VIVOTEK
A Delta Group Company

VIVOTEK Thermal Network Bullet Camera

User Manual

TB9332-E

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1 Product Overview

1.1 Thermal Imaging Principles and Advantages

For any object, as long as its temperature is above the absolute zero (-273.15° C), although the object does not give out light, it can radiate infrared. The infrared is also known as thermal radiation. A temperature change occurs when the infrared radiated by objects at different temperatures is absorbed by the infrared thermal detector, and thereby generating an electrical effect. An electrical signal is amplified and processed to obtain a thermal image corresponding to the distribution of heat on the surface of the object, that is, infrared thermal imaging.

- Applicable to any light environment

  Traditional cameras rely on the natural or ambient light for imaging. However, the infrared thermal imaging camera can clearly image the object with the infrared heat radiation of the object without relying on any light. The infrared thermal camera is applicable to any light environment and is free from glare impact. It can clearly detect and find the target as well as identify the camouflaged and hidden target in both day and night. Therefore, it achieves real 24-hour surveillance.

- Monitoring the temperature field of the target heat distribution

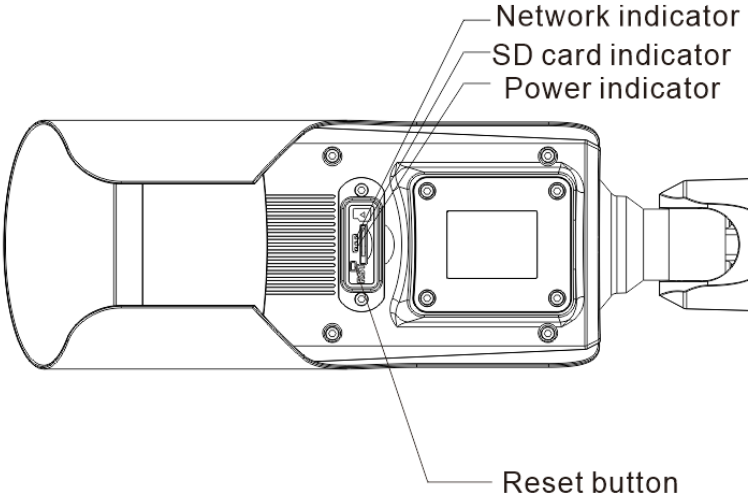
  The infrared thermal camera can display the temperature field of the object and change the surface temperature distribution of the object that cannot be directly seen by human eyes to the thermal image representing the surface temperature distribution of the object. By monitoring the temperature field, you can immediately identify the temperature abnormality, thereby preventing potential risks caused by the temperature, such as fire.

- Providing the cloud penetration capability

  Atmosphere, dust, and clouds can absorb visible light and near-infrared, but are clear to the thermal infrared for 3 to 5 microns (medium wave infrared region) and 8 to 14 microns (long wave infrared). Therefore, it is difficult for the conventional cameras to capture clear images under dense clouds, while the thermal imaging camera is able to effectively penetrate the atmosphere and clouds to capture clear images.

1.2 Device Structure

Error! Reference source not found. shows the rear panel of the Thermal Imaging N etwork Bullet Camera. For details of the interfaces, see **Error! Reference source not found.**.



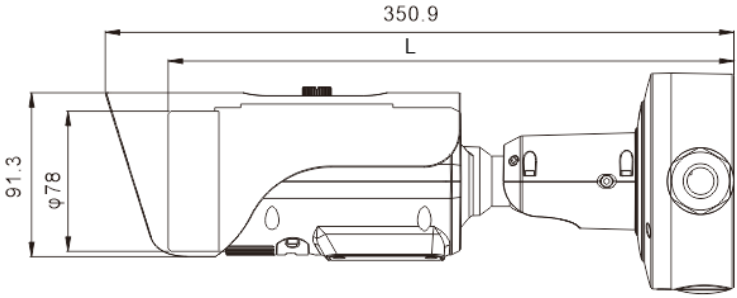
No.	Physical Interface	Connection
1	Network indicator	The network is working normally, the light is on; When it is transferring data, the light is splash.
2	SD card indicator	The SD indicator has the following states: OFF: The SD card is not inserted. ON: The SD card is inserted.
3	Power indicator	The power supply is plugged and works normally, the red light is on.
4	Reset button (RESET)	The configuration resumes to the factory settings after you press the reset button for 5s.
5	SD card slot	It places the SD card. Note: When you install the SD card, ensure that the SD card is not in the write-protection state and then insert the SD card in the SD card slot. When you remove the SD card, ensure that the SD card is not in the write-protection state. Otherwise, the data may be lost or the SD card may be damaged. When hot plugging the SD card, stop recording and then perform the corresponding operation.

1.3 Device Dimensions

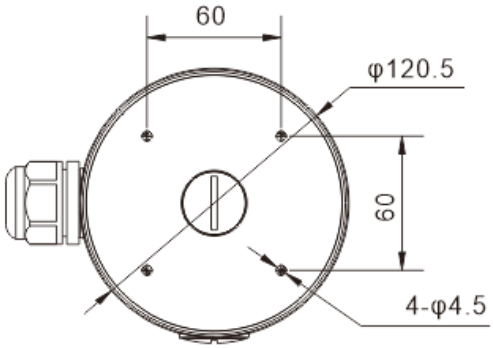
The Bracket With Junction Box Dimensions (unit: mm)

Short Sunshield

VIVOTEK TB9332-E (9mm) & TB9332-E (15mm)



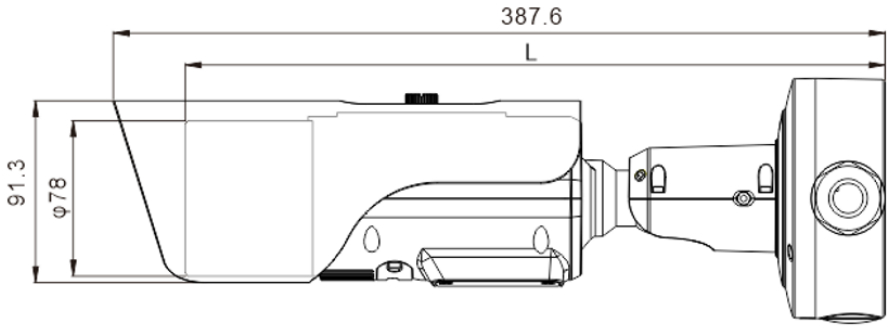
F15/F9 L=315.8mm



The Bracket With Junction Box Dimensions (unit: mm)

Long Sunshield

VIVOTEK TB9332-E (35mm) & TB9332-E (50mm)



F50 L=351.5mm
F35 L=340.3mm

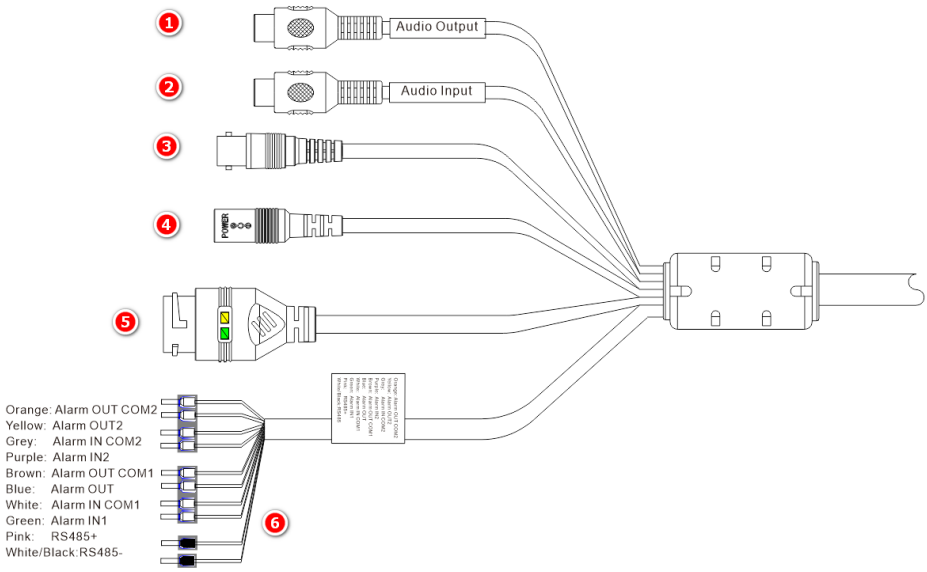
1.4 Out Wire Connection

There are two ways to connect the Thermal Imaging Network Bullet Camera, the multi-connector cables and the integrated cable management bracket. Users can choose the corresponding method and installation method according to their bracket.

1.4.1 The Multi-connector Cables

The following picture shows the multi-connector cable of the Thermal Imaging Network Bullet Camera. Find the table below for details of the multi-connector combination cable.

Multi-connector Combination Cable



Multi-connector Combination Cables

ID	Core of Cable	Functions	Connection
1	--	Audio output	Connect to the external audio device such as the voice box.
2	--	Audio input port (cable input)	Input the audio signal and receive the analog audio signals from the sound pick-up device. RCA connector is supported.
3	--	CVBS	Analog video output.
4	--	DC12V /AC 24V	Power interface, connect to the 12V DC (AC 24V) power supply.
5	--	Network interface	Connect to the standard Ethernet cable.
6	Orange	Alarm out com 2	Connect to the alarm devices.
	Yellow	Alarm out 2	
	Grey	Alarm in com 2	
	Purple	Alarm in 2	
	Brown	Alarm out 1com	

ID	Core of Cable	Functions	Connection
	Blue	Alarm out 1	
	white	Alarm in 1 com	
	Green	Alarm in 1	
	Pink	RS485RS+	RS485 interface, connect to devices with PTZ function.
	Black / white	RS485RS-	

1.5 Installation

1.5.1 Preparations

Tools needed (Not included) and supplied parts are shown below.

Installation Tools

Tools	Appearance
Phillips screwdriver (Not included)	
Claw hammer (Not included)	
Hammer drill (Not included)	
Spirit level (Not included)	
Allen Key (Included)	
Self-tapping screw (Included)	
Inflatable colloidal particle (Included)	

1.5.2 Installation Mode

The thermal imaging network bullet camera can be installed on the ceiling or the wall. You can select the appropriate installation according to your requirements. If the camera needs to be installed on the cement wall, you need to install the expansion screws (the mounting holes of the screws must be consistent with that of the support), and then install the support.

NOTE

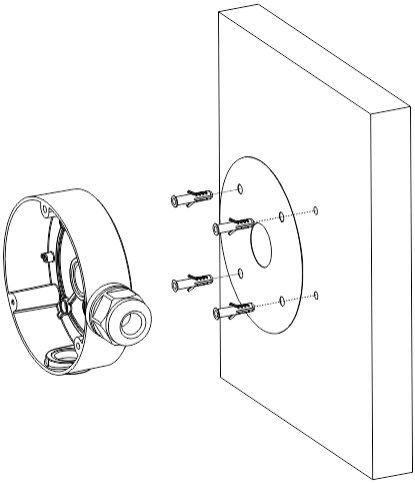
- The wall where the support is mounted must be able to withstand at least three times of the total weight of the support and the camera.
- The different brackets have different installation methods, please choose the corresponding method according to the purchased product.

1.5.3 Installing Camera With Junction Box

Step 1 Take out the installation location label from the package, stick it on the ceiling or the wall. According to the location hole positions shown in the installation location label, punch four location holes on the ceiling or the wall.

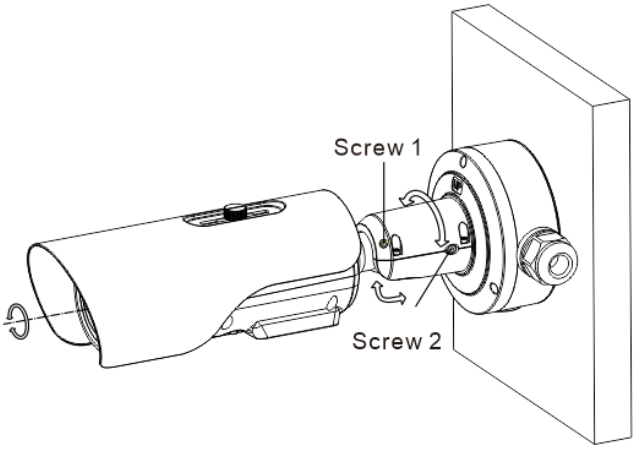
Step 2 Drive the plastic anchors into the holes, fix the junction box by self-tapping screws.

Fixing the Junction Box



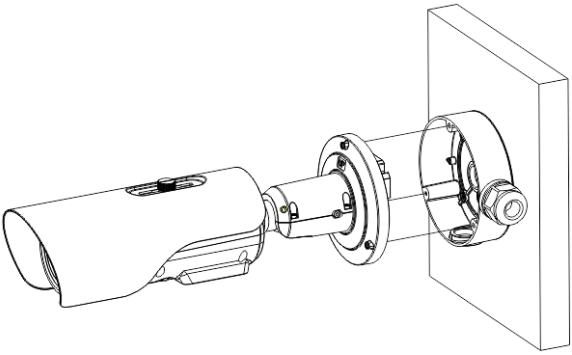
Step 3 Wiring of junction box. Align the holes in bracket with the box and fix the camera to the box with self-tapping screws.

Fix the Camera to the Junction Box



Step 4 Connect the multi-connector cable. Loosen screw 1 and screw 2, adjust the surveillance angle.

Adjust the Surveillance Angle

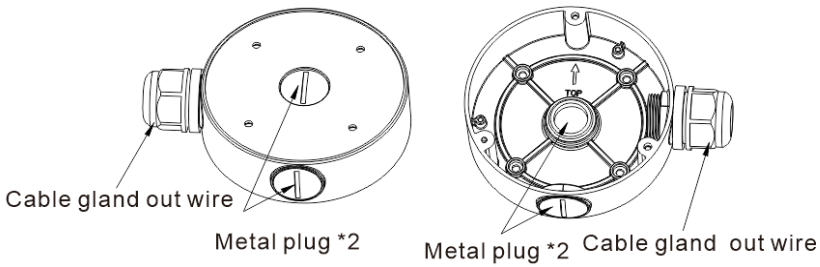


Step 5 After adjusting angle, fix screw 2 and screw 1 in turn to complete the installation.

NOTE

- There are three pipe thread interface in the junction box, one of which needs to be used with cable gland, so our company provides two plugs.

Figure 1-1 Installing Plug



2 Quick Configuration

2.1 Login and Logout

CAUTION

To access the web interface through Microsoft Edge, Chrome or Firefox browser; This document uses Firefox browser as an explanation. If there are some differences between different browsers, please refer to actual product!

Login system

Use VIVOTEK Shepherd or ONVIF Tool to find the IP address. Default setting is DHCP on. The login page is displayed as follows.

Login Page

NOTE

The default name is root. Create a password when you log in the system for first time to ensure system security.

User can change the system display language on the login page.

Step 1 Input the user name and password.

NOTE

Step 2 Click Login.

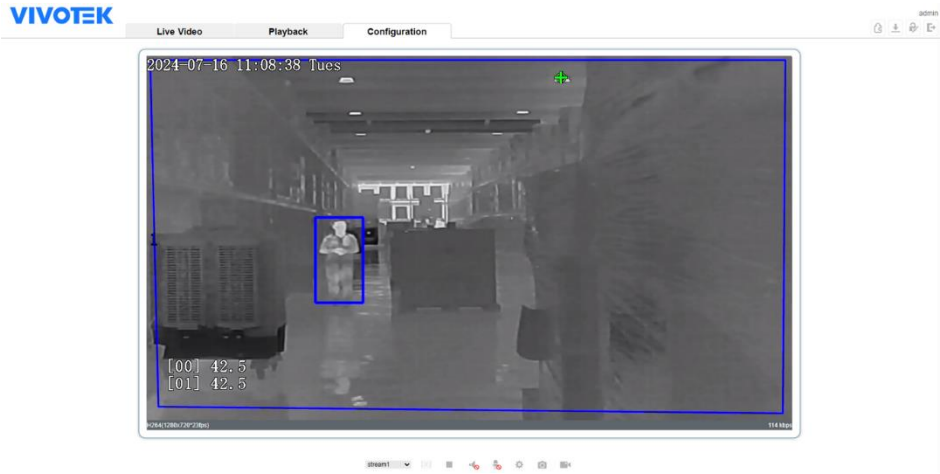
Logout

To log out of system, click in the upper right corner of the main page; the login page is displayed after you log out of the system.

2.2 Homepage Layout

On the homepage, the user can view real-time video, playback and configuration. The user can set parameter, video parameter, video control, network and logout of the system.

Homepage Layout



Elements on the Homepage

NO.	Element	Description
1	Live Video	View the real-time videos.
2	Playback	You can query the playback videos in this area if you plug in an SD card and open the recording.
3	Configuration	You can choose a menu to set device parameters, including the device information, image settings, audio and video streams, thermal parameter, AI functions, alarm setting, and privacy mask function.
4		When users don't download the IPC local server or use no plugin to play live video, the help icon will be shown. Click the icon to show detailed information. About the intercom function: Description: Only for enabling the Two-way Audio (Camera) in Chrome on HTTP in Chrome for (local) insecure origins. On HTTPS, all browsers are compatible with Two-way Audio (Camera). HTTP Environment Chrome Opens the intercom step: 1.Navigate to 'chrome://flags/#unsafely-treat-insecure-origin-as-secure' in Chrome. 2.Find and enable the 'Insecure origins treated as secure' 3.Add any camera addresses you want to ignore the secure origin policy for on the input box. The comma (',') is used to separate multiple camera addresses. For Example http://192.168.0.123，http://192.168.0.123:8045 4.Left-click outside the input box to save it and relaunch Chrome.
		Download the latest plugin IPC Local Server, you can choose the plugin to play H.265 video smoothly.
		Status of download recording.
		Change Password, you can click icon to change the password.

NO.	Element	Description
		Sign Out, you can click the icon to return to the login page.
5	Switch to No Plugin Play	When users download the IPC Local Server, you can switch to plugin or no-plugin to play live video.
6	Stream	The visible light channel has two streams. You can set details at the configuration base stream interface. The thermal image channel has two streams
7	-	: Play/pause : Audio : Enable/ Disable two-way audio : Snapshot; The plugin play mode, the file will be saved to the Local Config path. The no-plugin play mode, the file will be saved to the default download path of browser. : Record video to local storage.

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.

2.3 Browse Video

Procedure

If you want to play H.265 type video smoothly, you should download the latest IPC Local Server when you log in to the web management system for the first time.

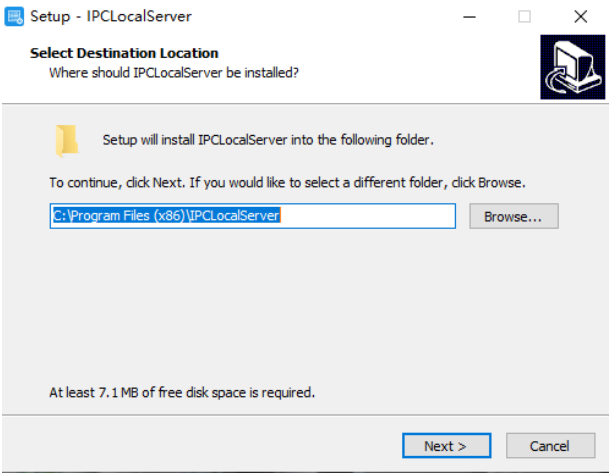
The Plugin Download Page

Step 1 Click " Please download the latest plugin" to download the IPC Local Server plugin.

Step 2 Open the download file; double-click to install the file.

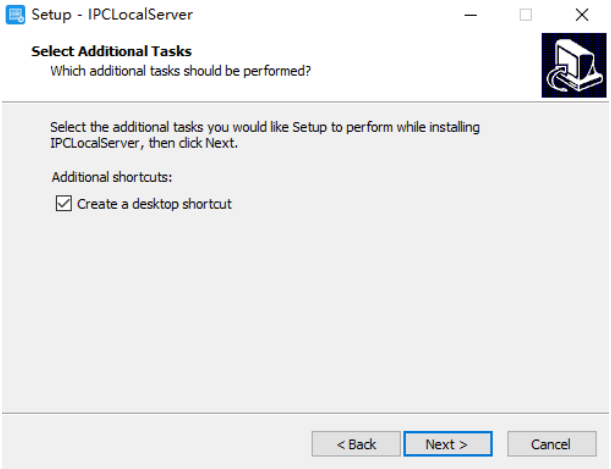
Step 3 Click "Run" to select the destination location.

Select Destination Location



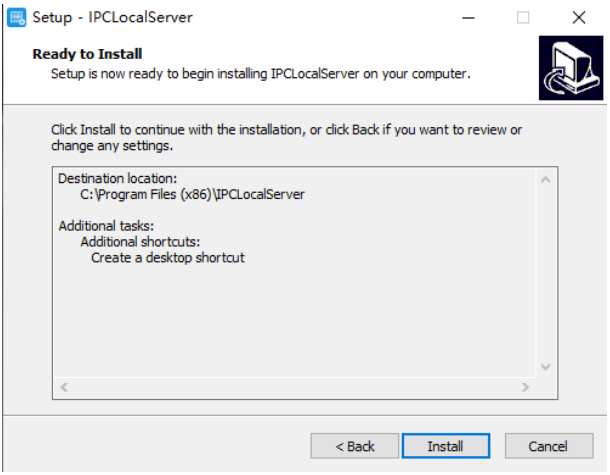
Step 1 Click "Next", ready to install the plugin.

Select Additional Tasks



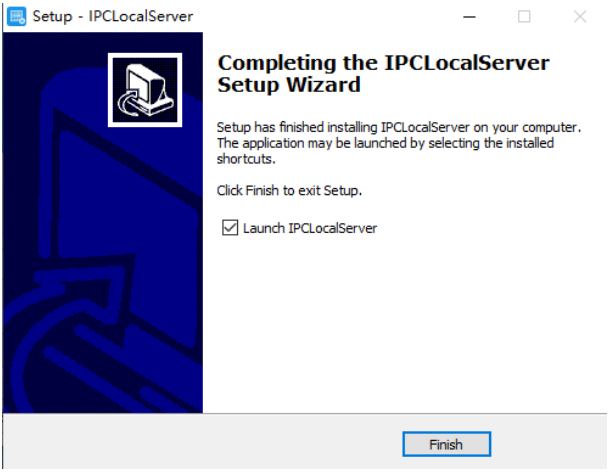
Step 2 Tick “Create a desktop shortcut” and click “Next” to install the plugin.

Installing



Step 3 Click “Finish” and complete the plugin installation.

Complete to Install the Plugin



Step 4 Reopen the browser after installing.

NOTE

- If the repair tips are displayed when installing the control, please ignore the prompt and continue the installation.
- During installing the plugin, the browser should be closed.

2.4 Changing the Password

Description

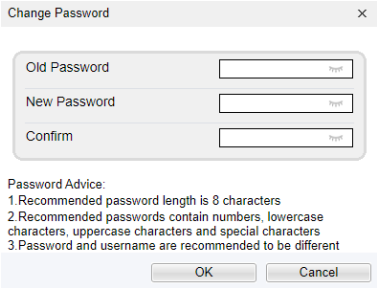
You can click to change the current login password.

Procedure

Step 1 Click in the upper right corner of the main page.

The **Change Password** dialog box is displayed.

Change Password Dialog Box



Step 2 Enter the old and new passwords, and confirm the password.

Step 3 Click **OK**.

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

2.5 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.

Step 2 Set the parameters.

Parameter	Description	Setting
IP Protocol	IPv4 is the Internet Protocol which adopts a 32-bit address.	[Setting method] Select a value from the drop-down list box. [Default value] **IPv4**
DHCP	Enable 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] **169.254.45.138**
Subnet Mask	Subnet mask of the network adapter.	[Setting method] Enter a value manually. [Default value] **255.255.255.0**

Parameter	Description	Setting
Default Gateway	This parameter must be set if the client accesses the device through a gateway.	[Setting method] Enter a value manually. [Default value] **169.254.45.1**
Preferred DNS Server	IP address of a DNS server.	[Setting method] Enter a value manually.
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.
MTU	Set the maximum value of network transmission data packets.	[Setting method] Enter a value manually. NOTE The MTU value ranges from 1280 to 1500; the default value is 1500; please do not change it arbitrarily.

Step 3 Click **Apply**.

- If the message "Be sure to modify, the device will restart" pops up, click **OK**. The system saves the settings and restarts. Use the new IP address to log in to the web management system.
- If the message "Parameter is invalid" pops up, 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 log in to the system again.
- You can click **Refresh** to set the parameters again if required.

3 Thermal Settings

3.1 Temperature Parameters

Temperature parameters include: temperature unit, ambient temperature, cavity temperature, correctional coefficient area temperature display mode, and so on.

NOTE

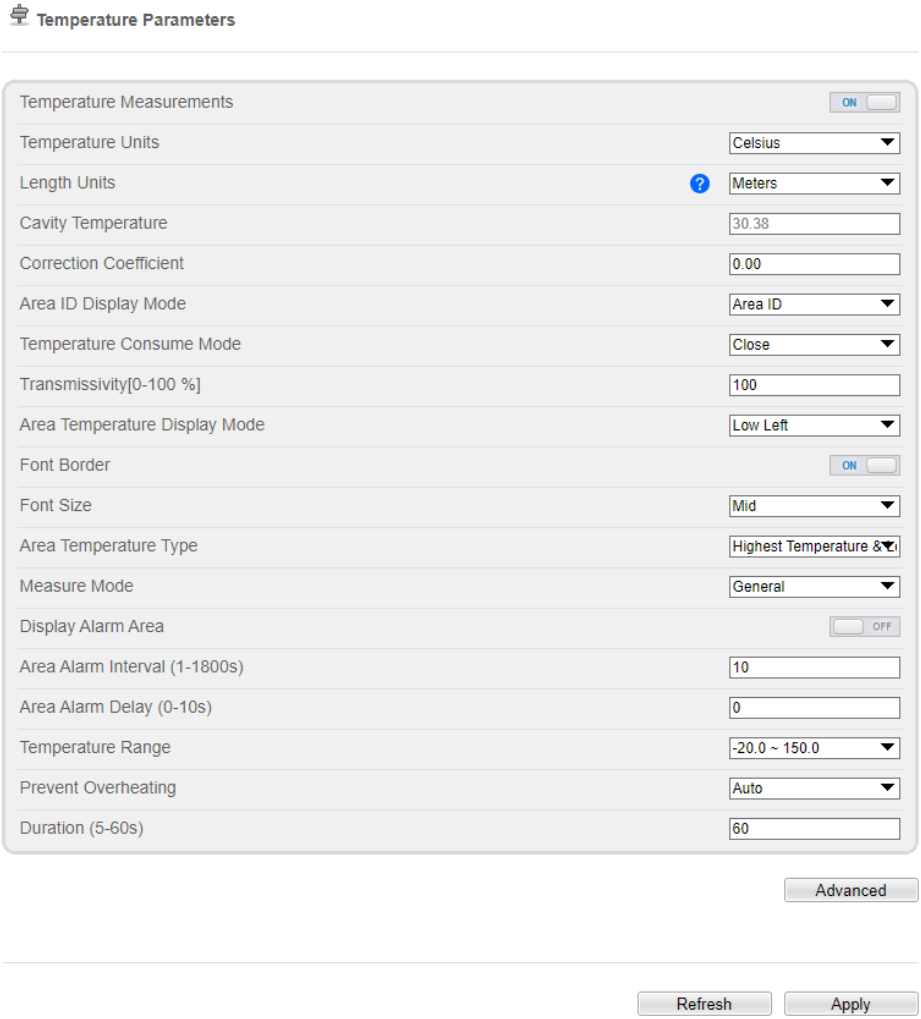
The temperature and length unit are used for all parameters which occur at the software.

The Open Temperature Measure should be enabled in advance, if not there are no temperature showing on screen, and the alarms settings are invalid.

Operation Procedure

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

Temperature Parameters Interface



Step 2 Set the parameters according to the following table.

Temperature Parameters

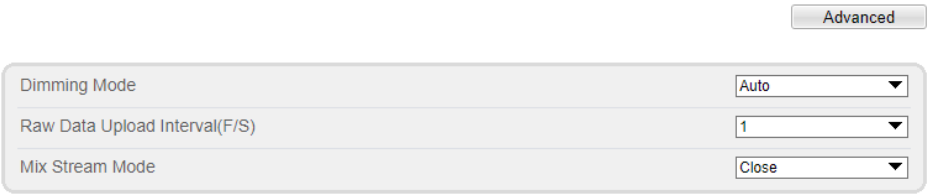
Parameter	Description	Setting
Temperature Measurements	Enable to open temperature measure.	[Setting method] Enable

Parameter	Description	Setting
Temperature Units	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	[Setting method] Select a value from the drop-down list box. [Default value] **Meters**
Cavity Temperature	The cavity temperature of the camera.	N/A
Correction Coefficient	Correction coefficient refers to the deviation between the measured object temperature and actual temperature. For example: 1. The measured object temperature is 30, and the actual temperature is 37, so the correction coefficient should be **7.** 2. The measured object temperature is 37, and the actual temperature is 30, so the correction coefficient should be **-7.** 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	Choose the area ID display mode, Area ID or Area name.	[Setting method] Select a value from the drop-down list box. [Default value] **Area ID**
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**

Parameter	Description	Setting
Font Border	Enable to bold the font.	[Setting method] Enable or disable [Default value] **Disable**
Font Size	Custom font size. There are three sizes can be chosen.	[Setting method] Select a value from the drop-down list box.
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	Choose the measure mode from the drop-down list. Different models may have different mode, please refer to actual product.	[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)	Alarm interval settings.	[Setting method] Enter a value manually ranging from 1 to 1800. [Default value] **10**
Area Alarm Delay(0-10s)	When the temperature in the detection area reaches a predetermined value and lasts for the set delay time, an alarm will be issued.	[Setting method] Enter a value manually ranging from 1 to 10. [Default value] **0**
Temperature range	The temperature range that TB9332-E cameras support is “-20 ℃ ~150℃/ -4 ºF ~ 302 ºF”.	[Setting method] Select a value from the drop-down list box.

Parameter	Description	Setting
Prevent Overheating	You can enable it to prevent over heat function if temperature of the testing area is too high. There are three types, close, auto and manual. **The auto mode is advised.**	[Setting method] Select a value from the drop-down list box. [Default value] **Auto**
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	**It is professional operation.** When prevent over heat mode is manual, the users should choose the action manually, such as pack up, lay down.	[Setting method] Select a value from the drop-down list box.

Advanced Interface



Advance Parameters

Parameter	Description	Setting
Dimming Mode	Auto Mode: Assign temperature highlight based on ambient temperature. Manual mode: Manually input the temperature range, and the temperature highlight display will be assigned according to the input range.	[Setting method] Select a value from the drop-down list box. [Default value] **Auto**
Raw Data Upload Interval(F/S)	Interval of upload the raw data	[Setting method] Select a value from the drop-down list box. [Default value] **1**

Parameter	Description	Setting
Mix Stream Mode	This function is used for mixing thermal and visible imaging. For the single thermal camera, it's close by default.	[Default value] **Close**

3.2 Ambient Temperature

Set the ambient temperature of camera, click "Apply" to save the setting, click "Refresh" the cavity temperature will be refresh based on ambient temperature.

Ambient Temperature

Parameter of Ambient Temperature

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

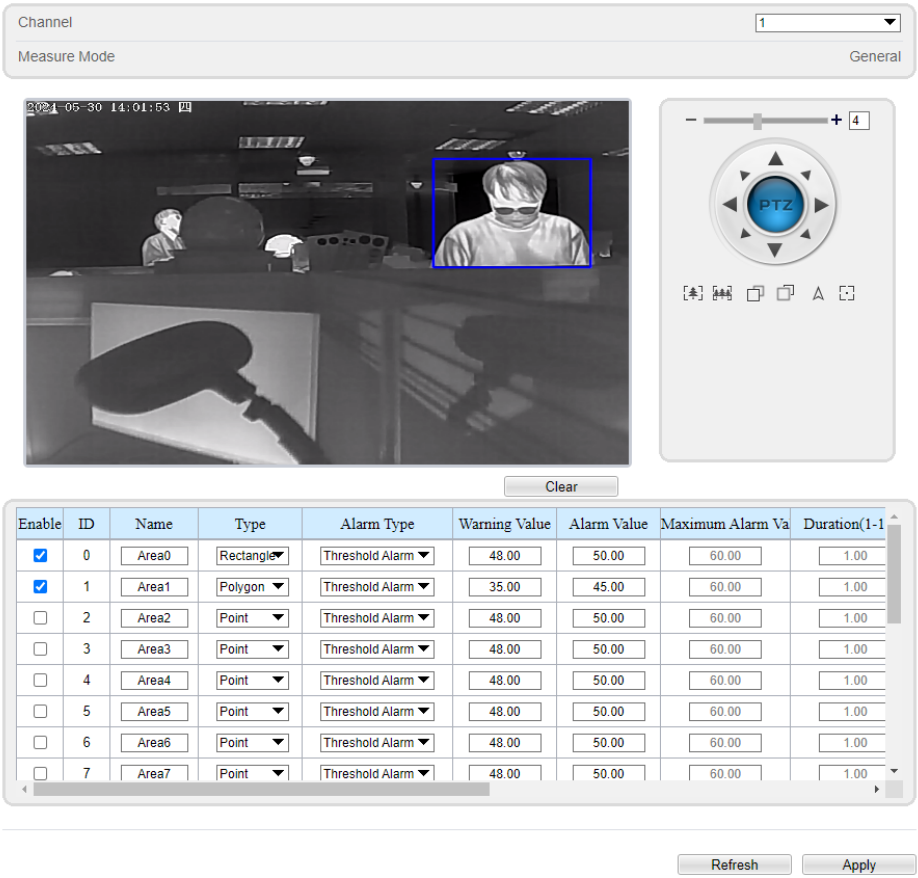
3.3 Temperature Alarm

Operation Procedure

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

The **Temperature Alarm** page is displayed in the following picture.

Temperature Alarm Configuration



Step 2 Set the parameters according to the table below.

Temperature Alarm Configuration

Parameter	Description	Setting
Channel	N/A	[Setting method] Select a value from the drop-down list box. [Default value] 1
Measure Mode	Set at temperature parameter interface.	N/A
Enable	Tick to enable the area alarm	[Setting method] Tick
Name	Area name of temperature area.	[Setting method] Enter a value manually.
Type	Type of temperature area. **ID 0 is a rectangle area, which is full screen by default.**	[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 the alarm type. Section Alarm: if the temperature value is among the set temperature range, it will generate the alarm. Temperature rise alarm means if the rising temperature value is more than the set value, it will generate the alarm. Alarm schedule linkage has to be set.	[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**

Parameter	Description	Setting
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 value rises within the duration setting; the alarm is triggered successfully.	
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. The emission rate list refers to 0B Common Emission Rate	[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 the actual distance when the distance between the camera and the target is less than 15m. Enter 15 when the distance between the camera and the target is greater than or equal to 15m.
Reflect Enable	When there are some high-temperature objects on the scene, and the temperature reflects the other object, you can enable this function to calibrate the temperature.	[Setting method] Tick to enable

Parameter	Description	Setting
Reflect Temperature	The temperature of high temperature object.	[Setting method] Enter a value manually. [Default value] **50.00**
Ignore Object	Enable to shield the temperature of area capturing AI object.	[Setting method] Select a value from the drop-down list box.
Alarm	**Enable or disable the alarm output and linkage of area.**	[Setting method] Tick the alarm output channel .
Masking	Enable, and then the device will shield this area's temperature.	[Setting method] Tick to shield.
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.

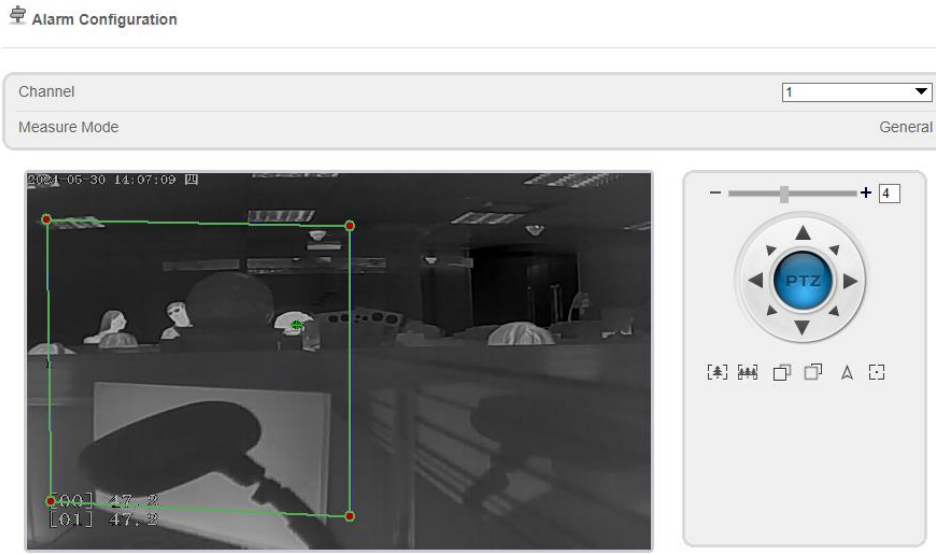
Step 3 **Set temperature area**.

Step 1. Select an area ID

Step 2. Select type from the drop-list.

Step 3. Press and hold the left mouse button, and drag in the video area to draw a temperature area, as shown in the picture below0.

Temperature Area Setting Interface



Step 4. Click **Apply**, the message “Apply success” pops up, 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 **Clear**.
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.

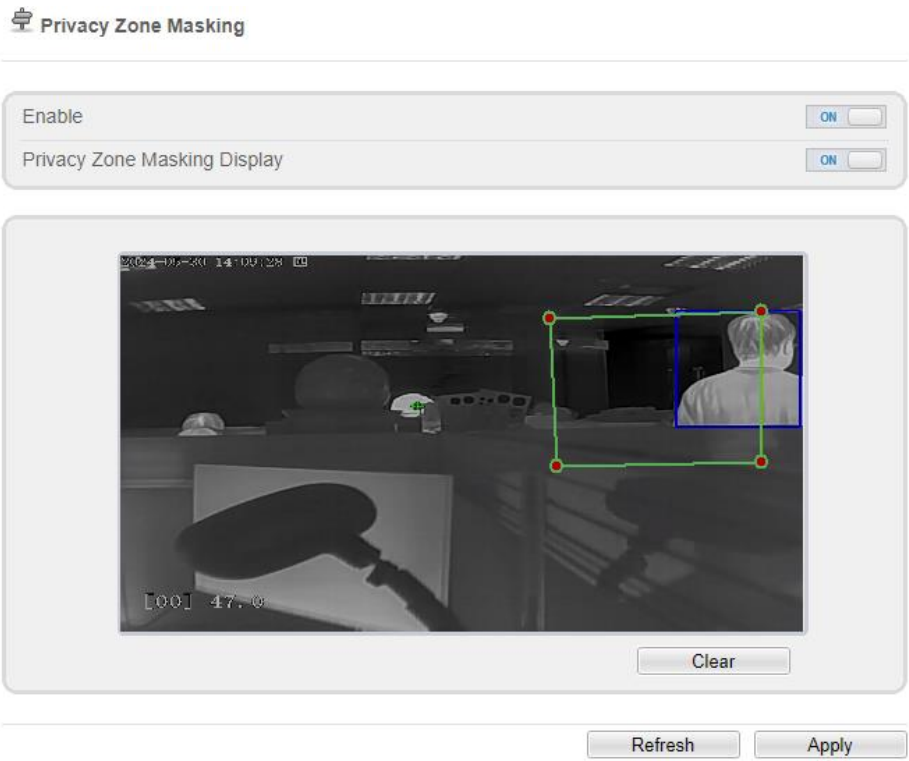
3.4 Privacy Zone Masking

Privacy zone masking means that the camera will not detect the temperature of the masking area.

Operation Procedure

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

Privacy Zone Masking



Step 2 Enable the **Privacy Zone Masking**.

Step 3 Enable **Privacy Zone Masking Display,** then the setting masking areas will show on live video.

Step 4 Left-click to select polygon area, right-click to save.

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

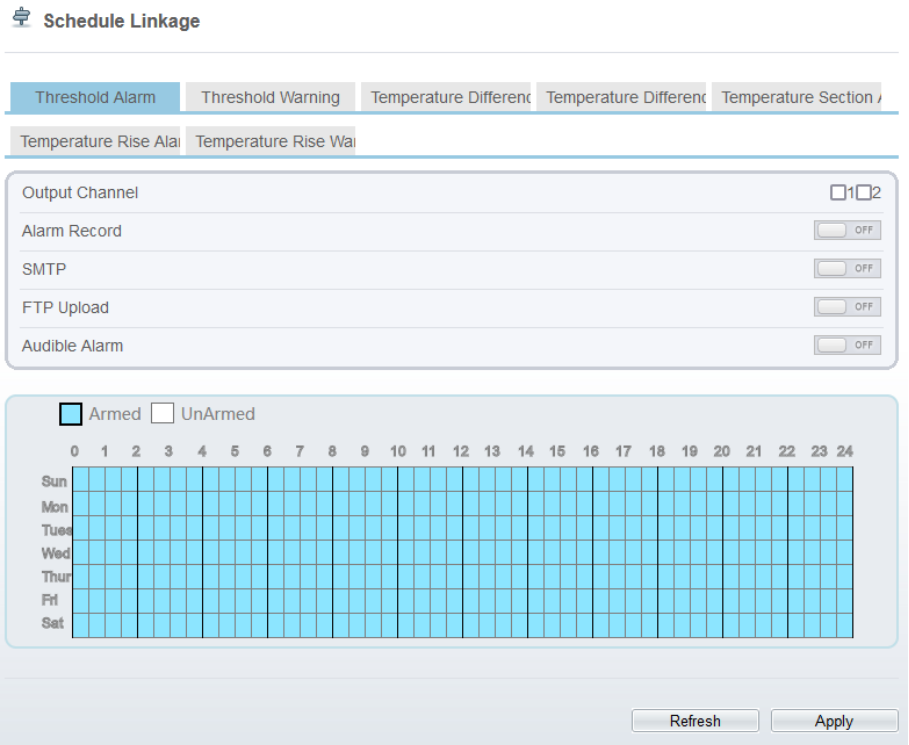
Step 6 Click **Clear** to clear the masking area.

3.5 Schedule Linkage

Operation Procedure

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

The **Schedule Linkage** page is displayed, as shown in **Error! Reference source not found.**



Step 2 Tick the output channel.

Step 3 Enable wanted linkage: “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 Click the armed icon Armed to set the arming time. Click the Unarmed icon UnArmed to set the unarming 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.

Deleting deployment time: Click UnArmed to delete the selected deployment time. The methods are same as set deployment time.

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.

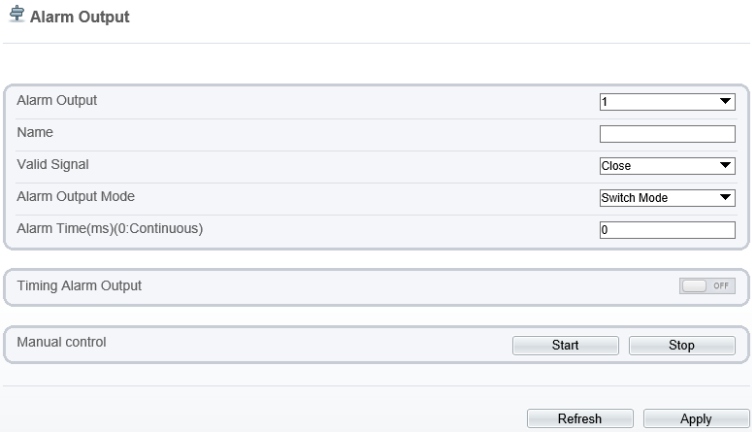
Step 5 Click **Apply**.

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.

Alarm Output



Alarm Output

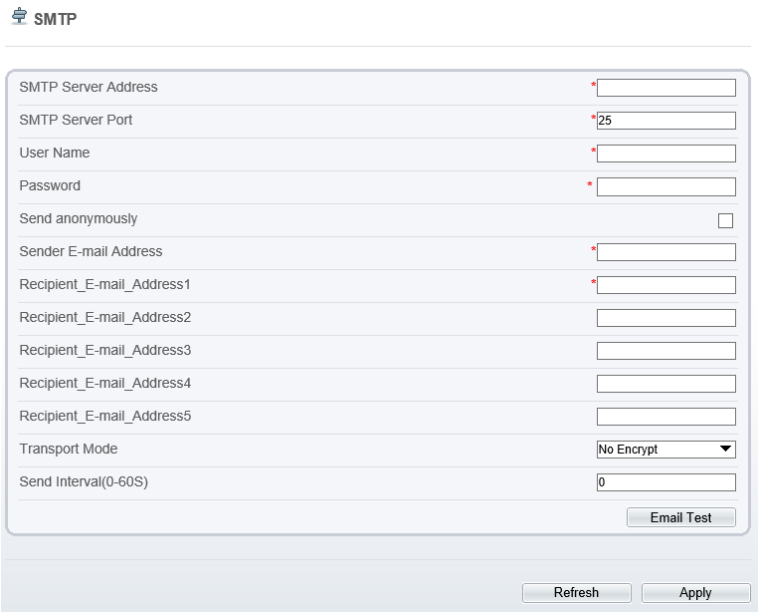
Parameter	Description	Setting
Alarm Output	ID of the alarm output channel. NOTE The number of alarm output channels depends on the device model.	[Setting method] Select a value from the drop-down list box. [Default value] **1**
Name	Alarm output channel name.	[Value range] 0 to 32 bytes
Valid Signal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

Parameter	Description	Setting
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

- Alarm Record: Users insert the SD card in camera. The recording time is set at "**Configuration > Device Record > Record Policy**" interface.

- SMTP: At " **Configuration > Network > SMTP**" interface, users should set the parameters of SMTP in advance.

SMTP



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.

Parameter	Description	Setting
Recipient_E-mail_Address 1	(Mandatory) Email address of recipient 1.	[Setting method] Enter a value manually.
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,.

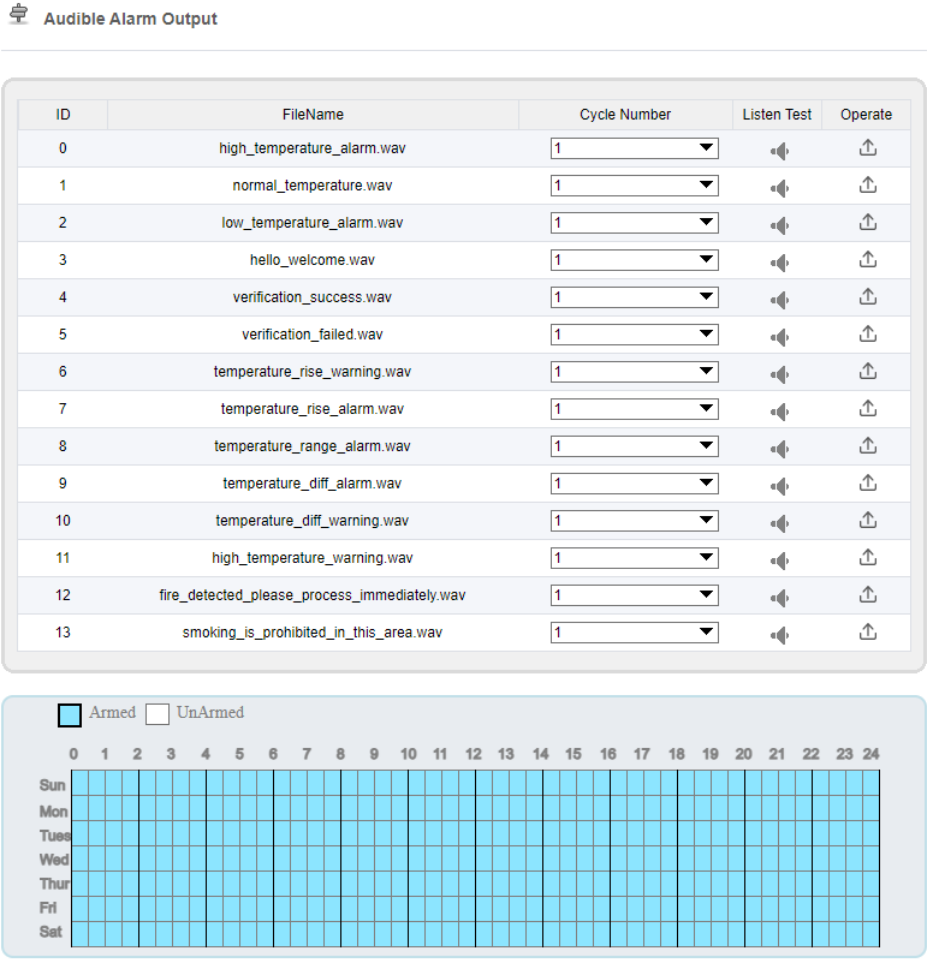
FTP Upload

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.
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

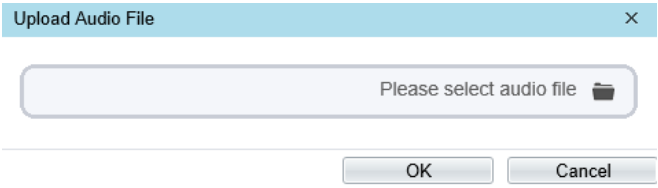
- Audible Alarm: At “ **Configuration > Alarm > Audible Alarm Output**” interface, users should set the parameters of Audible Alarm output in advance.

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.).

Upload Audio File



3.6 Defect Pixel Correction

Description

The points that can't move when the environment or scenario change is defect pixel. You can correct the these points manually.

Procedure

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

The Defect Pixel Correction page is displayed as the picture below.

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

Step 2 Click the white points one by one at image, click **Apply** to recover the bad point.

Step 3 Click **Reset** to return the previous settings.

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

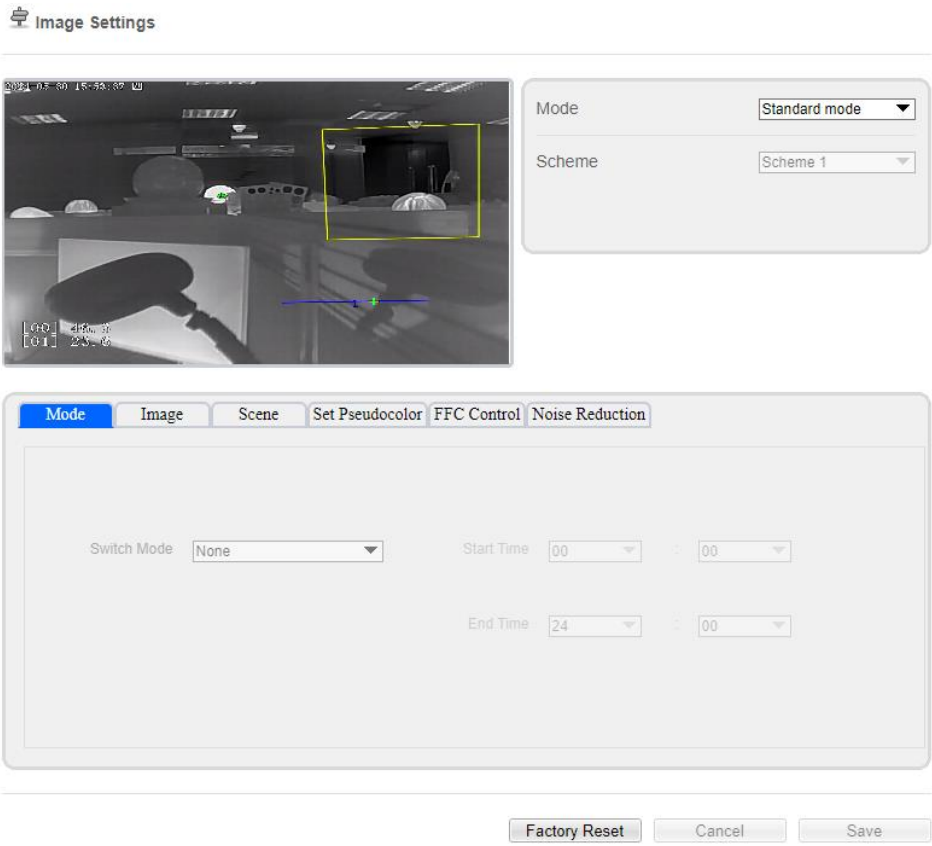
4 Image Settings

4.1 Image Settings Interface

Operation Procedure

Step 1 On the web choose "**Configuration > Image Settings**" interface to set,.

Thermal Channel Image Settings

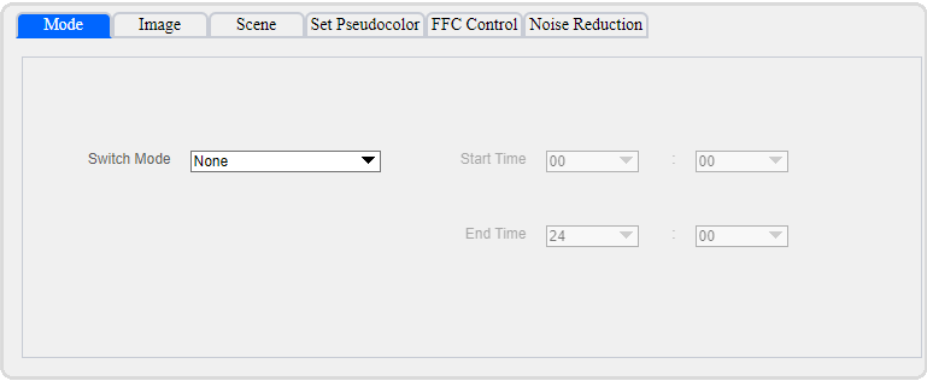


Step 2 Choose **Debug Mode** at mode item. There are four schemes can be set.

4.2 Mode

It shows the **Mode** interface below.

Mode Interface



Operation Procedure

Step 1 Click **Mode** tag on image settings interface.

Step 2 Choose switch mode form drop-down list.

Step 3 Set the **Start Time.**

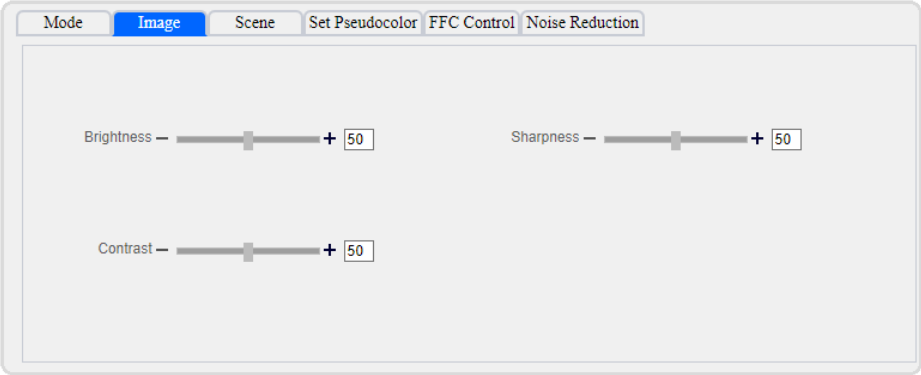
Step 4 Set the **End Time.**

Step 5 Click **Save**, the message "Save succeed" is displayed, the system saves the settings.

4.3 Images

It shows the **Image** interface.

Image Interface



Step 1 Click the **Image** tag on the image settings interface. Drag the slider to adjust the parameter of image.

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.

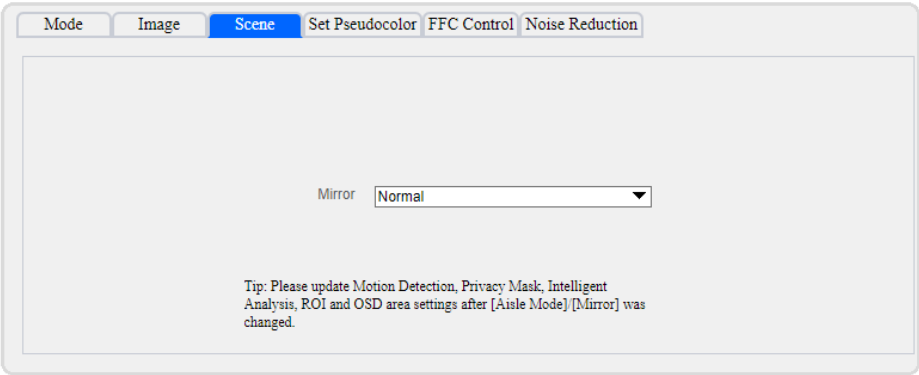
Sharpness: It indicates the contrast between definition and edge sharpness. The higher value, the higher definition and greater distortion. It ranges from 0 to 100.

Step 2 Click **Save**; the message "Save succeed" is displayed, and the system saves the settings.

4.4 Scene

It shows the **Scene** interface.

Scene Interface



Step 1 Click the **Scene** tag on the image settings interface.

Step 2 Choose mirror mode from the drop-list.

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

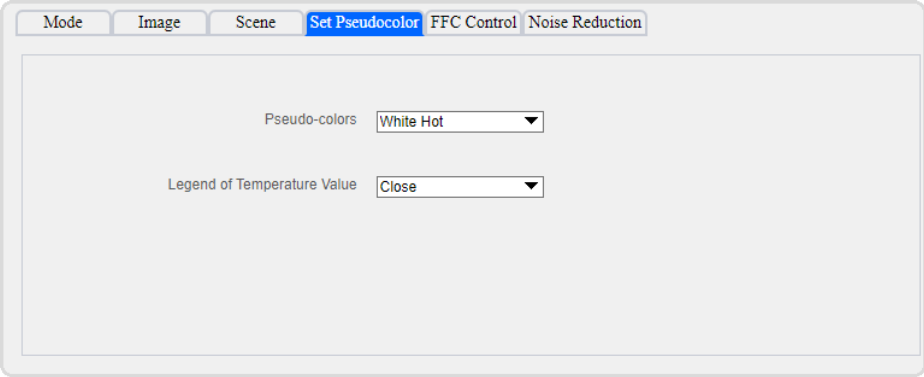
NOTE

- 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.

4.5 Set Pseudocolor

It shows the **Set Pseudocolor** interface.

Figure 4-1 Set Pseudocolor Interface



Step 1 Click **Set pseudocolor** tag on the image settings interface.

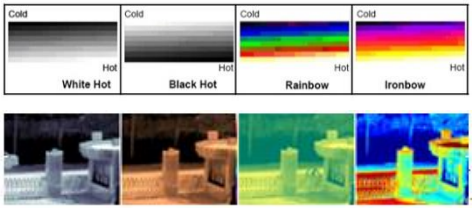
Step 2 Choose Pseudo-colors modes from the drop-down list.

Step 3 Enable or disable the Legend of Temperature Value.

Step 4 Click **Save**; the message "Save succeed" is displayed, and the system saves the settings.

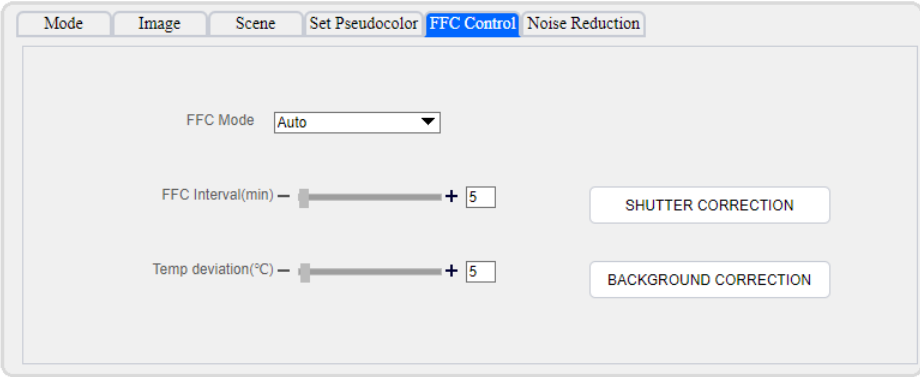
NOTE

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 is reversed. Other modes include rainbow, HSV, autumn, bone and so on.



4.6 FFC Control

FFC Control Interface



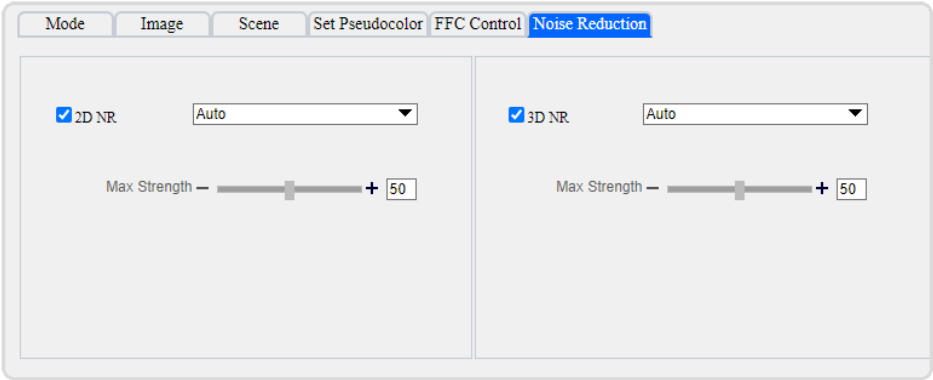
The following table lists the parameters on the FFC control interface.

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. 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)	[How to set] Select from the drop-down list box. [Default value] **Auto**

Parameter	Description	Setting
	ranges from 5 to 255 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 5 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] **5**
Temp deviation	In the automatic FFC mode, the temp deviation value ranges from 0.2 to 25.5 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 CORRECTION	Click the icon and the camera performs the action.	Manually
BACKGROUND CORRECTION	Click the icon and the camera performs the action.	Manually

4.7 Noise Reduction

Noise Reduction Interface



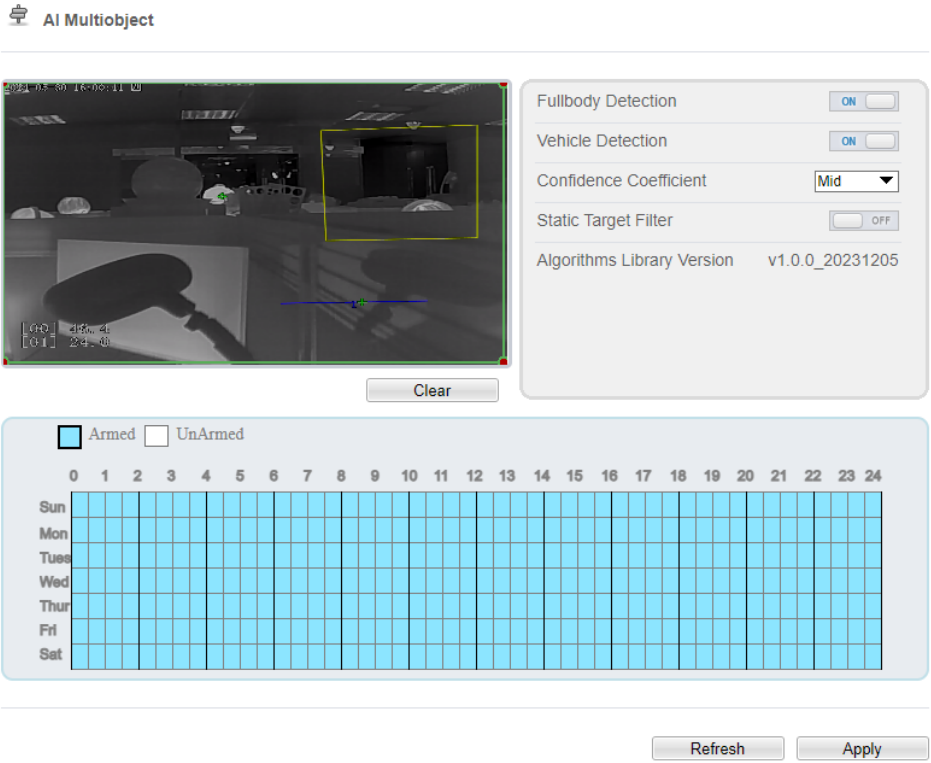
The following table lists the Noise Reduction parameters.

Parameters on the Noise Reduction Interface

Parameter	Description	Setting
2DNR	Decrease the image noise.	[How to set] Select from the drop-down list box. [Default value] **Auto**
3DNR	Decrease the image noise.	[How to set] Select from the drop-down list box. [Default value] **Auto**

5 AI Multiobject

To enable full body detection and vehicle detection, when the device detects an object, it will trigger the alarm.



Parameters of AI Multiobject

Parameter	Description	How to set
Full body detection	The camera will snap the whole body when someone appears in live video.	Enable
Vehicle detection	The camera will snap the vehicle when the vehicles appears in live video.	Enable
Confidence	The range of detecting object, there are three	Choose from drop

Parameter	Description	How to set
Coefficient	type, such as high, mid and low. The higher confidence, the better the detecting quality.	list.
Static Target Filter	If the target is static, the device will filter this target. For example, if a car stop for long time, the device will be filtered.	Enable

Set Deployment Time:

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

Click the armed icon Armed to set the arming time. Click the Unarmed icon UnArmed to set the unarming time.

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

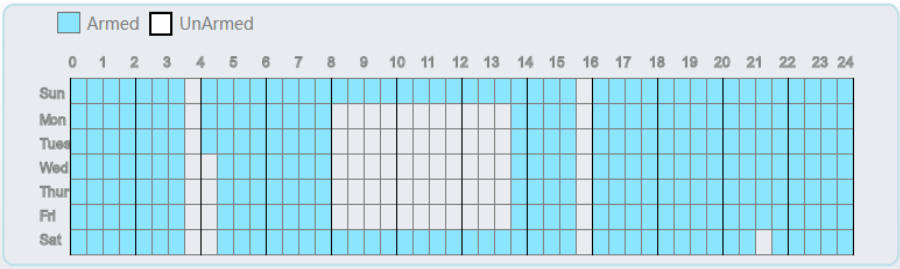
Method 2： Hold down the left mouse button, drag and release mouse to select the deployment time within 0:00-24:00 from Monday to Sunday.

Deleting deployment time: Click UnArmed to delete the selected deployment time. The methods are same as set deployment time.

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.

Deployment Time Setting Interface



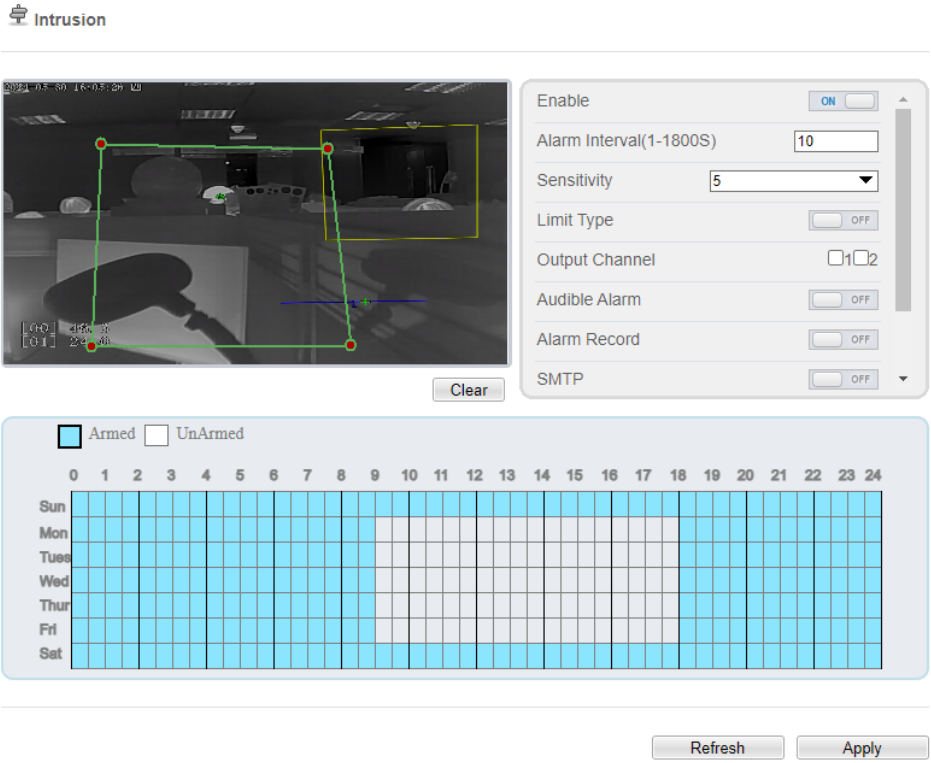
6 Intelligent Analysis

6.1 Intrusion

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.

Operation Procedure

Step 1 Select **Intelligent Analysis** > **Intrusion** to access the **Intrusion** interface.



Step 2 Set all parameters for Intrusion.

Parameter	Description	Setting
Enable	Enable the button to enable the alarm.	[How to set] Click Enable to enable. [Default value] **OFF**
Sensitivity	The sensitivity of detecting the target, when the value is high, the target can be detected easily, but the accuracy will be lower.	[How to set] Choose from the drop-down list [Default value] **5**
Limit Target 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 as 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 the alarm happens, it will play audio to alarm. Choose the audible alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audio Detection Alarm [Default value] **OFF**
Alarm Record	Enable the button to enable the alarm record.	[How to set] Click to enable Alarm Record. [Default value] **OFF**
SMTP	Enable the button to enable SMTP server. The parameters of SMTP can be set at **Configuration > Network Service > SMTP** interface.	[How to set] Click to enable SMTP. [Default value] **OFF**

Parameter	Description	Setting
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 deployment frame will show on the 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 8 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

Click the armed icon Armed to set the arming time. Click the Unarmed icon UnArmed to set the unarming time.

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

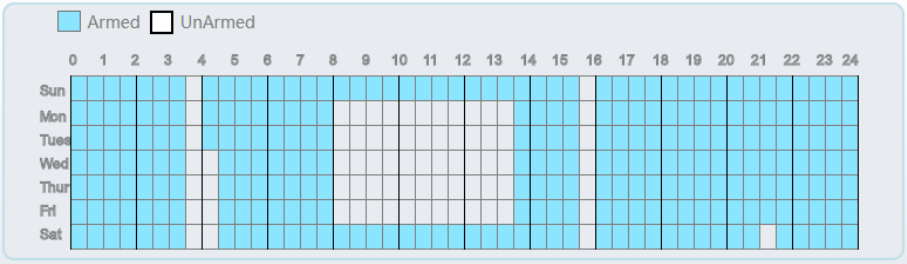
Method 2： Hold down the left mouse button, drag and release mouse to select the deployment time within 0:00-24:00 from Monday to Sunday.

Deleting deployment time: Click UnArmed to delete the selected deployment time. The methods are same as set deployment time.

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.

Deployment Time Setting Interface



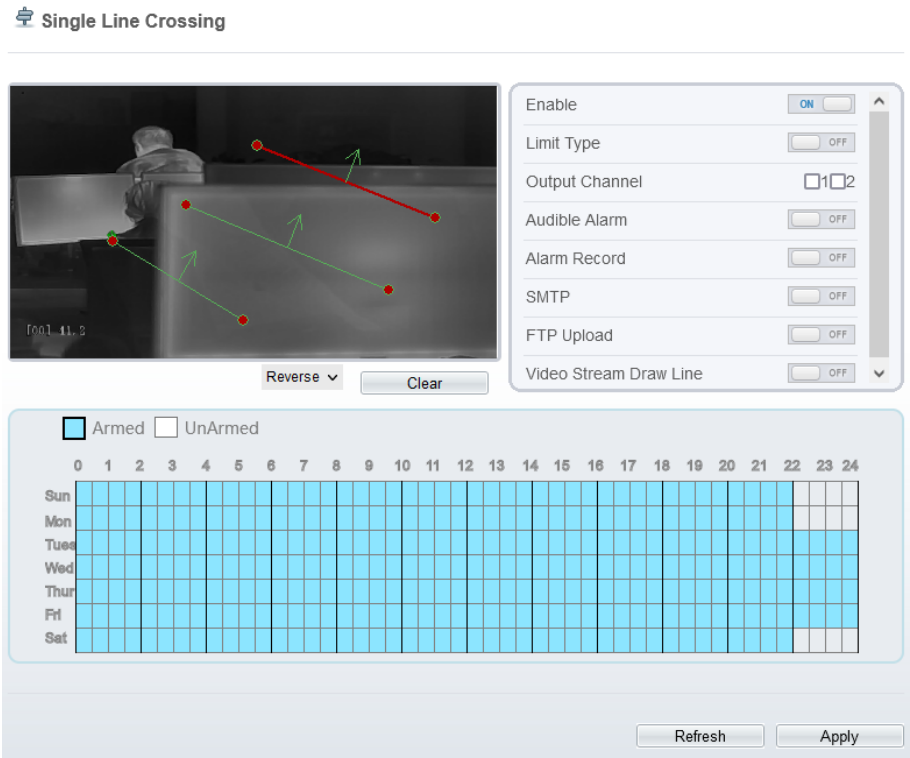
Step 5 Click **Apply** to save the settings.

6.2 Single Line Crossing

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.

Operation Procedure

Step 1 Select **Intelligent Analysis** > **Single Line Crossing** to access the **Single Line Crossing** interface.



Step 2 Set all parameters for the Single Line Crossing.

Parameter	Description	Setting
Enable	Enable the button to enable the alarm.	[How to set] Click Enable to enable. [Default value] OFF
Limit Target 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 as 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	[How to set] Click to select an ID.

Parameter	Description	Setting
	indicator, the alarm indicator signals when an alarm is triggered.	
Audible alarm	Enable, when happen the alarm, it will play audio to alarm. Choose the audible alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audio Detection Alarm [Default value] **OFF**
Alarm Record	Enable the button to enable the alarm record.	[How to set] Click to enable Alarm Record. [Default value] **OFF**
SMTP	Enable the button to enable SMTP server. 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. [Default value] **OFF**
Video Stream Draw Line	Enabled; the deployment frame will show on the live video.	[How to set] Click to enable Video Stream Draw Line. [Default value] **OFF**

Step 3 Set a deployment area

Drawing 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 virtual fence: 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 virtual fence. You can right-click to delete the single virtual fence.

NOTE

- 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 virtual fence.
- 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.

Step 4 Set deployment time.

Step 5 Click “Apply” to save the settings.

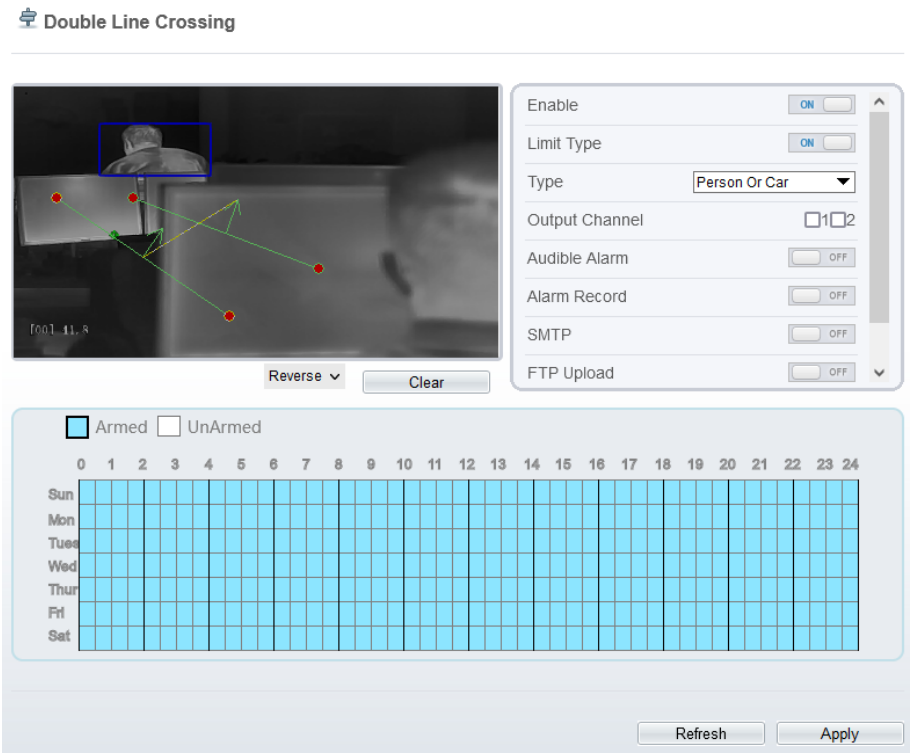
6.3 Double Line Crossing

Double Line Crossing refers 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.

Operation Procedure

Step 1 Select **Intelligent Analysis** > **Double Line Crossing** to access the **Double Line Crossing** interface.

Double Line Crossing Interface



Set all parameters for the Double Line Crossing.

Parameters of Double Line Crossing

Parameter	Description	Setting
Enable	Enable the button to enable the alarm.	[How to set] Click to enable. [Default value] OFF
Limit Target 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 as 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 the alarm happens, it will play audio to alarm. Choose the audible alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audio Detection Alarm [Default value] **OFF**
Alarm Record	Enable the button to enable the alarm record.	[How to set] Click to enable Alarm Record. [Default value] **OFF**
SMTP	Enable the button to enable SMTP server. 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. [Default value] **OFF**
Video Stream Draw Line	Enable, the deployment frame will show on the live video.	[How to set] Click to enable Video Stream Draw Line. [Default value] **OFF**

Step 2 Set a deployment area

Drawing 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.

Setting double virtual fences: 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 virtual fences 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.
- 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 virtual fences.
- 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.
- The double line crossing is not supported to modify the direction manually; you can change the direction by choosing **Reverse**.

Step 3 Set deployment time.

Step 4 Click “Apply” to save the settings.

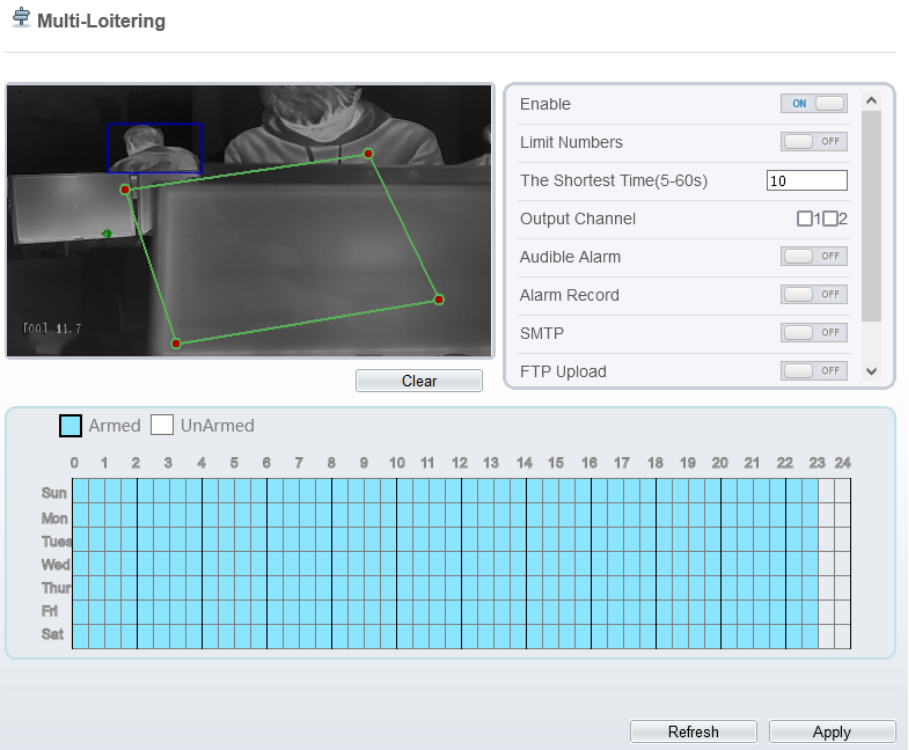
6.4 Multi-Loitering

Multi-loitering allows setting the shortest loitering time for multiple targets of specified type (such as person or car) within the deployment area in the field of view. When the loitering time of the multiple targets within this area meets the set shortest loitering time, an alarm is generated.

Operation Procedure

Step 1 Select **Intelligent Analysis** > **Multi-Loitering** to access the **Multi-Loitering** setting interface.

Multi-Loitering Setting Interface



Step 2 Set all parameters for Multiple-Loitering.

Parameters of Multiple Loitering

Parameter	Description	Setting
Enable	Enable the button to enable the alarm.	[How to set] Click Enable to enable. [Default value] **OFF**
Limit Target Size	The target size for triggering an effective alarm is set based on the actual target size. The minimum size is 1000 square centimeters and the maximum size is 100000 square centimeters. When setting the target size, you need to well set “Real size in scene” in advanced parameters; Otherwise no alarms may be generated.	[How to set] Click to enable Limit Target Size. [Default configuration] **OFF**

Parameter	Description	Setting
Limit Numbers	When Limit Numbers is set to OFF, an alarm is generated no matter how many people loiter. When Limit Numbers is set to ON, if the minimum number is set to 2 and the maximum number is set to 3, an alarm is generated for 2-3 people loitering. Other settings are the same as loitering.	[How to set] Click to enable Limit Numbers.
The Shortest Time (Sec)	The time that the target person wanders in the area must not be less than the minimum time. Settable range: 5-60s	[How to set] Input a value in the area box. [Default value] 10s
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 play audio to alarm. Choose the audible alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audio Detection Alarm [Default value] **OFF**
Alarm Record	Enable the button to enable the alarm record.	[How to set] Click to enable Alarm Record. [Default value] **OFF**
SMTP	Enable the button to enable SMTP server. 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**

Parameter	Description	Setting
Video Stream Draw Line	Enable, the deployment frame will show on the 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 8 sides at most can be drawn.
- The quantity of deployment areas is up to 8.

Step 4 Set deployment time

Step 5 Click “Apply” to save the settings.

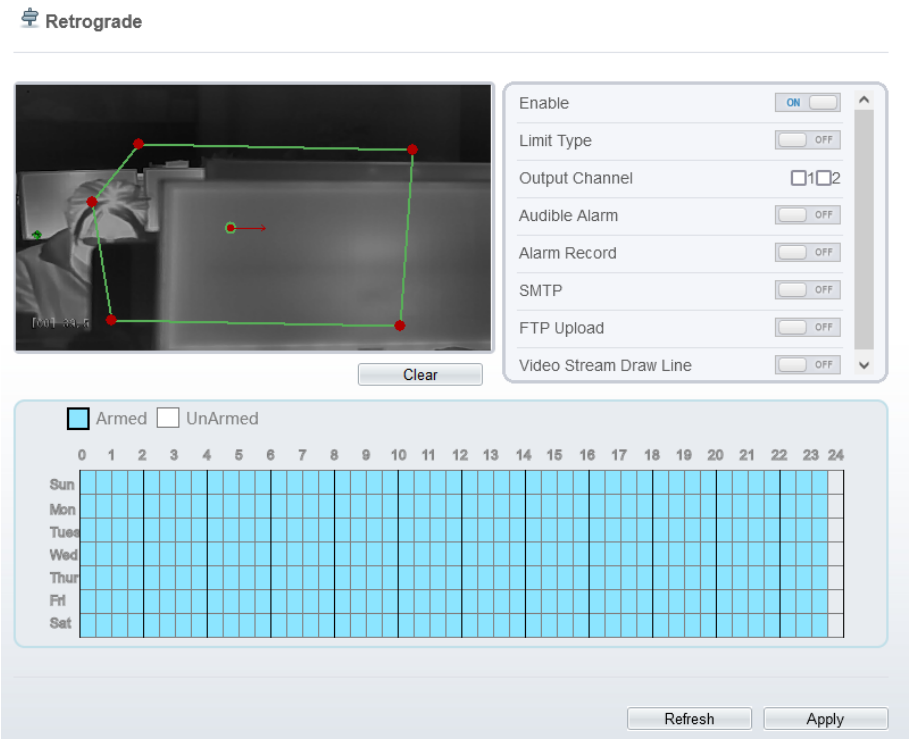
6.5 Retrograde

Retrograde, also called wrong-way detection, allows setting the travel direction criteria for a target within an area on the video screen. When a target of specified type (such as people or car) within this area moves in the set travel direction, an alarm is generated.

Operation Procedure

Step 1 Select **Intelligent Analysis** > **Retrograde** to access the **Retrograde** setting interface.

Retrograde Setting Interface



Step 2 Set all parameters for Retrograde.

Parameter of Retrograde

Parameter	Description	Setting
Enable	Enable the button to enable the alarm.	[How to set] Click Enable to enable. [Default value] OFF
Limit Target 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 the alarm happens, it will play audio to alarm. Choose the audible alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audio Detection Alarm [Default value] **OFF**
Alarm Record	Enable the button to enable the alarm record.	[How to set] Click to enable Alarm Record. [Default value] **OFF**
SMTP	Enable the button to enable SMTP server. 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 deployment frame will show on the 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, move the arrow in the field can set the direction of Retrograde.

NOTE

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

Step 4 Set deployment time

Step 5 Click “Apply” to save the settings.

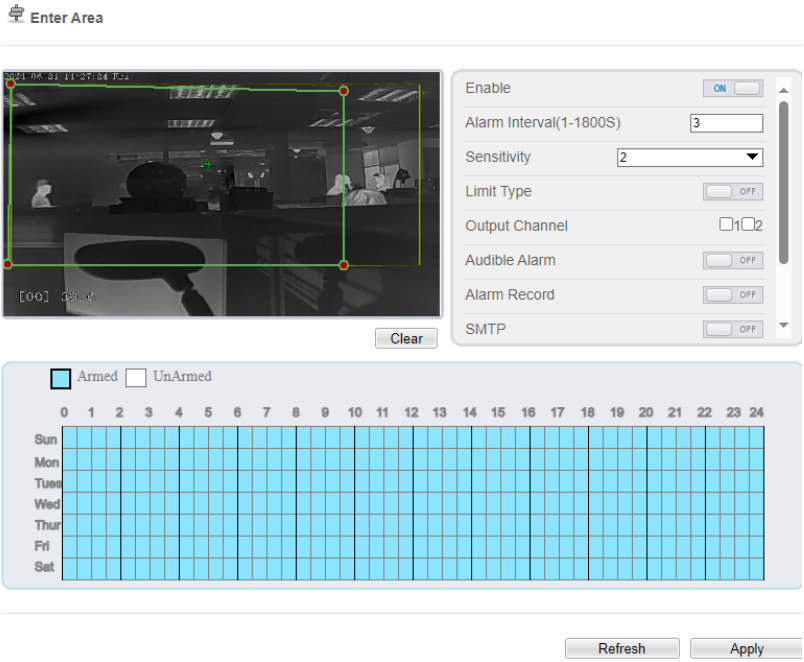
6.6 Enter Area

Set the area, when the targets enter the area, it will alarm.

Operation Procedure

Step 1 Select **Intelligent Analysis** > **Enter Area**.

Enter area



Step 2 Set all parameters for Enter Area.

Parameter	Description	Setting
Enable	Enable the button to enable the enter area alarm.	[How to set] Click Enable to enable. [Default value] **OFF**
Sensitivity	The sensitivity of detecting the target, when the value is high, the target can be detected easily, but the accuracy will be lower.	[How to set] Choose from the drop-down list [Default value] **5**

Parameter	Description	Setting
Limit Target 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 the alarm happens, it will play audio to alarm. Choose the audible alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audio Detection Alarm [Default value] **OFF**
Alarm Record	Enable the button to enable the alarm record.	[How to set] Click to enable Alarm Record. [Default value] **OFF**
SMTP	Enable the button to enable SMTP server. 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 deployment frame will show on the 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.

Step 5 Click “Apply” to save the settings.

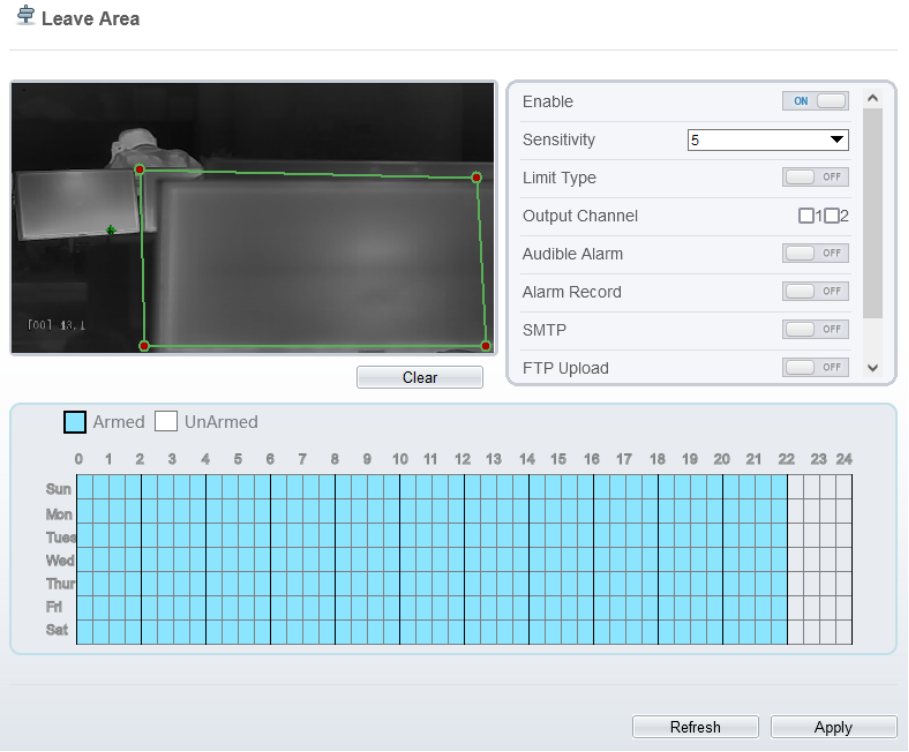
6.7 Leave Area

When the targets leave the setting area, it will be alarm.

Procedure

Step 1 Select **Intelligent Analysis** > **Leave Area**.

Leave Area



Step 2 Set all parameters for Leave Area.

Parameters of Leave Area

Parameter	Description	Setting
Enable	Enable the button to enable the leave area alarm.	[How to set] Click Enable to enable. [Default value] **OFF**
Sensitivity	The sensitivity of detecting the target, when the value is high, the target can be detected easily, but the accuracy will be lower.	[How to set] Choose from the drop-down list [Default value] **5**
Limit Target 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 the alarm happens, it will play audio to alarm. Choose the audible alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audio Detection Alarm [Default value] **OFF**
Alarm Record	Enable the button to enable the alarm record.	[How to set] Click to enable Alarm Record. [Default value] **OFF**
SMTP	Enable the button to enable SMTP server. The parameters of SMTP can be set at **Configuration > Network Service > SMTP** interface.	[How to set] Click to enable SMTP. [Default value] **OFF**

Parameter	Description	Setting
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 deployment frame will show on the live video.	[How to set] Click to enable Video Stream Draw Line. [Default value] **OFF**

Step 3 Set a deployment area

Step 4 Set deployment time.

Step 5 Click “Apply” to save the settings.

7 Advanced Intelligent Analysis

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

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

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

7.1 Smoker Detection

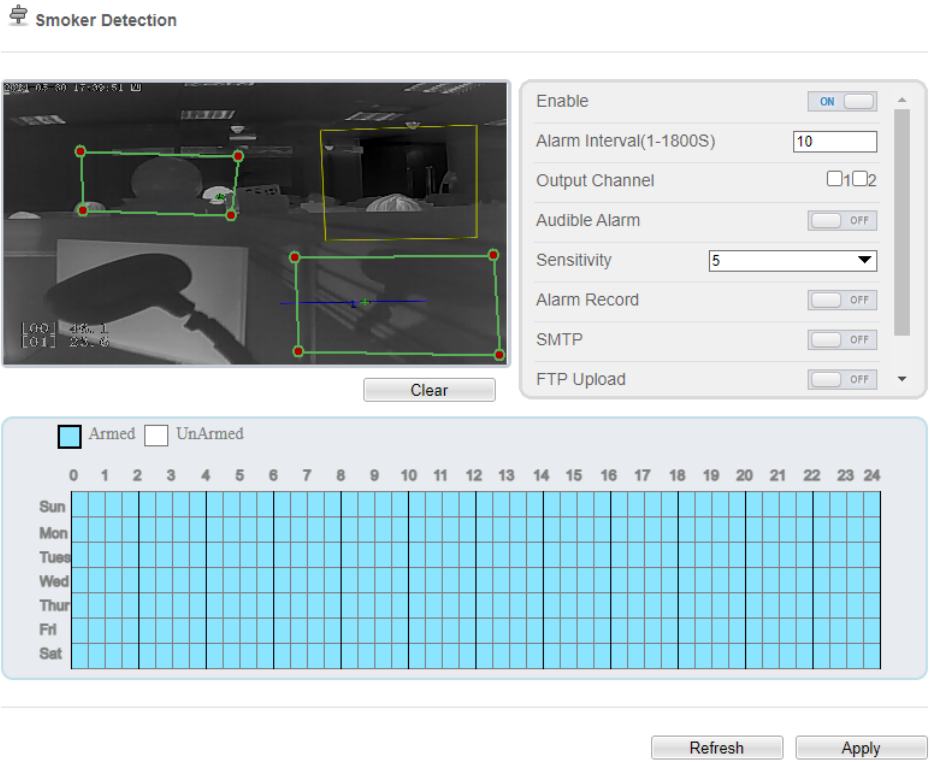
Description

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**.

Smoker Detection Interface



Step 2 Set all parameters for Smoker Detection.

Parameters of Smoker Detection

Parameter	Description	Setting
Enable	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 play audio to alarm. Choose the audible alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audio Detection 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**
Alarm Record	If you install SD card, enable this function, the device will record the alarm video.	[How to set] Click to enable Alarm Record. [Default value] **OFF**
SMTP	Enable the button to enable SMTP server.	[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 8 sides at most can be drawn.
- The quantity of deployment areas is up to 8.

Step 4 Set deployment time.

Step 5 Click “Apply” to save the settings.

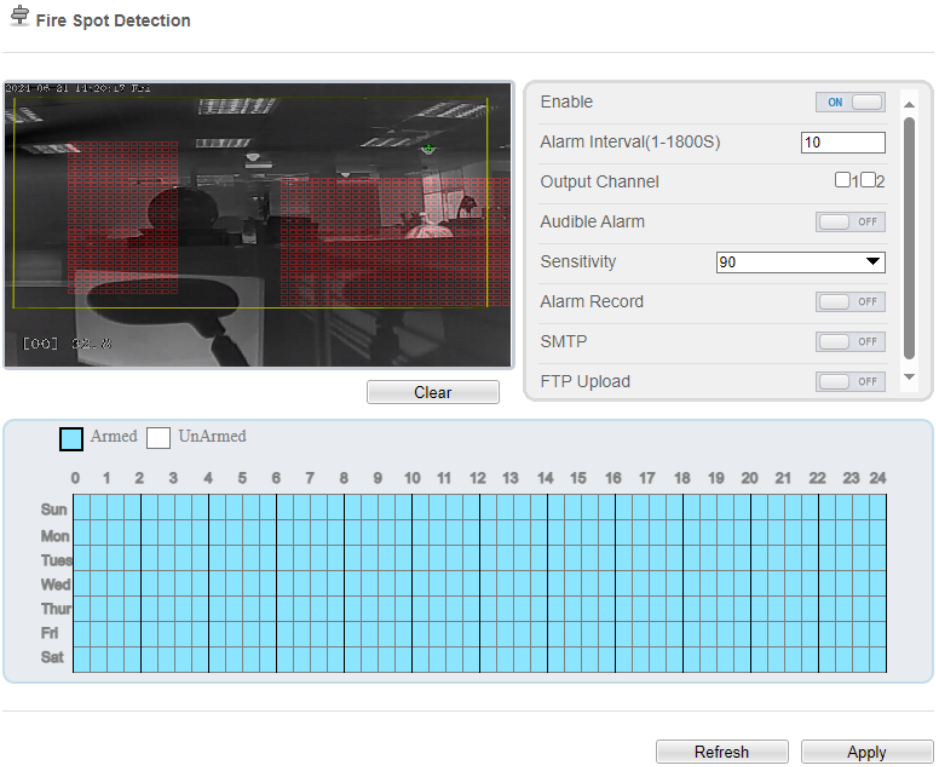
7.2 Fire Spot Detection

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**.



Step 2 Set all parameters for Fire Spot Detection.

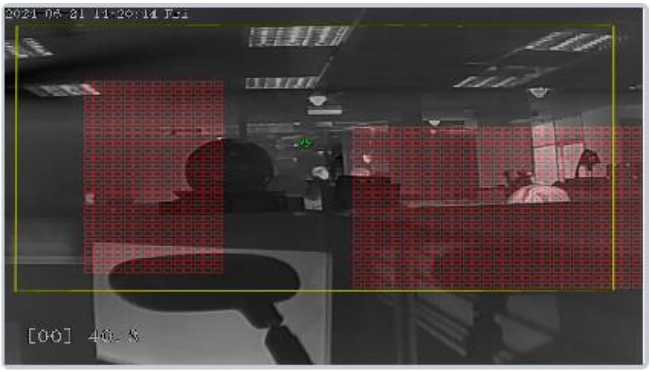
Fire Spot Detection Description

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 play audio to alarm. Choose the audible alarm file (set at the "**Configuration > Alarm > Audible Alarm Output**").	[How to set] Click to enable Audio Detection Alarm [Default value] **OFF**
Alarm Record	If you install SD card, enable this function, the device will record the alarm video.	[How to set] Click to enable Alarm Record. [Default value] **OFF**
SMTP	Enable the button to enable SMTP server.	[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**

Step 3 Set a deployment area.

Use mouse to draw rectangular area, you can set several area to deploy.



NOTE

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

Step 4 Set deployment time.

Step 5 Click “Apply” to save the settings.

A Troubleshooting

Common Issues	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 FFC mode is incorrect.	The FFC default mode is automatic. If the mode is set to manual, it will be no block calibration, which may lead to fuzzy pictures and inaccurate temperature.
	The target configuration is incorrect.	Check whether the emission rate and distance of the target are configured correctly.
Intelligent Analysis - cannot show detection area on live video	"Video Stream Draw Line" isn't enabled.	Go to Intelligent Analysis, Event type, and then enable "Video Stream Draw Line".

Common Issues	Possible Cause	Solution
Intelligent Analysis - event cannot be triggered by human or vehicle	"Limit Type" isn't enabled and configured.	Go to Intelligent Analysis, Event type, enable "Event Type" and then choose "Person, Car or Both".
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 follow: Press **Ctrl + Shift + Delete**, the pop-up window shows the **Clear browsing data** dialog box appears. Select all check boxes. Click **Clear now**. Log in the web page of the camera again.
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.

B Common Emission Rate

Emission Rate
The emission rate is the capability of an object to emit or absorb energy. An ideal transmitter provides an emission rate of emitting 100% of intake energy. An object with an emission rate of 0.8 can absorb 80% of intake energy, and reflect the remaining 20%. The emission rate is the ratio of the energy emitted by an object at a specific temperature to that emitted by an ideal radiator at the same temperature. The range of emission rate value is 0.0 to 1.0 generally.

Materials	Temperature (℃/℉)	Emissivity
Gold (High-purity)	227/440	0.02
Aluminum foil	27/81	0.04
Aluminum sheet	27/81	0.18
Aluminum used for families (flat)	23/73	0.01
Aluminum plate (98.3% purity)	227/440	0.04
	577/1070	0.06
Aluminum plate (rough)	26/78	0.06
Aluminum (oxidized @ 599℃)	199/390	0.11
	599/1110	0.19
Polished aluminum	38/100	0.22
Tin (light tinned Iron sheet)	25/77	0.04
Nickel wire	187/368	0.1
Lead (99.9% purity, No oxidized)	127/260	0.06
Copper	199/390	0.18

Cobalt	599/1110	0.19
Steel	199/390	0.52
	599/1110	0.57
Tinned iron sheet (Light)	28/82	0.23
Brass(High-polish)	247/476	0.03
Brass (Tough rolled, polished metal wire)	21/70	0.04
Tinned Iron (Light)	-	0.13
Iron plate (Rust eaten)	20/68	0.69
Rolled steel sheet	21/71	0.66
Ferric oxide	100/212	0.74
Wrought-iron	21/70	0.94
Fused iron	1299-1399/3270-2550	0.29
Copper (Polished)	21-117/70-242	0.02
Copper (Polished, not reflected)	22/72	0.07
Copper (Heavy oxide Board)	25/77	0.78
Enamel (Fuse on iron)	19/66	0.9
Formica Plate	27/81	0.94
Frozen soil	-	0.93
Brick (Red, rough)	21/70	0.93
Brick (Unglazed, rough)	1000/1832	0.8
Carbon (T - carbon 0.9% ash)	127/260	0.81
Concrete	-	0.94

Glass (Glossy)	22/72	0.94
Granite (Surfaced)	21/70	0.85
Ice	0/32	0.97
Marble (I Polished, grey)	22/72	0.93
Asbestos board	23/74	0.96
Asbestos paper	38/100	0.93
	371/700	0.95
Asphalt (Paving the road)	4/39	0.97
Paper (Black tar)	-	0.93
Paper (White)	-	0.95
Plastic (White)	-	0.91

VIVOTEK
A Delta Group Company