Bi-spectrum
Network Camera
User Manual

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Precautions

Precautions

Fully understand this document before using this device, and strictly observe rules in this document when using this device. If you install this device in public places, provide the tip "You have entered the area of electronic surveillance" in an eye-catching place. Failure to correctly use electrical products may cause fire and severe injuries. To prevent accidents, carefully read the following context:

Symbols

This document may contain the following symbols whose meanings are described accordingly.

Symbol	Description
⚠ DANGER	It alerts you to fatal dangers which, if not avoided, may cause deaths or severe injuries.
⚠ WARNING	It alerts you to moderate dangers which, if not avoided, may cause minor or moderate injuries.
⚠ CAUTION	It alerts you to risks. Neglect of these risks may cause device damage, data loss, device performance deterioration, or unpredictable results.
⊙ TIP	It provides a tip that may help you resolve problems or save time.
📖 NOTE	It provides additional information.

⚠ **DANGER**

To prevent electric shocks or other dangers, keep power is dry and clean when it is on.

⚠ **WARNING**

- Strictly observe installation requirements when installing the device. The manufacturer shall not be held responsible for device damage caused by users' non-conformance to these requirements.

- Strictly conform to local electrical safety standards and use power adapters which are marked with the LPS standard when installing and using this device. Otherwise, this device may be damaged.

- Use accessories delivered with this device. The voltage must meet input voltage requirements for this device.

- If this device is installed in places with unsteady voltage, ground the device to discharge high energy such as electrical surges in order to prevent the power supply from burning out.

- When this device is in use, ensure that no water or any liquid flows into the device. If water or liquid unexpectedly flows into the device, immediately power off the device and disconnect all cables (such as power cables and network cables) from this device.

- Do not place the thermal imaging camera and unpackaged products at a radiation source with a high intensity regardless of whether the device is in the normal power-on state, for example, the sun, laser, and electric arc welder, and place the thermal imaging camera and unpackaged products against objects with a high heat source, for example, the sun. Otherwise, the accuracy of the thermal imaging camera will be affected. In addition, the detector in the thermal imaging camera may be permanently damaged.

- If this device is installed in places where thunder and lightning frequently occur, ground the device nearby to discharge high energy such as thunder strikes in order to prevent device damage.

- This product is a fixed focus lens. The focus adjustment has been completed before leaving the factory. Please do not rotate or disassemble the lens.

- Please do not disassemble the machine. This product is an integrated device. It has been calibrated before leaving the factory. There is a precision detector in the device. Disassembling it privately will damage the detector!

⚠ CAUTION

- Unless otherwise specified in the user manual, do not use the thermal imaging camera in an environment with the temperature lower than -40°C (-40 F) or higher than 60°C (+140 F). Otherwise, the images displayed by the thermal imaging camera are abnormal and the device may be damaged if working beyond the temperature range for a long period.

- During the outdoor installation, prevent the morning or evening sunlight incidence to the lens of the thermal imaging camera. The sun shade must be installed and adjusted according to the angle of the sunlight illumination.

- Avoid heavy loads, intensive shakes, and soaking to prevent damages during transportation and storage. The warranty does not cover any device damage that is caused during secondary packaging and transportation after the original packaging is taken apart.

- This device is a static sensitivity device. Improper static may damage the thermal imaging camera. ESD protection measures and reliable grounding must be well prepared for device installation and uninstallation.

- Protect this device from fall-down and intensive strikes, keep the device away from magnetic field interference, and do not install the device in places with shaking surfaces or under shocks.

- Use a soft and dry cloth to clean the device body. In case that the dirt is hard to remove, use a dry cloth dipped in a small amount of mild detergent and gently wipe the device, and then dry it again. Pay a special attention to the front window of the thermal imaging camera because this is precision optics. If the front window has water spots, use a clean and soft cloth moistened with water to wipe it. If the

front window needs further cleaning, use a soft cloth dampened with isopropyl alcohol or detergent. Improper cleaning can cause damage to the device.

- The lens window of the thermal imaging camera is designed to be applicable to an outdoor environment. The window is coated with durable coating material, but may require frequent cleaning. When you found lens image degradation or excessive accumulation of pollutants, you should clear up the window in a timely manner. Exercise caution when you use this device in severe sandstorm (such as deserts) or corrosive environments (such as offshore). Improper use may cause surface coating off.

- Do not jam the ventilation opening. Follow the installation instructions provided in this document when installing the device.

- Keep the device away from heat sources such as radiators, electric heaters, or other heat equipment.

- Keep the device away from moist, dusty, extremely hot or cold places, or places with strong electric radiation.

- If the device is installed outdoors, take insect- and moisture-proof measures to avoid circuit board corrosion that can affect monitoring.

- Remove the power plug if the device is idle for a long time.

- Before unpacking, check whether the fragile sticker is damaged. If the fragile sticker is damaged, contact customer services or sales personnel. The manufacturer shall not be responsible for any artificial damage of the fragile sticker.

Special Announcement

For this document

All complete products sold by the manufacturer are delivered along with nameplates, operation instructions, and accessories after strict inspection. The manufacturer shall not be held responsible for counterfeit products.

This manual may contain misprints, technology information that is not accurate enough, or product function and operation description that is slightly inconsistent with the actual product. The manufacturer will update this manual according to product function enhancement or changes and regularly update the software and hardware described in this manual. Update information will be added to new versions of this manual without prior notice.

This manual is only for reference and does not ensure that the information is totally consistent with the actual product. For consistency, see the actual product.

Contents

1 **Product Overview**

1.1 About Product

- The Bi-spectrum network camera is integrated with the thermal imaging and temperature measuring, visible fusion, core image intelligent analysis, etc.

- Unique double registration mechanism, visible light and thermal imaging is reflecting the same scene.

- The Bi-spectrum network camera is high precision, built-in automatic temperature correction, it can work stable and reliable for long time.

- Smart over temperature alarm and location, track rapidly when temperature was abnormal.

- Full color technology, low lighting environments are no longer problem for security. Advanced video analysis for different scenes.

It is suitable for warehouse, schools, airports, stations, electric control room and other public places need to fireproof and anti-theft.

1.2 Cable Connection

Figure 1-1 the multi-connector combination cable of the thermal imaging integrated network camera. For details about the multi-connector combination cable, please refer to Table 1-1.
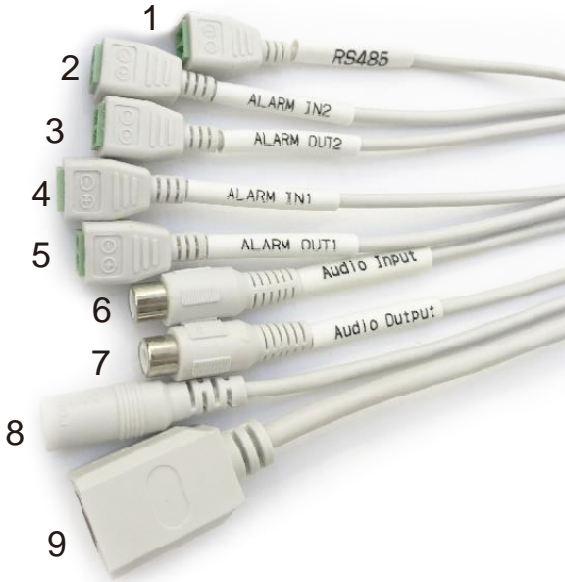
Figure 1-1 Multi-connector combination cable

Table 1-1 Multi-connector combination cable

ID	Core of Cable	Functions
1	RS485	RS485 interface connects to the external pan & tilt.
2	ALARM IN2	Connects to the alarm device.
3	ALARM OUT2	
4	ALARM IN1	
5	ALARM OUT1	
6	Audio Input	Inputs the audio signal and receives the analog audio signals from the sound pick-up device.
7	Audio Output	Connects to the external audio device such as the voice box.
8	DC12V (2A)	Power interface, connects to the 12 V DC power supply.
9	Network interface	Connects to the standard Ethernet cable.

1.3 Dimensions of Device

📖 **NOTE**

The different models may have different dimensions, please refer to the actual product.
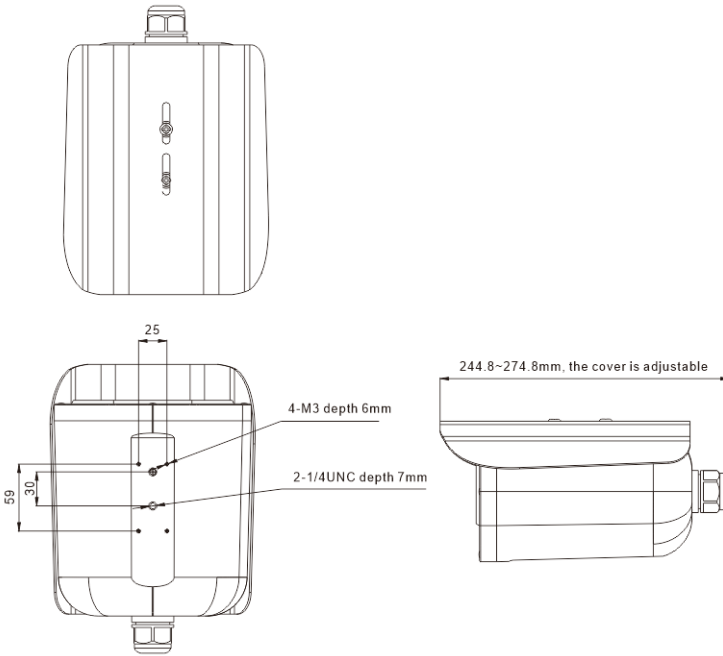
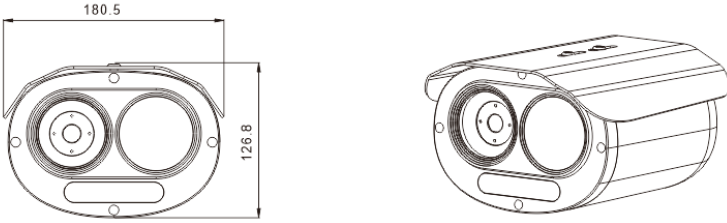Figure 1-2 Dimensions of device（Unit: mm）
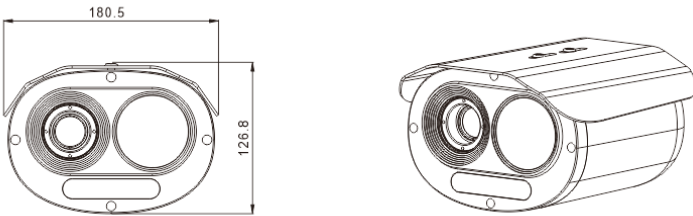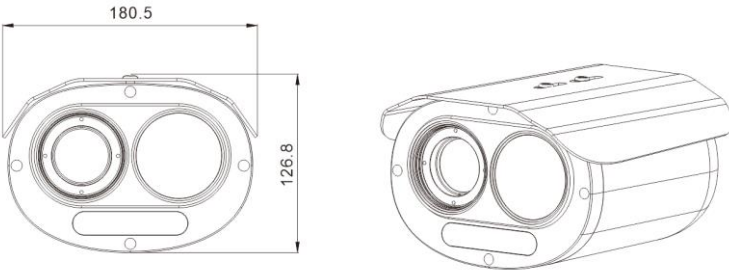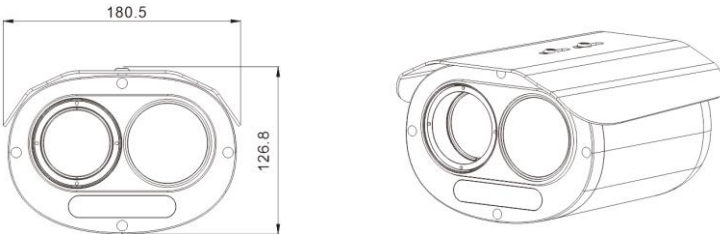
Figure 1-3 F 8mm

Figure 1-4 F 15 / 25 mm

Figure 1-5 F 35 mm
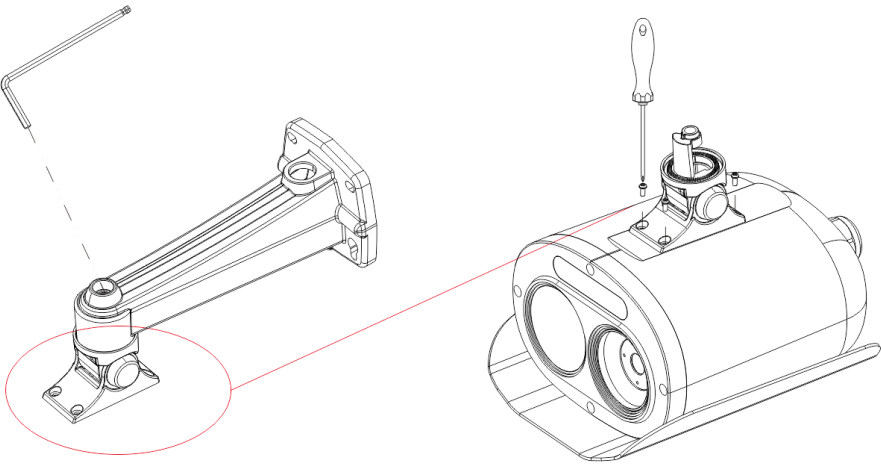

Figure 1-6 F 50 mm

1.4 Installation

📖 **NOTE**

The figures of installation are only for sketch map, these are not for actual product, please refer to actual product.

1.4.1 Wall Installation

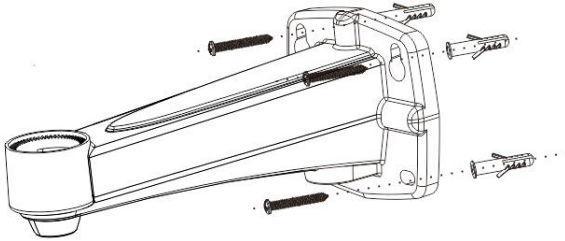Step 1 Take out the bracket and screw-wrench, loose the hexagon socket screw on bracket, fix the basement on camera use four M3 screws, as shown in Figure 1-7.
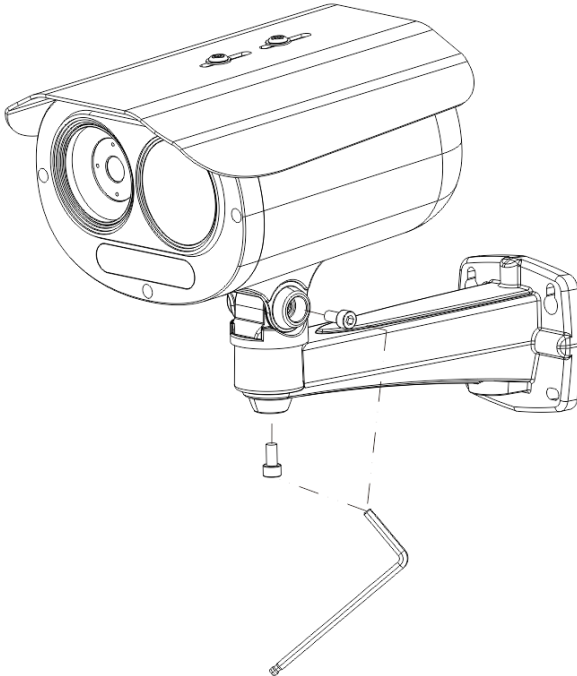
Figure 1-7 Assemble

Step 2 Stick the installation location sticker on ceiling or wall, drill four holes based on the marks on the sticker. Drive the plastic anchors into holes. Install the bracket on the ceiling or wall and fix the screws as shown in Figure 1-8.

Figure 1-8 Fix bracket

Step 3 Fix the camera to bracket, adjust the position so that the camera face the monitored area, then tighten the screw to fix camera, as shown in Figure 1-10.

Figure 1-9 Fix camera

1.4.2 Ceiling Installation

Step 1 Take out the bracket and screwdriver, loosen the two screws on side of bracket basement, fix the basement to camera use two screws, as shown in Figure 1-10.

Figure 1-10 Assemble

Step 2 Stick the installation location sticker on ceiling, drill four holes based on the marks on the sticker. Drive the plastic anchors into holes. Install the bracket on the ceiling and fix the screws as shown in Figure 1-11.

Figure 1-11 Fix bracket
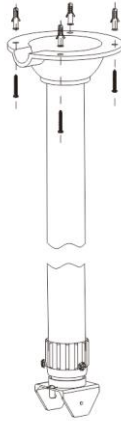
Step 3 Fix the camera to bracket, adjust the position so that the camera face the monitored area, then tighten the screw as shown in Figure 1-12.
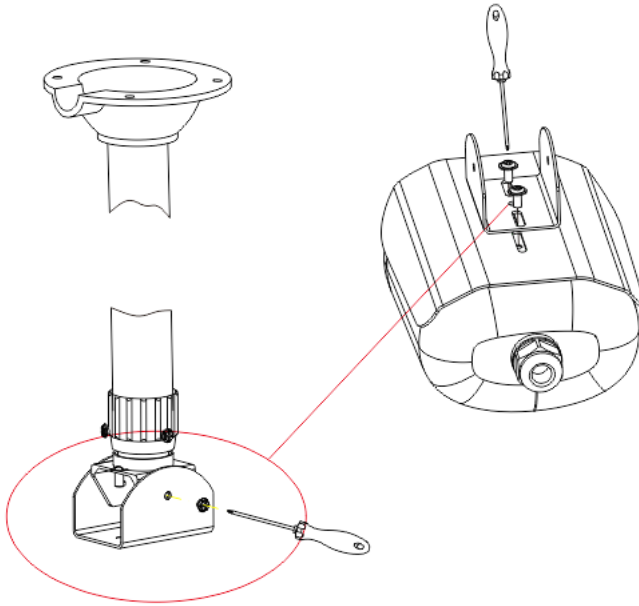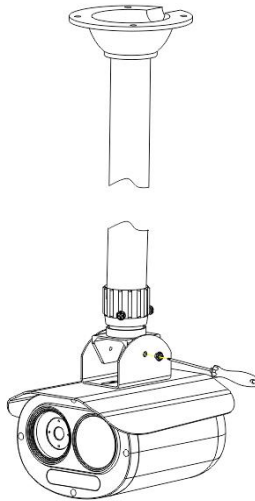
Figure 1-12 Fix camera

2 **Quick Configuration**

2.1 Login and Logout

⚠ **CAUTION**

To access the web interface through Microsoft Edge browser (IE Mode); Otherwise, some functions may be unavailable.

Login system

Step 1 Open Microsoft Edge, enter the IP address of camera (default value is 192.168.0.121) in the address box, and press Enter. The login page is displayed, as shown in Figure 2-1.

Figure 2-1 Login page

Step 2 Input the user name and password.

📖 **NOTE**

- Access the web at Edge browser which the mode should switch to **Reload in Internet Explorer mode**. At browser "Setting > Default browser" page, **Let Internet Explorer open sites in Microsoft Edge** choose "Always (Recommenced)"; **Allow sites to be reloaded in Internet Explorer mode (IE mode)** choose "Allow".

Figure 2-2 Internet Explorer Compatibility
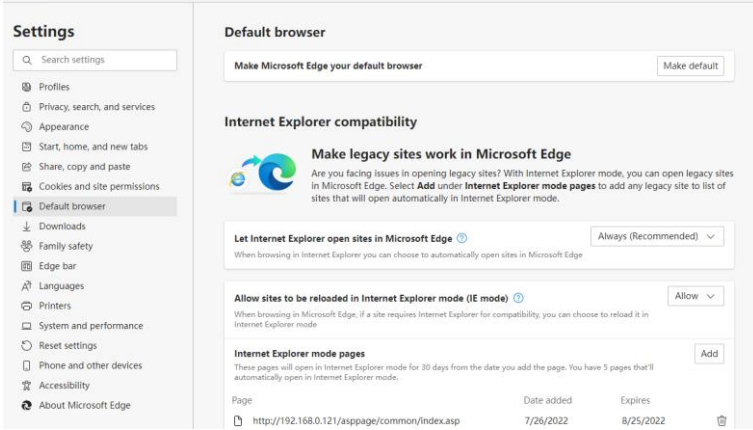
- The default name and password are both admin. Modify the password when you login the system for first time to ensure system security.
- After modifying password, you need to wait at least three minutes then power off to make sure modifying successfully. Or log in to the Web again to test the new password.
- You can change the system display language on the login page.

Step 3 Click Login. The homepage is displayed.

----End

logout

To logout of system, click [icon] in the upper right corner of the homepage, the login page is displayed after you logout of the system.

2.2 Homepage Layout

On the homepage, user can view real-time video, playback, People counting and configuration. User can set parameter, Video parameter, Video control, network and logout of the system, etc. Figure 2-3 is shown the homepage layout. Table 2-1 lists the elements on the homepage layout.

Figure 2-3 Homepage layout

Table 2-1 Elements on the homepage

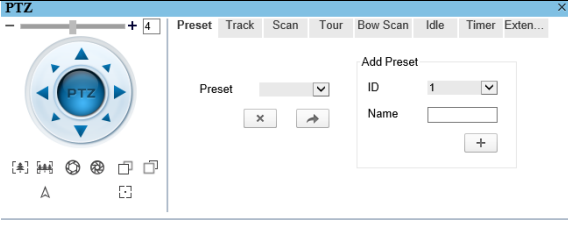| NO.	Element	Description
1	Real-time video area	Real-time videos are played in this area. You can also set sensor parameters.
2	Playback	You can query the playback videos in this area if you plug in SD card and open the recording.
3	People counting	Set the query condition to query the person counting, the statistical can be shown in different types, such as line chart, histogram, list, the detail information please refer to chapter 2.5
4	Configuration	You can choose a menu to set device parameters, including the device information, audio and video streams, alarm setting, and privacy mask function.
5	Change password	You can click [icon] to change the password.
6	Sign Out	You can click [icon] to return to the login page.
7	Stream	The visible light channel has two streams. You can set details at configuration base stream interface. The thermal image channel has two streams
8	PTZ	PTZ, adjust the lens of visible channel; when the camera is conntected to PTZ, it can set the parameters as shown in figure.

NO.	Element	Description
9		: Play/pause
		: Switch the mode
		: Audio
		: Interphone
		: Senor, or click right mouse button, more details please refer to chapter **Sensor Configuration** .
		: Snapshot
		: Record video to local storage.
		: Intelligent analysis, Choose the stream to stream 2, click to open the intelligent analysis, it will show target information and video stream draw line after you have turned on the function in IAS settings.

📖 **NOTE**

When the device generates an alarm, the alarm icon is displayed. You can click to view the alarm information. When the device accepts an alarm signal, the alarm icon will display within 10s in the web management system.

----End

2.3 Change the Password

Description

User can click to change the password for logging in to the system.

Procedure

Step 1 Click ![icon] in the upper right corner of the main page.

The **Change Password** dialog box is displayed, as shown in Figure 2-4.

Figure 2-4 Change password dialog box

□ NOTE

● The change password page will be displayed if you don't change the default password when you login the system for the first time.

Step 2 Input the old password, new password, and confirm password.
Step 3 Click **OK**.

If the message "**Change password success**" is displayed, the password is successfully changed. If the password fails to be changed, the cause is displayed. (For example, the new password length couldn't be less than eight.)

----End

2.4 Browse Video

User can browse the real-time video in the web management system.

Preparation

To ensure the real-time video can be played properly, you must perform the following operations when you log in to the web for the first time:

Step 1 Open Microsoft Edge. Choose **Control panel > Internet options > Security > Trusted sites > Sites**.

In the display dialog box, click **Add**, as shown in Figure 2-5.

Figure 2-5 Adding the trusted site
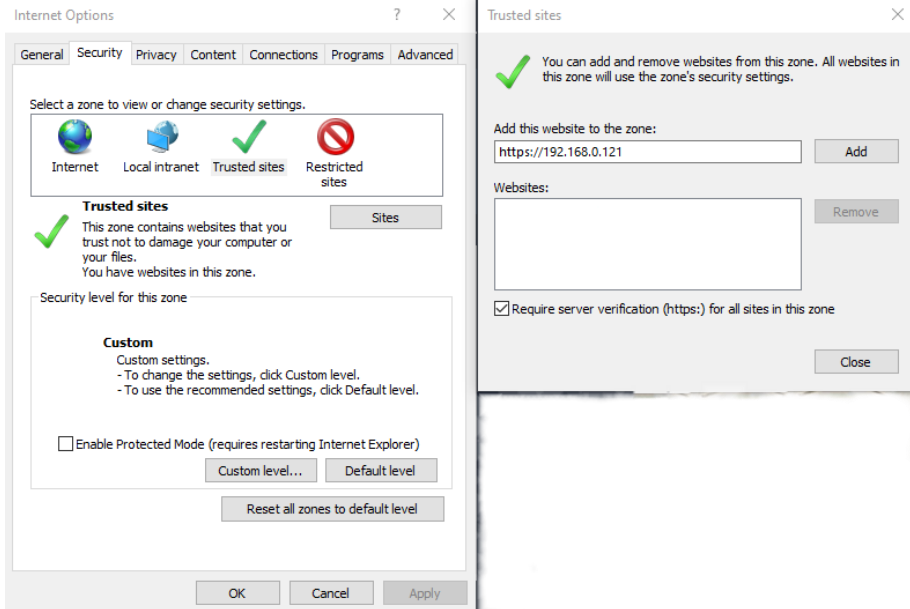
Step 2 In Microsoft Edge, choose **Control panel > Internet Options > Security > Customer level**, and set Download unsigned ActiveX control and initialize and script ActiveX controls not marked as safe for scripting under ActiveX controls and plug-ins to Enable, as shown in Figure 2-6.

Figure 2-6 Configuring ActiveX control and plug-ins
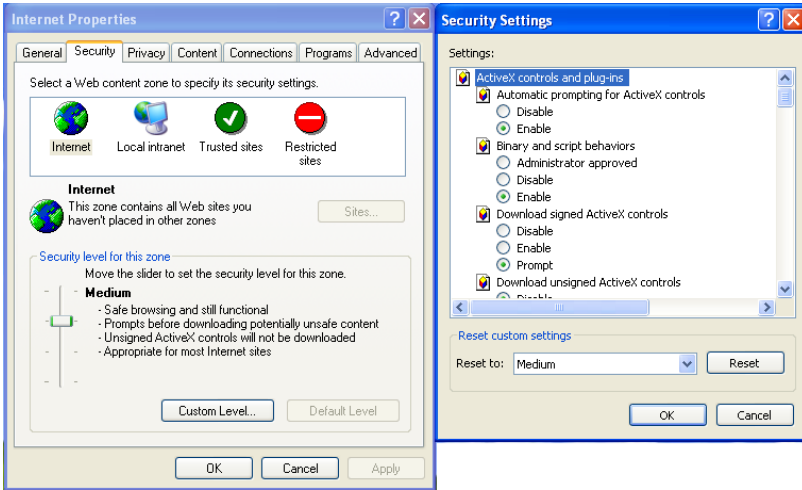
Step 3 Download and install the player control as prompted.

NOTE

- The login page is displayed when the control is loaded.

2.4.1 Install Plugins

You will be prompted with a message "**Download and install the new plugin**" as shown in Figure 2-7 when you log in to the web management system for the first time.

Figure 2-7 Download the plugin page
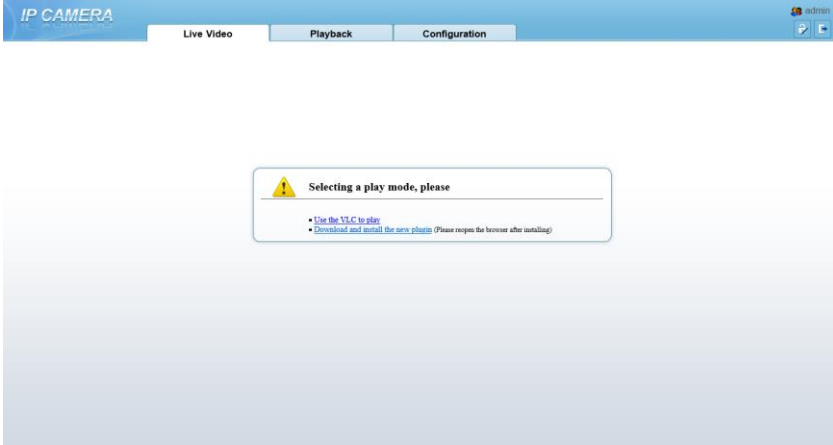
Procedure

Step 1 Click the message, download and install the plugin follow the prompts.
Step 2 Reopen the browser after installation.
Step 3 On live video page, you can operate these buttons as shown in live video.

NOTE

- Channel switch, click the live video, the red frame means the chosen channel.
- During installing plugins, you need to close the browser, finish the installation, login the device again.

----End

2.5 People Counting

At **People counting** interface, you can view the People counting throughout setting query condition (choose the detail time at date's pop up window).

There are three modes to show the data, such as line chart, histogram, and list, as shown in Figure 2-8.

Figure 2-8 People counting interface
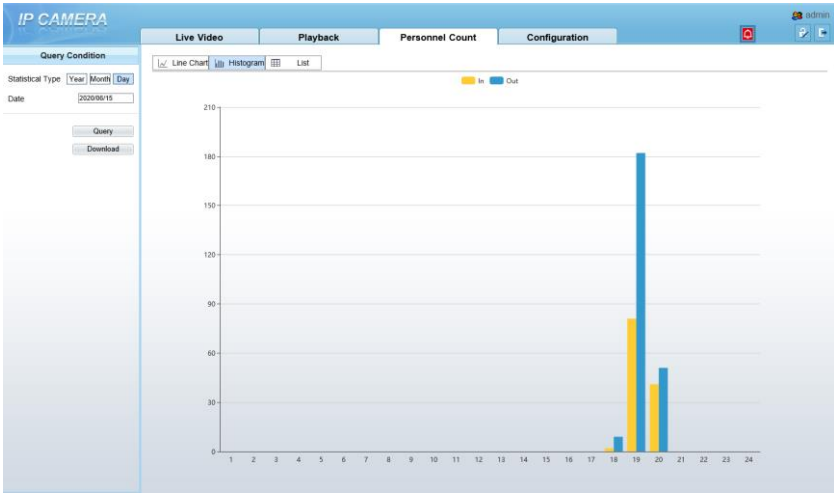
Click "Download" to download the query result.

Choose the mode of showing result, such as line chart, histogram, list.

Click "Query" to query the data of People counting.

User can download the result to local folder.

----End

2.6 Setting Local Network Parameters

Description

Local network parameters include:

- IP protocol
- IP address
- Subnet mask
- Default gateway
- Dynamic Host Configuration Protocol (DHCP)
- Preferred Domain Name System (DNS) server

- Alternate DNS server
- MTU

Procedure

Step 1 Choose **Configuration > Device > Local Network**.

The **Local Network** page is displayed, as shown in Figure 2-9.

Figure 2-9 Local Network

Step 2 Set the parameters according to Table 2-2.

Table 2-2 Local network parameters

Parameter	Description	Setting
IP Protocol	IPv4 is the IP protocol that uses an address length of 32 bits.	[Setting method] Select a value from the drop-down list box. [Default value] **IPv4**

Parameter	Description	Setting
DHCP	The device automatically obtains the IP address from the DHCP server.	[Setting method] Click the option button. NOTE To query the current IP address of the device, you must query it on the platform based on the device name.
DHCP IP	IP address that the DHCP server assigned to the device.	N/A
IP Address	Device IP address that can be set as required.	[Setting method] Enter a value manually. [Default value] **192.168.0.121**
Subnet Mask	Subnet mask of the network adapter.	[Setting method] Enter a value manually. [Default value] **255.255.255.0**
Default Gateway	This parameter must be set if the client accesses the device through a gateway.	[Setting method] Enter a value manually. [Default value] **192.168.0.1**
Preferred DNS Server	IP address of a DNS server.	[Setting method] Enter a value manually. [Default value] **192.168.0.1**
Alternate DNS Server	IP address of a domain server. If the preferred DNS server is faulty, the device uses the alternate DNS server to resolve domain names.	[Setting method] Enter a value manually. [Default value] **192.168.0.2**
MTU	Set the maximum value of network transmission data packets.	[Setting method] Enter a value manually. NOTE The MTU value is range from 1280 to 1500, the default value is 1500, Please do not change it arbitrarily.

Step 3 Click **OK**.

- If the message "**Apply success**" is displayed, click OK. The system saves the settings. The message "**Set network pram's success**, please login system again" is displayed. Use the new IP address to log in to the web management system.
- If the message "Invalid IP Address", "**Invalid Subnet Mask**", "**Invalid default gateway**", "**Invalid primary DNS**", or "**Invalid space DNS**" is displayed, set the parameters correctly.

NOTE

- If you set only the Subnet Mask, Default Gateway, Preferred DNS Server, and Alternate DNS Server parameters, you do not need to login to the system again.
- You can click Reset to restore the previous parameters if required.

----End

3 **Configuring Thermal**

3.1 Temperature Parameters

Temperature parameters include temperature unit, ambient type, ambient temperature, cavity temperature, correctional coefficient, area temperature display mode, area temperature type, measure mode, area alarm interval and so on.

Operation Procedure

Step 1 Choose **Configuration > Thermal > Temperature Parameters**.

The **Temperature Parameters** page is displayed, as shown in Figure 3-1.

Figure 3-1 Temperature Parameters interface

Step 2 Set the parameters according to Table 3-1.

Table 3-1 Temperature parameters

Parameter	Description	Setting
Temperature Measurement	Enable to measure temperature.	[Default value] **ON**

Parameter	Description	Setting
Temperature Unit	Celsius and Fahrenheit temperature units are available.	[Setting method] Select a value from the drop-down list box. [Default value] **Celsius**
Length Units	Meters and feet length units are available.	[Setting method] Select a value from the drop-down list box. [Default value] Meters
Cavity Temperature	The cavity temperature of camera.	N/A
Correction Coefficient	Correction coefficient refers to the deviation of measured object temperature and actual temperature, is offset value. For example: 1. The measured object temperature is 20, and actual temperature is 20.5, so the correction coefficient should be **0.5.** 2. The measured object temperature is 20, and actual temperature is 19.5, so the correction coefficient should be -0.5**.** NOTE User should contact the technical support staff of our company at this condition to make sure to apply	[Setting method] Enter a value manually. [Default value] **0.00**
Area ID display Mode	There two mode to display, area ID and area name	[Setting method] Select a value from the drop-down list box. [Default value] **Area ID**

Parameter	Description	Setting
Area Temperature Display Mode	The display position of temperature information on the live-video image.	[Setting method] Select a value from the drop-down list box. [Default value] **Low left**
Font Border	Enable to bold the font	[Setting method] Enable or disable [Default value] **Disable**
Font size	There are there font size can be chosen, small/mid/big	[Setting method] Enable or disable [Default value] **Mid**
Area Temperature Type	There are three types of area temperature.	[Setting method] Select a value from the drop-down list box. [Default value] **Highest Temperature**
Measure Mode	There are two types of measure modes.	[Setting method] Select a value from the drop-down list box. [Default value] **General**
Display Alarm Area	N/A	[Setting method] Enable or disable [Default value] **Disable**
Area Alarm Interval (1-1800s)	N/A	[Setting method] Enter a value manually ranges from 1 to 1800. [Default value] **10**
Area Alarm delay (0-10s)	N/A	[Setting method] Enter a value manually ranges from 1 to 10. [Default value] **10**

Parameter	Description	Setting
Temperature range	It depends on the device. Different devices have different modes, there are two ranges, such as -20 ℃ -150℃，-40 ℃-150℃, the thermal imaging box network camera is -40 ℃-150℃.	[Setting method] Select a value from the drop-down list box.
Prevent Overheating	Open, if temperature of the testing area is too high, you can enable prevent over heat function, the control cover will be lay down to keep the detector safe, there are two types, manual and auto.	[Setting method] Select a value from the drop-down list box.
Temper Duration (5-60s)	Prevent over heat' mode is auto, the control cover will block for duration time automatically if over heat.	[Setting method] Enter a value manually ranges from 5 to 60.
Control Cover	When prevent overheating mode is manual, the user should choose the action manually, such as pick up, lay down.	[Setting method] Select a value from the drop-down list box.

Figure 3-2 Advanced interface

Table 3-2 Advance parameters

Parameter	Description	Setting
Dimming Mode	There are auto and manual modes. It will show on temperature item.	[Setting method] Select a value from the drop-down list box. [Default value] **Auto**
Greater Prominent	Enable that, the image will show the setting color if the temperature is higher than set value.	[Setting method] Enter a value manually. Choose one color to show.
Section Prominent	Enable that, the image will show the setting color if the temperature is between minimum and maximum temperature.	[Setting method] Enter a value manually. Choose one color to show.
Less Prominent	Enable that, the image will show the setting color if the temperature is lower than set value.	[Setting method] Enter a value manually. Choose one color to show.

Parameter	Description	Setting
Raw Data Upload Interval(F/S)	Interval of Uploading the raw data.	[Setting method] Select a value from the drop-down list box. [Default value] **1**
Mix Stream Mode	This function is used for thermal and visible image to mix. There are close, mode 1 mode 2, and mode 3. The different models maybe have different displays; Please refer to the actual product.	[Default value] **Close**

----End

3.2 Ambient Temperature

Figure 3-3 Ambient temperature

Ambient Temperature

Ambient Temperature	25.00	℃
Cavity Temperature	21.75	℃

Refresh   Apply

Table 3-3 parameter of ambient temperature

Parameter	Description	Setting
Ambient Temperature	Environment temperature of camera.	[Setting method] Enter the temperature of ambient. [Default value] **25**
Cavity temperature	Set the cavity temperature, click "Apply", click "Refresh" ,the camera will get the value automatically.	---

----End

3.3 Temperature Alarm

Operation Procedure

Step 1 Choose **Configuration > Thermal > Temperature Alarm**.

The **Temperature Alarm** page is displayed, as shown in Figure 3-4.

Figure 3-4 Temperature alarm configuration

Step 2 Set the parameters according to Table 3-4.

Table 3-4 Temperature alarm configuration

Parameter	Description	Setting
Channel	Channel 1 is visible light channel. Channel 2 is thermal channel.	[Setting method] Select a value from the drop-down list box. [Default value] 1

Parameter	Description	Setting
Measure Mode	Set at temperature parameter interface.	N/A
Enable	Tick the ID to enable the area measuring.	[Setting method] Tick
Name	Area name of temperature area.	[Setting method] Enter a value manually.
Type	Type of temperature area. ID 0 is default rectangle area, which is full screen.	[Setting method] Select a value from the drop-down list box. [Default value] **Rectangle/Point**
Alarm Type	Threshold alarm, temperature difference alarm, section alarm, temperature rise alarm are available for alarm type. Section Alarm: if the temperature value is among the set temperature range, it will generate the alarm. Temperature rise alarm means it the rising temperature value is more than the set value, it will generate the alarm.	[Setting method] Select a value from the drop-down list box. [Default value] **Threshold alarm**
Warning Value	Camera will trigger warning alarm when the object temperature reaches the warning value.	[Setting method] Enter a value manually. [Default value] **48**
Alarm Value	Camera will alarm when the object temperature reaches the alarm value.	[Setting method] Enter a value manually. [Default value] **50**
Maximum Alarm Value	At section alarm type, the device would not alarm when the temperature is higher than maximum alarm value.	[Setting method] Enter a value manually. [Default value] **60.00**
Duration (1-10S)	Choose temperature rise alarm, set the duration, the temperature rise the value and it is kept for duration setting, the alarm is triggered successfully.	[Setting method] Enter a value manually. [Default value] **1.00**

Parameter	Description	Setting
Emission Rate	The emission rate is the capability of an object to emit or absorb energy. The emission rate should be set only when the target is special material.	[Setting method] Enter a value manually. [Default value] **0.95**
Distance(M)	The distance between camera and target.	[Setting method] Enter a value manually. [Default value] **15** 📖 NOTE Enter actual distance when the distance between camera and target is less than 15m.Enter 15 when the distance between camera and target is great than or equal to 15m.
Alarm	Enable or disable the alarm output and linkage of area.	[Setting method] Tick the alarm output channel .

Parameter	Description	Setting
Group ID	The ID can be chosen into one of six groups, or no group. The group will be alarm following as the next rules: A=The highest temperature of groups (the highest temperature of N regions is the largest) B=Average temperature of groups (average temperature of N regions) WA=Warning value AA=Alarm value a. If A-B >= WA, a temperature difference warning signal is generated ---> (the one with the largest difference between the N areas and the average temperature is the alarm area flashing) b. If A-B >= AA, a temperature difference alarm signal is generated ---> (the one with the largest difference between the N areas and the average temperature is the alarm area flashing) c. If the warning and alarm conditions are met at the same time, the alarm signal will be generated first.	[Setting method] Select a value from the drop-down list box.

Step 3 Set temperature area.

1. Tick an area ID.
2. Press and hold the left mouse button, and drag in the video area to draw a temperature area, as shown in Figure 3-5. Right-click to finish the area selected.

Figure 3-5 Temperature Area Setting Interface

Temperature Area And Alarm Configuration

| Channel | | | | | | | 1 | | |
| Measure Mode | | | | | | | General | | |

Enable	ID	Name	Type	Alarm Type	Warning Value	Alarm Value	Emission Rate	Distance(M)	Alarm
☑	0	Area0	Rectangle▼	Threshold Alarm▼	48.00	50.00	0.95	15.00	☐
☑	1	Area1	Line ▼	Threshold Alarm▼	48.00	50.00	0.95	15.00	☐
☐	2	Area2	Polygon ▼	Threshold Alarm▼	48.00	50.00	0.95	15.00	☐
☐	3	Area3	Line ▼	Threshold Alarm▼	48.00	50.00	0.95	15.00	☐
☐	4	Area4	Point ▼	Threshold Alarm▼	48.00	50.00	0.95	15.00	☐
☐	5	Area5	Point ▼	Threshold Alarm▼	48.00	50.00	0.95	15.00	☐

3. Click **Apply**, the message "Apply success" is displayed, the temperature area is set successfully.

📖 **NOTE**

ID 0 is the full screen; the area cannot be changed.

⬦ : the lowest temperature of the full screen.

⬦ :the highest temperature of the full screen.

✕ : the lowest temperature of the area.

✚ : the highest temperature of the area.

Delete a temperature area:
1. Select an area ID.
2. Click the temperature area and right-click.
3. Remove the tick of area ID.
4. Click **Apply**, the message "Apply success" is displayed, the temperature area is deleted successfully.

Step 4 Click **Apply**.

The message "Apply success" is displayed, the system saves the settings.

----End

3.4 Privacy Zone Masking

Privacy zone masking is meaning that the camera will do not detect the temperature of that area. The shield areas can be set up to four areas.

Operation Procedure

Step 1 Choose **Configuration > Thermal > Privacy Zone Masking**.

Figure 3-6 Privacy Zone Masking

Step 2 Enable the shield area.

Step 3 Enable **Show Privacy Zone Masking,** then the setting shield will show on live video.

Step 4 Click-left mouse button to set area; Click-right mouse button to end the setting.

Step 5 Click **Clear** to clear the shield area.

   ----End

3.5 Schedule Linkage

Operation Procedure

   Step 1 Choose **Configuration > Thermal > Schedule Linkage.**

   The **Schedule Linkage** page is displayed, as shown in Figure 3-7.

Figure 3-7 Schedule Linkage

Step 2 Tick the output channel.
Step 3 Enable "Alarm Record", "SMTP","FTP upload", audible alarm button.
Step 4 Set schedule linkage.

   Method 1： Click left mouse button to select any time point within 0:00-24:00 from Monday to Sunday.

   Method 2： Hold down the left mouse button, drag and release mouse to select the alarm time within 0:00-24:00 from Sunday to Saturday.

📖 **NOTE**

When you select time by dragging the cursor, the cursor cannot be moved out of the time area. Otherwise, no time can be selected.

Method 3：Click 🔄 in the alarm time page to select the whole day or whole week.

Deleting alarm time: Click 🔄 again or inverse selection to delete the selected alarm time.

Step 5 Click **Apply**.
Step 6 The message "Apply success" is displayed, the system saves the settings.

📖 **NOTE**

● Alarm output: Users should connect the external alarm device (such as siren) to alarm output cables. The parameter can be set at " **Configuration > Alarm > Alarm Output**" interface, as shown in Figure 3-8.
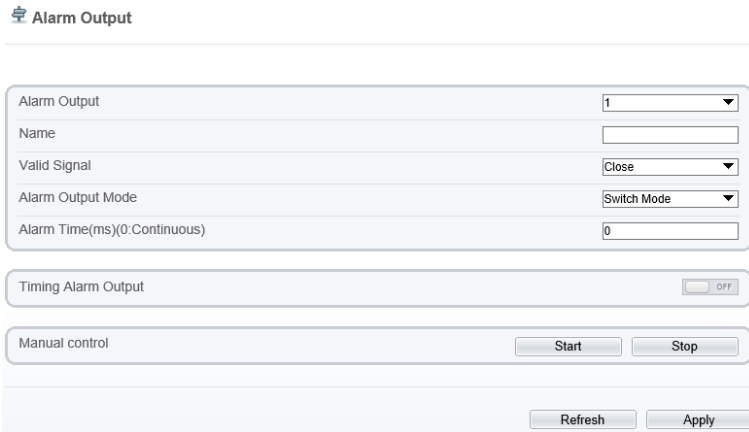
Figure 3-8 Alarm Output

Table 3-5 Alarm Output

Parameter	Description	Setting
Alarm Output	ID of the alarm output channel. NOTE 　The number of alarm output channels depends on the device model.	[Setting method] Select a value from the drop-down list box. [Default value] **1**
Name	Alarm output channel name.	[Value range] 0 to 32 bytes

Parameter	Description	Setting
Valid Signal	The options are as follows: **Close**: An alarm is generated when an external alarm signal is received. **Open**: An alarm is generated when no external alarm signal is received.	[Setting method] Select a value from the drop-down list box. [Default value] **Close**
Alarm Output Mode	When the device receives I/O alarm signals, the device sends the alarm information to an external alarm device in the mode specified by this parameter. The options include the switch mode and pulse mode. NOTE ● If the switch mode is used, the alarm frequency of the device must be the same as that of the external alarm device. ● If the pulse mode is used, the alarm frequency of the external alarm device can be configured.	[Setting method] Select a value from the drop-down list box. [Default value] **Switch Mode**
Alarm Time (ms) (0: Continuous)	Alarm output duration. The value **0** indicates that the alarm remains valid.	[Setting method] Enter a value manually. [Default value] 0 [Value range] 0 to 86400 seconds
Timing Alarm Output	Enable timing alarm output, set the schedule to time alarm.	[Setting method] Enable [Default value] **OFF**
Manual Control	Control the alarm output.	N/A

● SMTP: At " **Configuration > Network > SMTP**" interface, users should set the parameters of SMTP in advance, as shown in Figure 3-9.

Figure 3-9 SMTP

Table 3-6 SMTP Parameters

Parameter	Description	Setting
SMTP Server Address	IP address of the SMTP server.	[Setting method] Enter a value manually.
SMTP Server Port	Port number of the SMTP server.	[Setting method] Enter a value manually. [Default value] **25**
User Name	User name of the mailbox for sending emails.	[Setting method] Enter a value manually.
Password	Password of the mailbox for sending emails.	[Setting method] Enter a value manually.
Sender E-mail Address	Mailbox for sending emails.	[Setting method] Enter a value manually.
Recipient_E-mail_Address 1	(Mandatory) Email address of recipient 1.	[Setting method] Enter a value manually.

Parameter	Description	Setting
Recipient_E-mail_Address 2	(Optional) Email address of recipient 2.	
Recipient_E-mail_Address 3	(Optional) Email address of recipient 3.	
Recipient_E-mail_Address 4	(Optional) Email address of recipient 4.	
Recipient_E-mail_Address 5	(Optional) Email address of recipient 5.	
Attachment Image Quality	A higher-quality image means more storage space. Set this parameter based on the site requirement.	N/A
Transport Mode	Email encryption mode. Set this parameter based on the encryption modes supported by the SMTP server.	[Setting method] Select a value from the drop-down list box. [Default value] **No Encrypted**

●FTP Upload: At " **Configuration > Network > FTP**" interface, users should set the parameters of FTP upload in advance, as shown in Figure 3-10.

Figure 3-10 FTP Upload

Table 3-7 FTP Upload Parameters

Parameter	Description	Setting
FTP Upload	Indicates whether to enable the FTP service.	[Setting method] Click the button on. [Default value] **OFF**
FTP Address	IP address of FTP server.	[Setting method] Enter a value annually.
FTP Port	Port of FTP server.	[Setting method] N/A [Default value] **21**
Account	FTP server account.	[Setting method] Enter a value annually.
Password	FTP server Password.	[Setting method] Enter a value annually.
FTP Path	FTP Path to save the JPG image.	[Setting method] Enter a value annually.

Parameter	Description	Setting
Media Type	The media type of sending to FTP, snapshot or video clip.	[Setting method] Select a value from the drop-down list box. [Default value] Snapshot
FTP over SSL/TLS (FTPS)	Transfer the file by encrypting.	[Setting method] Tick to enable.

● Audible Alarm output: At " **Configuration > Alarm > Audible Alarm Output**" interface, users should set the parameters of audible alarm output in advance, as shown in Figure 3-11.

Figure 3-11 Audible Alarm Output

User can set the audio file manually. Click ⬆️ to upload the audible file (The type should be WAV, size must be less than 250 Kb, the bit rate should be 128 kbps.), as shown in Figure 3-12.

Figure 3-12 Upload Audio File

Upload Audio File	×
	Please select audio file 📁
	OK Cancel
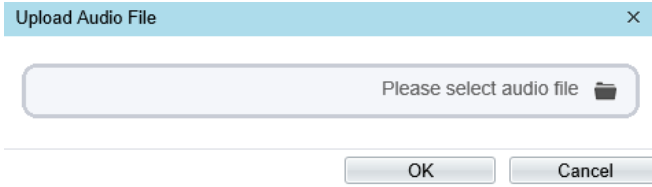
----End

3.6 Thermal Mapping

Thermal mapping is used to map accurately the location of detecting area to the visual channel. The mapping has three points, user can choose the right locations to map, the three points should not be too close.

📖 NOTE

● The images have been calibrated before leaving the factory and can be used directly. If the highest temperature detection point is deviating on the visible light image, it needs to be re-calibrated.

Operation Procedure

Step 1 Choose **Configuration** > **Thermal > Thermal Mapping,** as shown in Figure 3-13.

Figure 3-13 Thermal mapping interface
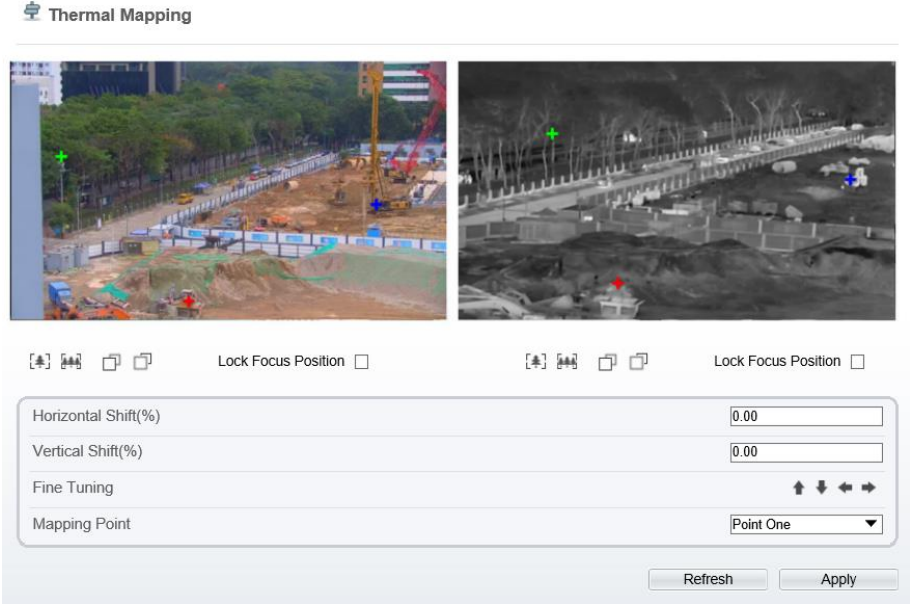
Step 2 Settings please refer to Table 3-8.

Table 3-8 Parameter of thermal mapping

Parameter	Description	Setting
Horizontal Shift(%)	Adjust horizontal position of area which is on visual image.	[Setting method] Input value
Vertical Shift(%)	Adjust vertical position of area which is on visual image.	[Setting method] Input value
Fine Tuning	Click the icon to adjust the position trifle.	[Setting method] Click
Mapping Point	You need map three points at two channels. Points are correspond of each. The three points should cover most areas, and two points are located in the diagonal display of the picture. Point one is green cross. Point two is red cross. Point three is blue cross.	[Setting method] Select from drop list .

Step 3 Click **Apply**. The message "**Apply success**" is displayed, the system saves the settings.

----End

3.7 Defect Pixel Correction

Operation Procedure

Step 1 Choose **Configuration > Thermal > Defect Pixel Correction**.

The **Defect Pixel Correction** page is displayed, as shown in Figure 3-14.

If the image has a white dot as shown in figure, user can test the function to recover the defect pixel. Users should connect the technical support at this condition to make sure to apply.

Figure 3-14 Defect pixel correction

Step 2 Click the white point at image, click **Refresh** to recover the defect pixel, as shown in Figure 3-15.

Figure 3-15 Recover defect pixel

Step 3 Click **Apply.** The message "Apply success" is displayed, the system saves the settings.

----End

4 **Visible Image Settings**

4.1 Accessing the Image Settings Interface

Procedure

Step 1 On the web, move the cursor to the real-time video page and right-click on the page. A shortcut menu is displayed, as shown in Figure 4-1.

Figure 4-1 Sensor setting interface
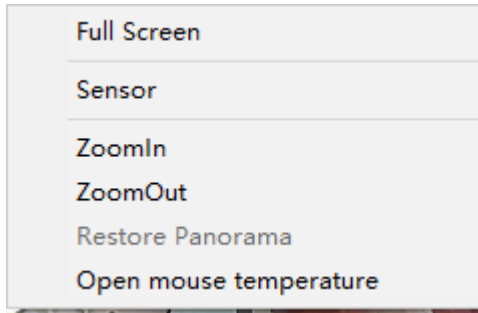
Or at "Configuration > Image Settings" interface to set, as shown in Figure 4-2.

Figure 4-2 Image settings
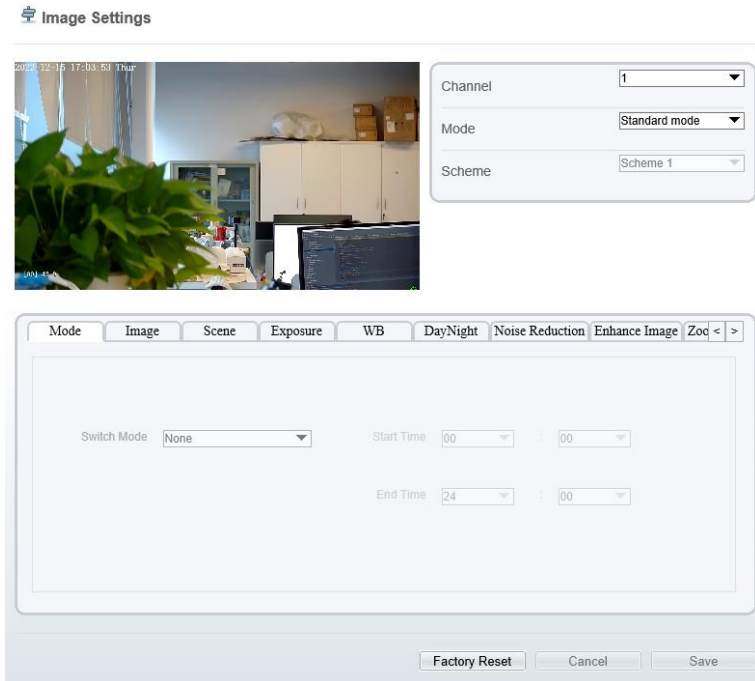
Step 2 Choose **Sensor** and the **Image Settings** dialog box appears.

📖 NOTE

- All image configure can be modified at debug mode. Click Standard ▼ in the lower left corner of Sensor Setting, and choose **Debug Mode.**

----End

4.2 Mode

Step 1 Click Standard ▼ in the lower left corner of Sensor Setting, and choose **Debug Mode**. As shown in Figure 4-3.

Figure 4-3 Mode
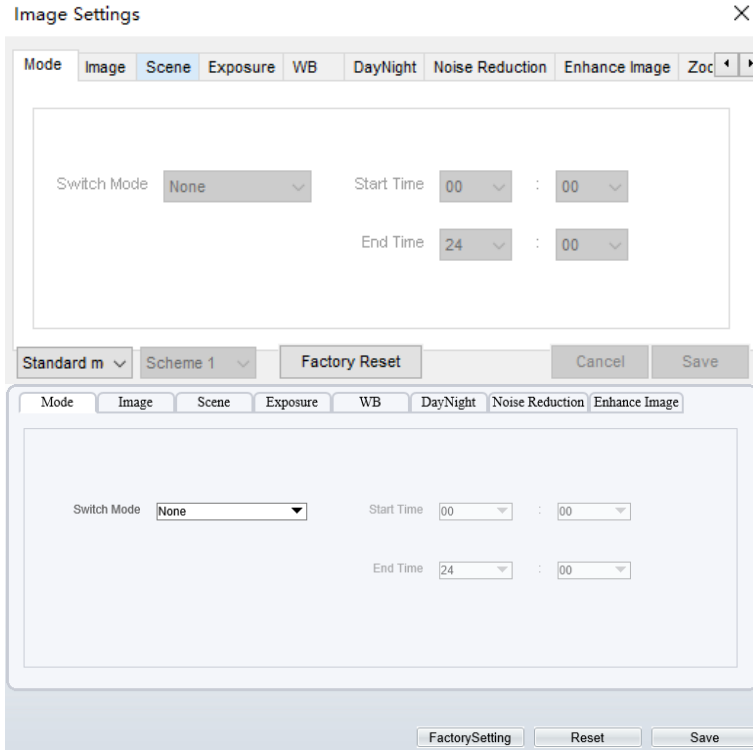
Step 2 Choose the **switch mode** from the drop-down list.
Step 3 Time mode: Set the **Start Time**, set the **End Time**.
Step 4 Click **Save**, the message "**Save succeed**" is displayed, the system saves the settings.

----End

4.3 Image

Figure 4-4 shows the Image Adjust tab page.

Figure 4-4 Image
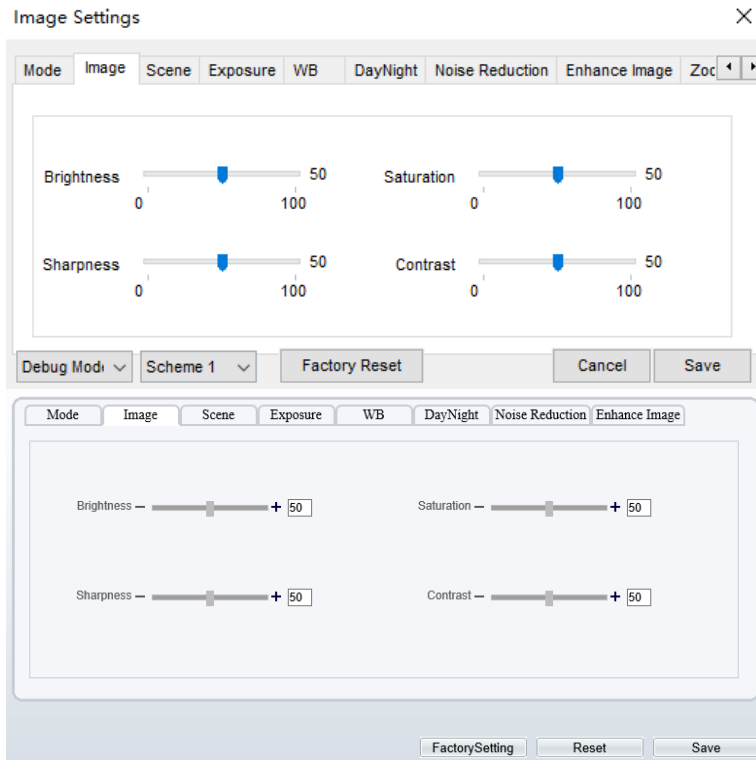
Table 4-1 describes the parameters on the Image tab page.

Table 4-1 Parameters of Image

Parameter	Description	Configuration Method
Brightness	It indicates the total brightness of an image. As the value increases, the image becomes brighter.	[Setting method] Drag the slider. [Default value] 50
Sharpness	It indicates the border sharpness of an image. As the value increases, the borders become clearer, and the number of noise points increases.	[Setting method] Drag the slider. [Default value] 50

Saturation	It indicates the color saturation of an image. As the value increases, the image becomes more colorful.	[Setting method] Drag the slider. [Default value] 50
Contrast	It indicates the measurement of different brightness levels between the brightest white and darkest black in an image. The larger the difference range is, the greater the contrast; the smaller the difference range is, the smaller the contrast	[Setting method] Drag the slider. [Default value] 50

----End

4.4 Scene

Figure 4-5 shows the scene tab page.

Figure 4-5 Scene
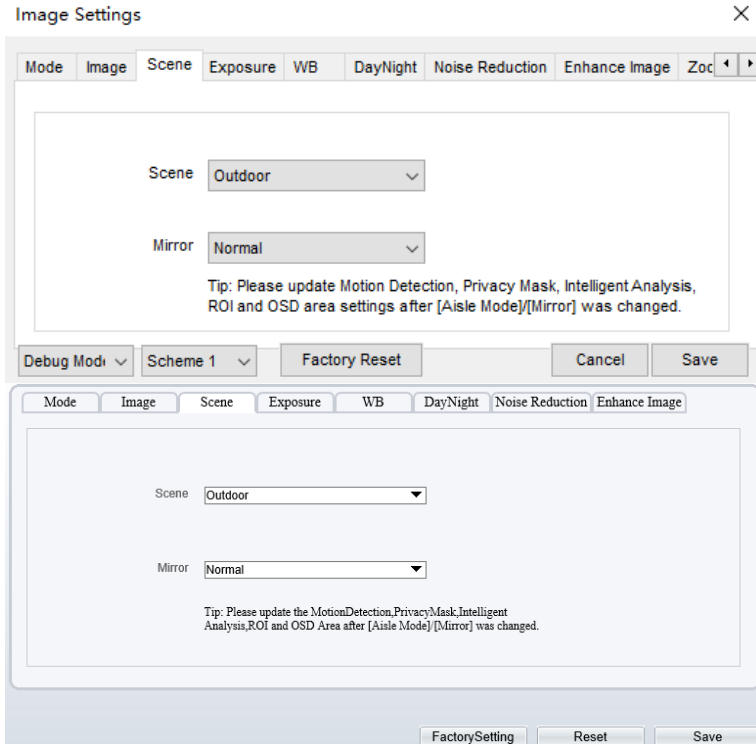
Table 4-2 describes the parameters on the scene tab page.

Table 4-2 Parameters of scene

Parameter	Description	Configuration Method
Scene	Indoor or outdoor.	[Setting method] Select a value from the drop-down list. [Default value] **Indoor**
Mirror	It is used to select the pixel location of an image. • Normal: The image does not flip. • Horizontal: The image flips to the left and right. • Vertical: The image flips up and down. • Horizontal+ Vertical: The image rotates at 180 degrees.	[Setting method] Select a value from the drop-down list. [Default value] **Normal**

----End

4.5 Exposure

Figure 4-6 shows the Exposure tab page.

Figure 4-6 Exposure
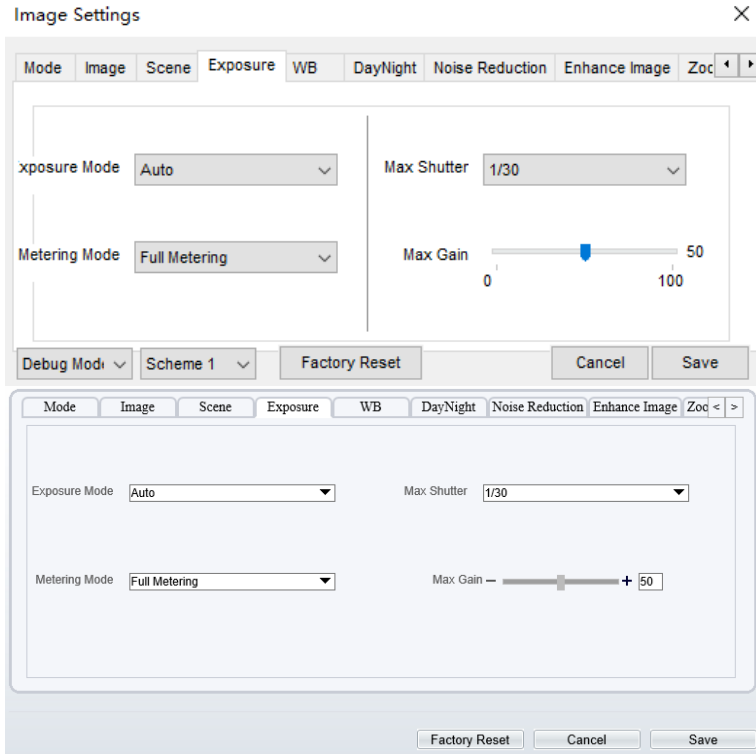
Table 4-3 describes the parameters on the Exposure setting tab page.

Table 4-3 Parameters of exposure setting

Parameter	Description	Configuration Method
Exposure Mode	The exposure modes include: • Auto: The system performs auto exposure based on the monitoring environment. • Manual: You can set Shutter Setting to fixed values manually. • Shutter Priority: You can set Shutter Setting to fixed values. The shutter and gain are automatically adjusted by the system.	[Setting method] Select a value from the drop-down list. [Default value] **Auto**

Metering mode	Choose the mode to meter, there are full metering, spot metering, and partial metering.	[Setting method] Select a value from the drop-down list. [Default value] **Full Metering**
Max Shutter	It is valid in Iris Priority mode. You can select a maximum shutter speed. As the value increases, the image becomes brighter.	[Setting method] Select a value from the drop-down list. [Default value] **1/25**
Max gain	It indicates the maximum gain. The device automatically adjusts the gain based on the external light, and the gain is less than or equal to the value of this parameter.	[Setting method] Drag the slider. [Default value] **50**

----End

4.6 WB

Figure 4-7 shows the WB tab page.

Figure 4-7 WB
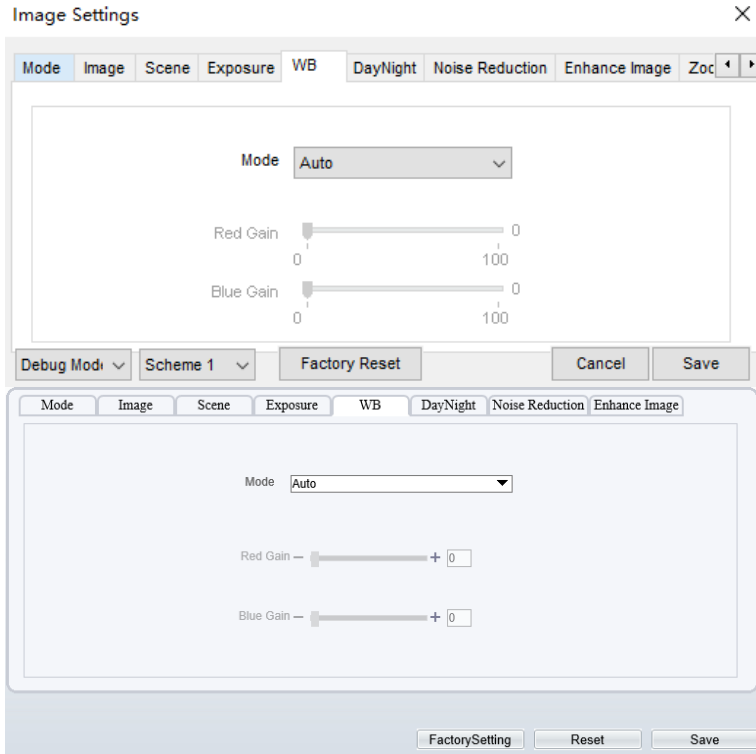
Table 4-4 describes the parameters on the WB tab page.

Table 4-4 Parameters of WB

Parameter	Description	Configuration Method
Mode	It is used to display the real color of a monitoring scenario when the color temperature changes. • Auto: camera adjusts automatically. • Tungsten: at Tungsten lamp Environment. • Fluorescent: fluorescent environment. • Daylight: at daylight environment. • Shadow: at low light environment. • Manual: adjust red and blue gain manually.	[Setting method] Select a value from the drop-down list. [Default value] **Auto**

----End

4.7 DayNight

Figure 4-8 shows the day-night tab page.

Figure 4-8 Day-night
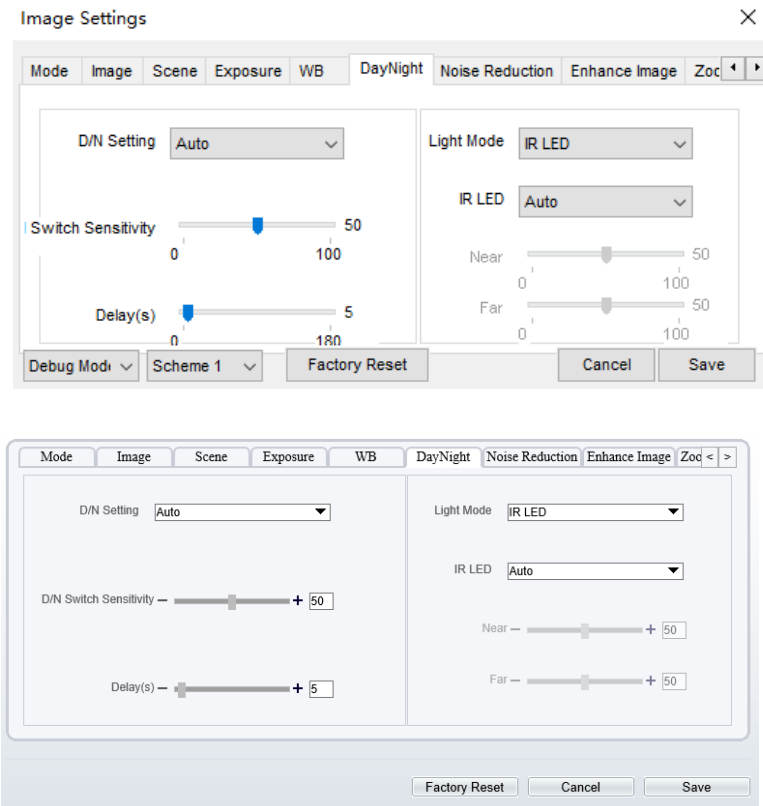
Table 4-5 describes the parameters on the Special Function tab page.

Table 4-5 Parameters of day night

Parameter	Description	Configuration Method
DayNight Mode	It can be set to Auto, Day Mode, Night Mode and Timing. • Auto mode The image color is adjusted based on the day/night mode. In auto mode, the image switches between the colored state and the black and white state based on the brightness. In day mode, the image is colored. In night mode, the image is black and white. • Day mode The image is colored, and the filter is in the day state, preventing infrared light from entering the sensor. • Night mode The image is black and white, and the filter is in the night state, allowing all types of light to enter the sensor. • Timing Select time from the drop-down list by the "Day to Night Time" and "Night To Day Time".	[Setting method] Select a value from the drop-down list. [Default value] **Day Mode**
Trans (D to N)	Day transit to night.	[Setting method] Drag the slider. [Default value] **50**
Trans (N to D)	Night transit to day.	[Setting method] Drag the slider. [Default value] **50**
Delay	N/A	[Setting method] Drag the slider. [Default value] **5**

Near	When the IR LED is manual mode, users can adjust the strength of IR LEDs which are operating on near distance.	[Setting method] Drag the slider. [Default value] **50**
Far	When the IR LED is manual mode, users can adjust the strength of IR LEDs which are operating far distance.	[Setting method] Drag the slider. [Default value] **50**

----End

4.8 Noise Reduction

Figure 4-9 shows the noise reduction tab page.

Figure 4-9 Noise Reduction
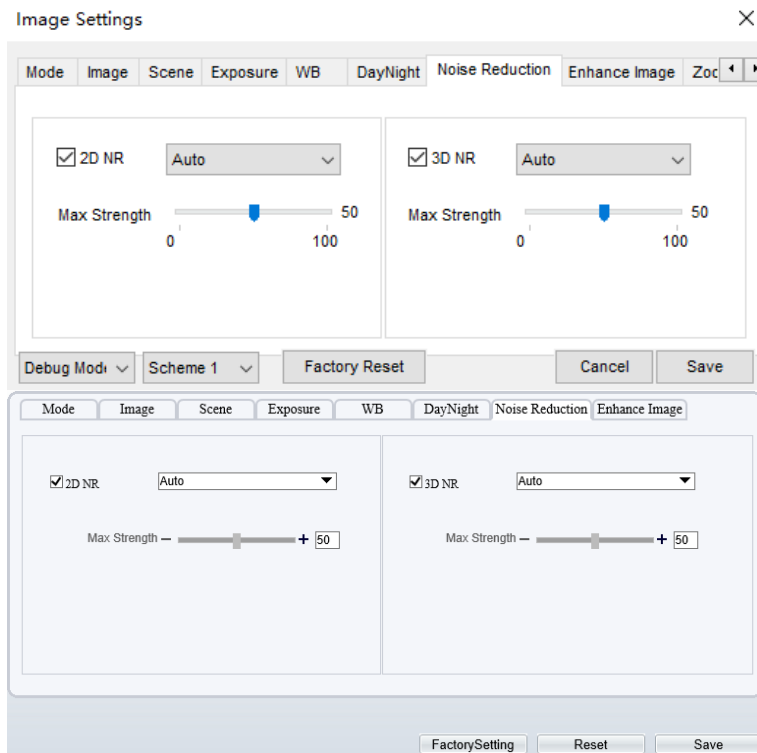
Table 4-6 describes the parameters on the Special Function tab page.

Table 4-6 Parameters of noise reduction

Parameter	Description	Configuration Method
2D NR	Auto /manual, default value is auto. By comparing and screening the images of the two frames before and after, the noise point position is found out and gain control is carried out on them.	[Setting method] Drag the slider strength. [Default value] **Auto / 50**
3D NR	Auto /manual, default value is auto. The 3D digital noise reduction function can reduce the noise interference of the weak signal image.	[Setting method] Drag the slider of strength. [Default value] **Auto / 50**

----End

4.9 Enhance Image

Figure 4-10 shows the enhance image tab page.

Figure 4-10 Enhance image
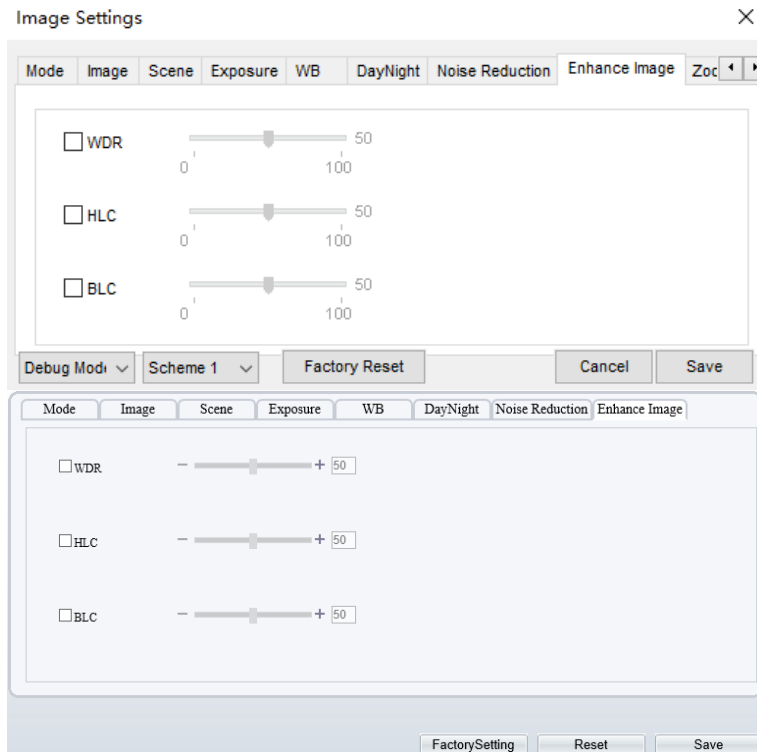
Table 4-7 describes the parameters on the enhance image setting tab page.

Table 4-7 Parameters of enhance image

Parameter	Description	Configuration Method
WDR	It is intended to provide clear image performance in strong backlight areas such as exterior light coming through a window or glass door. High contract light conditions are no longer a problem when you need to capture detailed images.	[Setting method] Drag the slider. [Default value] **50**
HLC	It indicates reverse bright points in the picture to black. As an effective approach to recognize vehicle plate number at night, HLC function can detect any spotlight diffused by object-vehicle and compensate it for obtaining clearer image.	[Setting method] Drag the slider. [Default value] **50**

| BLC | It indicates Back Light Compensation (BLC) automatically brings more detail to darker areas of an image when bright light shining from behind obscures it and provides perfect exposure for an object in front of very strong back light. The electronic shutter of the camera basically adjusts its exposure to try to allow for more light to be allowed in the darker areas.

📖 NOTE
This parameter applies only to visible light. | [Setting method]
Drag the slider.
[Default value]
50 |

----End

4.10 Zoom Focus

shows the zoom focus tab page

Figure 4-11 Zoom focus
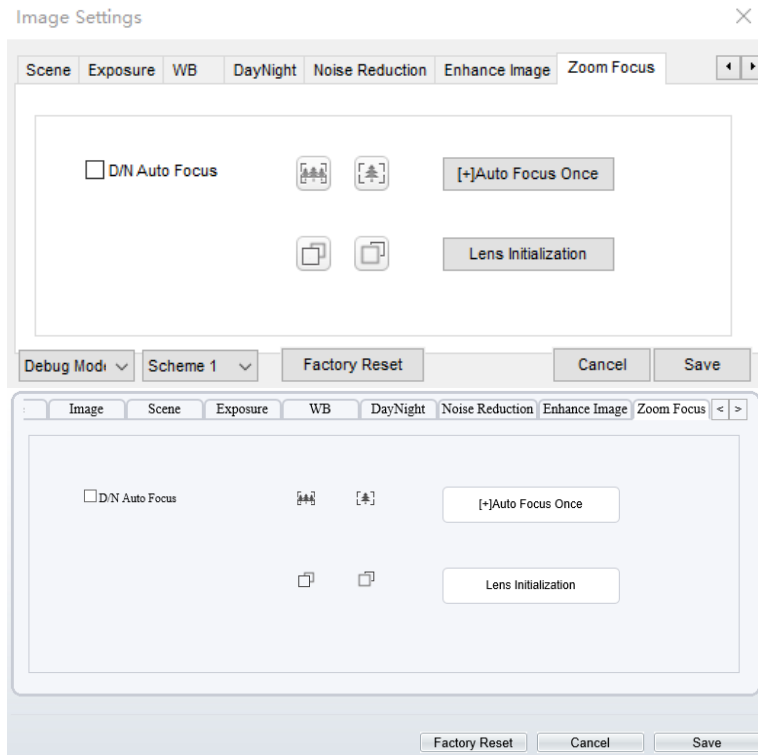
Table 4-8 Parameters of zoom focus

Parameter	Meaning	Configuration Method
D/N Auto Focus	It is used to trigger auto focus when day to night or night to day.	[Setting method] Tick the Auto focus.
Auto Focus Once	Click to trigger once auto focus.	[Setting method] Click the button.
Lens initialization	The lens of camera returns to the initial position.	[Setting method] Click the button.

5 Thermal Image Settings

5.1 Accessing the Image Interface

Operation Procedure

Step 1 On the web interface, choose thermal channel and right-click the surveillance
image to the set, as shown in Figure 5-1.

Figure 5-1 The image configuration

Full Screen
Sensor
ZoomIn
ZoomOut
Restore Panorama
Open mouse temperature
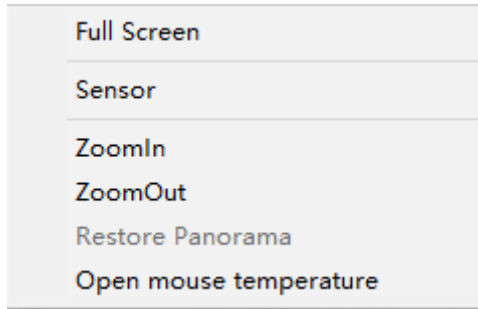
Or at "**Configuration > Image Setting**" interface, channel switch to channel 2 to set, as
shown in Figure 5-2.

Figure 5-2 Thermal channel image setting
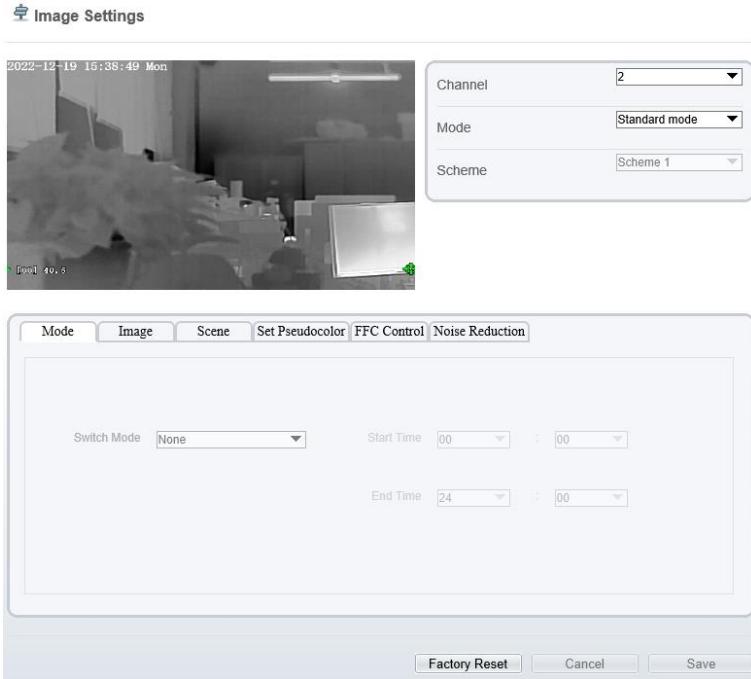
Step 2 Choose **Sensor**. The **Image Settings** dialog box is displayed, as shown in Figure 5-3.

----End

5.2 Mode

Figure 5-3 shows the Mode interface.

Figure 5-3 Mode interface
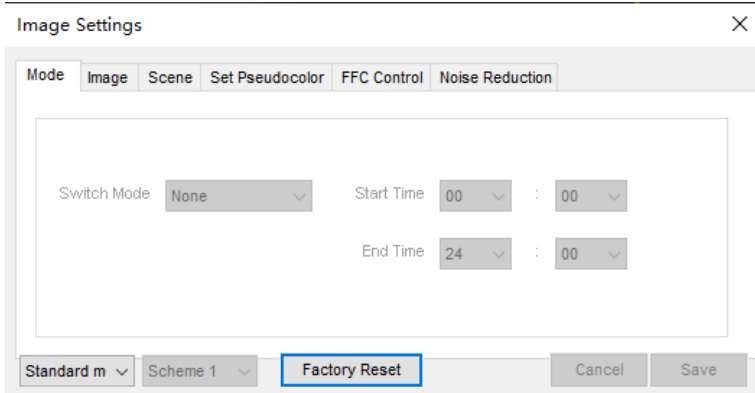
Operation Procedure

Step 1 Click Standard ▼ in the lower left corner of Sensor Setting, and choose Debug
Mode.
Step 2 Choose switch mode from the drop-down list
Step 3 Time mode: Set the Start Time, set the End Time.
Step 4 Click Save, the message " Save succeed " is displayed, the system saves the
settings.

----End

5.3 Images

Figure 5-4 shows the **Image** setting interface.

Figure 5-4 Image setting interface
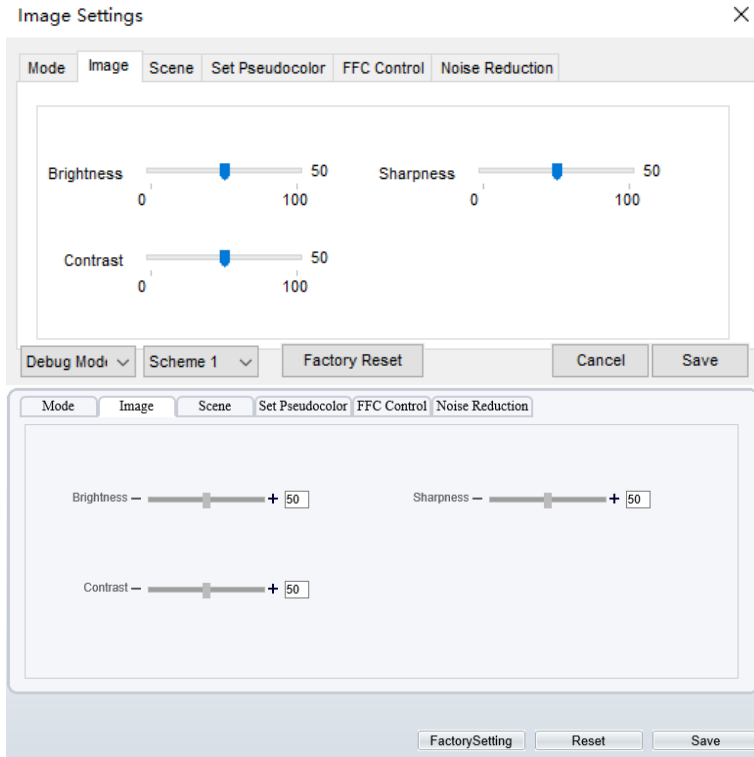
Step 1 Click [Standard ▼] in the lower left corner of Sensor Setting, and choose Debug Mode.

Step 2 Drag the slider to adjust parameter of image.

Step 3 Click Save, the message "Save succeed" is displayed, the system saves the settings.

📖 **NOTE**

- Brightness :It indicates the total brightness of an image. As the value increases, the image becomes brighter. It ranges from 0 to 100.
- Contrast ： It indicates the contrast between the bright part and the dark part of an image. As the value increases, the contrast increases. It ranges from 0 to 100.
- Sharpness: it indicates the contrast between definition and edge sharpness. The higher value, the higher definition and greater distortion. It ranges from 0 to 100.

----End

5.4 Scene

Figure 5-5 shows the **Scene** setting interface.

Figure 5-5 Scene setting interface
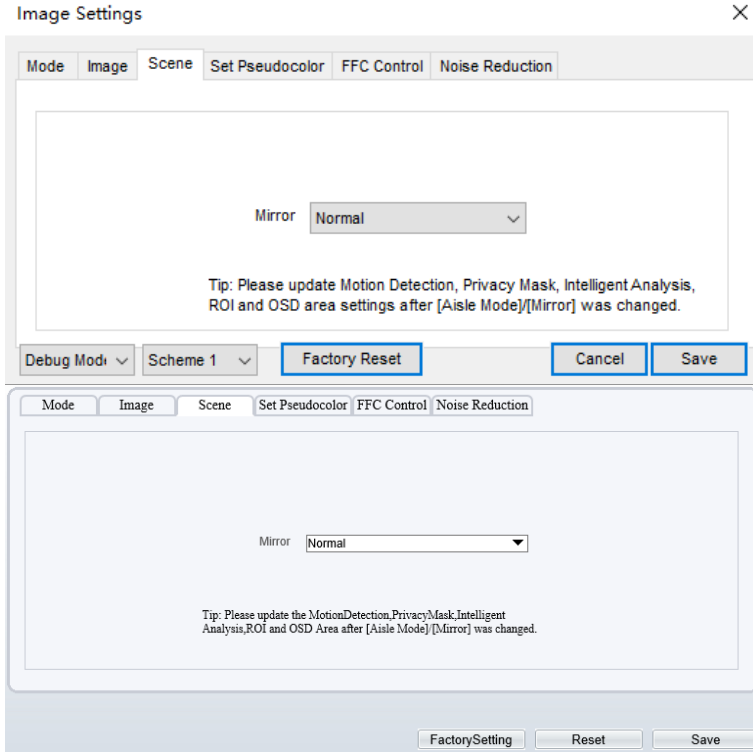
 Step 1 Click Standard in the lower left corner of Sensor Setting, and choose scene
Step 2 Choose mirror mode from drop-list.
Step 3 Click Save, the message "Save succeed" is displayed, the system saves the settings.

📖 **NOTE**

- Mirror providing the selection of image pixel locations.
- Normal: the image is not flipped.
- Horizontal: the image is flipped left and right.
- Vertical: the image is flipped up and down.
- Horizontal + Vertical: the image is rotated at 180 degree.

----**End**

5.5 Set Pseudocolor

Figure 5-6 shows the **Set pseudocolor** setting interface.

Figure 5-6 Set pseudocolor setting interface
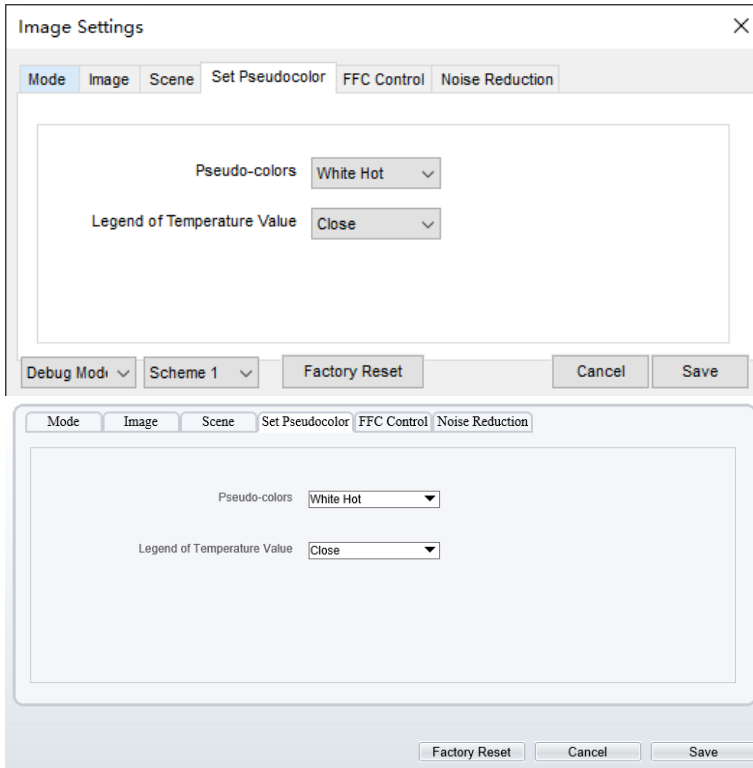
Step 1 Click **Standard ▼** in the lower left corner of Sensor Setting, and choose set
pseudo color.
Step 2 Choose pseudo-colors mode from drop-list.
Step 3 Enable or disable the legend of temperature value.
Step 4 Click **Save**, the message "Save succeed" is displayed, the system saves the settings.

📖 **NOTE**

- The temperatures of the temperature fields detected by the thermal imaging camera are separately mapped to values ranging from 0 to 255 by the algorithm. In the black/white display mode, this range is converted to the gray scale tones. For example, 0 indicates completely black, and 255 indicates completely white. The temperature field of the scene is converted to images by using the grayscale ranging from 0 to 255. Different polarity modes can be converted to different display images. The most common setting is white hot (a hotter object is displayed brighter than a colder object) or black hot (a hotter object is displayed darker than a colder object). The difference between two modes lies in that the temperatures corresponding to the darker one and the lighter one are reversed. Other modes include rainbow, ironbow, HSV, autumn, bone and so on.
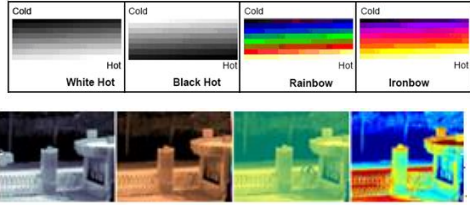
5.6 FFC Control

Figure 5-7 shows the **FFC control** interface.

Figure 5-7 FFC control interface
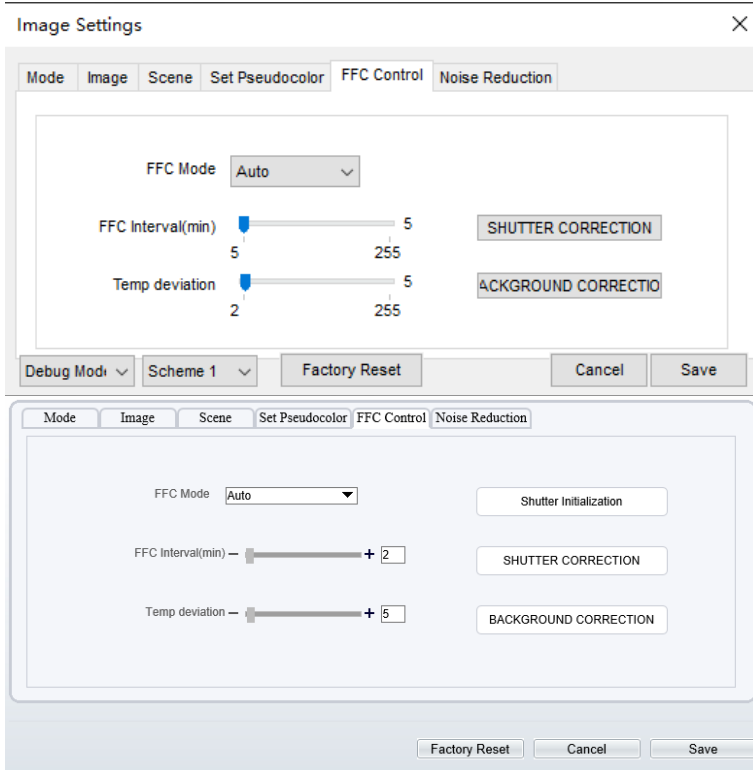
Table 5-1 lists the parameters on the FFC control interface.

Table 5-1 Parameters on the FFC control interface

Parameter	Description	Setting
FFC Mode	The internal of the thermal imaging camera may comprise the mechanical action correction mechanism that can periodically improve the image quality. This component is called flat field correction (FFC). When controlling the FFC, the FFC shields the sensor array, so that each portion of the sensor can collect uniform temperature fields (flat field). By means of FFC, the camera can update the correction coefficients to output more uniform images. Throughout the FFC process, the video image is frozen for two seconds and a static-frame image is displayed. After the FFC is complete, the image is automatically recovered.	[How to set] Select from the drop-down list box. [Default value] Auto

Parameter	Description	Setting
	Repeated FFC operations can prevent the grainy and image degradation problems. The FFC is especially important when the temperature of the camera changes. For example, after the camera is powered on or the ambient temperature is changed, you should immediately perform the FFC. **Auto**: In the Automatic FFC mode, the camera performs FFC whenever its temperature changes by a specified amount or at the end of a specified period of time (whichever comes first). When this mode is selected, the FFC interval (minutes) ranges from 5 to 30 minutes. The temperature change of the camera is based on the temperatures collected by the internal temperature probe. The temperature of the camera sharply changes when the camera is powered on. The FFC is relatively frequent, which is normal. **Manual**: In the manual FFC mode, the camera does not automatically perform the FFC based on the temperature change or the specified period. You can press the Do FFC button to select the manual FFC mode. When you feel that the image is obviously degraded but the automatic FFC is not performed, you can use the manual FFC function to check whether the image quality can be improved.	
FFC interval (min)	In the automatic FFC mode, the FFC interval ranges from 10 to 255 minutes. When the time reach to setting value, the camera does shutter adjust operation automatically.	[How to set] Select by dragging the slider. [Default value] 15
Temp deviation	In the automatic FFC mode, the temp deviation value ranges from 5 to 255 degree centigrade. When the time reach to setting value, the camera does background adjust operation automatically.	[How to set] Select by dragging the slider. [Default value] 5
Shutter initialization	Click the icon and shutter will be initialized	Manually
Shutter	Click the icon and camera perform the action.	Manually

Parameter	Description	Setting
CORRECTION		
Background CORRECTION	Click the icon and camera perform the action.	Manually

----End

5.7 Noise Reduction

Figure 5-8 shows the **Noise reduction** interface.

Figure 5-8 Noise reduction interface
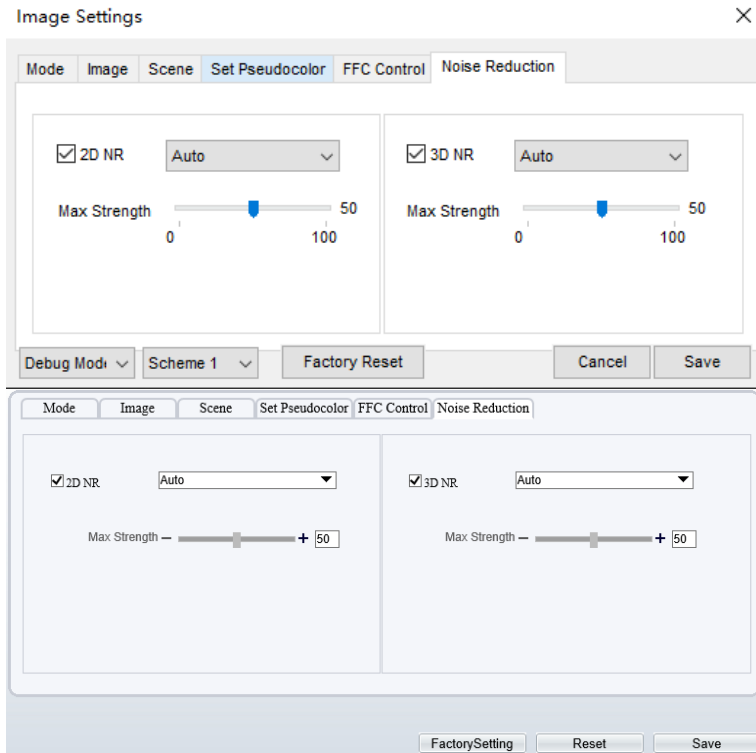
Table 5-2 lists the Noise reduction parameters.

Table 5-2 Parameters on the Noise reduction interface

Parameter	Description	Setting
2DNR	Decrease the image	[How to set]

Parameter	Description	Setting
	noise.	Select from the drop-down list box. [Default value] Close
3DNR	Decrease the image noise.	[How to set] Select from the drop-down list box. [Default value] Close

----End

6 **Intelligent Analysis**

6.1 Intrusion

Description
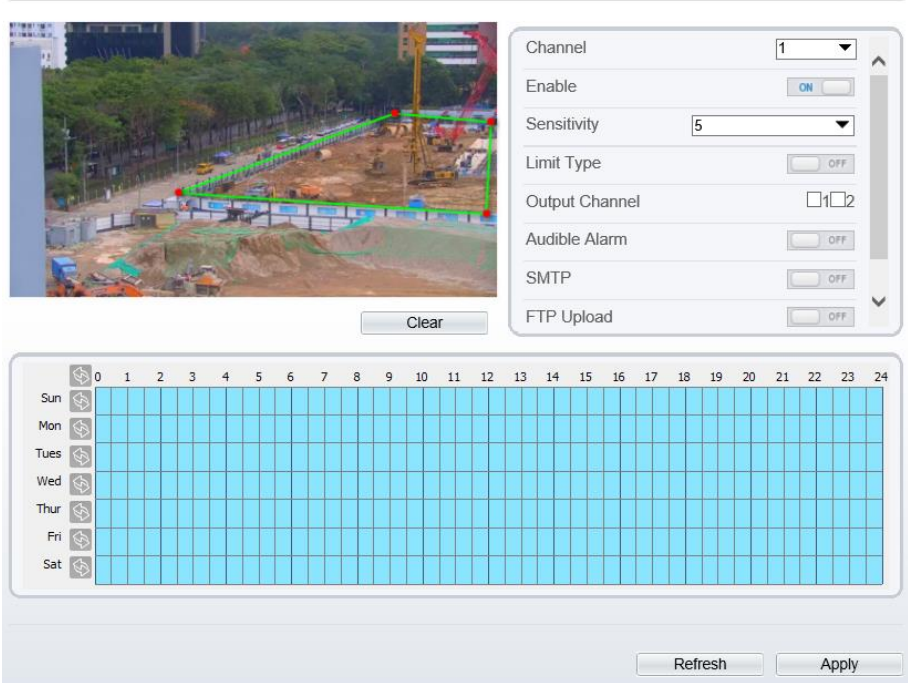
The Intrusion function refers to that an alarm is generated when the targets of specified types (such as person, car, and both person and car) enter the deployment area.

Procedure

Step 1 Select **Configuration** > **Intelligent Analysis** > **Intrusion** to access the **Intrusion** interface, as shown in Figure 6-1.

Figure 6-1 Intrusion Setting Interface

Step 2 Set all parameters for Intrusion. The table describes the specific parameters.

Table 6-1 Intrusion Parameter Description

Parameter	Description	Setting
Channel	Channel 1: visible. Channel 2: thermal.	Choose one channel to set.
Enable	Enable the button to enable the alarm.	[How to set] Click Enable to enable. [Default value] **OFF**
Sensitivity	The sensitivity of detecting smoker, when the value is high, the alarm can be triggered easily, but the accuracy will be lower.	[How to set] Choose from the drop-down list [Default value] **5**
Limit Type	Effective alarms are set based on target type, with options of Person or Car, person, car. When the device is used indoors, because of small space and large targets, to avoid wrong alarms are triggered b person even if car is selected, it is recommended to set the target type to person for indoor use.	[How to set] Click to enable Limit Target Type. [Default value] **OFF**
Out Channel	If you check to set the Output Channel and the device is connected to an external alarm indicator, the alarm indicator signals when an alarm is triggered.	[How to set] Click to select an ID.
Audible alarm	Enable, when happen the alarm, it will be play audio to alarm. Choose the sound alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audible alarm [Default value] **OFF**
SMTP	Enable the button to enable SMTP serve.	[How to set] Click to enable SMTP. [Default value] **OFF**
FTP Upload	Enable the button to enable File Transfer Protocol.	[How to set] Click to enable FTP Upload. [Default value] **OFF**

Parameter	Description	Setting
Video Stream Draw Line	Enable the button, the draw line will show at live video when the stream is stream 2.	[How to set] Click to enable FTP Upload. [Default value] **OFF**

Step 3 Set a deployment area. Move the cursor to the drawing interface and click to generate a point, move the cursor to draw a line, and then click to generate another point. This is how a line is generated. In this way, continue to draw lines to form any shape, and right-click to finish line drawing.

📖 **NOTE**

- A drawn line cannot cross another one, or the line drawing fails.
- Any shape with 32 sides at most can be drawn.
- The quantity of deployment areas is up to 8.

Step 4 Set deployment time.

Method 1：Click left mouse button to select any time point within 0:00-24:00 from Monday to Sunday as shown in Figure 6-2.

Method 2：Hold down the left mouse button, drag and release mouse to select the deployment time within 0:00-24:00 from Monday to Sunday.

Method 3：Click 🔄 in the deployment time page to select the whole day or whole week.

📖 **NOTE**

- When you select time by dragging the cursor, the cursor cannot be moved out of the time area. Otherwise, no time can be selected.

Deleting deployment time: Click 🔄 again or inverse selection to delete the selected deployment time.

Figure 6-2 Deployment Time Setting Interface
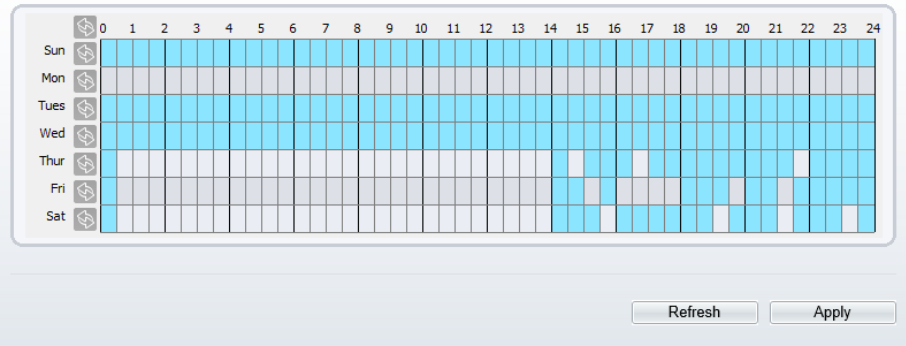
----End

6.2 Single Line Crossing

Description

A Single Line Crossing is a line that is set at a concerned position within the monitored field of view and specifies the forbidden travel direction; An alarm is generated when the targets of specified types (such as person or car) cross this line.

Procedure

Step 1 Select **Configuration** > **Intelligent Analysis** > **Single Line Crossing** to access the **Single Line Crossing** setting interface, as shown in Figure 6-3.

Figure 6-3 Single Line Crossing Setting Interface
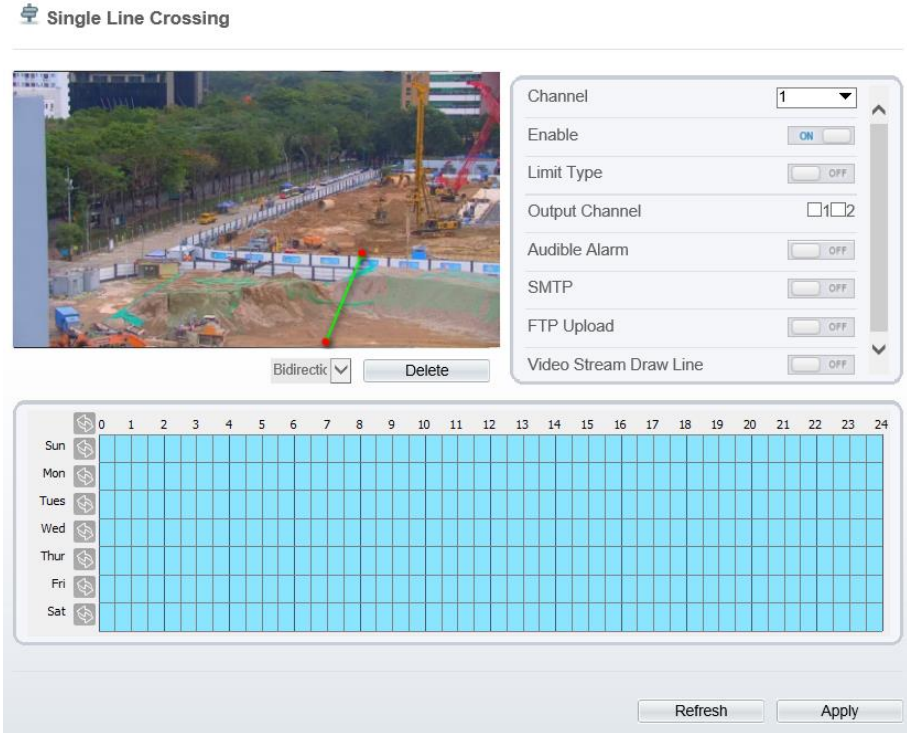
Step 2 Set all parameters for the Single Line Crossing. Table 6-2 describes the specific parameters.

Table 6-2 Parameters of Single Line Crossing

Parameter	Description	Setting	
Channel	Channel 1: visible. Channel 2: thermal.	[How to set] Choose one channel to set.	
Enable	Enable the button to enable the alarm.	[How to set] Click **Enable** to enable. [Default value] **OFF**	

Parameter	Description	Setting	
Limit Type	Effective alarms are set based on target type, with options of Person or Car, person, car. When the device is used indoors, because of small space and large targets, alarms are triggered by person sometimes even if car is selected, leading to false alarms. It is recommended to set the target type to person for indoor use.	[How to set] Click to enable Limit Target Type. [Default value] **OFF**	
Output Channel	If you check to set the Output Channel and the device is connected to an external alarm indicator, the alarm indicator signals when an alarm is triggered.	[How to set] Click to select an ID.	
Audible alarm	Enable, when happen the alarm, it will be play audio to alarm. Choose the sound alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audible alarm [Default value] **OFF**	
SMTP	Enable the button to enable SMTP sever.	[How to set] Click to enable SMTP. [Default value] **OFF**	
FTP Upload	Enable the button to enable File Transfer Protocol.	[How to set] Click to enable FTP. [Default value] **OFF**	
Video Stream Draw Line	Enable the button to enable Video Stream Draw Line, the setting area frame will show on live video.	[How to set] Click to enable Video Stream Draw Line. [Default value] **OFF**	

Step 3 Set a deployment area:

Draw a line: move the cursor to the drawing interface, hold down the left mouse button, and move the cursor to draw a line. When you release the left mouse button, a Single Line Crossing is generated.

Setting a Single Line Crossing: Click a line (and the trip line turns red) to select the Single Line Crossing and set its direction as Positive, Reverse or Bidirectional, or delete the selected line. You can also press and hold left mouse button at the endpoint of a Single Line Crossing and move the mouse to modify the position and length of this Single Line Crossing. You can right-click to delete the Single Line Crossing.

📖 NOTE

- A Single Line Crossing is not within any deployment area, therefore, when an alarm is generated, the trace always exists. Only when the target object moves out of the field of view, the trace disappears.
- Try to draw the Single Line Crossing in the middle, because the recognition of a target takes time after target appearance on the screen and an alarm is generated only when the object is recognized to have crossed the Single Line Crossing.
- The Single Line Crossing which detects person foot as the recognition target cannot be too short, because a short Single Line Crossing tends to miss targets.
- Set deployment time..

----End

6.3 Double Line Crossing

Description

Double Line Crossing refer to two lines that are set at a concerned special position within the field of view and specify the forbidden travel direction. When the targets of specified types (such as person or car) move along the set travel direction and cross these lines in a certain order (line 1 followed by line 2) in pass max time, an alarm is generated.

Procedure

Step 1 Select **Configuration** > **Intelligent Analysis** > **Double Line Crossing** to access the **Double Line Crossing** setting interface, as shown in Figure 6-4.

Figure 6-4 Double Line Crossing Setting Interface
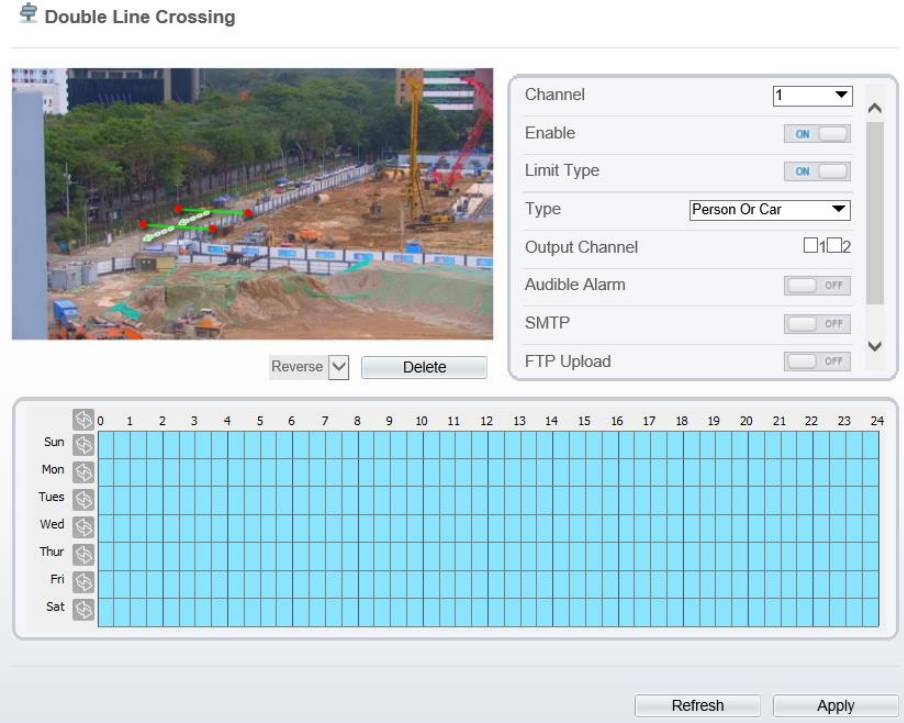
Step 2 Set all parameters for the Double Line Crossing. Table 6-3 describes the specific parameters.

Table 6-3 Description of Parameters for Double Line Crossing

Parameter	Description	Setting
Enable	Enable the button to enable the alarm.	[How to set] Click to enable. [Default value] **OFF**
Limit Type	Effective alarms are set based on target type, with options of Person or Car, person, car. When the device is used indoors, because of small space and large targets, alarms are triggered by person sometimes even if car is selected, leading to false alarms. It is recommended to set the target type to person for indoor use.	[How to set] Click to enable Limit Target Type. [Default value] **OFF**

Parameter	Description	Setting
Output Channel	If you check to set the Output Channel and the device is connected to an external alarm indicator, the alarm indicator signals when an alarm is triggered.	[How to set] Click to select an ID.
Audible alarm	Enable, when happen the alarm, it will be play audio to alarm. Choose the sound alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audible alarm [Default value] **OFF**
SMTP	Enable the button to enable SMTP sever. Details please refer to chapter 10.5	[How to set] Click to enable SMTP. [Default value] **OFF**
FTP Upload	Enable the button to enable File Transfer Protocol. Details please refer to chapter 10.6.	[How to set] Click to enable FTP. [Default value] **OFF**
Video Stream Draw Line	Enable the button, the draw line will show at live video when the stream is stream 2.	[How to set] Click to enable Video Stream Draw Line. [Default value] **OFF**

Step 3 Set a deployment area.

Draw a line: move the cursor to the drawing interface, hold down the left mouse button, and move the cursor to draw two lines. When you release the left mouse button, two numbered virtual fences are generated. Choose either of the Double Line Crossing to set the direction to Positive or Reverse.

Set Double Line Crossing: Click one of the Double Line Crossing (and the virtual fence turns red) to select this virtual fence and set the direction to **Positive** or **Reverse**, or delete the selected line. You can also press and hold left mouse button at the endpoint of a virtual fence and move the mouse to modify the position and length of this virtual fence. You can right-click to delete the Double Line Crossing.

📖 **NOTE**

- The two lines are in sequential order. An alarm is generated only when a target crosses virtual fence 1 and then virtual fence 2 within the set maximum passing time.
- The Double Line Crossing are not within any deployment area, therefore, when an alarm is generated, the trace always exists. Only when the target object moves out of the field of view, the trace disappears.
- Try to draw Double Line Crossing in the middle, because the recognition of a target takes time after target appearance on the screen and an alarm is generated only when the object is recognized to have crossed the Double Line Crossing.
- The Double Line Crossing which detect person foot as the recognition target cannot be too short, because short Double Line Crossing tend to miss targets.

Step 4 Set deployment time.

----End

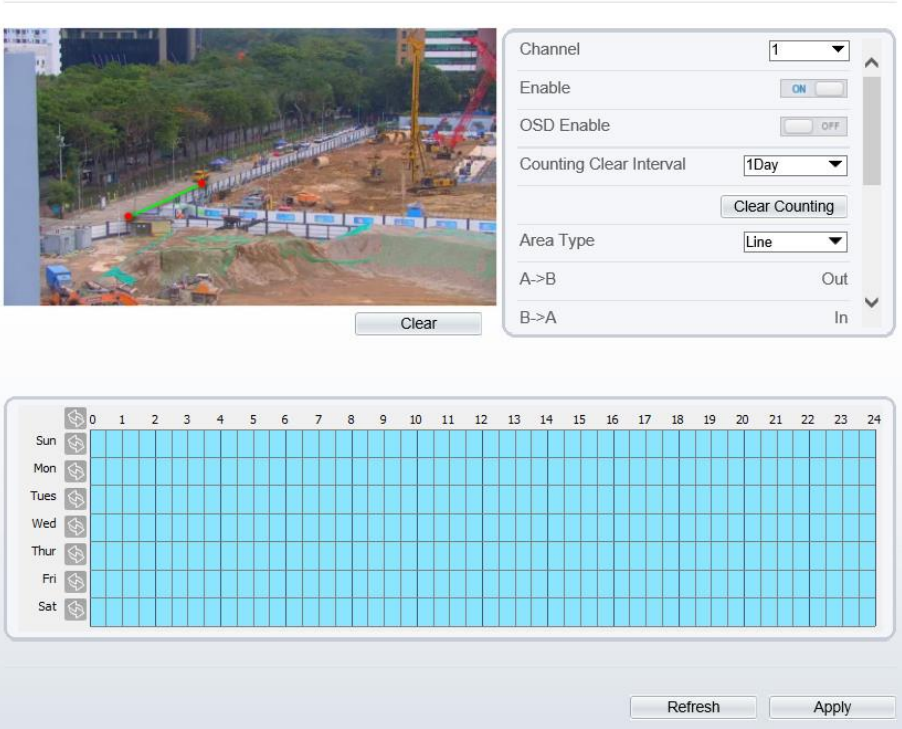# 6.4 People Counting

Description

User can draw line to count the personnel at the special area.

Procedure

Step 1   Select **Intelligent Analysis** > **People Counting** to access the **People Counting** setting interface, as shown in Figure 6-5.

Figure 6-5 People counting

Step 2   Set all parameters for illegal parking. Table 6-4 describes the specific parameters.

Table 6-4 Parameters of people counting

Parameter	Description	Setting
Channel	Channel 1: visible. Channel 2: thermal.	[How to set] Choose one channel to set.
Enable	Enable the button to enable the alarm.	[How to set] Click Enable to enable. [Default value] **OFF**
OSD Enable	Enable the OSD, the count data will show on live video screen.	[How to set] Click Enable to enable. [Default value] **OFF**
Counting Clear Interval	The camera will clear counting data at the setting interval. Click the "Clear Counting", clearing the data immediately.	[How to set] Choose from drop-down list. [Default value] **1 Day**
Area Type	Draw a line on live video screen. The label of A and B indicate out and in.	[How to set] Choose from drop-down list. [Default value] **Line**
Set Correction Value	Enable, set the count correction value, it can be positive or negative. For example, if there are 30 people enter the area before counting, input 30 to correct. If 30 people go out the area, input -30.	[How to set] Enable /Input a value in the area box. [Default value] **0**
Over People Number Alarm	Enable, when the counting number reaches the threshold value, an alarm is triggered.	[How to set] Click Enable to enable. [Default value] **OFF**
Alarm Threshold	The threshold of enable alarm.	[How to set] Enable /Input a value in the area box. [Default value] **1000**
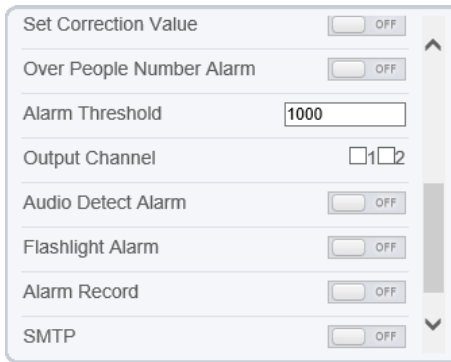
Parameter	Description	Setting
Output Channel	If you check to set the Output Channel and the device is connected to an external alarm indicator, the alarm indicator signals when an alarm is triggered.	[How to set] Click to select an ID.
Audible alarm	Enable, when happen the alarm, it will be play audio to alarm. Choose the sound alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audible alarm [Default value] **OFF**
SMTP	Enable the button to enable SMTP sever. The parameters of SMTP can be set at **Configuration > Network Service > SMTP** interface.	[How to set] Click to enable SMTP. [Default value] **OFF**
FTP Upload	Enable the button to enable File Transfer Protocol. The parameters of FTP can be set at **Configuration > Network Service > FTP** interface.	[How to set] Click to enable FTP Upload. [Default value] **OFF**
Video Stream Draw Line	Enable the button to enable Video Stream Draw Line, the setting area frame will show on live video.	[How to set] Click to enable Video Stream Draw Line. [Default value] **OFF**

Step 3   Set a deployment area.

Move the cursor to the drawing interface and click to generate a point, move the cursor to draw a line, and then click to generate another point. This is how a line is generated. In this way, continue to draw lines to form any shape, and right-click to finish line drawing.

Step 4   Set deployment time.

----End

7 **Advanced Intelligent Analysis**

At advanced intelligent analysis interface, users can set the parameters of smoker detection, smoke and flame detection, fire spot detection. Enable the linkage actions, the alarm information can be sent to user by the linkage.

The advanced intelligent analysis can be used for detecting the smoking, if someone smoke in the indoor where is forbidden smoking.

Smoke and Flame Detection can be used for detecting smoke and fire, it can be sent alarm information to avoid fire getting worse.

Fire Spot Detection can be used for finding the catching fire to quickly operate to extinguish.
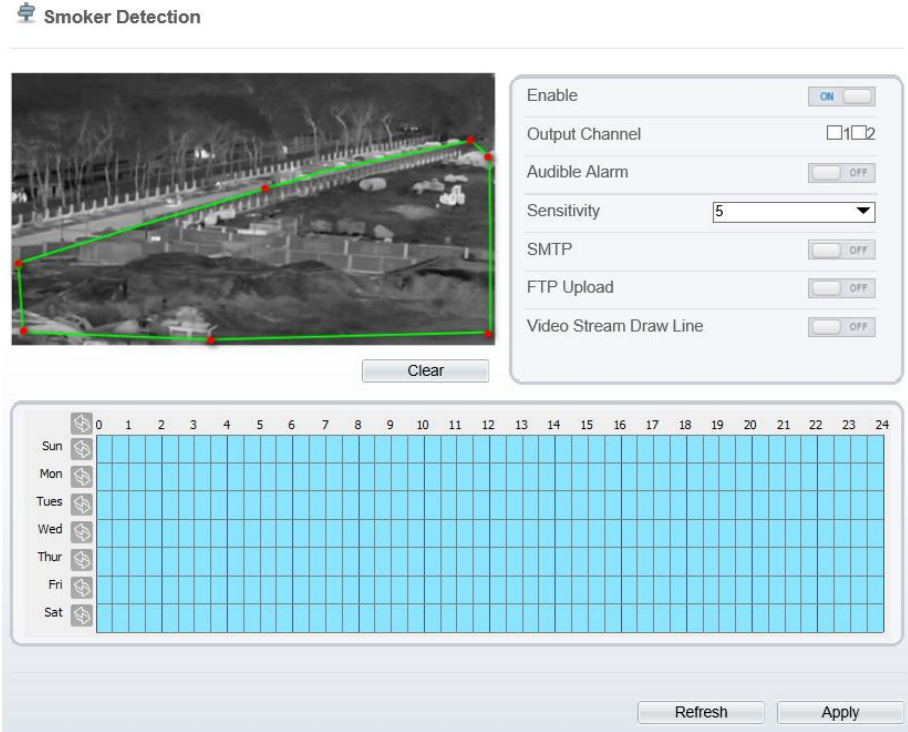
7.1 Smoker Detection

Description

The smoker detection function refers to that an alarm is generated when someone is smoking or generating spark at the deployment area.

Procedure

Step 1 Select **Configuration** > **Advanced Intelligent Analysis** > **Smoker Detection** to access the **Smoker Detection** interface, as shown in Figure 7-1.

Figure 7-1 Smoker detection interface

Step 2 Set all parameters for Intrusion. Table 7-1 describes the specific parameters.

Table 7-1 Parameters of smoker detection

Parameter	Description	Setting
Enable	At thermal channel, Enable the button to enable the alarm.	[How to set] Click Enable to enable. [Default value] **OFF**
Output Channel	If you check to set the Output Channel and the device is connected to an external alarm indicator, the alarm indicator signals when an alarm is triggered.	[How to set] Click to select an ID.

Parameter	Description	Setting
Audible alarm	Enable, when happen the alarm, it will be play audio to alarm. Choose the sound alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audible alarm [Default value] **OFF**
Sensitivity	The sensitivity of detecting smoker, when the value is high, the alarm can be triggered easily, but the accuracy will be lower.	[How to set] Choose from the drop-down list [Default value] **5**
SMTP	Enable the button to enable SMTP serve.	[How to set] Click to enable SMTP. [Default value] **OFF**
FTP Upload	Enable the button to enable File Transfer Protocol.	[How to set] Click to enable FTP Upload. [Default value] **OFF**
Video Stream Draw Line	Enable the button to enable Video Stream Draw Line, the setting area frame will show on live video.	[How to set] Click to enable Video Stream Draw Line. [Default value] **OFF**

Step 3 Set a deployment area. Move the cursor to the drawing interface and click to generate a point, move the cursor to draw a line, and then click to generate another point. This is how a line is generated. In this way, continue to draw lines to form any shape, and right-click to finish line drawing.

📖 **NOTE**

- A drawn line cannot cross another one, or the line drawing fails.
- Any shape with 32 sides at most can be drawn.
- The quantity of deployment areas is up to 8.

Step 4 Set deployment time.

Method 1：Click left mouse button to select any time point within 0:00-24:00 from Monday to Sunday.

Method 2：Hold down the left mouse button, drag and release mouse to select the deployment time within 0:00-24:00 from Monday to Sunday.

Method 3：Click ⟳ in the deployment time page to select the whole day or whole week.

📖 **NOTE**

● When you select time by dragging the cursor, the cursor cannot be moved out of the time area. Otherwise, no time can be selected.
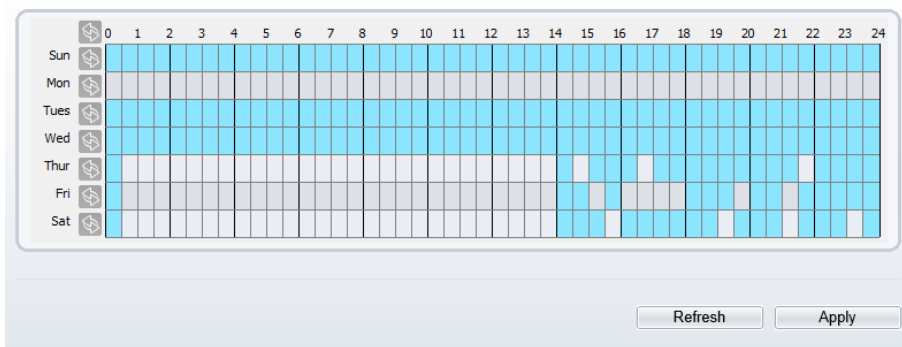
Deleting deployment time: Click ⟳ again or inverse selection to delete the selected deployment time.

Figure 7-2 Deployment time setting interface

----End

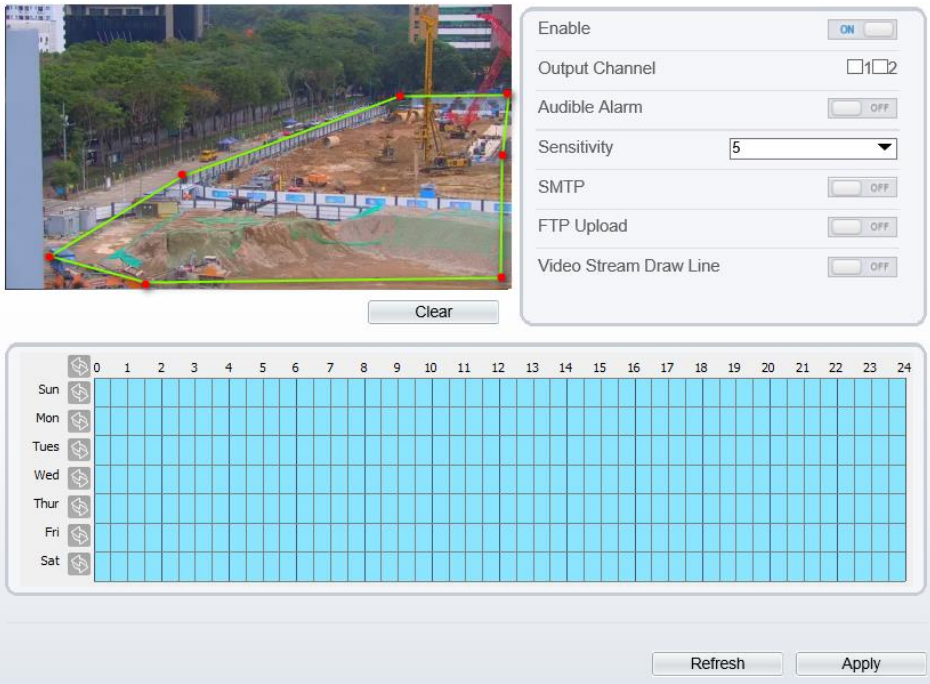# 7.2 Smoke and Flame Detection

Description

The smoke flame detection function refers to that an alarm is generated when something is smoking or generating flame at the deployment area.

Procedure

Step 1 Select **Configuration > Advanced Intelligent Analysis > Smoke and Flame Detection** to access the Smoke and Flame Detection interface, as shown in Figure 7-3.

Figure 7-3 Smoke and flame detection interface

Step 2 Set all parameters for Intrusion. Table 7-2 describes the specific parameters.

Table 7-2 Smoke flame detection description

Parameter	Description	Setting
Enable	At thermal channel, Enable the button to enable the alarm.	[How to set] Click Enable to enable. [Default value] **OFF**
Output Channel	If you check to set the Output Channel and the device is connected to an external alarm indicator, the alarm indicator signals when an alarm is triggered.	[How to set] Click to select an ID.

Parameter	Description	Setting
Audible alarm	Enable, when happen the alarm, it will be play audio to alarm. Choose the sound alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audible alarm [Default value] **OFF**
Sensitivity	The sensitivity of detecting smoker, when the value is high, the alarm can be triggered easily, but the accuracy will be lower.	[How to set] Choose from the drop-down list [Default value] **5**
SMTP	Enable the button to enable SMTP serve.	[How to set] Click to enable SMTP. [Default value] **OFF**
FTP Upload	Enable the button to enable File Transfer Protocol.	[How to set] Click to enable FTP Upload. [Default value] **OFF**
Video Stream Draw Line	Enable the button to enable Video Stream Draw Line, the setting area frame will show on live video.	[How to set] Click to enable Video Stream Draw Line. [Default value] **OFF**

Step 3 Set a deployment area. Move the cursor to the drawing interface and click to generate a point, move the cursor to draw a line, and then click to generate another point. This is how a line is generated. In this way, continue to draw lines to form any shape, and right-click to finish line drawing.

📖 **NOTE**

- A drawn line cannot cross another one, or the line drawing fails.
- Any shape with 32 sides at most can be drawn.
- The quantity of deployment areas is up to 8.

Step 4 Set deployment time.

Method 1：Click left mouse button to select any time point within 0:00-24:00 from Monday to Sunday.

Method 2：Hold down the left mouse button, drag and release mouse to select the deployment time within 0:00-24:00 from Monday to Sunday.

Method 3：Click ⚙ in the deployment time page to select the whole day or whole week.

📖 **NOTE**

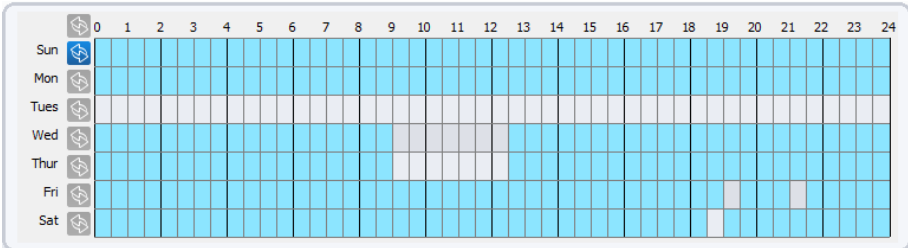● When you select time by dragging the cursor, the cursor cannot be moved out of the time area. Otherwise, no time can be selected.

Deleting deployment time: Click ⚙ again or inverse selection to delete the selected deployment time.

Figure 7-4 Deployment time setting interface

----End

7.3 Fire Spot Detection

Description

The fire spot detection function refers to that an alarm is generated when something is on fire at the deployment area.

Procedure

Step 1 Select **Configuration** > **Advanced Intelligent Analysis** > **Fire Spot Detection** to access the **Fire Spot Detection** interface, as shown in Figure 7-5

Figure 7-5 Fire spot detection interface
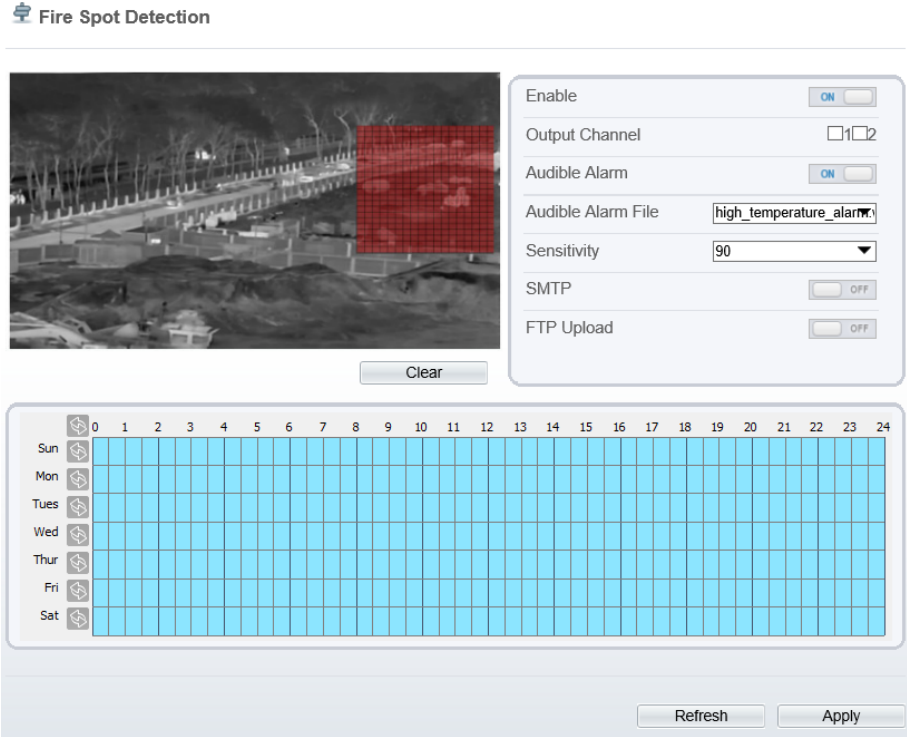
Step 2 Set all parameters for Intrusion. Table 7-3 describes the specific parameters.

Table 7-3 Fire spot detection description

Parameter	Description	Setting
Enable	At thermal channel, Enable the button to enable the alarm.	[How to set] Click Enable to enable. [Default value] **OFF**
Output Channel	If you check to set the Output Channel and the device is connected to an external alarm indicator, the alarm indicator signals when an alarm is triggered.	[How to set] Click to select an ID.

Parameter	Description	Setting
Audible alarm	Enable, when happen the alarm, it will be play audio to alarm. Choose the sound alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audible alarm [Default value] **OFF**
Sensitivity	The sensitivity of detecting smoker, when the value is high, the temperature of triggering alarm is lower; When the value is low, the temperature of triggering alarm is higher.	[How to set] Choose from the drop-down list [Default value] **90**
SMTP	Enable the button to enable SMTP serve.	[How to set] Click to enable SMTP. [Default value] **OFF**
FTP Upload	Enable the button to enable File Transfer Protocol.	[How to set] Click to enable FTP Upload. [Default value] **OFF**
Video Stream Draw Line	Enable the button to enable Video Stream Draw Line, the setting area frame will show on live video.	[How to set] Click to enable Video Stream Draw Line. [Default value] **OFF**

Step 3 Set a deployment area.

Use mouse to draw rectangular area, you can set several area to deploy, as shown in Figure 7-6.

Figure 7-6 Set deployment area

Clear

📖 NOTE

- A drawn line cannot cross another one, or the line drawing fails.
- Any shape with 32 sides at most can be drawn.
- The quantity quantity of deployment areas is up to 8.

Step 4 Set deployment time.

Method 1：Click left mouse button to select any time point within 0:00-24:00 from Monday to Sunday.

Method 2：Hold down the left mouse button, drag and release mouse to select the deployment time within 0:00-24:00 from Monday to Sunday.

Method 3：Click 📎 in the deployment time page to select the whole day or whole week.

📖 NOTE

- When you select time by dragging the cursor, the cursor cannot be moved out of the time area. Otherwise, no time can be selected.

Deleting deployment time: Click 📎 again or inverse selection to delete the selected deployment time.

Figure 7-7 Deployment time setting interface
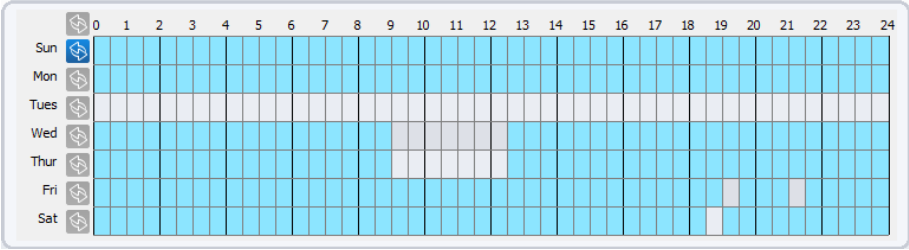
---End

8 Other Web Configurations

8.1 Device Information

You can view the information about device, as shown in Figure 8-1.

Figure 8-1 Device information interface

---**End**

8.2 Stream

8.2.1 Base Stream

Step 1 Choose **Configuration >Stream >Base Stream,** as shown in Figure 8-2.

Figure 8-2 Base stream interface

Step 2 Choose channel, stream ID, video encode type, video encode level, audio encode type, resolution, frame rate, frame interval, bit rate type and bit rate from all drop list.

Step 3 Set name of base stream, enable smart encode.

Step 4 Click **Apply**. The message "**Apply success**" is displayed, the system saves the settings.

----End

8.2.2 ROI

Step 1 Choose **Configuration > Stream >ROI,** as shown in Figure 8-3.
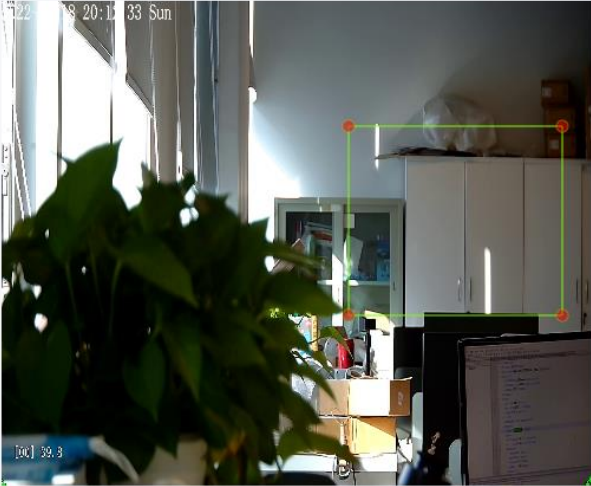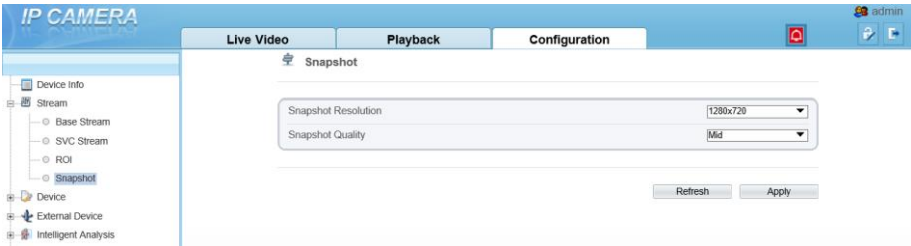
Figure 8-3 ROI interface

Step 2 Click **Apply**. The message "**Apply success**" is displayed, the system saves the settings.

    ----End

8.2.3 Snapshot

Step 1 Choose **Configuration >Stream >Snapshot,** as shown in Figure 8-4.

Figure 8-4 Snapshot interface

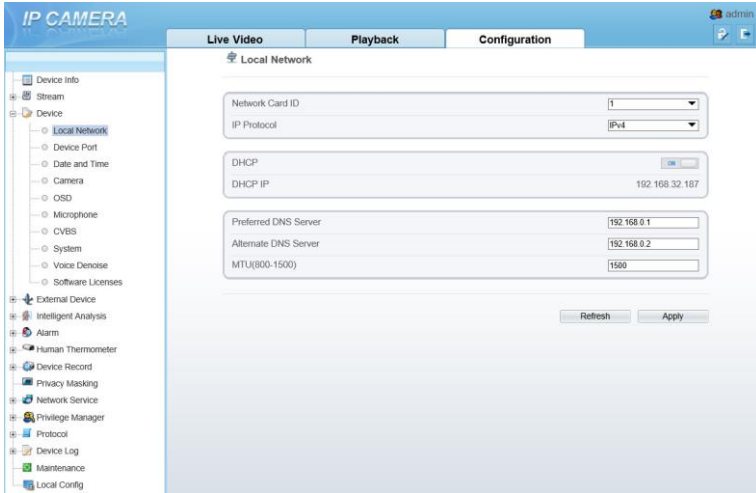Step 2 Choose snapshot resolution and snapshot quality from drop list.

Step 3 Click **Apply**. The message "Apply success" is displayed, the system saves the settings.

----End

8.3 Device

You can set local network, device port, data and time, camera, OSD, microphone, system, voice denoise and software licenses, as shown in Figure 8-5.
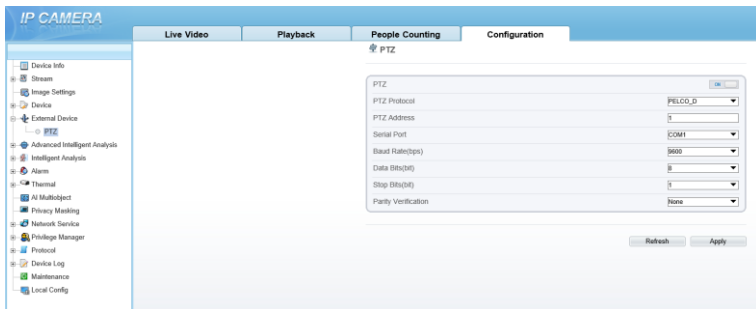
Figure 8-5 Device interface

---End

8.4 External Device

Choose **Configuration > External Device**, enable PTZ, set parameters as shown in Figure 8-6.
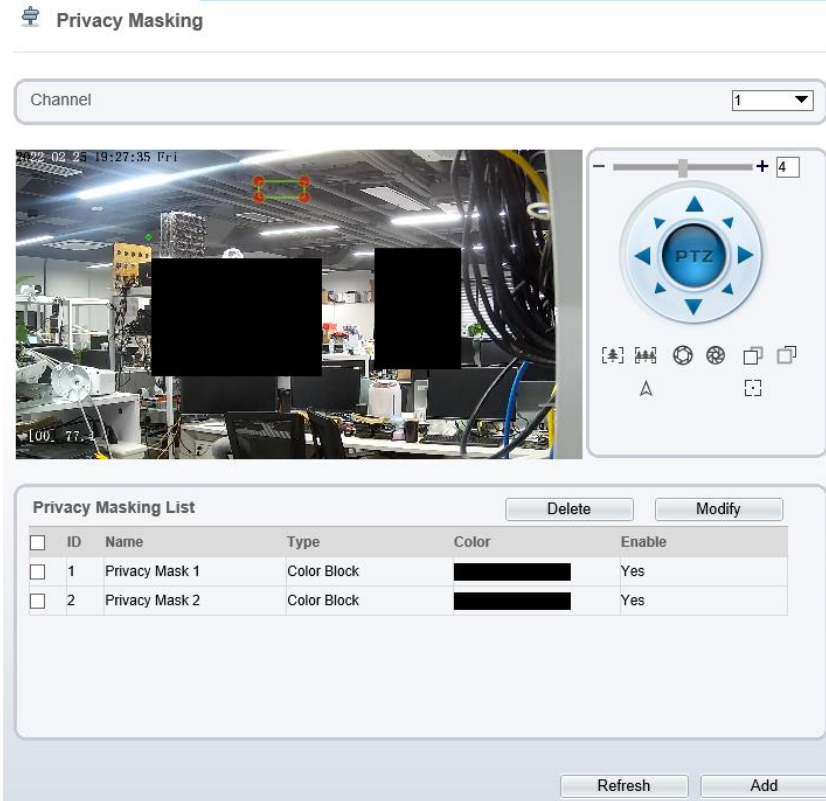
Figure 8-6 External device interface

---End

8.5 Privacy Masking

Choose **Configuration > Privacy masking.** You can set privacy masking if some area needs keep secret, drag mouse to select the area to cover, double click will delete the setting, as shown in Figure 8-7.

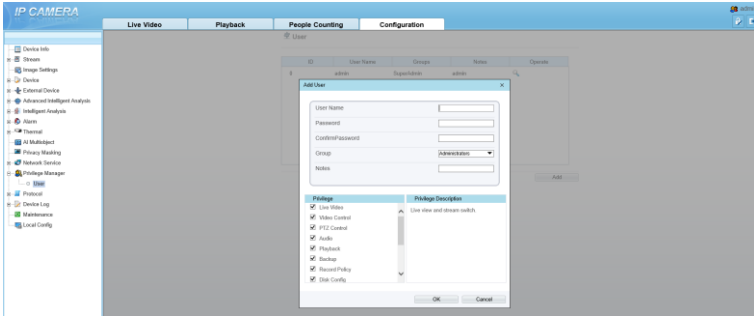Figure 8-7 Privacy masking interface

---End

8.6 Network Service

Choose **Configuration > Network Service.** You can set **802.1x, DDNS, PPPoE, Port mapping, SMTP, IP filter, CGI alarm service center, SNMP** and **QOS**

8.7 Privacy Manager

Add user account, manage the users' permission. As shown in Figure 8-8.

Figure 8-8 Privacy manager interface

8.8 Protocol

Choose **Configuration > Protocol**. You can set **protocol information, security, CMS configuration** and **multicast parameter.**
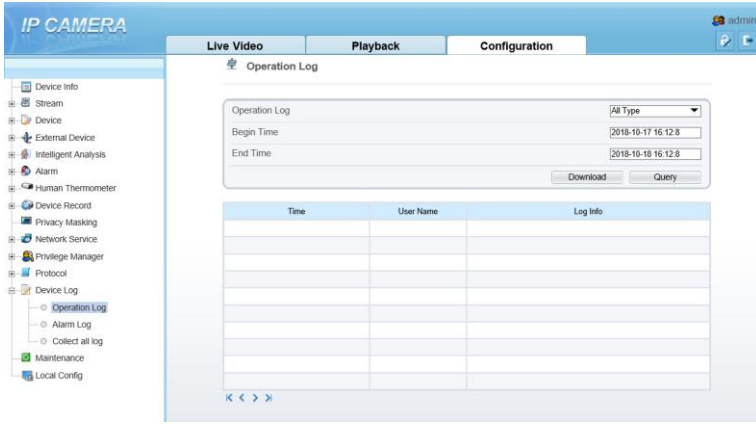
Figure 8-9 Protocol interface

8.9 Device Log

Choose **configuration > device log.** You can view **operation log** and **alarm log**, or collect all log information, as shown in Figure 8-10.
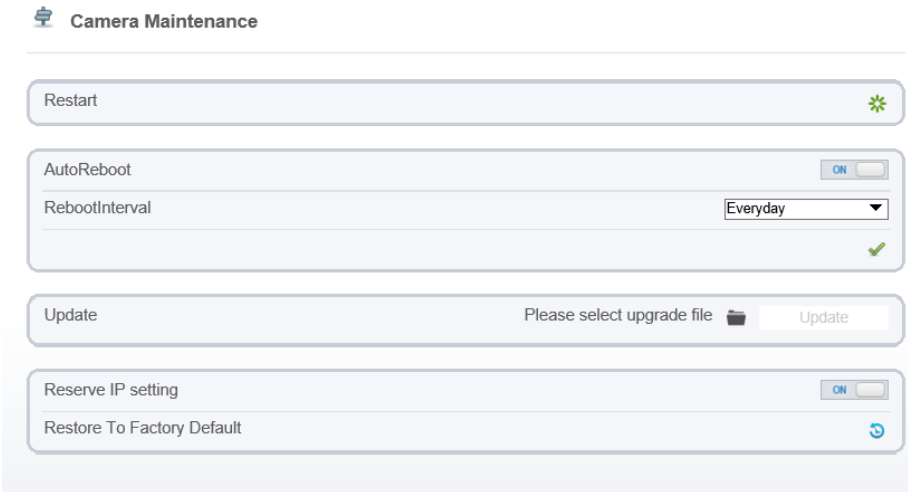
Figure 8-10 Device log interface

8.10 Maintenance

Choose **configuration > maintenance.** You can **restart, update, reserve IP setting and restore to factory default**, as shown in Figure 8-11.

Figure 8-11 Maintenance interface

8.11 Local Config

Choose **configuration > local config.** You can choose the snapshot picture format, change the save path of snapshot and local record, as shown in Figure 8-12.

Figure 8-12 Local config interface
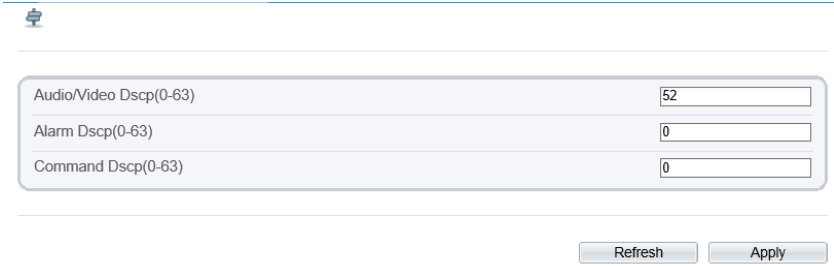

8.12 QOS

Description

> If the device is connected to a router or switch with a QOS function, and the priority rule of the corresponding mark is configured on the network device, the network device will preferentially pass the data packet of the corresponding mark.

Procedure

Step 1 Choose Configuration > Network Service > **QOS**.

The **QOS** page is displayed, as shown in Figure 8-13.

Figure 8-13 QOS page

Audio/Video Dscp(0-63)	52
Alarm Dscp(0-63)	0
Command Dscp(0-63)	0

<div align="right">Refresh   Apply</div>

Step 2 Input the value range from 0 to 63(audio/video dscp, alarm dscp and command dscp).

Step 3 Click **Apply**.

The message "Apply success!" is displayed, and the system saves the settings.

----End

A Troubleshooting

Common Trouble	Possible Cause	Solution
Unable to access the web	Network is not connected.	Connect the network cable of the camera to the PC to check whether the network cable is in good contact. Run the ping command to check the network connection and whether the device works normally.
	IP address is occupied.	Directly connect the camera to the PC, and reset the IP address of the camera.
	The IP addresses of the PC and the device are in different networks.	Check the IP address, subnet mask and gateway setting of the camera.
The measured temperature is not accurate.	The device is just powered on, and the temperature of the cavity is unstable.	The temperature of the cavity is stable within 15 to 30 minutes after the device is powered on.
	The target configuration is incorrect.	Check whether the emission rate and distance of the target are configured correctly.
An error occurs in accessing the web of the device after the upgrade.	The data in the cache of browser is not updated in time.	Delete the cache of browser. The steps are as follows (taking Edge as an example): Open the Edge. Press Ctrl + Shift + Delete on keyboard. The **Delete Browsing History** dialog box appears. Select all check boxes. Click **Clear now**. Relogin the web page of the camera.
Upgrade failed.	No network cable is connected. The network setting is incorrect.	Ensure the upgrade network is connected. Check whether the network setting is correct.
	The upgrade package is incorrect.	Perform the correct upgrade package again.

Common Trouble	Possible Cause	Solution
The temperature is too high.	1. Make sure '**thermal mapping**' and '**thermal calibration is configured correctly**' by checking if face square in thermal image is covering the face and the cross is in the middle of target's forehead. 2. Check if the temperature data is inconsistent with the actual temperature, the temperature may be too high; 3. Check if there is **high temperature object** near object area. Because, the camera may be measuring the hot object.	

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