Dash Camera

User's Manual



V1.0.0

Foreword

Model

CDR8213 Series

Safety Instructions

The following categorized signal words with defined meaning might appear in the manual.

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

Terms

To simplify descriptions, some frequently cited functions and names in this manual have the following meanings:

- Unless otherwise specified, "device" in this document refers to "Dash Camera"
- To keep the devices safe, IP addresses, MAC addresses, and serial numbers cited in this manual have all been modified.

Revision History

Version	Revision Content	Release date
V1.0.0	First release.	November 2024

Privacy Protection Notice

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

About the Manual

- The manual is for reference only. Slight differences might be found between the manual and the product.
- We are not liable for losses incurred due to operating the product in ways that are not in compliance with the manual.
- The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, see the paper user's manual, use our CD-ROM, scan the QR code or visit our official website. The manual is for reference only. Slight differences might be found between the electronic version and the paper version.
- All designs and software are subject to change without prior written notice. Product updates might result in some differences appearing between the actual product and the manual. Please contact customer service for the latest program and supplementary documentation.
- There might be errors in the print or deviations in the description of the functions, operations and technical data. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.
- All trademarks, registered trademarks and company names in the manual are properties of their respective owners.
- Please visit our website, contact the supplier or customer service if any problems occur while using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

479184 da hua 2024-11-06

Important Safeguards and Warnings

This chapter describes the contents covering proper handling of the Camera, hazard prevention, and prevention of property damage. Read these contents carefully before using the Camera, comply with them when using, and keep it well for future reference.

Operating Requirements

- Do not place or install the Camera near a heat source or where there is direct sunshine.
- Do not install the Camera in a humid, dusty, or smoggy place
- Install the Camera horizontally or in a stable place. Take measures to prevent it from falling.
- Do not drip or splash liquid onto the Camera. Make sure that the Camera does not bear any objects filled with liquid to prevent liquid from flowing into the Camera.
- Prevent foreign objects from entering the Camera, which might result in damage.
- Install the Camera in a place with good ventilation. Do not clog the air vents of the Camera.
- Use the Camera only within the rated input and output range.
- Do not dismantle the Camera without permission.
- Transport, use and store the Camera under the allowed humidity and temperature conditions.
- Do not expose the Camera to water or excessive moisture when washing the car. A failure to follow this instruction might result in short circuit, fire, or other malfunctions.
- The dust on the circuit board will cause short circuit, which affect the normal operation of the Camera and even damage the Camera. To make the Camera work stably for a long time, please regularly use the brush to remove the dust from components, including circuit board, connectors, and chassis.
- Keep the Camera installed horizontally and make sure the internal anti-vibration components work properly.
- After all the cables are connected, tie up the cables to avoid the dangers such as short circuit, heat and electric shock resulted from loose cables.
- Pay attention to grounding of Camera, since poor grounding might lead to chip damage.

Power Requirements

- Use the wires (power cords) recommended for the region where the Camera is used within the specified range of specifications!
- The appliance coupler is a disconnection Camera. Keep a convenient angle when using it.
- Take care to complete the circuit connection. A failure to follow this instruction might result in Camera damage.
- Prevent short circuit from occurring on all external wiring parts.
- After all the lines connections are completed, you can start connecting power cable.
- Ensure the project is well grounded to avoid interference to video and audio signals and avoid electrostatic or induced voltage to damage the Camera.
- Unplug the power cable before you remove the audio/video signal cable, RS-232; otherwise these ports might be damaged.

Table of Contents

Foreword I
Important Safeguards and Warnings III
1 Product Introduction 7
1.1 Overview 7
1.2 Functions 7
1.3 Out-of-box Check 8
2 Dimensions and Installation 9
2.1 Device Structure 9
2.1.1 Components 9
2.1.2 Port Description 10
2.1.3 Dimensions 12
2.2 Installation 12
2.2.1 Installing SIM and TF Card 13
2.2.2 Installing Device 13
2.2.3 Adjusting the Angle 14
2.3 Cable Instructions 15
2.3.1 Connecting Power Cable 15
2.3.2 Alarm Input Connection 18
2.3.3 Cable Layout 19
3 Basic Settings 20
3.1 Booting up Camera 20
3.2 Initializing Camera 20
3.3 Logging in to Camera 22
3.4 Configuring IP Address 25
3.5 Configuring General Settings 26
3.5.1 Setting General Information 26
3.5.2 Date and Time Settings 27
3.6 Configuring Record Mode 29
3.7 Configuring Storage Plan 30
3.7.1 Configuring Recording Schedule 30
3.7.2 Configuring Snapshot Schedule 32
4 Function Modules Operations 35
4.1 Live 35
4.1.1 Live Channels 36
4.1.2 Voice Talk 37
4.2 Video Playback 38
4.2.1 Playback Operation 38
4.2.2 Control Bar 39
4.2.3 Playing Back Video Recordings 40
4.2.4 Clipping Recording File 41
4.3 Viewing Alarm Info 42
5 System Settings 44
5.1 Configuring Alarm Settings 44
5.1.1 Configuring Video Detection Settings 44

A7 1.0 da hua 2024-11-06

5.1.2 Configuring Alarm Input Settings 47
5.1.3 Configuring Exception 49
5.2 Configuring AI Settings 52
5.2.1 Configuring ADAS Function 52
5.2.2 Configuring DSM Function 55
5.2.3 Configuring Reminds Of The Back Row 60
5.3 Backing up File 61
5.4 Configuring Camera Parameters 63
5.4.1 Configuring Camera Properties 63
5.4.2 Configuring Encode Parameters 64
5.5 Configuring Network Parameters 69
5.5.1 Configuring Port Settings 69
5.5.2 Configuring Wireless Network Settings 71
5.5.3 Configuring Cellular Settings 74
5.5.4 Configuring Email Settings 75
5.5.5 Configuring Auto Register Settings 78
5.5.6 Configuring P2P Settings 79
5.6 Managing Storage Device 80
5.6.1 Configuring Basic Information 80
5.6.2 Managing Disk 81
5.6.3 Configuring FTP 82
5.7 Configuring System 83
5.7.1 Configuring Serial Port Parameters 84
5.7.2 System Service 84
5.7.3 Configuring Vehicle Settings 85
5.8 Managing User Account 88
5.8.1 Managing User 89
5.8.2 Group Management 91
5.8.3 Resetting Password 92
6 System Upgrade 95
6.1 Viewing System Version 95
6.2 Upgrading System Firmware 95
7 System Maintenance 97
7.1 Maintenance Requirement 97
7.2 Viewing System Information 97
7.2.1 Viewing Log 97
7.2.2 Viewing Network Information 98
7.2.3 Viewing Disk Information 98
7.2.4 Viewing Channel Info 98
7.2.5 Viewing Satellite Information 99
7.3 Auto Maintenance 100
7.3.1 Restarting System 100
7.3.2 Configuring Auto Start 100
7.3.3 Configuring Auto Shutdown 101
7.3.4 Delay for Auto Shutdown 101
7.4 Backing Up and Restoring 101
7.4.1 Backing Up Configuration 102

7.4.2 Importing Configurations 102
7.4.3 Restoring to Default 103
7.5 Network Sniffer 104
8 Operating by Mobile Center 106
Appendix 1 FAQ 107
Appendix 2 Storage Capacity Calculation 110
Appendix 3 Cybersecurity Recommendations 111

479184 da hua 2024-11-06

1 Product Introduction

1.1 Overview

Based on the new generation platform, the Dash Camera is onboard video monitoring products that integrate video capturing, locating, drive recording and intelligent analysis. Features as below:

- Supports up to 3 channels of HDCVI video input and built-in 1 channel of ADAS video input.
- The use of H.264/H.265 encoding ensures high encoding efficiency and saves storage space.
- The needs of using the in-vehicle products in different networks are taken into full consideration in product design and 3G/4G modules or Wi-Fi modules are available.
- The use of professional in-vehicle design features the standard size , low power consumption and novel shape.
- TF card storage design makes recording backup and management easier.

This Camera can be widely used for vehicle-mount monitoring in public transportation, long-range passenger transport, police patrol, urban management patrol, cash carriers, hazardous goods transport, and logistics transport and so on, or video monitoring in harsh environments.

1.2 Functions

Table 1-1 Description of functions

Functions	Description
Storage	Stores the data in the dedicated format which cannot be falsified to ensure the data security.
Dual Stream	To cope with the low-bandwidth and instability of wireless network, the Device adopts the dual stream technology (respectively encode the real-time video and encode video in network transmission) to optimize the coding of network transmission, which improves the control capability of wireless network transmission
Video Playback	● Every channel supports real-time and independent recording, and you can play backward, monitor on network, searsh and download recordings. ● Displays the accurate time when the event occurred during playback.
Backup	● You can back up the data by downloading the files from the memory disk of the device through the Internet.
Alarm Linkage	● Provides 1-channel electric level alarm inputs that can connect to signals such as car door signal, cornering lamp signal, reversing and braking signal, to give an indication and take a record. ● Protective circuit for alarm input ports to prevent device from damage.
Rollover and Collision Detection	Provides rollover and collision detection and timely releases alarms through the platform.
Operation through Network	Supports remote operations through network, such as real-time remote monitoring, video recording search and playback, and PTZ remote control.

Functions	Description
3G/4G, Wi-Fi	● Adopts the latest wireless communication technology, which has improved the manageability of the device.
Communication Interface	● Offers RS-232 port to connect with external in-vehicle display.
Compression	Supports multi-channel audio and video signals, and each channel signal Supports real-time compression by independent hardware to realize the sync between sound and image.
Single BeiDou positioning	Supports positioning function and recording linkage. Recording search can be linked with vehicle moving track.

1.3 Out-of-box Check

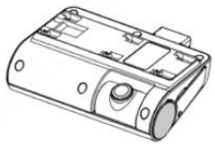
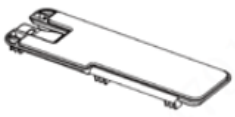
After unpacking the box, check if there is obvious damage to the appearance of the device, and make sure the components are complete according to the packing list. See Table 1-2 for details, and refer to real products for actual items.

Label Instruction:

The labels on the device are very important for our after-sales service. **So please keep the labels well, and do not tear or throw away.** You need to provide the serial number of the product when calling the after-sales service.

For tools or accessories not mentioned in the box, please purchase them.

Table 1-2 Packing list

Figure	Name	Quantity
	Dash Camera	1
	Bracket	1
	Extension Cable	1
	Installation Guide	1
	Regulation	1

2 Dimensions and Installation

This chapter introduces how to install the hardware of the device. Before installation, you need to know the device information, such as top cover, side panel, dimensions, and ports. After obtaining a sufficient understanding, you can install the SIM card, TF card and fix the device as needed.

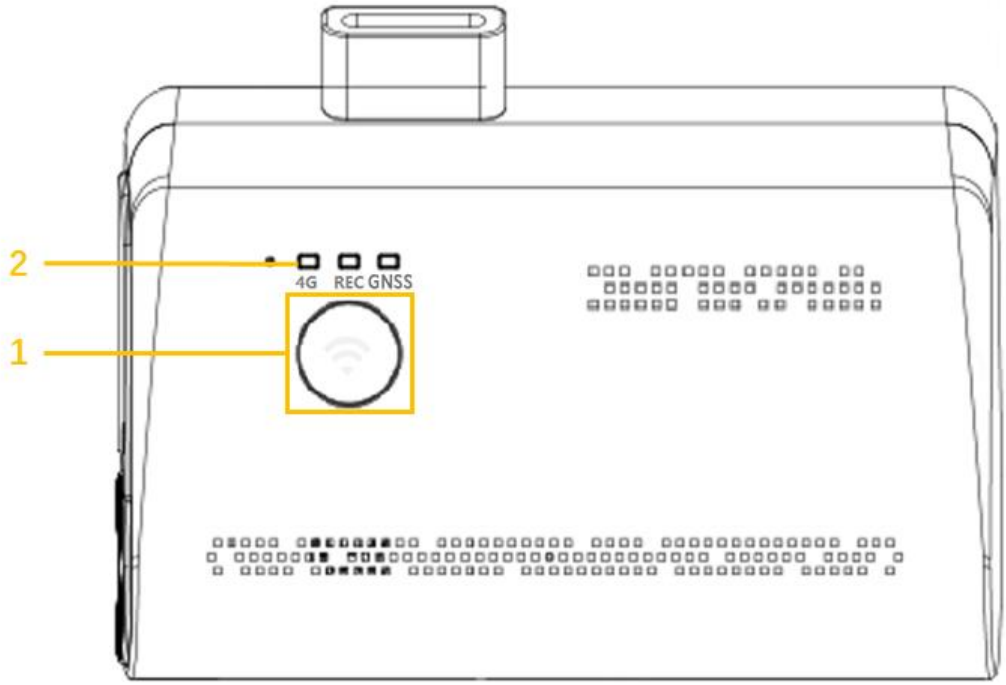
2.1 Device Structure

2.1.1 Components

2.1.1.1 Top Cover

Describes the functions of the front indicator lights and ports.

Figure 2-1 Top Cover



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Table 2-1 Descriptions of ports and indicators

No.	Name	Descriptions
1	Hot Spot Button	● Press the button to enable or close the hot spot. ● Hold for 10s to initialize the device.
2	Indicator Light	● 4G ◇ On: 4G is connected. ◇ Off: 4G is not connected. ● REC: ◇ On: The camera is recording. ◇ Off: The camera is not recording. ● GNSS: ◇ On: GNSS is normal. ◇ Off: GNSS is abnormal.

2.1.1.2 Side Panel

Describes the functions of the side panel ports.

For the ports of the side panel, please see Figure 2-2, Table 2-2 for ports function description, and 2.1.2 Port Description for port definition.

Figure 2-2 Side Panel Ports

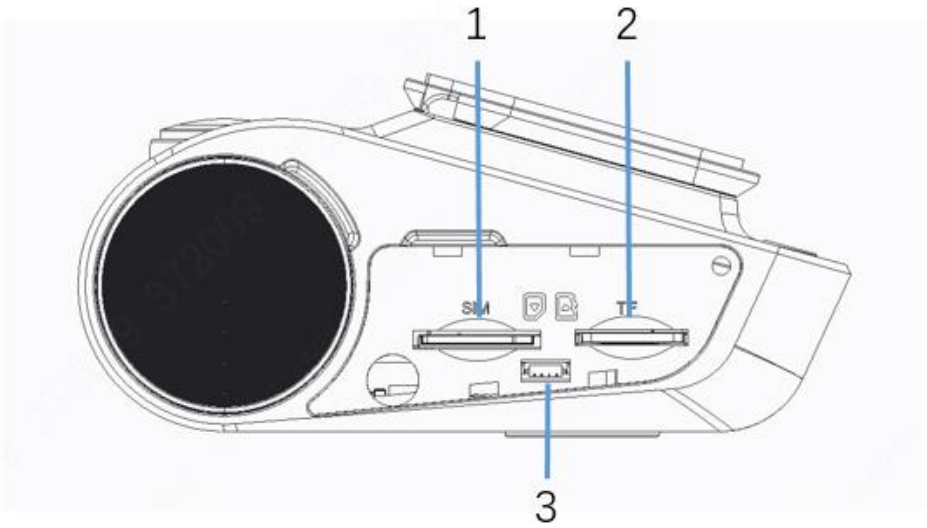


Table 2-2 Descriptions of side panel ports interfaces

No.	Name	Function
1	SIM card interface	Insert the SIM card.
2	TF card interface	Insert the TF card.
3	White port	Used for network testing and debugging.

2.1.2 Port Description

This manual only describes functions of each interfaces. You can follow these descriptions to prepare cables or contact our sales staff for purchasing cables.

2.1.2.1 Video Input Port

Figure 2-3 Video input port

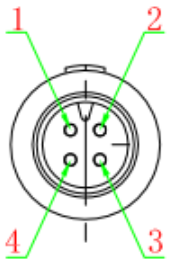


Table 2-3 Video input port description

No.	Description
1	VCC
2	Signal ground
3	Power ground
4	Signal

2.1.2.2 Network Port

The Dash Camera is not pre-installed with an RJ45 network port, so it needs to be connected to the white port before connecting the network cable.

2.1.2.3 Power Input Port

Figure 2-4 Power input port

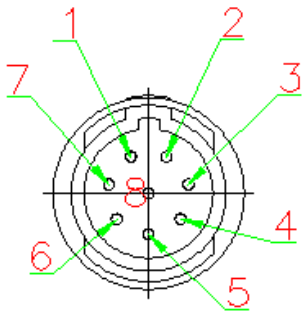


Table 2-4 Power port description

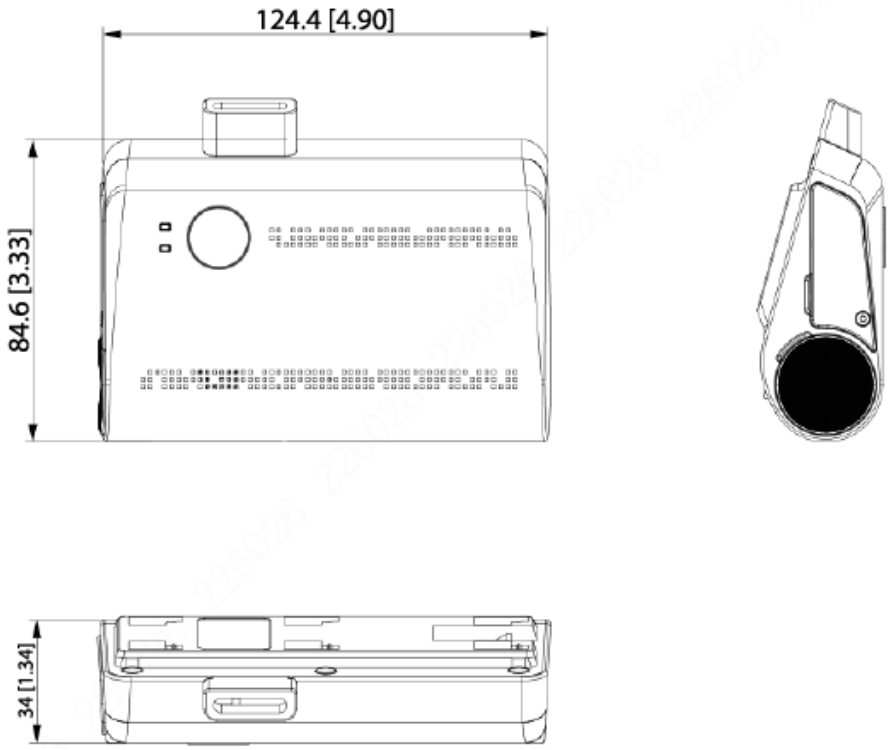
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No.	Pin Description	Cable Color
1	ACC signal input grounding	Orange
2	Power positive pole input	Red
3	GND	Black
4	Alarm input_1	Green
5	Alarm input_2	Blue
6	Alarm input_3	White
7	RS232_TX	Yellow
8	RS232_RX	Brown

2.1.3 Dimensions

The following figures are for reference only, and the actual product shall prevail.

Figure 2-5 Dimensions (mm [inch])



2.2 Installation

After purchasing the product, it is necessary to open the package and inspect the devices as well as understand its structure. Then, install SIM cards and TF cards according to actual network and storage requirements.

- Before completing the installation of the device, please ensure that the power supply has been disconnected before installing the SIM card and TF card. Do not insert or remove components with power on.

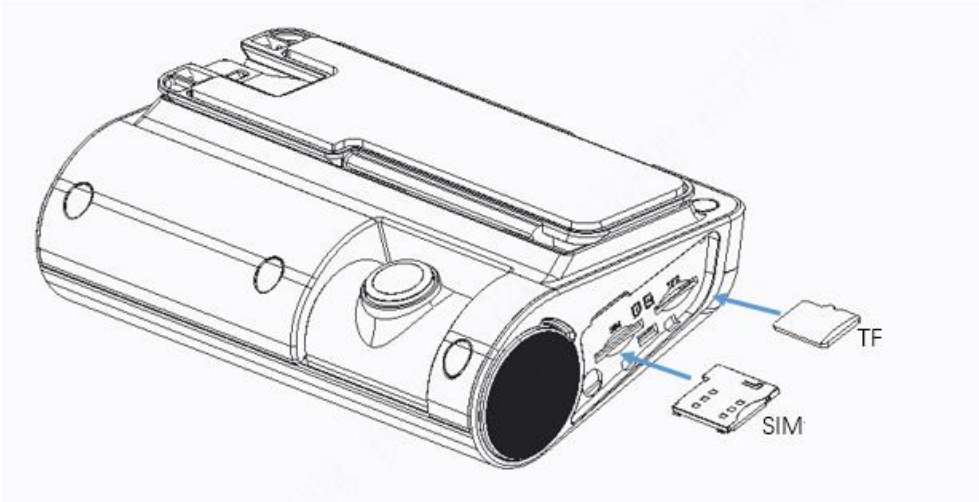
2.2.1 Installing SIM and TF Card

The SIM card and TF card are not provided with the device by default. To connect the device to network through dial-up connection, you need to purchase and install a SIM card. To store recording data, you need to purchase and install the TF card.

Step 1 Use the standard Phillips screwdriver to loosen the screws by turning them counterclockwise and disassemble the card cover.

Step 2 Insert the SIM card and TF card into the card slot with corresponding marks.See Figure 2-6.

Figure 2-6 Installing SIM and TF Card



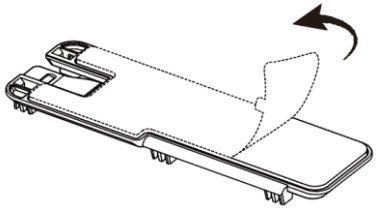
Step 3 Close the card slot cover and use a cross screwdriver to tighten the screws clockwise. The installation of the SIM card and TF card is complete.

2.2.2 Installing Device

- The optimal installation position for the Dash Camera is near the front windshield and rearview mirror, maintaining a level and centered position with the windshield.
- When installing, please adjust the position according to actual conditions to avoid obstructing the driver's line of sight.

Step 1 Wipe the front windshield clean and ensure there is no dust. Take off the dash camera bracket.

Figure 2-7 Removing backing adhesive

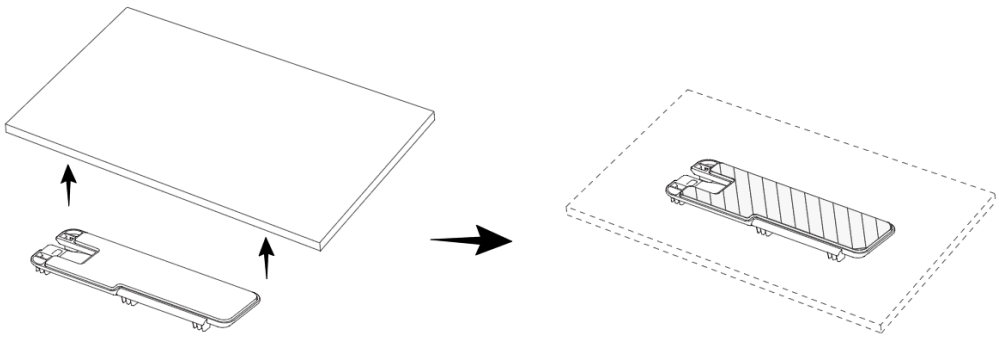


Step 2 Peel off the backing adhesive. Stick the bracket on the windshield and squeeze it with appropriate force to ensure that there are no bubbles.

After the bracket is stuck firmly, it is recommended to let it stand for 4 hours before installing the dash camera.

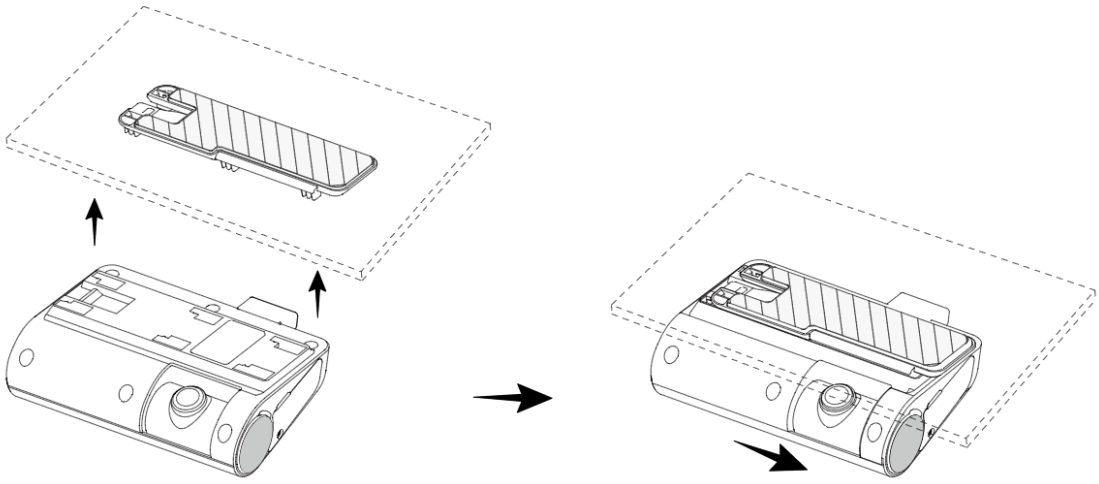
When installing, the bracket must be kept level with the windshield, otherwise it will affect the calibration effect.

Figure 2-8 Installation of Brackets



Step 3 Align the groove on the body of the Camera with the protrusion on the bracket, slide the body as shown in Figure 2-9 until you hear a "click" sound, and fix the body to the mounting bracket.

Figure 2-9 Fix the bracket



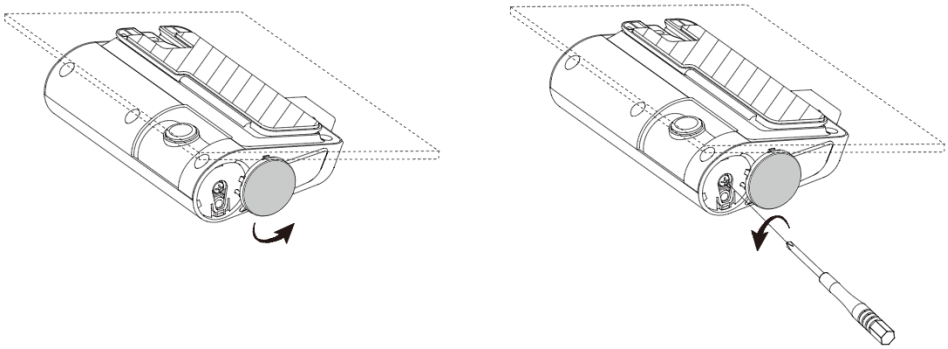
Step 4 Connect the cables. Refer to **2.3 Cable Instructions** for details.

2.2.3 Adjusting the Angle

After powering on the device, activate the hotspot and log in using the mobile app. Use the app interface to preview the video in real time and adjust the camera angle of the dash cam according to the desired monitoring position. For detailed instructions on operating the login interface of the app, please refer to **3.3 Logging in to Camera**.

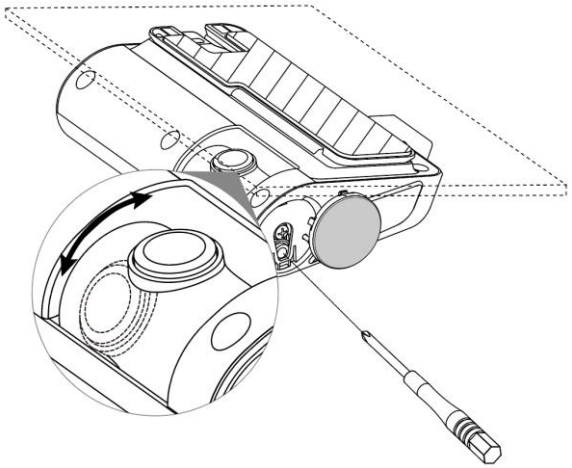
Step 1 Remove the protective cover on the side of the device and use a PH1 cross screwdriver to loosen the lens to adjust the screw counterclockwise. See Figure 2-10.

Figure 2-10 loosen the screw



Step 2 According to the video screen, use a PH1 screwdriver to rotate the lens adjustment slot and adjust the lens angle. See Figure 2-11.

Figure 2-11 Adjust the angle



2.3 Cable Instructions

2.3.1 Connecting Power Cable

- Before connecting the power cable, make sure the input voltage is between DC 9V and DC 36V. If it is out of the range, it will damage the Camera.
- Make sure that the positive and negative poles of the power are connected correctly. If not, the Camera may be damaged.
- When connecting the cables to the Camera, make sure that the main power switch of the vehicle is turned off and the key of the vehicle is placed in the off state. Do not perform live operation.

2.3.1.1 Power Cable Introduction

For power cable of the Camera, see Figure 2-12.

Connect one end of the power cord to the power interface of the device (left port in the diagram), and the other end needs to be connected to the vehicle's battery by the user.

- The red one with fuse is positive pole of the power (normalizing fire).
- The black one is the grounding cable.
- The orange one is the ACC signal (key starting wire).

Figure 2-12 Power cable

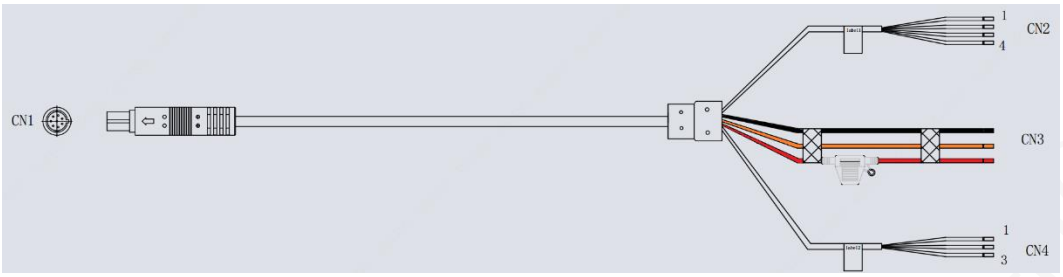


Table 2-5 Power cable description

Name	Description
CN1	Connect the device.
CN2	Connect the alarm button.
CN3	GND
CN4	Connect Acc signal.
CN5	Connect the positive power.

2.3.1.2 Obtaining Connection Modes

To ensure correct cable connection, it is necessary to obtain the connection mode of the main power switch (By connection mode here, it means to confirm the main power switch is connected to the positive or negative pole of the battery). In the following three ways:

- Consult the vehicle manufacturer the connection modes of the main power switch of the vehicle.
- Measure with a multimeter: Disconnect the main switch, and then measure the voltage between the vehicle body and the positive pole of the vehicle battery. If the voltage is 12V or 24V, it means that the main switch disconnects the positive pole. If the voltage is 0V, then the main switch disconnects the negative pole.
- Visual inspection: Whether the switch cable near the vehicle battery is connected to the positive pole or the negative pole.

2.3.1.3 Connecting Operation

The Camera must be connected to the ground wire, ACC signal, and constant electricity.

Step 1 Enable the main power switch on the vehicle, place the key in the OFF state, and then measure the constant electricity of the vehicle.

Step 2 Use a multimeter to measure the voltage on the fuse by switching to the DC voltage range. When the multimeter detects voltage, it measures the constant electricity on the vehicle. Generally, the voltage is 24V DC for large vehicles and 12V DC for small vehicles. However, this is subject to actual data.

Step 3 When the vehicle key is placed at the ACC signal or the ON state, the ACC signal of the vehicle is measured.

Step 4 Use a multimeter to measure the voltage on the fuse by switching to the DC voltage range. When the multimeter detects voltage, remove the vehicle key. If the voltage changes to 0V, it means that the measured signal is ACC on the vehicle.

Step 5 Turn off the main power switch on the vehicle, and place the key in the OFF state.

Step 6 Connect the power cable according to the main power switch installation mode. See Figure 2-13 and Figure 2-14.

- The positive terminal and negative terminal of the battery must be equipped with protective devices such as fuses.
- For vehicles where the main power switch is installed at the negative terminal of the accumulator, isolation installation is needed.

Figure 2-13 Vehicle main power switch installed on the positive terminal of the vehicle battery

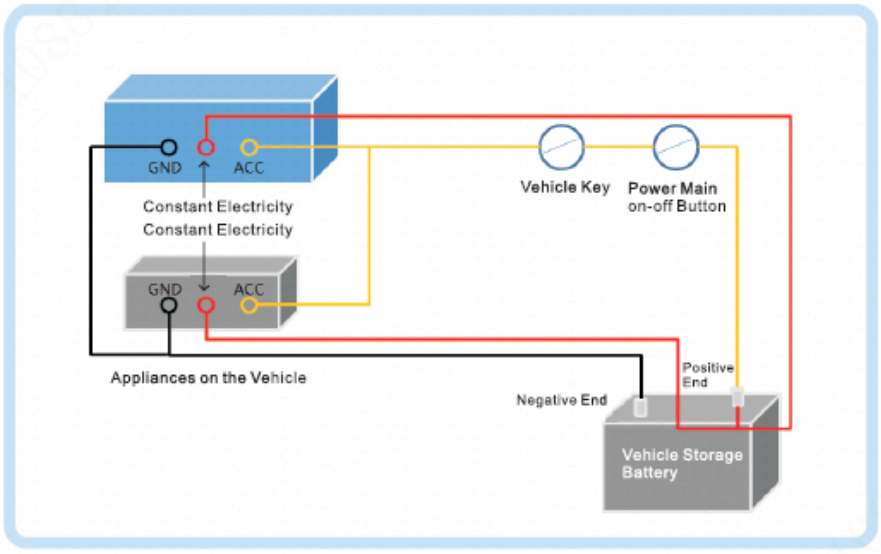
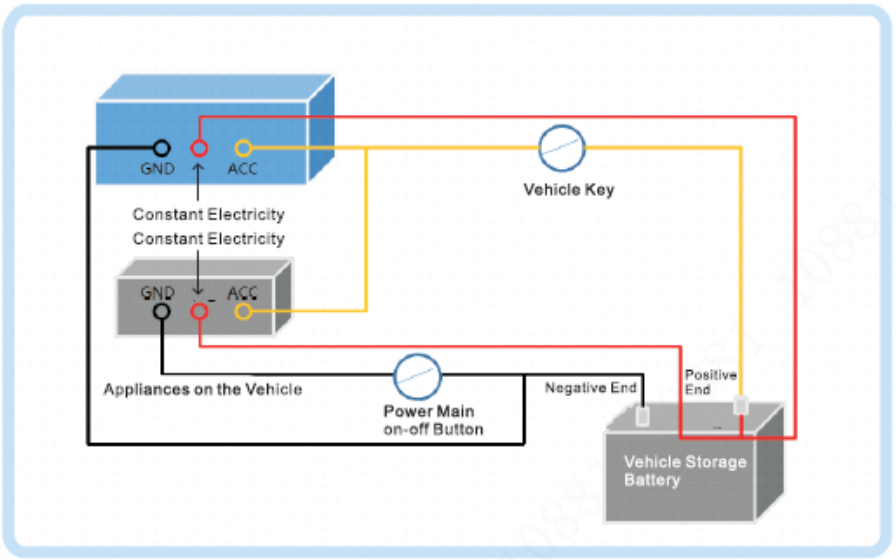


Figure 2-14 Vehicle main switch installed on the negative terminal of the vehicle battery



2.3.2 Alarm Input Connection

Before using the alarm function, please learn about the connections method of alarm input port.

Alarm Input

- The alarm input port supports alarm signal from ground and Camera of 12V-24V voltage.
- If the alarm Camera is connected to the Camera and other Cameras at the same time, use relay for isolation.

No Restriction for Alarm Input Types

The alarm input can be Normally Open (NO) or Normally Closed (NC).

2.3.2.1 Port Definition

Describes the function of alarm input ports.

Figure 2-15 Alarm input port

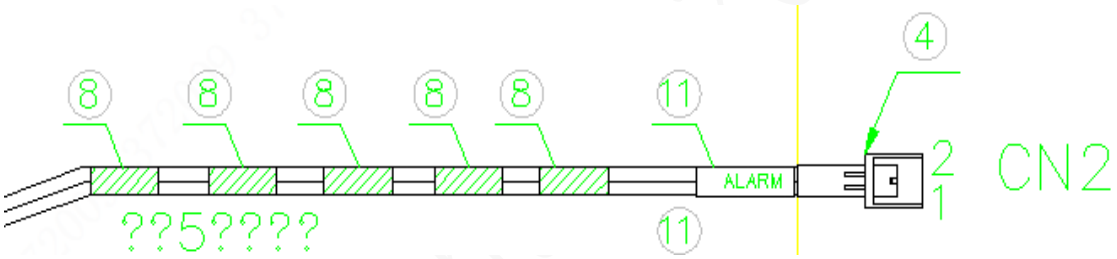


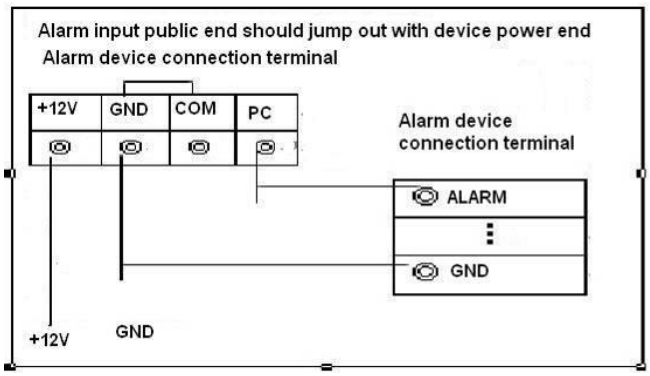
Table 2-6 Alarm port description

Name	Description
Alarm input port	Alarm input 1, the local alarm input port.

2.3.2.2 Alarm Input Port Description

- Both NO and NC are supported.
- The GND of alarm detector is in parallel connection with COM (the power supply of alarm detector should be from external power source). See Figure 2-16.
- The GND of alarm detector is in parallel connection with GND of Camera.
- Connect the NC port of alarm detector to the alarm input port (ALARM).
- When supplying power from external power source to the alarm device, the alarm device should be common-grounded with the Camera.

Figure 2-16 NC alarm input illustration

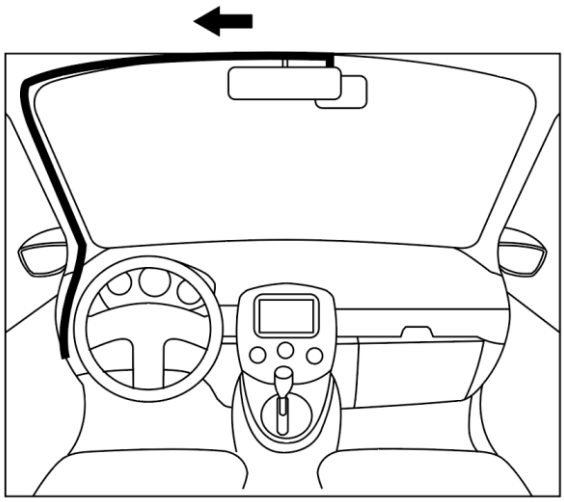


2.3.3 Cable Layout

Connect the power supply and alarm input port by using an extension cable. Please complete the cable layout according to the diagram. See Figure 2-17.

- The device comes with a default extension cable and customizations are available for special requirements..

Figure 2-17 Cable Layout



3 Basic Settings

This Camera can be operated through the APP or WEB interface. This section introduces the WEB interface as an example, and similar functions are available on the local interface, which will not be further elaborated.

- Supports logging into the WEB interface through multiple browsers including Safari, Firefox, , IE and so on.
- After setting up a specific channel, Click **Refresh** to display the latest configuration.

3.1 Booting up Camera

- Before booting up the Camera, check if input voltage matches rated voltage of the Camera.
- Refer to international standard to offer the power input (power input that is with stable power value and less interference) to ensure the Camera works stably and prolong its service life.
- In the first power-on, the Camera needs connection to the ACC to work as intended.

For the first boot up or after restoring to the default factory settings, the initialization interface is displayed on the screen. Follow on-screen instructions to initialize your Camera prior to use.

3.2 Initializing Camera

When you are opening the Camera for the first time or you have allowed your system to be restored the factory settings, you need to initialize the Camera. Only after that can you operate and configure your Camera.

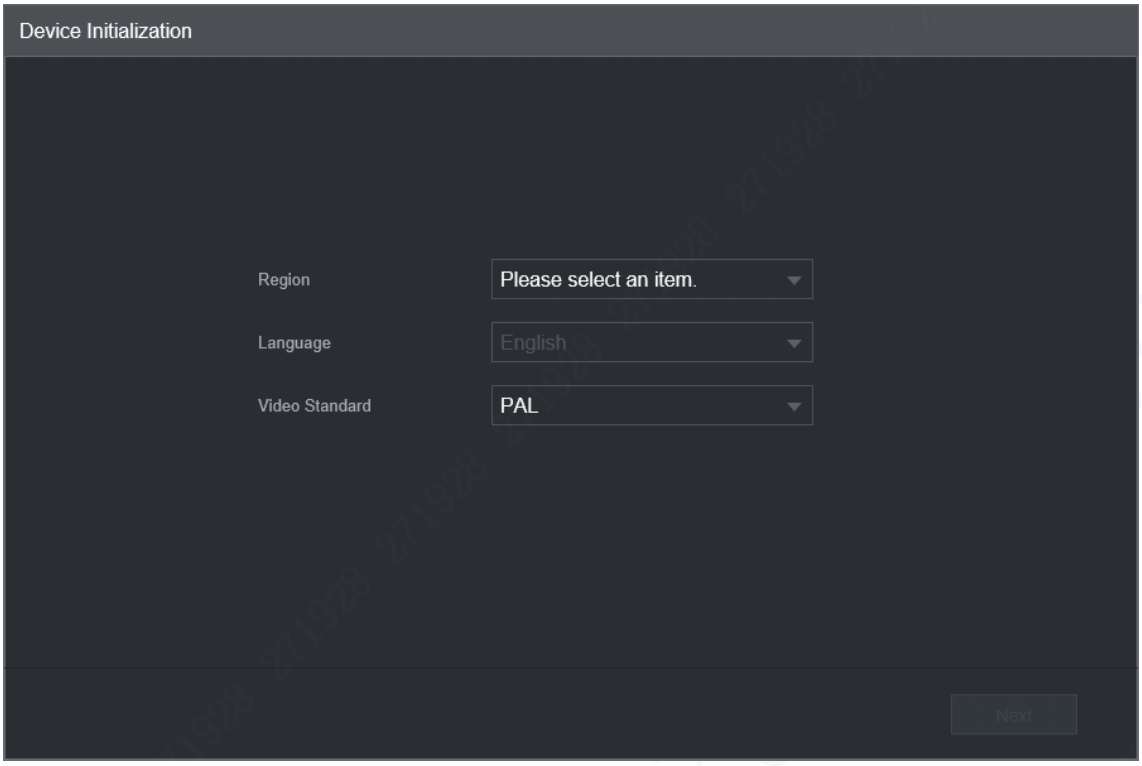
Preparation

Please make sure the correct network connection between PC and the Camera.

Procedure

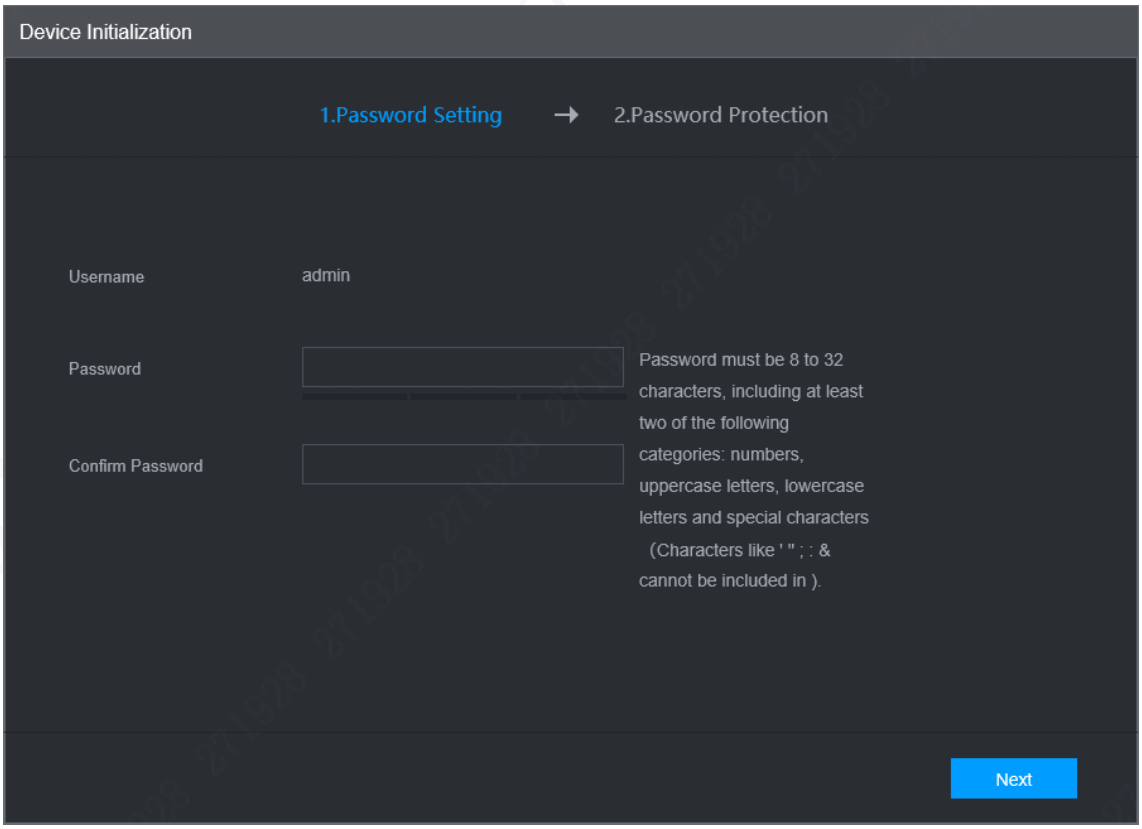
Step 1 Open the browser, enter the Camera IP address (the default IP address is 192.168.1.108), and then press **Enter**.
The **Device Initialization** interface is displayed. See Figure 3-1.

Figure 3-1 Device initialization interface



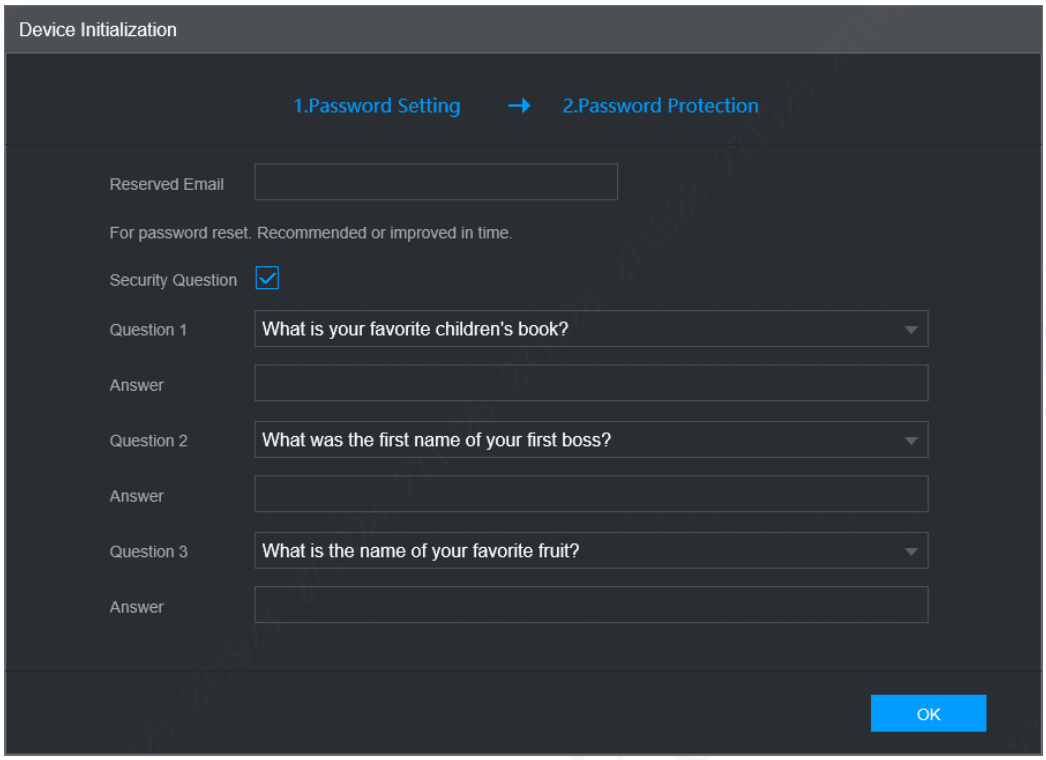
Step 2 Select **Region, Language** and **Video Standard**. Then click **Next**.
The **Password Setting** is displayed. See Figure 3-2.

Figure 3-2 Password Setting



Step 3 Enter your password and enter it again to confirm it. Then click **Next**.
The **Password Protection** is displayed . See Figure 3-3.

Figure 3-3 Password Protection



Step 4 Set password protection. Select a password protection mode based on the actual situation. You are advised to enable both modes.

- Select **Reserved Email** and enter the number.
- Select **Security Question**, and select the question and set the answer to the question.

Step 5 Click **OK**.

Device initialization completed.

3.3 Logging in to Camera

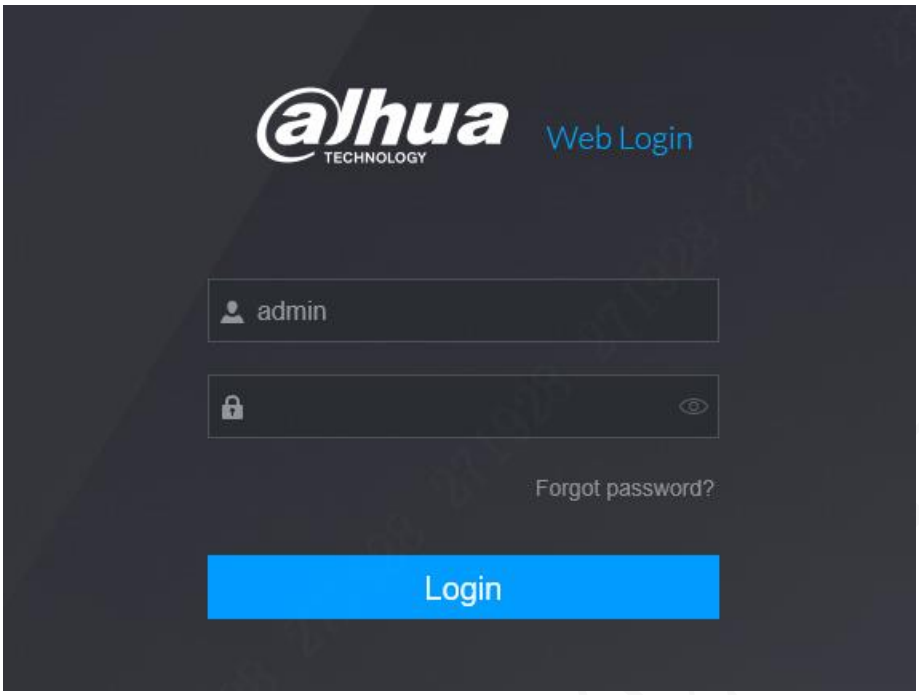
You can log in to and then configure the Camera.

Step 1 Open the browser, enter the Camera IP address and then press **Enter**.

The **Login** interface is displayed. See Figure 3-4.

The default IP address is 192.168.1.108.

Figure 3-4 Web login interface



Step 2 Enter username and password, and click **Login**.

The **web** interface is displayed. See Figure 3-5.

For **admin** account, if you forget password, click Forgot password to find back the password. For details, see 5.8.3 Resetting Password.

Figure 3-5 WEB interface

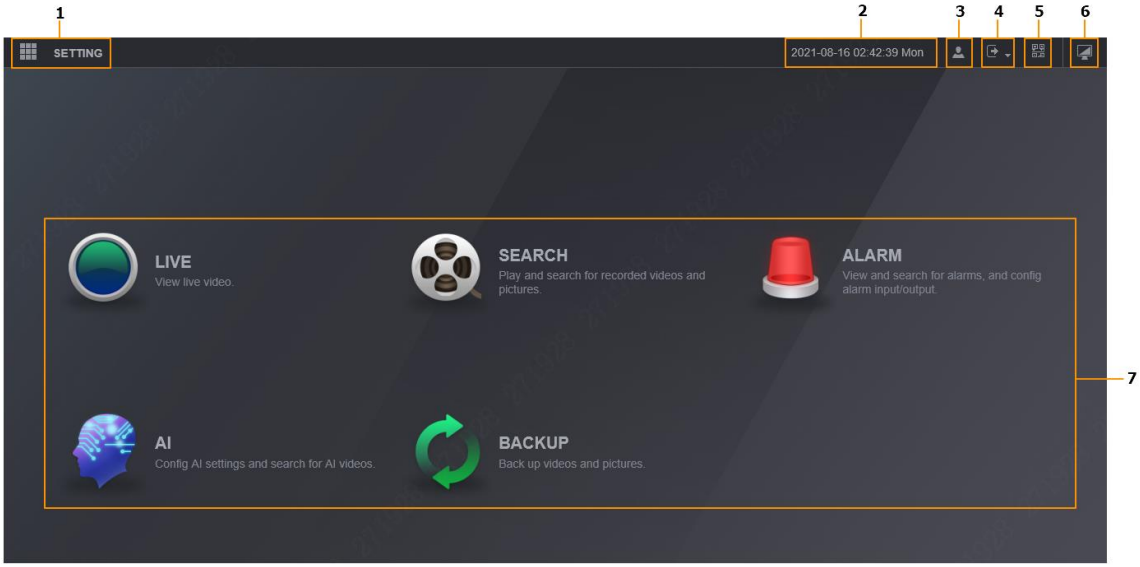


Table 3-1 WEB interface description

No.	Name	Description
1	SETTING	Click or **SETTING**. See Figure 3-5. Click this icon to go to the configuration interface.
2	Time	Display the current time.
3	User	Display the user that currently logs in.

No.	Name	Description
4	Logout	Click , the system displays as Figure 3-7. Select **Logout** or **Reboot** as needed.
5	QR Code	Click , the system displays as Figure 3-8. Scan device serial number to add the device to APP.
6	Desktop	Click to return to WEB main interface.
7	Operation	System operation

Figure 3-6 Setting

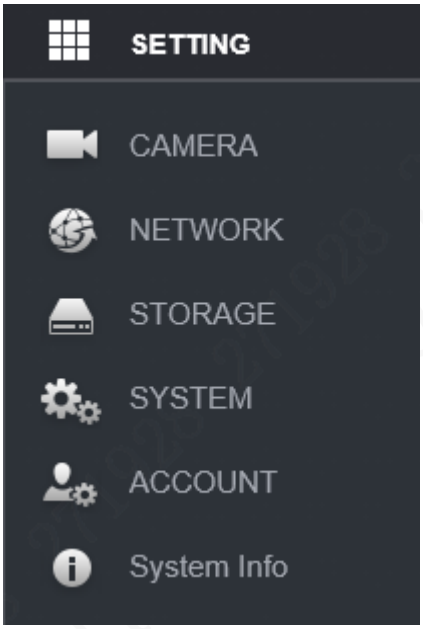


Figure 3-7 Logout

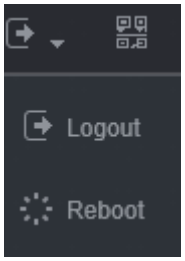
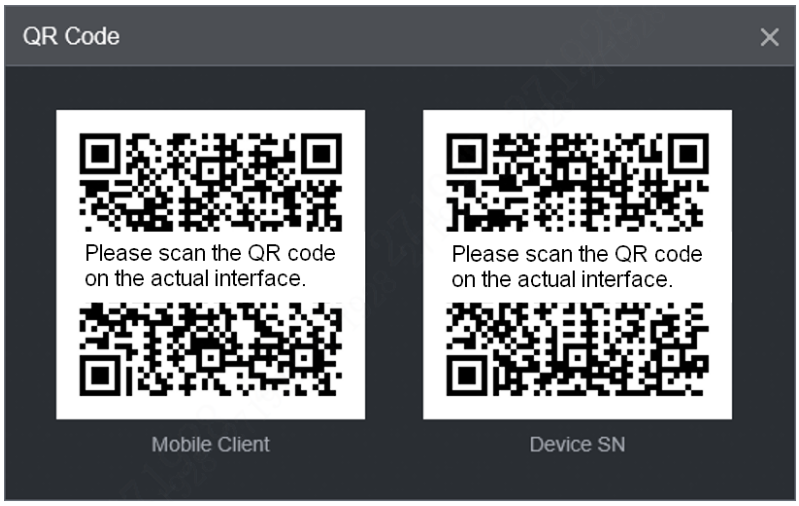


Figure 3-8 QR Code



3.4 Configuring IP Address

Connect the camera to the network and make sure the camera can communicate with other cameras in the network diagram.

Preparation

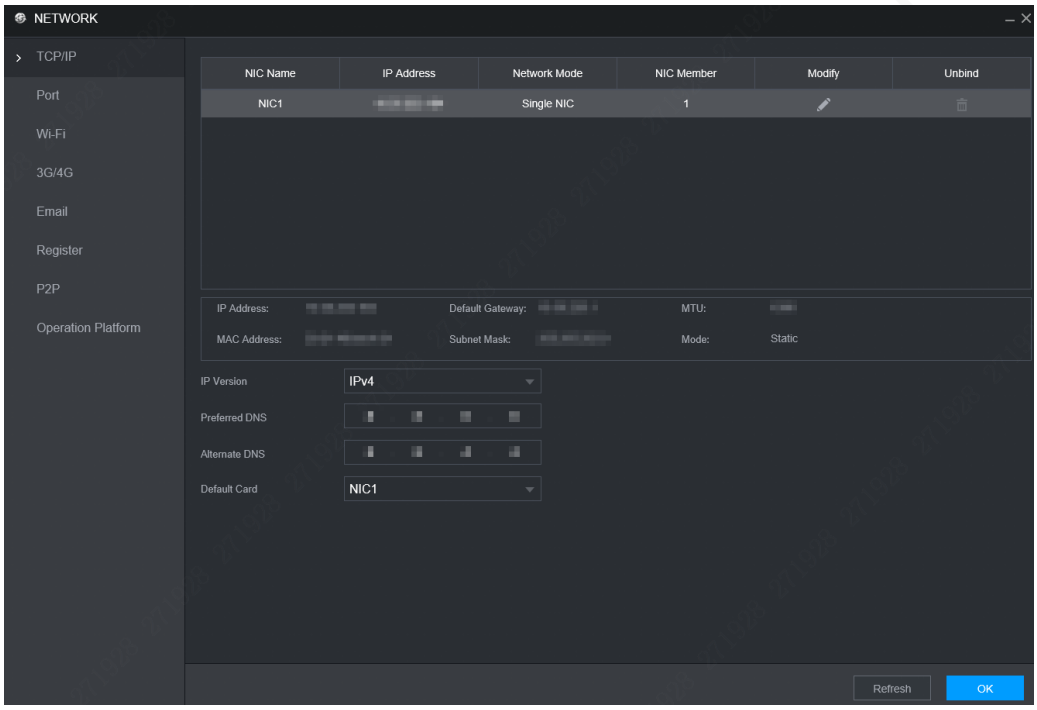
Make sure the Camera is connected to the network properly.

Procedure

Step 1 Select **SETTING > NETWORK > TCP/IP**.

The **TCP/IP** interface is displayed. See Figure 3-9.

Figure 3-9 TCP/IP



Step 2 Click  to modify the parameters. See Figure 3-10.

Figure 3-10 Modify the parameters.

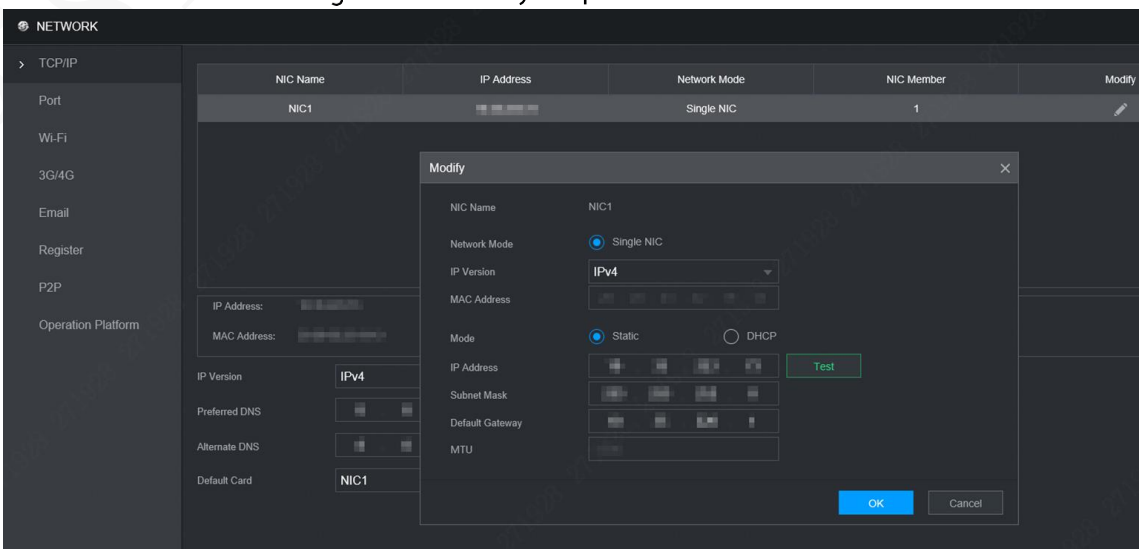


Table 3-2 TCP/IP description

Parameter	Description
IP Version	Click **IPv4** or **IPv6**. Both versions are supported. For IPv6 version, in the **IP address** box, **Gateway** box, **Preferred DNS** box, and **Alternate DNS** box, enter 128 bits and cannot be blank.
MAC address	Host's MAC address, cannot be modified.
Static Mode	If static Settings are used, you need to manually set the IP address, subnet mask, and default gateway.
DHCP Mode	Obtains IP address automatically. With DHCP enabled, **IP Address**, **Subnet Mask** and **Default Gateway** cannot be configured. You can check the current IP address whether the DHCP takes effect or not.
IP address	According to your network plan, enter the modified IP address, gateway and subnet mask. IP address and gateway must be in the same network segment.
Subnet Mask	
Default Gateway	
Preferred DNS	IP address of the preferred DNS
Alternate DNS	IP address of the alternate DNS
MTU	Maximum Transmission Unit, the default setting is 1500 bytes.

Step 3 Click **OK**.

3.5 Configuring General Settings

You can configure the basic settings, including time and date settings.

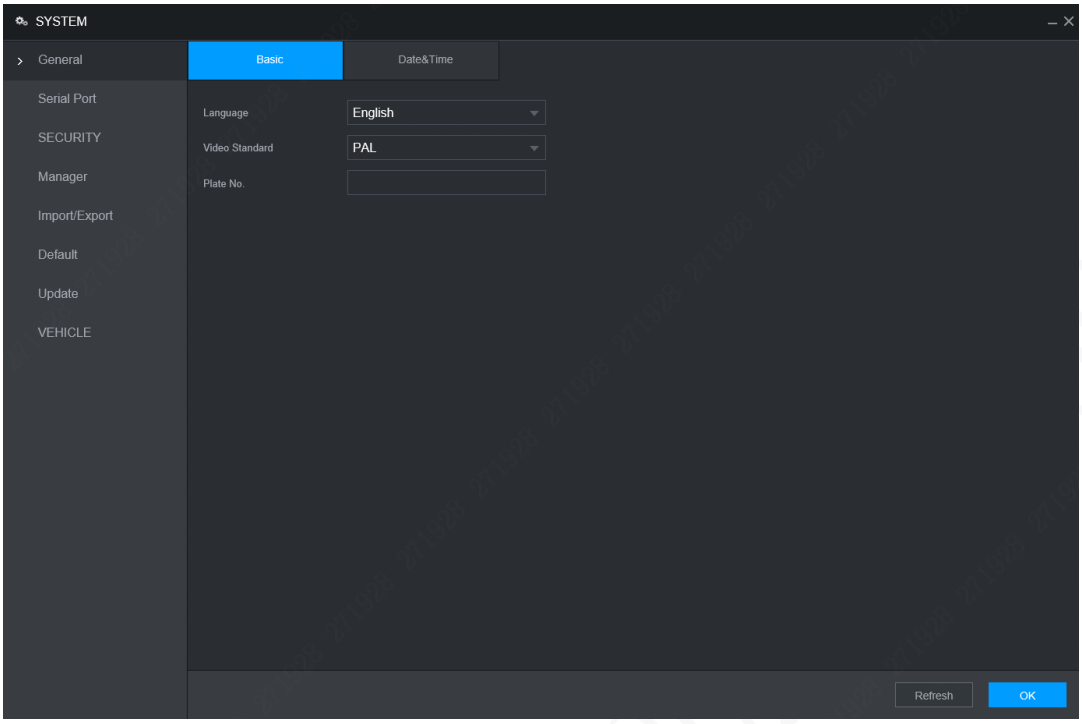
3.5.1 Setting General Information

Set the general information of the Camera, including video recording strategy when the HDD is full, recording length, menu standby duration, license plate, and more.

Step 1 Select **SETTING > SYSTEM > General > BASIC**.

The **Basic** interface is displayed. See Figure 3-11.

Figure 3-11 Basic



Step 2 Configure more settings. See Table 3-3.

Table 3-3 General settings parameters description

Parameter	Description
Language	Select a language for the Camera system.
Video Standard	Displays the video encode standard.
Plate No.	Enter the license plate number of vehicle where the Camera is located.

Step 3 Click **OK**.

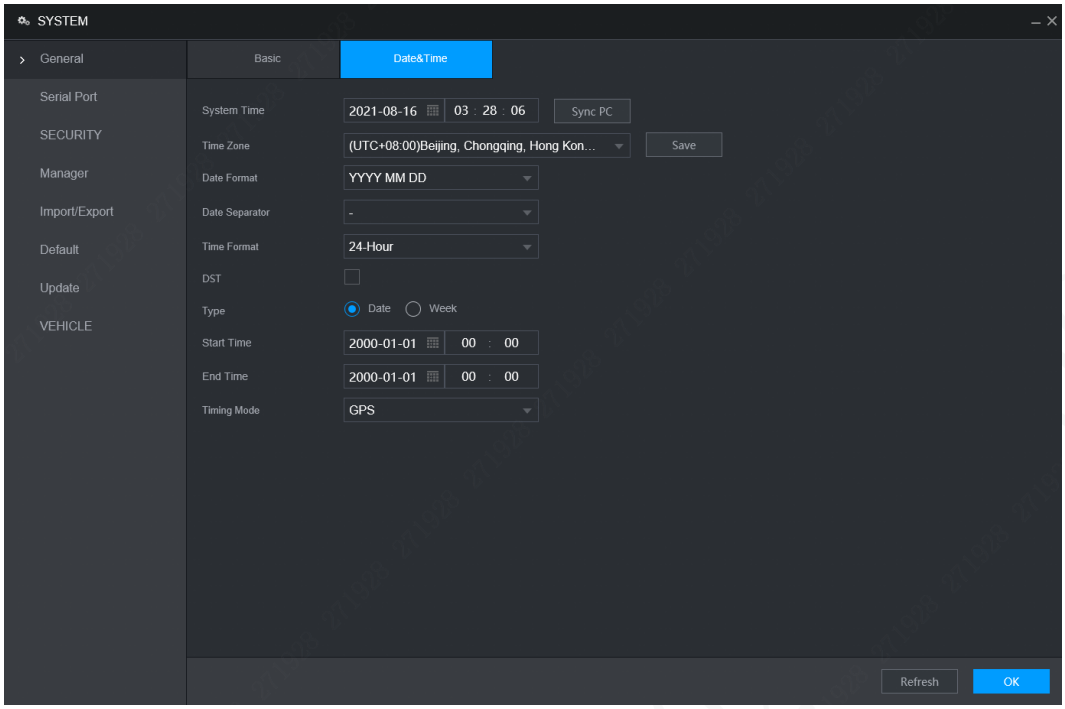
3.5.2 Date and Time Settings

You can configure settings such as date format, time format, and timing mode.

Step 1 Select **SETTING > SYSTEM > General > Date & Time**.

The **Date & Time** interface is displayed. See Figure 3-12.

Figure 3-12 Date & time settings



Step 2 Configure more settings. See Table 3-4.

Table 3-4 Date and time settings parameters description

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Parameter	Description
System Time	Displays the current system date and time.
Time zone	In the **Timing Mode** list, if **GPS** or **NTP** is selected, configure this parameter. Configure the Time zone that the Camera is at.
Date format	Set the date display format of the Device, including YYYY-MM-DD, MM-DD-YYYY and DD-MM-YYYY.
Date separator	Select date separator you want to display.
Time format	Select a time format from 24-Hour and 12-Hour.
Weekdisplay	Select whether to display the date of the device by week.
DST DST Type Start Time End Time	The DST is applied in some countries or regions. Select the **DST** check box if it is applied where the Camera is located 1. Click the **DST** check box. 2. According to the local regulations, configure the type, begin time and end time for the DST.
Timing Mode	Select a timing mode, including DSS, GPS, and NTP. The default selection is NTP ● **DSS**: The system time syncs with DSS platform. ● **GPS**: The system time syncs with satellite. ● **NTP**: The system time syncs with NTP server that you configured.
Server Address Manual Update Port Interval	In the **Timing Mode** list, if **NTP** is selected, configure this parameter. After configuring NTP server, the Camera syncs time with NTP server. 1. In the **Timing Mode** list, select **NTP** to enable the NTP timing function. 2. Configure parameters. ◇ Server Address: Enter IP address of NTP server. ◇ Manual Update: Click **Manual Update** to sync the Camera time with NTP server. ◇ Port: The system supports TCP protocol only and the default setting is 123. ◇ Interval: Enter the interval that you want the Camera to sync time with the NTP server. The maximum value is 65535 minutes.

Step 3 Click **OK**.

3.6 Configuring Record Mode

The record mode is consisted of manual mode and auto mode. You can also enable or disable the snapshot function.

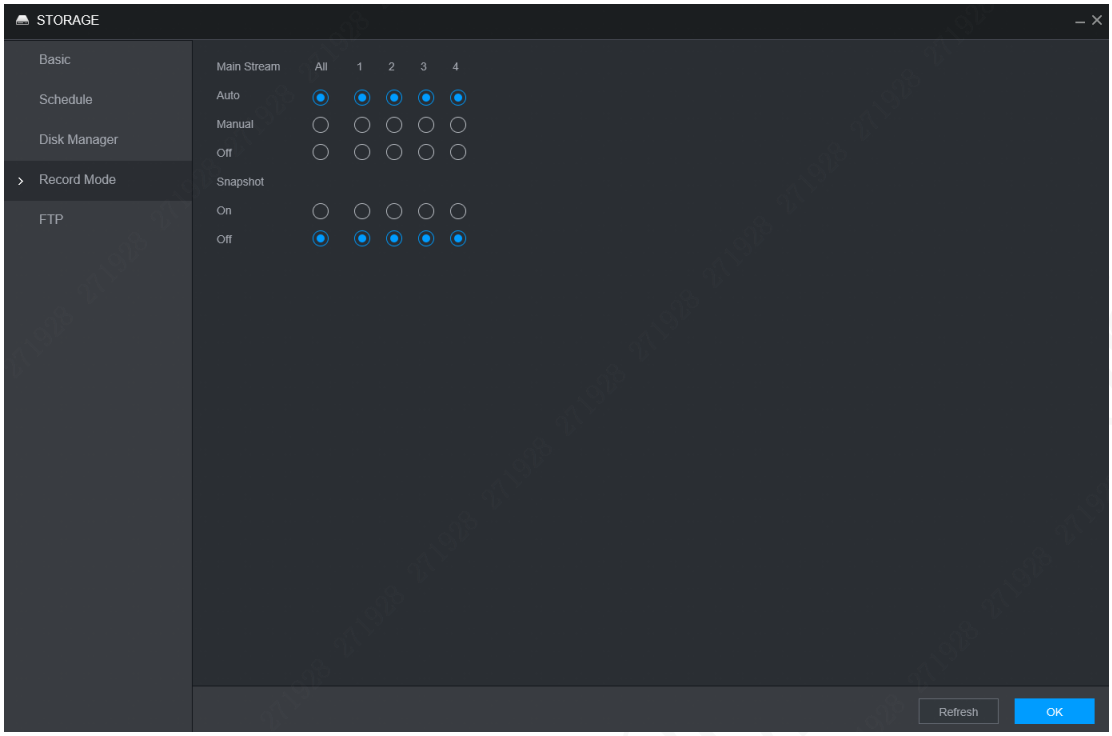
- Auto: The recording starts automatically according to the record type and recording time as configured in the recording schedule.
- Manual: Keep general recording for 24 hours for the selected channel.

Manual recording operation requires the user have the permission to access **STORAGE** settings.
Please ensure the HDD installed in the Camera has been formatted properly before operating.

Step 1 Click **SETTING > STORAGE > RECORD MODE**.

The **Record Mode** interface is displayed. See Figure 3-13.

Figure 3-13 Record Mode



Step 2 Configure Serial port parameters, for the detailed description, see Table 3-5.

Table 3-5 Record Mode parameter description

Parameter	Description
Channel	Displays the channel number. You can select one or several channels or select **All**.
Status	Indicates the recording status of corresponding channels. The choices include Auto, Manual, Enable, and Stop. ● : Selected ● : Not selected
Auto/Manual/Off	Select the recording mode, including Manual, Auto, and Stop. ● Manual: Top priority. When the **Manual** check box is selected, the system keeps general recording for 24 hours for the corresponding channel. ● Auto: The system starts recording according to the record type (such as general alarm, motion detect, and system alarm) and recording time. ● Off: Do not record.
On/Off	Enable or close the scheduled snapshot for the corresponding channels.

Step 3 Click **OK**.

3.7 Configuring Storage Plan

3.7.1 Configuring Recording Schedule

All channels record 24 hours by default. You can configure the record type and recording time as needed.

Preparation

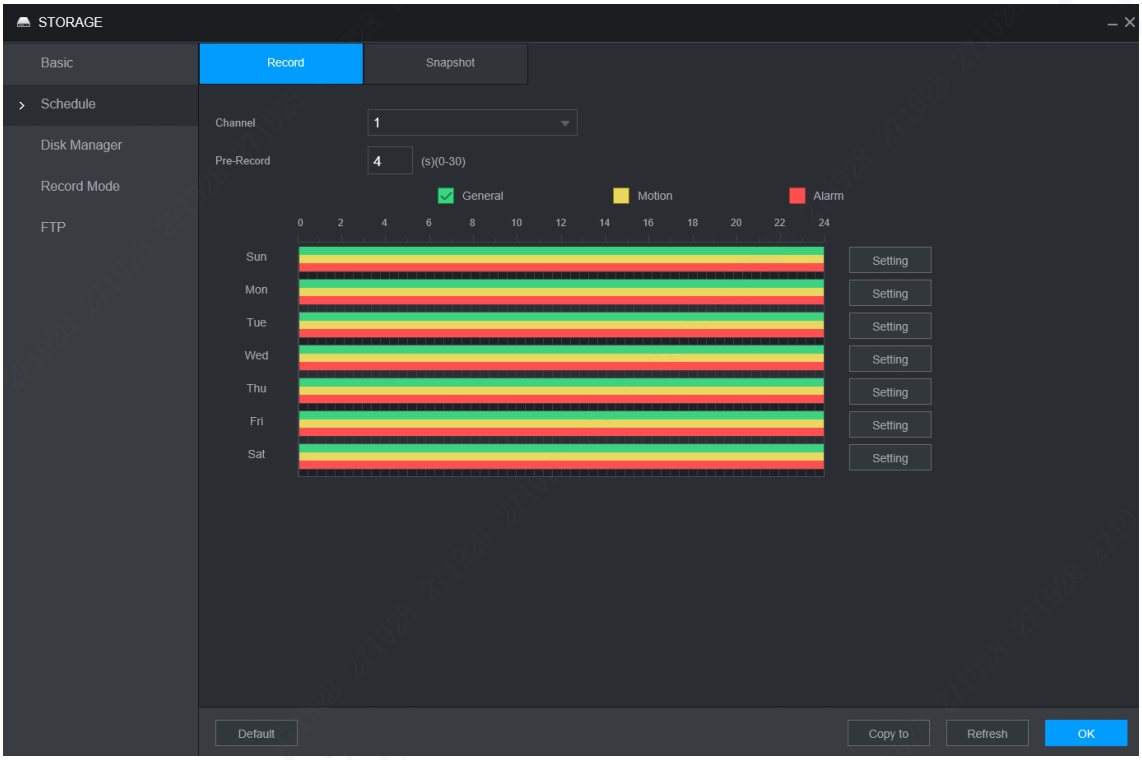
The auto recording function is enabled for the corresponding channel. For details, see "3.6 Configuring Record."

Procedure

Step 1 Select **SETTING > STORAGE > SCHEDULE > Record**.

The **Record** interface is displayed. See Figure 3-14.

Figure 3-14 Record



Step 2 Configure pre-record parameters. See Table 3-6.

Table 3-6 Pre-record parameters description

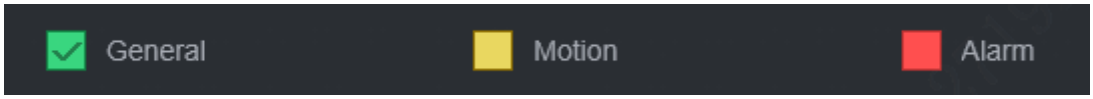
Parameter	Description
Channel	Select a channel to configure the corresponding recording schedule. If you configure the same setting for all channels, select **All**.
Pre-record	Start recording from 0s to 30s before the alarm event occurs. If you enter 0 seconds, there will be no pre-recording.

Step 3 Configure the recording time period, including drawing method and editing method.

- Drawing method

1. Select record type. Select the check box to indicate selection. See Figure 3-15.

Figure 3-15 Type



2. Hold down the left button and drag the mouse to draw a time range.

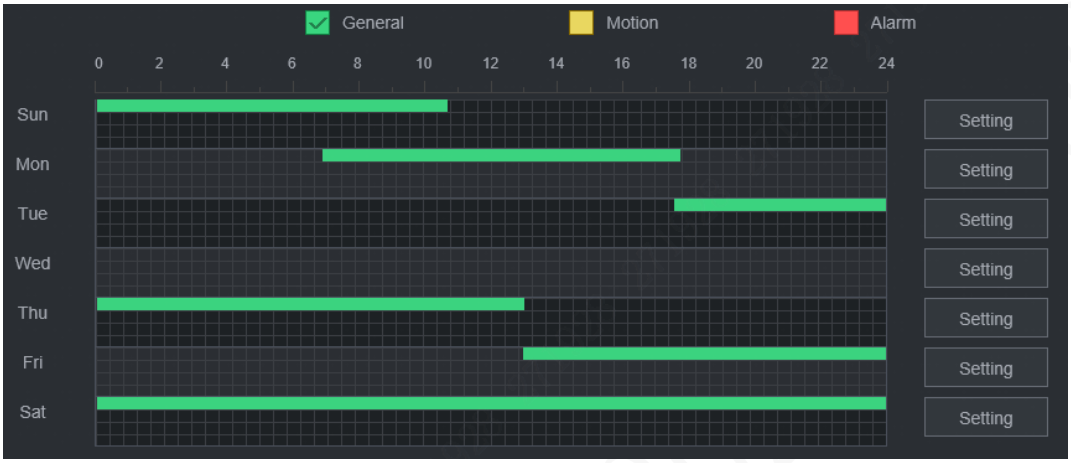
There are six periods of time each day to set, and the device will start the corresponding type of recording within the set time range. See Figure 3-16.The color bar indicates the video type corresponding to the time range.

◇Green indicates valid for ordinary videos.

◇Yellow indicates that the dynamic detection video is valid.

◇Red indicates that the alarm video is valid.

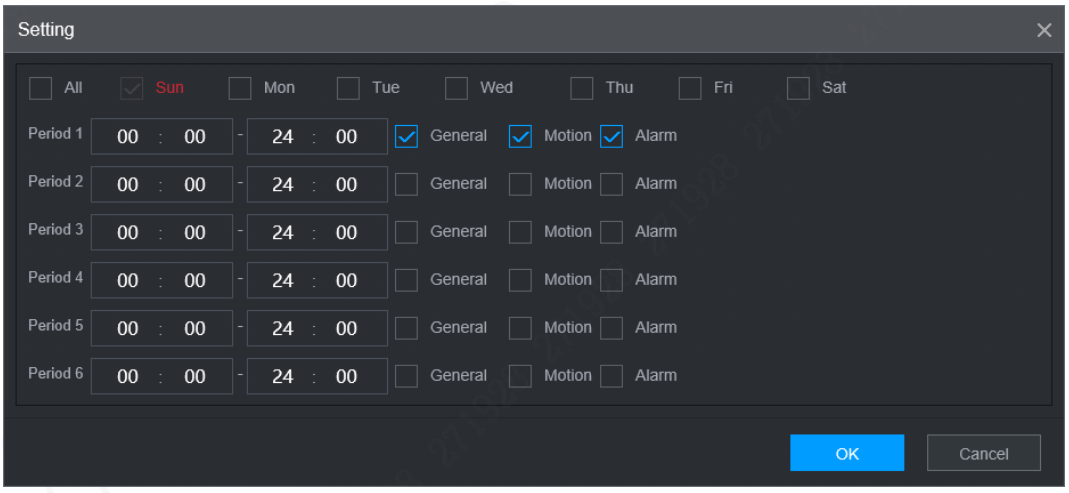
Figure 3-16 Drawing time range



- Editing method

3. Click on the **Setting** corresponding to the the weekday.
   The system will display the **Period** interface. See Figure 3-17.

Figure 3-17 Period



4. Select the record type and a weekday, and configure the period.
5. Click **OK**. The interface will display a corresponding time schedule, providing a more intuitive understanding of the Recording Schedule.

Step 4 Click **OK**.

After setting up a certain channel, click **Copy** to apply the settings of that channel to other channels.

After setting up a certain channel, click **Default** to restore the initial configuration.

3.7.2 Configuring Snapshot Schedule

Set up a Snapshot Schedule for the channel, and the system will automatically capture images during

the scheduled time period.

Preparation

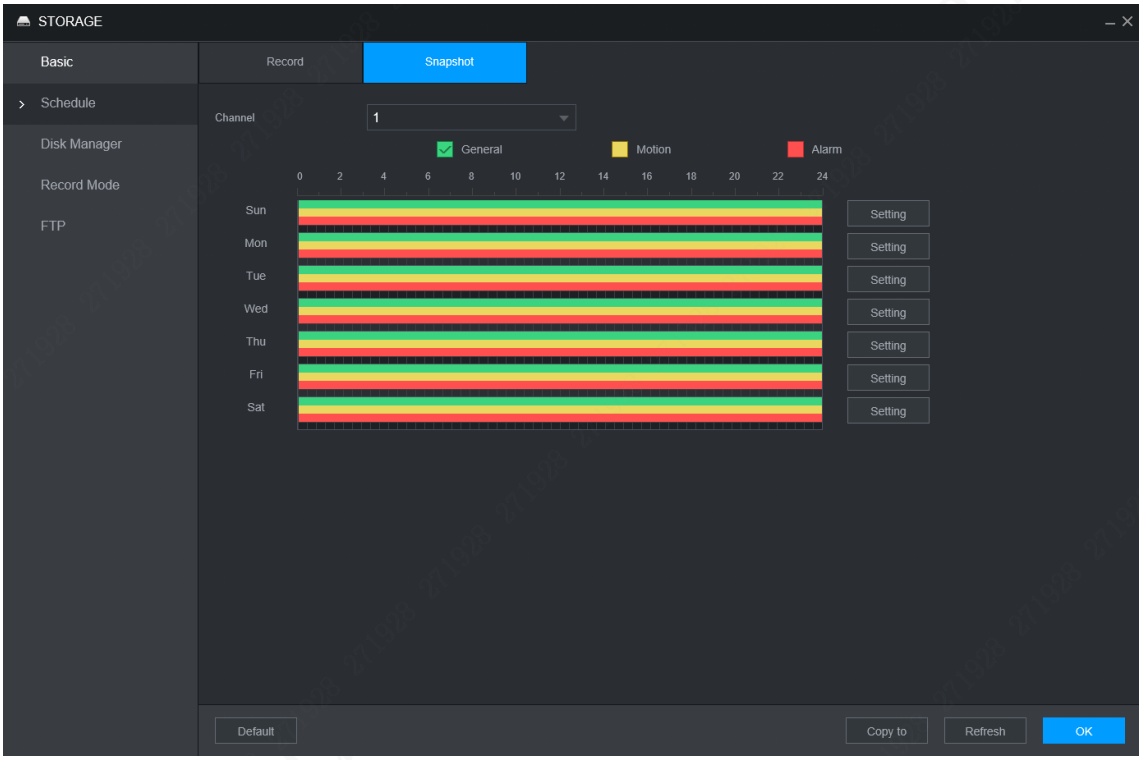
The snapshot function is enabled for the corresponding channel. For details, see "3.6 Configuring Record."

Procedure

Step 1 Click **SETTING** > **STORAGE** > **SCHEDULE** > **Snapshot**.

The **Snapshot** interface is displayed. See Figure 3-18.

Figure 3-18 Snapshot

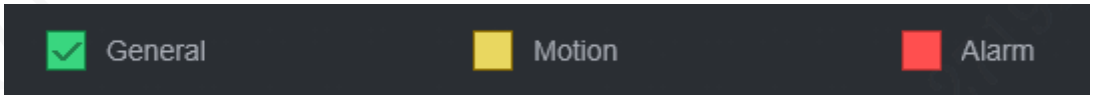


Step 2 Configuring time period for taking snapshots， including drawing method and editing method.

- Drawing method

1. Click **Type.** Select the check box to indicate selection. See Figure 3-18..

Figure 3-19 Type



2. Hold down the left button and drag the mouse to draw a time range.

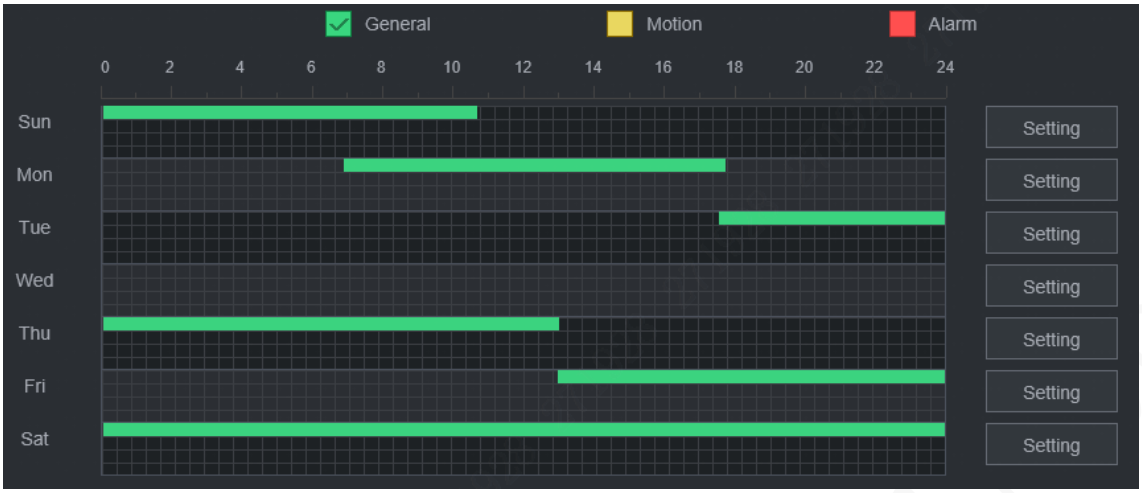
   There are six periods of time each day to set, and the device will start the corresponding type of recording within the set time range. See Figure 3-20.The color bar indicates the video type corresponding to the time range.

   ◇Green indicates valid for ordinary snapshot videos.

   ◇Yellow indicates that the dynamic snapshot video is valid.

   ◇Red indicates that the alarm snapshot is valid.

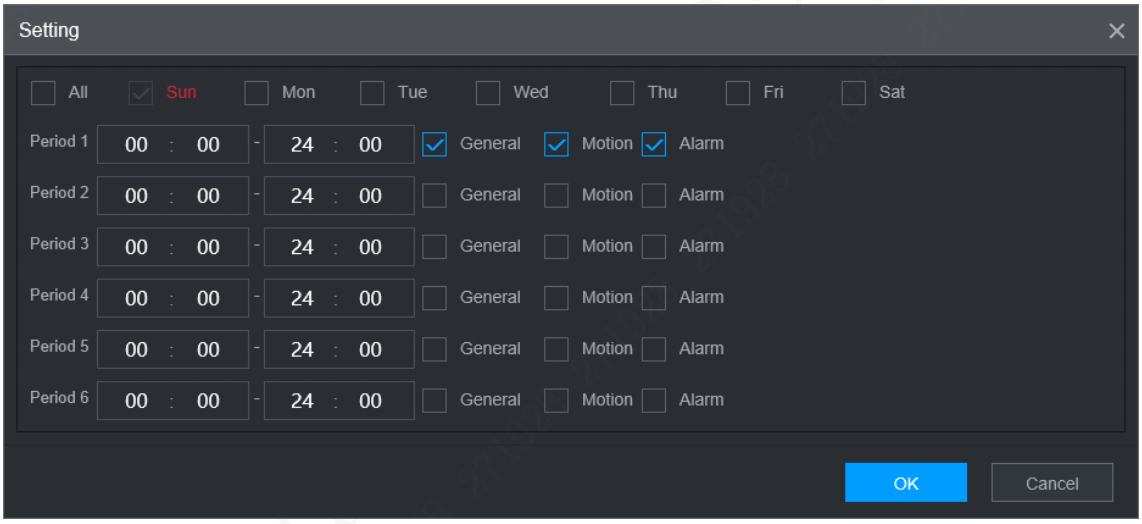
Figure 3-20 Drawing time range



- Editing method

3. Click on the **Setting** corresponding to the weekday.
   The system will display the **Period** interface. See Figure 3-21.

Figure 3-21 Period



4. Select the record type and a weekday, and configure the period.
5. Click **OK**. The interface will display a corresponding time schedule, providing a more intuitive understanding of the Recording Schedule.

Step 3 Click **OK**.

After setting up a certain channel, click **Copy** to apply the settings of that channel to other channels.

After setting up a certain channel, click **Default** to restore the initial configuration.

4 Function Modules Operations

4.1 Live

After you logged in to the web interface, click **LIVE**, the **LIVE** interface is displayed. See Figure 4-1.

Figure 4-1 Live

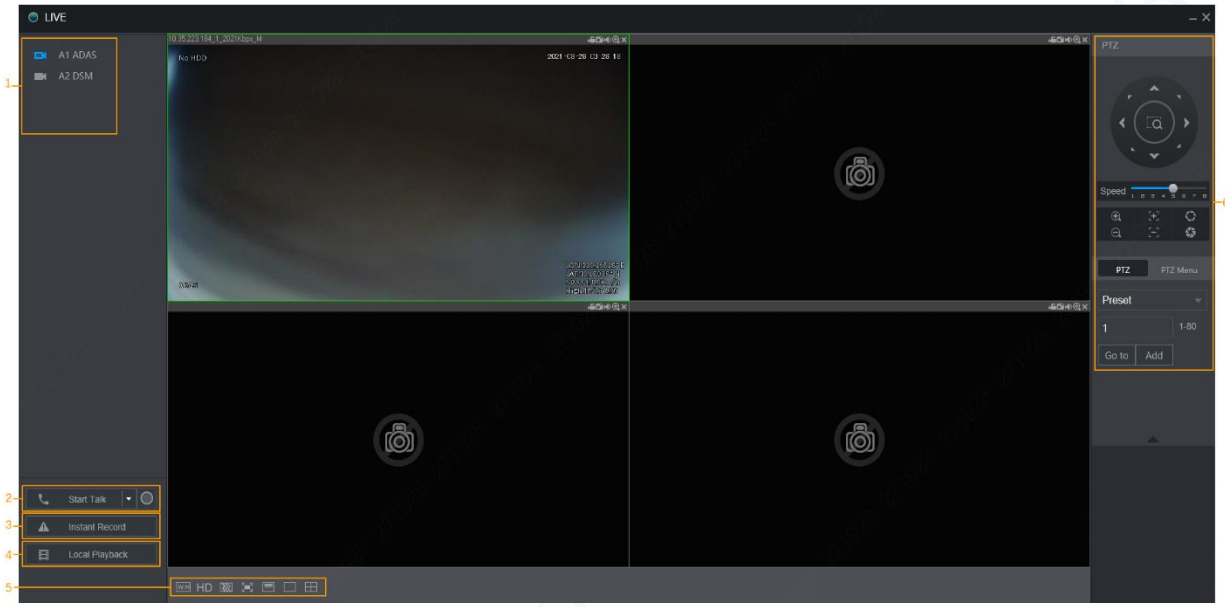


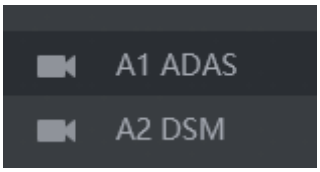
Table 4-1 Live interface parameters description

No.	Name	Description
1	Live channels	See "4.1.1 Live Channels"
2	Start Talk	See "4.1.2 Voice Talk"
3	Instant Record	Click **Instant Record**, the recording type switches to Manual, and the icon turns to  ; click **Instant Record** again to switch the record type back to Auto. This function is only supported by main stream.
4	Local Playback	Plays back the video file (.dav) stored on the PC. Click **Local Playback**, select the video file in the pop-up dialog box, and then click **Open** to start playing back the video file
5	Window function operations	● From left to right, the following options are represented: aspect ratio selection, image quality selection, frame rate selection, full screen mode, and window split mode. ● For real-time monitoring, you can select the fluency or real-time to be the priority according to your actual requirement. ● Select  to split the live window as necessary.

4.1.1 Live Channels

Display the list of monitoring channels.

Figure 4-2 Monitoring channels



Monitoring Channels Operations

Click any monitoring channel to display its live video. See Figure 4-3.

Figure 4-3 Live video

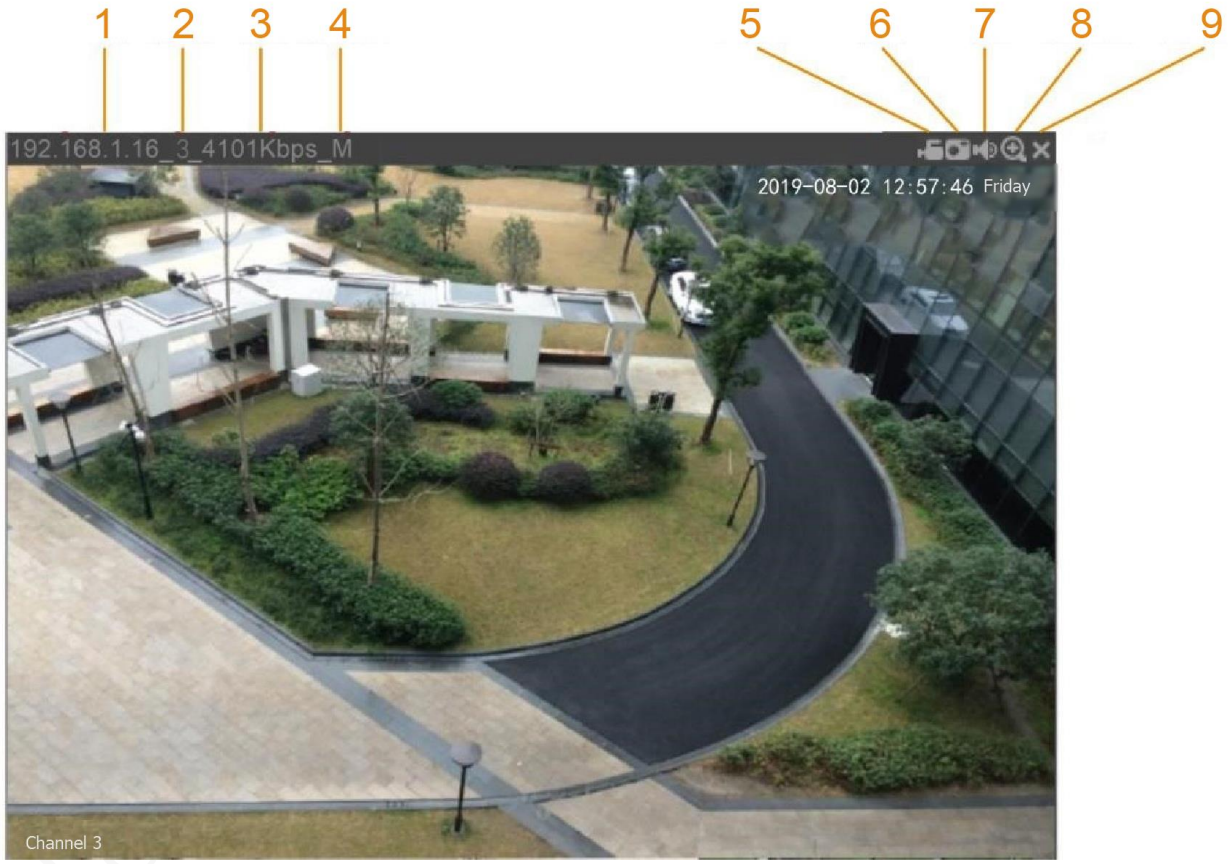


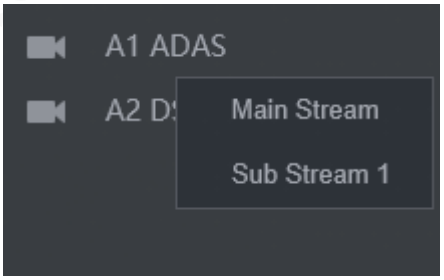
Table 4-2 Video monitoring window parameters description

No.	Parameter	Description
1、2、3、4	Camera information	Displays the IP address, channel number, bit stream, and stream type (M represents main stream; S represents sub stream)
5	Local Record	Click this icon to start recording; click it again to stop recording. The recorded files are stored in C:\Record Download by default. You can modify this path if needed.
6	Snapshot	Click this icon to start taking snapshot. The snapshots default storage path is C:\PictureDownload. You can modify this path if needed. See "5.4.2.4 Configuring Storage Path".
7	Audio	Mute/unmute audio.
8	Area zoom in	Click the icon, and then draw a box at any area to zoom in the selected part. Right-click or click the icon again to restore to the original status.
9	Close	Close the live view in the window.

Bit Rate

The system supports switching between main stream and sub-stream in real-time monitoring window. See Figure 4-4.

Figure 4-4 Bit rate



4.1.2 Voice Talk

You can do the two-way voice talk between the Device and Client. See Figure 4-5.

Figure 4-5 Voice intercom



- Click **Start Talk** to enable the voice talk between the Device and Client.
- Click the drop-down list to select the voice talk mode. Available options include: PCM, G711a, and G711u.
- After enabling voice talk, the **Start Talk** turns to **Stop Talk**. Click 

if you want to end the talk.

4.2 Video Playback

Supports to replay or download video files, and so on in the playback interface.

4.2.1 Playback Operation

Step 1 Click on **Playback** on the WEB main interface.

The **Playback** interface is displayed. See Figure 4-6.

Figure 4-6 Playback

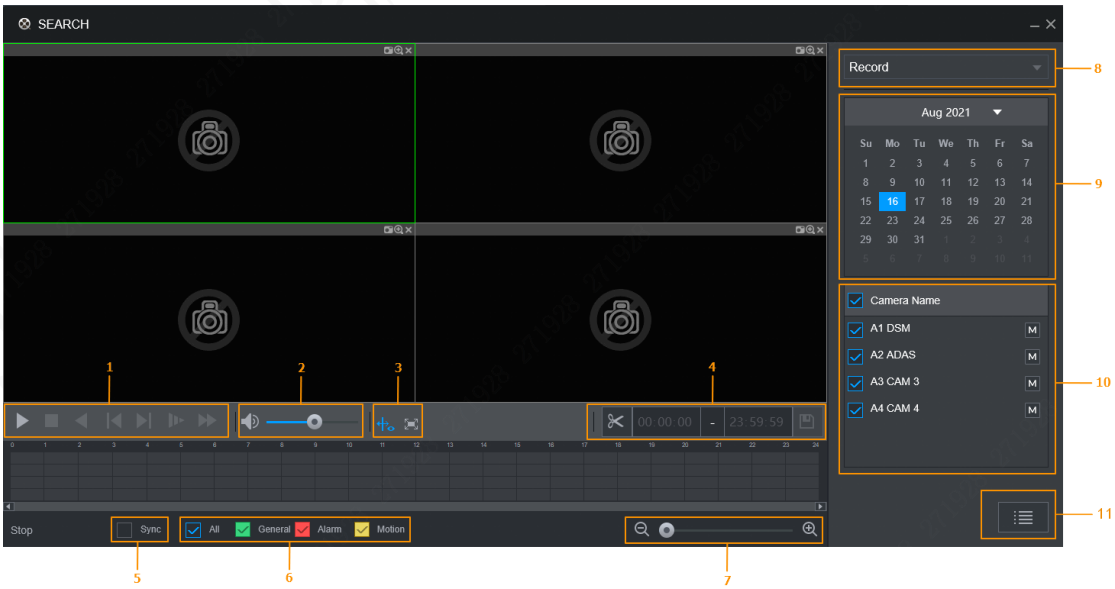


Table 4-3 Playback function bar

No.	Function	Description
1	Playback control bar	See "4.2.4 Clipping Recording File."
2	Volume adjustment	Controls playback volume, including: ● , means mute. ● , means not mute, and the volume can be adjusted.
3	Ai Rule	● , means to open the Ai Rule.
	Full screen button	● , means to play the video recording in full screen.
4	Video editing	Captures and saves certain video sections.
5	Sync	With **Sync** selected, when you click in the progress bar to play back the recordings, the playback time of other channels will sync with the selected channel in the following ways: ● If the playback time of other channels is before the time of the selected channel, other channels will speed up the playback till synced with the selected channel. ● If the playback time of other channels is after the time of the selected channel, other channels will pause to wait till synced with the selected channel.
6	Record type selection	The record types include Regular, MD, and Alarm. You can select the type as needed.
7	Time bar	Move the slider or click  to adjust the time bar.
8	Playback type	To select the playback type. Only record playback is supported at present.
9	Date selection	Click to select the date the recording on which you want to play back.
10	Channel name	You can set the corresponding channel number for the playback window.  You can select up to 4 channels.
11	File list	Click **File list**, you can play back the recordings by file name, download video recordings by file name or time, and verify the completeness.

4.2.2 Control Bar

Table 4-4 Control bar

Icon	Function	Description
	Play	When this icon displays, it means the video is paused or not being played. You can click this icon to play the video.
	Stop	Click this icon to stop playback.
	Backward playback	Click this icon to play the video recording backward.
	Previous frame	Click this icon to jump to the previous frame. You need to pause the playback before using play by frame.
	Next frame	Click this icon to play the next frame. You need to pause the playback before using play by frame.
	Slow playback	Click this icon to adjust the slow playback speed. Click  to start slow playback.
	Fast playback	Click this icon to adjust the fast playback speed. Click  to start fast playback.

4.2.3 Playing Back Video Recordings

You can play back video recordings by time or file name. During playback, you can conduct the following operations.

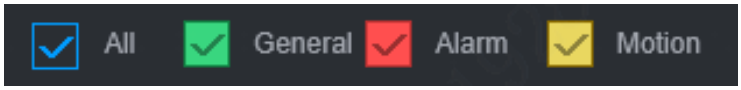
- In the channel window, click  at the upper right corner and select the area you want to enlarge. The area is enlarged. Click this icon again or right-click in the window to exit.
- Click  at the upper right corner to take a snapshot.
- Click  at the upper right corner to close playback.

Playing Video Recordings by Date

Step 1 Select the date for searching for the video recordings, and set the corresponding channel as needed.

Step 2 Select a date with video recordings and the channel window, and then select the record type. See Figure 4-7.

Figure 4-7 Record type



Step 3 Click  to start playing back video recordings.

Playing Video Recordings by File Name

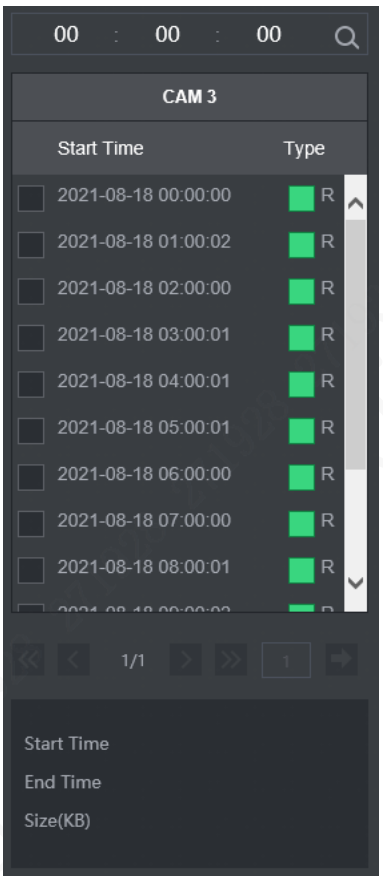
Step 1 Select the date for searching for the video recordings, and set the corresponding channel as needed.

Step 2 Select a date with video recordings and the channel window.

Step 3 Click File list.

The video recordings are displayed in the list. See Figure 4-8.

Figure 4-8 File list



Step 4 Set the start time of the file to be searched for, and then click . The recording files are displayed.

Step 5 Double-click the video recordings to start playback.

4.2.4 Clipping Recording File

You can clip sections of video recordings and save to the PC.

Step 1 On the **Record Playback** interface, select the playback mode, date, channel, and recording type.

The system displays the corresponding results.

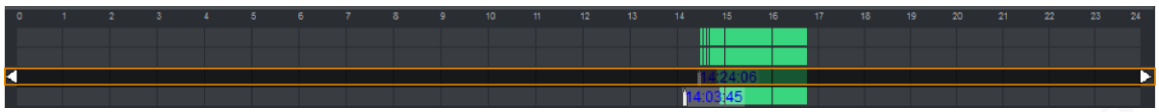
Step 2 Select the channel number.

Step 3 Capture the video segment you need through the following methods:

- Enter the start time and end time you need to edit in .

- Click , and video clipping frame appears on the time bar. See Figure 4-9. Press the record edit column (the white column on) and drag to the left or right, to select start time and end time of clipping.

Figure 4-9 Video clipping frame



Step 4 Click  to select save path.

Step 5 Click **OK**.

The system begins to save the record file and displays the saving progress.



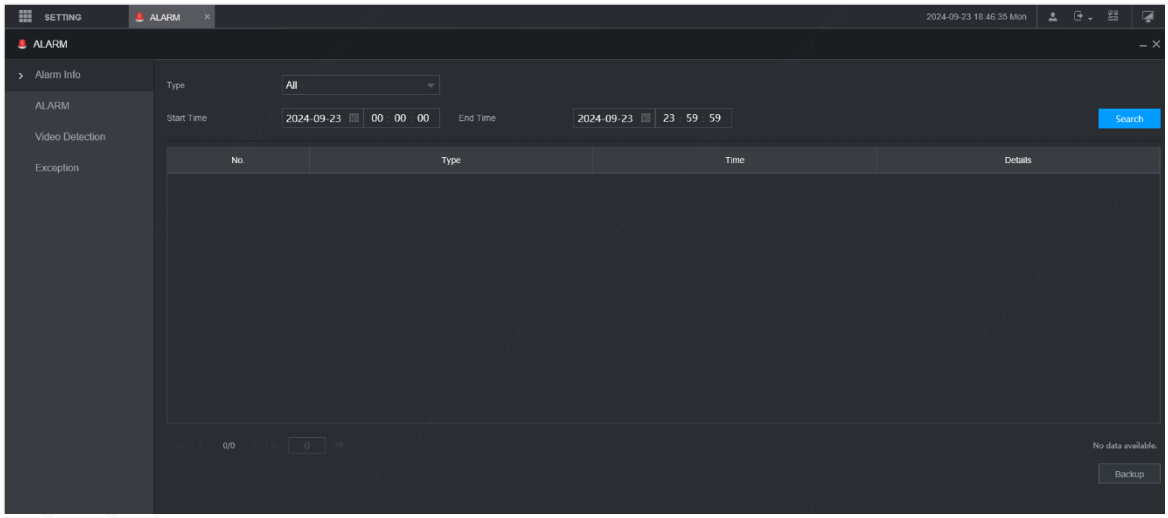
Click  to stop downloading the recordings.

4.3 Viewing Alarm Info

You can view the alarm information during a fixed period.

Step 1 On the main web interface, click **ALARM > Alarm Info**. See Figure 4-10.

Figure 4-10 Alarm info(1)

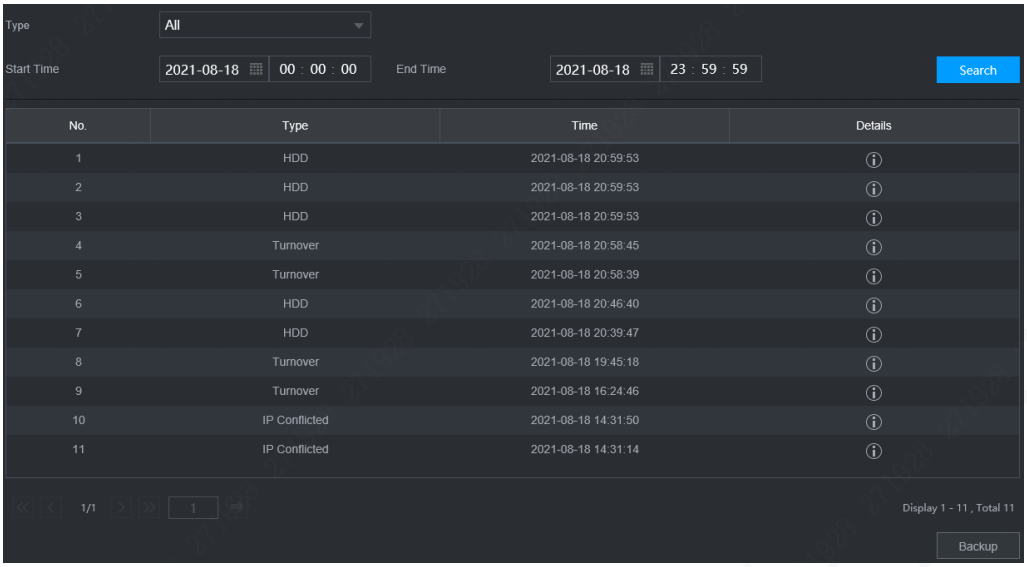


Step 2 Select **Type** to set the alarm type to be searched for, including All, Motion Detect, Video Loss, Tampering, Abnormality, Local and Smart Alarm.

Step 3 Set the start time and end time.

Step 4 Click **Search**. Alarm information in the set type during the set period is displayed. See Figure 4-11.

Figure 4-11 Alarm info(2)



Step 5 Click **Backup** to back up the obtained alarm information to a local directory.

You need to install relevant controls before backup.

479184 da hua 2024-06

5 System Settings

You can set up system information following instructions on the Local interface or web interface. This section introduces the web interface instructions. The Local interface is similar and would not be elaborated here.

- Some functions can only be configured on the Local interface. The actual interface shall prevail.
- Some functions are not used in actual operations, so they are not described in detail in the document.
- In this section, when you have configured the settings for a channel, click **Apply** to apply the settings to other channels. Click **Refresh** to display the latest configuration. Click **Default** to restore to factory default settings.

5.1 Configuring Alarm Settings

Alarm information settings include the setting of video detection, alarm input and abnormality.

5.1.1 Configuring Video Detection Settings

Video detection includes motion detection, video loss, and tampering. This function detects the abnormal changes and triggers alarms.

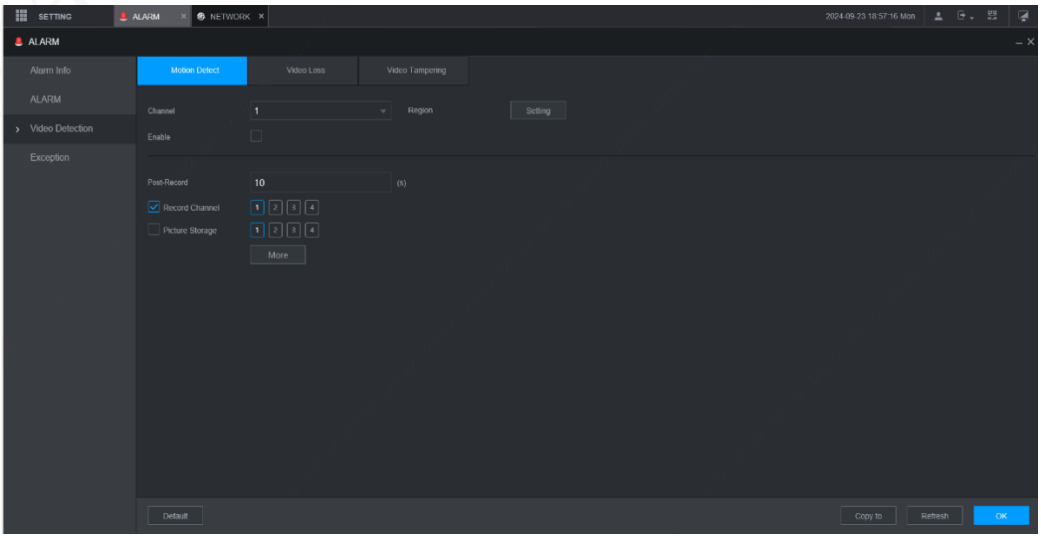
5.1.1.1 Configuring Motion Detect Settings

When the moving object appears and moves fast enough to achieve the preset sensitivity value, the system triggers an alarm and alarm linkage.

Step 1 On the main web interface, select **ALARM** > **Video Detection** > **Motion Detect**.

The system displays the **Motion Detect** interface. See Figure 5-1.

Figure 5-1 Motion Detect



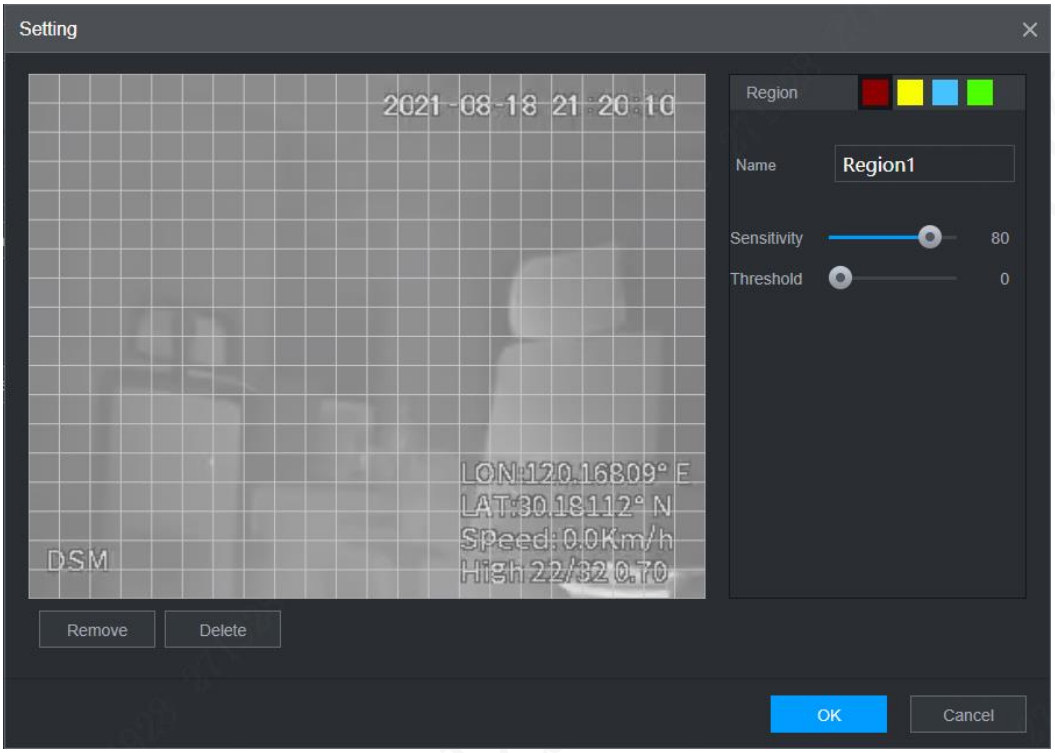
Step 2 Select the channel number and select **Enable** to enable the motion detect function for the channel.

Step 3 Set MD region.

1) Click **Setting** behind **Region**.

The **Setting** interface is displayed. See Figure 5-2.

Figure 5-2 Region setting



2) Click **Remove** or **Delete**, you can remove or delete the motion detect. The higher the sensitivity value is, the easier the motion detect is triggered; the lower the threshold is, the easier the motion detect is triggered. By default, the whole video image is for motion detect.

Each color represents a separate region, and you can set different motion detect regions.

3) Hold down the left button of the mouse, drag to select the region to be detected, and set up its sensitivity and threshold value.

Channel alarm events: As long as any one of the four regions triggers alarm, the channel that houses the region will give alarm.

Step 4 Click **OK**.

Step 5 Configure alarm linkage parameters. See Table 5-1.

Table 5-1 Alarm linkage parameters

Parameter	Description
Delay	When an alarm ends, the alarm recording will stop after a period of delay.
Record channel	Select the corresponding check box and set a record channel. When an alarm event occurs, the corresponding channel starts recording automatically. Two more conditions must be satisfied before recording function works: ● Motion detect recording is enabled. ● Auto recording is enabled.
Picture Storage	Select the corresponding check box and set the channel. When an alarm event occurs, the corresponding channel starts capturing automatically. You can also configure the frequency, size, and quality of the snapshots. See 5.4.2.2 Configuring Snapshot Settings.
Anti-dither	Click **More** to set the anti-dither time. The system records only one event during this period.
Log	Click **More**, and select the corresponding check box to enable the device to create a local alarm log when an alarm event occurs.
Send email	Click **More**, and select the corresponding check box. When an alarm event occurs, the system sends email to the specified mailbox. Set your e-mail first before enabling this function. See "5.5.4 Configuring Email Settings."

Step 6 Click **OK**.

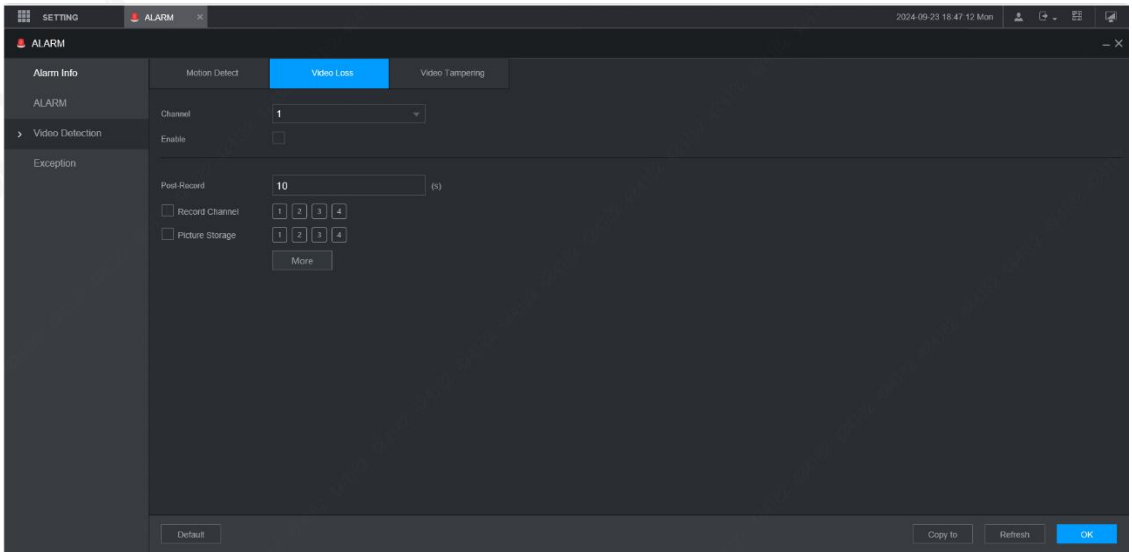
5.1.1.2 Configuring Loss Detect Settings

When video loss occurs, the system triggers an alarm and configured actions.

Step 1 On the main web interface, select **ALARM** > **Video Detection** > **Video Loss**.

The **Video Loss** interface is displayed. See Figure 5-3.

Figure 5-3 Video loss



Step 2 Select **Channel** and select **Enable** to enable the video tampering detect function for the channel.

Step 3 Configure alarm linkage parameters. See Table 5-1

Step 4 Click **OK**.

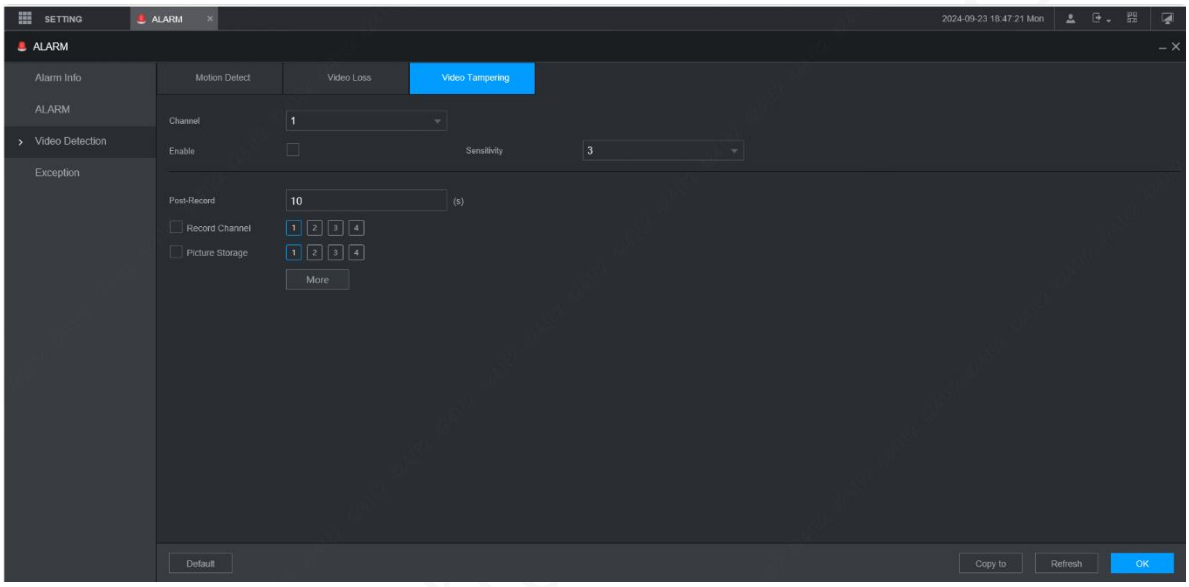
5.1.1.3 Configuring Tampering Settings

When the camera is covered intentionally, or the video is displayed in a single color due to sunlight or other reasons, that is the monitoring cannot be continued normally, the system triggers alarm and links to the configured actions.

Step 1 On the main web interface, select **ALARM > Video Detection > Video Tampering**.

The **Video Tampering** interface is displayed. See Figure 5-4.

Figure 5-4 Video Tampering



Step 2 Select **Channel** and select **Enable** to enable the video tampering detect function for the channel.

Step 3 Set the sensitivity of detection.

The higher the sensitivity, the easier it is to detect a moving object, but the false alarm rate might increase.

Step 4 Configure alarm linkage parameters. See Table 5-1.

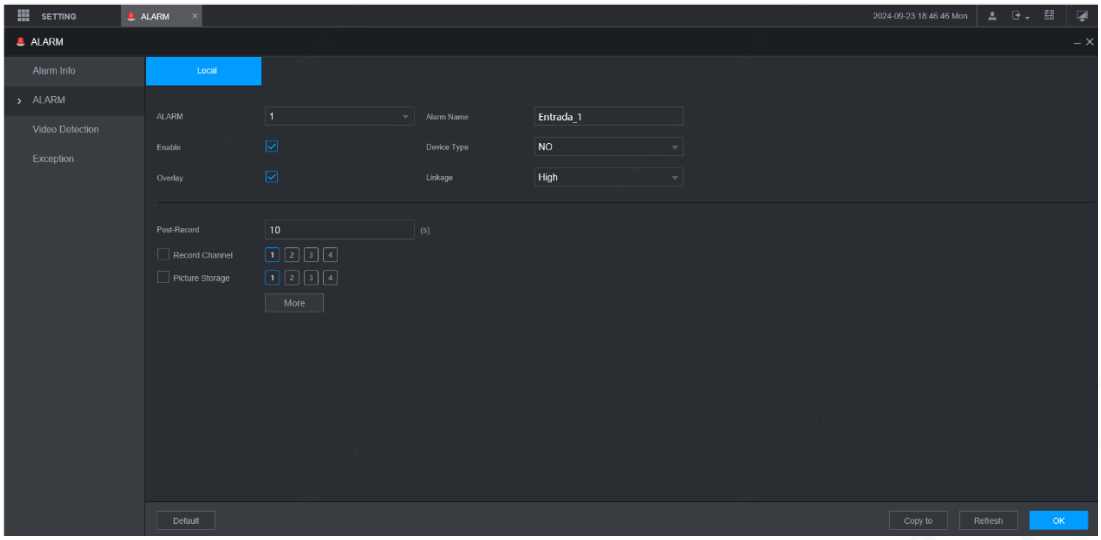
Step 5 Click **OK**.

5.1.2 Configuring Alarm Input Settings

You can select different types of input according to different sources of alarm and set up alarm output methods.

Step 1 On the main WEB interface, select **ALARM > ALARM > Local**. See Figure 5-5.

Figure 5-5 Alarm input



Step 2 Set the local alarm as required: The alarm signal detected on the device alarm input port.

Step 3 Select the **Alarm channel number** and select **Enable**.

Step 4 Configure more settings. See Table 5-2.

Table 5-2 Alarm input parameters

479184 da hua 2024-10-06

Parameter	Description
Alarm name	Enter a customized alarm name.
Type	If the **Event Type** is **Local Alarm**, configure this parameter. ● **NO**: The alarm signal is disconnected normally. The alarm is triggered when alarm signal is connected. ● **NC**: The alarm signal is connected normally. The alarm is canceled when alarm signal is disconnected.
Overlay	Select the **Overlay** check box to overlay alarm names onto channel images.
Linkage	If the **Event Type** is **Local Alarm**, configure this parameter. If the alarm signal is 12V/24V voltage, select **High** as the triggering mode; if the alarm signal is ground voltage, select **Low** as the triggering mode.
Record channel	Select the corresponding check box and set a record channel. When an alarm event occurs, the corresponding channel starts recording automatically. Two more conditions must be satisfied before recording function works: ● Alarm recording is enabled. See 3.7.1 Configuring Recording Schedule. ● Auto recording is enabled. See 3.6 Configuring Record
Picture Storage	Select the corresponding check box and set the channel. When an alarm event occurs, the corresponding channel starts capturing automatically. You can also configure the frequency, size, and quality of the snapshots. See 5.4.2.2 Configuring Snapshot Settings.
Anti-dither	Click **More** to set the anti-dither time. The system records only one alarm input event during this period.
Log	Click **More**, and select the corresponding check box to enable the device to create a local alarm log when an alarm event occurs.
Send email	Click **More**, and select the corresponding check box. When an alarm event occurs, the system sends email to the specified mailbox. Set your e-mail first before enabling this function.

Step 5 Click **OK**.

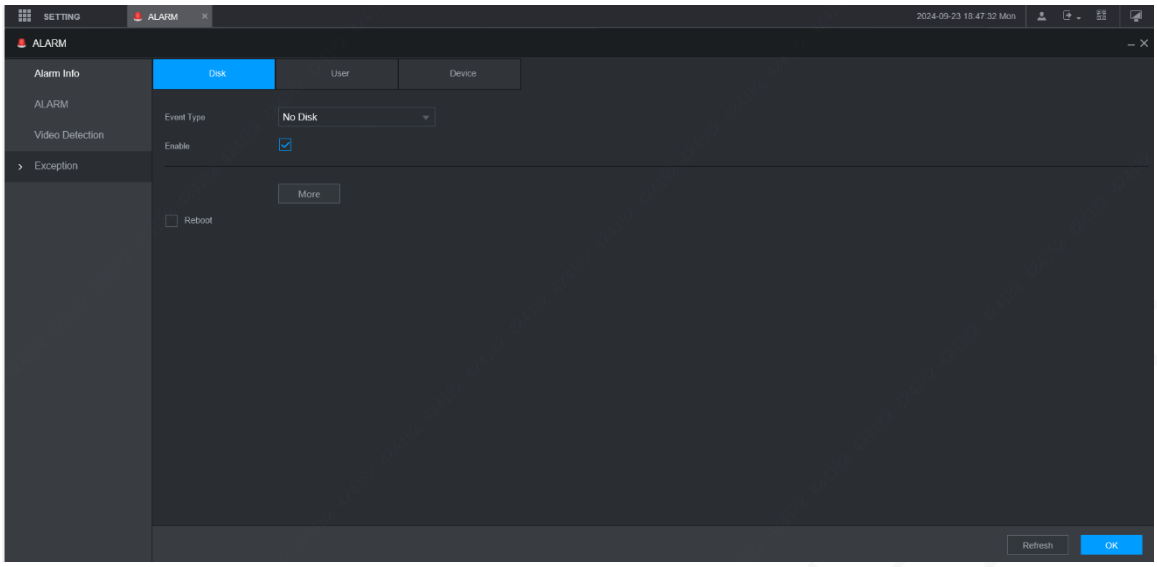
5.1.3 Configuring Exception

You can configure the ways to handle the device when errors occur.

Step 1 On the main web interface, select **ALARM > EXCEPTION > Disk**.

The **Disk** interface is displayed. See Figure 5-6.

Figure 5-6 Exception



Step 2 Select the event type, and select **Enable** to enable the handling of corresponding abnormal events.

Step 3 Configure more settings. See Table 5-3.

Table 5-3 Abnormality setting parameters

479184 da hua 2024

Parameter	Description
Event type	You can configure corresponding abnormal events on the following three tabs. ● HDD: To set the ways to handle abnormal HDD events, including No HDD, HDD Errors, HDD No Space. ● User: Set the ways to handle illegal login events. ● Device: Set the ways to handle abnormal device events, including Temperature Too High, Low Battery Safety Exception, Network Security Exception, Over Speed, Low Speed, Collision, Turnover, Rapid Turn, Rapid Speedup, Sharp Brake and ACC Power Off.  The event type might be different depending on the model you purchased, and the actual interface shall prevail.
Restart	Select the check box, when no hard disk alarm occurs, the system restarts after 3 minutes.
Available capacity	Select **Disk** tab, and if the **Event Type** is **Low Space**, configure this parameter. You can set the percentage of Disk remaining space. When Disk remaining space is lower than this percentage, an alarm will occur.
Login Attempt	Select **User** tab, and if the **Event Type** is **Illegal Login**, configure this parameter. The maximum number of allowed password input errors during user login. If the number of password input errors reaches this value, the user account will be locked.
Lock time	Select **User** tab, and if the **Event Type** is **Illegal Login**, configure this parameter. Set the time for locking the user account when the number of password input errors reaches the set value.
High Temperature	Select **Device** tab, and if the **Event Type** is **High Temperature**, configure this parameter. Enter the upper limit of device temperature. The alarm is triggered when the device temperature exceeds this value.
Lower Than Auto Accumulator voltage	Select **Device** tab, and if **Event Type** is **Battery Low Voltage**, configure this parameter. The supply voltage to the device from the vehicle and the percentage of available supply voltage capacity. When the vehicle is in ACC Off, and the voltage supplied to the device is less than the percentage of available capacity, the system triggers an alarm.
Max speed	Select **Device** tab, and if the **Event Type** is **Over Speed**, configure this parameter. The upper limit of vehicle speed. When the vehicle speed exceeds this value, the system triggers an alarm.
Min speed	Select **Device** tab, and if **Event Type** is **Low Speed**, configure this parameter. The lower limit of vehicle speed. When the vehicle speed is lower than this value, the system triggers an alarm.
Send email	Click **More**, and select the corresponding check box. When an alarm event occurs, the system sends email to the specified mailbox.  Set your e-mail first before enabling this function.
System log	Click **More**, and select the corresponding check box to enable the device to create a local alarm log when an alarm event occurs.

Step 4 Click **OK**.

5.2 Configuring AI Settings

The AI solution includes active safety driving intelligent functions. After activating and setting the intelligent solution, the corresponding functions can take effect.

- ADAS: Advanced Driver Assistance Systems detect events such as lane departure, too close following distance, and collision warnings. The system then executes alarm linkage actions and reports to the platform.
- DSM: The system supports analysis and processing of driver behavior captured by cameras, detecting behaviors such as looking down, yawning, smoking, looking around, and leaving the post.
- Rear Seat Object Detection: The function intelligently identifies objects left on the rear seat. When an object is detected as being left behind, it triggers an alarm and uploads to the platform.

- You can enable up to 3 smart functions at the same time.
- The cameras mentioned in this chapter are based on some models, and the actual product shall prevail.

5.2.1 Configuring ADAS Function

Introduction

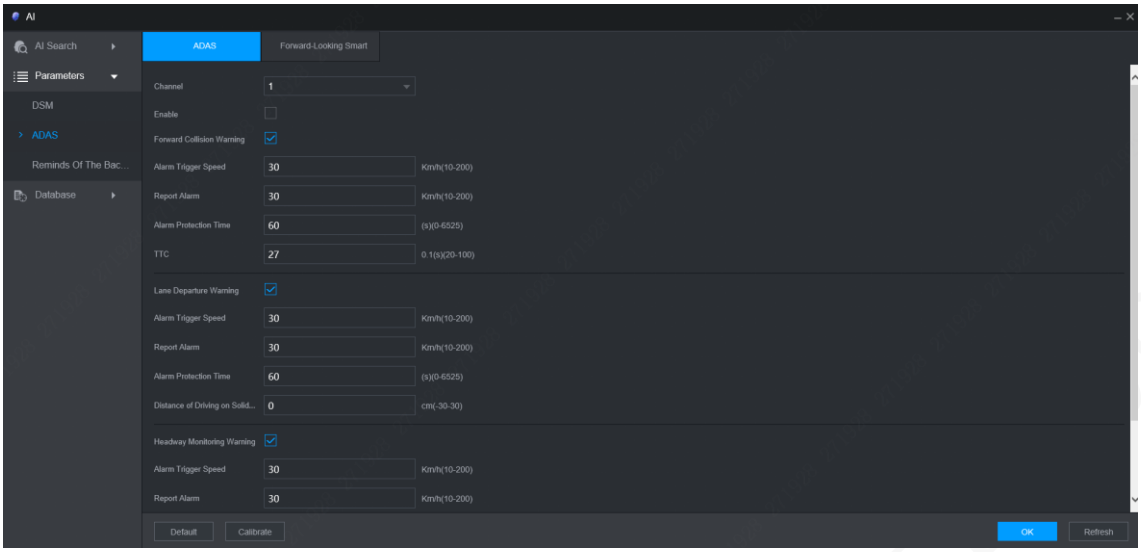
ADAS (Advanced Driving Assistance System) alarms mainly include forward collision warning, lane departure warning and headway monitoring warning. The Forward-looking Intelligence mainly includes green light reminder, reminder of the car ahead starting, speed limit reminder, and reminder of not giving way to pedestrians at zebra crossings.

- Please ensure to activate the turn signal in advance, with alarm input_2 (left turn) and alarm input_3 (right turn). Once the vehicle's turn signal is activated, it will not trigger a lane departure warning.

5.2.1.1 Configuring ADAS Parameters

Step 1 On the main web interface, select **AI** > **Parameters** > **ADAS**.
The **ADAS** interface is displayed. See Figure 5-7.

Figure 5-7 ADAS



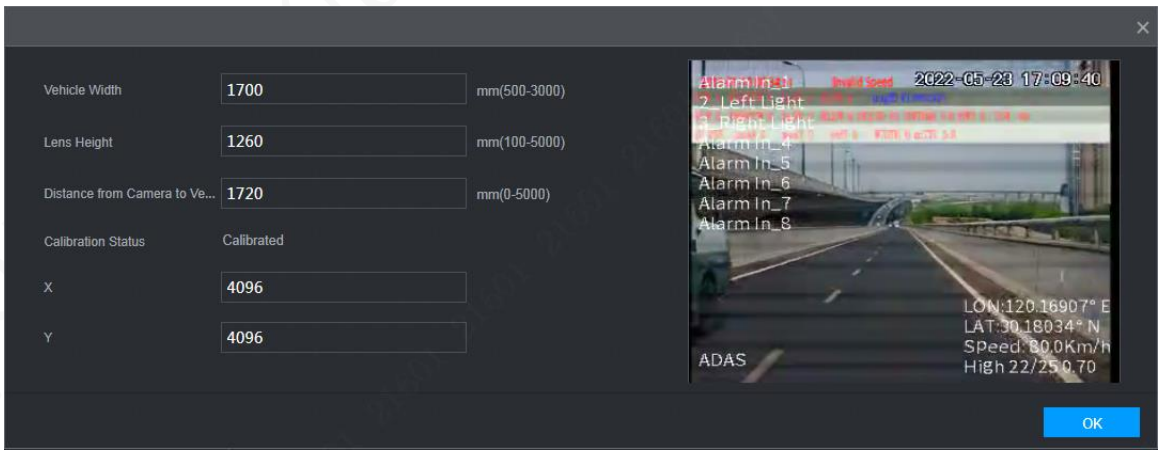
Step 2 Click **Enable** and **OK** to enable the ADAS alarm.

Step 3 Click **Calibrate**.

The **Calibrate** interface is displayed. See Figure 5-8.

- The installation position of the vehicle's assisted driving camera needs to be calibrated before use. When configuring parameters, please measure the width of the vehicle, the height of the lens, and the distance from the camera to the front of the vehicle in advance. After a certain period of driving, the equipment will automatically calibrate its position.
- -The X value represents the yaw angle of the camera installation, ranging from 2958 to 5233; Y value represents the pitch angle of the camera installation, ranging from 3872 to 4320. If it exceeds this range, it is judged as an unreasonable camera installation angle and calibration failure.

Figure 5-8 Calibrate



Step 4 Enter the vehicle width, the lens height and the distance from the camera to the vehicle head, and click **OK** to complete the calibration.

Step 5 Click to go back to parameter config interface.

Step 6 Configure more parameters. For details, see Table 5-4.



means the corresponding alarm is enabled.

Table 5-4 ADAS parameter description

Parameter	Description
Channel	ADAS is fixed to channel 1.
Forward collision warning	Gives out warning if it is possible to collide with the vehicle in front.
Alarm trigger speed	The speed at which the Forward Collision Warning is triggered: The range is 10km/h–200km/h.
Report alarm	The speed at which the Forward Collision Warning is uploaded to the platform: The range is 10km/h–200km/h.
Alarm protection time	Continuous alarm time: The range is 0s–6525s.
TTC	Time to collision: The range is 2s–10s.
Lane departure warning	Gives out warning when the vehicle directly changes the lane without turning on the left or right cornering lamp.
Alarm trigger speed	The speed at which the Lane Departure Warning is triggered: The range is 10km/h–200km/h.
Alarm upload	The speed at which the Lane Departure Warning is uploaded: The range is 10km/h–200km/h.
Alarm protection time	Continuous alarm time: The range is 0s–6525s.
Distance of driving on solid line	Set the distance of driving on solid line: The range is -30cm–30cm.
Headway Monitoring Warning	Gives out warning when the vehicle is too close to the vehicle in the front.
Alarm trigger speed	The speed at which the Headway Monitoring Warning is triggered: The range is 10km/h–200km/h.
Report alarm	The speed at which the Headway Monitoring Warning is uploaded: The range is 10km/h–200km/h.
Alarm protection time	Continuous alarm time: The range is 0s–6525s.
TTC	Time to collision: The range is 1s–10s.

Step 7 Click **OK**.

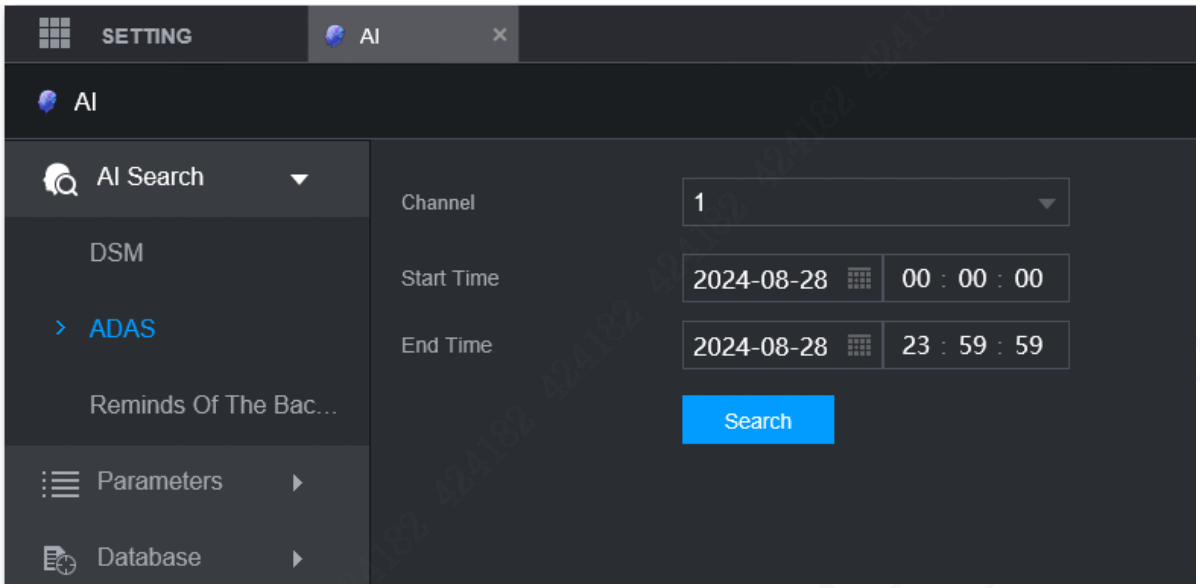
5.2.1.2 AI Search

Users can set search parameters to screen out alarm records in a specific period of time.

Step 1 On the main web interface, select **AI > AI Search > ADAS**.

The **ADAS** interface is displayed. See Figure 5-9.

Figure 5-9 ADAS



Step 2 Select the Channel, Start Time, and End Time.

Step 3 Click **Search**.

The **search** interface is displayed.

5.2.2 Configuring DSM Function

Introduction

DSM (Driver Status Monitor) alarms mainly include drowsy driving, distracted driving, calling when driving, driver not in position, wearing infrared-blocking sunglasses, smoking when driving, and camera being shielded. The Camera can monitor and alarm unsafe driving behaviors through the driver monitoring camera. After being triggered, these alarms require voice broadcast by means of TTS and need to be uploaded to the platform.

5.2.2.1 Installing DSM Camera

Notice

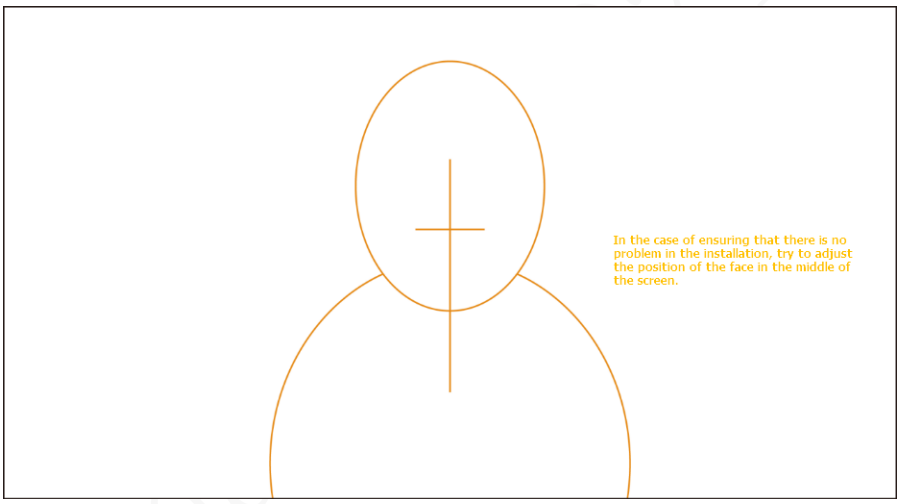
- The tilt angle range between the camera lens and the horizontal line below the face is 10° to 30°, with the camera positioned at a distance of 80cm to 90cm from the face.

Figure 5-10 The installation position of the DSM camera.



- When installing the camera, it is important to ensure that the face is within the frame. Consideration should be given to situations where the individual may have their head lowered, as this could result in partial or complete exclusion of the face from the frame, potentially leading to detection failure.

Figure 5-11 The positioning of the face within the frame.

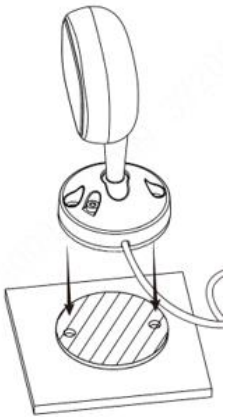


Procedure

Step 1 Take out the 3M adhesive from the device accessories and affix it to the base of the camera (with cables drawn out from the side).

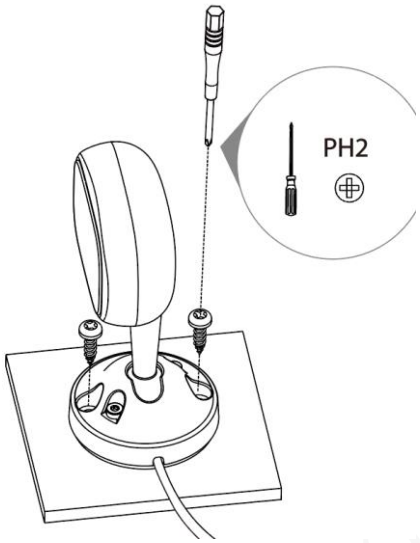
Step 2 Based on the surveillance camera's position, affix the camera onto the installation surface.

Figure 5-12 Installation Diagram(1)



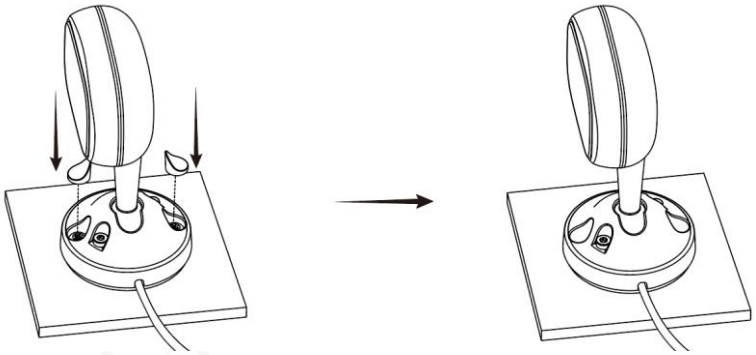
Step 3 Use a PH2 cross screwdriver to tighten two self-tapping screws(ST4×15) into the installation holes.

Figure 5-13 Installation Diagram(2)



Step 4 Insert the self-tapping screw plug into the screw hole.

Figure 5-14 Installation Diagram(2)

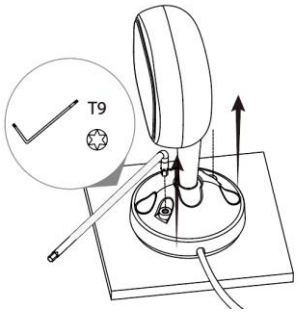


Adjusting the perspective

Step 5 Connect the device cable to the DSM interface of the dash cam.

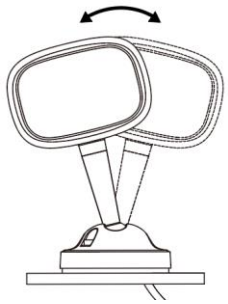
Step 6 Use a T9 hex wrench to loosen the camera ball head rod mounting screw counterclockwise.

Figure 5-15 Adjustment(1)



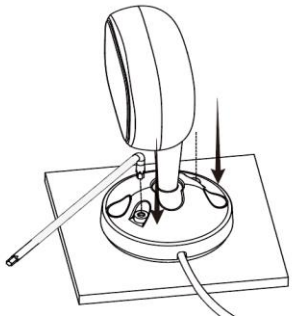
Step 7 Once the image is displayed on the local monitor, adjust the lens angle to the appropriate monitoring position.

Figure 5-16 Adjustment(2)



Step 8 Tighten the screw to secure the camera ball head pole. Installation complete.

Figure 5-17 Adjustment(3)

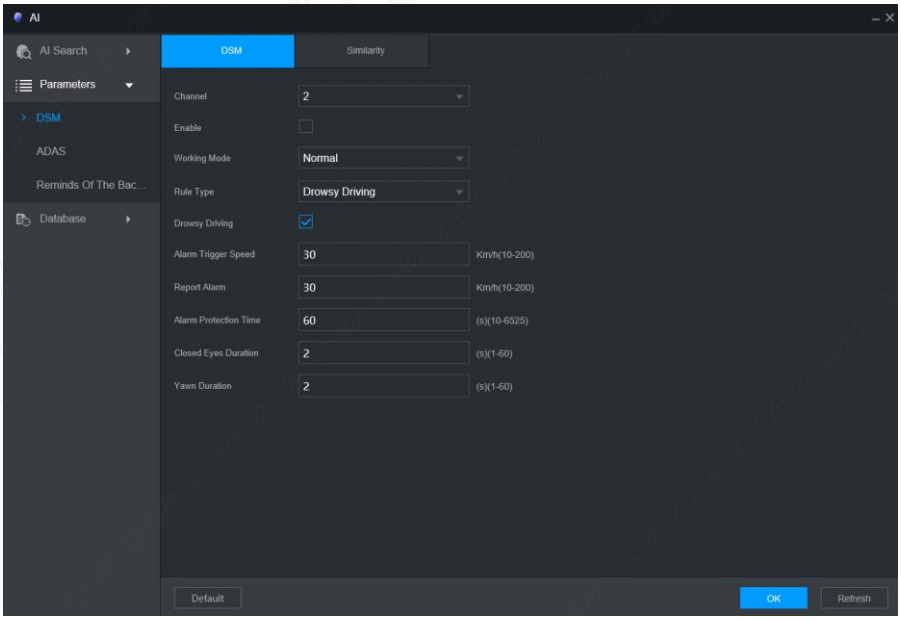


5.2.2.2 Configuring DSM Parameters

Step 1 On the main web interface, select **AI** > **Parameters** > **DSM**.

The **DSM** interface is displayed. See Figure 5-18.

Figure 5-18 DSM



Step 2 Click **Enable** to enable the DSM alarm.

Step 3 Configure parameters. See Table 5-5.

Table 5-5 DSM parameter description

Parameter	Description
Channel	The DSM is fixed to channel 2.
Working mode	Vehicle working modes include normal mode and test mode.
Rule type	For alarm rules, you can select drowsy driving, distracted driving, calling when driving, driver not in position, wearing infrared-blocking sunglasses, smoking when driving, lens tempering, unbelted alarm, ID exception and substitution driving (not the correct driver). ☑ means the corresponding alarm is enabled.
Alarm trigger speed	The speed at which the alarm is triggered: The range is 0 km/h–200 km/h.
Report alarm	The speed at which the alarm is uploaded to the platform: The range is 0 km/h–200 km/h.
Alarm protection time	Continuous alarm time: The range is 10s–6525s.
Closed eyes duration	Setting is necessary when the rule type is **Drowsy Driving**: The range is 1s–60s.
Yawn duration	
Duration of lowering head	Setting is necessary when the rule type is **Distracted Driving**: The range is 1s–60s.
Duration of looking around	
Duration of calling	Setting is necessary when the rule type is **Calling When Driving**: The range is 1s–60s.
Duration of driver not in position	Setting is necessary when the rule type is **Driver not in Position**: The range is 1s–60s.
Duration of wearing infrared-blocking sunglasses	Setting is necessary when the rule type is **Wearing Infrared-Blocking Sunglasses**: The range is 1s–60s.
Duration of smoking	Setting is necessary when the rule type is **Smoking When Driving**: The range is 1s–60s.
Duration of acceleration when camera is shielded	Setting is necessary when the rule type is **Camera Being Masked**: The range is 1s–60s.
Duration of Not Wearing Seatbelt	Setting is necessary when the rule type is **Unbelted Alarm**: The range is 1s–60s.

Step 4 Click **OK**.

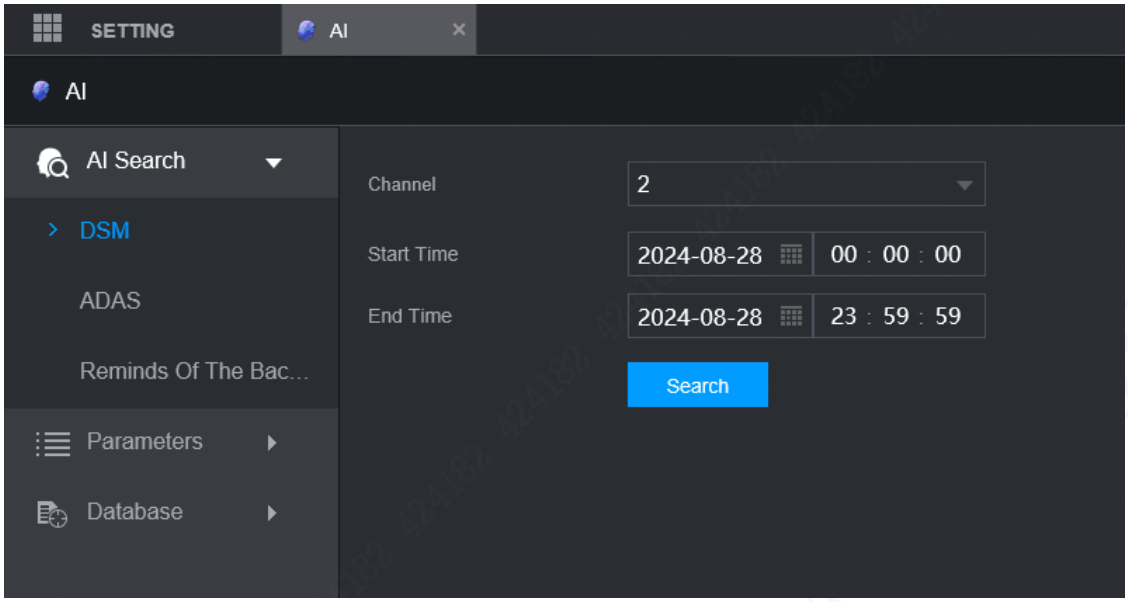
5.2.2.3 AI Search

Users can set search parameters to screen out alarm records in a specific period of time.

Step 1 On the main web interface, select **AI > AI Search > DSM**.

The **DSM** interface is displayed. See Figure 5-19.

Figure 5-19 DSM



Step 2 Select the Channel, Start Time, and End Time.

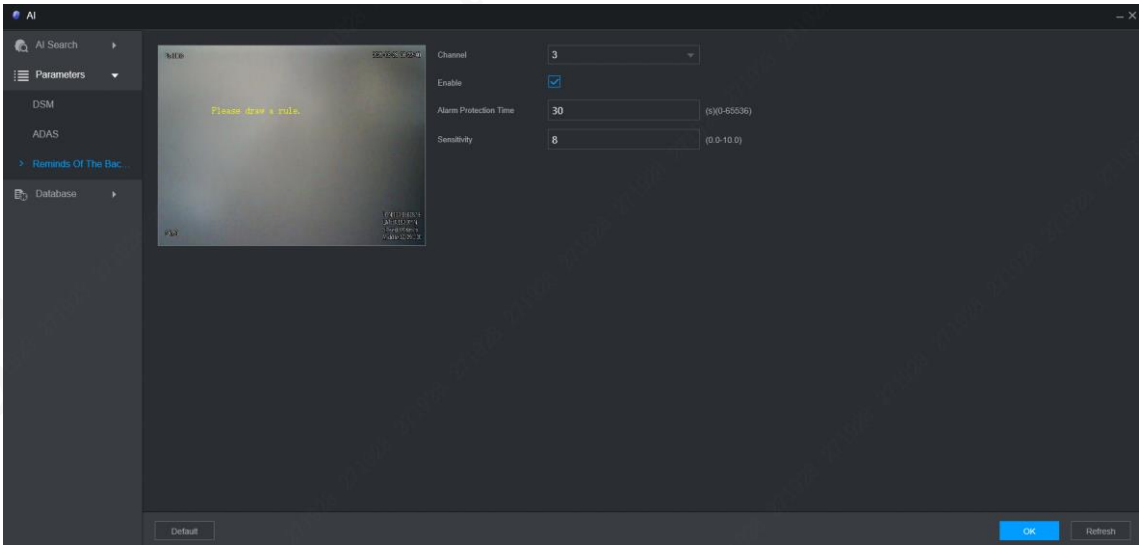
Step 3 Click **Search**.

The **search** interface is displayed.

5.2.3 Configuring Reminds Of The Back Row

Step 1 On the main web interface, select **AI** > **Parameters** > **Reminds Of The Back Row** .The **Reminds Of The Back Row** interface is displayed. See Figure 5-20.

Figure 5-20 Reminds Of The Back Row

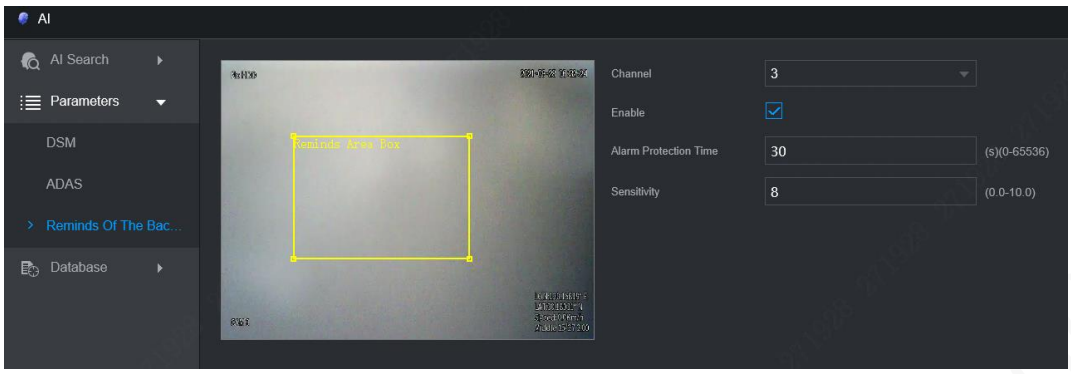


Step 2 Click **Enable** to enable the alarm. The message **Please draw a rule** is displayed.

Step 3 Outline the area where reminds from the rear need to be detected.

Step 4 Click **OK.**

Figure 5-21 Reminds Area Box



Select the channel that needs to be activated, either channel 3 or channel 4.

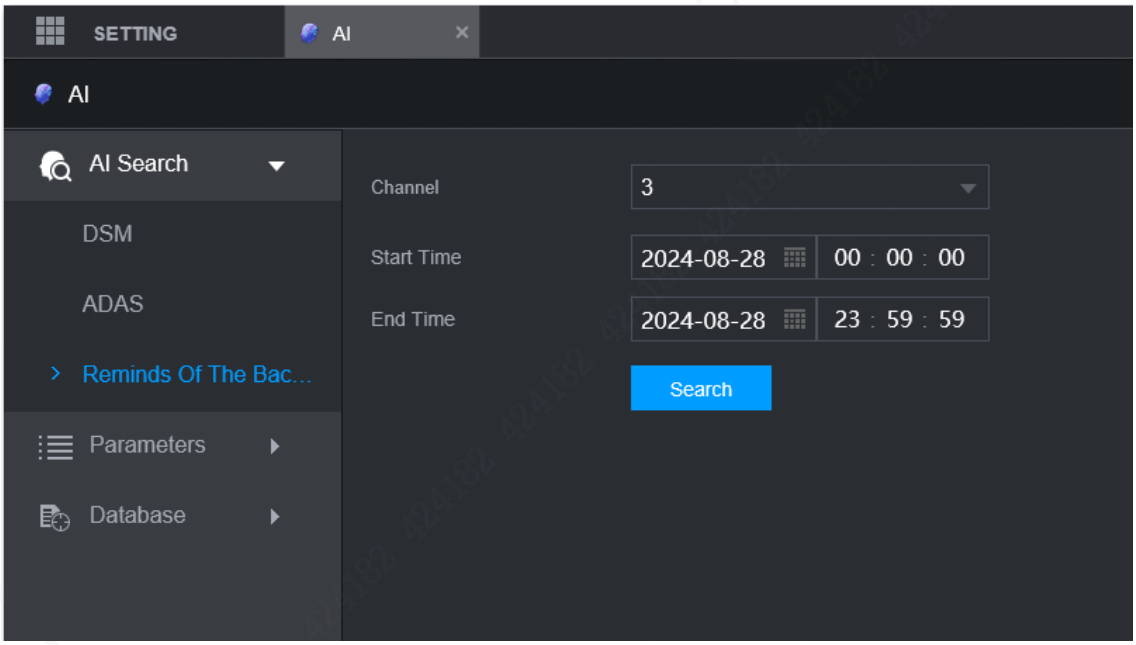
5.2.3.2 AI Search

Users can set search parameters to screen out alarm records in a specific period of time.

Step 1 On the main web interface, select **AI > AI Search > Reminds Of The Back Row**

The **Reminds Of The Back Row** interface is displayed. See Figure 5-22.

Figure 5-22 Reminds Of The Back Row



Step 2 Select the Channel, Start Time, and End Time.

Step 3 Click **Search**.

The **search** interface is displayed.

Select the channel that needs to be activated, either channel 3 or channel 4.

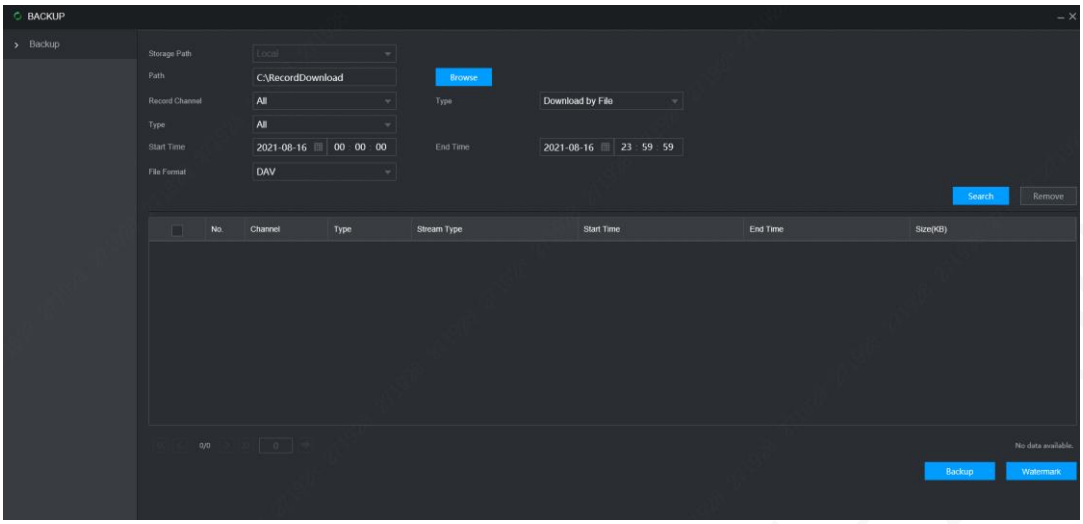
5.3 Backing up File

You can back up video recordings and images.

Step 1 On the main web interface, click **BACKUP**.

The **BACKUP** interface is displayed. See Figure 5-23

Figure 5-23 Backup (1)



Step 2 Configure parameters. For details, see Table 5-6.

Table 5-6 Backup parameters

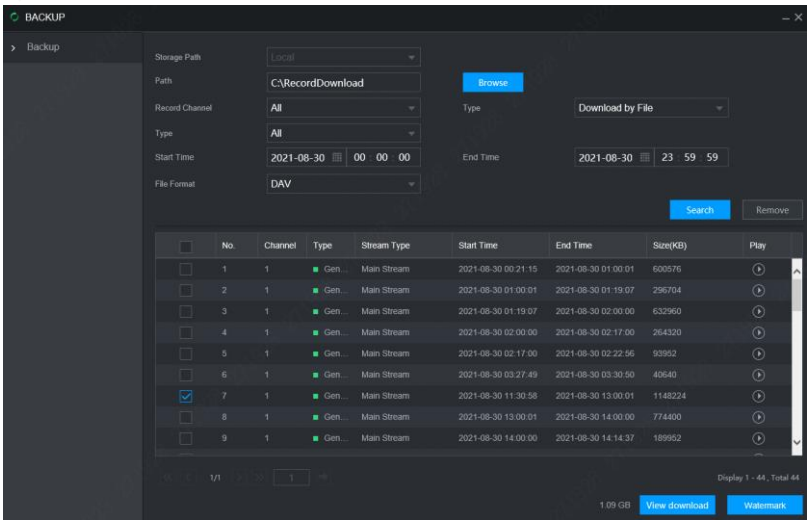
Parameter	Description
Storage Path	Only local address is supported.
Path	File backup path is C://RecordDownload by default. Click **Browse** to set the backup path as needed.
Record Channel	Select the record channel you want to do the backup for.
Type	Select the backup type, including download by file and download by time.
Start time	Set the file backup period.
End time	
File format	Select the backup file format, including DAV and MP4.
Record type	Select the record type, including external alarm, motion detect, all alarms, normal record, picture, and all.

Step 3 Click **Search**.

The obtained files are displayed.

Step 4 Select the file that you want to back up, and click **Backup**. See Figure 5-24

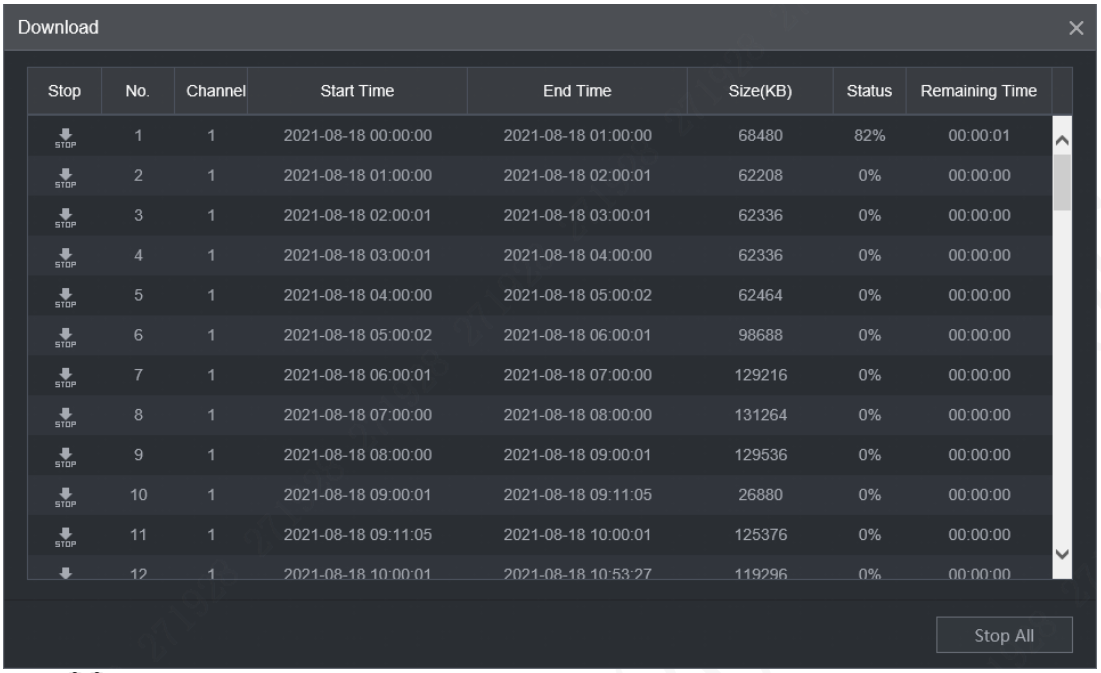
Figure 5-24 Backup (2)



Step 5 Click View Download.

The **Download** interface is displayed. See Figure 5-25.

Figure 5-25 Download



Click **Stop All** to stop downloading.

Step 6 (Optional) Select the file that you want to verify, and click **Watermark**.

Watermark can be used to verify whether the record file is falsified.

The verifying progress and result are displayed.

5.4 Configuring Camera Parameters

You can set camera properties, encode parameters.

5.4.1 Configuring Camera Properties

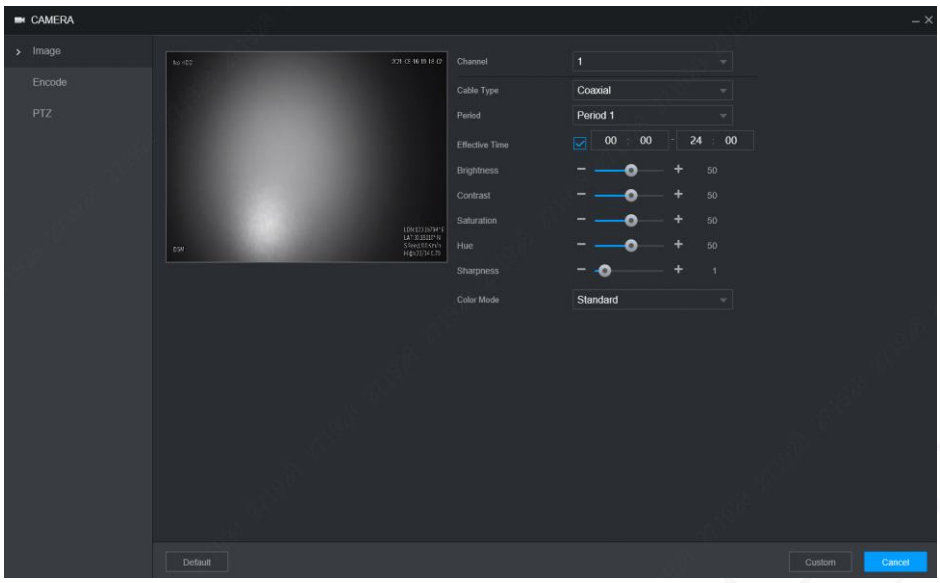
You can set up the camera property parameters of the channel.

Different cameras have different property parameters. The actual parameters shall prevail.

Step 1 Select **SETTING >CAMERA > Image**.

The **Image** interface is displayed. See Figure 5-26.

Figure 5-26 Image



Step 2 Select a channel.

Step 3 Configure more parameters. See Table 5-7.

Table 5-7 Image parameters description

Parameter	Description
Cable type	Select the cable type for the channels. The currently available cable type for channel selection is limited to coaxial cable.
Period	Different time periods are configured with varying image parameters based on image parameters.
Effective Time	Refers to a specific time interval, during which the corresponding image parameters are executed once the designated time is reached.
Brightness	Adjust the image brightness in a linear manner. The bigger the value, the brighter the image will become.
Contrast	Adjust the contrast of the images. The bigger the value is, the more obvious the contrast between the light area and dark area will become.
Saturation	Adjust the color purity. Adjust the saturation according to the actual situation. The bigger the value, the more colorful the image will become.
Hue	Adjust the hue of the images. The image parameters can be adjusted.
Sharpness	Adjust the sharpness of the edges of the images. The bigger the value, the more obvious the image edge will become.
Color Mode	Set the image color mode, preset standard, soft, bright, gorgeous, bank five templates, and four customizable templates.

Step 4 Click **Custom**.

5.4.2 Configuring Encode Parameters

You can set **Audio/Video**, **Snapshot**, **Overlay**, and **Storage Path**.

5.4.2.1 Configuring Audio/Video.

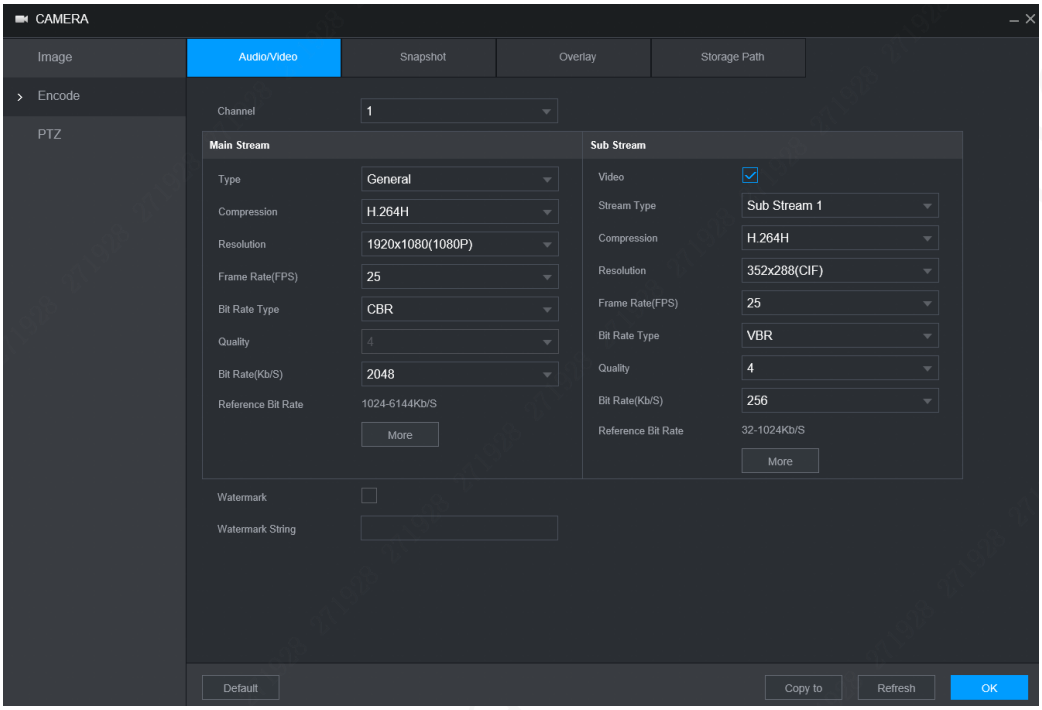
You can configure the encode settings for main stream and sub-stream.

Step 1 Select **SETTING >CAMERA > Encode > Audio/Video**.

The **Audio/Video** interface is displayed. See Figure 5-27.

Encode parameters might be different depending on devices, and the actual product shall prevail.

Figure 5-27 Audio/Video



Step 2 Select a channel.

Step 3 Configure parameters. See Table 5-8.

Table 5-8 Encode parameters

Parameter	Description
Video enable	Enable the sub stream.
Type	The record type of main stream is permanently fixed as General and cannot be changed. General, motion detect and alarm use the general stream configurations for recording.
Stream Type	Sub stream types.
Compression	Compression mode.
Resolution	The higher the video resolution, the better the image quality.
Frame Rate (FPS)	Configure the frames per seconds for videos. The higher the value, the smoother and more vivid the image.
Bit Rate Type	You can select the bit rate type. ● CBR: Constant Bit Rate, which changes around the configured value. ● VBR: Variable Bit Rate, which changes along with environment. ● It is recommended to select CBR when there might be only small changes in the monitoring environment, and select VBR when there might be big changes in the monitoring environment. ● The main stream is fixed to VBR.
Quality	This parameter can be set only when **Bit Rate Type** is set to **VBR**. The image quality level. There are six levels in total. The higher the value, the better the image will become.
Bit Rate (kb/s)	Configure the bit rate for main stream and sub stream. ● When CBR is selected, select the bit rate according to the reference bit rate, and the bit rate changes around the configured value. ● When VBR is selected, select the upper limit value of bit rate according to the reference bit rate, and the bit rate changes along with the monitoring environment. But the maximum bit rate value changes around the configured value. ● Select **Custom** to configure bit rate value manually.
Reference Bit Rate	The system recommends the optimal bit rate range according to the resolution and frame rate settings.
Audio Enable	Click **More** to enable the audio. If the corresponding check box is selected, the video recordings are audio and video combined streams.
Audio Encoding	Select an audio encode format. The parameters might be different depending on the model you purchased, and the actual product shall prevail.
Audio source	Source of audio.
Watermark enable	Select the **Watermark** check box to verify whether the video recording is falsified.
Watermark string	Enter the strings for verifying watermark. The default string is DigitalCCTV. The watermark string can only consist of number, letter, underline (_), and hyphen (-), and the maximum length is 127 characters.

Step 4 Click **OK**.

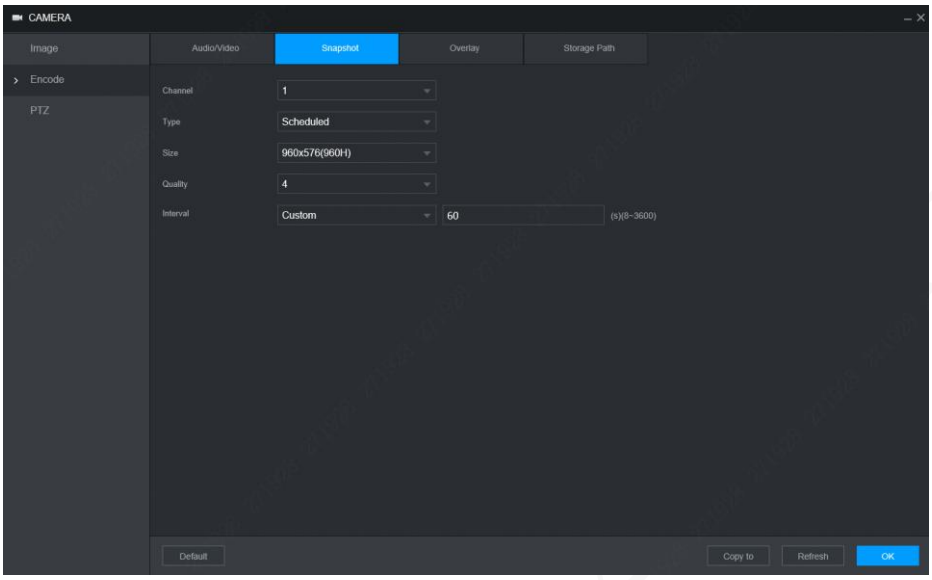
5.4.2.2 Configuring Snapshot Settings

You can configure the snapshot settings such as mode, size, quality, and interval.

Step 1 Select **SETTING >CAMERA > Encode > Snapshot**.

The **Snapshot** interface is displayed. See Figure 5-28.

Figure 5-28 Snapshot



Step 2 Select a channel.

Step 3 Configure more parameters. See Table 5-9.

Table 5-9 Snapshot parameters

Parameter	Description
Type	Includes Scheduled and Event. ● Scheduled: Take snapshots within the configured period. ● Event: Take snapshots when alarms such as local alarm, video detection and abnormality are triggered.
Size	Select a resolution for the captured images.
Quality	The image quality and there are six levels in total.
Interval	Interval of taking snapshots. Select **Custom** to configure the snapshot interval for manually captured snapshots. The maximum value you can set is 3600 seconds as an interval between two snapshots.

Step 4 Click **OK**.

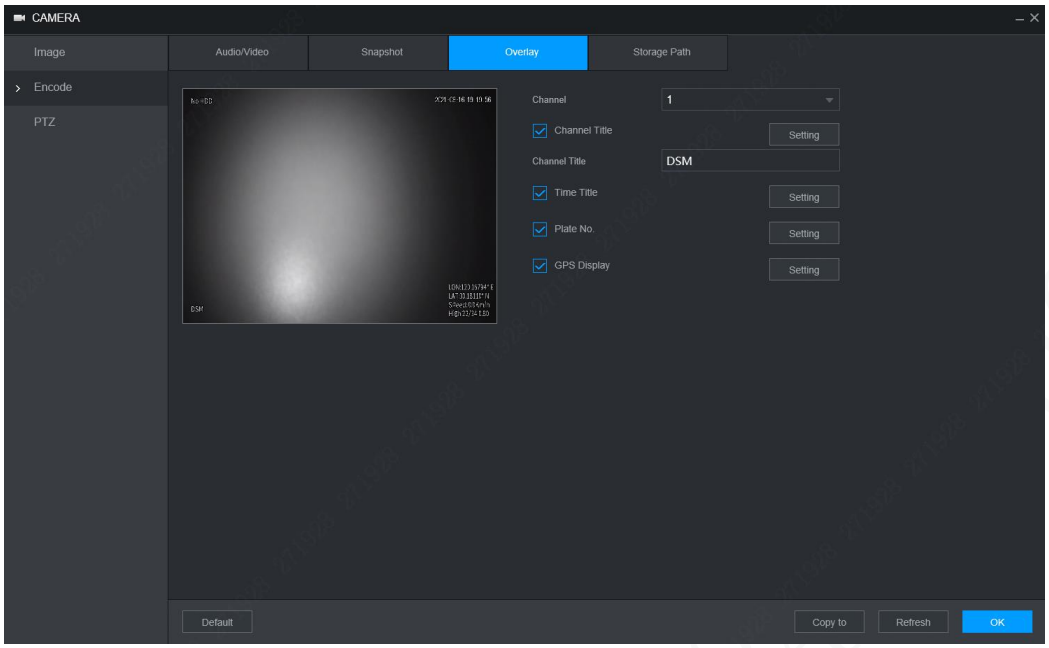
5.4.2.3 Configuring Overlay Settings

You can configure the title of video image overlay.

Step 1 Select **SETTING >CAMERA > Encode > Overlay**.

The **Overlay** interface is displayed. See Figure 5-29.

Figure 5-29 Overlay



Step 2 Select a channel.

Step 3 Configure more parameters. See Table 5-10.

Table 5-10 Overlay parameters

Parameter	Description
Channel title	Select **Channel Title**, and the **Setting** button is displayed. Then click **Setting** on the right of the **Channel Title**, enter the channel title, and drag it to a proper location.
Time title	Select the **Time Title** check box, the **Setting** button is displayed. Then click **Setting** on the right of the **Time Title**, and then drag it to a proper location.
Plate No.	Tick **Plate No.**, **Setting** button shows up at the right side of **Plate No.**, click that and drag plate title to proper position.
GPS Display	Select the **GPS Display** check box, the **Setting** button is displayed. Then click **Setting** on the right of the **GPS Display**, and then drag it to a proper location.

Step 4 Click **OK**.

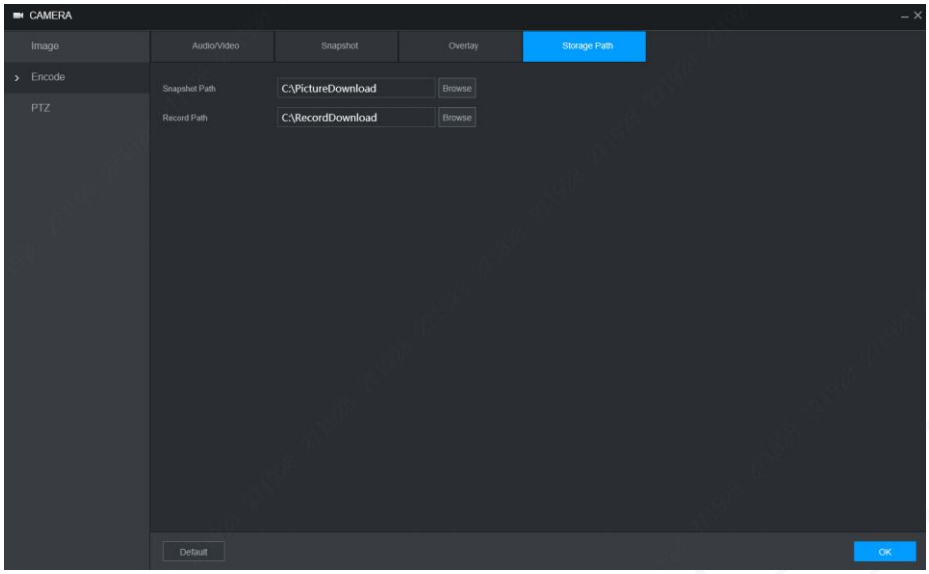
5.4.2.4 Configuring Storage Path

You can configure the storage path of captured snapshots and video recordings.

Step 1 Select **SETTING >CAMERA > Encode > Storage Path**.

The **Storage Path** interface is displayed. See Figure 5-30.

Figure 5-30 Storage Path



Step 2 Click **Browse** to select the save path for snapshots and recordings.

Images and recordings by using functions of snapshots and recordings on the **Live** interface are saved in these two paths by default: C:\PictureDownload and C:\RecordDownload.

Step 3 Click **OK**.

5.5 Configuring Network Parameters

You can set the network parameters of the device as needed, including Connection Setting, wireless Network Settings, Cellular Settings, Email Settings, Auto Register Settings and P2P Settings.The display varies according to the different devices.

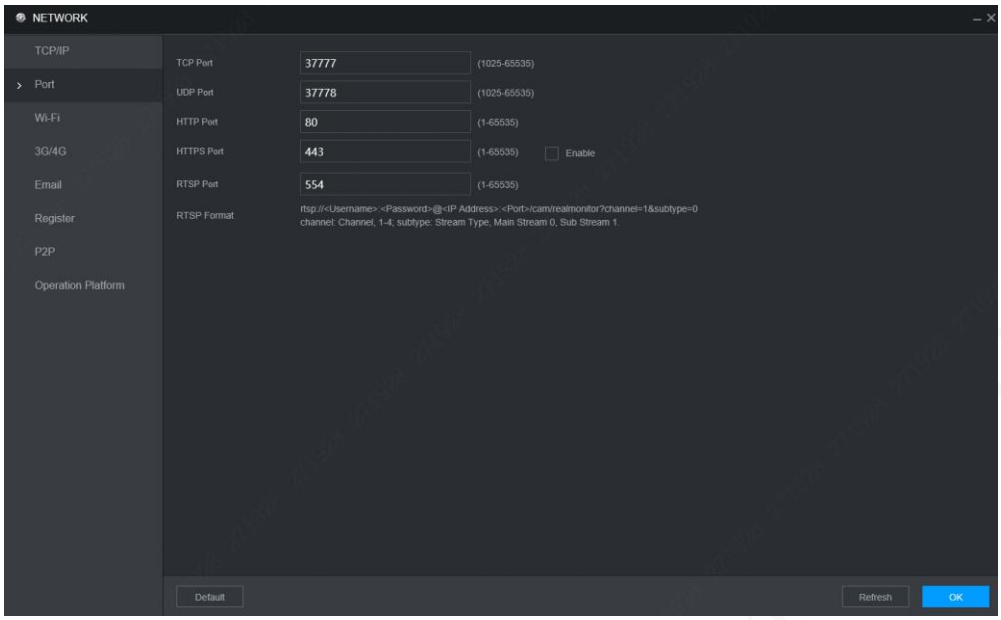
5.5.1 Configuring Port Settings

You can configure the maximum number of ports and their respective values.

Step 1 Select **SETTING > NETWORK > Port.**

The **Port** interface is displayed. See Figure 5-31.

Figure 5-31 Port



Step 2 Configure the ports of the device. See Table 5-11.

The revised settings take effect after device restart. Please proceed with caution.

Table 5-11 Connection parameters

479184 da hua 2024 06

Parameter	Description
TCP port	Transmission Control Protocol port. The value is 37777 by default.
UDP port	User Datagram Protocol port. The value is 37778 by default. You can enter the value as needed.
HTTP port	Hyper Text Transfer Protocol port. The value is 80 by default. You can enter other values as needed, in which case, add the new value after the address when logging in to the device in the browser.
HTTPS port	Hyper Text Transfer Protocol over Secure Socket Layer port. Select **Enable**, and then enter the value as needed. The value is 443 by default.
RTSP port	● Real Time Streaming Protocol port. Keep the default value 554 if it is displayed. If you use Apple browser, QuickTime or VLC to play the real-time monitoring screen, the following formats can be used: This function is also available for Blackberry phones. ● When the URL format requiring RTSP, you need to specify channel number and code-stream type in the URL, and also user name and password if needed. ● When playing live view with Blackberry smart phone, you need to turn off the audio, and then set the compression to H.264B and resolution to CIF. URL format: rtsp://<*User Name*>:<*Password*>@<*IP Address*>:<*Port*>/cam/realmonitor?channel=*1*&subtype=*0* ● User name, such as admin. ● Password, such as admin_123. ● IP address, such as 192.168.1.16. ● Port: The default setting is 554. If the default setting is displayed, you do not need to configure this parameter. ● Channel: channel number, starting from 1. For example, if it is channel 2, enter channel=2. ● Subtype: code-stream type. The main stream is 0 (subtype=0); the sub stream is 1 (subtype=1). For example, if you request the sub stream of channel 2 from a certain device, the URL should be: rtsp://admin:admin_123@192.168.1.16:554/cam/realmonitor?channel=2&subtype=1 If certification is not required, there's no need to specify the user name and password. Use the following format: rtsp:// <*IP Address*>:<*Port*>/cam/realmonitor?channel=*1*&subtype=*0*
NTP port	The port that automatically syncs time with the NTP server is 123 by default.

Step 3 Click **OK**.

5.5.2 Configuring Wireless Network Settings

You can connect the device to a network through Wi-Fi. Make sure the device can communicate with other devices in the group network. The device itself can also act as a hot spot to share flows with other terminals.

If both 3G/4G and Wi-Fi are available, the device connects to Wi-Fi and disconnects from 3G/4G.

5.5.2.1 Configuring Wi-Fi Network Settings

You can connect the device to a network through Wi-Fi. Then connect the PC to the same network. You can log in to the web interface by PC to operate the device.

This function is only supported by the device with a Wi-Fi module. The actual situation shall prevail.

Preparation

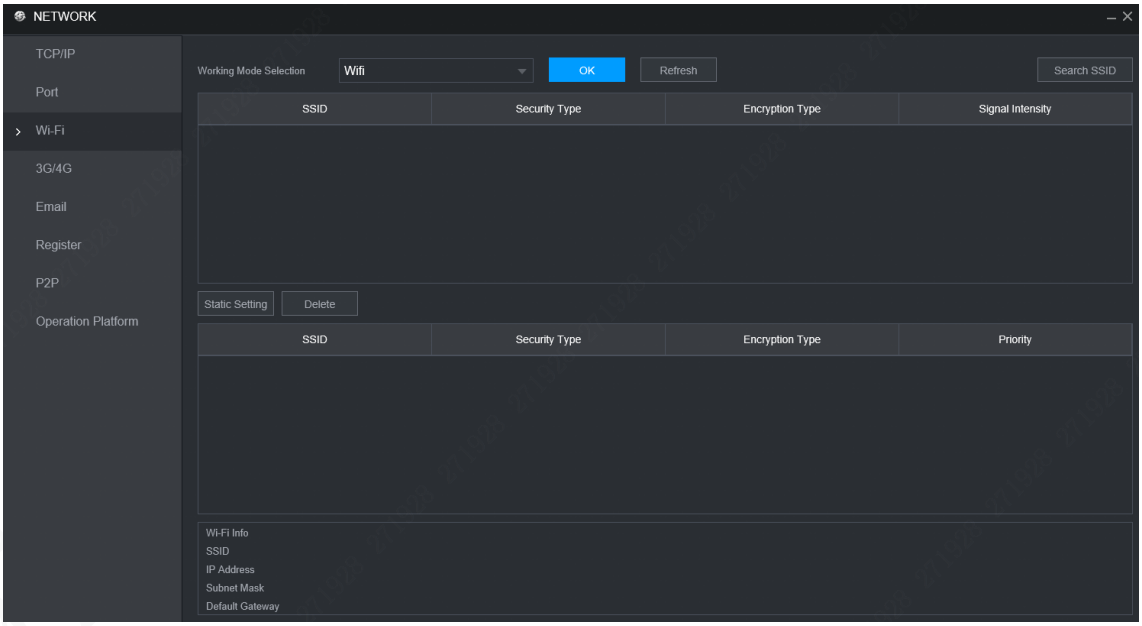
Make sure that the device is connected to a Wi-Fi module.

Procedure

Step 1 Select **SETTING > NETWORK > Wi-Fi**.
The **Wi-Fi** interface is displayed.

Step 2 Select **Wifi** as the working mode.
The **Wi-Fi** interface is displayed. See Figure 5-32.

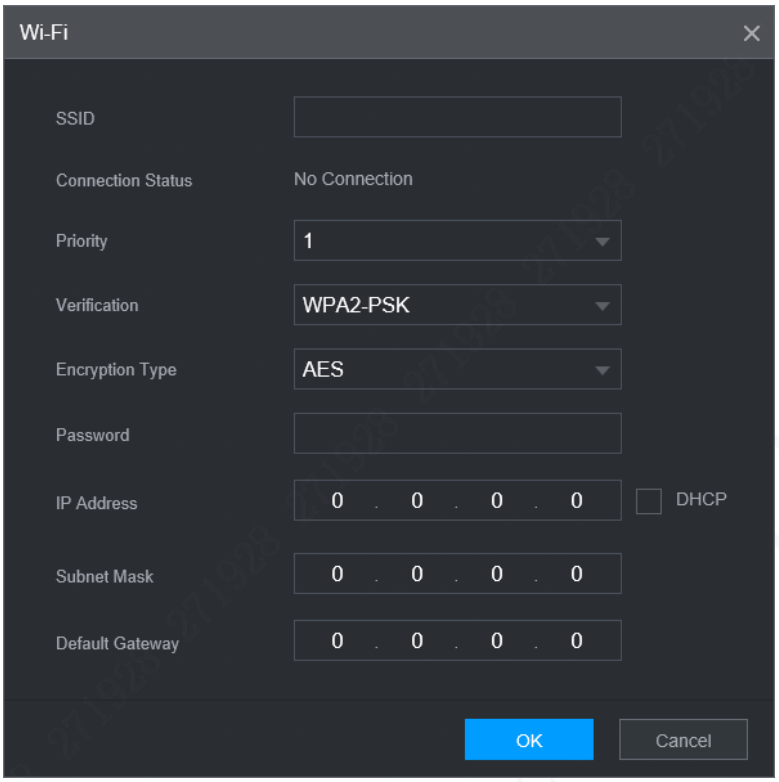
Figure 5-32 Wi-Fi



Step 3 Connect to Wi-Fi.

- Auto search
  1. Click **Search SSID**.
     In the SSID list, all available wireless networks are listed, including the information such as network name, security type, encryption type, and signal intensity.
  2. Double-click the Wi-Fi you want to connect to, enter the password, and then click **OK**.
- Add Wi-Fi manually.
  1. Click **Static Setting**.
     The **Wi-Fi** interface is displayed. See Figure 5-33.

Figure 5-33 Wi-Fi settings



2. Enter SSID and password, select priority and verification type, set IP address, subnet mask, and gateway.
   If you select **DHCP** check box, after successful connection, the system automatically obtains the IP address, subnet mask, and gateway.
3. Click **OK**.

Step 4 Click **OK**.

Click **Refresh** to refresh the connection status.

After successful connection, you can view the current hot spot, IP address, subnet mask, and gateway in **Wi-Fi Working Info**.

5.5.2.2 Configuring Wi-Fi Hot Spot

The device can work as a hot spot to share the network connection to other terminals. The terminals connected to the hot spot can log in to the device through host IP address (192.168.0.108). After login, you can view videos on the device.

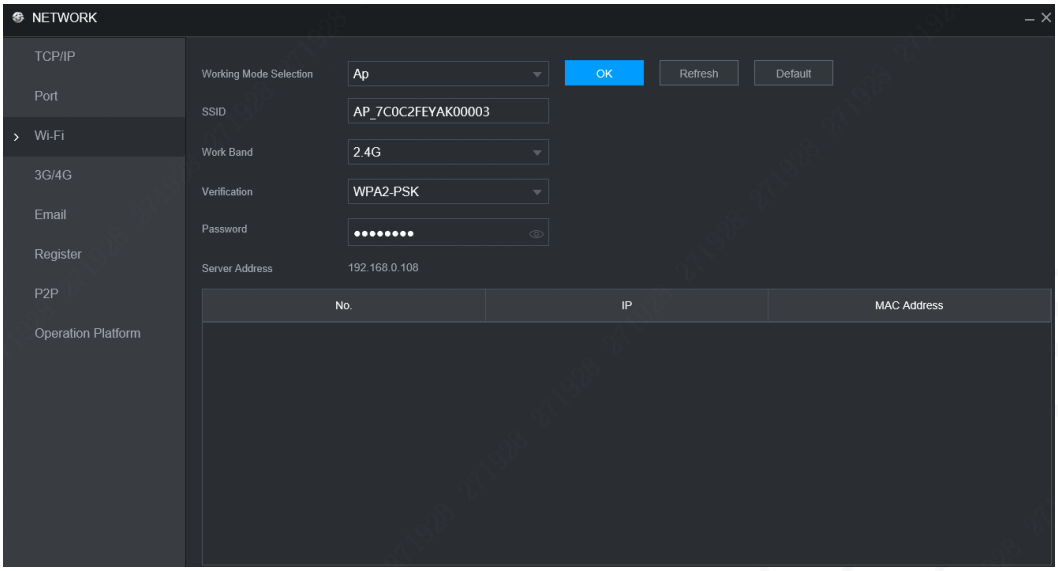
Step 1 Select **SETTING > NETWORK > Wi-Fi**.

The **Wi-Fi** interface is displayed.

Step 2 Select **Ap** as the working mode.

The **Ap** interface is displayed. See Figure 5-34.

Figure 5-34 Ap settings



Step 3 Enter SSID, select work band and verification type, and then enter the password.

- The work band can only be 2.4G.
- Select the check box behind **Password**, and the password will be visible. The default password is 12345678.

Step 4 Click **OK**.

5.5.3 Configuring Cellular Settings

Preparation

- Make sure that the device is equipped with 3G/4G module and inserted with SIM card from corresponding communication operators.
- The dial number, user name, and password have been obtained from corresponding communication operators.

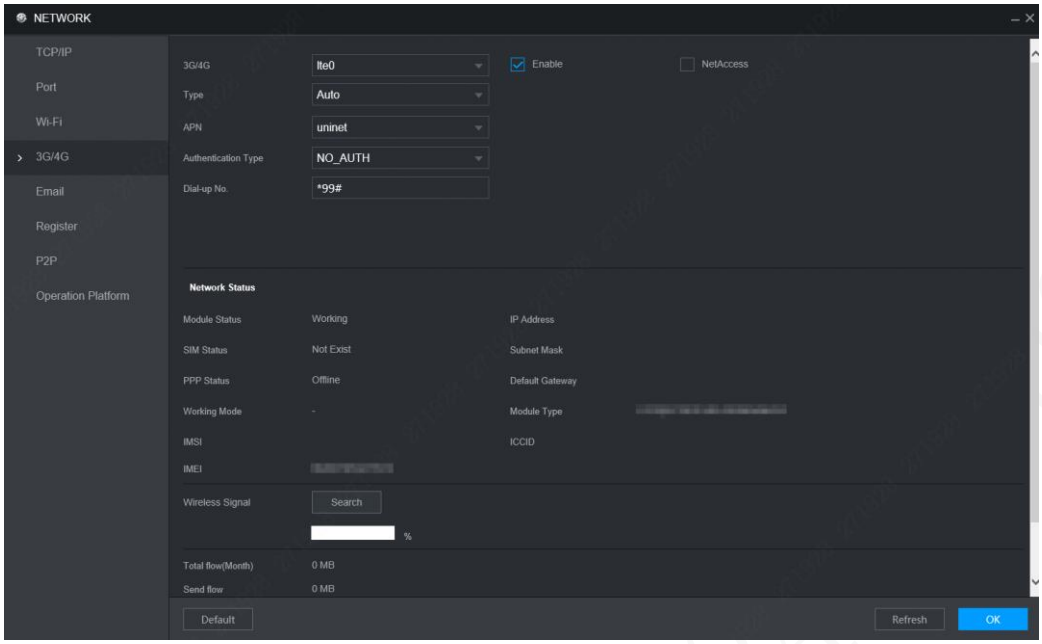
Procedure

Step 1 Select **SETTING > NETWORK > Cellular**.

The **Cellular** interface is displayed. See Figure 5-35.

After 3G/4G module is connected, the module information and wireless signal are displayed; if not, click **Search** to search for wireless signal.

Figure 5-35 Cellular settings



Step 2 Select **lte0** and **Enable** to enable the network. This function is enabled by default.

Step 3 Configure parameters. See Figure 5-12.

Table 5-12 3G/4G parameters

Parameter	Description
NetAccess	When the device is connected to a private network, select the **NetAccess** check box, enter APN name and select authentication mode. If **PAP** or **CHAP** is selected for authentication mode, enter user name and password, and then the device is automatically connected to the private network.
WLAN type	When enabled, the network type is displayed, which is used to distinguish between the 3G/4G modules of different communication operators, such as TD-LTE.
APN	When enabled, the access point of the communication operator is displayed. To manually set up APN, select **Customized**.
AUTH	Includes PAP, CHAP, and NO_AUTH protocols. The system automatically recognizes and displays the enabled protocol.
Dial No.	Enter the dial number provided from the communication operator.
User name	This parameter needs to be set up when AUTH is set to PAP or CHAP. The system automatically recognizes the user name and password.
Password	
WLAN status	After successful dial-up, all relevant information is displayed without any setup needed. Such information includes module state, SIM state, PPP state, working mode, IMSI, IMEI, IP address, subnet mask, gateway, and module type.
Wireless Signal	Click **Search** to search for wireless signals.

Step 4 Click **OK**.

After successful connection, the obtained IP address is displayed.

5.5.4 Configuring Email Settings

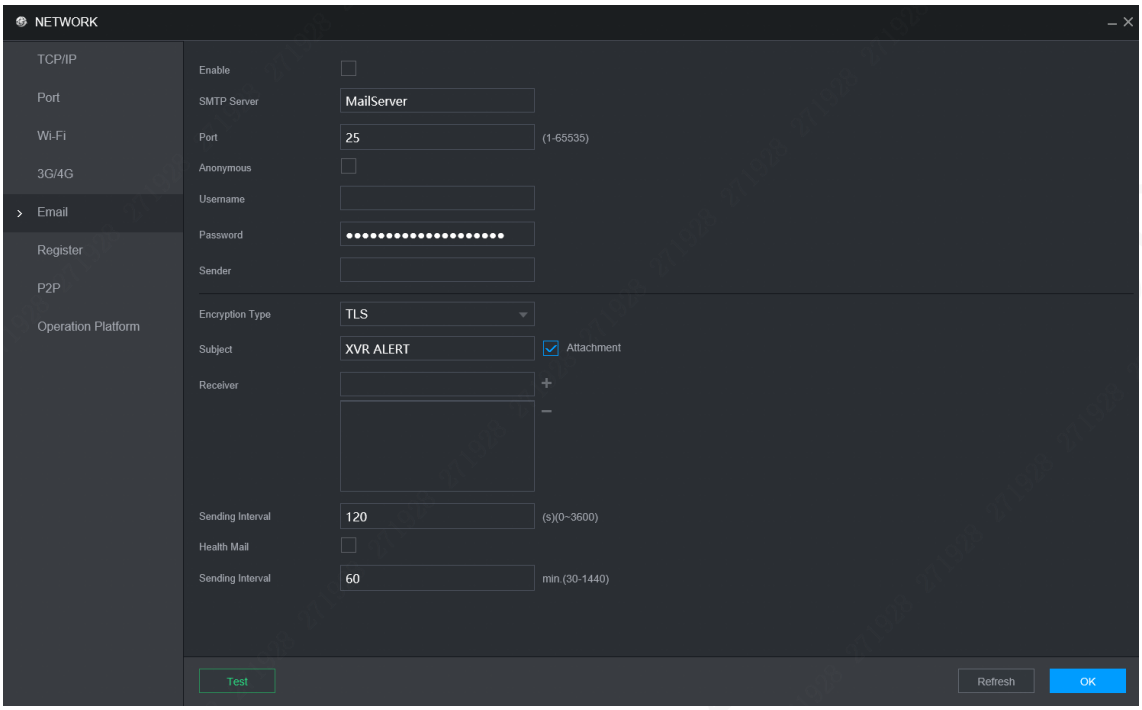
You can configure the email settings to enable the system to send an email as a notification when

there is an alarm event occurs, such as video detection or abnormality.

Step 1 Select **SETTING > NETWORK > Email**.

The **EMAIL** interface is displayed. See Figure 5-36.

Figure 5-36 Email settings



Step 2 Select **Enable** to enable email function.

Step 3 Configure parameters. See Table 5-13.

Table 5-13 Email setting parameters

Parameter	Description
SMTP server	Configure the address of SMTP (Simple Mail Transfer Protocol) server. See Table 5-15.
Port	Enter the port value of SMTP server.
Anonymous	If **Anonymous** is selected, the sender information is not displayed when sending an email.
User name	Enter the user name and password of SMTP server. See Table 5-15.
Password	
Sender	Sender's email address.
Encryption Type	For authentication, select NONE, SSL, or TLS. See Table 5-15.
Subject/Attachment	If **Attachment** is enabled, when an alarm takes place, the system can send alarm linked snapshots.
Receiver	Email address of the receiver. You can enter up to three email addresses separated by colons.
Sending Interval	This is the interval that the system sends another email for the same type of alarm event, which means, the system does not send an email upon any same alarm event within the set interval. The interval ranges from 0 through 3600 seconds. 0 means that there is no interval. This setting helps avoid large amount of emails caused by frequent alarm events.
Health Mail	Confirm whether the email link is valid through the test information sent automatically from the system. Select the **Health Mail** check box, and then enter the interval. The system can send a test email to check the connection after the specified interval. The sending interval value ranges from 30 minutes through 1440 minutes.

Step 4 Table 5-14 is a common mailbox configuration mode. You can set the parameters.

Table 5-14 Common mailbox configuration mode

Mail Type	SMTP Server	Encryption Type	Port	Description
QQ	smtp.qq.com	SSL	465	• The encryption mode cannot be NONE. • The SMTP service must be enabled for the mailbox. • The password must be "authorization code". The QQ login password and email login password are invalid. Authorization code, which is obtained when the SMTP service is enabled on the mailbox.
		TLS	587	

163	smtp.163.com	SSL	465/994	• The SMTP service must be enabled for the mailbox. • The password must be "authorization password". The email login password are invalid. Authorization password, which is obtained when the SMTP service is enabled on the mailbox
		TLS	25	
		NONE	25	
Sina	smtp.sina.com	SSL	465	• The SMTP service must be enabled for the mailbox.
		NONE	25	
126	smtp.126.com	NONE	25	• The SMTP service must be enabled for the mailbox.

Step 5 Click **OK**.

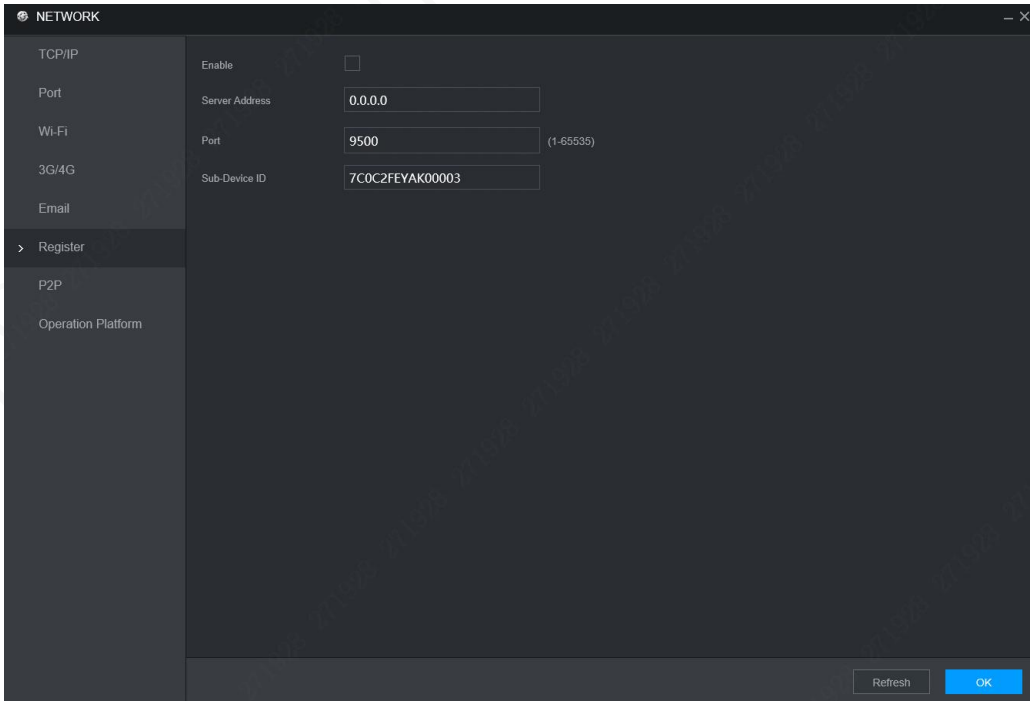
5.5.5 Configuring Auto Register Settings

After successfully auto registered, when the device is connected into the Internet, it will report the current location to the specified server to make it easier for the client software to access to the device, and to view and monitor it.

Step 1 Select **SETTING > NETWORK > Register**.

The **Register** interface is displayed. See Figure 5-37.

Figure 5-37 Register



Step 2 Select the **Enable** check box to enable the function. (Selected by default).

Step 3 Configure more parameters. See Table 5-15.

Table 5-15 Register parameters

Parameter	Description
Server Address	Enter the IP address or domain name of the server to register.
Port	Enter the port of the server to register.
Sub device ID	Unique ID for identifying the device. When different devices register to the same server, the sub device IDs should be different.

Step 4 Click **OK**.

5.5.6 Configuring P2P Settings

P2P is a private network penetration technology. With this technology, you do not need to apply for dynamic domain name, set port mapping, or deploy transit server. You can add devices for management by either of the following two ways.

- Scan the QR code on the interface to download the app, and register an account. See App Operation Examples for details.
- Log in to www.gotop2p.com and register an account, and then add devices by device serial numbers. See *P2P Operation Manual* for details.

Before using P2P, make sure that the device is connected to the Internet.

Preparation

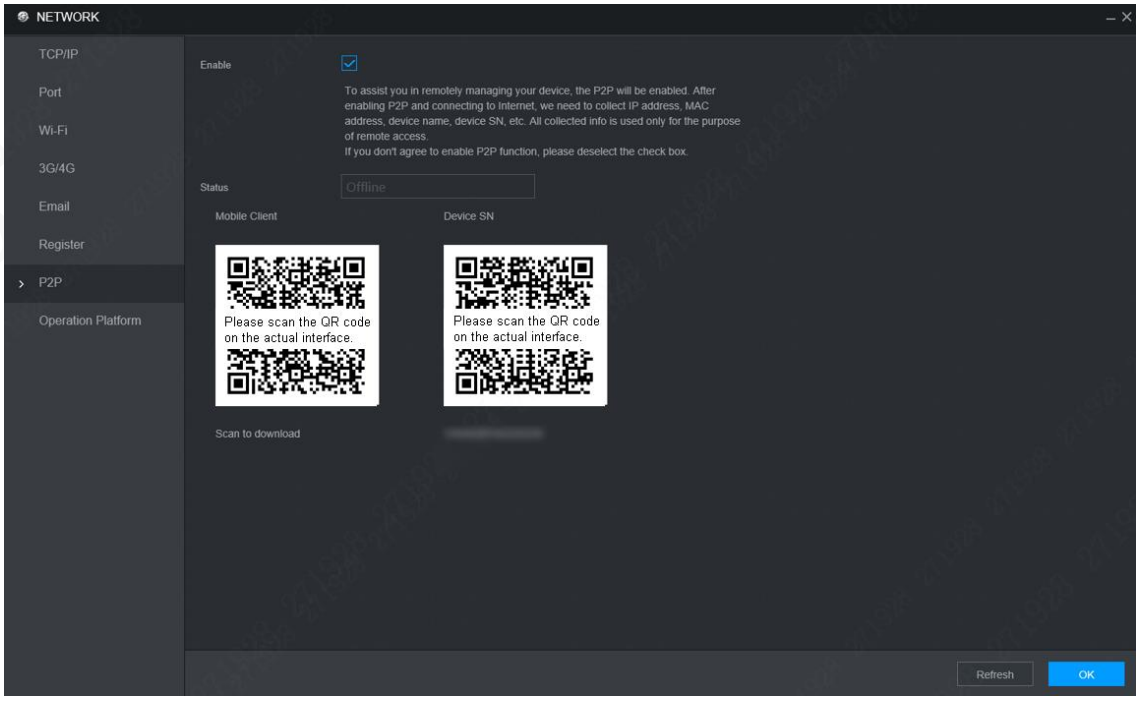
- The device is connected to the Internet.
- DMSS app is downloaded and installed on your mobile phone.

Procedure

Step 1 Select **SETTING > NETWORK > P2P.**

The **P2P** interface is displayed. See Figure 5-38.

Figure 5-38 P2P



Step 2 Select **Enable** to enable P2P.

Step 3 Use the app to scan the QR code of the device SN to add the device in the app.

Scan the QR code on the actual interface of the device. The QR code in this document is for reference only.

Step 4 Click **OK**.

After configuration is complete, the **Status** shows **Online**, meaning the P2P registration is successful.

5.6 Managing Storage Device

You can configure Disk storage, package basic information, manage Disk, and review Disk information.

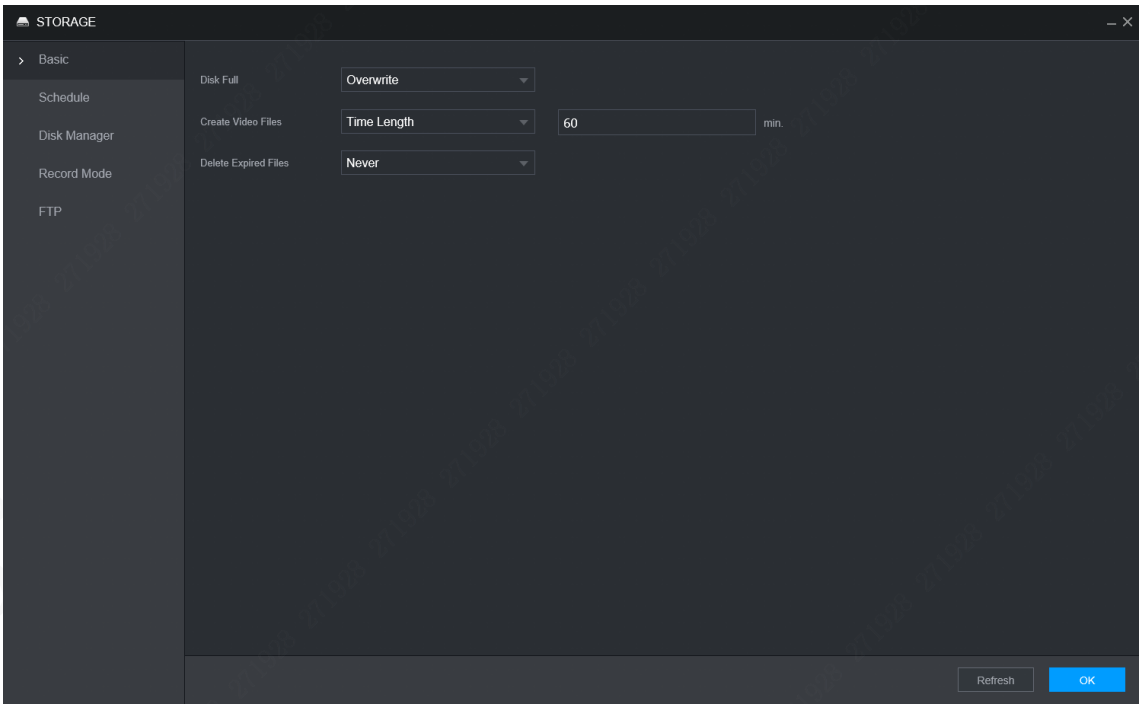
5.6.1 Configuring Basic Information

On the Local interface, you can set up the strategy when the Disk is full and how to package recordings.

Step 1 In the main menu, select **SETTING** > **STORAGE** > **Basic**.

The **Basic** interface is displayed. See Figure 5-39.

Figure 5-39 Basic configuration



Step 2 Configure basic information

- Select the processing strategy of stopping recording and overwriting earlier recordings when TF Card is full.
  - ◇ **Stop**: The system stops recording when the disk is full.
  - ◇ **Overwrite**: The system overwrites the oldest files and keeps recording when the disk is full.
- Set up the time length or file size for Video Packaging.

Select the required packaging manner from the **Create Video Files** drop-down list. Including **Time Length** and **File Size**.

◇ Set the length of time for each video file. The default value is 60 minutes, and the range is 1 minute –120 minutes.

◇ Set the size of file for each video file. The default value is 1024M, and the range is 128M–2048M.

- Set the strategy of deleting old files automatically.
  You can enable this function to delete recorded videos or images saved in TF card or FTP server regularly according to the time gap you have set.

  After setting file auto deletion, deleted files cannot be recovered.

Step 3 Click **OK**.

5.6.2 Managing Disk

Set the read and write properties of the TF card and view the capacity information of the HDD.

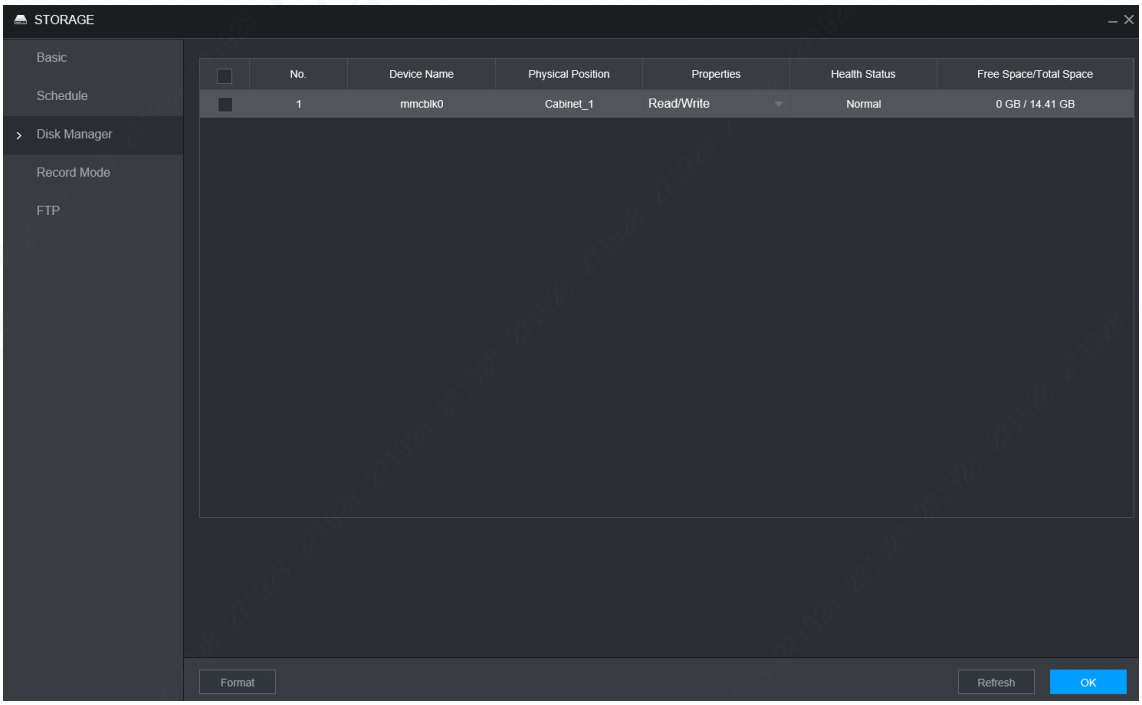
Step 1 Select **SETTING > STORAGE > Disk Manager**.
The **Disk Manager** interface is displayed. See Figure 5-40.

Step 2 Set the read and write properties of the TF card. You can set the TF card as the Read/Write disk, Read-Only disk or Redundancy disk under the **Properties** column.

- Read/Write: You can read data from TF card and save data in TF card.
- Read-Only: You can only read data from TF card if set to read-only disk.
- Redundancy: If the device is connected to two or more TF cards, one of the TF cards can be set as the redundancy one for recording backup.

  Select TF card and click **Format** to clear all data in the SD card. Proceed with caution.

Figure 5-40 Disk Manager



Step 3 Click **OK**.

5.6.3 Configuring FTP

Back up video recordings and images to the preset FTP (File Transfer Protocol) server for storage.

Preparation

Make sure that you have purchased or download a FTP server and installed it on your PC.

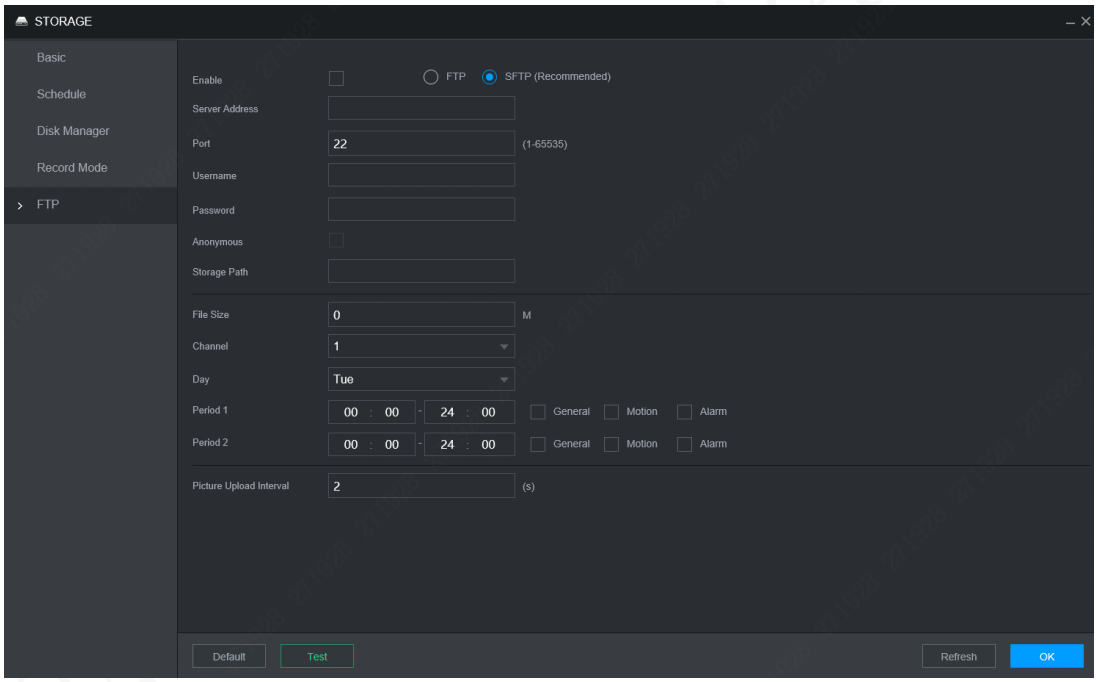
For the created FTP user, you need to set the write permission; otherwise the upload of video recordings and snapshots will fail.

Procedure

Step 1 Select **SETTING > STORAGE > FTP**.

The **FTP** interface is displayed. See Figure 5-41.

Figure 5-41 FTP



Step 2 Select **Enable** to enable FTP upload and select FTP type.

- Select FTP or SFPT from the drop-down list. SFTP is recommended to enhance network security.
- When **FTP** is selected, the system gives a risk prompt. Select **OK** or **Cancel** as needed.

Step 3 Configure parameters. For details, see Table 5-16.

Table 5-16 FTP parameters description

Parameter	Description
Server Address	The IP address of the host PC that is installed with the FTP/SFTP server.
Port	By default, SFTP port is 22 and FTP port is 21.
User Name	The user name and password used to access the server.
Password	
Anonymous	Select **Anonymous** if you want to log in to the server anonymously.

Parameter	Description
Storage Path	Create folder on FTP server. ● If you do not enter the name of remote directory, the system automatically creates the folders according to the IP, time, and channel. ● If you enter a name for the remote directory, the system creates a folder with the entered name under the FTP/SFTP root directory first, and then automatically creates folders based on IP, time, and channel.
File Size	Enter the size of the uploaded recorded video. ● If the entered size is less than the recorded video size, only a section of the recorded video can be uploaded. ● If the entered size is more than the recorded video size, the whole recorded video can be uploaded. ● If the entered size is 0, the whole recorded video will be uploaded.
Picture Upload Interval	● When the **Snapshot Type** is **Schedule**, the upload method should be determined based on the image upload interval and snapshot interval. ◇ If this interval is longer than snapshot interval, the system uploads the most recent snapshot. For example, if the interval is 5 seconds and snapshot interval is 2 seconds, the system sends an upload command to upload the next snapshot every 5 seconds. ◇ If this interval is shorter than snapshot interval, the system uploads the snapshot per the snapshot interval. For example, if the interval is 5 seconds and snapshot interval is 10 seconds, the system uploads the snapshot every 10 seconds. ● When the **Snapshot Type** is **Event**, the system uploads the snapshot as per the snapshot interval. You can change the **Interval** and **Type**. For details, see "5.4.2.2 Configuring Snapshot Settings".
Choose channel	Select the channel that you want to apply the FTP settings.
Weekday	Select the week day and set the time period that you want to upload the recorded files. You can set two periods for each week. Select the record type (Alarm, MD, and General) that you want to upload. After selecting the corresponding recording type next to the corresponding period, the selected recording type will be uploaded during the configured period.
Period	

Step 4 Click **Test** to test if the FTP/SFTP server is successfully configured.

- The system pops up a message to indicate success or failure.
- If failed, please check the network connection or configurations.

Step 5 Click **OK**.

5.7 Configuring System

You can configure system information, security management, and vehicle information.

5.7.1 Configuring Serial Port Parameters

You can configure the serial port parameters such as baud rate, date bits, stop bits, and parity.

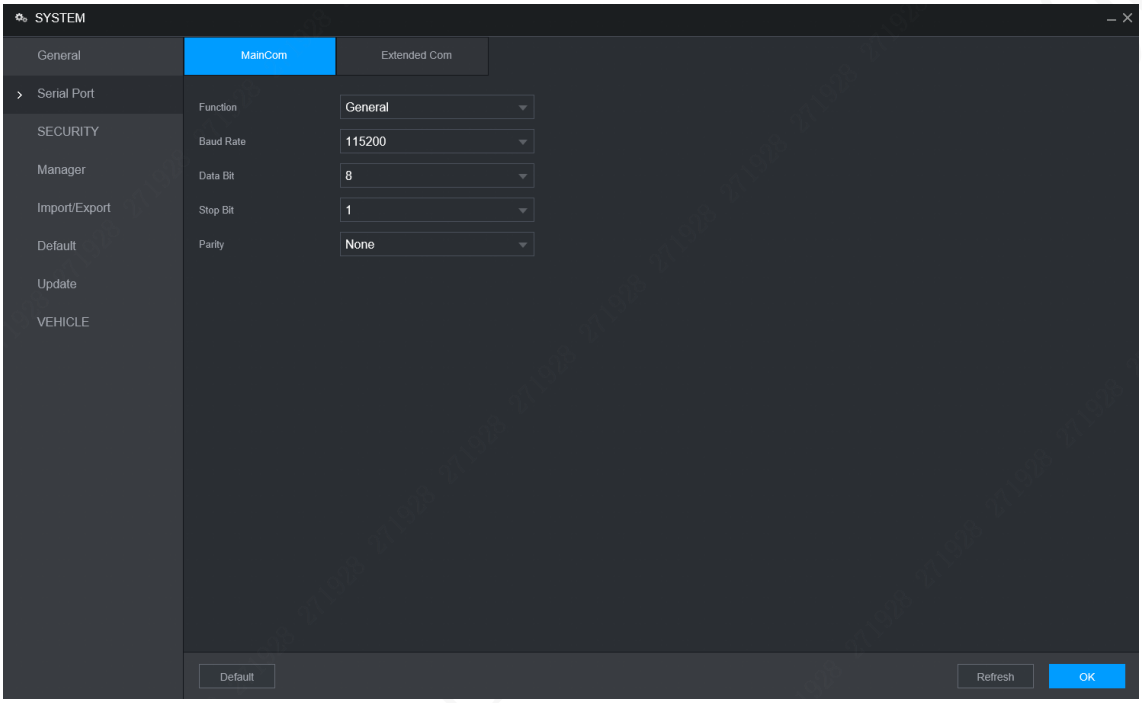
Step 1 Select **SETTING > SYSTEM > Serial Port**.

The **Serial Port** interface is displayed. See Figure 5-42.

Step 2 Click the **Maincom** or **Extended Com** TAB based on the serial port function.

- If a common serial port is used, click the **Maincom** TAB.
- When RS-485 or RS232 is used, click the **Extended Com** TAB.

Figure 5-42 Serial Port



Step 3 Configure parameters. See Table 5-17.

Table 5-17 Serial port setting parameters description

Parameter	Description
Function	Select the corresponding protocol. ● Console: Upgrades programs and debug by suing the serial interface and mini terminal software. ● GPS： Used to transmit real-time GPS data.
Baud rate	The times of signal changes on the transmission line in time unit. ● The default baud rate is 115200 for a console. ● The default baud rate is 9600 for a transparent serial port.
Data Bit	Select a data bit. The options include **8**.
Stop Bit	Select a stop bit. The options includes **1**.
Parity	Select a parity mode from None, Odd, Even, Mark, and Null. The default is **None**.

Step 4 Click **OK**.

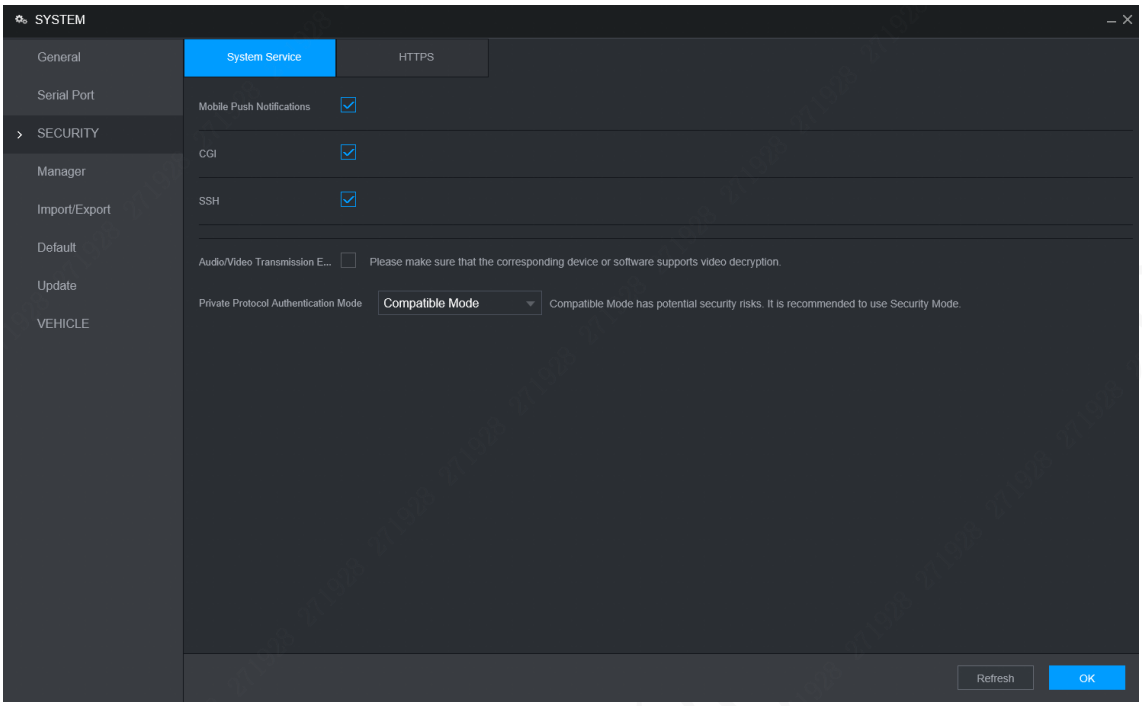
5.7.2 System Service

The corresponding service can only be used after the system service is turned on.

Step 1 Select **SETTING > SYSTEM > SECURITY > System Service.**

The **System Service** interface is displayed. See Figure 5-43.

Figure 5-43 System service



Step 2 Select whether to enable mobile phone push, CGI, SSH, or audio/video transmission encryption as needed.

- App can receive alarm push only when the mobile phone push is enabled and the app has subscribed alarm.
- After enabling CGI, a third-party platform can connect to this device via the CGI protocol.
- When audio/video transmission encryption is enabled, audio/video transmission will be encrypted. Related devices or software shall support video decryption.

Step 3 Click **OK**.

5.7.3 Configuring Vehicle Settings

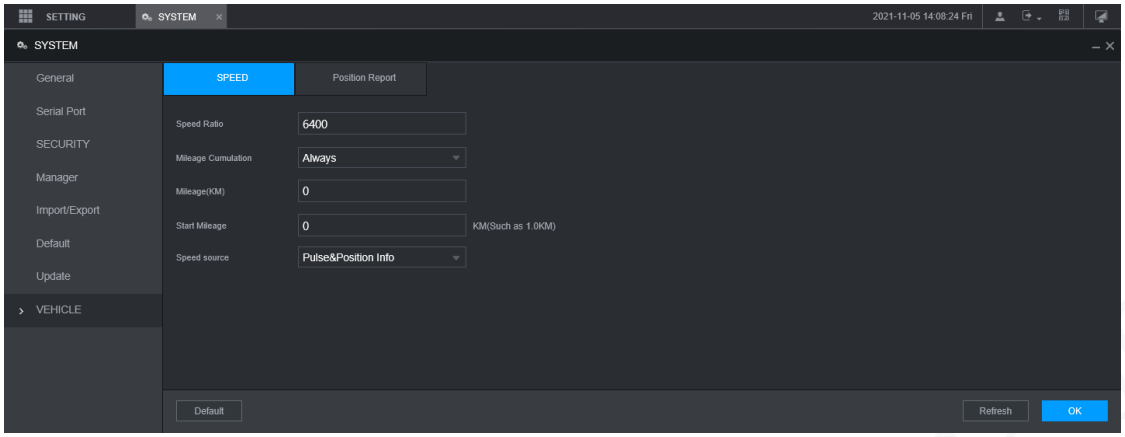
You can set the vehicle speed and position report.

5.7.3.1 Configuring Speed Settings

Step 1 Select **SETTING > SYSTEM > VEHICLE > speed**

The **SPEED** interface is displayed. See Figure 5-44.

Figure 5-44 Speed



Step 2 Configure more settings. See Table 5-18.

Table 5-18 Speed parameters

Parameter	Description
Speed Ratio	The parameter for converting speed.
Mileage Cumulation	Select the vehicle mileage cumulation mode.
Mileage	Displays the total mileage.
Start Mileage	Enter the initial mileage of the vehicle.
Speed source	Select where the speed is obtained, including **Pulse**, **Position Info**, and **Pulse&Position Info**. ● Pulse: Gets the speed information from vehicle pulse system. ● Position Info: Gets the speed information from positioning system. ● Pulse&Position Info: Gets the speed information from both the pulse system and positioning system. Information from the pulse system is used first.

Step 3 Click **OK**.

5.7.3.2 Configuring Position Report

You can configure the position report strategy to be device auto report or report per platform schedule.

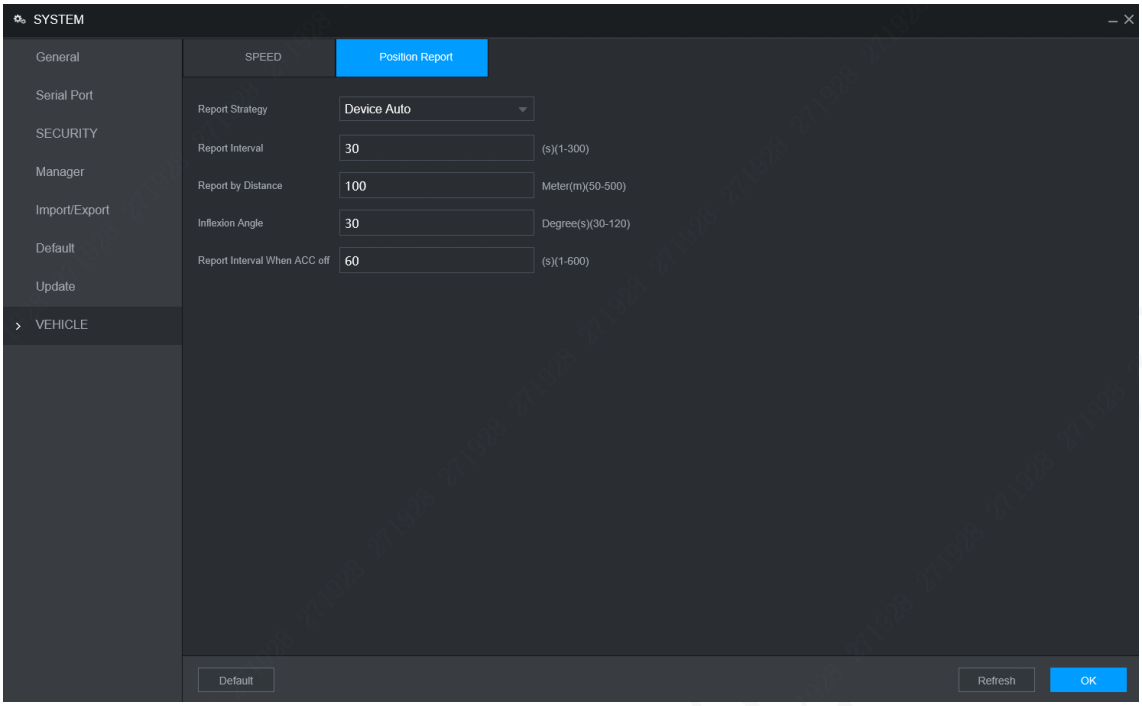
Step 1 Select **SETTING > SYSTEM> VEHICLE> Position Report**.

The **Position Report** interface is displayed.

Step 2 Configure the report strategy.

- Device auto report.
  1. In the **Report Strategy** list, select **Device Auto**.
     The **Device Auto** setting interface is displayed. See Figure 5-45.

Figure 5-45 Position report (device auto)



2. Configure parameters. For details, see Table 5-19.

Table 5-19 Device auto report parameters description

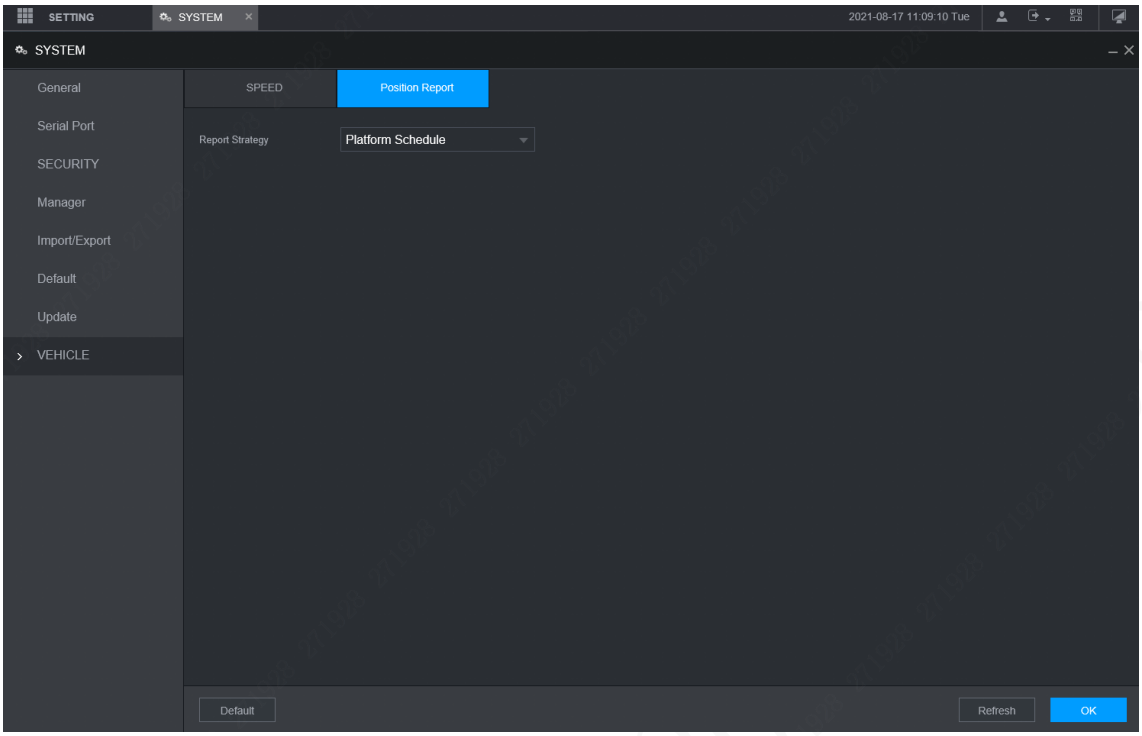
Parameter	Description
Report Interval	When the vehicle ACC status is on, the system report the position to platform according to the configured report interval, report distance, and inflexion angle. The system reports vehicle position to platform only if one of conditions is satisfied.
Report by Distance	
Inflexion Angle	
Report Interval When ACC off	When the vehicle ACC status is off, the system report the position to platform according to the configured report interval.

- Platform schedule.

  In the **Report Strategy** list, select **Platform Schedule**. The **Platform Schedule** setting interface is displayed. See Figure 5-46.

  The platform obtains the device position by the configured schedule. The schedule is configured at the platform. See the user's manual for the platform.

Figure 5-46 Position report (platform schedule)



Step 3 Click **OK**.

5.8 Managing User Account

You can add, modify and delete user accounts and groups, and configure security questions for admin account.

The Default User and Authority

The default user account is admin.

- The admin account is defined as the highly privileged user by default.
- To manage user accounts easily, when defining the user account authority, it is recommended to give lower authority to common user accounts than advanced user account.

About User and User Group

You can manage the account by user and user group, and the name cannot be repeated.

- You can set maximum 64 users and 20 groups.
- The default group name by "User" and "Admin" cannot be deleted.
- Select the authorities to the user of a group. However, the authorities of the admin account cannot be specified at your will.
- Every user must belong to only one group. When selecting a group for a user, permissions of the user can only be a subset of group permissions and cannot exceed permission attributes of the group.
- Both the user name and group name support 1–3 characters and can only consist of letter, number, underline (_), and hyphen (-).

5.8.1 Managing User

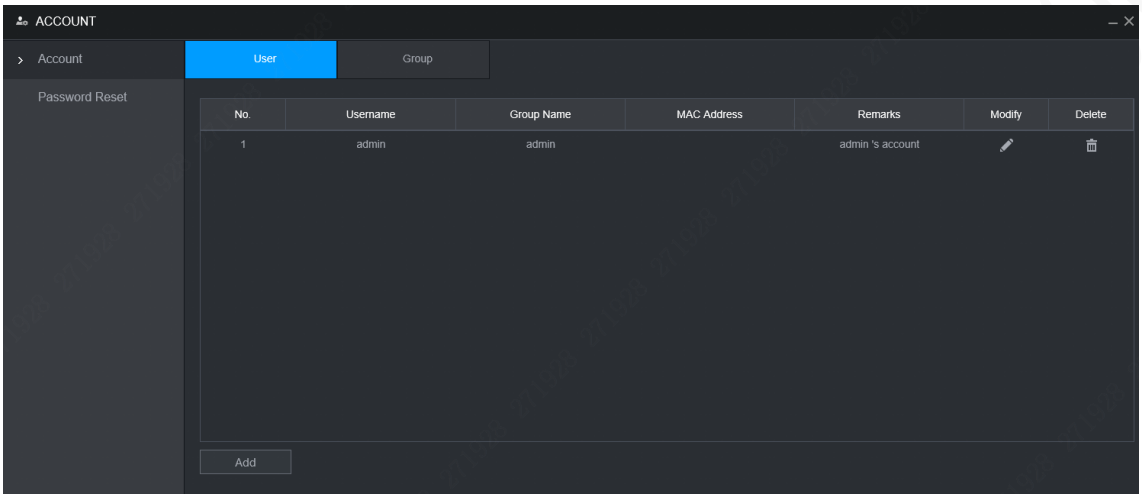
You can add, delete, or modify user, and set the authorities for the user of a group.

Adding a user

Step 1 Select **SETTING > ACCOUNT > Account > User**.

The **User** interface is displayed. See Figure 5-47.

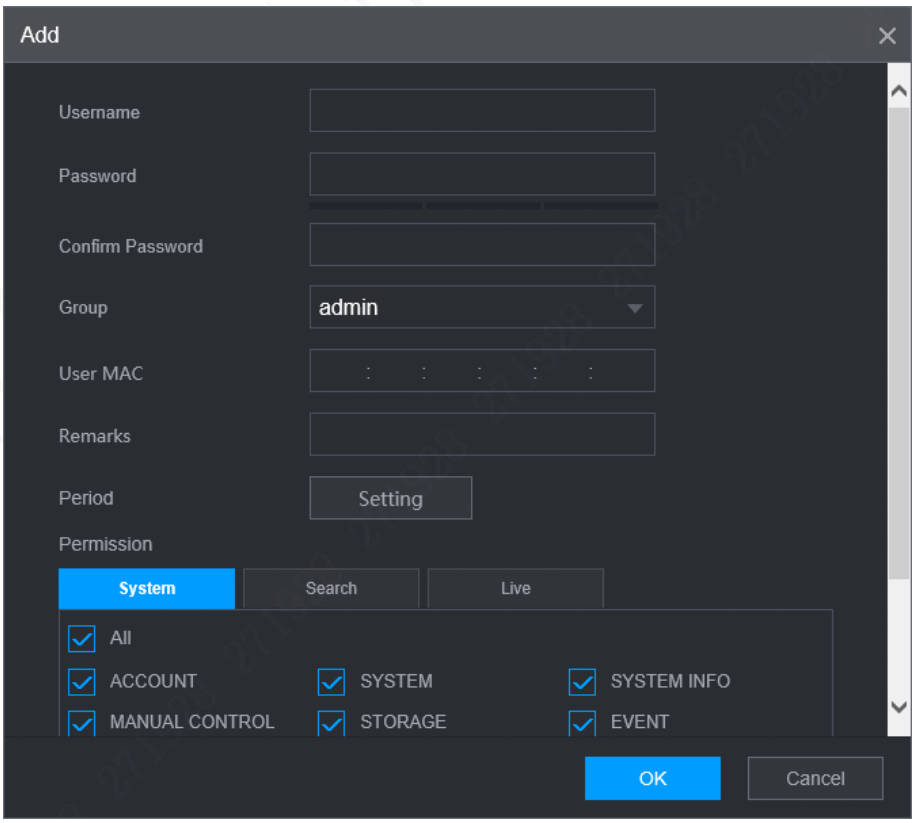
Figure 5-47 User



Step 2 Click **Add**.

The **Add** interface is displayed. See Figure 5-48.

Figure 5-48 Add



Step 3 Configure parameters. For details, see Table 5-20.

Table 5-20 Parameters description for adding user

Parameter	Description
User Name	Enter the user name and password, and conform the password.
Password	
Confirm Password	
Group	Select the group that the users belong to.
User MAC	Enter user MAC address that is allowed to login the device.
Remarks	Enter a description of the user.
Period	Click **Setting** to set a valid period. The user is only allowed to log in to the device in the set period.

Step 4 Click **System**, **Search**, or **Live** to set up user permissions.

- Select **All** to select all authorities in the category.
- The authorities of the admin account cannot be changed.

Step 5 Click **OK**.

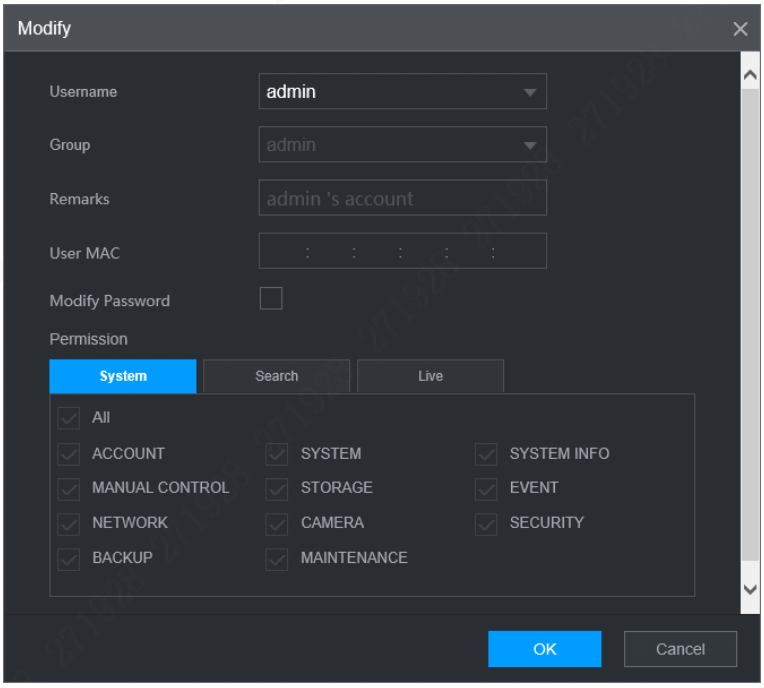
Click to modify user information; click to delete the user.

Modifying Password

Step 1 On the **User** interface, click .

The **Modify** interface is displayed. See Figure 5-49.

Figure 5-49 Modify user



Step 2 Select the **Modify Password** check box, and then enter old password, new password, and confirm password in corresponding boxes.

Step 3 Select the authority, including system, playback, and real-time monitoring authorities.

Step 4 Click **OK**.

- The new password can be set to 8 characters through 32 characters and contains at least two types from number, letter and special characters (excluding ', ", ;, :, and &). Enter a strong password according to the security level indication.
- A user authorized to manage user accounts can modify its own password and the passwords of other users.

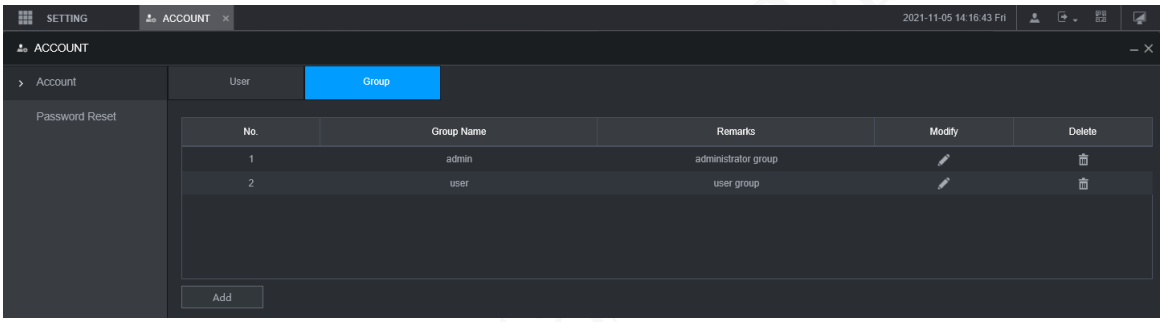
5.8.2 Group Management

You can perform the operations to manage the user group, such as adding a group, deleting a group, and modifying a group.

Step 1 Select **SETTING** > **ACCOUNT** > **Account** > **Group**.

The **Group** interface is displayed.

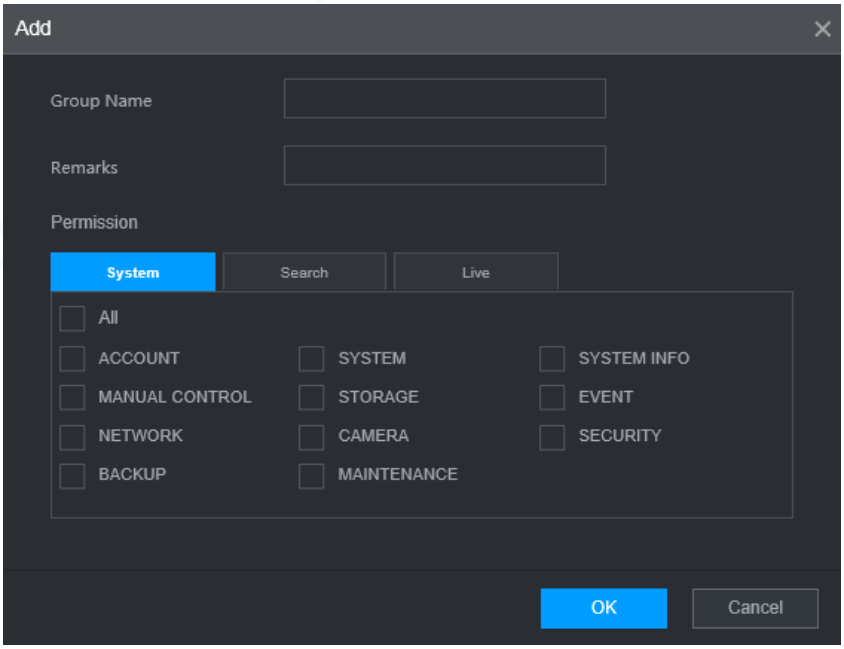
Figure 5-50 Group



Step 2 Click **Add**.

The **Add** interface is displayed.

Figure 5-51 Add group



Step 3 Set group name and memo.

A group name consists of letters, numbers, and special characters (including "_", "@", ".").

Step 4 Select the authority, including system, playback, and real-time monitoring authorities.

Select **All** to select all authorities in the category.

Step 5 Click **OK**.

Click to modify the corresponding group information; click to delete the group.

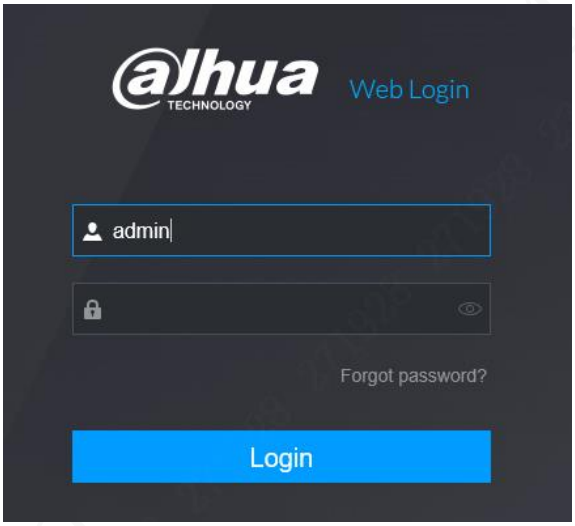
5.8.3 Resetting Password

You can reset the password through the reserved Email Address when you forget the login password of admin.

Step 1 Open a browser and login the **WEB** interface of device.

The **Login** interface is displayed. See Figure 5-52.

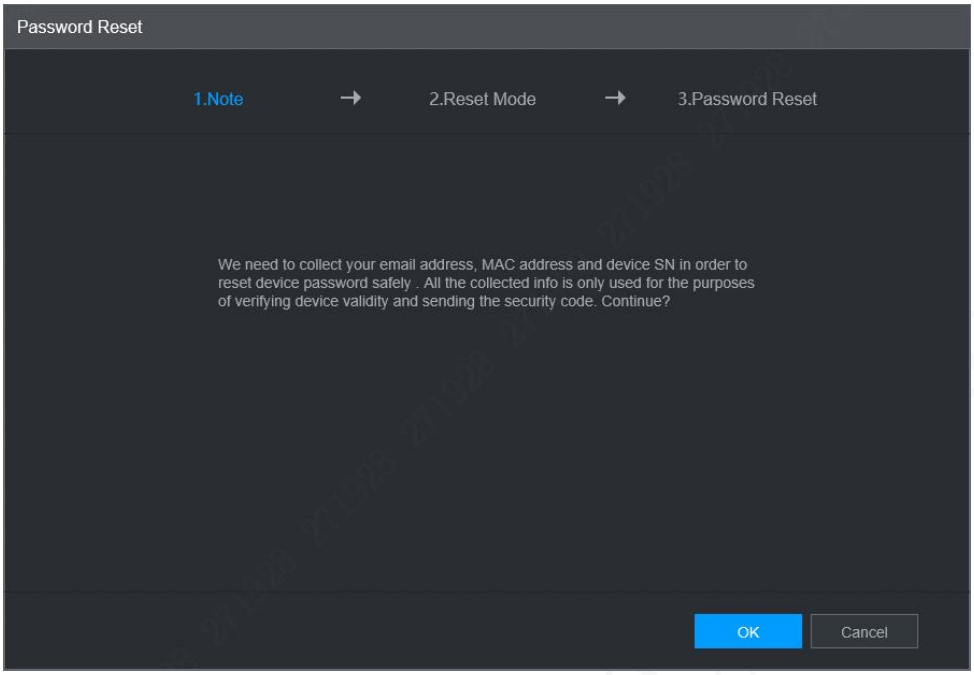
Figure 5-52 Login



Step 2 Click **Forgot Password?.**

The **Password Reset** interface is displayed. See Figure 5-53.

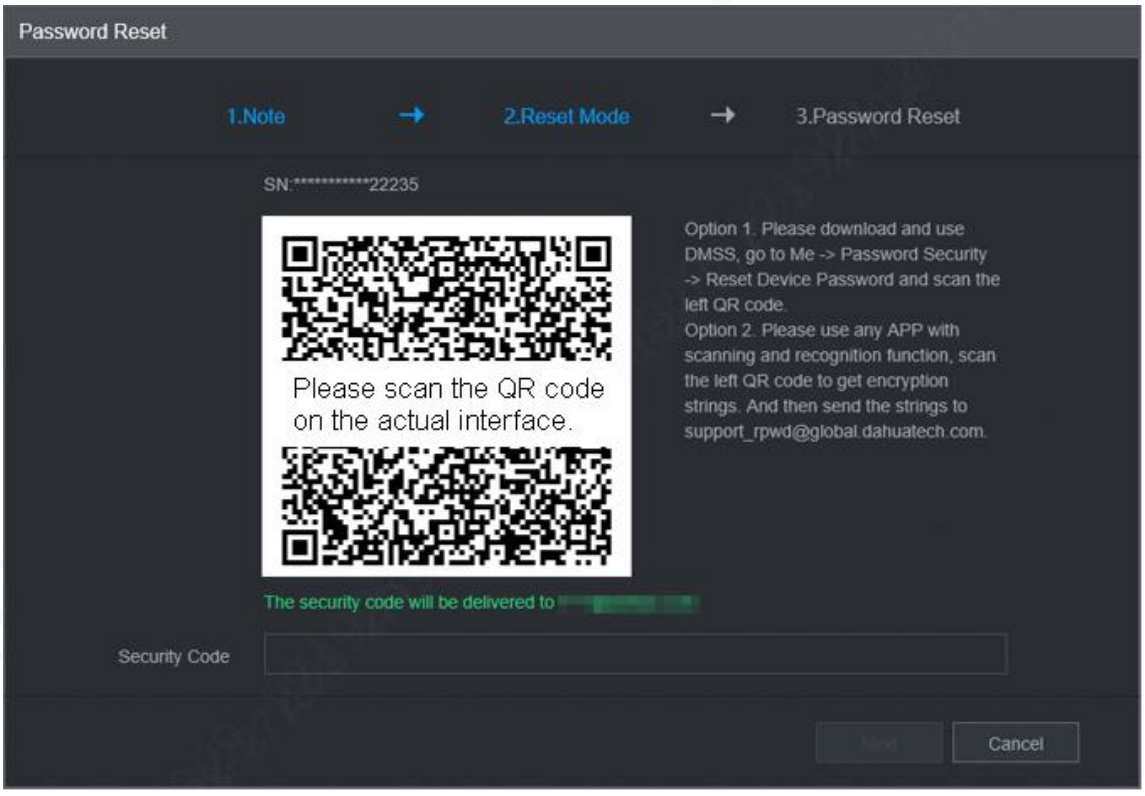
Figure 5-53 Reset password (1)



Step 3 Click **OK**.

The **Password Reset** interface is displayed. See Figure 5-54.

Figure 5-54 Reset password (2)



Step 4 Follow the instructions to scan the QR code and get the security code.

- Please scan the QR code on the actual interface of device.
- At most two security codes will be generated by scanning the same QR code. To get more security code, refresh the QR code.

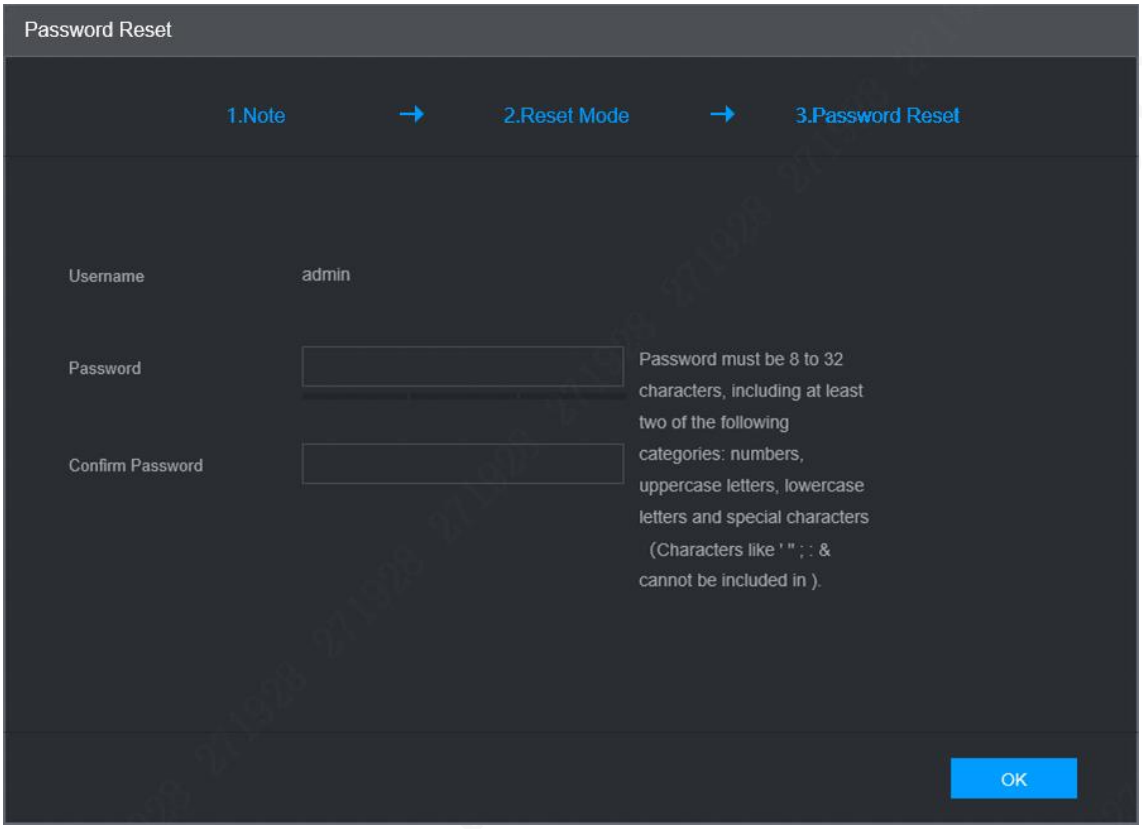
- Please use the security code within 24 hours after you receive it. Otherwise, it will become invalid.
- Wrong security code entered for up to five times will cause account locked for 5 min.

Step 5 In the **Security Code** box, enter the security code received in your provided mailbox.

Step 6 Click **Next**.

The new password setting interface is displayed. See Figure 5-55.

Figure 5-55 New password setting



Step 7 Reset and confirm the password.

The new password must be 8 to 32 characters, including at least two of the following categories: numbers, uppercase letters, lowercase letters and special characters (Characters like'"; & cannot be included in).

Step 8 Click **OK**.

The system prompts successful operation and restarts. You can use the new password to log in to the device.

6 System Upgrade

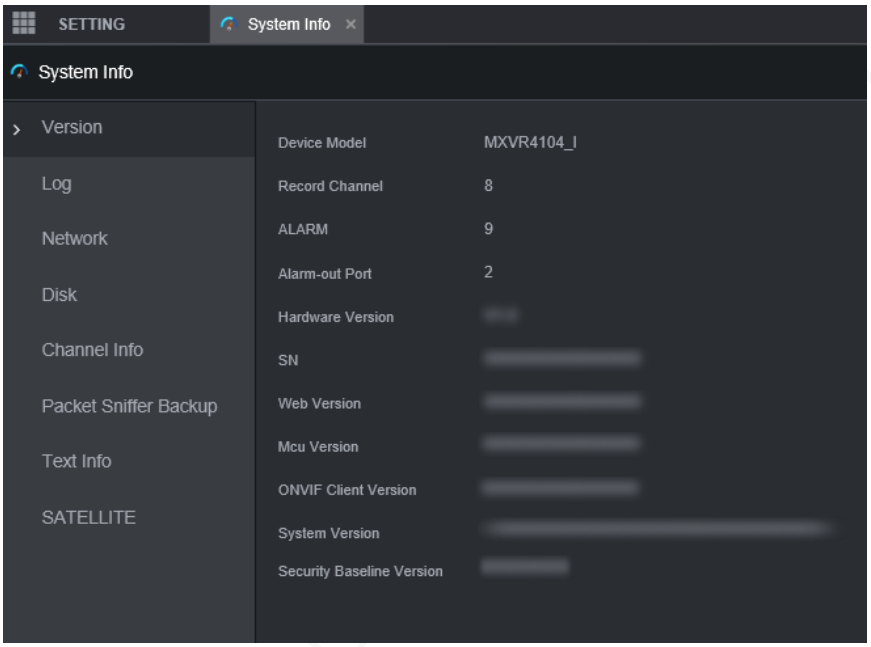
6.1 Viewing System Version

You can view the device version information.

Select **SETTING > System Info > Version.**

The **Version** interface is displayed. See Figure 6-1.

Figure 6-1 Version



6.2 Upgrading System Firmware

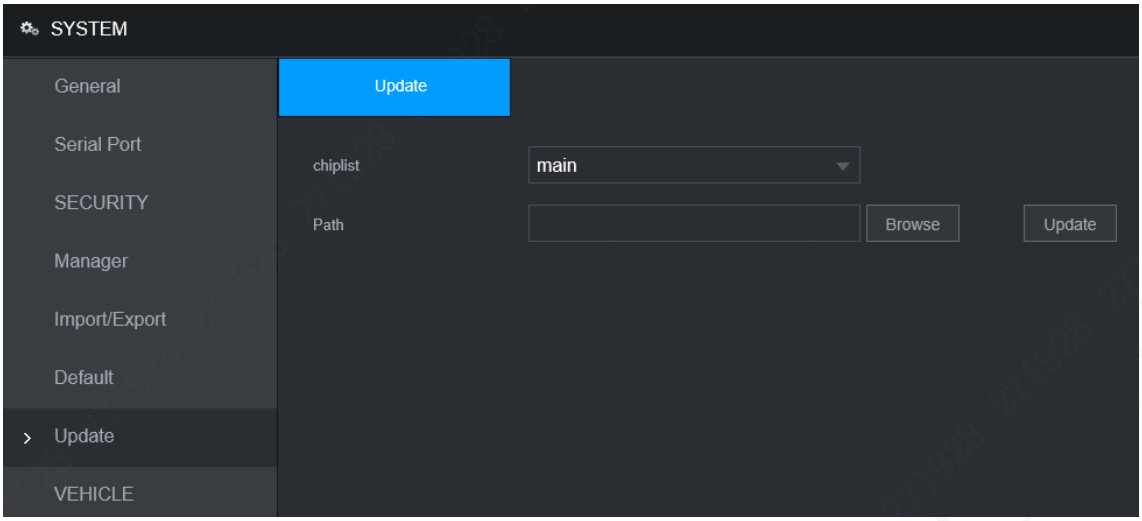
Import the update file in the format of .bin to update the system.

- Do not disconnect the power or network, or restart or shut down the device during update cannot be used.
- Incorrect update programs may result in the device unable to work.

Step 1 Select **SETTING > SYSTEM > Update**.

The **Update** interface is displayed. See Figure 6-2.

Figure 6-2 Update



Step 2 Select the chip list that suits your actual needs.

- To upgrade system programs, select **Main** for the chip list.
- To upgrade the MCU firmware programs, select **MCU** for the chip list.

Step 3 Click **Browse** and select the upgrade files you want to use.

Step 4 Click **Update.** The system starts upgrading. You should log in to the WEB interface again after upgrading

7 System Maintenance

7.1 Maintenance Requirement

For the system's good and safe running, it's recommended to manage and maintain the system, back up files in the following methods.

- Check monitoring images regularly.
- Clear the users and user groups not frequently used regularly.
- Modify your password every 3 months.
- Check your system log regularly. Handle problems in a timely manner.
- Back up your configuration of the system regularly.
- Restart the device regularly.
- Upgrade firmware in a timely manner.

7.2 Viewing System Information

You can view device version information, logs, network information, HDD information, channel information, satellite information, and MAC information.

For version information, see 6.1 Viewing System Version.

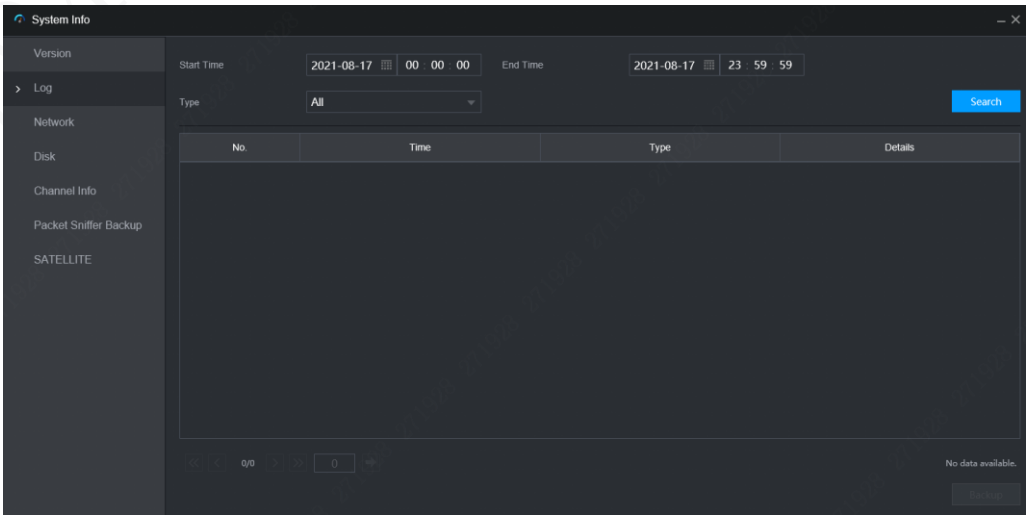
7.2.1 Viewing Log

You can search, view, and back up the logs to local PC.

Step 1 Select **SETTING > System Info > Log**.

The **Log** interface is displayed. See Figure 7-1.

Figure 7-1 Log



Step 2 Set Start Time, End Time, and Type.

Step 3 Click **Search**.

The obtained logs are displayed.

Select the log that you want to back up, and then click **Backup**. In the **Save as** dialog box, select the save path to save the log to local PC.

7.2.2 Viewing Network Information

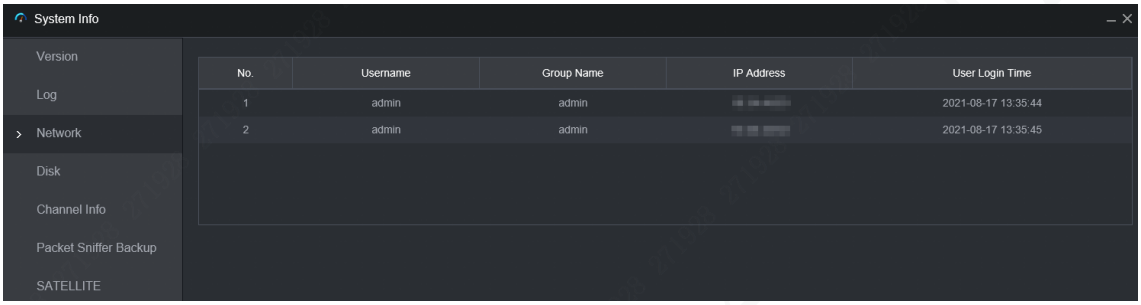
You can view IP information of the logged in device.

Step 1 Select **SETTING > System Info > Network**.

The **Network** interface is displayed. See Figure 7-2.

Step 2 Click **Refresh** and the latest network information is displayed.

Figure 7-2 Network information



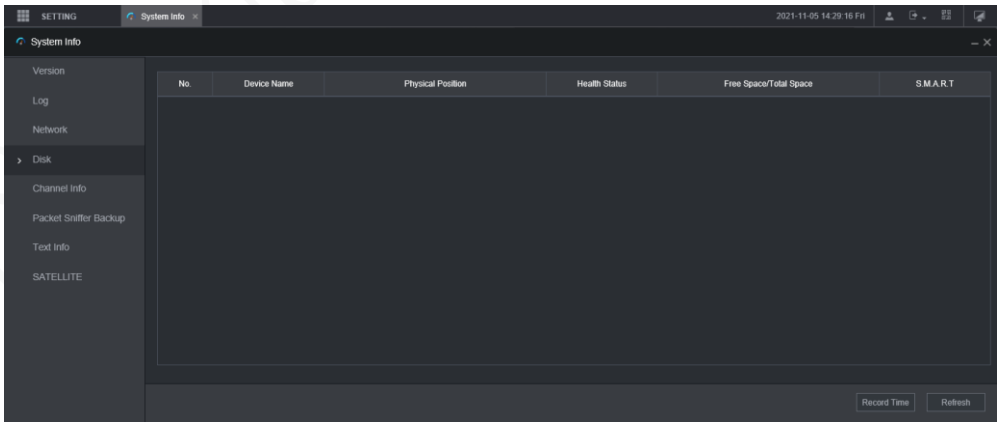
7.2.3 Viewing Disk Information

You can view the HDD information of the device, including Disk name, location, and health.

Step 1 Select **SETTING > System Info > Disk**.

The **Disk** interface is displayed. See Figure 7-3.

Figure 7-3 Disk information



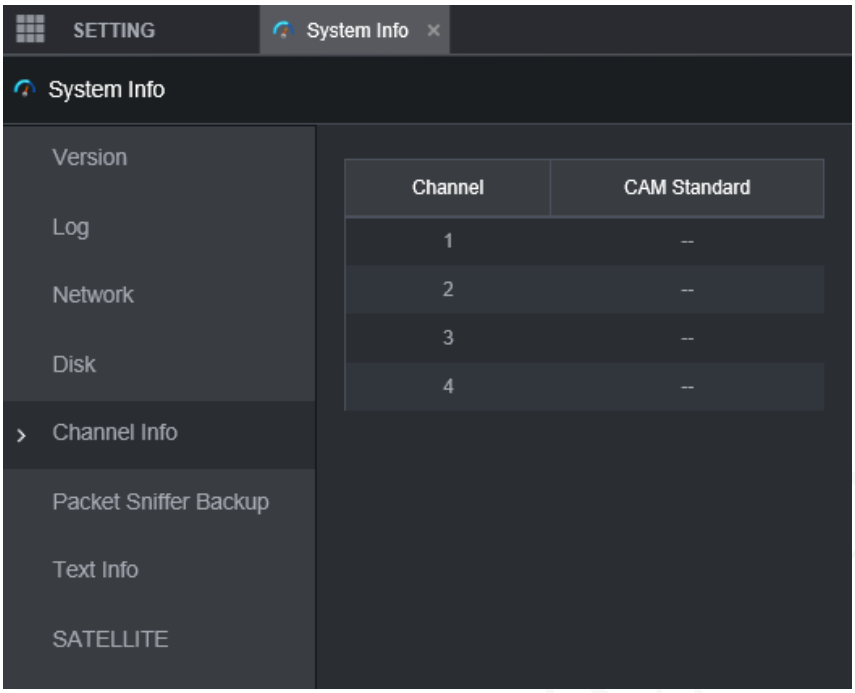
7.2.4 Viewing Channel Info

You can view the channel information.

Step 1 Select **SETTING > System Info > Channel Info**.

The **Channel Info** interface is displayed. See Figure 7-4.

Figure 7-4 Channel information



7.2.5 Viewing Satellite Information

You can view the satellite positioning information such as module state, GPS status, latitude and longitude, and search results.

Step 1 Select **SETTING > System Info > SATELLITE**.

The **SATELLITE** interface is displayed. See Figure 7-5.

Step 2 Click **Refresh** and the latest satellite information is displayed.

- If the GPS module state indicates Normal but does not position within five minutes, the GPS module automatically resets and repositions. When the positioning information is obtained again, the GPS module reset times is up to 20, or the device is restarted, you can view the GPS module reset records in the log.
- When the GPS module is short-circuited for more than 10 seconds, the module state is abnormal and the GPS module is automatically powered off and no longer powered on. After the device is restarted, the GPS module will be powered on again.

Figure 7-5 Satellite information



7.3 Auto Maintenance

You can configure the automatic maintenance settings such as auto restart, auto deleting old files, auto start, auto shutdown, and delay for auto shutdown.

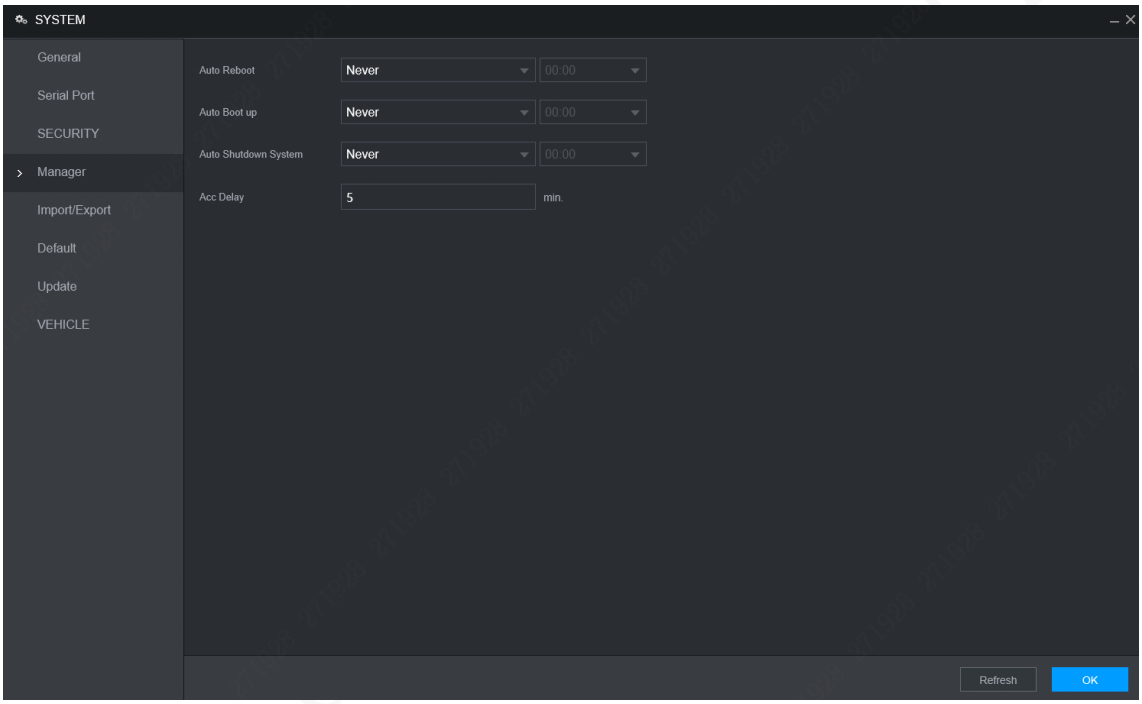
7.3.1 Restarting System

Once the device is running for a long time, you can set to automatically reboot the device at idle time. After configuring auto reboot, when the device is working, it reboots according to the schedule.

Step 1 Select **SETTING > SYSTEM > Manager.**

The **Manager** interface is displayed, see Figure 7-6.

Figure 7-6 Manager



Step 2 Select the strategy of auto restart.

- Select **Never**, and the device will never restart automatically.
- Select **Every Day**, set the device restart time, and the device will restart automatically at that time point.
- Select **Monday** to **Sunday**, set the device restart time, and the device will restart automatically at that time point every week. If **Sunday** and **01:00** are selected, the device will restart automatically at 1:00 every Sunday.

Step 3 Click **OK**.

7.3.2 Configuring Auto Start

After configuring auto start, the device starts automatically at the scheduled time point. If you turn the vehicle key to ACC before the configured auto start time, the device starts immediately. When the documentation is powered off, the device will shut down as per the scheduled auto delay for shutdown.

Step 1 Select **Setting > System > Manager**.

The **Manager** interface is displayed.

Step 2 Select the strategy of auto start.

- Select **Never**, and the device will never start automatically.
- Select **Every Day** and set the time. When you turn the vehicle key to ACC before this time point, the device starts immediately.

Step 3 Click **OK**.

7.3.3 Configuring Auto Shutdown

After configuring auto shutdown, the device automatically shuts down as per the ACC power off time and auto start setting.

- If you have set the time for auto start, there are two situations when the ACC is powered off: If the system time is between the auto start time and auto shutdown time, the device is turned off at the configured time point. If the system time is before the auto start time or after the auto shutdown time, the device is turned off immediately.
- If the auto start time is not set, when the ACC is disconnected, the device shuts down at the scheduled time point.

Step 1 Select **SETTING > SYSTEM > Manager**.

The **Manager** interface is displayed. See

Step 2 Select auto shutdown.

Select **Never**, and the device will never shut down automatically.

Select **Every Day** and set the time. The system will shut down as per the ACC power off time and auto start setting. Select **Every Day** for **Auto Shutdown System**, and then enter the specific time.

Step 3 Click **OK**.

7.3.4 Delay for Auto Shutdown

After configuring delay for auto shutdown, when ACC is disconnected, the device shuts down as per the settings of delay for auto shutdown.

- If you enter a delay value that is not 0, the device automatically shuts down after the preset delay.
- If you enter 0, the device shuts down as per the auto shutdown settings without delay.

Step 1 Select **SETTING > SYSTEM > Manager**.

The **Manager** interface is displayed, see Figure 7-6.

Step 2 Configure the auto delay for shutdown.

The value ranges from 0 through 65535. The fault value is 5.

Step 3 Click **OK**.

7.4 Backing Up and Restoring

You can back up or restore the web configurations and restore to default settings.

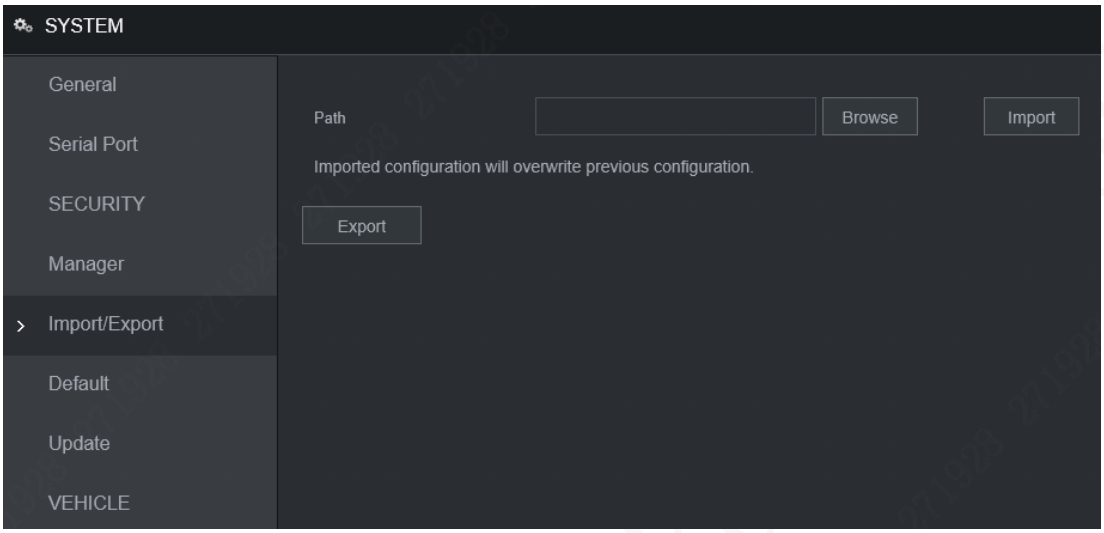
7.4.1 Backing Up Configuration

You can back up all web configurations.

Step 1 Select **SETTING > SYSTEM > Import/Export**.

The **Import/Export** interface is displayed. See Figure 7-7.

Figure 7-7 Configuration import/export



Step 2 Click **Import**, and select the backup path.

The system starts backing up configurations.

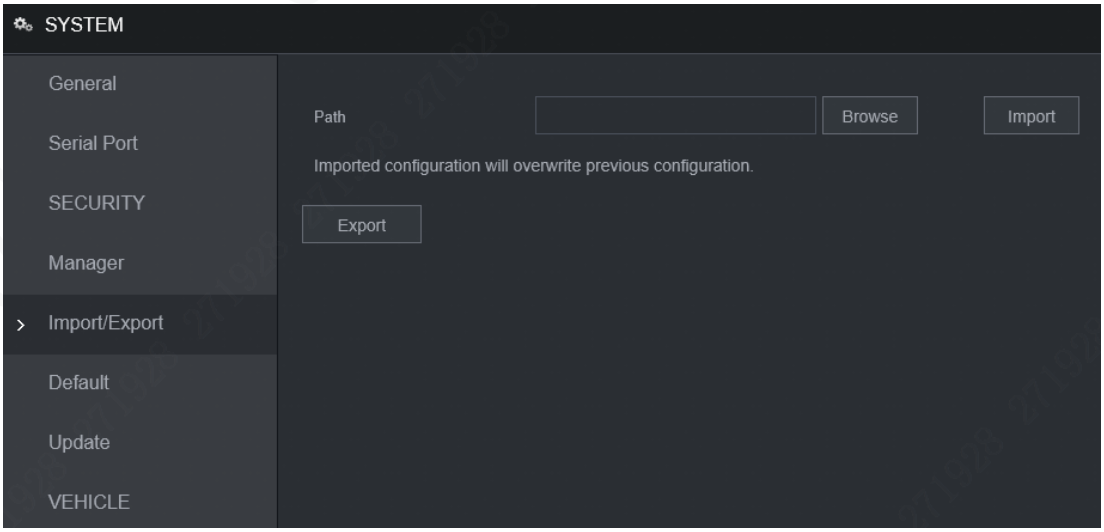
7.4.2 Importing Configurations

You can use the backed up configurations to quickly configure the device and restore the device configurations.

Step 3 Select **SETTING > SYSTEM > Import/Export**.

The **Import/Export** interface is displayed, see Figure 7-8.

Figure 7-8 Import/Export



Step 4 Click **Browse**, and then select the backup file you want to import.

Step 5 Click **Import**.

The system pops up the reboot message. Click **OK**, the system starts importing the configurations and reboot the device after importing is completed.

7.4.3 Restoring to Default

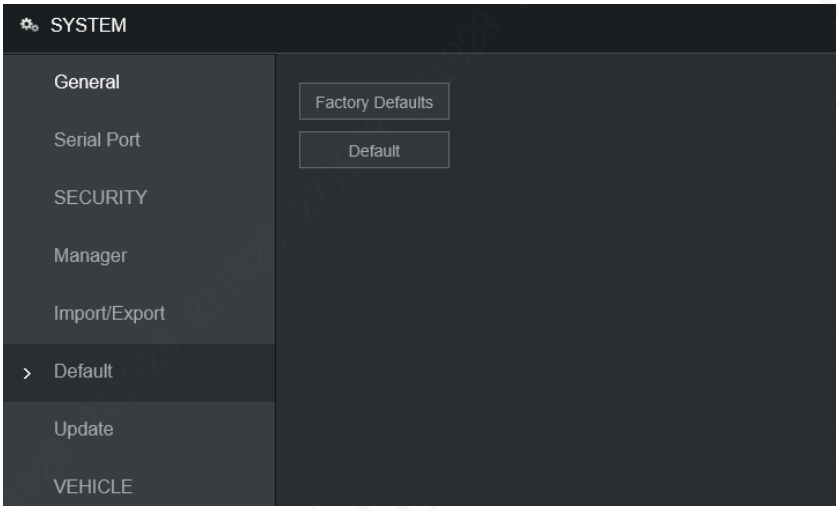
You can restore the system to default configurations or the factory default. Only the user with the default & upgrade authorities can do this.

The corresponding functions will be restored to the factory settings, and your current configurations will be lost. Proceed with caution.

Step 1 Select **SETTING > SYSTEM > Default**.

The **Default** interface is displayed. See Figure 7-9.

Figure 7-9 Factory default settings



Step 2 Select the check box of the options that you want to restore to the factory default.

- Default: Click **Default**, and the **Reboot** dialog box is popped up. See Figure 7-10. Then click **OK**. All configurations other than user name, password, security questions, device IP, 4G, Wi-Fi are restored to the default configuration of the device.
- Factory Default: Click **Factory Default**, and the **Reboot** dialog box is displayed. See Figure 7-11. Then click **OK**, and the system restarts. After the device is restarted, the system will restore to factory defaults, and the device requires initialization again. Proceed with caution.
- When there is a user operating on the local interface, the factory default settings cannot be performed until the local user log out.

Figure 7-10 Reboot prompt (1)

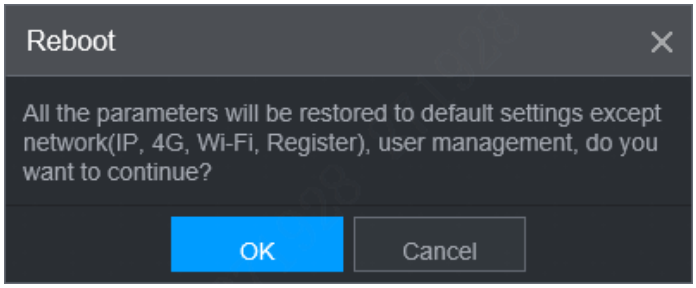
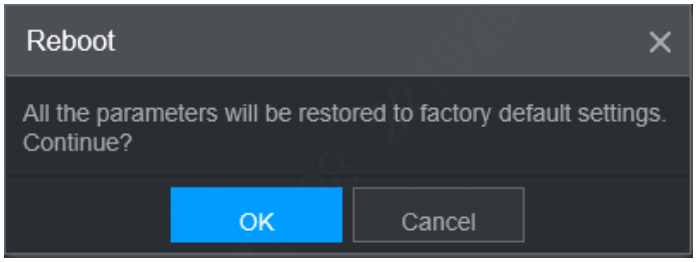


Figure 7-11 Reboot prompt (2)



7.5 Network Sniffer

The packet data can be provided to the developers or engineers to analyze the network usage.

Preparation

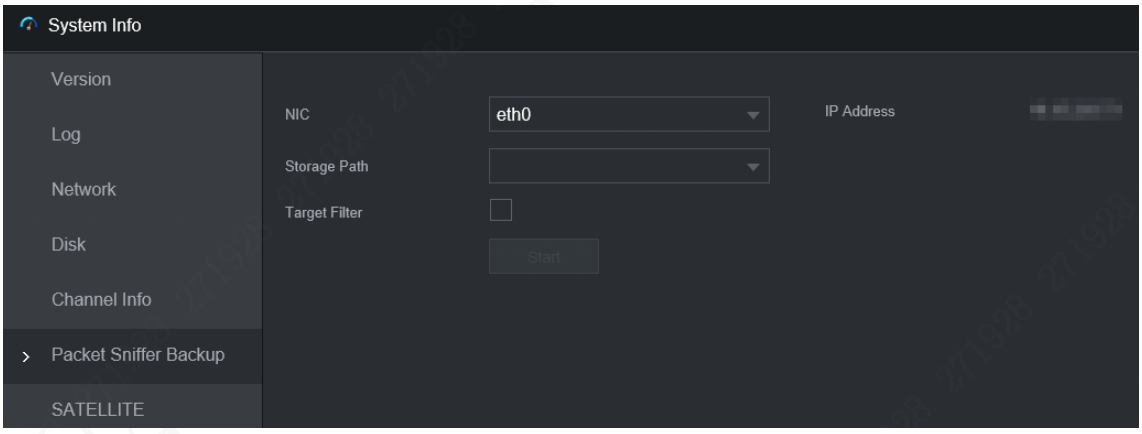
The device being captured is connected to an external backup device.

Procedure

Step 1 Select **SETTING > System Info > Packet Sniffer Backup**.

The **Packet Sniffer Backup** interface is displayed. See Figure 7-12.

Figure 7-12 Packet Sniffer Backup



Step 2 Select the Ethernet port and save path.

Step 3 Select the **Target Filter** check box, and then enter the IP address that you want to filter.

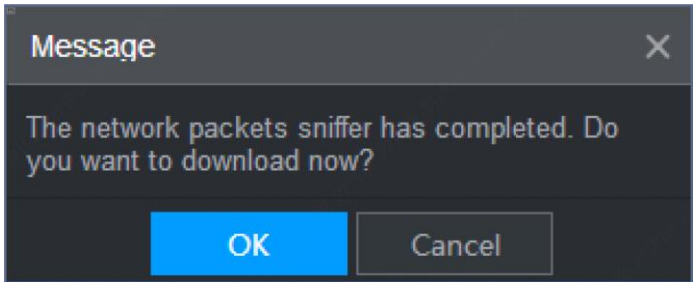
Step 4 Click **Start**.

The system starts the sniffer, and the data will be stored to the external backup device.

Step 5 Click **Stop**.

The **Prompt** dialog box is displayed. See Figure 7-13.

Figure 7-13 Prompt



Step 6 Click **OK** or **Cancel**.

- Click **OK** to download the files locally. Viewed those files in the storage path.
- Click **Cancel** to stop downloading.

479184 da hua 2024-11-06

8 Operating by Mobile Center

Beside from web, you can also remotely log in to the Camera from Mobile Center. For details, see the manual of Mobile Center.

479184 da hua 2024-11-06

Appendix 1 FAQ

If your questions are not solved by following the answers in this document, contact your local customer service or call customer service at headquarters. We will guide you to solve your problems.

1. **Q: Disconnect the constant electricity but the device is still working.**
   A: Possible reasons:
   - The UPS setting provides constant power supply to the device when the lithium battery voltage is above 7V.
2. **Q: The device gives squeal after start.**
   A: Possible reasons:
   - Connecting to the display and being too close to the camera.
   - A single channel interface or a large-image multi-channel interface. The first route of sound comes from a local source.
3. **Q: The interface shows that no SIM card is detected.**
   A: Possible reasons:
   - SIM card not inserted.
   - Micro SIM card reversely inserted with its notch facing outward. Follow instructions on the label to insert the SIM card.
   - SIM card is damaged.
4. **Q: DVR cannot boot up properly.**
   A: Possible reasons:
   - The input power is not correct; the input voltage is too low or too high.
   - Poor contact in the input power cable or incorrect wiring.
   - HDD is damaged or poor contact between the HDD carrier and HDD.
   - Main board is damaged.
5. **Q: DVR automatically reboots or frequently crashes.**
   A: Possible reasons:
   - Input voltage is unstable or too low
   - The device is not properly installed, which result in poor contact between components.
   - Poor heat dissipation and too many dusts result in poor working environment for the device.
   - Hardware malfunction.
6. **Q: Blank screen in a channel of the display.**
   A: Possible reasons:
   - A camera is damaged. Replace the damaged camera.
   - The connection wire is damaged. Replace the damaged connection wire.
7. **Q: There is no video output for single channel, multiple channels or all channels.**
   A: Possible reasons:
   - Incorrect program. Upgrade to the correct program.
   - Image brightness is set as 0. Restore to default settings.
   - Video input signal is null or too weak.
   - Channel protection (or screen protection) is set.
   - Hardware malfunction.
8. **Q: Real-time video image is abnormal, such as color and brightness is distorted.**
   A: There are the following possibilities:
   - NTSC and PAL settings are not correct, and the image becomes black and white.
   - Device and monitor resistance is not compatible.

- Video network transmission distance is too far or transmission line signal attenuation is too much.
- NVR color or brightness settings are not correct.

9. **Q: I cannot search video record in local playback.**

   A: There are the following possibilities:
   - Poor contact between the HDD carrier and HDD.
   - HDD is damaged.
   - Upgraded a program different from the original program file system.
   - The video record is overlapped.
   - The video record is not opened.

10. **Q: The local video record is blurry.**

    A: Possible reasons:
    - The image quality is too low.
    - Program read error, bit data is too small, and there is full of mosaic in the screen. Please firstly try to restart the DVR to solve this problem.
    - HDD Error
    - Hardware malfunction.

11. **Q: No audio.**

    A: Possible reasons:
    - It is not an active speaker.
    - Audio cable is damaged.
    - Hardware malfunction.

12. **Q: There is audio under monitoring state but no audio under playback state.**

    A: There are the following possibilities:
    - Audio function is not enabled.
    - The corresponding channel does not connect to the camera. Playback is not continuous when the screen is blue.

13. **Q: The time displayed in the video record is wrong.**

    A: Possible reasons:
    - Error settings.
    - Poor battery contact or low voltage.
    - Crystal oscillator does not work.

14. **Q: USB backup error.**

    A: There are the following possibilities:
    - Too much data which occupies CPU resources. Please stop recording first and then begin backup.
    - Backup device is not compatible.
    - Backup device is damaged.
    - The backup device features high power and needs separate power supply.

15. **Q: Alarm does not work.**

    A: Possible reasons:
    - Incorrect alarm settings.
    - Incorrect alarm wiring.
    - Incorrect alarm input signal.
    - An alarm device is connected to 2 loops at the same time.

16. **Q: Messy channel display.**

    A: Possible reasons:

- Incorrect selection of camera type. Auto switch is recommended.
- The camera is damaged.

17. **Q: Record storage period is not enough.**

    A: Possible reasons:

    - Low camera quality, dirty lens, camera installed against the light, or iris not properly adjusted caused large big rate.
    - HDD capacity is not enough.
    - The HDD is damaged.

18. **Q: No 3G/4G dial-up. No dial-up IP.**

    A: Possible reasons:

    - Check if the SIM card is normal.
    - Check if the SIM card is not in service.
    - Check if the 3G/4G antenna is connected as intended.
    - Check if the 128 G/4 G signals are strong enough.
    - Try out with another SIM card.

19. **Q: 3G/4G platform is not online.**

    A: Possible reasons:

    - Check if 3G/4G dial-up is normal.
    - Check if local active registration is correctly set up.
    - Check if the sever terminal is correctly set up.

20. **Q: No GPS data.**

    A: Possible reasons:

    - Check if the GPS antenna is connected as intended.
    - Make sure the GPS antenna is in a place where signals are not blocked.

21. **Q: GPS drifting and produces speed for no reason.**

    A: Possible reasons:

    - Weak GPS signal.

22. **Q: Video record is silent.**

    A: Possible reasons:

    - Check if a normal analog camera is connected. Only HDCVI camera with audio input supports audio.

479184 da hua 2024-11-06

Appendix 2 Storage Capacity Calculation

When the device is installed for the first time, make sure the HDD (or TF card) is installed.

Capacity calculation formula:

Total capacity (M) = Channel quantity × Demand time length (hour) × storage capacity occupied per hour (M/hour)

Recording time calculation formula:

$$\text{Recording time (hour)} = \frac{\text{Total capacity (M)}}{\text{Storage capacity occupied per hour (M/hour)} \times \text{Channel quantity}}$$

The device adopts H.264/H.265 compression technology, which features a large dynamic range. Therefore, when calculating HDD capacity, you should accord to the bit rate to evaluate the file size generated per hour from each channel.

479184 da hua 2024-11-06

Appendix 3 Cybersecurity Recommendations

Mandatory actions to be taken for basic device network security:

1. **Use Strong Passwords**

   Please refer to the following suggestions to set passwords:

   - The length should not be less than 8 characters.
   - Include at least two types of characters; character types include upper and lower case letters, numbers and symbols.
   - Do not contain the account name or the account name in reverse order.
   - Do not use continuous characters, such as 123, abc, etc.
   - Do not use overlapped characters, such as 111, aaa, etc.

2. **Update Firmware and Client Software in Time**

   - According to the standard procedure in Tech-industry, we recommend to keep your device (such as NVR, DVR, IP camera, etc.) firmware up-to-date to ensure the system is equipped with the latest security patches and fixes. When the device is connected to the public network, it is recommended to enable the "auto-check for updates" function to obtain timely information of firmware updates released by the manufacturer.
   - We suggest that you download and use the latest version of client software.

"Nice to have" recommendations to improve your device network security:

1. **Physical Protection**

   We suggest that you perform physical protection to device, especially storage devices. For example, place the device in a special computer room and cabinet, and implement well-done access control permission and key management to prevent unauthorized personnel from carrying out physical contacts such as damaging hardware, unauthorized connection of removable device (such as USB flash disk, serial port), etc.

2. **Change Passwords Regularly**

   We suggest that you change passwords regularly to reduce the risk of being guessed or cracked.

3. **Set and Update Passwords Reset Information Timely**

   The device supports password reset function. Please set up related information for password reset in time, including the end user's mailbox and password protection questions. If the information changes, please modify it in time. When setting password protection questions, it is suggested not to use those that can be easily guessed.

4. **Enable Account Lock**

   The account lock feature is enabled by default, and we recommend you to keep it on to guarantee the account security. If an attacker attempts to log in with the wrong password several times, the corresponding account and the source IP address will be locked.

5. **Change Default HTTP and Other Service Ports**

   We suggest you to change default HTTP and other service ports into any set of numbers between 1024–65535, reducing the risk of outsiders being able to guess which ports you are using.

6. **Enable HTTPS**

   We suggest you to enable HTTPS, so that you visit Web service through a secure communication channel.

7. **MAC Address Binding**

   We recommend you to bind the IP and MAC address of the gateway to the device, thus reducing

the risk of ARP spoofing.

8. **Assign Accounts and Privileges Reasonably**

   According to business and management requirements, reasonably add users and assign a minimum set of permissions to them.

9. **Disable Unnecessary Services and Choose Secure Modes**

   If not needed, it is recommended to turn off some services such as SNMP, SMTP, UPnP, etc., to reduce risks.

   If necessary, it is highly recommended that you use safe modes, including but not limited to the following services:

   - SNMP: Choose SNMP v3, and set up strong encryption passwords and authentication passwords.
   - SMTP: Choose TLS to access mailbox server.
   - FTP: Choose SFTP, and set up strong passwords.
   - AP hotspot: Choose WPA2-PSK encryption mode, and set up strong passwords.

10. **Audio and Video Encrypted Transmission**

    If your audio and video data contents are very important or sensitive, we recommend that you use encrypted transmission function, to reduce the risk of audio and video data being stolen during transmission.

    Reminder: encrypted transmission will cause some loss in transmission efficiency.

11. **Secure Auditing**

    - Check online users: we suggest that you check online users regularly to see if the device is logged in without authorization.
    - Check device log: By viewing the logs, you can know the IP addresses that were used to log in to your devices and their key operations.

12. **Network Log**

    Due to the limited storage capacity of the device, the stored log is limited. If you need to save the log for a long time, it is recommended that you enable the network log function to ensure that the critical logs are synchronized to the network log server for tracing.

13. **Construct a Safe Network Environment**

    In order to better ensure the safety of device and reduce potential cyber risks, we recommend:

    - Disable the port mapping function of the router to avoid direct access to the intranet devices from external network.
    - The network should be partitioned and isolated according to the actual network needs. If there are no communication requirements between two sub networks, it is suggested to use VLAN, network GAP and other technologies to partition the network, so as to achieve the network isolation effect.
    - Establish the 802.1x access authentication system to reduce the risk of unauthorized access to private networks.
    - Enable IP/MAC address filtering function to limit the range of hosts allowed to access the device.