check the security status.

5.20.2 System Services

You can set information such as basic services, 802.1x, and HTTPS.

5.20.2.1 Basic services

Procedure

Step 1: Select**Main menu**>**SAFETY**>**System service**>**Basic services**(Main Menu > SECURITY >System Service > Basic Services).

Figure 5-296 Basic Services
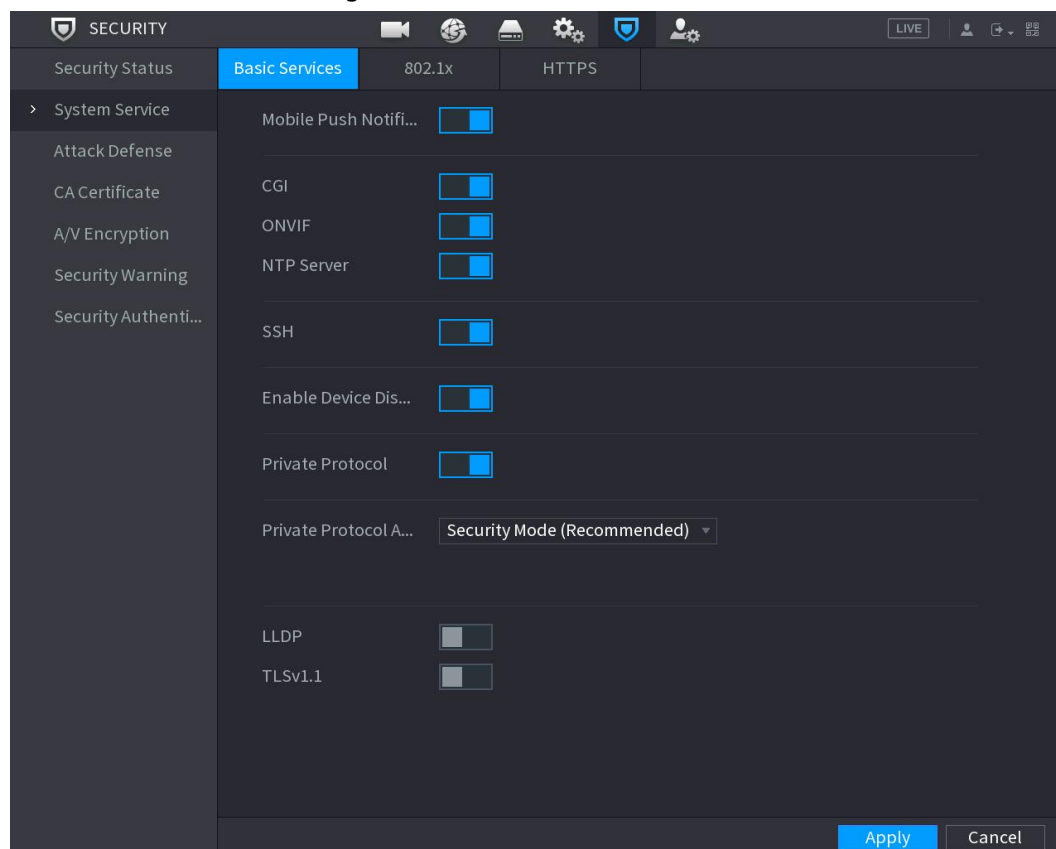
Step 2: Enable system services.

⚠️

They could occur risks For there safety When I am enabled the Notifications **push** mobile (Mobile Push Notifications), **CGI**, **ONVIF**, **SSH** And Server **NTP** (NTP Server).

Table 5-80 Basic service parameters

Parameter	Description
Mobile Push Notifications	Once the function is enabled, the alarm triggered by the device can be sent to the mobile phone. The function is enabled by default. 📖 Security risks may arise if you enable this service. Disable this feature when not in use.
CGI	If you enable this feature, you can add remote devices via CGI protocol. The feature is enabled by default.

Parameter	Description
	📖 Security risks may arise if you enable this service. Disable this feature when not in use.
ONVIF	If you enable this function, you can add remote devices via ONVIF protocol. The function is enabled by default. 📖 Security risks may arise if you enable this service. Disable this feature when not in use.
NTP Server	If you enable this feature, you can use an NTP server to synchronize your device. The feature is enabled by default.
SSH	If you enable this feature, you can use the SSH service. This feature is disabled by default. 📖 Security risks may arise if you enable this service. Disable this feature when not in use.
Activation of the Device detection	If you enable this feature, you can search for your device via other devices.
Mode of private protocol authentication	● Security Mode (Recommended): Use Digest login authentication when connecting to the DVR. ● Compatibility Mode: Select this mode when the client does not support Digest login authentication.
LLDP	Enable LLDP service. Link Layer Discovery Protocol (LLDP) allows two different devices to gather hardware and protocol information about nearby devices, enabling troubleshooting of network problems.
TLSv1.1	Enable TLSv1.1 encryption protocol.

Step 3: Click on**Apply**(Apply) to complete the setup.
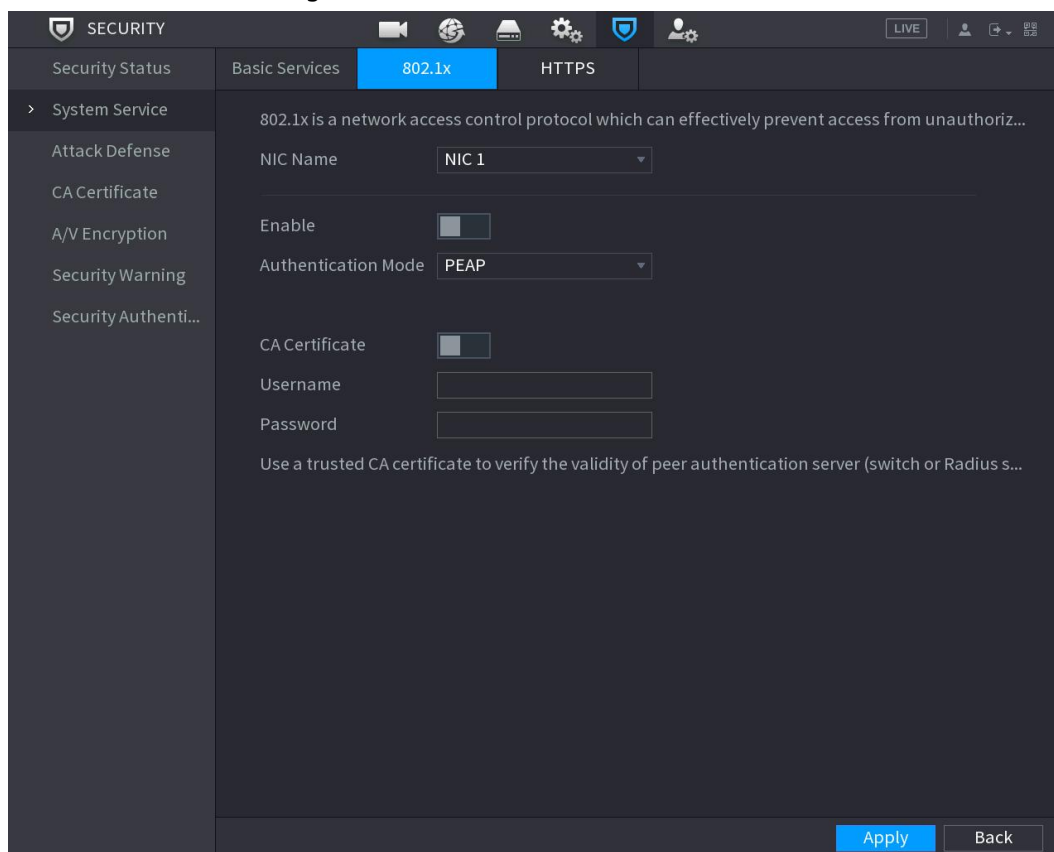
5.20.2.2 802.1x

To access the LAN, the device must pass 802.1x certification.

Procedure

Step 1: Select**Main menu**>**SAFETY**>**System service**>**802.1x**(Main Menu > SECURITY >System Service > 802.1x).

Figure 5-297 802.1x Certification

Step 2: Select the Ethernet adapter to certify. Step 3: Select
Ability(Enable) and configure the parameters.

Table 5-81 802.1x parameters

Parameter	Description
NIC Name	Select a NIC.
Authentication	● PEAP: Protected EAP Protocol. ● TLS: Transport Layer Security. A protocol that ensures the confidentiality and integrity of data between two communicating application programs.
CA Certificate	Enable it and click on**Browse**(Browse) to import the CA certificate from the flash drive. For details on importing and creating a certificate, see "5.20.4 CA Certificate".
Username	The username must be authorized on the server.
Password	Enter the password of the corresponding username.

Step 4: Click on**Apply**(Apply).

5.20.2.3 HTTPS

It is recommended to enable HTTPS feature to improve system security.

Procedure

Step 1: Select**Main menu**>**SAFETY**>**System service**>**HTTPS**(Main Menu > SECURITY >System Service > HTTPS).

Figure 5-298 HTTPS
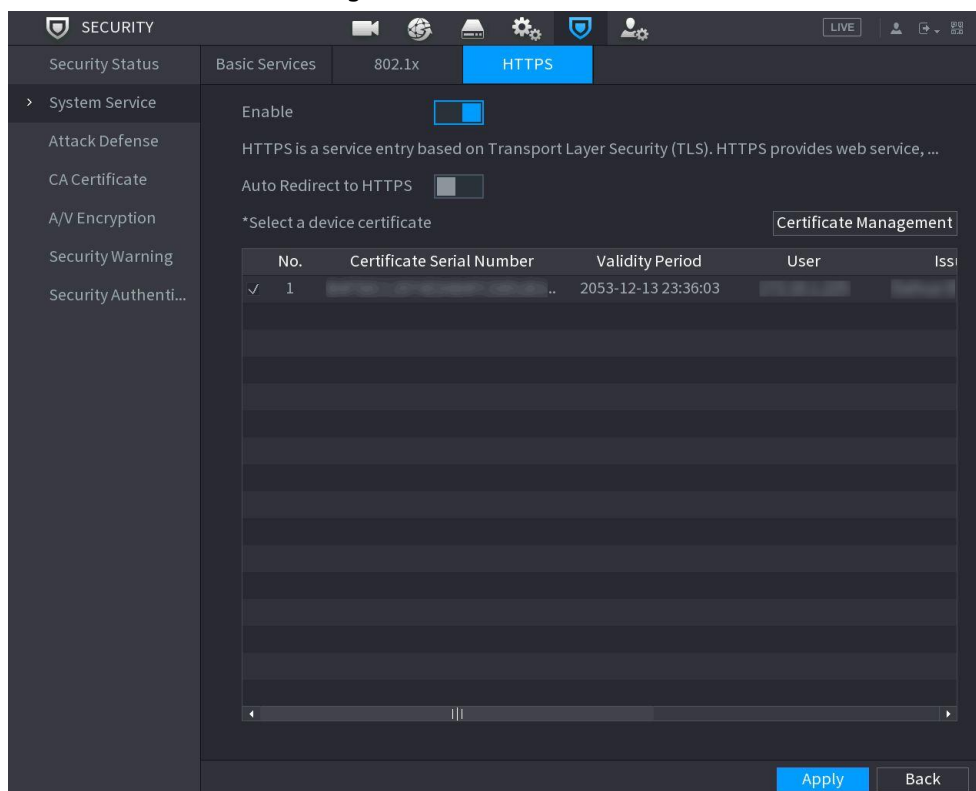
Step 2: Select**Ability**(Enable) to activate the HTTPS function. Step 3:

Click on ▭ to enable**Automatic redirect to HTTPS**(Auto Redirect to HTTPS) to automatically redirect to HTTPS. After enabling the feature,

Step 4: Click on**Certificate Management**(Certificate Management) to create or import an HTTPS certificate from the USB drive. For details on importing or creating a CA certificate, see "5.20.4 CA Certificate".

Step 5: Select an HTTPS certificate. Step 6:

Click on**Apply**((Apply)

5.20.3 Defense from attacks

5.20.3.1 Firewall

Procedure

Step 1: Select**Main menu**>**SAFETY**>**Defense from attacks**>**Firewall**(Main Menu > SECURITY > Attack Defense > Firewall).

Step 2: Select**Active**(Enable) to enable the firewall. Step 3:

Configure the parameters.

Table 5-82 Firewall parameters

Parameter	Description
Mode	The mode can be configured when the Type is Network Access. ● If the consent list is enabled, you can log in successfully.

Parameter	Description
	to the device port if the host IP/MAC is listed. ● If the block list is enabled, the device port cannot be accessed if the host IP/MAC is listed.
Add	If the**Type**(Type) is**Network access**(Network Access), you can configure IP Address, IP Segment and MAC Address.
Type	You can select the IP address, IP segment and MAC address.
IP address Initial door Final door	Enter the IP address, start port and end port allowed or forbidden. 📖 If the**Type**(Type) is**IP address**(IP Address), can be configured. And possible configure **Brings initial** (Start port) And **Brings final** (End Port) only in Type (Type)**Network access**(Network Access).
Address initial/final address	Enter the start and end address of the IP segment. 📖 If the**Type**(Type) is**IP Segment**(IP Segment), can be configured.
MAC address	Enter the allowed or forbidden MAC address 📖 If the**Type**(Type) is**MAC address**(MAC Address), can be configured.

Step 4: Click on**Apply**(Apply).

5.20.3.2 Account Blocking

Procedure

Step 1: Select**Main menu**>**SAFETY**>**Defense from attacks**>**Account Blocking**(Main Menu > SECURITY > Attack Defense > Account Lockout). Step 2: Set the parameters.

Table 5-83 Block parameters

Parameter	Description
Attempts	Set the maximum number of incorrect password attempts allowed. The account will be locked after the number of attempts exceeds the maximum number. Value range: 5–30. Default value: 5.
Duration of the block	Set how long the account will be locked. Value range: 5–120 minutes. Default: 5 minutes.

Step 3: Click on**Apply**(Apply).

5.20.3.3 Defense from Dos Attacks

To protect your device from DoS attacks, you can enable the following features:**Defense against SYN flood attacks**(SYN Flood Attack Defense) and**ICMP flood attack defense**(ICMP Flood Attack Defense).

Figure 5-299 Defense against DoS attacks
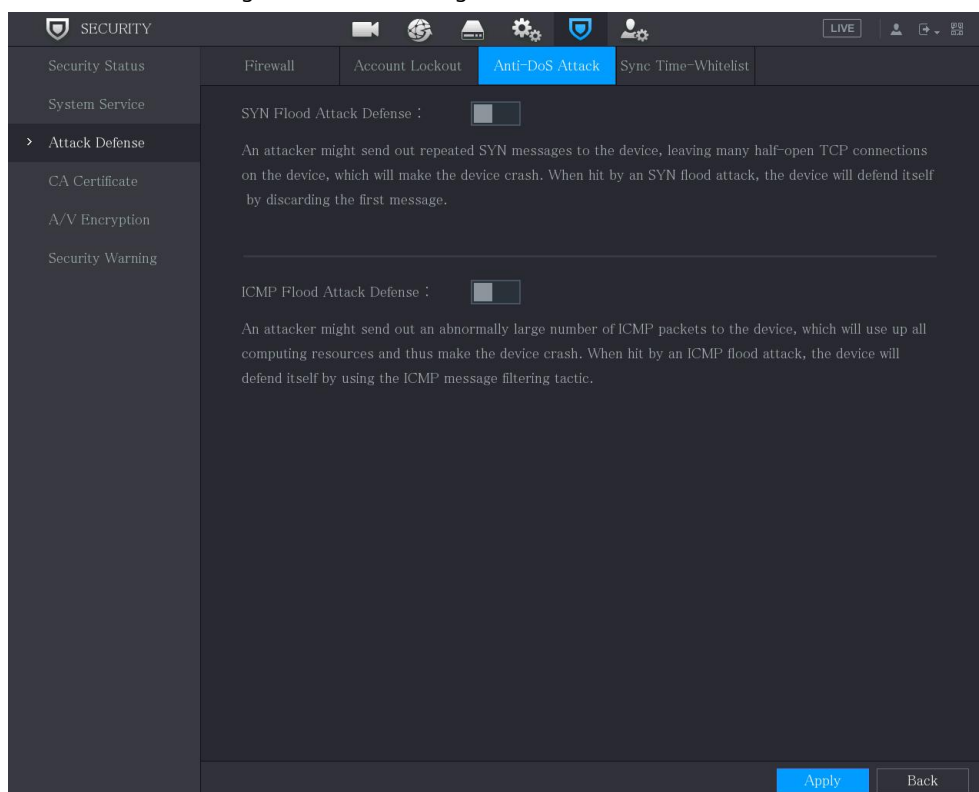
5.20.3.4 Time Sync - Allowed List

Synchronization is only allowed with hosts in the trusted hosts list.

Procedure

Step 1: Select**Main menu**>**SAFETY**>**Defense from attacks**>**Time sync allowed list**(Main Menu > SECURITY > Attack Defense > Sync Time-Allowlist). Step 2: Select**Ability**(Enable) to activate the function. Step 3: Configure the parameters.

Table 5-84 Time synchronization allow list parameters

Parameter	Description
Add	You can add trusted hosts for time synchronization.
Type	Select the IP address or IP segment for the hosts to add.
IP address	Enter the IP address of a trusted host.

Parameter	Description
	📖 If the**Type**(Type) is**IP address**(IP Address), you can configure
Initial address	Enter the starting IP address of the trusted hosts. 📖 If the**Type**(Type) is**IP Segment**(IP Segment), you can configure
Final address	Enter the final IP address of the trusted hosts. 📖 If the**Type**(Type) is**IP Segment**(IP Segment), you can configure

<u>Step 4:</u> Click on**Apply**(Apply).

5.20.4 CA Certificate

You can create or import the device certificate and install the trusted CA certificate.

5.20.4.1 Device Certificate

Certificate Creation

1. Select**Main menu**>**SAFETY**>**CA Certificate**>**Device Certificate**(Main Menu > SECURITY > CA Certificate > Device Certificate).

   📖

   ● Do click on 📥 For download The certificate in the archive local.
   ● Do click on 🗑 For eliminate The certificate. The certificate deleted Not you can not to be restored, proceed with caution.

Figure 5-300 Device Certificate
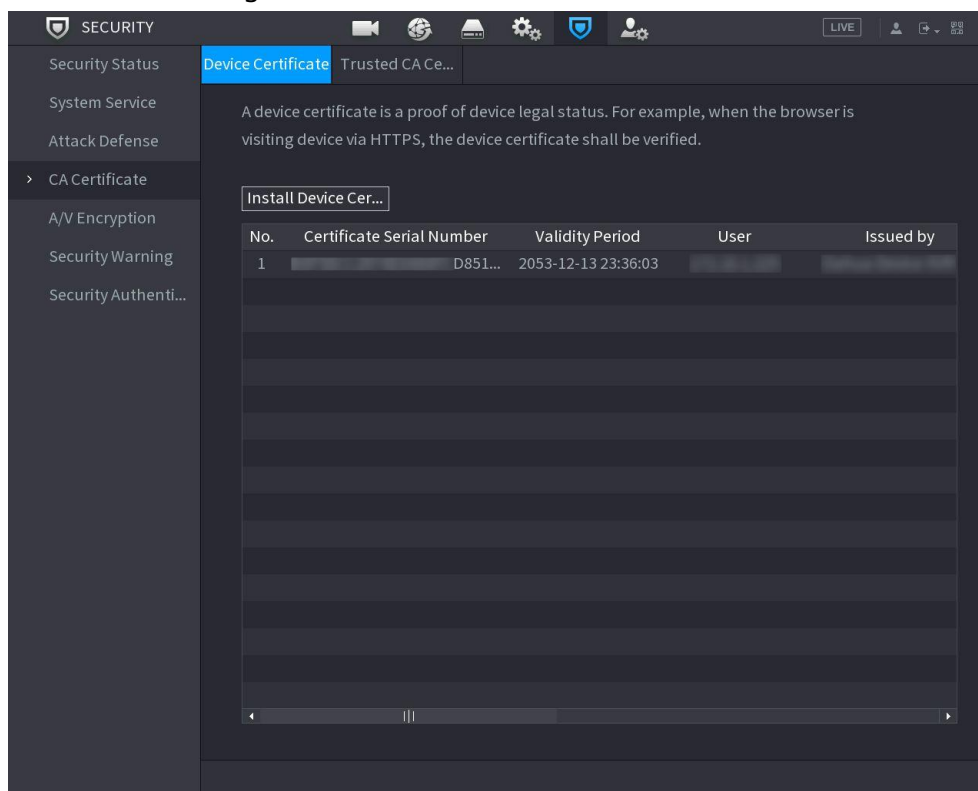
2. Configure the parameters.

Table 5-85 Device certificate parameters

Parameter	Description
Country/geographic area	This parameter is user-defined.
State	This parameter is user-defined.
City name	This parameter is user-defined.
Validity period	Enter a validity period for the certificate.
Organization	This parameter is user-defined.
Organization Department	This parameter is user-defined.
Domain Name	Enter the IP address of the certificate.

3. Click on**Create**(Create).
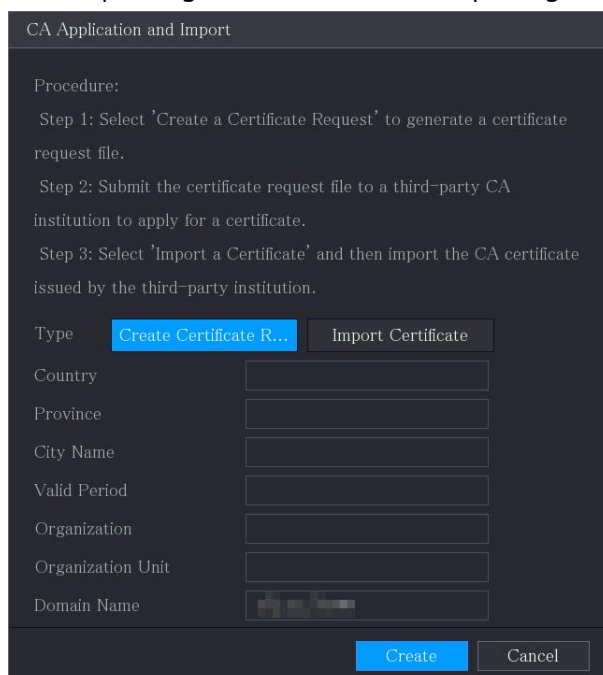
CA Certification Request and Import

To complete the CA certification request and import, follow the on-screen instructions.

Before of the 'use,insert unit to flash USB.

Figure 5-301 Requesting CA certification and importing
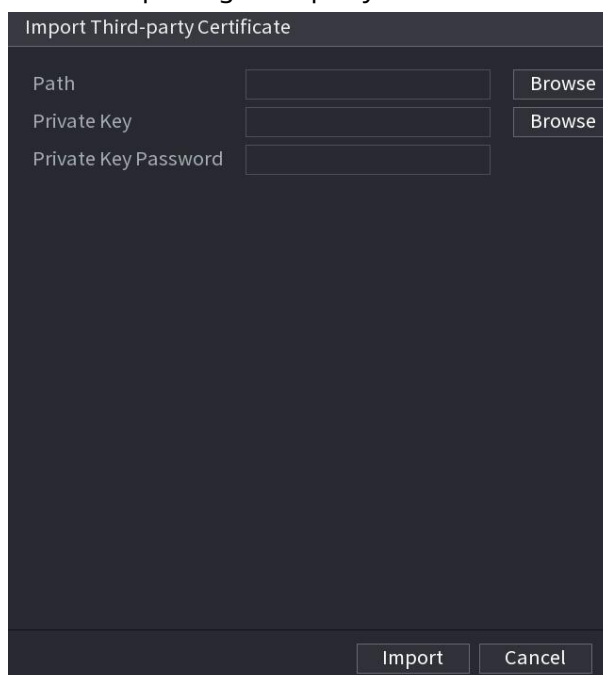
Importing third-party certificate

Before importing, please insert the USB flash drive with third-party certificate.

1. Select**Import third-party certificate**(Import Third-party Certificate).

Figure 5-302 Importing third-party certificate

2. Configure the parameters.

Table 5-86 Importing Third-Party Certificate

Parameter	Description
Path	Click Browse to browse for the third-party certificate path on the USB drive.
Private key	Click Browse to search for the third-party certificate private key on the USB drive.
Private key password	Enter the password of the encrypted private key. If the private key is not encrypted, you do not need to enter this parameter.

3. Click on**Create**(Create).

5.20.4.2 Trusted CA Certificate

Procedure

Step 1: Select**Main menu**>**SAFETY**>**CA Certificate**>**Trusted Certificate** (Main Menu > SECURITY > CA Certificate > Trusted Certificate).

Figure 5-303 Trusted CA Certificate
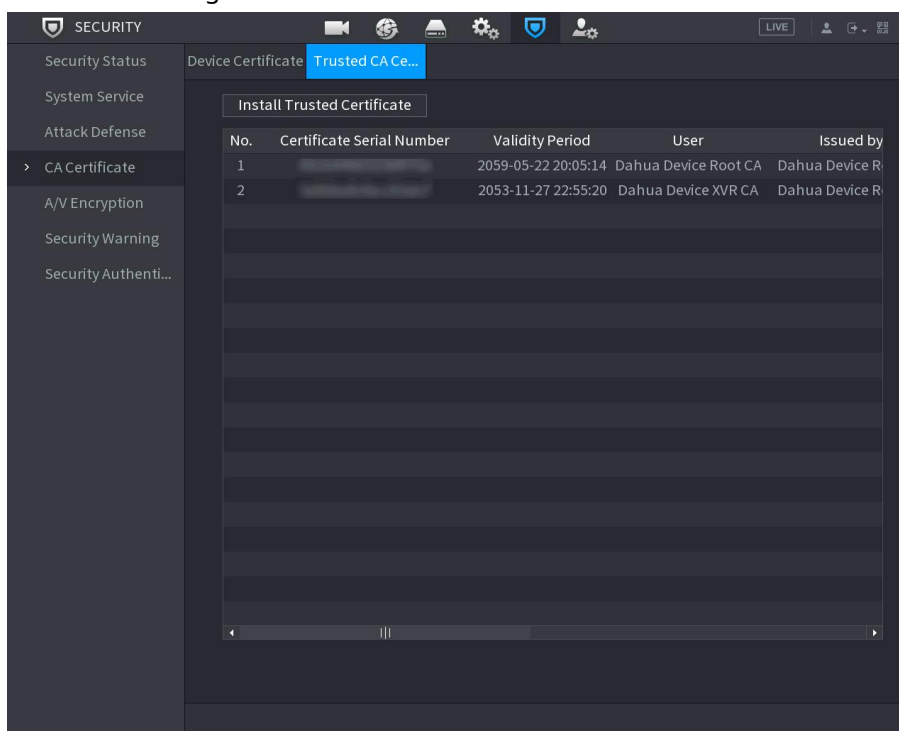
Step 2: Click on**Install trusted certificate**(Install Trusted Certificate). Step 3: Click on **Browse**(Browse), to select the backup file you want to install. Step 4: Click on**It matters**((Import).

5.20.5 Audio/Video Encryption

The device supports audio and video encryption during data transmission.

Procedure

Step 1: Select**Main menu**>**SAFETY**>**A/V Encryption**>**Audio/video transmission**(
Main Menu > SECURITY > A/V Encryption > Audio/Video Transmission).

Figure 5-304 Audio/Video Transmission
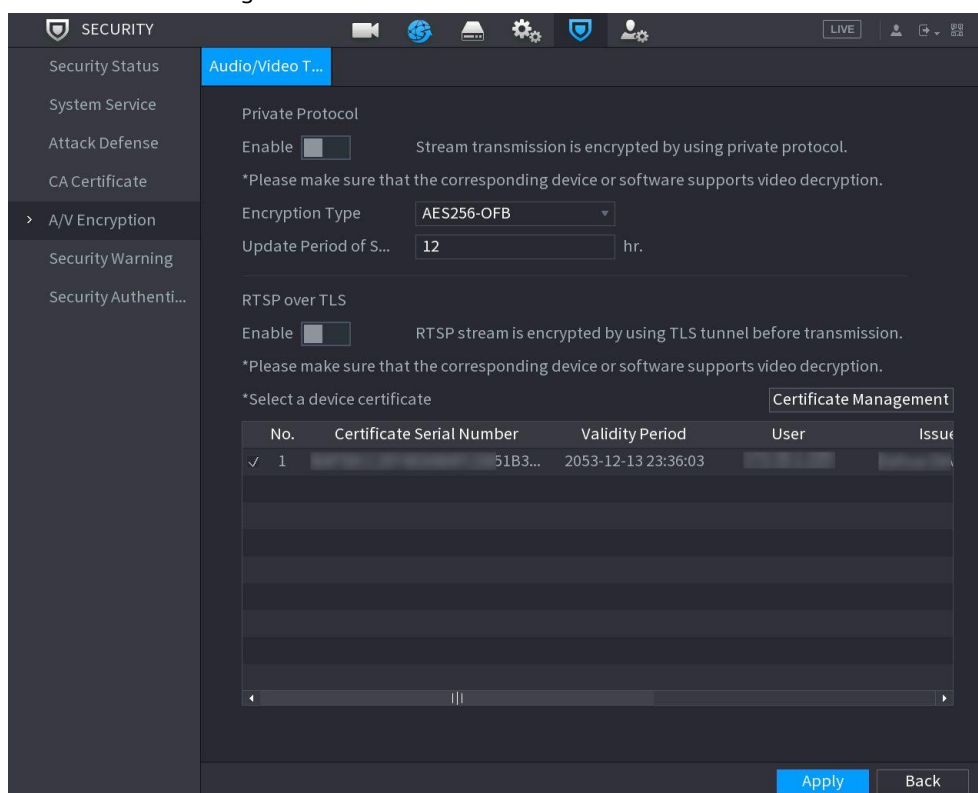
Step 2: Configure the parameters.

Table 5-87 Transmission parameters

Parameter		Description
Protocol private	Ability	Enables encryption of stream frames via a private protocol. Security vulnerabilities may occur if you disable this service.
	Encryption type	Use the default setting.
	Update period of the secret key	Secret key update period. Value range: 0–720 hours. 0 indicates that the secret key is never updated. Default value: 12.
RTSP over TLS	Ability	Enable RTSP stream encryption via TLS.

Parameter		Description
		Data breaches can occur if you disable this service. It is recommended to enable this feature.
	Select a device certificate	Select a device certificate for RTSP over TLS.
	Certificate Management	For details on managing certificates, see section 5.20.4 CA Certificate.

Step 3: Click on**Apply**(Apply).

5.20.6 Security Notice

5.20.6.1 Security Exception

Procedure

Step 1: Select**Main menu**>**SAFETY**>**Security Notice**>**Security exception**(Main Menu > SECURITY > Security Warning > Security Exception).

Figure 5-305 Security Exception
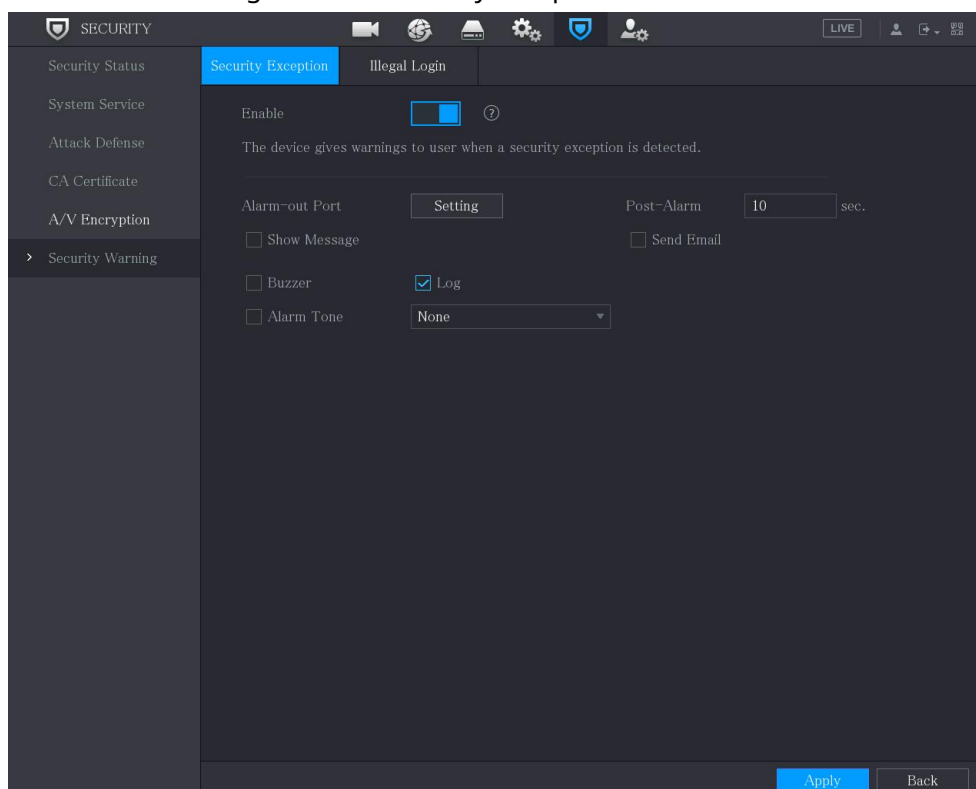
Step 2: Select**Ability**(Enable) and then configure the parameters.

Table 5-88 Security Exception Parameters

Parameter	Description
Alarm output port	Alarm devices (e.g. lights, sirens, etc.) are connected to the alarm output port. When an alarm is triggered,

Parameter	Description
	alarm, the DVR device transmits the related information to the alarm device.
Post-alarm	When the alarm stops, its duration can be extended for a certain period of time. The selectable time range is from 0 to 300 seconds.
Show message	Select the checkbox to enable a pop-up message on the local PC.
Acoustic signal	Select the checkbox to enable an audible signal when an alarm is triggered.
Alarm tone	Select the checkbox and the corresponding audio file from the drop-down list. The system will play the audio file when an alarm is triggered.
Log	By selecting the checkbox, the DVR device will record the alarm information in the log when an alarm occurs.
Send email	Select the checkbox. When an alarm is triggered, the DVR device will send a notification email to the set mailbox. To use this feature, make sure that the email function is enabled in the item**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).
ⓘ	Security event monitoring explained. Indicates the type of attacks that can trigger security exceptions. ● Unauthorized executable program that attempts to run ● Brute-force attack on web URL ● Session connection overload ● Brute-force attack on session ID
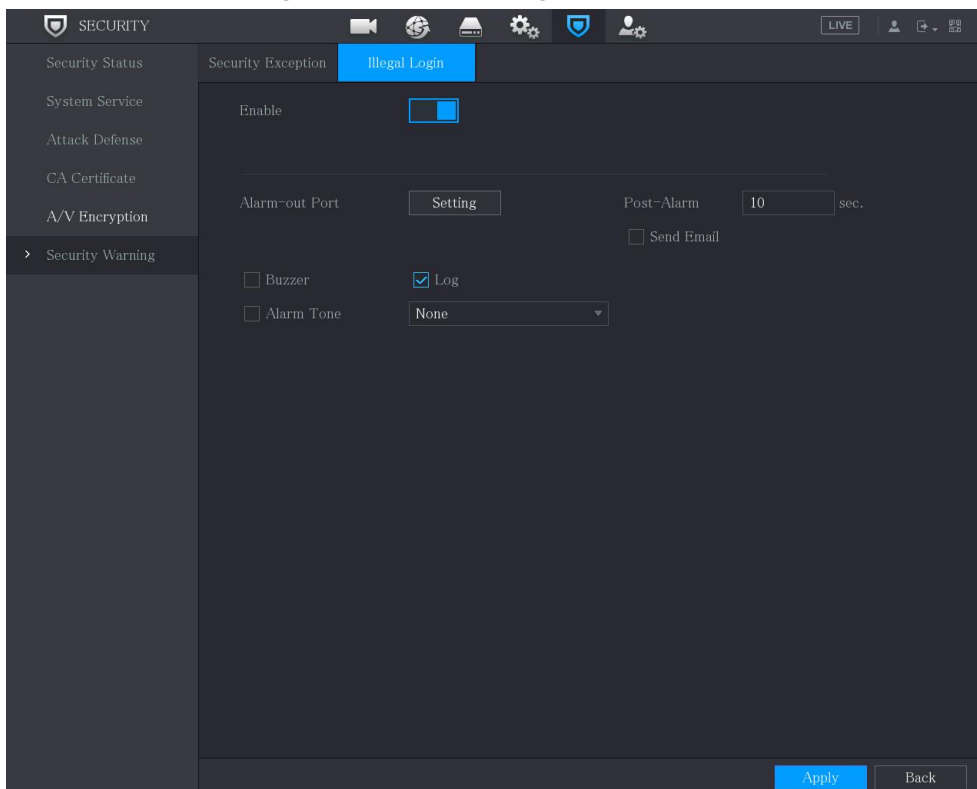
Step 3: Click on**Apply**(Apply).

5.20.6.2 Invalid Login

Procedure

Step 1: Select**Main menu**>**SAFETY**>**Security Notice**>**Invalid login** (Main Menu > SECURITY > Security Warning > Illegal Login).

Figure 5-306 Invalid login

Step 2: Select**Ability**(Enable) and then configure the parameters.

Table 5-89 Invalid access parameters

Parameter	Description
Alarm output port	Alarm devices (e.g. lights, sirens) are connected to the alarm output port. When an alarm is triggered, the device transmits the alarm information to the alarm device.
Post-alarm	When the alarm stops, its duration can be extended for a certain period of time. The selectable time range is from 0 to 300 seconds.
Acoustic signal	Select the checkbox to enable an audible signal when an alarm is triggered.
Alarm tone	Select the checkbox and the corresponding audio file from the drop-down list. The system will play the audio file when an alarm is triggered.
Log	By selecting the checkbox, the device will record the alarm information in the log when an alarm occurs.
Send email	Select the checkbox. When an alarm is triggered, the device will send a notification email to the set mailbox. 📖 To use this feature, make sure the email function is turned on voice enabled**Main menu**>**NET**>**E-mail**(Main Menu > NETWORK > Email).

Step 3: Click on**Apply**(Apply).

5.20.7 Security Authentication

Procedure

Step 1: Select**Main menu**>**SAFETY**>**Security authentication**>**Digest algorithm for authentication**(Main Menu > SECURITY > Security Authentication > Digest Algorithm for Authentication).

Figure 5-307 Digest algorithm for authentication
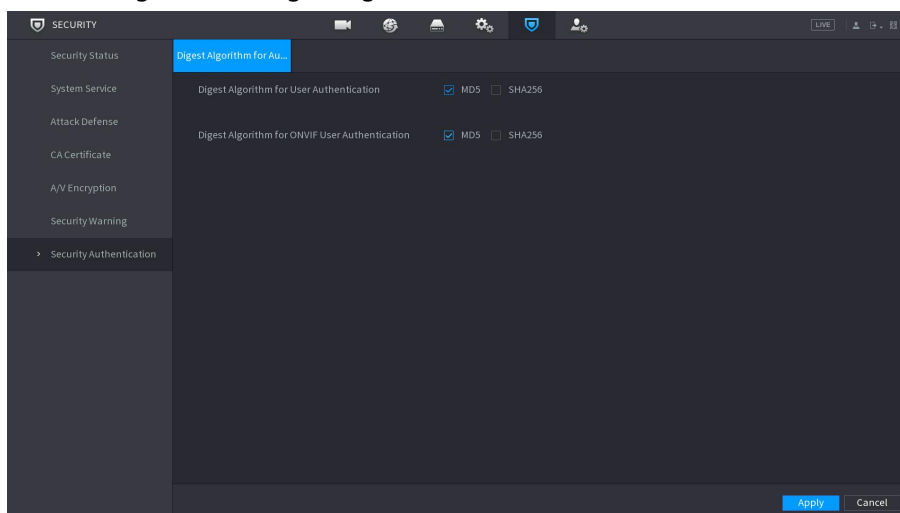
Step 2: Select**Digest Algorithm for User Authentication**(Digest Algorithm for User Authentication) or**ONVIF User Authentication Digest Algorithm**(Digest Algorithm for ONVIF User Authentication), depending on your needs.

You can select between**MD5**or**SHA256**The default setting is**MD5**.

After have modified there password Of everyone The account private, A possible select a algorithm digest different from MD5.

5.21 Configuring system settings

5.21.1 Configuring general system settings

You can configure basic device, time and holiday settings.

Procedure

Step 1: Select**Main menu**>**SYSTEM**>**General**>**Holiday**(Main Menu > SYSTEM > General > Holiday).

Figure 5-308 Holidays
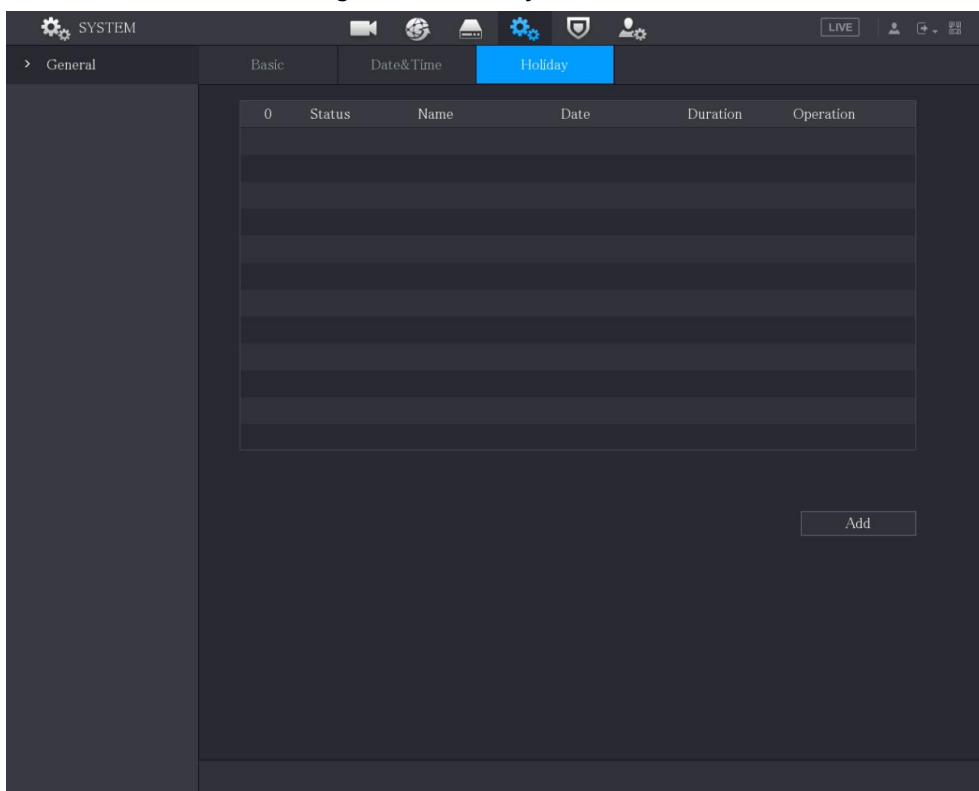
Step 2: Click on**Add**(Add).

Figure 5-309 Adding Holidays

Step 3: Configure the holiday name, repeat mode and time range as needed.

Step 4: Click on**Add**(Add).

📖

Enable ₜₕₑᵣₑfunction **Add** **other** (Add(More) Forcontinue to add information on the festivity to

Figure 5-310 Adding Holidays
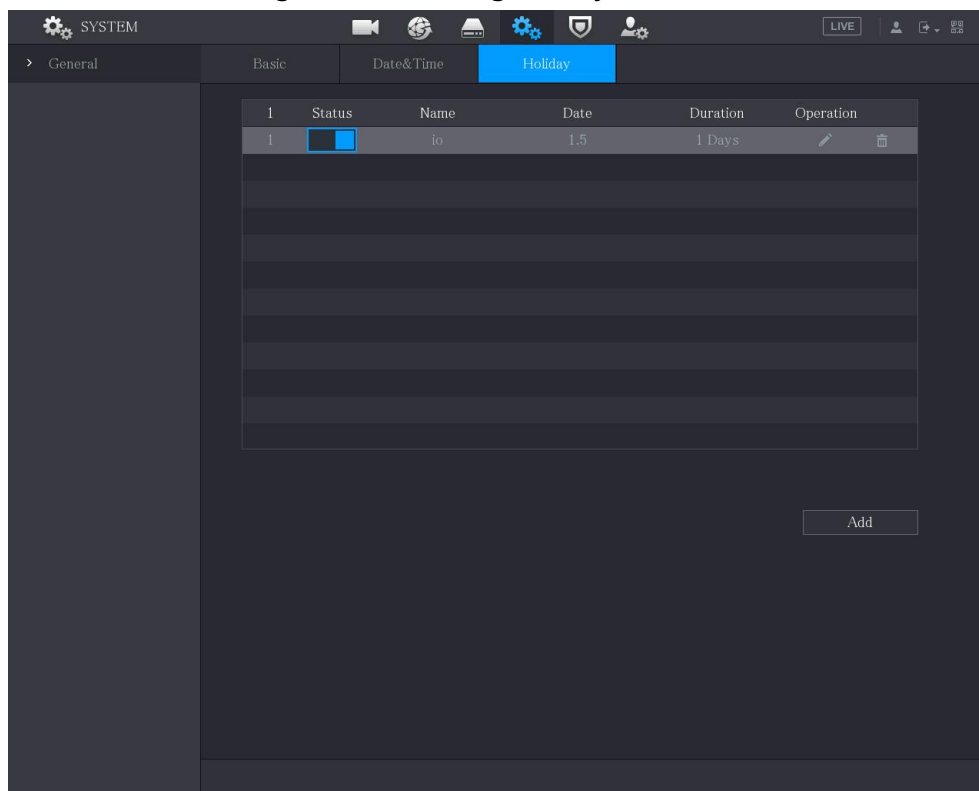
5.21.2 Configuring settings for the RS-232 standard

Select**Main menu**>**SYSTEM**>**RS232**(Main Menu > SYSTEM > RS232), and then configure the serial port function, baud rate and other parameters.

📖

Alone ₛₒₘₑₒₙₑ series Of products they support the standard RS-232.

Figure 5-311 RS-232
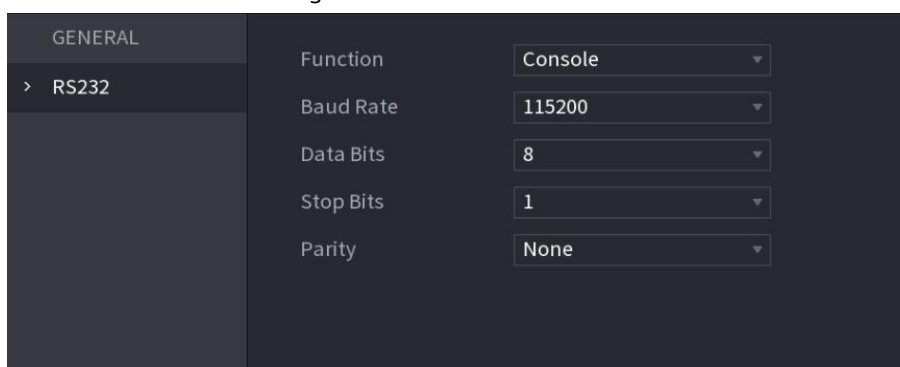
Table 5-90 RS-232 Parameters

Parameter	Description
Function	Select the serial port control protocol. The value

Parameter	Description
	default is**Console**. ● Console: Update the program and debug with the console and mini terminal software. ● Keyboard: Allows you to control the device using a special keyboard. ● Adapter: Connect the computer directly to transmit data. ● COM Protocol: Configure the function to COM protocol, to display the card number in overlay. ● PTZ Matrix: Connect matrix control.
Baud rate	Select the baud rate; default is 115200.
Bits of data	The available range is from 5 to 8 and the default is 8.
Stop bits	The available options are 1 and 2.
Equality	The available options are none, odd, even, sign, and null. The default is None.

5.22 Maintenance

You can view information such as log information, hard disk information, and version details.

5.22.1 Viewing log information

Preliminary information

● If And installed a disc rigid, the registers related to the operations Of system they come saved in the memory of the device, While others types Of registers they come saved In the disc rigid. In absence Of disc rigid, The others types Of registers they come saved In the support from the memory of the device.

● When Yes format This disc rigid, the registers Not they will go lost. However, if Yes extracts This disc rigid from the device, the registers they could go lost.

Procedure

Step 1: Select**Main menu**>**MAINTENANCE**>**Register**(Main Menu > MAINTENANCE > Log).

Figure 5-312 Register
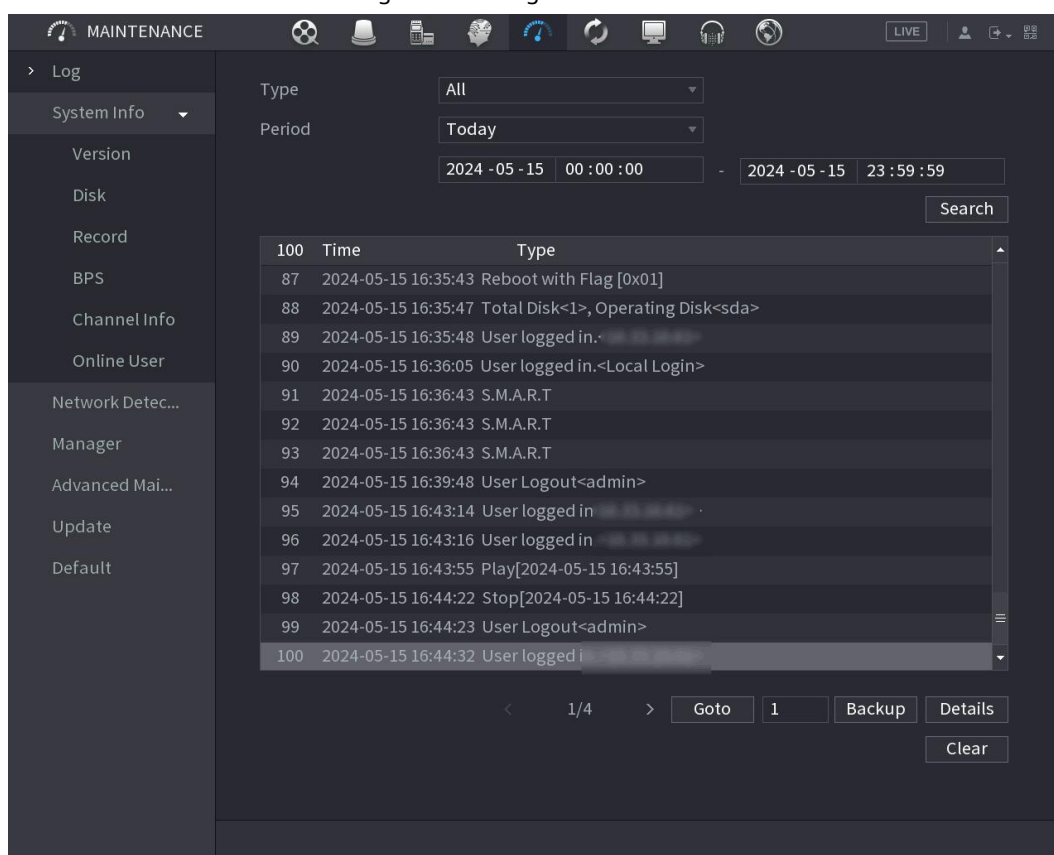
Step 2: In the listType(Type), select the type of log to display (**System**(System), **Configuration**(Config),**Archiving**(StorageE),**Registration**(Record),**Account**,**Delete**(Clear), **Reproduction**(Playback) and**Connection**(Connection) or select**All**(All) to view all logs.

Step 3: Enter the time period and click**OK**.

Figure 5-313 Search results

📖
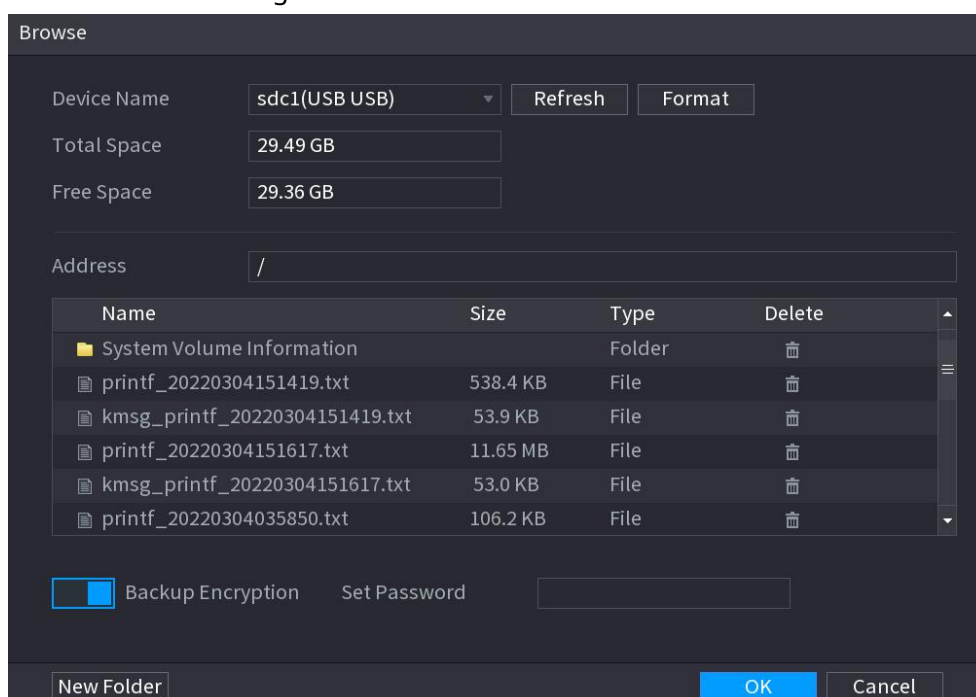
- Do click on **Details** (Details) or Do double click on the register That from view: will come to displayed there page **Information detailed** (Detailed Information). Do click on After you (Next) Or Backwards (Previous) For to view further information on the register.
- Do click on **Backup** For to execute The backup of the registers on the device Of archiving USB. AND possible enable **Encryption Of backup** (Backup (Encryption) And the before set up a password. AND necessary there password For open The file exported.
- Do click on **Delete** (Clear) For remove everyone the registers.

5.22.2 System Information

5.22.2.1 Viewing version details

You can view version details, such as device model, system version, and build date.

Select **Main menu** > **MAINTENANCE** > **System information** > **Version** (Main Menu > MAINTENANCE >System Info > Version).

Figure 5-314 Version
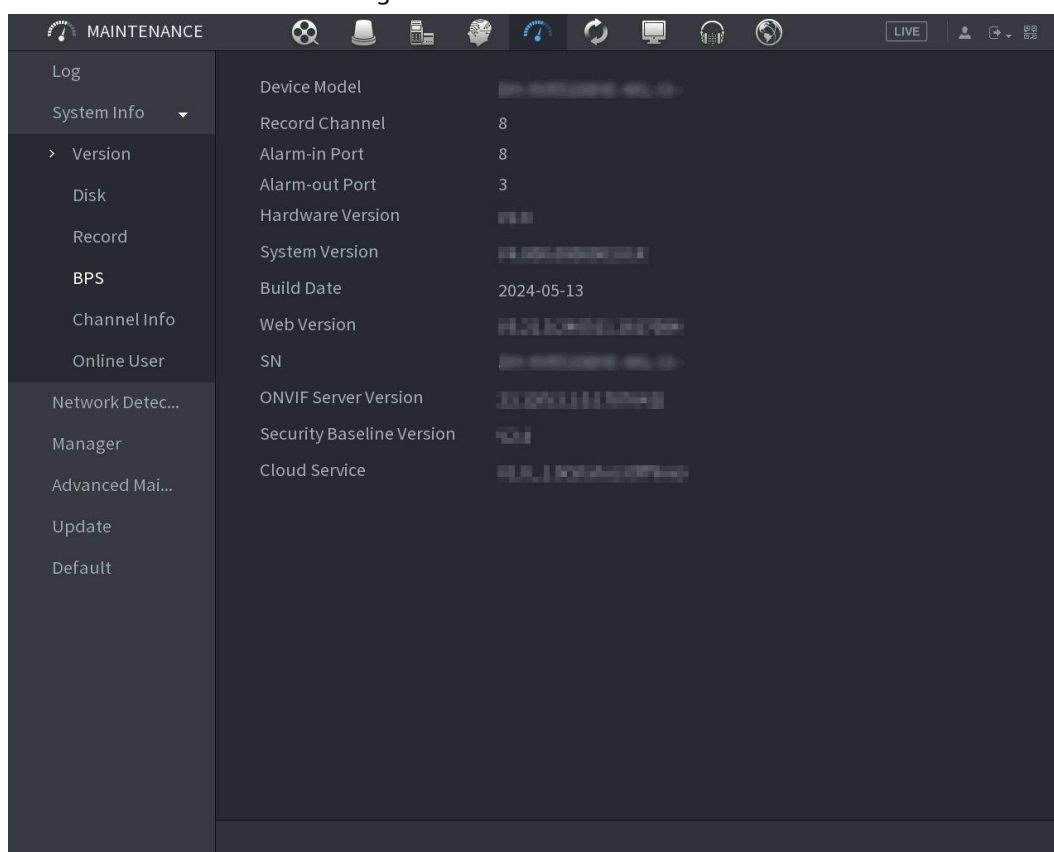
5.22.2.2 Viewing Disk Information

You can view the number of hard disks, hard disk type, total space, free space, status, SMART information, and version.

Select**Main menu**>**MAINTENANCE**>**System information**>**Disc**(Main Menu >
MAINTENANCE >System Info > Disk).

Figure 5-315 Disk
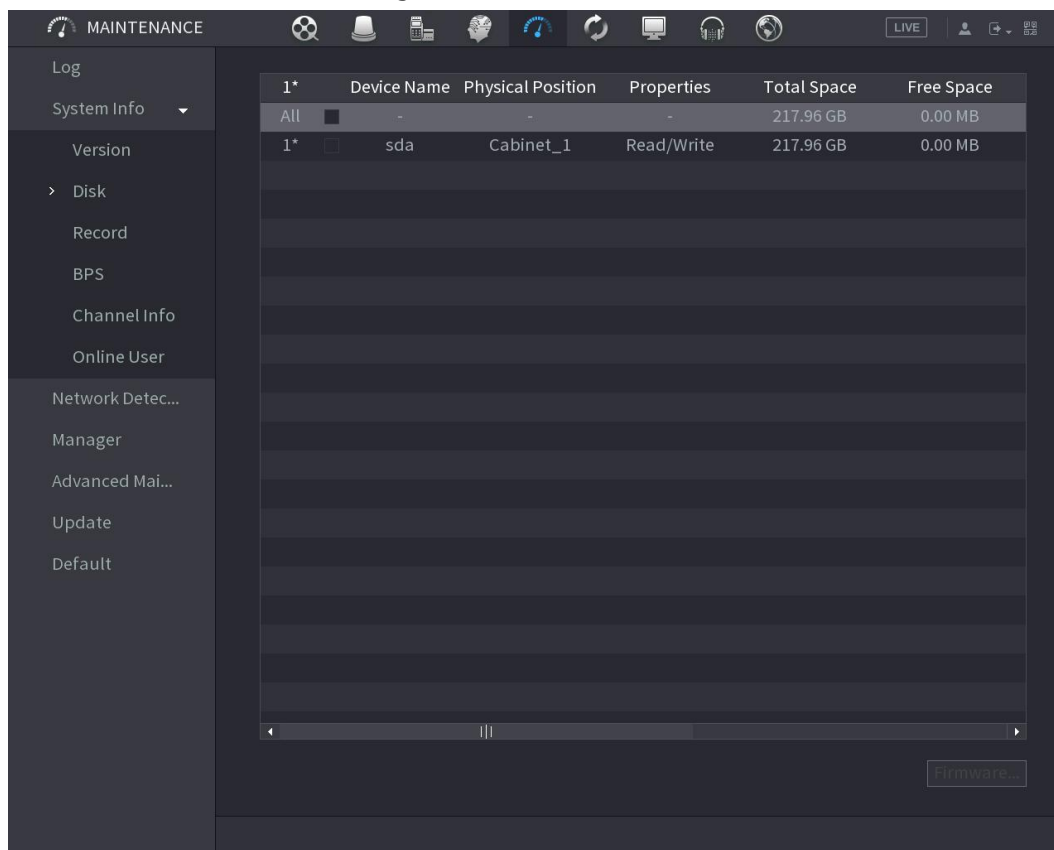
Table 5-91 Disk parameters
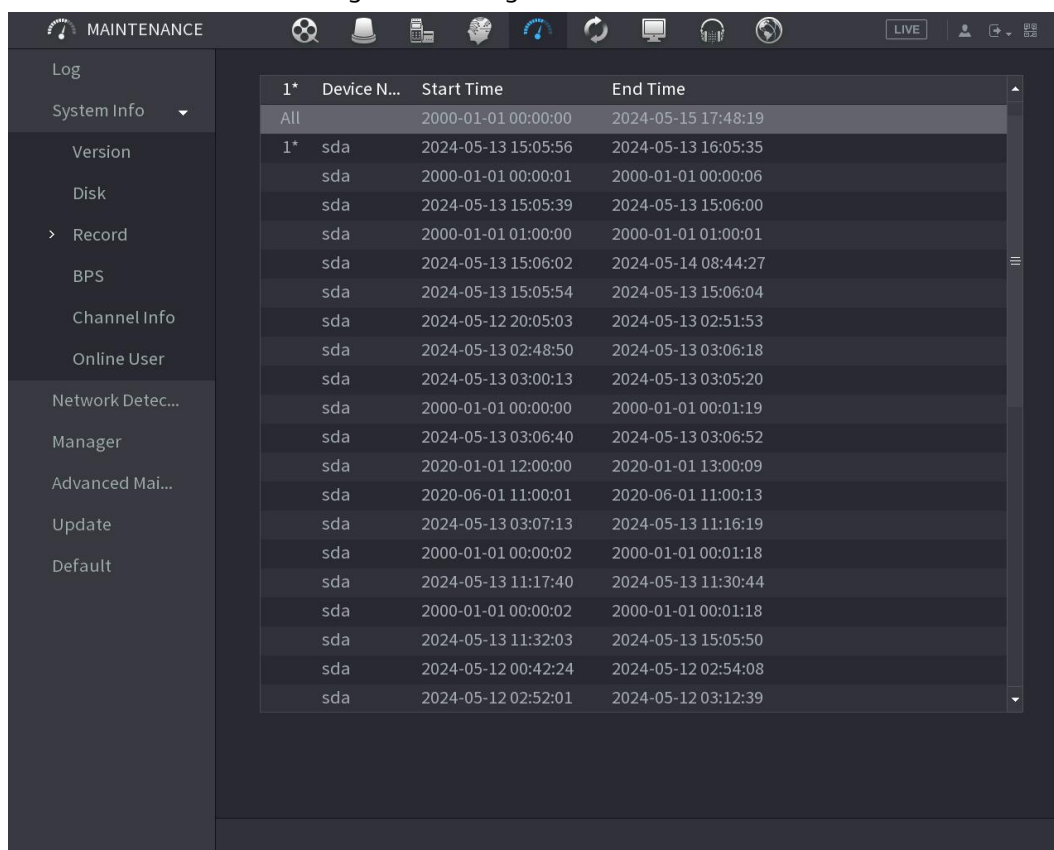
Parameter	Description
N.	Indicates the number of the currently connected hard disk. The asterisk (*) indicates the hard disk is working.
Device name	Indicates the name of the hard disk.
Physical position	Indicates the installation position of the hard disk.
Type	Indicates the type of hard disk.
Total space	Indicates the total capacity of the hard disk.
Free space	Indicates the available capacity of the hard disk.
State	Indicates the status of the hard disk and displays whether it is working normally.
SMART	View SMART reports obtained from hard drive testing.
Version	Indicates the system version of the hard disk.
Updates of the Firmware	Select the hard disk to upgrade, click**Firmware Update**(Firmware Update), select the update files, and then click**OK**. The system will display a message indicating that the update was completed successfully. 📖 Before upgrading the hard disk, insert a USB device

Parameter	Description
	USB storage containing the update files in the USB port of your device.

5.22.2.3 Viewing Registration Information

Select**Main menu**>**MAINTENANCE**>**System information**>**Registration**(Main Menu > MAINTENANCE > System Info > Record), to view the recording information.

Figure 5-316 Registration

5.22.2.4 Viewing data flow information

You can view the real-time data flow rate and resolution of each channel. Select**Main menu**>**MAINTENANCE**>**System information**>**BPS**(Main Menu > MAINTENANCE >System Info > BPS).

Figure 5-317 BPS

5.22.2.5 Viewing channel information

You can view the information of the camera connected to each channel. Select**Main menu**>**MAINTENANCE**>**System information**>**About the channel**(Main Menu > MAINTENANCE >System Info > Channel Info).

Figure 5-318 Channel information
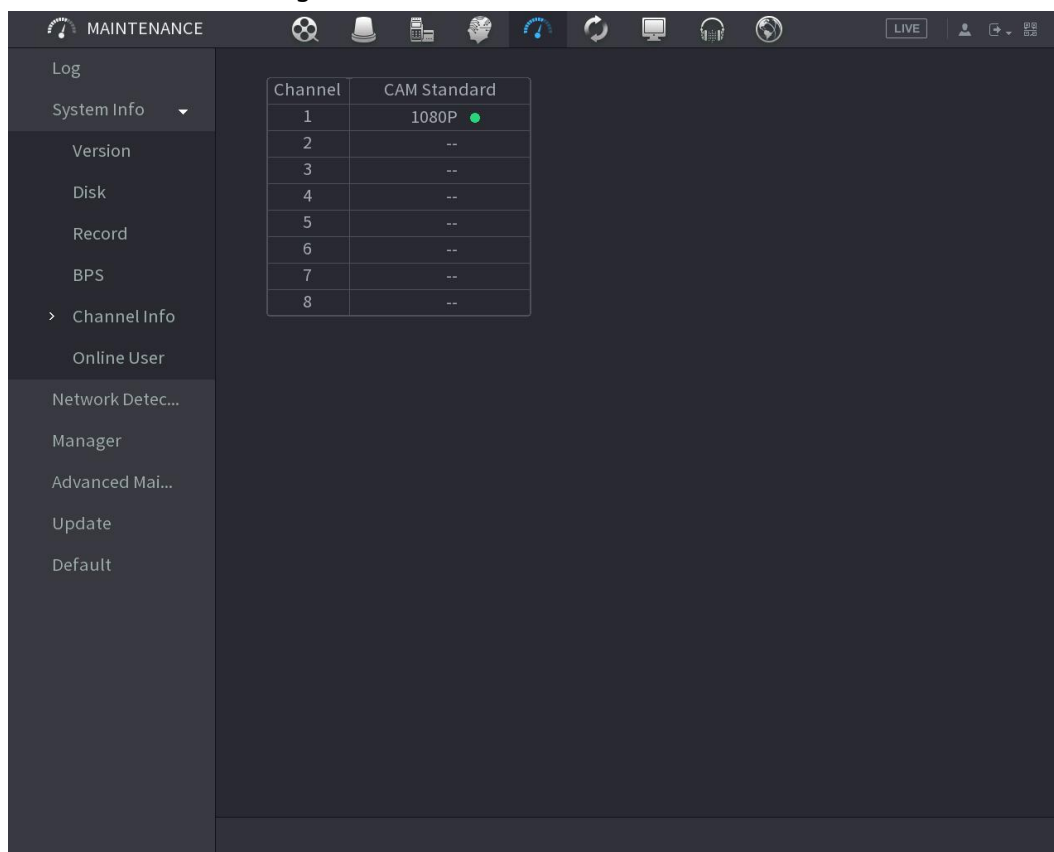
5.22.2.6 Viewing Online Users

You can view the information of online users and block them for a certain period of time.

Select**Main menu**>**MAINTENANCE**>**System information**>**Online Users**(Main Menu > MAINTENANCE >System Info > Online User).

Figure 5-319 Online Users
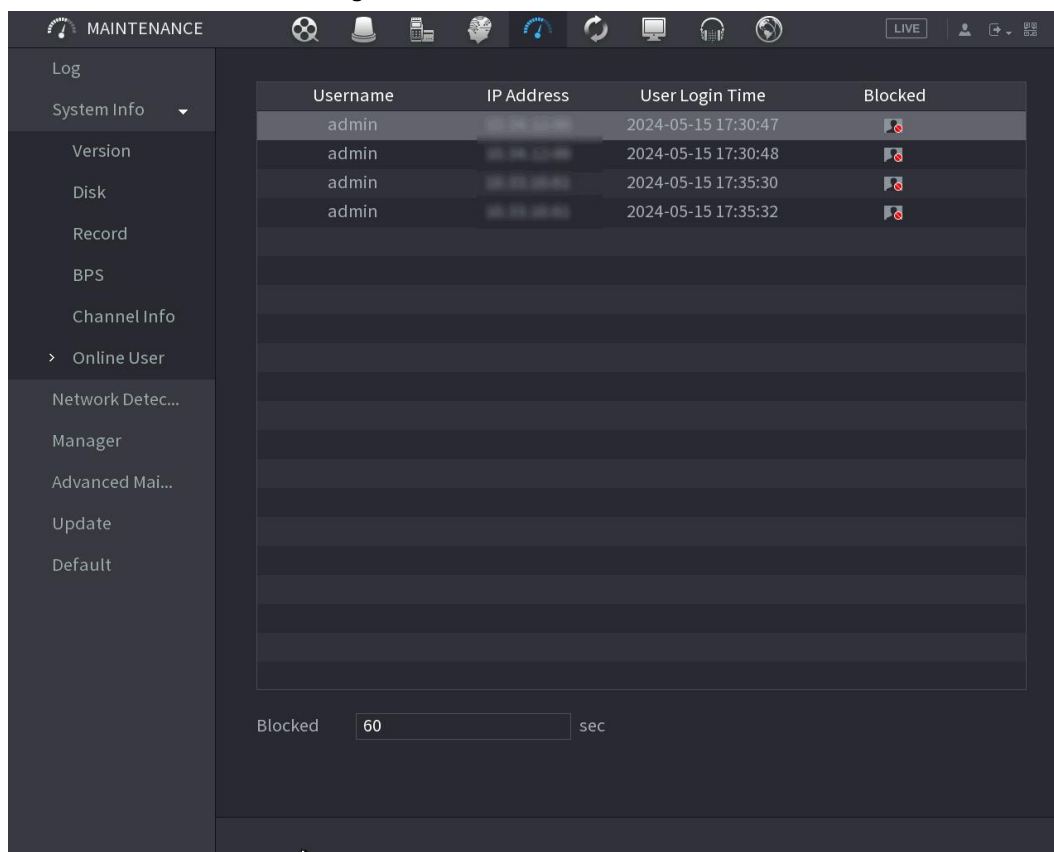
To block a user online, click and enter the user's block time. You can set a maximum value of 65535.

The system checks every 5 seconds whether a user has been added or deleted and immediately updates the user list.

5.22.3 Viewing Network Load

Network load is the data flow that measures the transmission capacity. You can view information such as the speed of receiving and sending data.

Procedure

Step 1: Select**Main menu**>**MAINTENANCE**>**Network Detection**>**Net**(Main Menu > MAINTENANCE > Network Detection > Network).

Figure 5-320 Network load
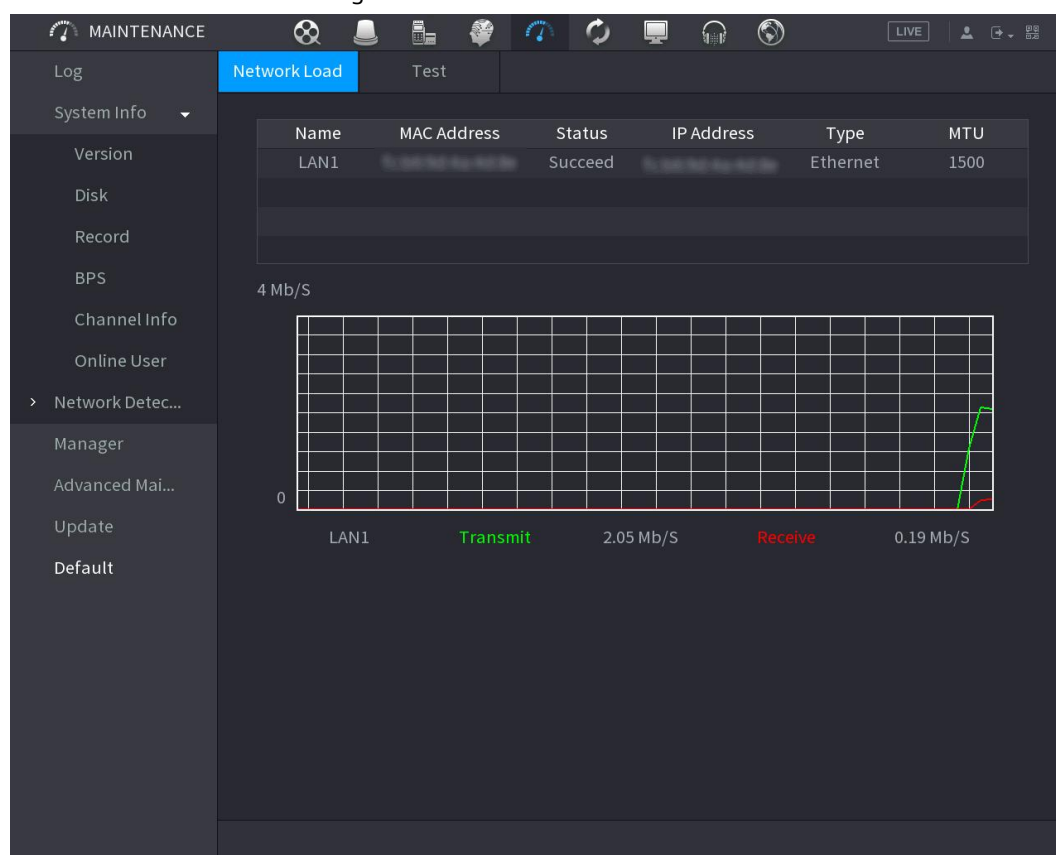
Step 2: Click the LAN name to view, such as LAN1. The system displays
the data sending and receiving speed information.

📖

● For option default,   he comes displayed   The   load   LAN1.
● ANOt possible to view   Alone a   load   LAN at the time.

5.22.4 Management

5.22.4.1 Device maintenance

If the device has been in operation for a long time, you can configure it to automatically restart
when the device is not working. You can also configure the fan operation mode to reduce noise
and extend the life of the fan.

Procedure

Step 1: Select**Main menu**>**MAINTENANCE**>**Management**>**Maintenance**(Main Menu >
MAINTENANCE > Manager > Log).

Figure 5-321 Maintenance

Step 2: Configure the parameters.

Table 5-92 Maintenance parameters

Parameter	Description
Auto Restart	In the list**Automatic restart**(Auto Reboot), select the restart time.
Fan mode	In the list**Fan mode**(Case Fan Mode) you can select **Always**(Always) or**Automatic**(Auto). Selecting**Automatic**(Auto), the fan will stop or start based on external conditions, such as the temperature of the device. This feature is only available on some models and is only supported on the local setup page.
Maintenance of emergency	When there is a power failure, malfunction or other problems and you cannot log in, then you can use the emergency maintenance function to restart the device, clear the configuration, update the system, etc.

Step 3: Click on**Apply**(Apply).

5.22.4.2 Exporting and importing system settings

You can export or import your device's system settings if you have multiple devices that require the same configuration.

● If the operation Of backup And course on the other pages, NotApossible open there page **Import/Export** (Import/Export).

● When Yes opens there page **Import/Export** (Import/Export), The system update the devices And tax there directory current as Before directory root.

● Do click on**Format** (Format) For to format The device Of archiving USB.

Exporting system settings

1. Select**Main menu**>**MAINTENANCE**>**Management**>**Import/Export**(Main Menu >
MAINTENANCE > Manager > Import/Export).

Figure 5-322 Import/Export
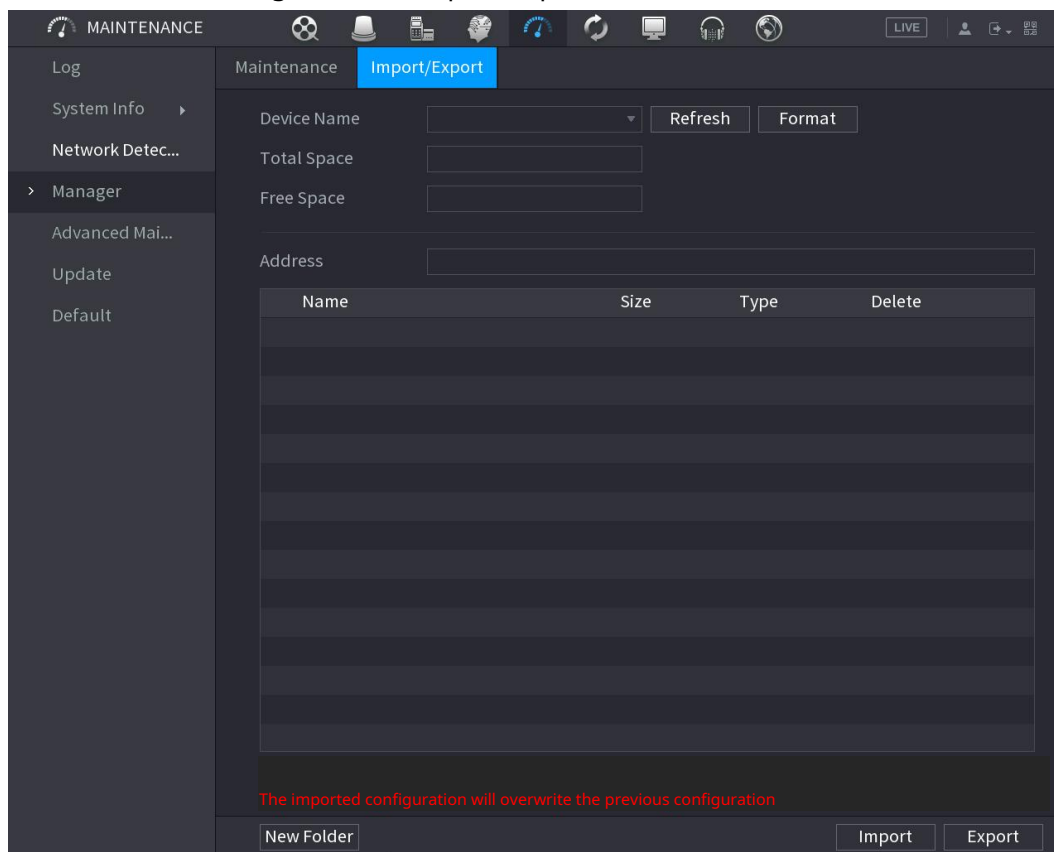
2. Insert a USB storage device into the USB port on the device.

3. Click on**Update**(Refresh) to update the page.

4. Click on**Export**(Export).

There is a folder named "Config_[YYYYMMDD111hhmmss]". Double clicking on the folder
will show the backup files.

Importing system settings

1. Insert a USB storage device containing configuration files exported from another device
into one of the device's USB ports.

2. Select**Main menu**>**MAINTENANCE**>**Management**>**Import/Export**(Main Menu >
MAINTENANCE > Manager > Import/Export).

3. Click on**Update**(Refresh) to update the page.

4. Click on the configuration folder (named "Config_[YYYYMMDD111hhmmss]") to
import.

5. Click on**It matters**((Import).

Once the import is complete, your device will restart.

5.22.5 Advanced maintenance

If an exception occurs, export the data to verify the details.
Select**Main menu**>**MAINTENANCE**>**Advanced maintenance**(Main Menu >
MAINTENANCE > Advanced Maintenance).

5.22.6 Update

5.22.6.1 Update Files

Procedure

Step 1: Insert a USB storage device containing the update files into the USB port on your
device.

Step 2: Select**Main menu**>**MAINTENANCE**>**Update**(Main Menu > MAINTENANCE >
Update)

Figure 5-323 Update
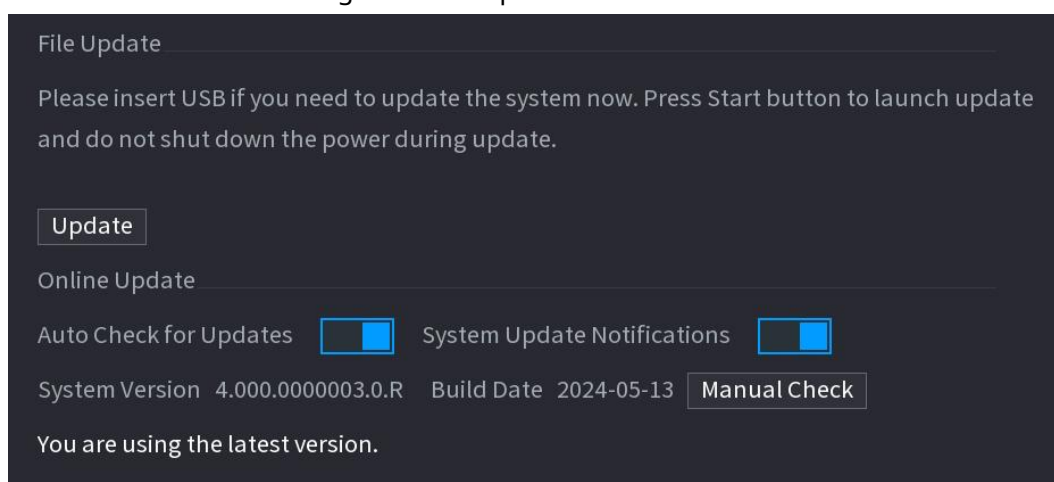
Step 3: Click on**Update**(Update).

Figure 5-324 Navigation
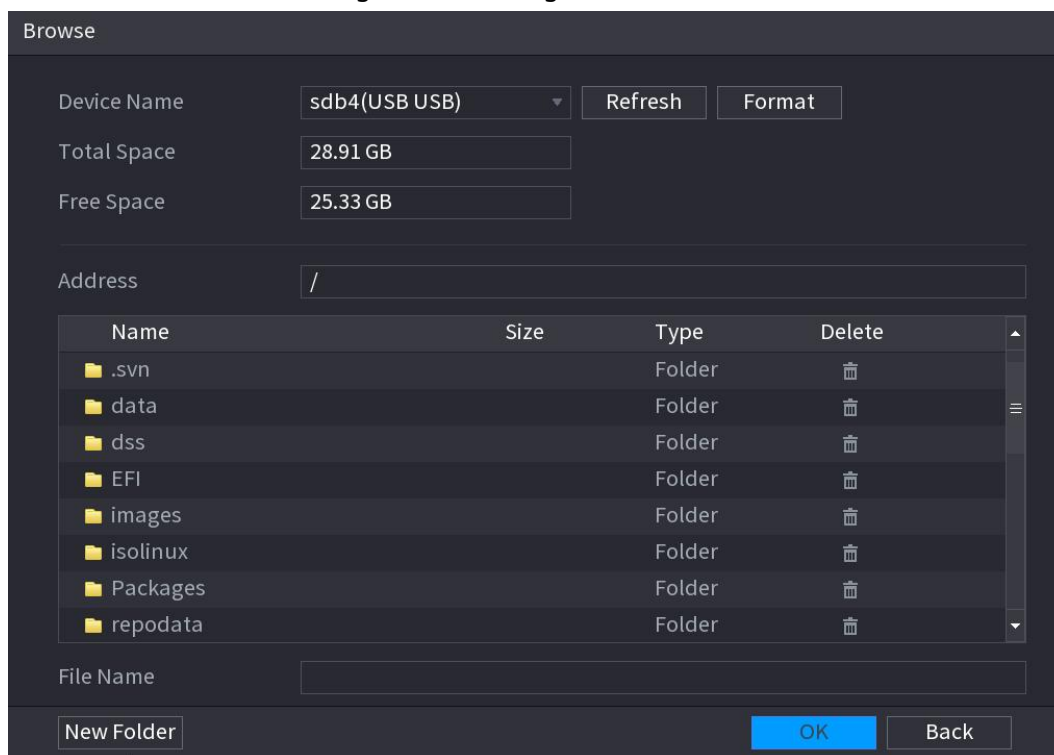
Step 4: Click on the update file.

Step 5: The selected file is displayed in the field**Update Files**(Update file). Step 6: Click on **Start**(Start).

5.22.6.2 Online Update

If your device is connected to the Internet, you can use the online update function to update the system.

Preliminary information

Before using this feature, you need to check if there is a new version by automatic or manual check.

● Automatic check: The device checks at intervals whether a new version is available.

● Manual Check: A real-time check is performed for new versions available.

⚠️

During there procedure, to make sure That the net is delivered correctly And that there connection Of net functions waves avoid problems Of update.

Procedure

Step 1: Select**Main menu**>**MAINTENANCE**>**Update**(Main Menu > MAINTENANCE > Update).

Step 2: Check if there is a new version.

● Automatically check for updates: Enable automatic checking for updates.

● Manual verification: Click on**Manual verification**(Manual Check).

The system starts searching for new versions. After the check, the system displays the results.

- If you see a message that the latest version is already installed, you do not need to upgrade.
- If the message indicates that a new version is available, go to step 3.

Step 3: Click on**Update now**(Upgrade Now) to update your system.

5.22.6.3 Uboot Update

- It Necessary save the file "u-boot.bin.img" And update.img" in the directory principal of the device Of archiving USB And the device Of archiving USB must to be in format FAT32.
- Make sure That The device Of archiving USB is inserted, otherwise Not I will be to possible to carry out the update.

When the device boots, the system automatically checks whether a USB storage device is inserted and whether there is an update file. If there is and the update file check result is correct, the system will automatically perform the update. Uboot update saves the need to perform the update via +TFTP when the device is shut down.

5.22.7 Reset to default settings

On the local page, you can restore the device to its default configurations.

Preliminary information

This function And supported Alone from the account of the administrator.

You can select which settings to restore to factory defaults.

Procedure

Step 1: Select**Main menu**>**MAINTENANCE**>**Default**(Main Menu > MAINTENANCE > Default).

Step 2: Reset settings.

- Click on**Default**(Default) to restore all parameters to the default settings, except the network and user management parameters.
- Click on**Factory default settings**(Factory Default), select**OK**, then enter the administrator password in the displayed dialog box to reset all device parameters to factory default settings.

5.23 Device Logout

Click on　　　　, top right of the Main Menu page or any other page, after accessing the main menu.

● By selecting**Disconnect**(Logout), you can log out of the device.

● By selecting**Restart**(Reboot), you can restart your device.

● By selecting**Arrest**(Shutdown), you can turn off the device.

6 Use via Web

📖

- The pages reported In the manual I am to Alone scope Of reference For there presentation from the related operations. The look actual could be vary in base to the model purchased. In case Of discrepancy between The manual And the product, prevails the latter.
- The manual And document generic That has the scope Of present The product. Therefore, someone functions of the device described In the manual they could Not to be applicable to the model purchased.
- Beyond That from interface Web, And ssible log in to the device using The our software Smart PSS. For information detailed, consult The manual of the user Of Smart PSS.

6.1 Connecting to the network

Preliminary information

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- The address IP of the device expected as setting Of factory And 192.168.1.108.
- The device supports The monitoring through different browser as Safari, FireFox, Google on computer Apple For to execute functions which monitoring multichannel, check PTZ And configuration of the parameters of the device.

Procedure

Step 1: Connect the device to the network.

Step 2: Configure the IP address, subnet mask, and gateway for your computer and device. For details on the device's network configuration, see "5.1.4.4 Configuring Network Settings".
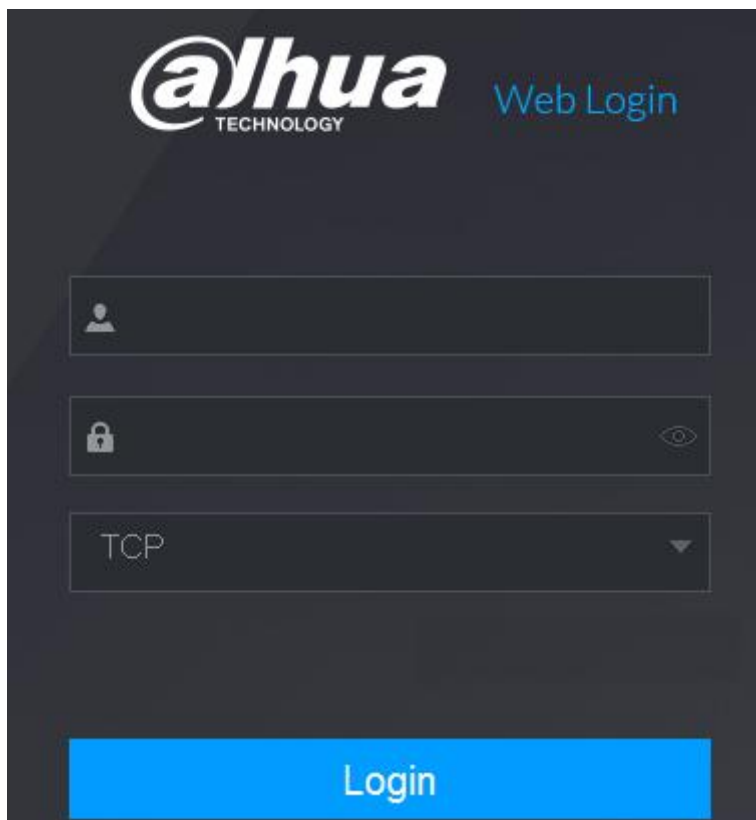
Step 3: On your computer, check the device's network connection by "ping ***.***.***.*** ". Typically the TLL return value is 255.

6.2 Access to the web page

Procedure

Step 1: Open IE browser, enter the IP address of your device and press Enter.

Figure 6-1 Access

Step 2: Enter your username and password.

📖

● The account Of administrator default And **admin** . There password And that set during there procedure Of configuration initial. For protect adequately The own account, Yes suggests Of keep there password to the Safe And change it periodically.

● Do click on 👁 For to view there password.

Step 3: Click on **Sign in** (Login).

6.3 Introduction to the Web Main Menu

After logging in to the web page, the main menu appears.

Figure 6-2 Main menu
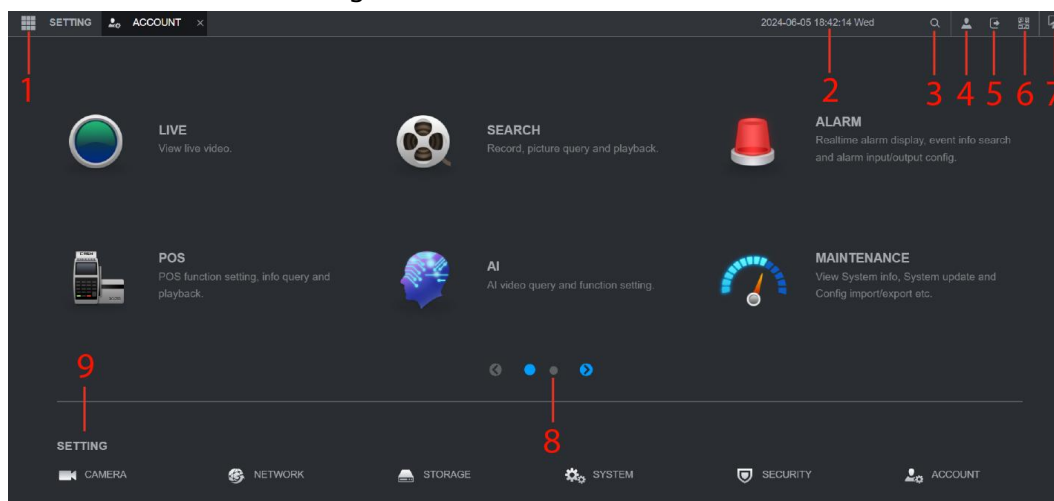
Table 6-1 Description of the main menu

N.	Icon	Description
1		It includes a setup menu through which you can configure camera settings, network settings, storage settings, system settings, account settings and view information.
2	Nobody	Show system date and time.
3		Click on and enter the desired keyword. This way it is you can quickly access this page.
4		By moving the cursor over the icon in , the user account is shown use.
5		Click on to select the desired option from**You go out** (Logout),**Restart**(Reboot) or**Turn off**(Shutdown).
6		Allows you to view the mobile phone client and the QR code of the device serial number. ● Mobile Phone Client: Using your phone, scan the QR code to add the device to the mobile phone client. Then you can access the device from your mobile phone. ● Device SN: Get the device serial number by scanning the QR code. Log in to the P2P management platform and add the device serial number to the platform. Then you can log in and manage the device over the WAN. For more details, please refer to the P2P operation manual. You can also configure the P2P function in the local settings. Please refer to "5.1.4.5 Configuring P2P Settings".
7		Click on to return to the main menu page.
8	Nobody	Includes 10 boxes with function:**IN REAL TIME**(LIVE),**NEAR** (SEARCH),**ALARM**(ALARM),**POS,IA**(TO THE),**MAINTENANCE**

N.	Icon	Description
		(MAINTENANCE),**BACKUP**,**DISPLAY**,**AUDIO**And**IoT**. Click on a name to open the corresponding configuration page.
9	SETTINGS ONI	Includes 6 panels: Click on a name to open the corresponding configuration page. ● **CAMERA:**Allows you to add cameras, set A/V encoding, properties and camera name. ● **NET:**Allows you to set up basic network function, Wi-Fi, email and P2P. ● **ARCHIVE:**It includes functions such as recording schedule, disk management, disk detection, storage space calculation, etc. ● **SYSTEM:**Allows you to configure basic parameters and system date and language. ● **SAFETY:**Allows you to check the protection status and change the security configurations of your device. ● **ACCOUNT:**Allows you to add/delete users and manage their permissions.

6.4 Viewing the Open Source Software Warning

Access the web, select**MAINTENANCE**>**System information**>**Legal information** (MAINTENANCE > System Info > Legal Info), then click**View**(View) to view the open source software notice.

7 FAQ

1.**The DVR does not start properly.** The

following situations are possible:

- The diet is not adequate.
- The power supply is not connected properly.
- The ignition switch is damaged.
- The program update was not successful.
- The hard drive is malfunctioning or there is a problem with the hard drive jumper.
- There is a compatibility issue with Seagate DB35.1, DB35.2, SV35 or Maxtor 17-g. Update to the latest version to resolve this issue.
- Front panel error.
- The main board is damaged.

2.**Often the DVR shuts down or stops working.** The

following situations are possible:

- The input voltage is not stable or insufficient.
- The hard drive is malfunctioning or there are problems with the hard drive jumper configuration.
- Insufficient power supply.
- The camera signal is not stable.
- The operating environment is too harsh; too much dust.
- Hardware malfunction.

3.**The hard drive cannot be detected.** The

following situations are possible:

- The HDD is faulty.
- The hard drive jumper is damaged.
- The HDD cable connection is unstable.
- The SATA port on the main board is not working.

4.**No video output in single channel, multi channel and all channel modes.** The

following situations are possible:

- The program is not compatible. Update to the latest version.
- Brightness is 0. Reset to default configuration.
- Input video signal absent or too weak.
- Check privacy masking or screen saver.
- DVR hardware malfunction.

5.**Real-time color video is distorted.** The

following situations are possible:

- When using BNC output, NTSC and PAL configuration is incorrect. Real-time video is black and white.
- The DVR impedance and the monitor impedance are not compatible.
- The video is too long or the quality is insufficient.
- The DVR's color or brightness settings are incorrect.

6.**It is not possible to search for local recordings.**

The following situations are possible:

● The hard drive jumper is damaged.

● The HDD is faulty.

● The updated program is not compatible.

● The recorded file has been overwritten.

● The recording function has been disabled.

7. **When searching for local recordings, the video is distorted.** The following situations are possible:

● The video quality setting is too low.

● Program reading error; insufficient data. Mosaic displayed in full screen. Restart DVR to solve the problem.

● Hard drive jumper problem.

● HDD malfunction.

● DVR hardware malfunction.

8. **There is no audio during monitoring mode.** The following situations are possible:

● The pickup is not powered.

● The speaker is not powered.

● The audio cable is damaged.

● DVR hardware malfunction.

9. **Audio is present in monitoring mode but not in playback mode.** The following situations are possible:

● The configuration is incorrect. Please enable the audio feature.

● No video input on a channel. Playback is choppy when the screen is blue.

10. **The system time is incorrect.** The following situations are possible:

● The configuration is incorrect.

● The battery is not connected properly or the voltage is insufficient.

● The oscillator is broken.

11. **The DVR panning cannot be controlled.** The following situations are possible:

● PTZ module front panel error.

● Incorrect PTZ decoder configuration, connection or installation.

● The cable is not connected properly.

● The PTZ module configuration is incorrect.

● The PTZ decoder protocol and DVR protocol are not compatible.

● The address of the PTZ decoder and the DVR are not compatible.

● If there are multiple decoders, add a 120 ohm resistor between the A and B wires of the farthest PTZ decoder to eliminate reverberation or differentiate impedance. Otherwise, the PTZ control will not be stable.

● The distance is too far.

12. **Motion detection not working.** The following situations are possible:

● The period configuration is incorrect.

- The motion detection zone configuration is incorrect.
- Sensitivity is insufficient.
- For some versions there is a hardware limit.

13. **Unable to access client or web control.** The

following situations are possible:

- If you are using Windows 98 or Windows ME, please upgrade your system to Windows 2000 SP4. Alternatively, you can install the client software of previous versions. Currently, our DVR is not compatible with Windows Vista.
- ActiveX controls disabled.
- Version lower than dx8.1. Update your video card driver.
- Problem with network connection.
- Incorrect network configuration.
- The username or password is invalid.
- Client not compatible with DVR program.

14. **Mosaic only (no video) when previewing or playing remote video files.** The

following situations are possible:

- Network fluidity is poor.
- Client resources are limited.
- A multi-transmission group has been configured on the DVR. This mode may cause mosaic effect. Generally, it is not recommended to use this mode.
- Privacy masking or channel protection has been configured.
- The user does not have monitoring rights.
- The quality of the DVR's local video output is poor.

15. **The network connection is not stable.**

The following situations are possible:

- The network is not stable.
- IP address conflict.
- MAC address conflict.
- Faulty computer or DVR network card.

16. **Burning error/USB backup error.** The

following situations are possible:

- The burner and the DVR are connected to the same data cable.
- The system is using too much CPU resources. Stop recording, then start backup.

- The data volume exceeds the capacity of the backup device. Burning may fail.

- The backup device is not compatible.
- The backup device is damaged.

17. **The keyboard cannot control the DVR.** The

following situations are possible:

- The DVR serial port settings are incorrect.
- The address is incorrect.
- When there are multiple selectors, the power supply is not enough.
- The transmission distance is too far.

18.**It is not possible to turn off the alarm signal.**

The following situations are possible:

● The alarm configuration is incorrect.

● The alarm output was manually disconnected.

● Input device error or incorrect connection.

● Some versions of the program may have this problem. Update your system.

19.**The alarm does not work.**

The following situations are possible:

● The alarm configuration is incorrect.

● The alarm cable is not connected properly.

● The alarm input signal is incorrect.

● An alarm device is connected to two circuits.

20.**The remote control does not work.** The

following situations are possible:

● The remote control address is incorrect.

● The distance is too far or the remote control tilt is too low.

● The remote control battery is low.

● The remote control is damaged or the front panel of the DVR is damaged.

21.**The retention period for the records is insufficient.** The

following situations are possible:

● The camera quality is poor. The lens is dirty. The camera is installed against the light. The camera iris setting is incorrect.

● The HDD capacity is not enough.

● The HDD is damaged.

22.**The downloaded file cannot be played.**

The following situations are possible:

● No media player available.

● Graphics acceleration software version lower than DXB8.1.

● DivX503Bundle.exe control not available for playing the converted AVI file via media player.

● No DivX503Bundle.exe or ffdshow-2004 1012.exe not available in Windows XP.

23.**I forgot my local menu operation password or network password.** Please contact your local technician or our sales representative for assistance. We will help you solve the problem.

24.**When I log in via HTTPS, I get a message saying that this site's certificate matches another address.**

Re-create the server certificate.

25.**When I log in via HTTPS, I get a message saying the certificate is not trusted.**

Download the root certificate again.

26.**When I log in via HTTPS, I get a message saying the certificate has expired or is not yet valid.**

Make sure the date and time on your computer match the date and time on your device.

27. **If I connect an analog camera to the device, there is no video output signal.** The

following situations are possible:

● Check the camera power, data cable connection, etc.

● Devices in this series do not support all brands of analog cameras. Please check if your device supports standard definition analog cameras.

28. **If I connect a standard definition analog or coaxial camera to the device, there is no video output signal.**

The following situations are possible:

● Check the camera power or data cable connection.

● For the product to support standard analog cameras and HD cameras, please access the **Main menu**>**CAMERA**>**Channel type**(Main Menu > CAMERA > Channel Type), then select the corresponding channel type and restart the DVR.

29. **Unable to connect to IP channel.** The

following situations are possible:

● Check that the camera is online.

● Check that the channel IP is configured correctly (IP address, username, password, connection protocol and port number).

● Check if the allow list is set on the camera (only the specified devices can connect to the camera).

30. **After establishing connection with IP channel, the output is OK in single window mode, but there is no output signal in multi-window mode.**

The following situations are possible:

● Check if the camera secondary stream is enabled.

● Check whether the camera's sub-stream type is H.264.

● Check if the device supports the resolution of the camera's sub-stream (e.g. 960H, D1 and HD1).

31. **After establishing connection with IP channel, the output is OK in multi-window mode but there is no output signal in single-window mode.**

The following situations are possible:

● Check for video on the IP channel. Go to**Main menu**> **MAINTENANCE**>**System information**->**BPS**(Main Menu > MAINTENANCE > System Info > BPS), to view real-time information about the transmission flow.

● Check if the camera's main stream is enabled.

● Check whether the main stream type of the camera is H.264.

● Check whether the device supports the main stream resolution of the camera (e.g. 960H, D1, HD1 and so on).

● Check if the network camera transmission threshold has been reached. Check the camera user who is currently online.

32. **After connecting to the IP channel, there is no video output in either multi-window or single-window mode. However, I see that there is a stream.**

The following situations are possible:

● Check whether the camera's main/sub stream type is H.264.

● Check if your device supports the resolution of the camera's main/substream (e.g. 1080p, 720p, 960H, D1 and HD1).
● Check the camera configuration. Make sure it supports third-party devices.

33.**DDNS registration failed or cannot access the device domain.** The following situations are possible:
● Check if the device is connected to the WAN. Check if the device has obtained the IP address, if the PPPoE can communicate. If there is a router, check it and verify if the device's IP is online.
● Check if DDNS protocol is enabled. Check if DDNS function is OK.
● Check if your DNS configuration is correct. Google's default DNS server is 8.8.8.8, 8.8.5.5. You can use different DNS provided by your ISP.

34.**I can't use the P2P function on my mobile or via the web.** The following situations are possible:
● Check if P2P functionality is enabled on your device. (**Main menu**>**Net**>**P2P** (Main Menu > Network > P2P)
● Check if the device is connected to the WAN network.
● Check whether the P2P access mode of your mobile phone is correct.
● Check whether the device's P2P access port is specified, when using a P2P client.

● Please check that you have entered your username and password correctly.
● Check if the P2P serial number is correct. You can use your mobile phone to scan the QR code on the P2P page of the device (Main Menu > Network > P2P), or you can use the web version information to confirm. (For some products of the previous series, the serial number of the device is the same as the serial number of the main board, which may cause an error.)

35.**If I connect a standard definition camera to the device, there is no video output signal.**
The following situations are possible:
● Check if the DVR supports standard definition signals. Only some series products support analog standard definition signals and coaxial signal input.
● Check if the channel type is correct. For the product to support standard analog cameras and HD cameras, go to Main Menu -> Settings -> Camera -> Channel Type, then select the channel type (for example analog) and restart the DVR. This way the DVR can recognize the analog standard definition.
● Check the camera power or data cable connection.

36.**Unable to connect to IP camera.** The following situations are possible:
● Check if the DVR supports IP channels. Only some series products support A/D switching, you can switch between analog channel and IP channel to connect to IP camera. In**Main menu**>**CAMERA**>**Channel type**(Main Menu > CAMERA > Channel Type), select the last channel to switch to IP channel. Some series products support IP channel extension, N+N mode.

● Check if the IPC and DVR are connected. Log in to**Main menu**>**CAMERA**> **Camera List**(
Main Menu > CAMERA > Camera List) to search and view the IP camera and check if it is
online. Alternatively, you can access**Main menu**> **MAINTENANCE**>**Network Detection**>
Network Test(Main Menu > MAINTENANCE > Network Detection > Network Test), here
you enter the IP address of the IP camera and click the Test button to check whether you
can connect to the IP camera.

● Check that the channel IP is configured correctly (IP address, manufacturer, port,
username, password and remote channel number).

Daily maintenance

● Brush the board, socket and frame regularly.

● The device must be firmly grounded if there is any audio or video disturbance. Keep
the device away from sources of static or induced voltage.

● Disconnect the power cord before removing the audio/video signal cables and RS-232 or
RS-485 cables.

● Do not connect the TV to the local video output port (VOUT). It may damage the video
signal output circuit.

● Always turn off the device using the correct procedure. To turn off the device, use the
shutdown function in the menu or press and hold the power button on the front panel
for at least three seconds. Otherwise, the hard disk may be damaged.

● Keep the device away from direct sunlight or other heat sources. Ensure good
ventilation.

● Check and maintain your device regularly.

Appendix 1 Glossary

The abbreviations in this glossary refer to the Manual.

Appendix Table 1-1 Glossary

Abbreviations	Full term
BNC	Bayonet nut connector
CBR	Constant bit rate
CIF	Common intermediate format
DDNS	Dynamic domain name service
DHCP	Dynamic IP Configuration Protocol
DNS	Domain Name System
Daylight saving time	Daylight saving time
DVR	Digital video recorder
FTP	File Transfer Protocol
HDD	Hard disk drive
HDMI	High definition multimedia interface
HTTP	Hypertext Transfer Protocol
IoT	Internet of Things
IP	Internet Protocol
IVS	Intelligent video system
LAN	Local network
MAC	Media Access Control
MTU	Maximum transmission unit
NTP	Network Time Protocol
NTSC	National Television Standards Committee
ONVIF	Open Network Video Interface Forum
PAL	Phase shift line
PAT	Port Address Translation
POS	Point of Sale
PPPoE	Point-to-point protocol over Ethernet
PSS	Professional surveillance software
PTZ	Pan, tilt, zoom
RCA	American Radio Corporation
RTSP	Real-time streaming protocol
SMART	Self-monitoring, analysis and reporting technology
SATA	Serial Advanced Technology Attachment

Abbreviations	Full term
SMTP	Simple Mail Transfer Protocol
SNMP	Simple Network Management Protocol
TCP	Transmission Control Protocol
TFTP	Trivial File Transfer Protocol
UDP	User Datagram Protocol
UPnP	Universal Plug and Play
VBR	Variable bit rate
VGA	Video Graphics Array
W-A-N	Wide Area Network

Appendix 2 Calculating Hard Disk Capacity

Calculate the total capacity needed for each DVR based on video recording (video recording type and time).

Procedure

Step 1: Use formula (1) to calculate the storage capacity, that is, the capacity needed for each channel, for each hour, expressed in MB.

Formula (1): $q_i = d_i \div 8 \times 3600 \div 1024$

In the formula: indicates the bit rate, expressed in Kbit/s

Step 2: After confirming the required video recording time, use formula (2) to calculate the capacity, i.e. the storage space required for each channel, expressed in MB.

Formula (2): $m_i = q_i \times h_i \times D_i$

In the formula:

● h_i indicates the recording time for each day (hour)

● D_i indicates the number of days for which the video must be kept

Step 3: Use formula (3) to calculate the total (cumulative) capacity required for all DVR channels during scheduled video recording.

Formula (3): $q_T = \sum_{i=1}^{c} m_i$

In the formula: c indicates the total number of channels of a DVR.

Step 4: Use formula (4) to calculate the total (cumulative) capacity q_T necessary for all DVR channels during video recording in alarm status (including motion detection).

Formula (4): $q_T = \sum_{i=1}^{c} m_i \times a\%$

In the formula: $a\%$ indicates the frequency of alarms.

See the following table for the approximate size of a one-hour file for each channel. (All data listed below is for reference only.)

Appendix Table 2-1 Hard disk capacity calculation

Flow dimensions video (max)	File size	Flow dimensions video (max)	File size
96Kbps	42 MB	128Kbps	56 MB
160Kbps	70 MB	192Kbps	84 MB
224Kbps	98 MB	256Kbps	112 MB
320Kbps	140 MB	384Kbps	168 MB
448Kbps	196 MB	512Kbps	225 MB
640Kbps	281 MB	768Kbps	337 MB
896Kbps	393 MB	1024Kbps	450 MB
1280Kbps	562 MB	1536 Kbps	675 MB
1792 Kbps	787 MB	2048Kbps	900 MB

Appendix 3 Compatible Backup Devices

Appendix 3.1 Compatible USB Device List

Appendix Table 3-1 Compatible USB devices

Producer	Model	Capacity
Sandisk	Cruzer Micro	512 MB
Sandisk	Cruzer Micro	1 GB
Sandisk	Cruzer Micro	2 GB
Sandisk	Cruzer Freedom	256 MB
Sandisk	Cruzer Freedom	512 MB
Sandisk	Cruzer Freedom	1 GB
Sandisk	Cruzer Freedom	2 GB
Kingston	DataTraveler II	1 GB
Kingston	DataTraveler II	2 GB
Kingston	DataTraveler	1 GB
Kingston	DataTraveler	2 GB
Maxell	USB Flash Driver	128 MB
Maxell	USB Flash Driver	256 MB
Maxell	USB Flash Driver	512 MB
Maxell	USB Flash Driver	1 GB
Maxell	USB Flash Driver	2 GB
Kingax	Super Stick	128 MB
Kingax	Super Stick	256 MB
Kingax	Super Stick	512 MB
Kingax	Super Stick	1 GB
Kingax	Super Stick	2 GB
Netac	U210	128 MB
Netac	U210	256 MB
Netac	U210	512 MB
Netac	U210	1 GB
Netac	U210	2 GB
Netac	U208	4GB
Teclast	You Cool	128 MB
Teclast	You Cool	256 MB
Teclast	You Cool	512 MB

Producer	Model	Capacity
Teclast	You Cool	1 GB
Sandisk	Cruzer Micro	2 GB
Sandisk	Cruzer Micro	8 GB
Sandisk	You Cool	2 GB
Sandisk	Hongjiao	4GB
Lexar	Lexar	256 MB
Kingston	Data Traveler	1 GB
Kingston	Data Traveler	16 GB
Kingston	Data Traveler	32 GB
Aigo	L8315	16 GB
Sandisk	250	16 GB
Kingston	Data Traveler Locker+	32 GB
Netac	U228	8 GB

Appendix 3.2 Compatible SD Card List

Appendix Table 3-2 Compatible SD cards

Producer	Standard	Capacity	Card type
Transcend	SD111HC6	16 GB	Big
Kingston	SD111HC4	4GB	Big
Kingston	SD	2 GB	Big
Kingston	SD	1 GB	Big
Sandisk	SD111HC2	8 GB	Small
Sandisk	SD	1 GB	Small

Appendix 3.3 List of compatible portable hard drives

Appendix Table 3-3 Compatible portable hard drives

Producer	Model	Capacity
YDStar	YDstar HDD box	40 GB
Netac	Netac	80 GB
Iomega	Iomega RPHD-CG" RNAJ50U287	250 GB
WD Elements	WCAVY1205901	1.5TB
Newsmy	Liang Jian	320 GB
WD Elements	WDBAAR5000ABK-00	500 GB

Producer	Model	Capacity
WD Elements	WDBAAU0015HBK-00	1.5TB
Seagate	FreeAgent Go(ST905003F)	500 GB
Aigo	H8169	500 GB

Appendix 3.4 Compatible USB DVD Device List

Appendix Table 3-4 Compatible USB DVDs

Producer	Model
Samsung	SE-S084
BenQ	LD2000-2K4

Appendix 3.5 Compatible SATA DVD List

Producer	Model
LG	GH22NS30
Samsung	TS-H653 Ver.A
Samsung	TS-H653 Ver.F
Samsung	SH-224BB/CHXH
SONY	DRU-V200S
SONY	DRU-845S
SONY	AW-G170S
Pioneer	DVR-217CH

Appendix 3.6 Compatible SATA HDD List

Update The firmware of the DVR at the version more recent For guarantee The operation. Yes they recommend discs rigid with capacity to from 500 GB to 4 TB.

Appendix Table 3-5 Compatible SATA hard drives

Producer	Series	Model	Capacity	Door mode
Seagate	Video 3.5	ST1000VM002	1TB	SATA
Seagate	Video 3.5	ST2000VM003	2TB	SATA
Seagate	Video 3.5	ST3000VM002	3TB	SATA
Seagate	Video 3.5	ST4000VM000	4TB	SATA
Seagate	SV35	ST1000VX000	1TB	SATA

Producer	Series	Model	Capacity	Door mode
Seagate	SV35	ST2000VX000	2TB	SATA
Seagate	SV35	ST3000VX000	3TB	SATA
Seagate	SV35 (Support for recovery disk data rigid offered by Seagate)	ST1000VX002	1TB	SATA
Seagate	SV35 (Support for recovery disk data rigid offered by Seagate)	ST2000VX004	2TB	SATA
Seagate	SV35 (Support for recovery disk data rigid offered by Seagate)	ST3000VX004	3TB	SATA
Seagate	SkyHawk HDD	ST1000VX001	1TB	SATA
Seagate	SkyHawk HDD	ST1000VX005	1TB	SATA
Seagate	SkyHawk HDD	ST2000VX003	2TB	SATA
Seagate	SkyHawk HDD	ST2000VX008	2TB	SATA
Seagate	SkyHawk HDD	ST3000VX006	3TB	SATA
Seagate	SkyHawk HDD	ST3000VX010	3TB	SATA
Seagate	SkyHawk HDD	ST4000VX000	4TB	SATA
Seagate	SkyHawk HDD	ST4000VX007	4TB	SATA
Seagate	SkyHawk HDD	ST5000VX0001	5TB	SATA
Seagate	SkyHawk HDD	ST6000VX0001	6TB	SATA
Seagate	SkyHawk HDD	ST6000VX0023	6TB	SATA
Seagate	SkyHawk HDD	ST6000VX0003	6TB	SATA
Seagate	SkyHawk HDD	ST8000VX0002	8TB	SATA
Seagate	SkyHawk HDD	ST8000VX0022	8TB	SATA
Seagate	SkyHawk HDD	ST100000VX0004	10TB	SATA
Seagate	SkyHawk HDD (Support for the data recovery of the hard drive powered by Seagate)	ST1000VX003	1TB	SATA
Seagate	SkyHawk HDD (Support for the data recovery of the hard drive powered by	ST2000VX005	2TB	SATA

Producer	Series	Model	Capacity	Door mode
	Seagate)			
Seagate	SkyHawk HDD (Support for the data recovery of the hard drive powered by Seagate)	ST3000VX005	3TB	SATA
Seagate	SkyHawk HDD (Support for the data recovery of the hard drive powered by Seagate)	ST4000VX002	4TB	SATA
Seagate	SkyHawk HDD (Support for the data recovery of the hard drive powered by Seagate)	ST5000VX0011	5TB	SATA
Seagate	SkyHawk HDD (Support for the data recovery of the hard drive powered by Seagate)	ST6000VX0011	6TB	SATA
Seagate	SkyHawk HDD (Support for the data recovery of the hard drive powered by Seagate)	ST8000VX0012	8TB	SATA
WD	WD Green	WD10EURX (EOL)	1TB	SATA
WD	WD Green	WD20EURX (EOL)	2TB	SATA
WD	WD Green	WD30EURX (EOL)	3TB	SATA
WD	WD Green	WD40EURX (EOL)	4TB	SATA
WD	WD Purple	WD10PURX	1TB	SATA
WD	WD Green	WD20PURX	2TB	SATA
WD	WD Green	WD30PURX	3TB	SATA
WD	WD Green	WD40PURX	4TB	SATA
WD	WD Green	WD50PURX	5TB	SATA
WD	WD Green	WD60PURX	6TB	SATA
WD	WD Green	WD80PUZX	8TB	SATA
WD	WD Green	WD10PURZ	1TB	SATA
WD	WD Green	WD20PURZ	2TB	SATA

Producer	Series	Model	Capacity	Door mode
WD	WD Green	WD30PURZ	3TB	SATA
WD	WD Green	WD40PURZ	4TB	SATA
WD	WD Green	WD50PURZ	5TB	SATA
WD	WD Green	WD60PURZ	6TB	SATA
WD	WD Green	WD80PURZ	8TB	SATA
WD	WD Green	WD4NPURX	4TB	SATA
WD	WD Green	WD6NPURX	6TB	SATA
TOSHIBA	Mars	DT01ABA100V	1TB	SATA
TOSHIBA	Mars	DT01ABA200V	2TB	SATA
TOSHIBA	Mars	DT01ABA300V	3TB	SATA
TOSHIBA	Sound	MD03ACA200V	2TB	SATA
TOSHIBA	Sound	MD03ACA300V	3TB	SATA
TOSHIBA	Sound	MD03ACA400V	4TB	SATA
TOSHIBA	Sound	MD04ABA400V	4TB	SATA
TOSHIBA	Sound	MD04ABA500V	5TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST1000NM0033	1TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST2000NM0033	2TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST3000NM0033	3TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST4000NM0033	4TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST1000NM0055	1TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST2000NM0055	2TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST3000NM0005	3TB	SATA

Producer	Series	Model	Capacity	Door mode
Seagate	Constellation ES series (Interface (SATA)	ST4000NM0035	4TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST6000NM0115	6TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST8000NM0055	8TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST10000NM0016	10TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST4000NM0024	4TB	SATA
Seagate	Constellation ES series (Interface (SATA)	ST6000NM0024	6TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST1000NM0023	1TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST2000NM0023	2TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST3000NM0023	3TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST4000NM0023	4TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST6000NM0014	6TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST1000NM0045	1TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST2000NM0045	2TB	SATA
Seagate	Constellation ES series	ST3000NM0025	3TB	SATA

Producer	Series	Model	Capacity	Door mode
	(SAS Interface)			
Seagate	Constellation ES series (SAS Interface)	ST4000NM0025	4TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST6000NM0095	6TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST6000NM0034	6TB	SATA
Seagate	Constellation ES series (SAS Interface)	ST8000NM0075	8TB	SATA
WD	WD RE series (Interface (SATA)	WD1003FBYZ	1TB	SATA
WD	WD RE series (Interface (SATA)	WD1004FBYZ (replaces (WD1003FBYZ)	1TB	SATA
WD	WD RE series (Interface (SATA)	WD2000FYYZ	2TB	SATA
WD	WD RE series (Interface (SATA)	WD2004FBYZ(replaces he swears WD2000FYYZ)	2TB	SATA
WD	WD RE series (Interface (SATA)	WD3000FYYZ	3TB	SATA
WD	WD RE series (Interface (SATA)	WD4000FYYZ	4TB	SATA
WD	WD (Interface (SATA)	WD2000F9YZ	2TB	SATA
WD	WD (Interface (SATA)	WD3000F9YZ	3TB	SATA
WD	WD (Interface (SATA)	WD4000F9YZ	4TB	SATA
WD	WD (Interface (SATA)	WD4002FYYZ	4TB	SATA
WD	WD (Interface (SATA)	WD6001FSYZ	6TB	SATA
WD	WD (Interface (SATA)	WD6002FRYZ	6TB	SATA
WD	WD (Interface (SATA)	WD8002FRYZ	8TB	SATA

Producer	Series	Model	Capacity	Door mode
HITACHI	Ultrastar series (Interface (SATA)	HUS724030ALA640	3TB	SATA
HITACHI	Ultrastar series (Interface (SATA)	HUS726060ALE610	6TB	SATA
HITACHI	Ultrastar series (Interface (SATA)	HUH728060ALE600	6TB	SATA
HITACHI	Ultrastar series (Interface (SATA)	HUH728080ALE600	8TB	SATA
HITACHI	Ultrastar series (SAS Interface)	HUS726020AL5210	2TB	SATA
HITACHI	Ultrastar series (SAS Interface)	HUS726040AL5210	4TB	SATA
HITACHI	Ultrastar series (SAS Interface)	HUS726060AL5210	6TB	SATA
Seagate	Pipeline HD Mini	ST320VT000	320 GB	SATA
Seagate	Pipeline HD Mini	ST500VT000	500 GB	SATA
Seagate	Pipeline HD Mini	ST2000LM003 (EOL)	2TB	SATA
TOSHIBA	2.5-inch computer series	MQ01ABD050V	500 GB	SATA
TOSHIBA	2.5-inch computer series	MQ01ABD100V	1TB	SATA
SAMSUNG	HN-M101MBB	HN-M101MBB (EOL)	1TB	SATA
Seagate	2.5-inch enterprise series	ST1000NX0313	1TB	SATA
Seagate	2.5-inch enterprise series	ST2000NX0253	1TB	SATA

Appendix 5 List of compatible displays

See the following table for a list of compatible displays.

Appendix Table 5-1 Compatible displays

Brand	Model	Dimensions (unit of measurement: inches)
BENQ (LCD)	ET-0007-TA	19" (widescreen)
DELL (LCD)	E178FPc	17"
BENQ (LCD)	Q7T4	17"
	Q7T3	17"
HFNOVO (LCD)	LXB-L17C	17"
SANSUNG (LCD)	225BW	22" (widescreen)
HFNOVO (CRT)	LXB-FD17069HB	17"
HFNOVO (CRT)	LXB-HF769A	17"
HFNOVO(CRT)	LX-GJ556D	17"
Samsung (LCD)	2494HS	24"
Samsung (LCD)	P2350	23"
Samsung (LCD)	P2250	22"
Samsung (LCD)	P2370G	23"
Samsung (LCD)	2043	20"
Samsung (LCD)	2243EW	22"
Samsung (LCD)	SMT-1922P	19"
Samsung (LCD)	T190	19"
Samsung (LCD)	T240	24"
LG (LCD)	W1942SP	19"
LG (LCD)	W2243S	22"
LG (LCD)	W2343T	23"
BENQ (LCD)	G900HD	18.5"
BENQ (LCD)	G2220HD	22"
PHILIPS (LCD)	230E	23"
PHILIPS (LCD)	220CW9	23"
PHILIPS (LCD)	220BW9	24"
PHILIPS (LCD)	220EW9	25"

Appendix 6 Compatible Switchers

Appendix Table 6-1 Compatible switchers

Brand	Model	Network work mode
D-LinK	DES-1016D	10/100M self-adaptive
D-LinK	DES-1008D	10/100M self-adaptive
Ruijie	RG-S1926S	Five network modes: ● Automatic ● HALF-10M ● FULL-10M ● HALF-100M ● FULL-100M
H3C	H3C-S1024	10/100M self-adaptive
TP-LINK	TL-SF1016	10/100M self-adaptive
TP-LINK	TL-SF1008+	10/100M self-adaptive

Appendix 7 Earthing

Appendix 7.1 What is overvoltage?

Surge is a short change in current or voltage that occurs in a very short period of time. In the circuit, it lasts for a few microseconds. In a 220V circuit, a voltage change of 5KV or 10KV in a very short period of time (microseconds) can be called a surge. The voltage surge occurs in two ways: external voltage surge or internal voltage surge.

● External voltage surge: It is mainly caused by lightning. Alternatively, it can be due to voltage changes when connecting or disconnecting the power cord.
● Internal Voltage Surge: According to statistics, 88% of low voltage surges come from internal building sources such as air conditioning systems, elevators, electric welders, air compressors, water pumps, power switches, duplicators and other inductive load devices.

Power surges caused by lightning are far beyond the load level that the computer or microdevices can handle. In most cases, the power surge can cause damage to the chip of the electrical device, generate error codes in the computer, accelerate the aging of components, cause data loss, etc. Even when a small 20 horsepower inductive motor starts or stops, the surge can reach 3000-5000V, adversely affecting electronic devices that use the same distribution box.

To protect the device, it is necessary to evaluate the operating environment and the degree of lightning influence objectively. Since the overvoltage is closely related to the voltage amplitude, frequency, network structure, voltage resistance of the device, protection level, grounding and other factors, the lightning protection work should be a systematic design aiming at comprehensive protection (including building, transmission cable, device, grounding, etc.). The management should be comprehensive, and the measures taken should be scientific, reliable, practical and economical. Considering the high voltage during lightning, according to the International Electrotechnical Commission (IEC) standard on the theory of gradual energy absorption and the classification of the entity in the protection zone, it is necessary to arrange multiple levels of protection.
Lightning rods, lightning rod straps, or lightning rod nets can be used to reduce building damage, injury, or property damage.
Lightning protection devices are divided into three types:
● Power surge arrester: There are single-phase 220V and three-phase 380V surge arresters (mainly parallel connection, sometimes series connection). The surge arrester can be connected in parallel with the power cable to reduce the short-time voltage variation and discharge the peak current. From the BUS to the device, there are usually three levels, so that the system can reduce the voltage and discharge the current gradually, ensuring the protection of the device. You can select the replaceable module type, terminal connection type and portable socket according to your needs.

● Signal surge arrester: This device is mainly used in computer networks and communication systems. The connection type is serial. When the surge arrester is connected to the signal port, it can prevent the lightning current from flowing to the device and at the same time discharge it to the ground to ensure the proper operation of the device. The surge arrester has various specifications and is widely used in many devices, such as telephones, networks, analog communications, digital communications, cable TV and satellite antennas. For all input ports, especially external ones, a signal surge arrester must be installed.

● Antenna Power Cable Strain Relief: It is suitable for the transmitter antenna system or the system of the device that receives the wireless signal. This device also uses serial connection.

When selecting the type of surge arrester, pay attention to the type of port and the reliability of grounding. In some important environments, special shielded cables are required. Do not connect the lightning grounding wire with the lightning rod grounding wire in parallel. Make sure they are far enough apart and properly grounded.

Appendix 7.2 Grounding Methods

It is known that grounding is the most complicated technology in electromagnetic compatibility design, because there is no systematic theory or form. Grounding can be done in different ways, but the choice depends on the structure and performance of the system.

Below are some positive experiences from our past work.

● **Single point grounding:**The following figure shows the single-point grounding. This connection has a common point to allow signal transmission in many circuits. Without a common point, signal transmission errors occur. In the single-point grounding mode, each circuit is simply grounded and all circuits are connected to the same point. Since there is only one common point, there is no circuit and therefore no interference occurs.

Appendix Figure 7-1 Single-point grounding
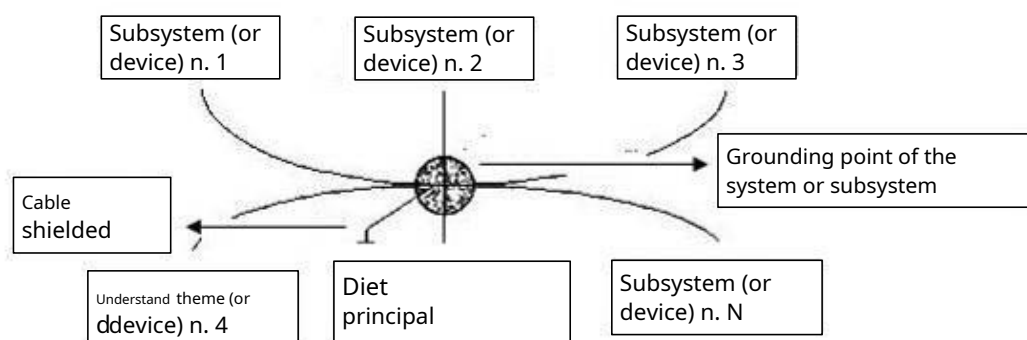
● **Multi-point grounding:**In the following figure, you can see how the internal circuit uses the chassis as a common point. At the same time, all the device chassis use the ground as a common point. In this connection, the ground structure is able to provide a lower ground resistance because, in the case of multi-point grounding, each ground wire is as short as possible. In addition, the parallel connection of the wires can reduce the total conductance of the

ground wire. In a high frequency circuit, multi-point grounding mode must be used, and each wire must be grounded. The length must be less than 1/20 of the signal wavelength.

Appendix Figure 7-2 Multi-point grounding
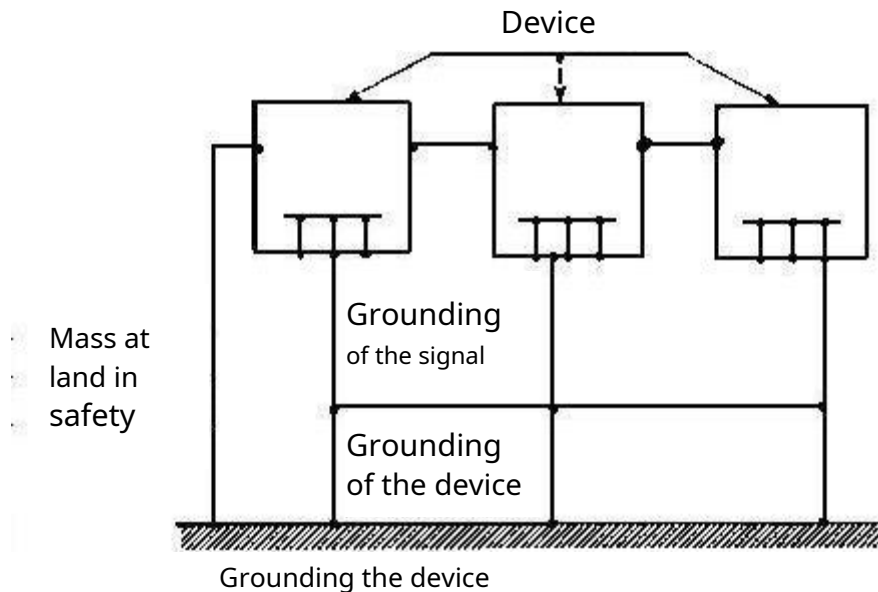
● **Mixed grounding:**Mixed grounding has the characteristics of both single-point and multi-point grounding. For example, the system power supply needs to use single-point grounding, while the radio frequency signal needs multi-point grounding. So, the ground can be referred to as the following figure. For direct current (DC), the capacitance is open circuit, and the circuit is single-point grounding. For radio frequency signal, the capacitance is conductive, and the circuit adopts multi-point grounding.

Appendix Figure 7-3 Mixed grounding
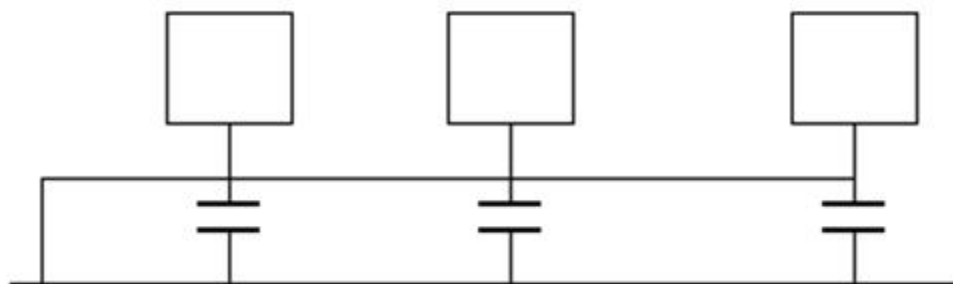
When connecting large devices (the physical size of the device and the connecting cable are large compared to the existing interference wave path), there is a possibility of interference when the current flows through the chassis and cable. In this case, the interference circuit path is usually in the system ground circuit.

In terms of grounding, there are two aspects to consider: System compatibility and external interference coupling in the ground circuit, which may cause system failure. Since the external interference is not regular, the problem is not easy to solve.

Appendix 7.3 Anti-lightning grounding method in monitoring system

● The monitoring system must be equipped with a solid lightning-proof ground to ensure the safety of personnel and device.

● The ground resistance of the monitoring system must be less than 1 Ω.

● Lightning-proof grounding shall use a special grounding cable from the monitor control room to the grounded object. The grounding cable adopts copper-insulated cable or wire, and its grounding section shall be more than 20mm2.

● The ground wire of the monitoring system cannot be short-circuited or mixed with the strong AC wire.

● For all ground wires from the control room to the monitoring system or the ground wire of other monitoring devices, use soft copper resistance wires with a cross-section greater than 4 mm2.

● As a rule, the monitoring system is able to adopt single-point grounding.

● Connect the ground end of the 3-prong plug in the monitor system to the system ground port (protective ground wire)

Appendix 7.4 Shortcut to check the electrical system with a digital multimeter

For 220V AC outlets, from top to bottom we have: E (earth wire), N (neutral wire), L (phase wire). Refer to the following figure.

Appendix Figure 7-4 Electrical outlet
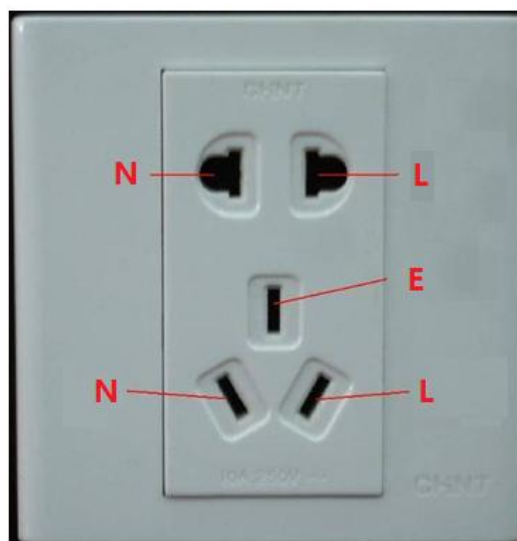
There is a quicker way to check whether the connection of these three cables is standard or not (this is not a precision check).

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In the following operations, thereflow rate of the multimeter mustto be Of750V.

For E (ground wire)

Set the digital multimeter to 750 VAC, hold the metal end with one hand, and insert the probe into the E port of the socket with the other. Refer to the figure below. If the multimeter indicates 0, it means that the ground wire connection is normal. If the value is higher than 10, then it is possible that there is an inductive current and the ground wire connection is not correct.

Appendix Figure 7-5 Checking the ground wire connection
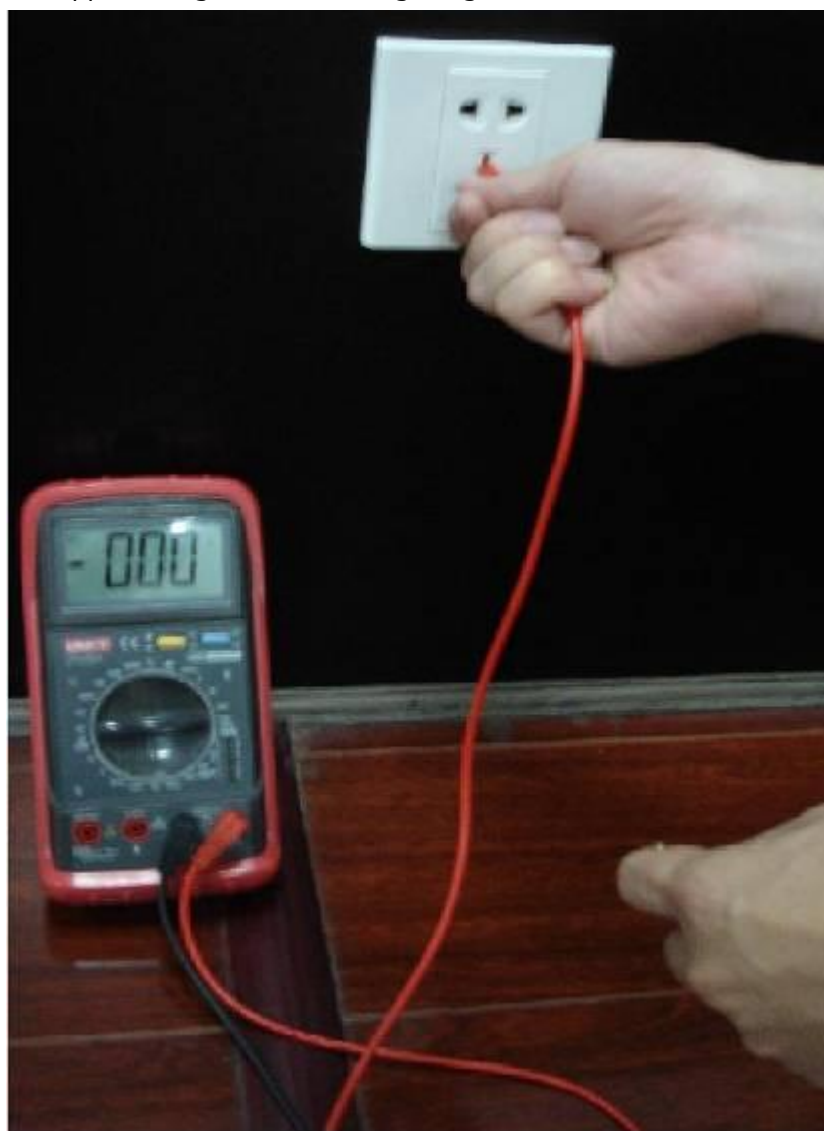
For L (live cable)

Set the digital multimeter to 750VAC, hold the metal end with one hand, and insert the probe into the L port of the socket with the other. Refer to the figure below. If the multimeter indicates 125, it means that the live wire connection is normal. If the value is less than 60, it is possible that the live wire connection is not correct or that the wire is not live at all.

Appendix Figure 7-6 Checking the live cable connection

For N (neutral wire)

Set the digital multimeter to 750 VAC, hold the metal end with one hand, and insert the probe into the N port of the socket with the other. Refer to the figure below. If the multimeter indicates 0, it means that the N wire connection is normal. If the value is higher than 10, then there may be an inductive current and the neutral wire connection is incorrect. If the value is 120, then the neutral wire has been incorrectly connected to the live wire.

Appendix Figure 7-7 Checking the neutral wire connection
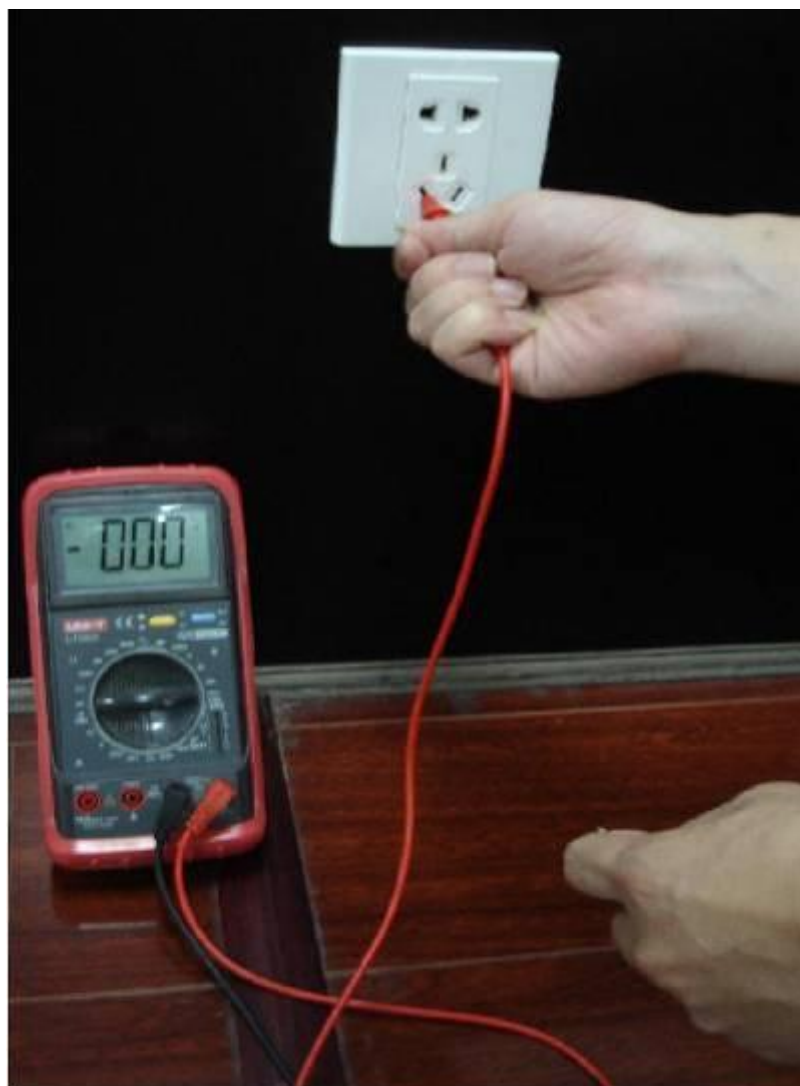
Appendix 8 Connection cable definition RJ45-RS232

For the definition of RJ-45 cable, refer to the following figure.

Appendix Figure 8-1 RJ-45 cable

W=White   **O=Orange**

BL=Blue   **G=Green**

B=Brown
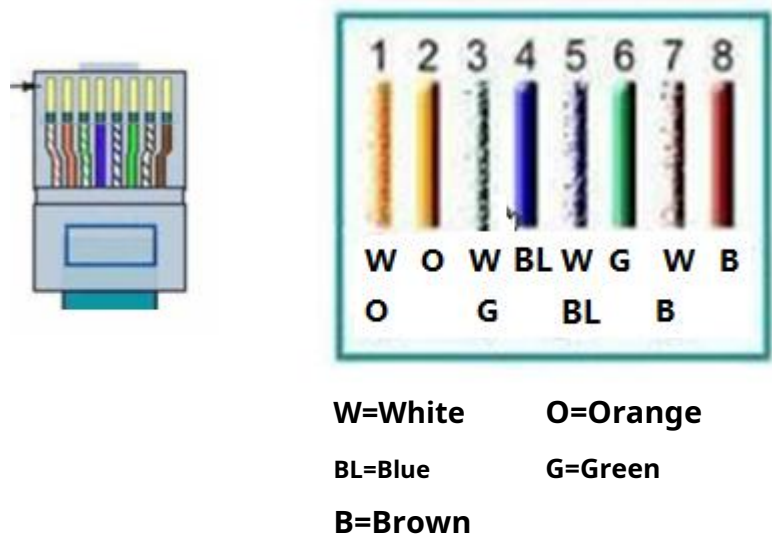
For the definition of the RS-232 connector pins, refer to the following figure.

Appendix Figure 8-2 RS-232 connector
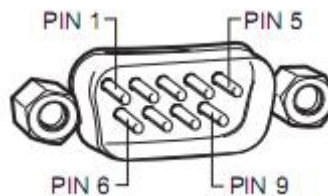
Cross-connection

The following figure illustrates the device connection.

Appendix Figure 8-3 Cross-connection
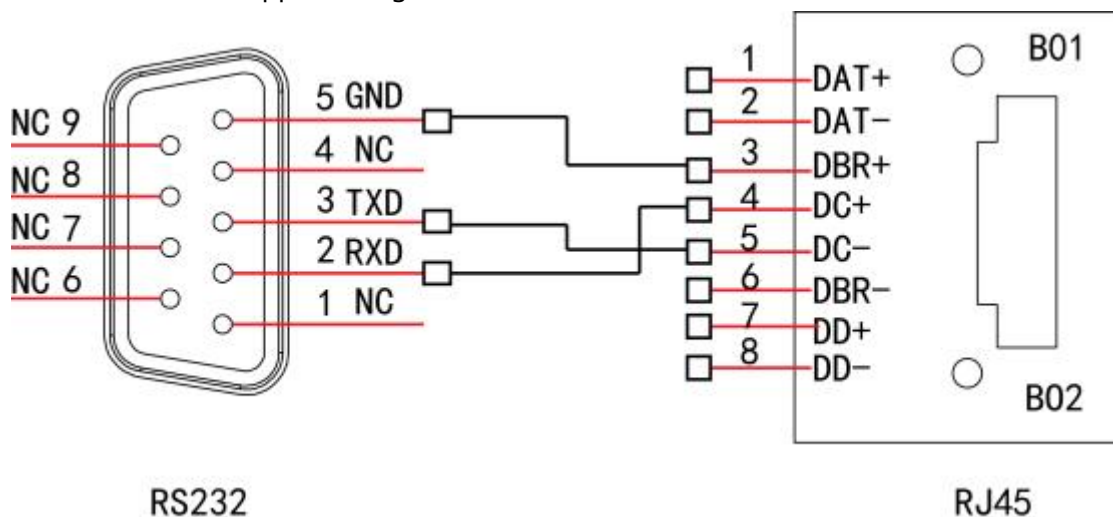
Refer to the following table for detailed information on connecting the crossover cable.

Appendix Table 8-1 Crossover cable connection

RJ-45 (T568B)	RJ-45 (Network Cable)	RS-232	Description of the signal
4	Blue	2	RXD
5	White and blue	3	TXD
3	White and green	5	GND

Direct connection

Refer to the following figure for information on connecting the direct cable.

Appendix Figure 8-4 Direct cable connection
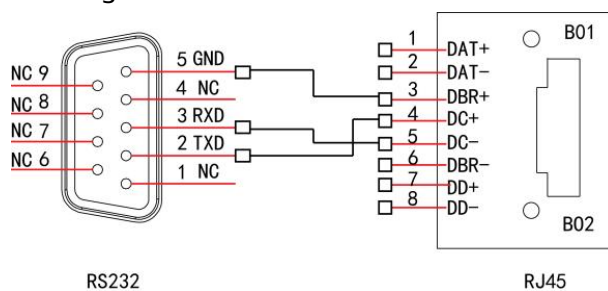
See the following figure for direct connection information.

Appendix Table 8-2 Direct connection

RJ-45 (T568B)	RJ-45 (Network Cable)	RS-232	Description of the signal
4	Blue	3	RXD
5	White and blue	2	TXD
3	White and green	5	GND

Appendix 9 Recommendations on safety

Dahua Vision Technology Co., Ltd. (hereinafter referred to as "Dahua") attaches great importance to cyber security and privacy protection. Dahua continuously allocates special funds to improve employee security awareness and capabilities, and to ensure that our products are secure. Dahua has established a professional security team to ensure comprehensive security control throughout the entire product life cycle, including design, development, testing, production, delivery, and maintenance. Dahua products adhere to the principle of collecting as little data as possible, minimizing repairs, prohibiting backdoors, and disabling unnecessary and unsafe services (such as Telnet). Dahua continuously introduces innovative security technologies to strengthen the protection of its products. In addition, striving to surpass itself, Dahua provides 24/7 security alarm services and security emergency response services to users around the world. This approach ensures better protection of security rights and interests. Meanwhile, Dahua encourages users, partners, suppliers, government agencies, industry organizations and independent researchers to report potential risks or vulnerabilities to Dahua PSIRT. You can submit reports by visiting the cybersecurity section on Dahua's website.

The safety of software platforms is not only based on the continuous attention and efforts of manufacturers in R&D, production and delivery, but also requires the active participation of users. Users must pay attention to the environment and usage methods to ensure safe operation. Therefore, users are advised to use the software platform safely, including but not limited to:

Account Management

1. **Use strong passwords**
   ● length must not be less than 8 characters;
   ● use at least two different types of characters chosen from uppercase and lowercase letters, numbers and symbols;
   ● Passwords must not contain the account name or the account name backwards;
   ● do not use sequential characters, such as 123, abc, etc.;
   ● do not use repeated characters, such as 111, aaa, etc.;
2. **Change your passwords regularly**
   It is advisable to change your passwords regularly to reduce the risk of them being discovered or compromised.
3. **Assign accounts and permissions sensibly**
   Add users sensibly and assign them the minimum set of permissions based on your work and management needs.
4. **Activate account blocking**
   The account lockout feature is enabled by default and it is recommended that you do not disable it to ensure the security of your account. If an attacker tries to access

repeatedly enter an incorrect password, the corresponding account and source IP address will be blocked.

5.**Set up and update password recovery information in a timely manner** The platform supports password reset function. To reduce the risk of attacks, please set password reset information in a timely manner. If the information changes, please change it in a timely manner. When setting password reset security questions, it is recommended not to use questions whose answers can be easily guessed.

6.**Enabling Account IP/MAC Address Matching**

It is recommended to enable the account IP/MAC binding mechanism to further enhance the login security.

Service Configuration

1.**Enabling HTTPS protocol**

It is advisable to enable the HTTPS protocol, so that you can access the web service via a secure communication channel.

2.**Disable unnecessary services and choose safe modes**

To reduce risks, it is advisable to disable services such as SNMP, SMTP, etc. when they are not needed.

If you need them, it is highly recommended to use secure methods for the following services (this list is not exhaustive):

● SMTP: Choose TLS to access the email server.

● FTP: Choose SFTP and set strong passwords.

Network Configuration

1.**Enabling the Firewall Allow List**

It is recommended that you enable the Allow List to allow access to the system only from specified IP addresses. Therefore, be sure to add the IP address of your computer and devices to the Allow List.

2.**Network Isolation**

The network should be isolated by dividing the video monitoring network and the office network on switches and routers on different VLANs. This prevents the office network from being used to launch Pivoting attacks on the video monitoring network.

Security checks

1.**Online User Verification**

It is advisable to check online users on an irregular basis to identify any users who have logged in illegitimately.

2.**Platform Registry Verification**

Log control allows you to obtain information about the IP addresses that attempted to access the platform and the operations performed by connected users.

Physical protection

It is recommended that you install physical protection on the device where the platform is installed. For example, place the devices inside a cabinet in a computer room and implement access control and key management measures to prevent unauthorized personnel from damaging the hardware.

Perimeter Protection

It is recommended to implement perimeter security products and take necessary measures, such as authorized access, access control and intrusion prevention, to protect the security of the software platform.

ENABLING A SMARTER SOCIETY AND BETTER LIVING