User Guide

GD-TI-AT30105K
GD-TI-AT30155K

EN

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Contents

1. Product Overview

The user's PC can access the IP camera through a router or switch.

Before accessing the IP camera through the network, first you need to obtain its IP address. The user can search for the IP address of the network camera through the quick configuration tool.

The following table shows the default parameters of different devices.

Items	The Introduction of Login method
Single IP Dual optical	IP:192.168.1.64 Account number: admin/ Password: Abc.12345
Dual IP dual optical	IP:192.168.1.65 Account number: admin/ Password: Abc.12345
Single thermal image	IP:192.168.1.65 Account number: admin/ Password: Abc.12345

2. Log in and Log out

After logging in to the WEB interface of the device through a browser, you can perform operations such as preview, playback etc.

2.1 Logging in to the Web Interface

The following takes IE as an example to describe the login procedures.

Connecting camera to the computer, enter the camera IP address browser address bar to log in. When the browser plug-in installation interface pops up, please allow the installation. Please close the browser when installing the plug-in, otherwise, the plug-in installation will be unsuccessful.

If you log in for the first time, please install the Active X. You need to close your browser to complete the installation. Otherwise, the installation will fail.

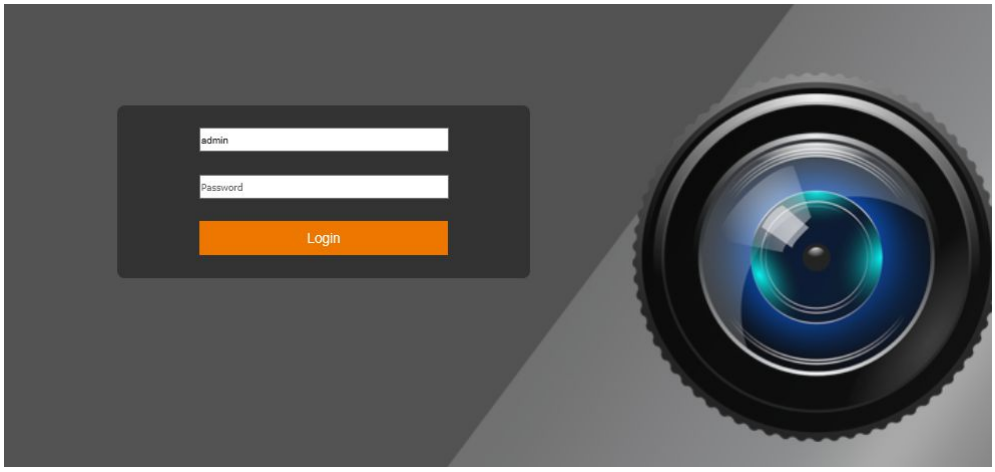


Figure 2-1 Login page

Note:

(1) It is recommended to use IE browser 10 or 11. If you use a third-party browser, it is recommended to use the compatibility mode;

(2) If you have to use Google or Firefox browsers, you need to adjust the third stream of visible light to a resolution of 384*288 or less, and keep the thermal imaging at the default. Please refer to section 6.3.1 for specific adjustment methods;

2.2 Logout

When entering the main interface of the network camera, you can click " 

" in the upper right corner to safely exit the system.

2.3 Introduction of the Main Web Interface

The live view window is displayed when you are logged in to the Web interface. The following shows an example.

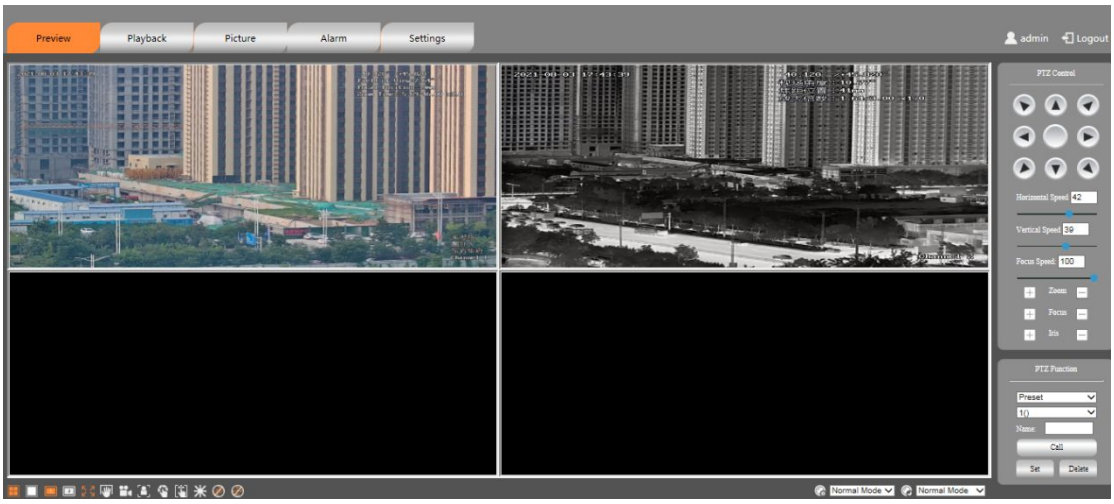


Figure 2-2 Preview interface

- Preview: Live view window and PTZ control
- Playback: Search for recordings by time or recording type and play them back
- Picture: Pictures stored in the SD card of the IP camera.
- Alarm: Real-time Alarm Messages List.
- Settings: Configuration interface for system configuration and function configuration.

Note:

The main interface of the single-IP dual-optical device is four screens by default, displaying visible light and thermal imaging at the same time. The single thermal imaging device only displays one screen. Please refer to the specific device.

3. Preview

3.1 Interface Description

This area include: Live View windows, Live View Toolbar, PTZ Control and PTZ Functions.

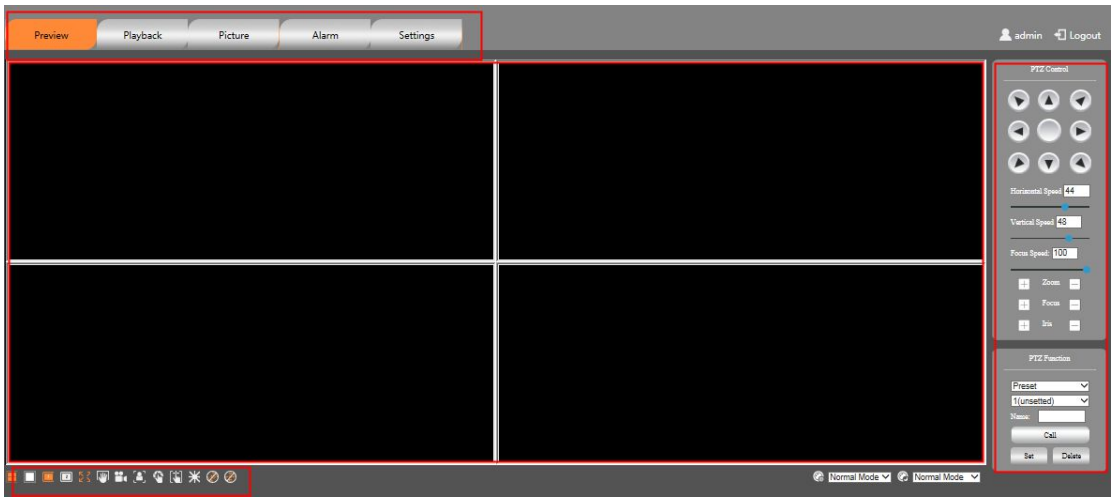


Figure 3-1 Preview

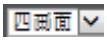
3.2 Shortcut Function Area

Use of common functions, including screen split screen switching, primary and secondary stream switching, picture capture, video recording, focus once, manual correction, background correction, laser ranging, 3D positioning.

Figure 3-2 Shortcut function

Table 3-1 Video window adjustment function description

Button	Function	Description
	Main stream	To display high-definition images

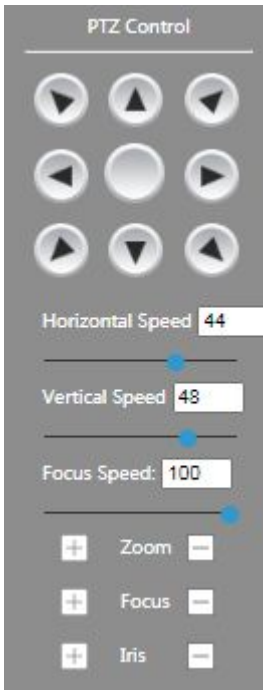
	Sub stream	To display low-definition images
	Multi-screen switch	Support switch for single screen and four screens
	Laser Range finder	Click this button to trigger the laser range finder. The distance is displayed on the video.
	Start/stop 3D positioning	Click and hold the mouse button, and then drag from top down (draw a rectangle) to specify an area. Dragging reversely (from down top) will zoom out.
	Snapshot	Grab a current video screen and save it in the preset storage path.
	Recording	With recording enabled, A red video icon is displayed in the upper right corner of the video and the camera can automatically transfer the video stored in the memory card to a storage resource.
	Focus	The camera is triggered to Auto-focus one time once when clicked the icon.
	Manual Calibration	The camera is triggered to Manual Calibration one time once when clicked the icon.
	Background Calibration	The camera is triggered to Background Calibration one time once when clicked the icon.

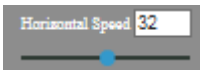
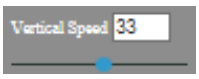
Notes:

3D positioning is available only for the camera installed on a Pan/Tilt motor.

3.3 PTZ Control

PTZ control functions, including lens doubling, focusing, PTZ direction control, etc



Button	Description
	Control the direction of the PTZ camera and release the control.
	Adjust the rotating speed of the PT
	Adjust the focus speed of the Camera
	Adjust camera zoom.
	Adjust camera focus.
	Increase or decrease iris diameter.

Notes:

Focusing speed currently only applies to thermal imaging, not visible light.

3.4 PTZ Functions

Common functions of PTZ, including Preset, Horizontal scanning, Cruise scan, etc.

3.4.1 Setting Presets & Patrols

Preset

On the Preset tab, you can manage presets to the PTZ camera. The preset includes the position parameters such as the horizontal Angle, pitch Angle and focal length of the equipment lens.

Step 1. Click the PTZ TAB and select Preset from the drop-down list box.

Step 2. Adjust the camera till it points toward the desired direction

Step 3. Adjust zoom and focus as needed to obtain the optimal image.

Step 4. Click Settings to complete the configuration. Click for a preset. The PTZ camera goes to the selected preset.

Patrol

A patrol route is the track by which a PTZ camera follows when moving from a preset to the next.

After the Patrol group is set the PTZ camera follows the same route and patrols repeatedly.

Step 1. Click the PTZ TAB and select Cruise Scan from the drop-down list.

Step 2. Select cruise path number.

Step 3. Click The Settings button to add an existing preset bit and set the residence time.

Step 4. Click “Start” The equipment start. Click the "paused" button to pause the cruise. Click the "Stop" button or directly control the direction to stop the cruise; Click the "Delete" button to delete the Patrol.

3.4.2 Horizontal scan

After horizontal fan scanning is enabled, the device automatically scans the left and right boundaries at a certain speed.

Step 1. Click the PTZ TAB and select Horizontal Scan from the drop-down list.

Step 2. Control the head to a certain position and click the "left" button to complete the setting of the left boundary.

Step 3. Control the head to another position and click the "right boundary" button to complete the setting of the right boundary

Step 4. Click Start to start horizontal fan scanning. Click Pause to pause horizontal scanning. To stop horizontal fan scanning, click Stop or control the direction.

3.4.3 Auxiliary function

Auxiliary functions can be enabled through the auxiliary switch. The specific functions are described as follows:

Auxiliary switch	Description
Windshield Wiper	After selecting "On", the wiper will brush continuously, and "Wiper on" will be displayed

	on the thermal imaging video. Select "Off" and the wiper stops. After selecting "Automatic", the equipment with intelligent wiper module will trigger the wiper to work when water flows through the sensitive component quickly, and the sensitive component will not detect water flow for a period of time after the wiper stops. Devices without smart wiper modules will automatically stop after a few brushes
Defrost	After selecting "On", defrosting will start, and "Defrosting on" will be displayed on the thermal imaging video. After selecting "Off", defrosting will stop.
Infrared	Selecting "On" INFRARED light 2 will turn on the first light in the upper left corner, and "On" INFRARED light 1 will turn on the last two. After selecting "Automatic", the photosensitive module will be automatically opened or closed according to the ambient brightness and darkness.
White Light	Select "On", the white light will turn on. After you select Off, the white light will turn off. After selecting "Automatic", the white off light blinks for 10 times and then returns to the off state.

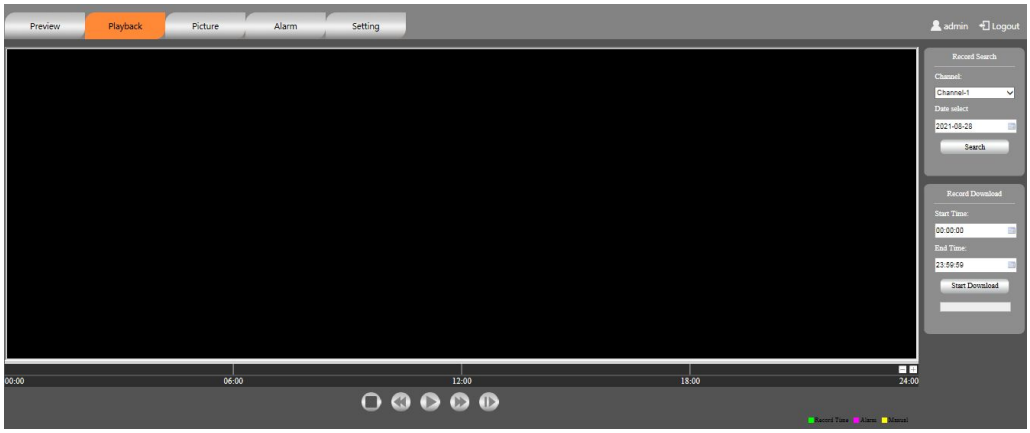
Note:

Auxiliary functions depend on specific devices.

4. Video playback

Currently, only SD card remote playback is supported. Local video playback is not supported.

Click the Playback TAB. The Playback page is displayed. The playback screen includes the progress bar, playback control bar, and video search bar.



(1) Progress bar: Displays the video type and time period. Click a point in the color area to start playback from this point in time.

(2) Playback control bar: start, stop, fast forward, slow down, single frame

ICON	Function	Description
	Play	When this icon is displayed, the video is paused or not played. Click this icon to switch to the normal playing state.
	Stop	Click to stop playing the video
	Fast forward	Click the icon to skip to the next frame.
	Slow	Click the icon to slow down the playback speed.
	Single frame	Click the icon to speed up the playback

(3) Video Search Bar: Search video by time period, different video types are marked with different colors, normal video is green, alarm video is purplish red.

(4) Search video by period, different video types are marked with different colors, normal video is green, alarm video is purplish red.

Note:

When using SD card to store video, please make sure there is a memory card in the device.

The SD card recording of single IP dual optical device can only play back one channel at the same time.

5. Picture

Set the alarm linkage mode to capture. When an alarm is triggered, the camera captures a picture and saves the picture in the SD card.

On the Picture page, select the search time and type, and tap “Search” to search for captured images stored in the SD card.

Double-click the image to enlarge the preview.

Click the picture display mode in the lower right corner to switch to "tile" or "list" two modes.

Description:

When using an SD card to store pictures, ensure that the device has a memory card.

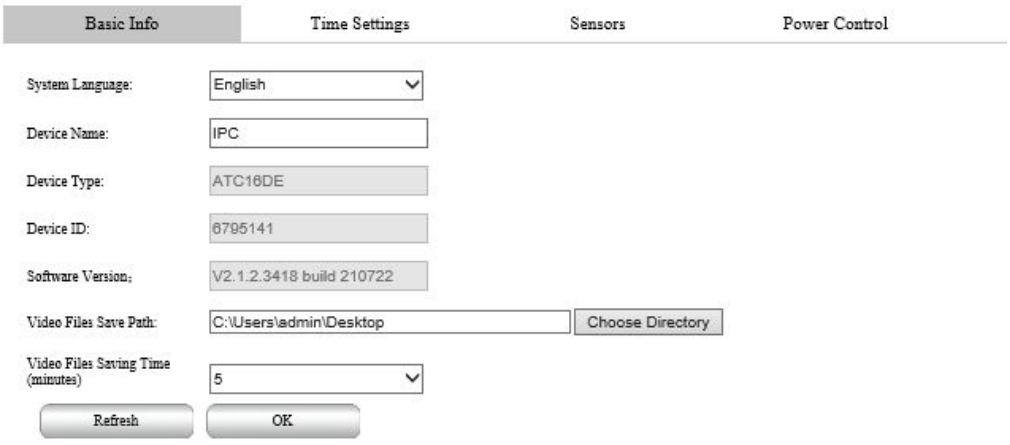
6. Configuration Parameters

6.1. System management

6.1.1 Basic Settings

6.1.1.1 Basic Information

Set the device name, system language, video file saving path, and video file saving duration, as shown in Figure 6-1.

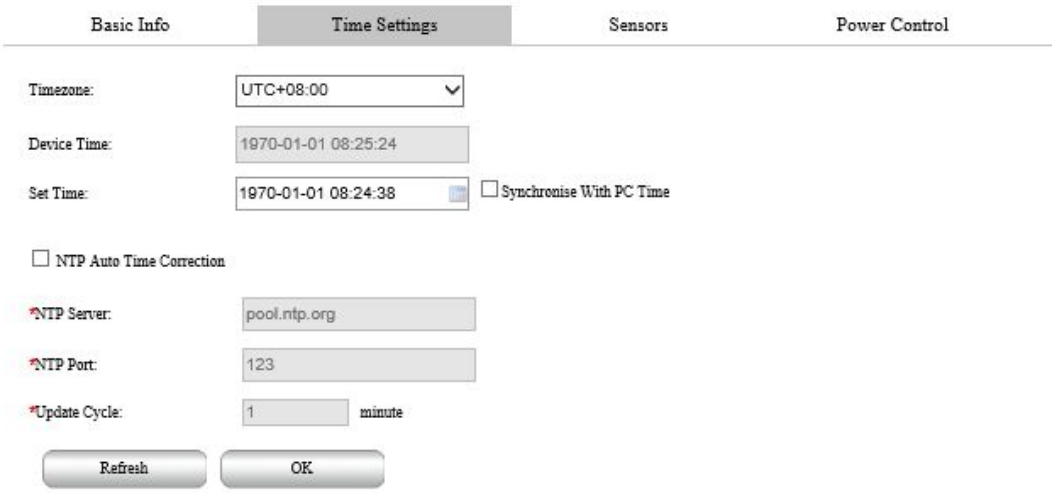


For details about the parameters, see Table 6-1.

Parameter	Description
System language	The language displayed by the system
Device name	
Device type	
Device ID	
Software version	Firmware version of the device
Path for saving video files	Path for saving local videos
Retention duration of video files	Storage duration of a single local video file

6.1.1.2 Time Settings

Set the date and time format, time zone, system time, enable daylight saving time (DST) or configure the NTP server.



For details about the parameters, see table 6-2

Table 6-2 Time parameters parameter Description

Parameter	Description
Timezone	Set the timezone where the device located
Equipment time	Current time of the device
Set time	Set the device time and click “Synchronize with Computer time to adjust the system time” based on the PC time.
NTP Settings	Select “NTP Settings” to enable network time calibration of the NTP server.
NTP Server 1	
NTP Server 2	
NTP Server 3	
Update period	

6.1.1.3 Sensor setup

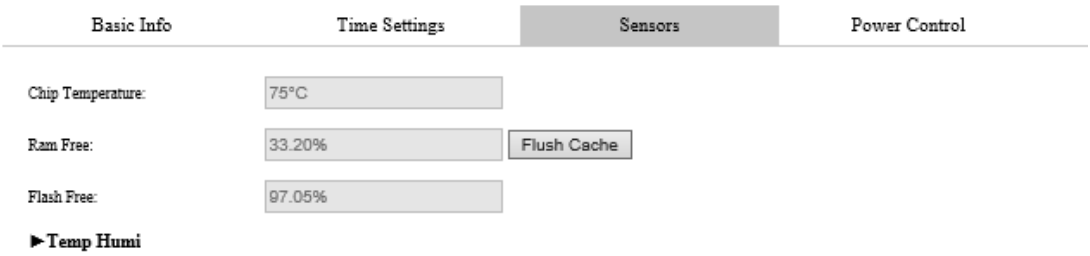
Used to manage and set built-in sensors such as t/H sensors and electronic compass.

Note:

Anyway, different devices buy different types of built-in sensors, depending on the device.

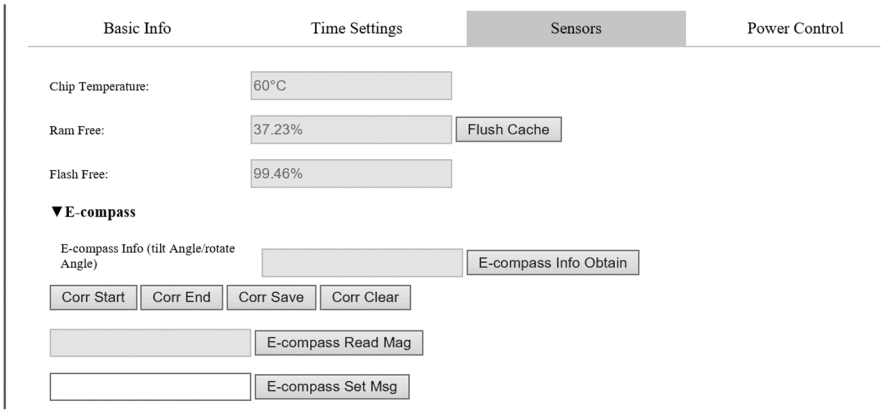
Temperature Humidity Sensor

Displays internal temperature and humidity data of the device in real time.



Electronic compass

A device with an electronic compass built in to obtain the azimuth of the device's position. Before use, the electronic compass should be corrected and the magnetic deflection Angle should be set. The correction is to correct the electromagnetic interference around the environment where the equipment is located. Magnetic declination is set to correct for deviations between geographic and electromagnetic meridians. You can check the magnetic declivity of the device's address.



Electronic compass setting interface

Calibration electronic compass:

First click "Calibration Start", the PTZ will automatically rotate slowly in the horizontal direction (the pitch is preferably 0 degrees during calibration). When the PTZ rotates more than 360 degrees, click "Calibration End", and choose to save or clear according to the calibration results.

(When the calibration fails, the pitch and level will always display 0, at this time, you need to clear the calibration and then re-calibrate)

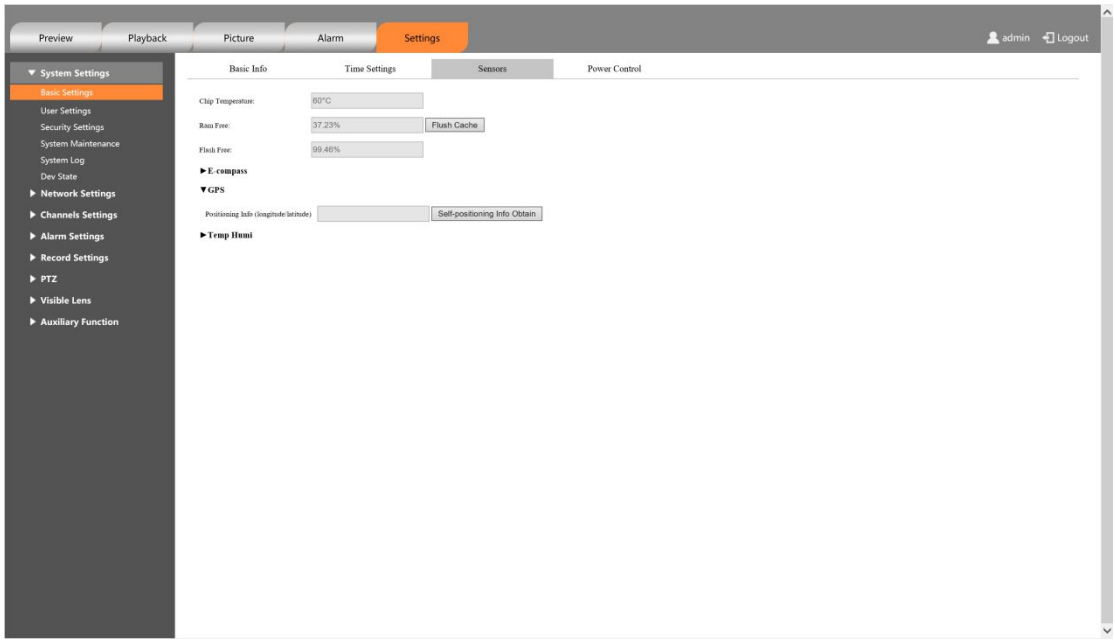
Set magnetic declination:

Enter the local magnetic discrimination Angle in "Electronic compass Set Magnetic Discrimination Angle", click "Electronic compass set magnetic Discrimination Angle" to complete the setting, click "Electronic compass read magnetic Discrimination Angle", the displayed value is consistent with the set value, the setting is successful.

After completing the above two steps, electronic compass parameters are set up and can be used normally.

GPS

Get positioning information: Click this button, the device displays GPS information of the current location.

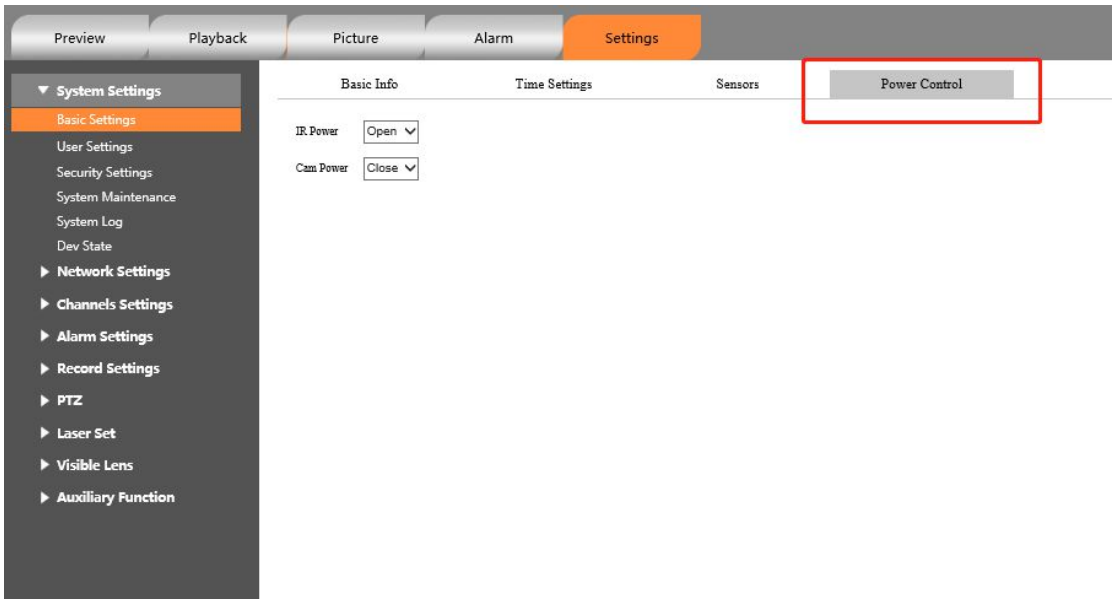


GPS Chart

6.1.1.4 power supply control

Perform power-on and power-off management for visible light and thermal imaging

respectively. Click on to power on and click on to power off.



Power control setting interface

After the cooling thermal image is enabled, there will be startup progress prompt, as shown below:

Cooling start interface

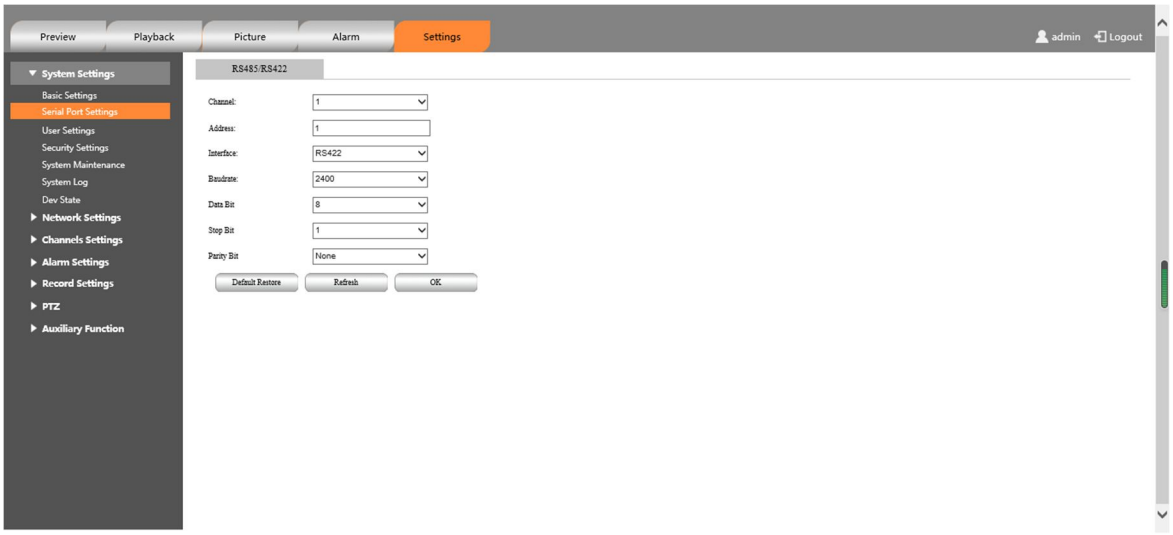
During the cooling startup process, the startup should be completed when the temperature gradually decreases to 84K

6.1.2 Serial port Configurations

RS485/RS422

This section describes how to set RS485/RS422 parameters, including console protocol, address, baud rate, data bit, stop bit, and parity. After the Settings are complete, you can operate the device through the panniers

.



For details about the parameters, see Table 6-3:

Table 6-3 Parameter description of the RS485/RS422 interface

Parameters	Description
Pan Tilt Type	Default, HPWS
Address	Default 1 The address here must be consistent with the address of the device, otherwise the device cannot be controlled
Interface Type	RS422
Baud rate	By default, 115200 The address here must be consistent with the address of the device, otherwise the device cannot be controlled
Data bits	By default, 8

Stop bit	By default, 1
Check bit	By default, None

Note:

This parameter has been configured before the device is delivered. Do not change it at will. If the parameter is incorrectly set, data cannot be sent back or controlled.

(2) RS232

Set the parameters of RS232, used for auto-focus debugging, and set the transparent channel.

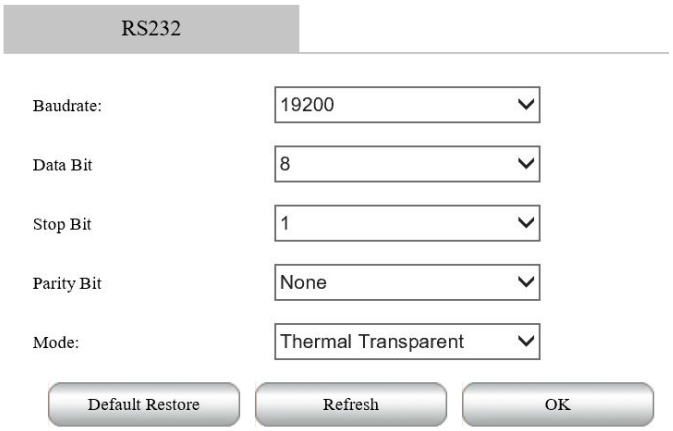


Chart 6-9 RS232 Setting

Chart 6-4 RS232 descriptions

Parameters	Description
Baud rate	By default, 115200 The address here must be consistent with the address of the device, otherwise the device cannot be controlled
Data bits	By default, 8
Stop bit	By default, 1
Check bit	By default, None
Mode	Idle;

	External output; Core transmission/n Visible-light integrated machine control

6.1.3 User settings

Manage system users. You can add users, delete users, and modify user information. System users include admin, WEB user, and ONVIF user.

User management functions, including adding, deleting, and modifying user information, are implemented only when users have user management rights.

The user name and user group contain 5 to 32 characters including digits, letters, and underscores.

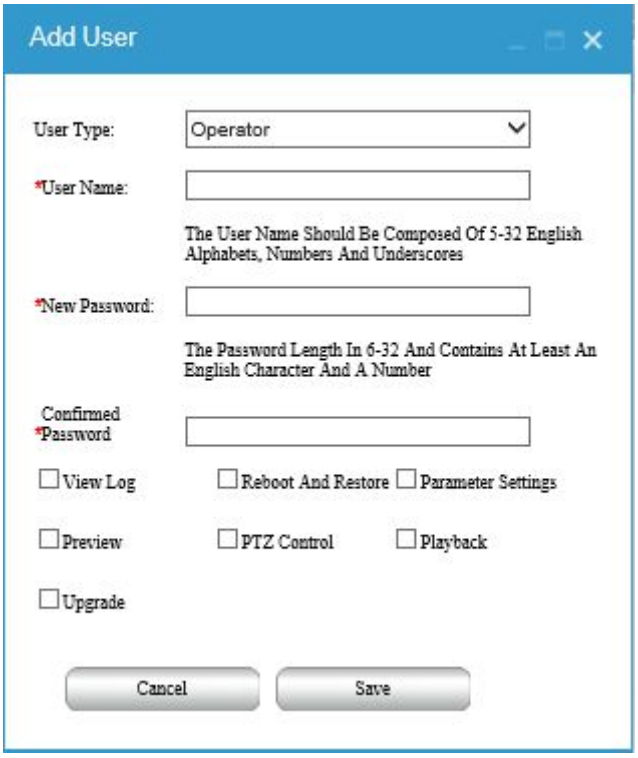
The password contains 6 to 32 characters and at least one English character or digits

The system provides a default user admin, who has the highest user rights.

(1) Web user login

You can add, delete, or change the password of a WEB user.

Web users can log in to the web and the client. After clicking the "Add" button, the "Add User" dialog box will pop up. Follow the prompts, select the user type, enter the user name and password, select the user permissions, and click the "Save" button to complete the addition of web users.



Example Add a web login user

Table 6-5 describes the user parameters.

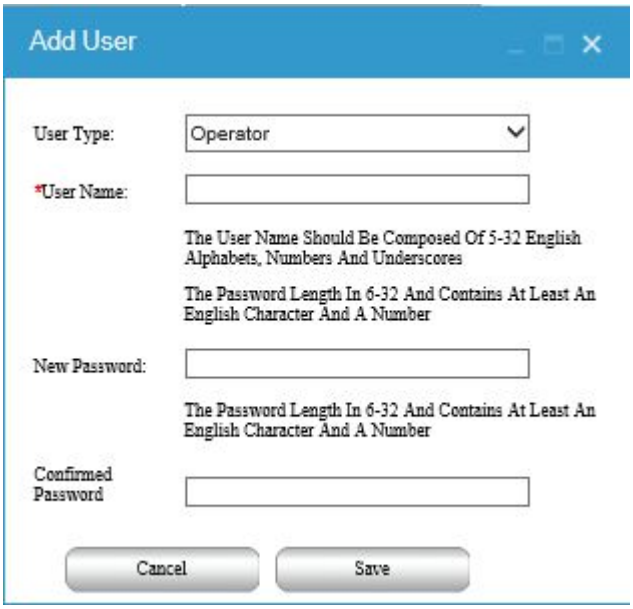
Parameters	Descriptions
User type	There are two types: operator and administrator.
User name	The name is used to uniquely identify the user. It cannot be the same as an existing user name.
Password	The name is used to uniquely identify the user. It cannot be the same as an existing user name.
Confirm Password	The password is 6-32 digits long and contains at least one English character and number.
Permission List	Including viewing logs, restarting and restoring the factory, setting parameters, preview, PTZ control, playback, and upgrade.

After adding a user, click the "Delete" button to delete the user. Click the "Modify" button to modify the user parameters.

(2) ONVIF user login

You can add ONVIF users, delete ONVIF users, or modify ONVIF user passwords.

After clicking the "Add" button, the "Add User" dialog box pops up. Follow the prompts, select the user type, enter the user name and password, and click the "Save" button to complete the addition of ONVIF users.



User parameter description is shown in Table 6-6.

Table 6-6 User parameter description

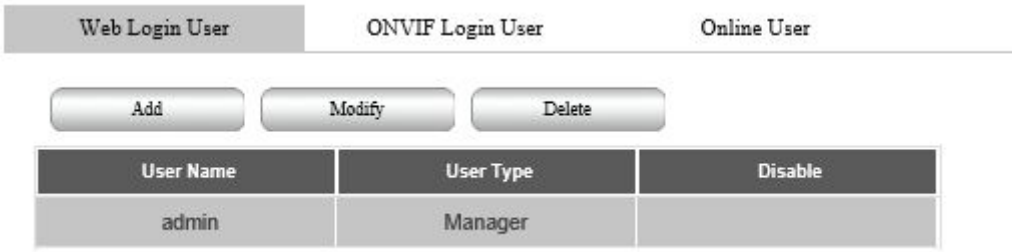
Parameter	Description
User-type	Including operators and administrators.
Username	A name that uniquely identifies a user. The user name must be unique.
Password	The user password and confirm password are the same.
Confirm Password	The password contains 6 to 32 characters and at least one English character or digit.

(3) Online user login

The information about the current login user is displayed, including the login type, user name, user type, login time, and login IP address.

(4) User disabled

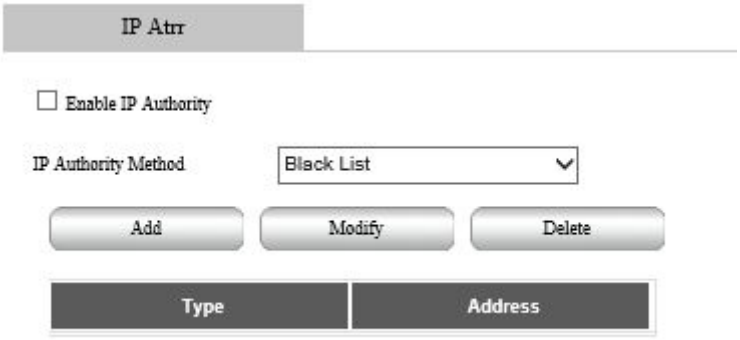
The disabled user cannot log in to the network camera. After selecting a user, select "Whether to disable" on the right side of the user.



User disabled

6.1.4 Security Management

Through the blacklist and whitelist management functions, access and denial of specific users can be realized. After the IP permission function is enabled, only users in the whitelist can access the camera, and users in the blacklist cannot access the camera. There are three types of user addition: IP address, IP address segment, and MAC address. The MAC address is not case-sensitive when it is added.



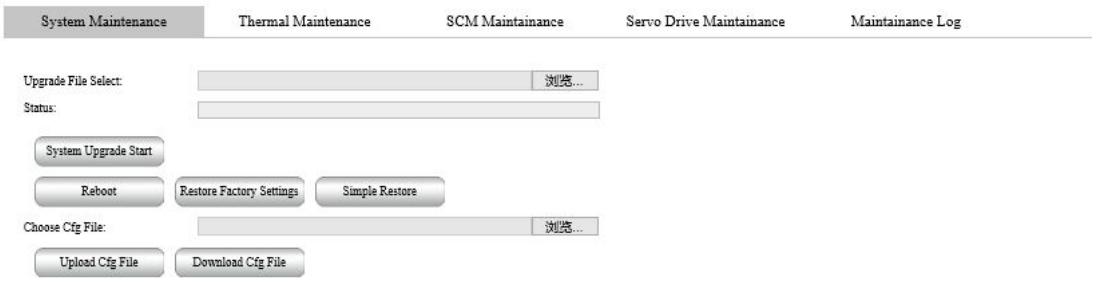
After the user is disabled, log in to the network camera and prompt "User has been disabled":

Chart 6-15 User has been Disabled

6.1.5 System maintenance

6.1.5.1 System maintenance

It is used to upgrade and maintain the Thermal imaging network program.



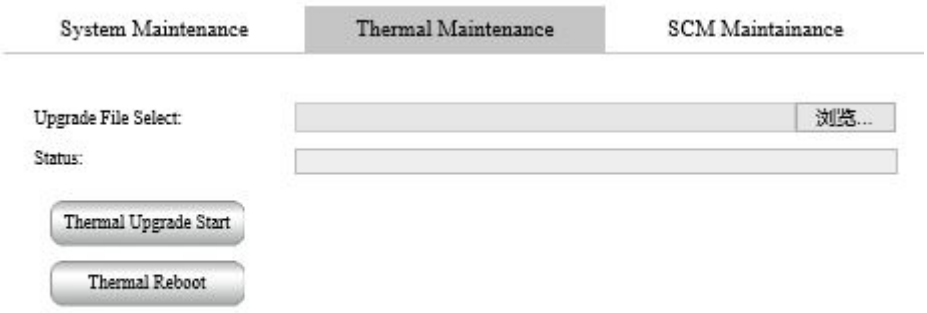
Click the "Browse" button, select the upgrade file, and click the "Start System Upgrade" button. During the upgrade, the device cannot be powered off. After the upgrade is completed, the device automatically restarts.

Click the "Restart Device" button to restart the network program separately.

Click the "Restore Factory Settings" button, and the device parameter configuration will be restored to the factory.

6.1.5.2 Thermal sensor maintenance

Used for thermal imaging movement program upgrade and maintenance.

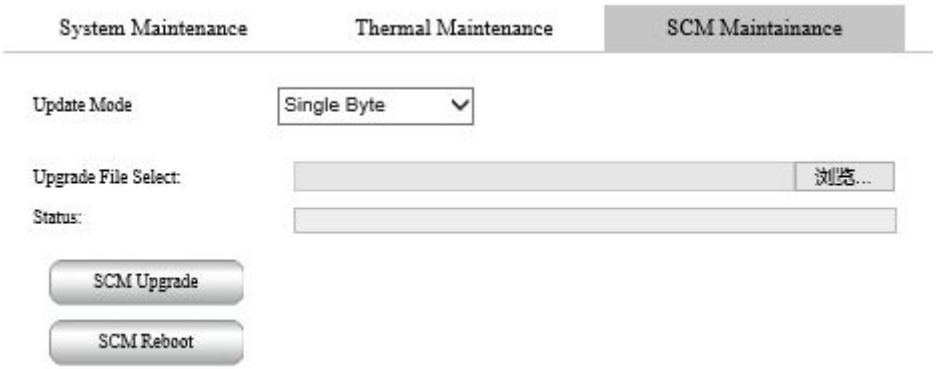


Thermal imaging movement maintenance

Click the "Browse" button, select the upgrade file, and click "Start to upgrade the movement". During the upgrade, the device cannot be powered off. After the upgrade is completed, the movement will automatically restart. Click "Restart Movement" to manually restart the movement individually.

6.1.5.3 Control panel maintenance

Used for program upgrade and maintenance of thermal imaging control panel.

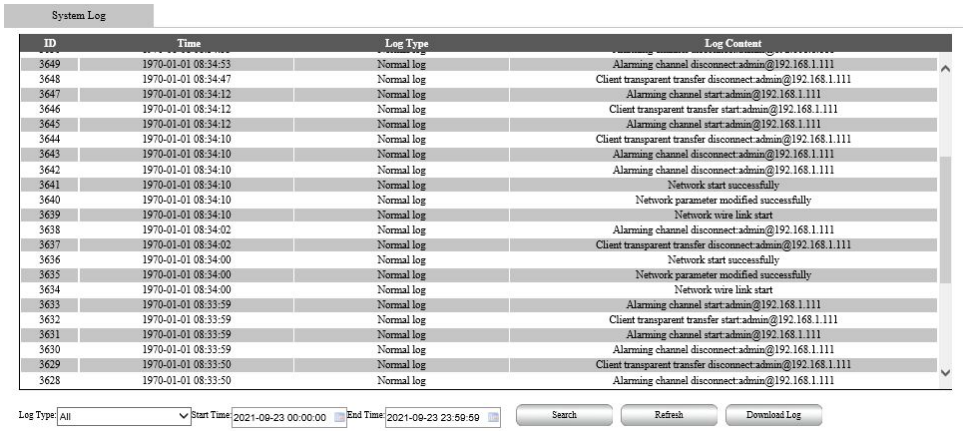


Control panel maintenance

Click the "Browse" button, select the upgrade file, and click "Start to upgrade the control board". During the upgrade, the device cannot be powered off. After the upgrade is completed, the main control board automatically restarts. Click "Restart Control Panel" to manually restart the control panel individually.

6.1.6 System log

View system logs, as shown in Figure 6-19



(1) Dynamic Log Viewer

Select the log type. The log type can be all, normal, alarm, and exception. Click "Refresh" button to display the latest system logs.

(2) Log download

Click Download Log to download the log file in TXT format to the local PC.

6.2 Network Configurations

The parameters include IP Settings, ONVIF, and GB28181. Please set the parameters as required.

6.2.1 IP Settings

According to the network planning, set the device's IP address, DNS (Domain Name System) server, and other information.

Chart 6-20 IP Setting

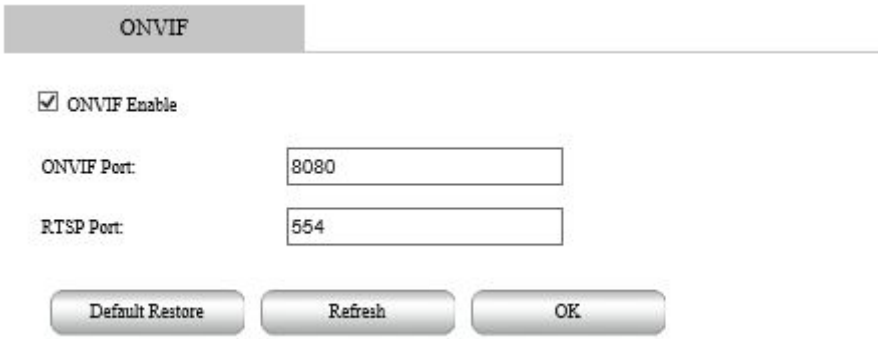
Diagram 6-7 IP Setting Parameter description

Parameter	Description
Host Name	The Host Name of the devices
Network card	Select the network card to be configured, the default is wired.
Mode	**Static Address** Enter the IP address, subnet mask, and default gateway address. Make sure that the IP address of the camera is unique in the network. **DHCP** The Dynamic Host Configuration Protocol (DHCP) is enabled by default when the

	camera is delivered. If a DHCP server is deployed in the network, the camera can automatically obtain an IP address from the DHCP server.
MAC Address	The MAC Address of the devices
IP type	IPv4 or IPv6
IP address	Device's Static IP
Submask	Usually 255.255.255.0
Gateway	Usually router's IP address
Preferred DNS Server	IP address of the DNS server
Standby DNS Server	IP address of the DNS server

6.2.2 ONVIF

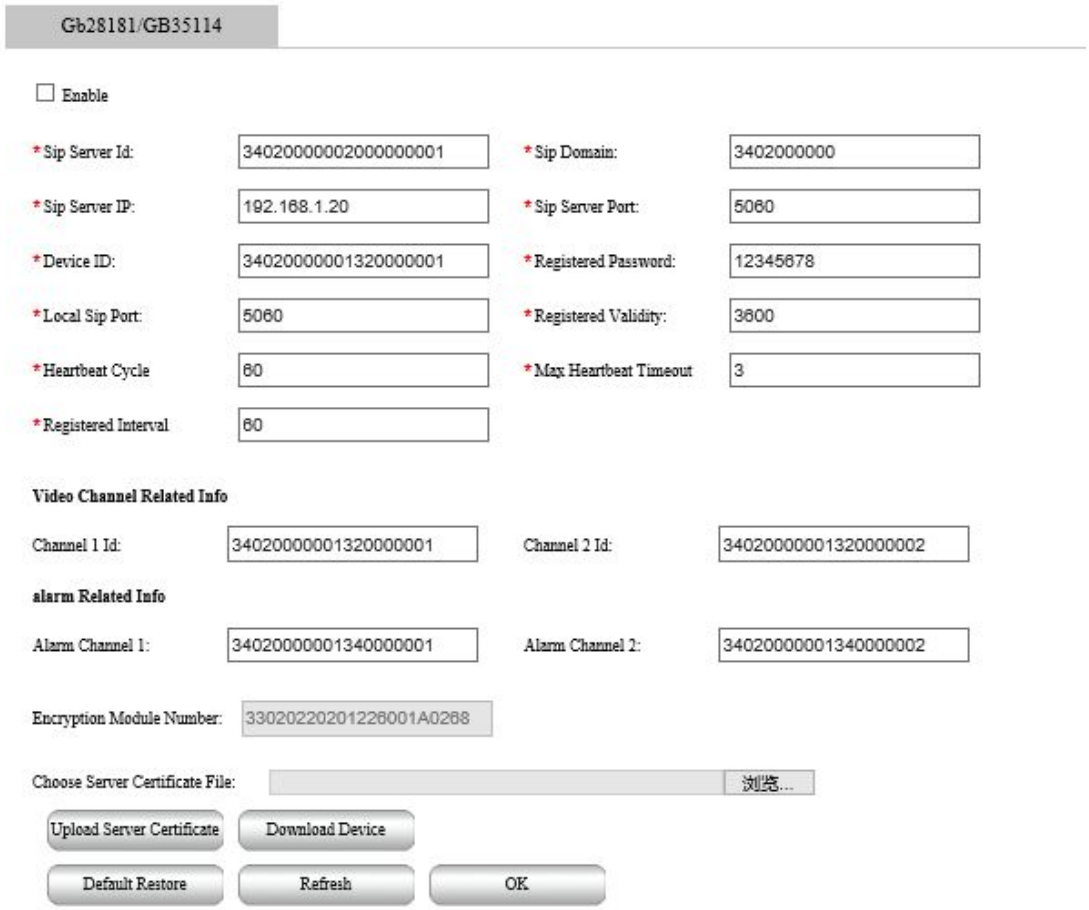
ONVIF enable is turned on by default, and the device can communicate with other manufacturers' network video products (including video camera head ends, video equipment, etc.).



The default ONVIF service port is 8080, and the default RTSP service port is 554.

6.2.3 GB28181

The device supports access to a server that complies with the national standard 28181 protocol. After the connection is successful, the device can be used for real-time monitoring, alarm control, and other operations through the server.



The parameter setting items on this page should be in accordance with the information provided by the platform during actual use. All parameters must be set correctly, otherwise abnormalities such as device registration failure and function unresponsiveness may occur. For detailed parameter description, see Table 6-8.

Table 6-8 GB28181 parameter description

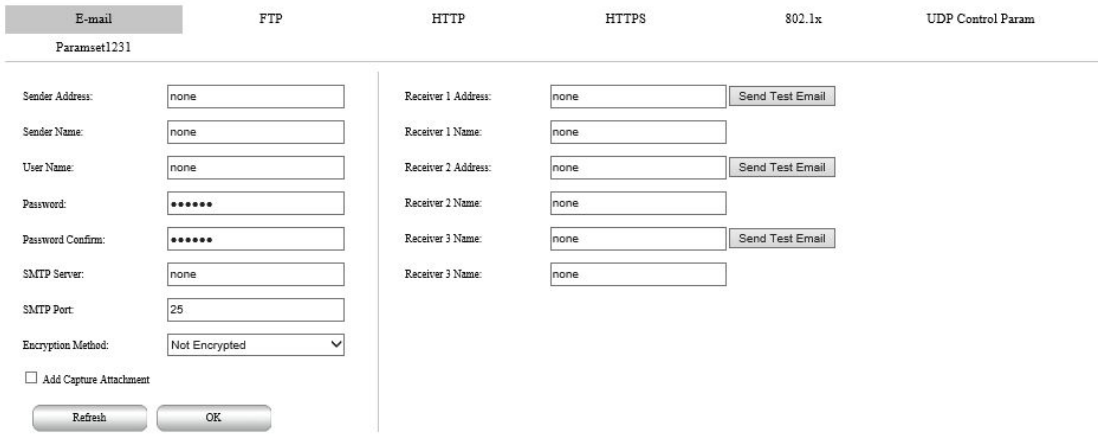
Parameter	Description
SIP Server number	28181 Server platform ID. The default value is 34020000002000000001

SIP domain name	28181 Server platform domain name number, the default is 3402000000.
SIP Server IP	28181 Server IP address, for example, 192.168.1.20.
SIP Server Port	28181 Server port number. The default value is 5060.
Device ID	The number assigned by the platform to the device, the number of each device is unique
Sign up password	The default is 12345678.
Local SIP service port	The default value is 5060.
Term of validity	The default is 3600, unit: second
The heartbeat cycle	The keep-alive time between the device and the 28181 servers, the default is 60.
Maximum number of heartbeat timeouts	Count the number of times the device and the 28181 servers exceed the heartbeat time. Once this number is exceeded, that is The device actively disconnects the communication with the 28181 servers. The default is 3 times.
Channel Number	The default value is 34020000001320000001
Alarm channel 1	The default value is 34020000001340000001
Alarm channel 2	The default value is 34020000001340000002

6.2.4 Advanced Settings

6.2.4.1 Email

After the configuration of E-mail, when alarms are triggered, you will be able to send messages to the specified E-mail address.



Configure relevant parameters of the sender and the recipient. Some camera models support Email test. You may test email after setting the recipient address and enable the attach image. The email received by the recipient includes the event type, alarm capture picture, and alarm text: This is an Alarm E-mail.

Different mailbox setting parameters are different, please refer to the following:

Table 6-9 Mailbox parameters

Mailbox Type	SMTP Server	Encryption mode	Port	Description
QQ	smtp.qq.com	None	25	The mailbox must have an "SMTP" service The password must use the "authorization code", and the QQ login password and email login password are invalid
		SSL	587	
		TLS	465	
163		None	25	Email addresses must be enabled with the “SMTP “ service The password must be the
		SSL	25	
		TLS	465/994	

				Authorization code.
126		None	25	Email addresses must be enabled with the “SMTP” service. The password must be the Authorization code.
		SSL	25	
		TLS	465/994	
Sina		None	25	Email addresses must be enabled with the “SMTP” service. The password must be the Authorization code.
		SSL	25	
		TLS	465	

6.2.4.2 FTP

All snapshots (except face detection) are saved through the general FTP service. After the configuration of FTP, you will be able to upload snapshots from network cameras to the specified FTP server.

Set the IP address and port for the FTP server, username and password used to upload images to the FTP server.

Set the path for saving snapshots on the FTP server from the directory structure drop-down list. Save in the root directory, Use Level 1 directory, and Use Level 2 directory are optional.

After setting the parameters, click "Save" to complete the setting.

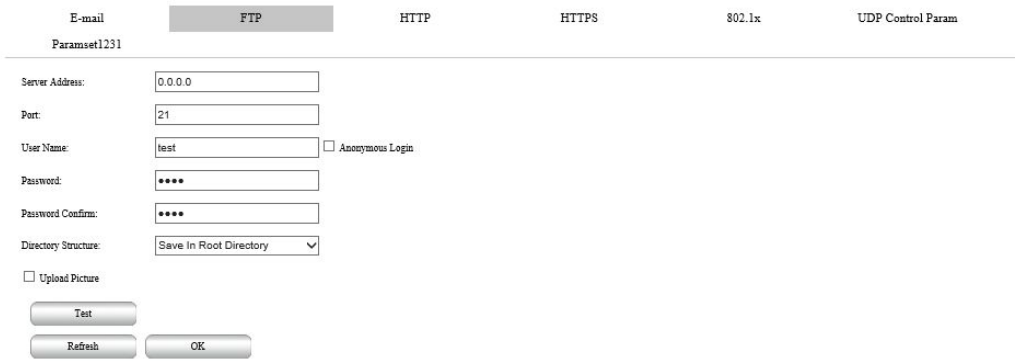


Figure 6-24 FTP Settings

Select "Upload Picture", the alarm linkage upload FTP will send the picture;

Click the "Test" button, and a test file named test will be uploaded to the FTP server.

6.2.4.3 HTTPS

HTTPS is an HTTP channel with security as the goal. To use HTTPS, a security certificate is required. HTTPS establishes a Web server that provides authentication on an insecure network.

If you have installed the certificate, the certificate details will be displayed. Check "Enable HTTPS" and click "Save" to enable the HTTPS function, as shown in Figure 6-25. After selecting the HTTPS protocol, the camera will only be able to log in through the HTTPS protocol.

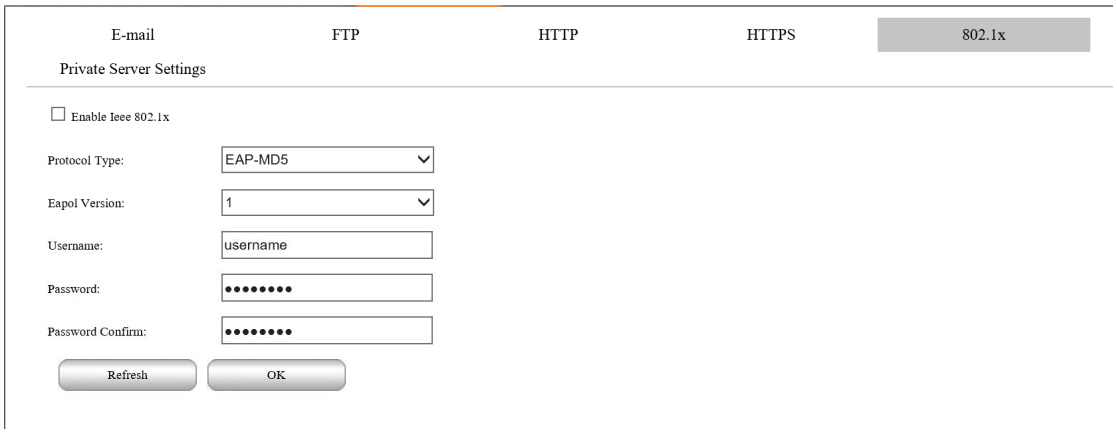
If you need to import a new certificate, you can click "Delete" to delete the installed certificate first.

The certificate installation method can choose "Create private certificate", "Existing visa certificate, install directly" and "Create certificate request first, and then continue to install".

Figure 6-25 HTTPS Settings

6.4.2.4 802.1X

By configuring the 802.1X protocol, the authentication of the user authority of the connected device can be realized. Check "Enable IEEE 802.1X" to enable the device's 802.1X authentication function. The default protocol type is "EAP-MD5". EAPOL version "1" and "2" are optional, please choose according to the protocol version on the network switching equipment. "User name" and "Password" refer to the user name and password of the connected device, as shown in Figures 6-26. After setting the parameters, click "Save" to save the related settings.



6.3 Audio and Video Configuration

6.3.1 Encoding Settings

(1) Video Encoding

Set video primary and sub bitstream parameters, including bitstream type, encoding mode, resolution, frame rate, bitstream control, an upper limit of bit rate, and image quality so on

Figure 6-27 Video Encoding

For details about the parameters, see Table 6-10.

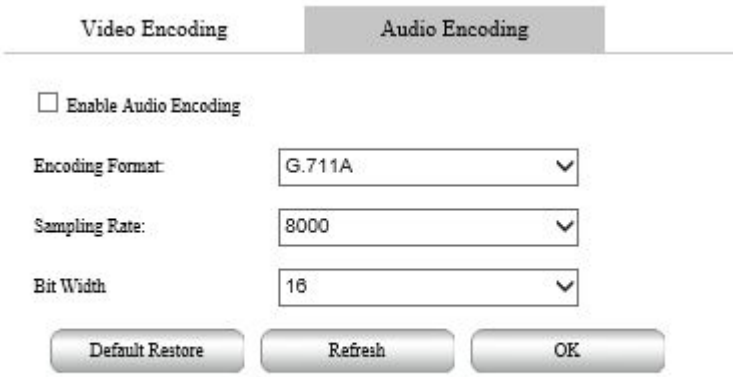
Table 6-10 Video coding parameters

Parameter	Descriptions
Channel	1 Visible Light、2 Thermal imagine
Stream	1 Main stream 2 Sub stream 3 third-stream
Encoding Format	Three options: H.265, H.264 and MJPEG. Note: MJPEG In this coding mode, a high bitstream value is required to ensure the clarity of the video picture. To achieve a better effect, it is recommended to use the maximum bitstream value in the corresponding reference bitstream value

Resolution	Resolution of video 3840*2160/2592*1520/1920*1080/1280*960/1280*720/704*576 /640*512 / 384*288 / 352*288 / 352*240
Frame Rate	Frame rate for encoding images. Unit: FPS (frame per second). Note: To ensure image quality, note that the frame rate should not be greater than the reciprocal of shutter speed.
Key Frame Interval	Interval at which an I frame is encoded. Normally, a shorter I frame interval offers better image quality but consumes more bandwidth.
Rate Control	Video stream control mode. The options are as follows: Constant Bit-rate: The bitstream changes little, and the bitstream keeps changing near the set value. Variable Bit-rate: The stream changes depending on the monitoring scenario.
Bit-rate (Kbps)	The upper limit of the code stream is set according to the reference code stream value. The code stream changes according to the monitoring scenario, but the maximum stream value changes around the set stream value.
Image Quality	These include: Best, Normal, poor, and worst. The higher the image quality, the higher the transmission bandwidth.

（1）Audio Encoding

Set the audio encoding mode, sampling frequency, bit width, and other parameters, as shown in Figure 6-28



.

Figure 6-28 Audio coding

For a detailed parameter description, see Table 6-11.

Table 6-11 Audio encoding parameter description

Parameters	Description
Coded format	The audio encoding mode can be G.711A, G.711U, or G.726.
OSR	The audio sampling frequency can be 8000, 16000, or 32000
Bit wide	16

6.3.2 Imagine Settings

Including Image Parameter, OSD setting, Thermal Parameter, Bad Point correction, Thermal imaging status.

Note:

This function may vary with models. Please see actual Web interface for details.

(1) Picture Settings

Table 6-12 Visible light parameter setting instructions

Visible Light Configuration

No	Functions	Descriptions
1	Basic Parameters	 1 Brightness Set the degree of brightness of images. The overall brightness of the image is adjusted by linear adjustment. The larger the value, the brighter the image, and vice versa. 2 Contrast Set the degree of difference between the blackest pixel and the whitest pixel. 3 Sharpness Contrast of boundaries of objects in an image. 4 Saturation The amount of a hue contained in a color. 5 Gamma The brightness of the image is changed through the non-linear adjustment method, and the dynamic display range of the image is improved. The larger the value, the brighter the image, and vice versa.
2	Exposure mode	Select the correct exposure mode to achieve the desired exposure effect. 1.Automatic: The camera automatically adjusts exposure according to the environment. 2.Manual: Finetune image quality by setting shutter, gain manually. 3.Aperture Priority:

		The aperture is fixed to the set value, and the device automatically adjusts the shutter value. If the image brightness does not reach the effect and the shutter value has reached the upper or lower limit, the device will automatically adjust the gain value to make the image reach the best brightness. 4.Shutter priority: According to the brightness of different scenes within the normal exposure range, the device will automatically adjust it according to the set shutter range first. If the image brightness does not reach the effect and the shutter value has reached the upper or lower limit, the device will automatically adjust the gain value to make the image reach the best brightness.
3	Focus Mode	There are three focusing modes: manual, automatic, and semi-automatic. Auto Focus: When the “automatic” mode is set, the auto-focus module will automatically focus the picture definition in real-time; when the “semi-auto” mode is set, the camera will focus once after controlling the pan/tilt zoom, and the focus will not be focused even if the scene changes after the focus is clear; when the setting “After "Manual" mode, the user needs to manually adjust the pan/tilt control interface to control zoom and focus. There are three types of sensitivity: low, medium, and high. In automatic mode and semi-auto mode, the higher the sensitivity, the easier it is to trigger autofocus. Near Limit: When the value is less than the changed value, the focus cannot be sharpened.
4	Day/Night Mode	1Day: The camera provides high-quality color images using the existing light. 2.Night: The camera provides high-quality black and white images using the existing light. 3.Automatic: The camera outputs the optimum images according to the light condition. In this mode, the camera can switch between night mode and day mode automatically. 4.Timing: The user needs to set the period, the color mode is within the set period, and the black and white mode is outside the period.

5	Back light	1.Highlight Inhibition After turning on the strong light suppression, the strong light can be partially weakened. It is suitable for toll station, entrance and exit of parking lot and other areas. For extreme light, capturing faces in dark environments, license plate details are great. 2.Backlight Recoup After the backlight compensation is enabled, the phenomenon of silhouette in the dark part of the subject can be avoided in the backlight environment. 3.Widely When wide dynamic is turned on, the over-bright areas can be suppressed, and the over-dark areas can be compensated to make the overall picture clear.
6	White Balance	The white balance function enables the color of the captured image to be accurately reflected. After the white balance mode is set, the white objects in the image can appear white in different environments. Currently supports Auto, Indoor, outdoor, manual, incandescent lamp, fluorescent lamp, Sun.
7	Enhance	1.Fog through: When the device is in a foggy or haze environment, the image quality will decrease. After turning on this function, the visibility of objects in the video screen of water fog weather can be improved to a certain extent. As shown below.  Optical fog shut off

		 Optical fog opening 2.3D noise reduction: This option is used to adjust the level of noise reduction in the video. Noise reduction also reduces image detail. 3.Anti-shaking: After turning on this function, the stability of the camera can be improved to a certain extent 4.The stability of objects in the picture when shaking. Note: Some visible light cameras have optical fog penetration function, please refer to the specific equipment for details.
8	Video adjust	The video can be mirrored and adjusted according to the needs, and the left and right, up and down and center mirror adjustments can be selected, and the mirror can also be turned off. When the image is upside down, you can flip the image through this menu. Digital zoom: After turning on, when performing zoom control, digital zoom can be performed after the optical zoom reaches the longest focal length
9	Dual Video	▼Dual Video Dual Video Mode: PIP Blend Alpha: 51 PIP Size: 0 PIP Horizontal: 100 PIP Veritical: 0 1.PIP:

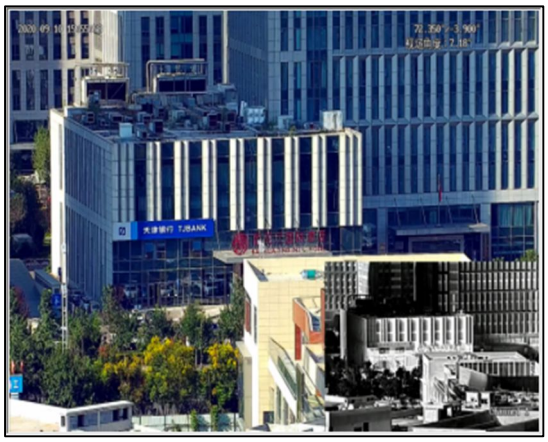
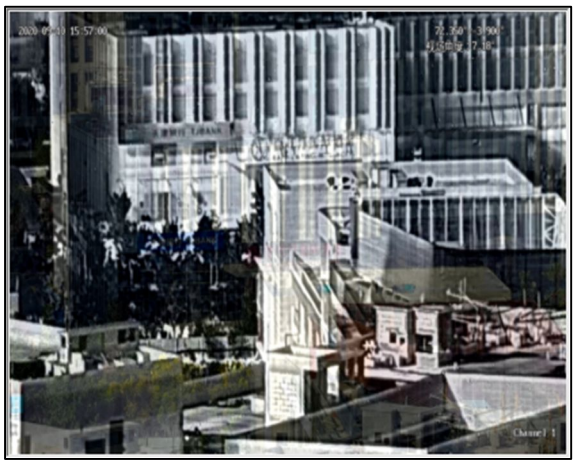
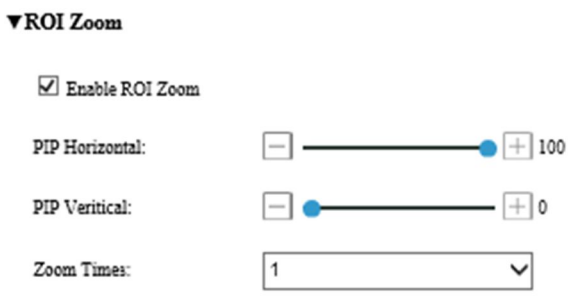
		In this mode, the thermal image video screen can be scaled down and displayed on the visible light video screen. The transparency, size, and position of the picture-in-picture display can be adjusted through the scroll bar.  2.Dual Video Merge: In this mode, visible light and thermal imaging images can be combined and displayed, and the transparency of the fusion and the offset position during fusion can be adjusted by the scroll bar. 
10	ROI Zoom	

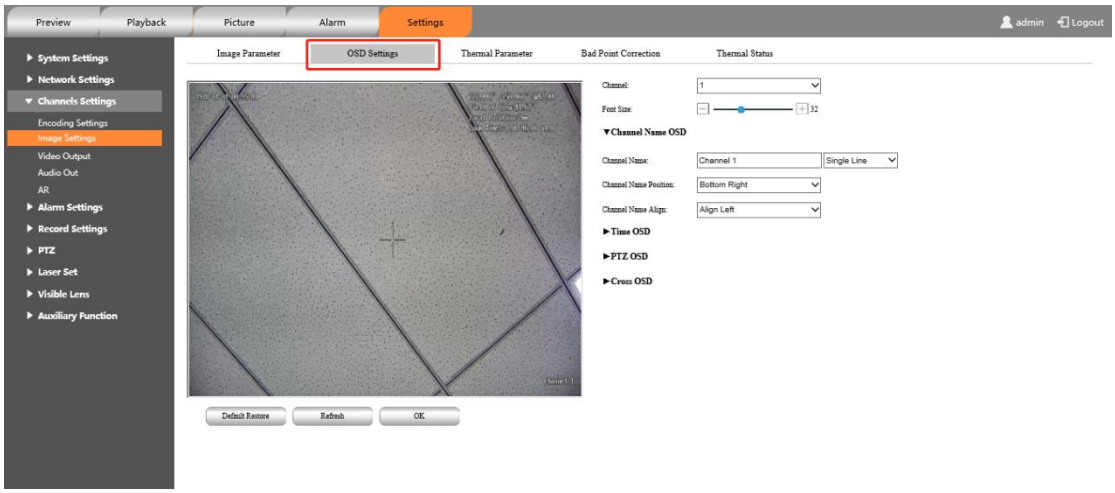
Table 6-13 Thermal imaging parameter setting instructions

Thermal imaging parameter setting		
No.	Function	Description
1	Digital Zoom	After the electronic zoom is turned on and the photoelectric continuous zoom is turned on, when the zoom is zoomed to the longest focal length of the optical zoom, the zoom control will continue to perform electronic zoom, and the maximum zoom is 8 times.
2	PIP	After the picture-in-picture is turned on, the electronic zoom stage, the longest optical field of view picture will be displayed in the video in the form of picture-in-picture. The coordinate position of the picture in picture can be adjusted by the scroll bar.

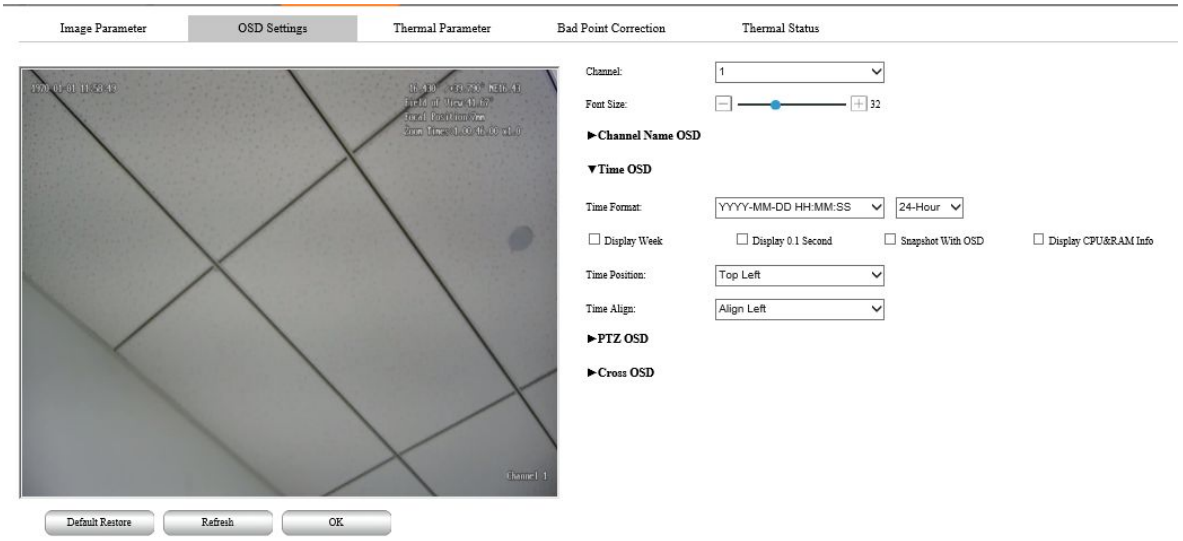
		
3	Dual Video	
4	ROI	

2.OSD Settings

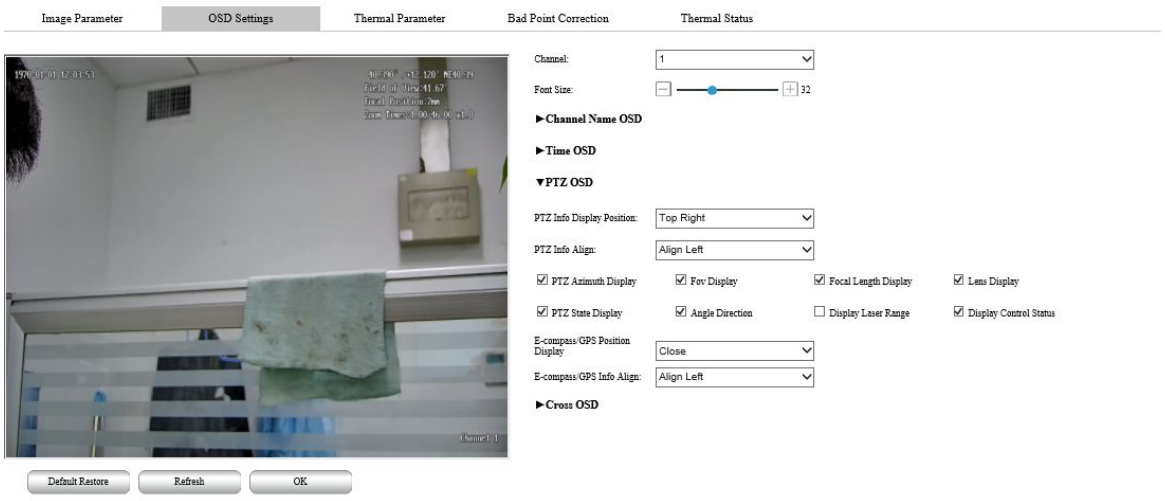
Set the Time Format, Time location, Channel Name, and Channel Name Position, as shown in Figure 6-29.



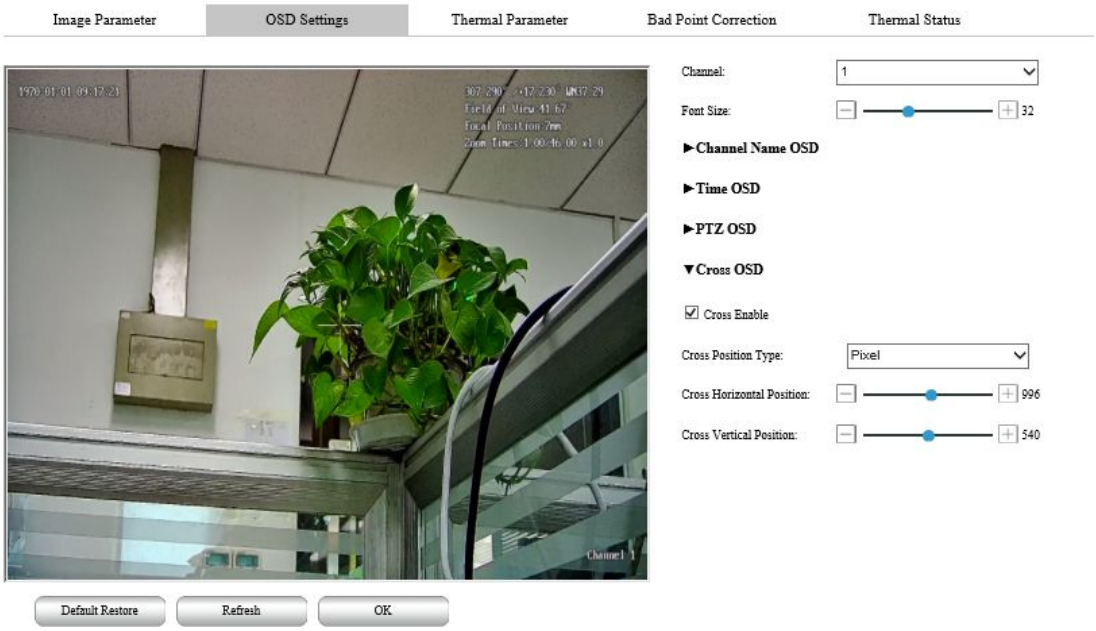
(a) Channel name OSD



(b)Time OSD



(c) PTZ OSD



(d)Cross OSD

Figure 6-29 OSD Settings

For some detailed function descriptions, see Table 6-14.

Table 6-14 OSD parameter setting description

Functions	Description
Channel	1 is Visible light, 2 is Thermal imaging
Channel Name	Channel name
Channel Name Position	The position of the channel name display: upper left, lower left, upper right, lower right, custom, off
Time Format	Time display format: Year: month: day: hour: minute: second Month: day: year: hour: minute: second Day: month: year: hour: minute: second
Time Position	Time display position: upper left, lower left, upper right, lower right, custom, off
Display Week	After opening, display the day of the week
PTZ Information Location Display	After opening, display PTZ information: upper left, lower left, upper right, lower right, custom, off

E-compass Position Display	After opening, display electronic compass information: upper left, lower left, upper right, lower right, custom, off
PTZ Azimuth Display	After turning on, display the PTZ's azimuth and pitch angle
Fov Display	After opening, display the angle of view
Focal Length Display	After opening, display the focal length value
Lens Display	After this function is enabled, the zoom factor of the lens is displayed
PTZ State Display	After this function is enabled, the PTZ status is displayed
Cross Cursor Display	After this function is enabled, the cross cursor is displayed. Cross bar coordinates can be adjusted through the scroll bar, support percentage, and pixel mode.
Cross Ruler Display	After this function is enabled, the cross ruler is displayed. 

(3) Thermal parameter

- Graphic Adjustment

Adjust the image according to the actual environment.

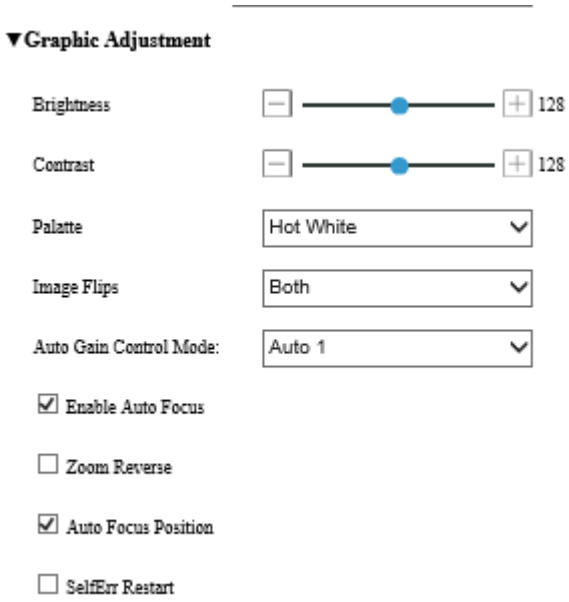


Figure 6-30 Graphic Adjustment

For details, Refer table 6-15.

Table 6-15 Image adjustment parameters description

Function	Description
Brightness	Adjust the overall brightness of the image linearly. The larger the value, the brighter the image, and vice versa.
Contrast	Adjust the contrast of the image. The greater the value, the greater the brightness and contrast of the image, and vice versa. When the value is set too large, the dark areas of the image will be too dark, and the bright areas will be easily overexposed.
Palette	Contains 18 color modes: hot white, hot black, dawn, iron red, rainbow 1, rainbow 2, rainbow 3, rainbow 4, red hot, dark green, gorgeous, hottest, purple light, laser, warm sun, azure blue, lava, gold
Zoom Reverse	None, up and down, left and right, all

Histogram mode	Focus mode, including manual, automatic 1.automatic 2.automatic 3. In manual mode, brightness and contrast are adjustable. It is not adjustable in automatic mode.
Whether to enable auto focus	After it is turned on, the automatic focus will be triggered after the manual control of the zoom stops
Multiplication logic inversion	After opening, the zoom direction is opposite
Whether to position auto focus	After opening, the angle positioning will trigger auto focus

- Image Calibration

Manual correction, background correction, automatic correction, and Gamma correction are available, as shown in Figure 6-31.

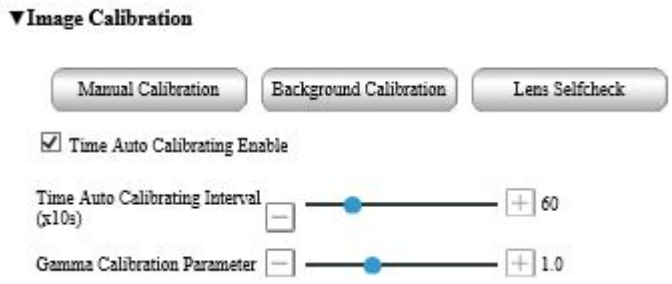


Figure 6-31 Image correction

For details, Refer the table 6-16.

Table 6-16 Description of image correction parameter Settings

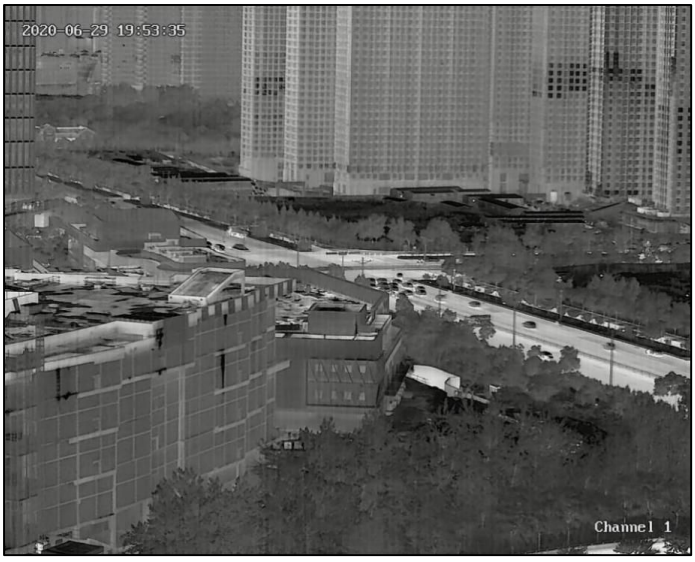
Function	Description
Manual Calibration	Click this button to manually Calibrate once.
Background Calibration	Click this button to correct the background once. Before using this function, the camera must be aimed at a scene with a single background. For example, it can be aimed at a cloudless sky, or it can be corrected after being

	covered by a lens cover.
Time Auto Calibrating Calibration	After it is turned on, it will automatically calibrate according to the set time interval.
Time Auto Calibrating Interval	
Gamma Calibration Parameter	
Lens Self check	Click the button and the lens will check itself

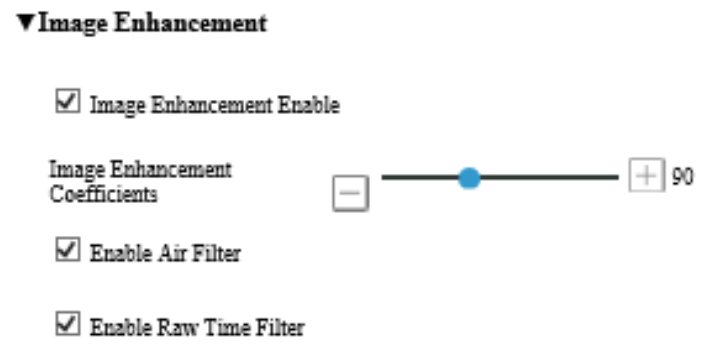
- Image Enhancement

Enable to improve image details

(a) Enhancement is not enabled



(b) Enable enhancement

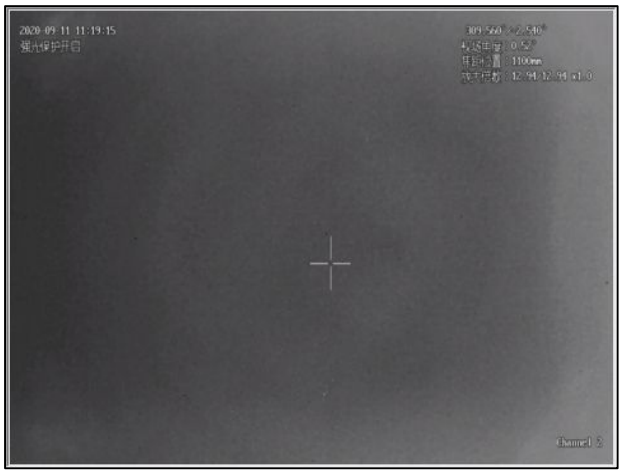


(c) Image enhancement setting interface

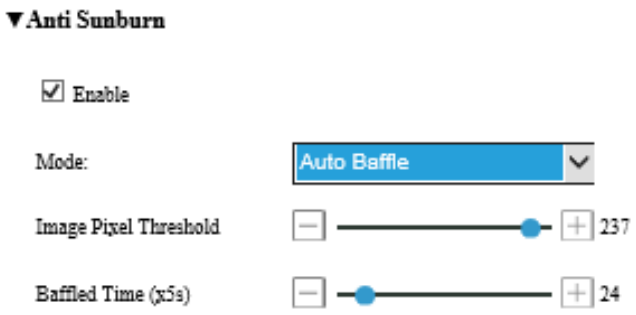
Table 6-32 Image enhancement

- Anti-Sunburn

After opening, when there is strong light illuminating the lens, the shutter will automatically block the lens to protect the lens. After opening, the upper left corner of the video will prompt "Strong light protection on" as shown in Figure 6-33.



(a) Strong light protection on



(b) Anti-Sunburn setting interface

Figure 6-17 Anti Sunburn Parameter Setting Description

Function	Description
Enable	After this parameter is selected, the function is enabled
Image Pixel Threshold	The smaller the value, the more sensitive it is.
Baffled Time	The holding time of the baffle after occlusion. When this time is exceeded, the baffle plate is removed.

- Other

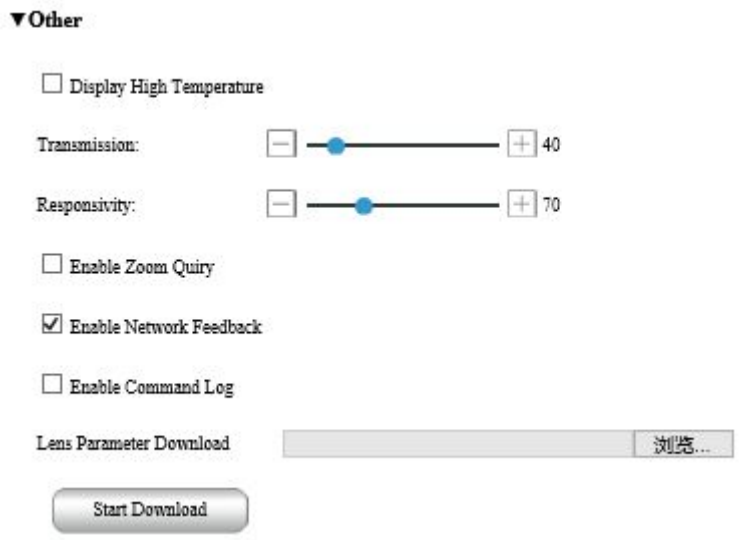


Figure 6-34 Other functions

For detailed function description, refer the table 6-18.

Table 6-18 Other function parameter settings description

Function	Description
Temperature Display	The video screen will superimpose the reference temperature and the maximum temperature. After closing, it is not displayed. The temperature value can be adjusted by adjusting the transmittance and response rate.

Enable Network Feedback	After it is turned on, the client software transparently transmits to the thermal imaging movement to return movement data and does not return after it is turned off.
Lens parameter download	It is used to download the thermal imaging lens data to the thermal imaging movement.

(4) Bad Point Correction

The dead pixels of the lens can be corrected. After correction, the dead pixels can be eliminated.

Step 1: Click the location of the dead pixel with the mouse

Step 2 Click the arrow keys to move the cross cursor to the exact position of the dead pixel

Step 3 Click the "Calibration" button to prompt that the calibration is successful

Step 4 Click the "Save" button to complete the calibration.

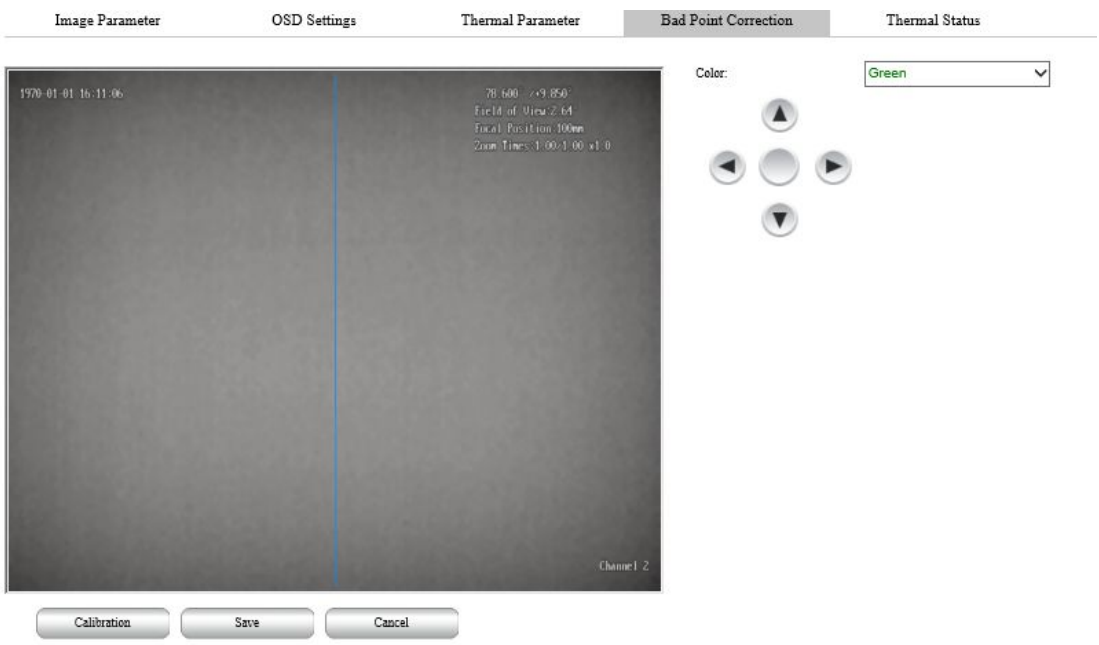
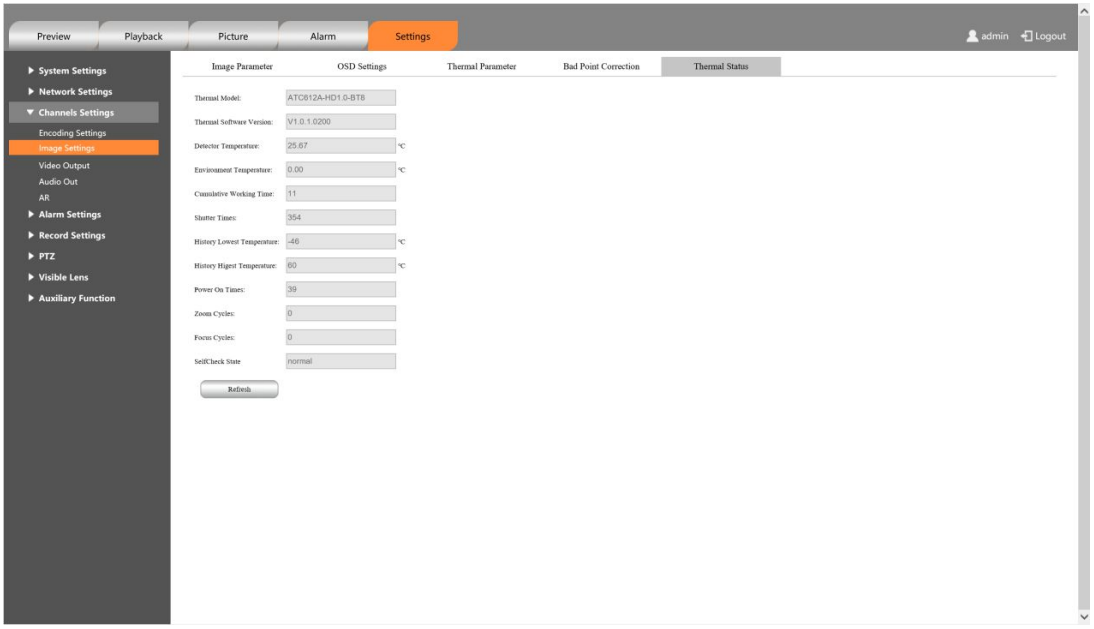


Figure 6-35 Bad Point Correction

(5) Thermal Status

Display various status information of thermal imaging, as shown in Figure 6-36



Note:

The temperature display unit of the refrigerated detector is K, and the temperature display unit of the uncooled detector is ℃;

The refrigerated detector needs to be started before it can display various parameters.

6.3.3 Video Output

Analog video output setting. After turning on, the CVBS interface of the camera can output analog video, and even the monitor can display analog video, as shown in Figure 6-37.

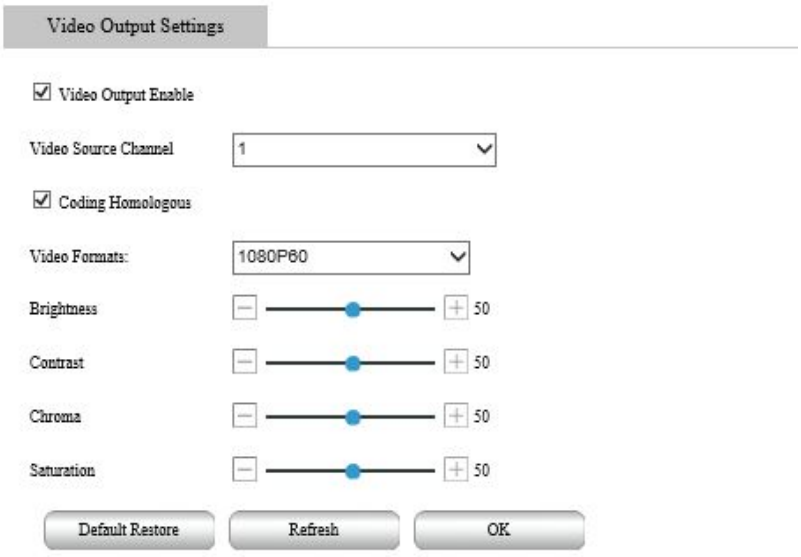


Figure 6-37 Video output settings

For detailed function description, see Table 6-19.

Table 6-19 Video output parameter setting description

Function	Description
Video Output Enable	After this function is enabled, the CVBS interface outputs simulated videos
Video Formats	1080P50\1080P60\1080P30\1080P25\1080I50\1080I60\720P50\720P60\576P60\480P60\3840*2160P60\3840*2160P50
Brightness	Analog video image parameters
Contrast	
Chroma	
Saturation	

6.3.4 AR

Turning on the AR function can achieve a certain degree of reality enhancement.

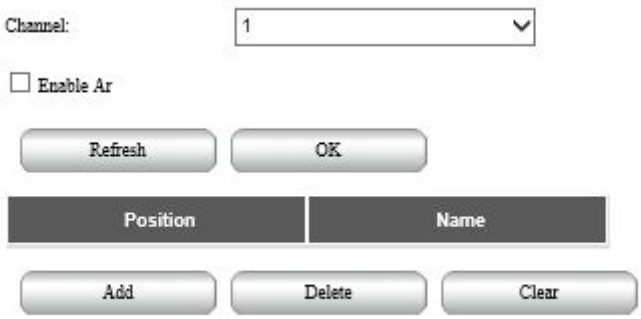


Figure 6-38 AR Settings

After controlling the camera to the corresponding scene, click on the left video screen, then click the Add button, and enter the name of the location to complete the addition of the location. Tick

"Enable AR" to enable the AR function. After it is enabled, the name of the location will be displayed at the target where a virtual location has been added to the real-time video screen.

Figure 6-39 Enabling the AR

6.4 Alarm Management

6.4.1 Intelligent Analysis

6.4.1.1 Intrusion Detection Settings

Intrusion detection detects objects that enter a specified area in live video and triggers alarm when such an event is detected.

Region Settings:

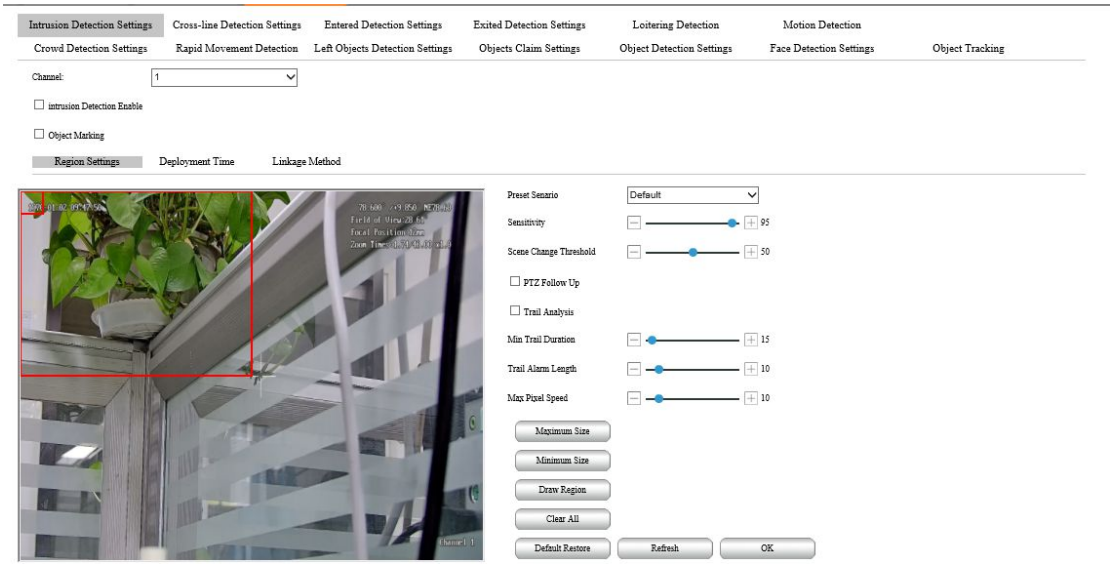


Figure 6-40 Intrusion Detection Settings-Regional Settings

For detailed function description, Refer Table 6-20**.**

Table 6-20 Region Parameter Settings Description

Function	Description
Channel	Channel 1 sets visible light intelligent analysis rules, channel 2 sets thermal imaging intelligent analysis rules.
Instruction Detection Enable	After opening, the detected target will be marked on the video screen
Object Marking	After opening, the detected target will be marked on the video screen
Preset Scenario	Can be associated with presets
Sensitivity	The higher the sensitivity, the easier to detect moving objects, but at the same time the higher the false alarm
PTZ follow up	After enabling this function, the drawn area will move synchronously with the PTZ, and the virtual area will always be consistent with the actual area.
Trail Analysis	After enabling this function, when the system continues to detect a certain target for more

	than the "minimum track duration", the target recognition frame will be drawn
Maximum Size	Maximum size of detected target
Minimum Size	Minimum size of the detected object
Draw Region	After clicking, start to draw the detection area, and click the left mouse button to draw the rectangle area. A maximum of eight regions can be drawn in a single scene
Clear All	Click to clear all drawn regions

Deployments Time

Draw the deployment time. The intelligent analysis rule takes effect only within the deployment time.

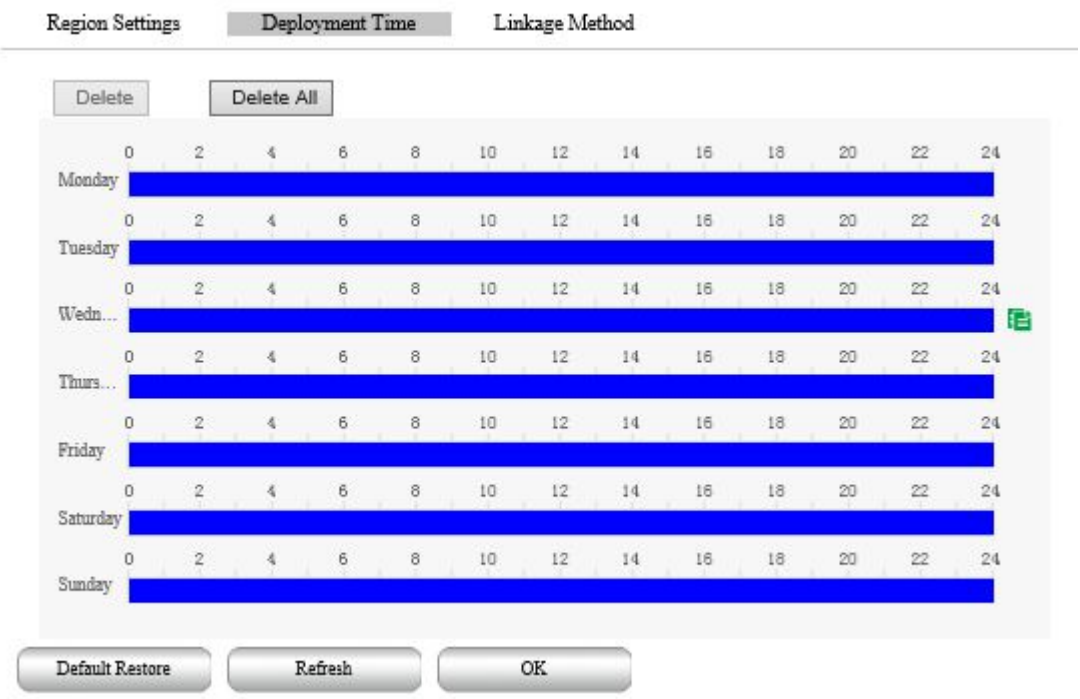


Figure 6-41 Instruction Detection Settings-Deployments Time

Linkage Method

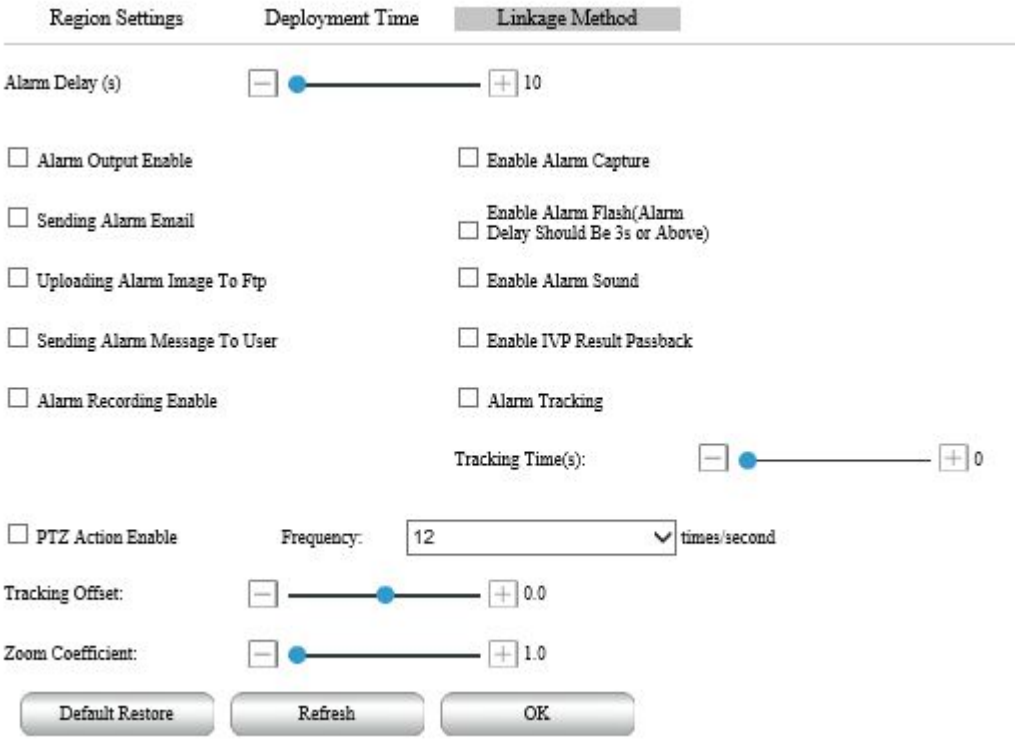


Figure 6-42 Intrusion Detection Settings-Linkage Method

For a detailed function description, please refer to Table 6-21

Table 6-21 Parameter Settings of linkage mode

Function	Description
Alarm Output Enable	Linkage IO alarm
Sending Alarm Email	To send emails in alarm linkage, the device needs to be able to connect to the Internet and configure email parameters
Upload Alarm Image to FTP	Alarm upload snapshot to FTP server
Sending Alarm Message To Client	Alarm send message to a client
Alarm Delay (s)	Duration after an alarm is triggered
Alarm Recording Enable	Alarm linkage recording to SD card
Enable Alarm Capture	Alarm linkage snapshot to SD card
Alarm Tracking	Reserved function

Shot the ball joint	Reserved function

6.4.1.2 Cross-Line Detection Settings

Cross line detection detects objects that cross a virtual line in live video and triggers alarm when such an event is detected.

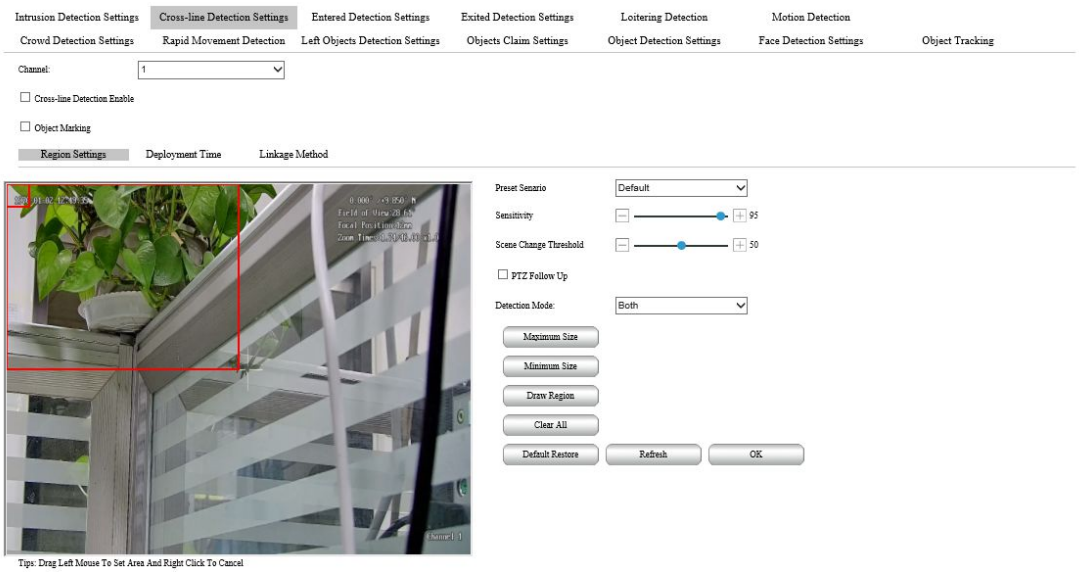


Table 6-43 Cross-Line Detection Settings

For detailed function description, see Table 6-22.

Table 6-22 Cross-line Detection Settings Description

Functions	Descriptions
Channel	1: Visible Light 2: Thermal imagine
Cross-line Detection Enable	After being turned on, when the target crosses the mixing line, an alarm will be triggered
Object Marking	After opening, the detected target will be marked with a red frame on the video screen
Sensitivity	The higher the sensitivity, the easier it is to detect moving objects, but at the same time the higher the false alarm

Preset Scenario	Can be associated with presets
Detection Mode	Support all, A to B direction, B to A direction
Maximum Size	Maximum size of a detected target
Minimum Size	Minimum size of a detected target
Draw Region	After clicking, the detection area starts to be drawn, and the left mouse button clicks to draw the rectangular area to the end. A single scene can draw up to 8 areas.
Clear ALL	After clicking, you can clear all the drawn areas

6.4.1.3 Entered Detection Settings

The entry area detection function can detect whether there is an object in the video that has entered the set area, and does not detect the target leaving the area, and will alarm according to the judgment result.

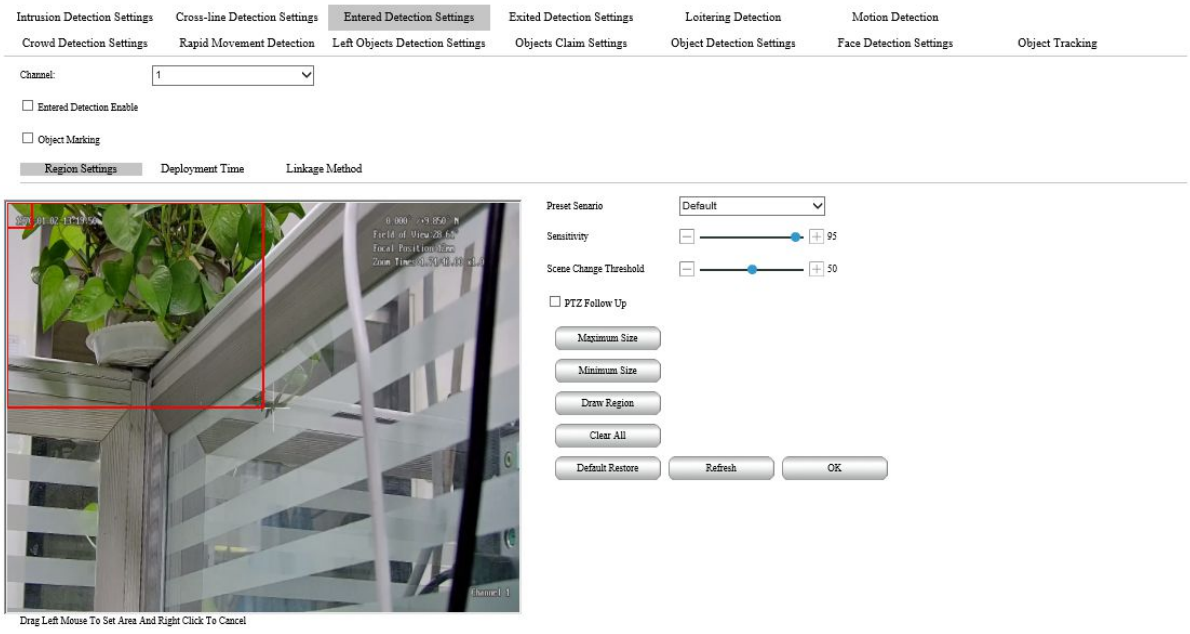


Figure 6-44 Entered Intrusion Detection Settings

For details, see Table 6-23.

Table 6-23 Entered Detection Settings Description

Functions	Descriptions
Channel	1: Visible Light 2: Thermal imagine
Intrusion Detection Enable	After being turned on, when the target crosses the mixing line, an alarm will be triggered
Object Marking	After opening, the detected target will be marked with a red frame on the video screen
Preset Scenario	Can be associated with presets
Sensitivity	The higher the sensitivity, the easier it is to detect moving objects, but at the same time the higher the false alarm
Maximum Size	Maximum size of a detected target
Minimum Size	Minimum size of a detected target
Draw Region	After clicking, the detection area starts to be drawn, and the left mouse button clicks to draw the rectangular area to the end. A single scene can draw up to 8 areas.
Clear ALL	After clicking, you can clear all the drawn areas

6.4.1.4 Exited Detection Settings

The exited area detection function can detect whether there is an object in the video leaving the set area. The target entering the area is not detected, and the alarm is linked according to the judgment result.

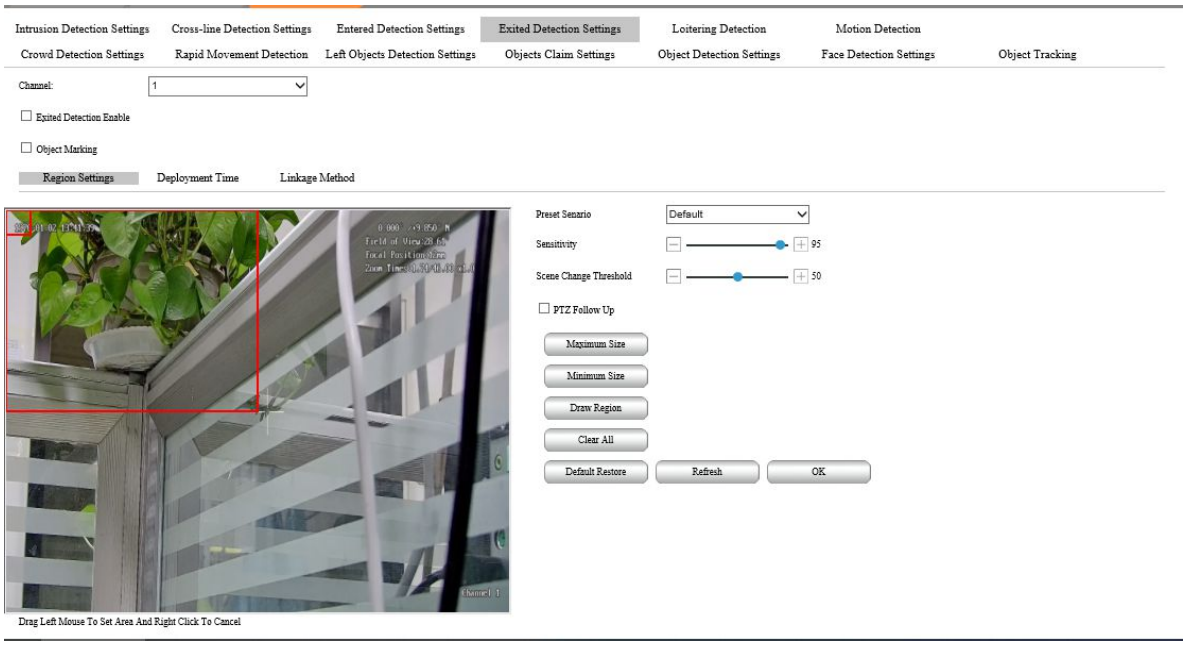


Figure 6-45 Exited Detection Settings

For details, see Table 6-24.

Table 6-24 The Parameter Settings description of Exited Detection

Function	Description
Channel	1: Visible Light 2: Thermal imagine
Exited Area Enable	After opening, after the target leaves the area, an alarm will be triggered
Object Marking	After opening, the detected target will be marked on the video screen
Sensitivity	The higher the sensitivity, the easier it is to detect moving objects, but at the same time the higher the false alarm
Preset Senario	Can be associated with presets
Maximum Size	Maximum size of a detected target
Minimum Size	Minimum size of a detected target
Draw Region	After clicking, the detection area starts to be drawn, and the left mouse button clicks to draw the rectangular area to the end. A single scene can draw up to 8 areas.
Clear ALL	After clicking, you can clear all the drawn areas

6.4.1.5 Wandering detection

When it is detected that the target's wandering time in the detection area exceeds the set time threshold, a wandering detection alarm will be triggered.

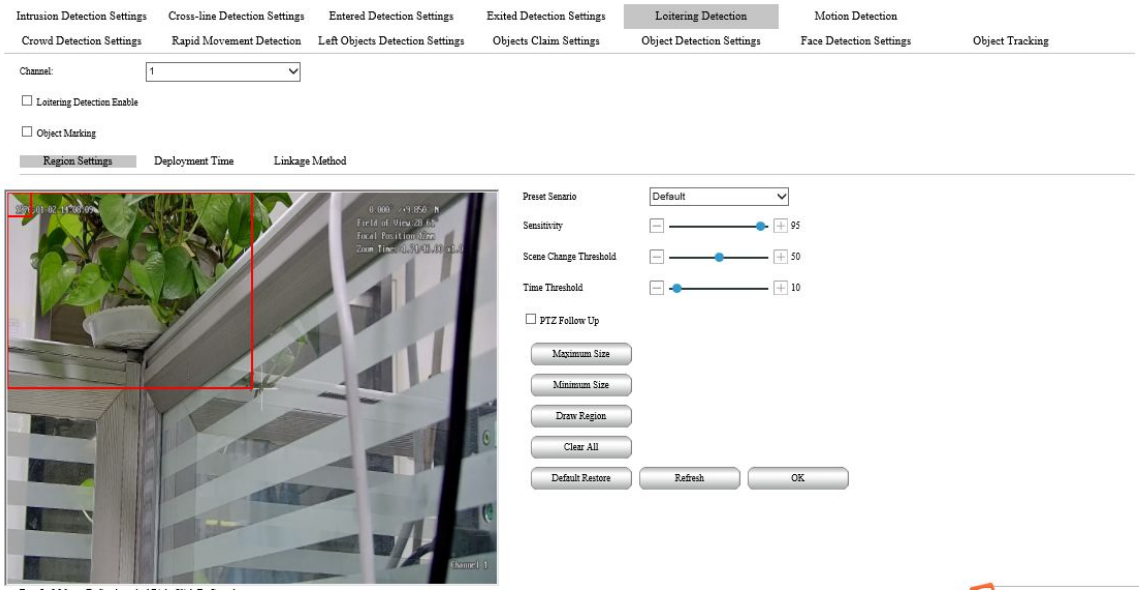


Figure 6-46 Loitering detection Settings

For detailed function description, see Table 6-25.

Table 6-25 The Description of Wandering detection Settings

Function	Description
Channel	1: Visible Light 2: Thermal imagine
Wandering detection Enable	After opening, if the target wanders in the set area for more than the set time, an alarm will be triggered
Object Marking	After opening, the detected target will be marked with a red frame on the video screen
Preset Senario	Can be associated with presets
Sensitivity	The higher the sensitivity, the easier it is to detect moving objects, but at the same time the higher the false alarm
Time Threshold	When the target's wandering time exceeds the threshold, an alarm will be triggered
Maximum Size	Maximum size of a detected target

Minimum Size	Minimum size of a detected target
Draw Region	After clicking, the detection area starts to be drawn, and the left mouse button clicks to draw the rectangular area to the end. A single scene can draw up to 8 areas.
Clear ALL	After clicking, you can clear all the drawn areas

6.4.1.6 Rapid Movement Detection

Used to detect fast-moving targets.

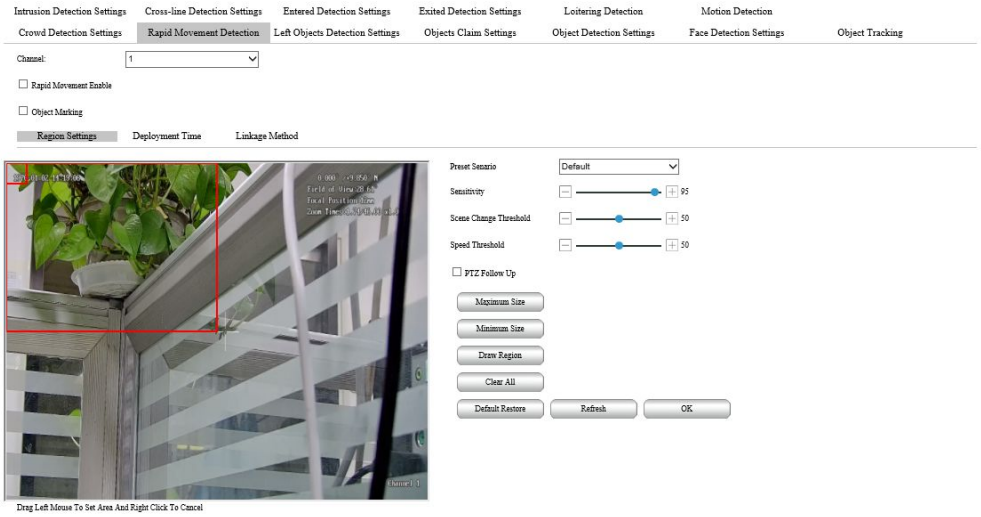


Figure 6-47 The Settings of Rapid Movement Detection

For the function details, please refer table 6-26

Table 6-26 The parameter settings of Rapid movement Detection

Function	Description
Channel	1: Visible Light 2: Thermal imagine
Rapid Movement Detection Enable	When enabled, an alarm will be triggered when the target enters the area.
Object Marking	After opening, the detected target will be marked with a red frame on the video screen
Preset Scenario	Can be associated with presets
Sensitivity	The higher the sensitivity, the easier it is to detect moving objects, but at the same time the higher the false alarm

Speed Threshold	Filter the target according to the set speed threshold. When the target moving speed exceeds the set speed threshold, an alarm will be triggered; when the target moving speed is lower than the set speed threshold, no alarm will be triggered. Remarks: When the speed threshold range is 1-100.100, it means that the moving distance of the target within 1s exceeds 1/4 of the screen, that is, when it is 1, the corresponding target speed is 1/400 screen per second
Maximum Size	Maximum size of a detected target
Minimum Size	Minimum size of a detected target
Draw Region	After clicking, the detection area starts to be drawn, and the left mouse button clicks to draw the rectangular area to the end. A single scene can draw up to 8 areas.
Clear ALL	After clicking, you can clear all the drawn areas

6.4.1.7 Crowd Detection Settings

Used to detect the gathering behavior of people and alarm when the gathering density reaches the set threshold

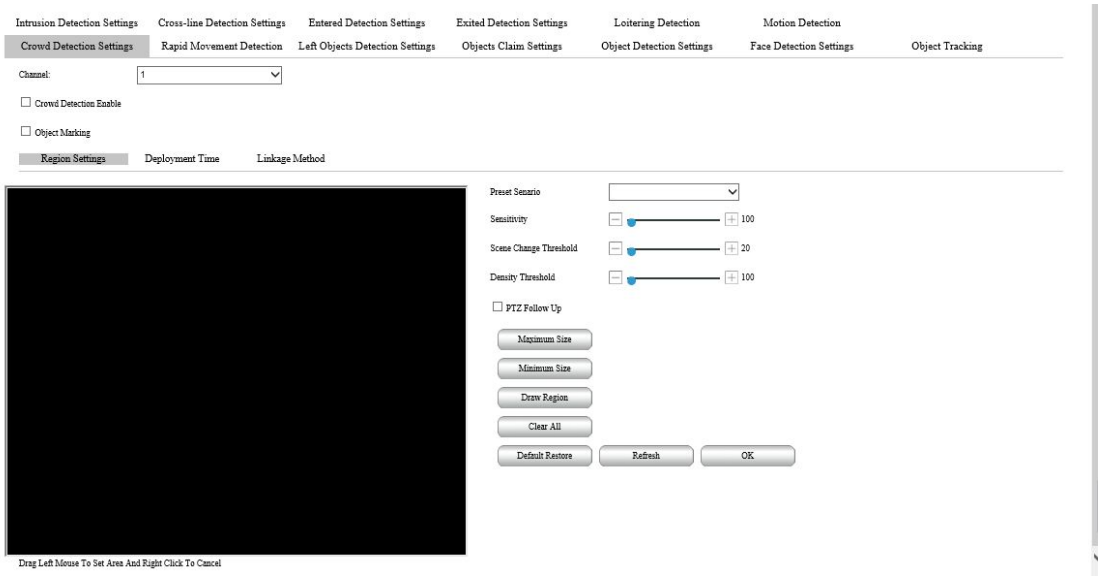


Figure 6-48 The Settings of Crowd Detection

For the function details, please refer the table 6-27.

Table 6-27 The parameter settings of Crowd Detection

Function	Description
Channel	1: Visible Light 2: Thermal imagine
Crowded Detection Enable	When enabled, an alarm will be triggered when the target enters the area.
Object Marking	After opening, the detected target will be marked with a red frame on the video screen
Preset Senario	Can be associated with presets
Sensitivity	The higher the sensitivity, the easier it is to detect moving objects, but at the same time the higher the false alarm
Density Threshold	When the number of people in the detection area exceeds the set density threshold, an alarm will be triggered. When the personnel data is lower than the set density threshold, no alarm will be triggered. The unit of this value is the number of targets.
Maximum Size	Maximum size of a detected target
Minimum Size	Minimum size of a detected target
Draw Region	After clicking, the detection area starts to be drawn, and the left mouse button clicks to draw the rectangular area to the end. A single scene can draw up to 8 areas.
Clear ALL	After clicking, you can clear all the drawn areas

6.4.1.8 Object Tracking

The target tracking function can lock and track the target, support three scenarios of air, sea, and ground, and can track people, vehicles, and drones.

（1）Object Tracking Settings

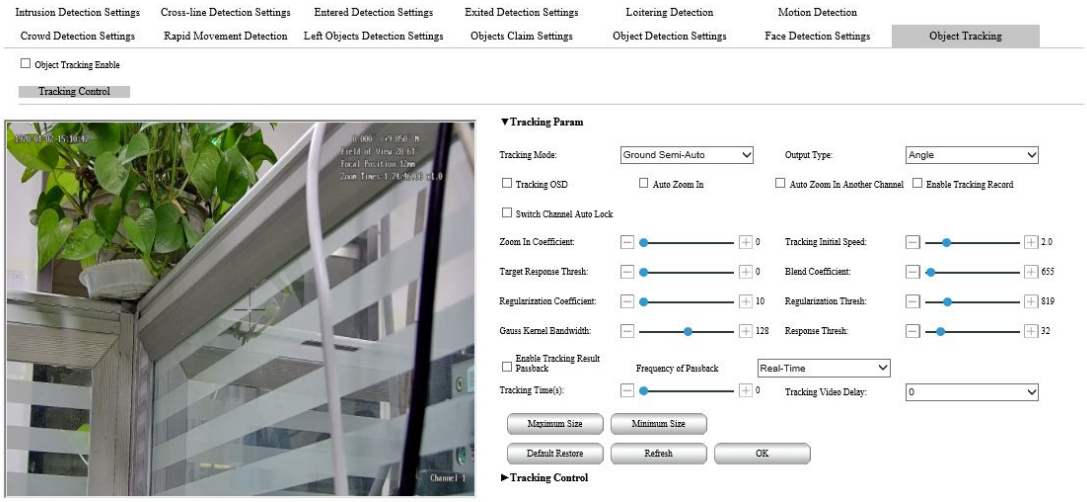


Table 6-49 Object Tracking Settings

For detailed function description, please refer the table 6-28.

Table 6-28 Object Tracking Settings Description

Function	Description
Channel	1: Visible Light 2: Thermal imagine
Object Tracking Enable	After opening, Object tracking can be performed
Tracking Mode	Ground Auto, Ground Semi-Auto, Ground Manual, Sky Auto,Sky Semi-Auto When tracking a vehicle, you need to select the ground mode; When tracking the drone, you need to select the air-to-air mode; Mode Description: In the automatic mode, the target will be tracked automatically after it is detected, without manual intervention; In semi-automatic mode, after detecting the target, you need to click the "Start Tracking"

	button. After clicking, the target will be automatically locked for tracking; In manual mode, you need to manually select the target you want to track on the video, and then lock the target and track it after the frame selection.
Output Type	Support angle, radian, pixel, the default is the angle
Tracking OSD	You can choose whether to display the miss amount of information. After it is turned on, the real-time information about the miss amount will be displayed next to the target position
Auto Zoom in	After this function is enabled, the target tracking process will be automatically enlarged.
Enable Track Recording	After opening, it will automatically record to SD card after tracking is locked
Enable Tracking Record	After it is turned on, the mop volume data can be transmitted back to the client through the network, and the return frequency is optional: real time, 10 times/second, 5 times/second, 1 time/second
Tracking time	The tracking time after the target is locked, after exceeding the set value, the lock is canceled. In particular, when the tracking time is set to 0, it means that it has been tracking until the target loss.
Target Choose	After it is turned on, you can manually use the mouse button to choose the target for tracking. After it is turned off, you cannot manually frame the target to track.
Start tracking\stop tracking	Controls tracing on and off

Note:

Visible light and thermal imaging tracking can only be turned one at one time, if it is turned on at

the same time, it will prompt a parameter setting error;

Some models do not support tracking, please refer to the actual device function.

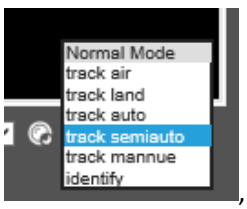
Before using thermal imaging tracking, please close the center cross.

Before using thermal imaging tracking, please turn off automatic time correction.

Table 6-50 Object Tracking

（2）Target tracking lock

After the tracking parameters are configured, return to the main preview interface and switch to the single-screen mode to perform tracking operations. The visible light tracking operation is performed on the visible light single screen, and the thermal imaging tracking operation is performed on the thermal imaging single screen.

Click the start tracking icon  , the icon changes to  , it means the device has entered the tracking mode 

, drop down to select the tracking mode, use the mouse to left-click on the target on the video screen to lock the target and track it, and use the right mouse to click to release Lock tracking.

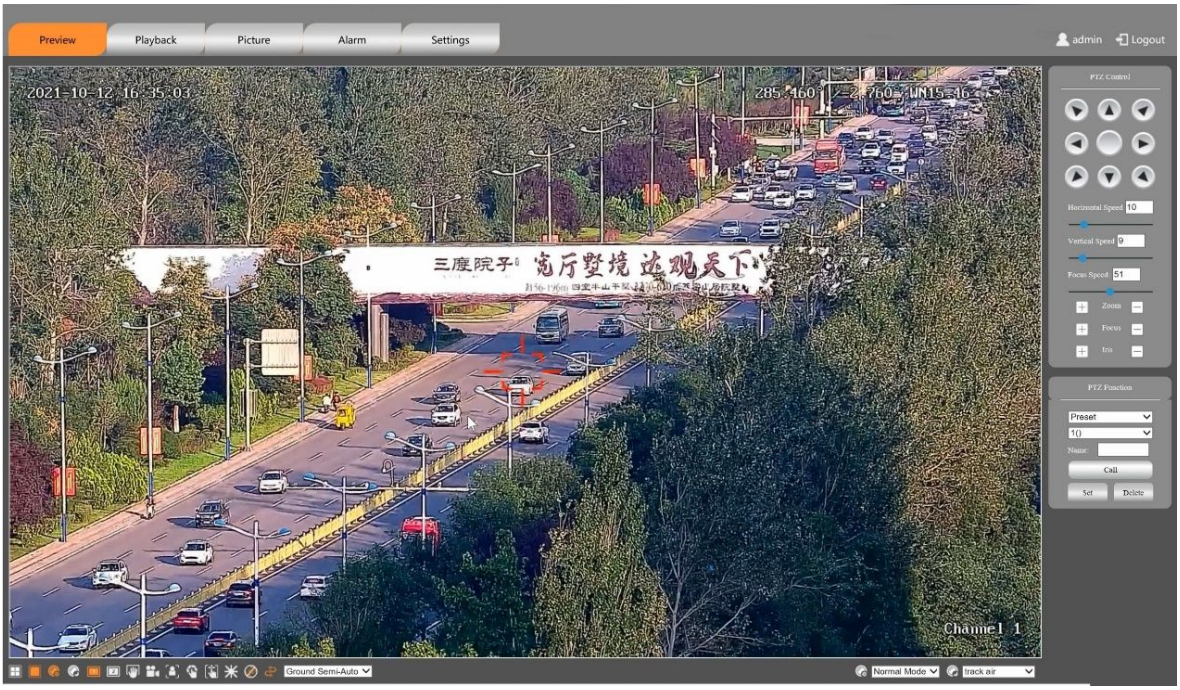


Table 6-51 Target tracking lock

6.4.1.9 Object Detection Settings

The target detection function can detect and recognize targets and can detect and recognize people, cars, boats, and drones.

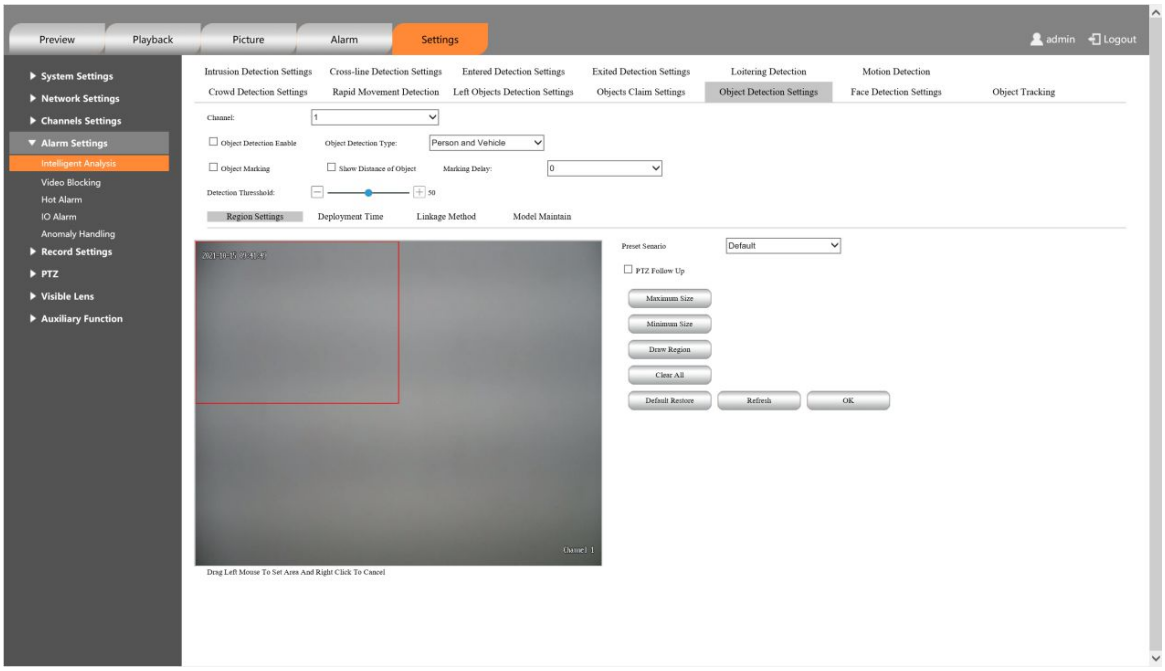


Figure 6-52 Target detection settings

For a detailed function description, see Table 6-29.

Table 6-29 Description of target detection parameter settings

Functions	Descriptions
Channel	1. Visible Light 2. Thermal imagine
Object Detection Enable	After opening, Object Detection can be performed.
Object Detection Type	After opening, Object Detection can be performed
Detection Threshold	Switch to select different detection types, support: people, vehicles, boats, drones
Object Marking	After opening, the detected target will be marked with a red frame on the video screen
Maximum Size	Maximum size of a detected target
Minimum Size	Minimum size of a detected target
Draw Region	After clicking, the detection area starts to be drawn, and the left mouse button clicks to draw the rectangular area to the end. A single scene can draw up to 8 areas.
Linkage Method	After the linkage capture is turned on, the recognition target that enters the detection area will be linked capture and stored in the SD card.
Model Maintain	Used to import the target detection model, the visible light detection model is imported under channel 1, and the thermal imaging detection model is imported under channel 2.

Note:

Visible light and thermal imaging tracking can only be turned on one, if it is turned on at the same time, it will prompt a parameter setting error;

Select the corresponding channel number when importing visible light algorithm model and thermal imaging algorithm model.

6.4.1.10 Face Detection

After the face detection is turned on, the face can be detected and captured.

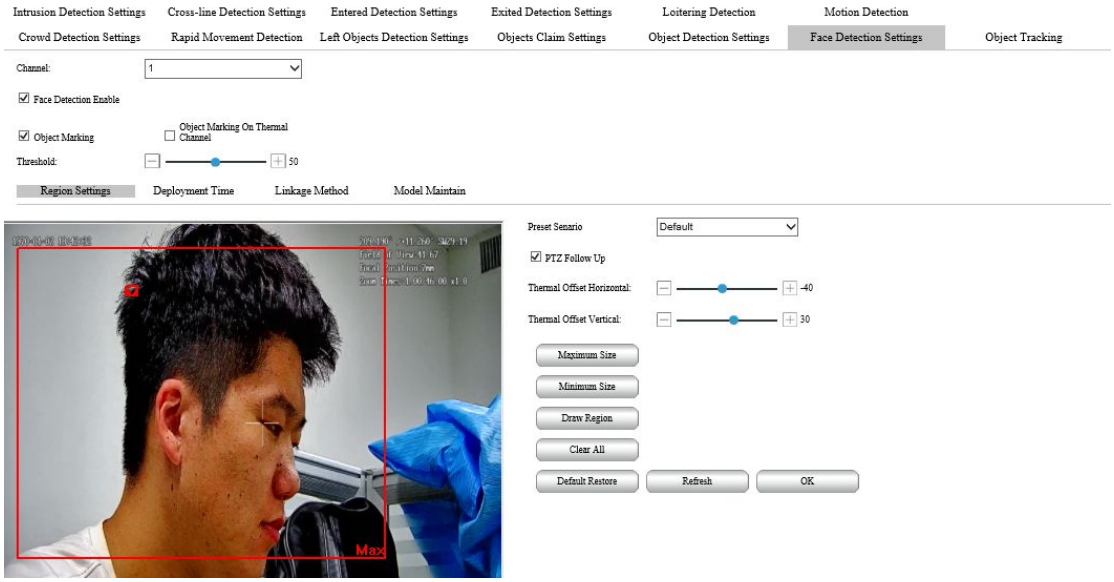


Figure 6-53 Face detection Settings

For a detailed function description, please refer table 6-30.

Table 6-30 Description of face detection parameter settings

Functions	Descriptions
Channel	1. Visible Light 2. Thermal imagine
Face Detection Enable	When turned on, face detection can be performed. After face detection, a check mark will be performed
Object Marking On Thermal Channel	Switch to select different detection types, support: people, vehicles, boats, drones
Threshold	The lower the threshold, the easier it is to detect the target, but the higher the corresponding false positives will be.

Object Marking	After opening, the detected target will be marked with a red frame on the video screen
Maximum Size	Maximum size of a detected target
Minimum Size	Minimum size of a detected target
Draw Region	After clicking, the detection area starts to be drawn, and the left mouse button clicks to draw the rectangular area to the end. A single scene can draw up to 8 areas.
Linkage Method	After the linkage capture is turned on, the recognition target that enters the detection area will be linked capture and stored in the SD card.
Model Maintain	Used to import the target detection model, the visible light detection model is imported under channel 1, and the thermal imaging detection model is imported under channel 2.

Note:

Currently only supports visible light detection of faces

6.4.2 Video Blocking Alarm

When this function is enabled, an alarm will be triggered when the video is blocked for more than the set time.

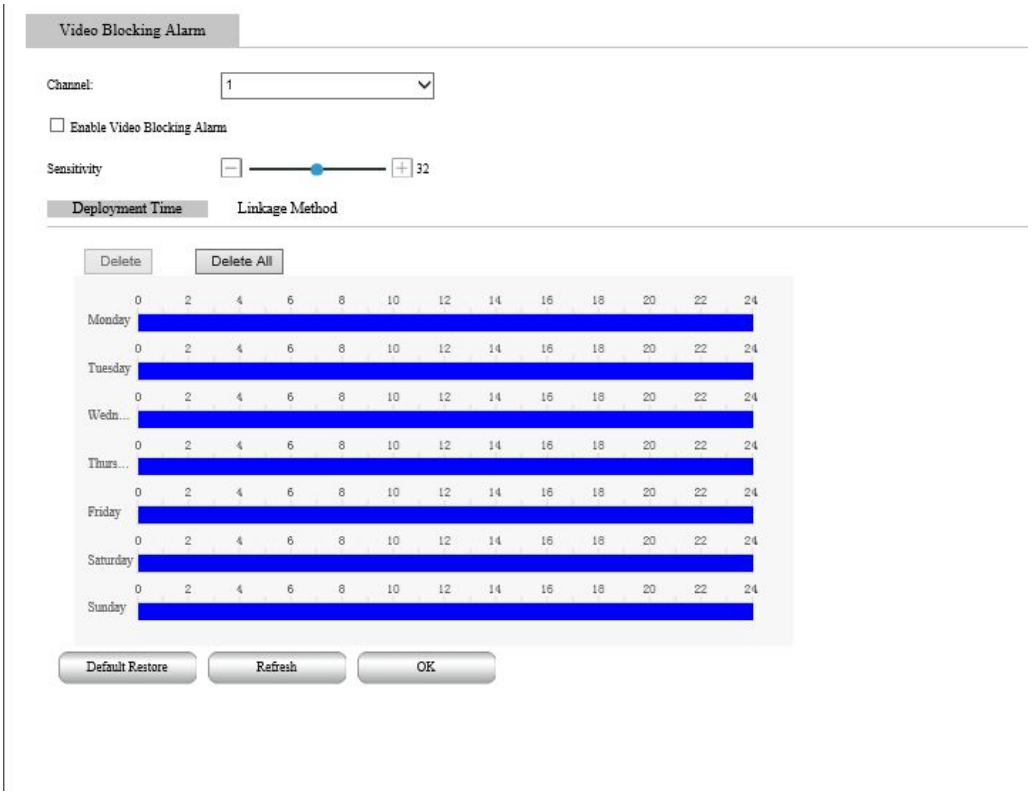


Figure 6-54 Video blocking alarm

For detailed function description, please refer the table 6-31.

Table 6-31 Description of target tracking parameter settings

Function	Description
Channel	1. Visible Light 2. Thermal imagine
Enable Video Blocking Alarm	After being turned on, an alarm will be triggered when the video is blocked for longer than the set value
Sensitivity	Approximately high sensitivity, approximately easy to trigger an alarm

The arming time and linkage mode are the same as above.

6.4.3 Hot Alarm

When the thermal imaging network camera detects a hot target, it will perform alarm identification and frame the alarm target.

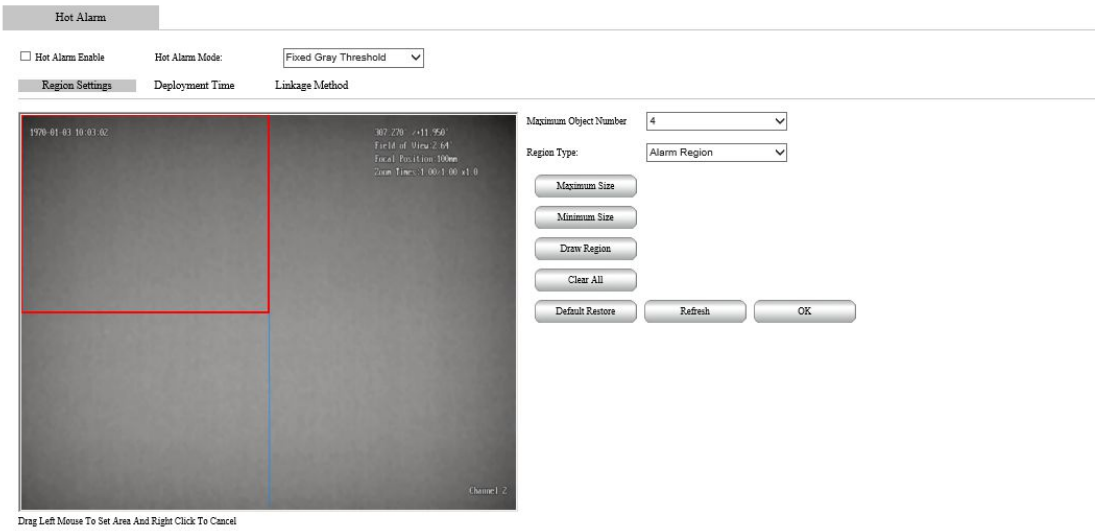


Figure 6-55 Hot alarm

For detailed function description, see Table 6-32.

Table 6-32 Description of thermal alarm parameter settings

Function	Descriptions
Hot Alarm Enable	After it is turned on, it will alarm when a hot target is detected
Maximum Size	Maximum size of a detected target
Minimum Size	Minimum size of a detected target
Maximum Object Number	The maximum number of detected targets, up to 16 can be configured
Alarm Threshold	The lower the threshold, the easier it is to trigger an alarm, but the easier it is to falsely report

Deployment time and linkage mode, same as above.

Enable hot alarm detection for hot objects.

Figure 6-56 Hot target

6.4.4 IO Alarm

Set the light quantity alarm input and output. Before configuration, the camera needs to be connected to the alarm output device. By configuring the alarm output, the alarm signal of the camera can be transmitted to the alarm output device.

IO alarm settings are shown in Figure 6-57.

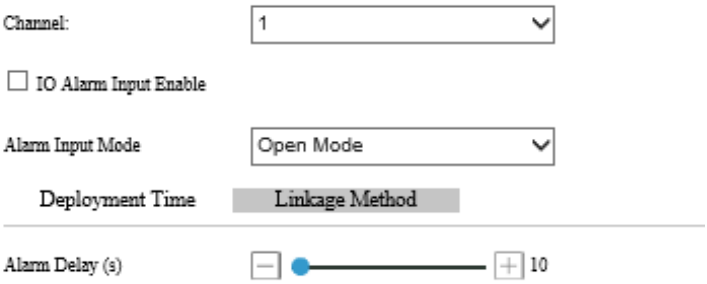


Figure 6-57 IO alarm configuration

For a detailed function description, see Table 6-33.

Table 6-33 IO alarm configuration parameter setting description

Functions	Descriptions
IO Alarm Enable	After opening, the IO alarm input will detect the alarm signal triggered by the external alarm device

Alarm Output Enable	After opening, the IO alarm input will link the alarm output
Alarm Input Mode	It needs to be consistent with the external alarm device. The default normally open mode can be switched to normally closed mode.
Alarm Delay	Alarm output duration

6.5 Record Management

6.5.1 Record Settings

Display front-end storage, usually SD card information, as shown in Figure 6-58.

Figure 6-58 Recording Setting

When the SD is used for the first time, it needs to be formatted first, select the SD card, click format, and a format confirmation prompt will pop up. After clicking OK, the formatting starts and the formatting progress is displayed. After the formatting is completed, you can record.

6.5.2 Storage Plan

Used to configure the time plan for front-end storage. After the configuration is completed, the front-end storage card will record according to the configured storage plan.

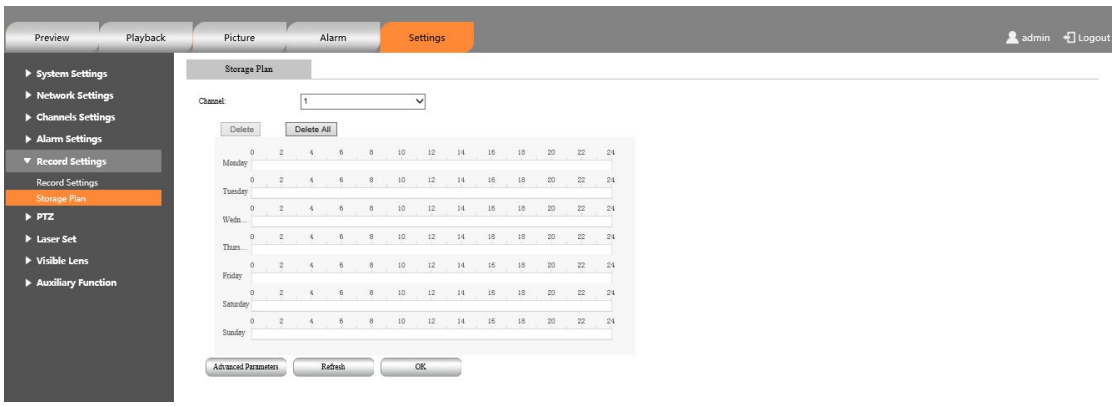


Figure 6-59 Storage plan

Step 1 Select the storage period. Up to 4 time periods can be configured. Click the button on the right to pop up the copy dialog box. You can copy the current recording plan to other periods.

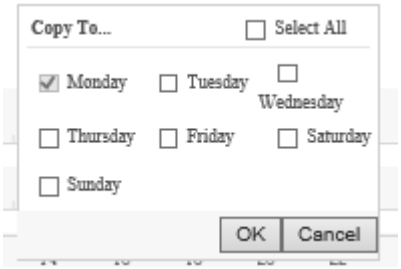


Table 6-60 Copy storage plan

Step 2 Click the "Advanced Parameters" button to pop up the video stream dialog box, and you can configure the recording main stream or size stream.

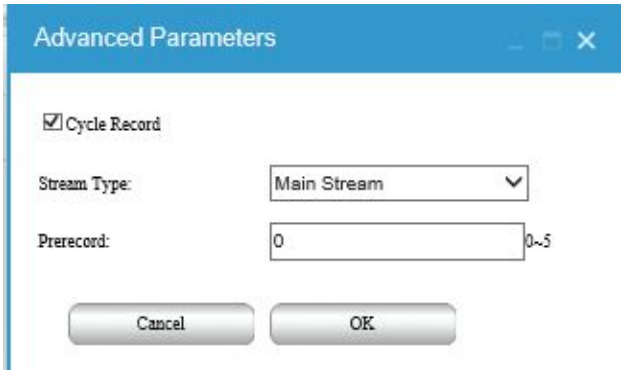


Figure 6-61 Video stream

After the alarm pre-record is turned on, the device can pre-record before the alarm is triggered, which is convenient for users to analyze the scene before the alarm. Switch to storage management-storage plan, click "advanced parameters", enter the pre-record time, and click OK to save. The pre-record time supports 0 to 5 seconds.

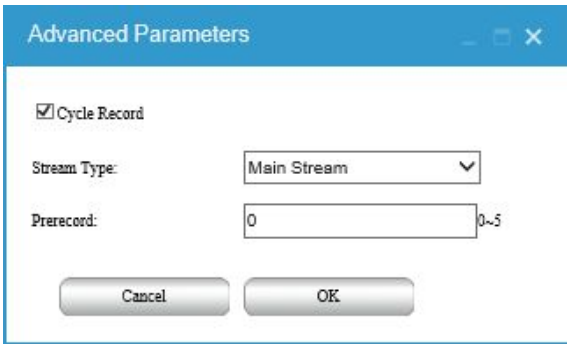


Figure 6-62 Alarm Prerecord

6.6 PTZ

6.6.1 PTZ Settings

PTZ control, a field of view positioning, preset position, power switch, and other advanced function settings.

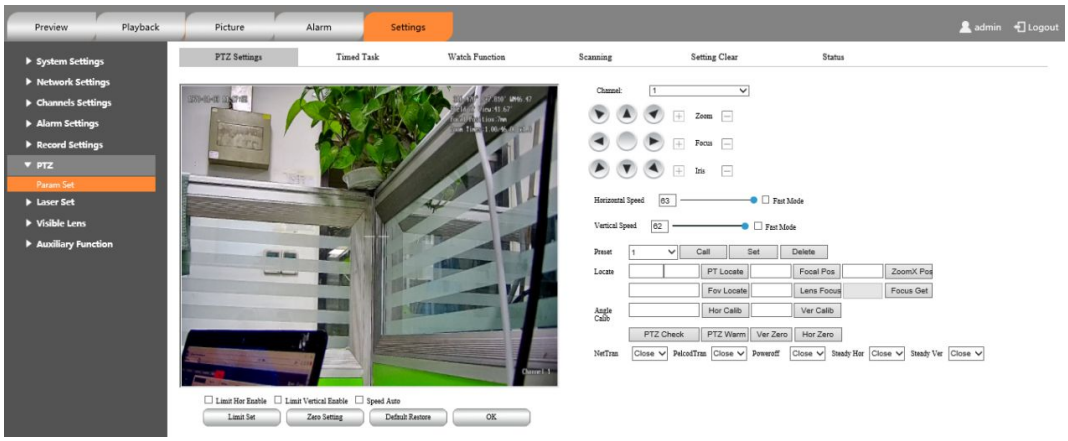


Figure 6-63 PTZ settings

See Table 6-34 for details.

Table 6-34 PTZ setting parameter description

Function	Description
Channel	Channel 1: Visible light, Channel 2: Thermal imaging
Preset	Set, call, delete, support up to 5000 presets
PTZ Locate	Enter the pitch square angle and pitch angle, click on the PTZ to locate, the PTZ will automatically locate the set location
FOV Locate	Enter the lens field angle value, click on the field position, the lens is automatically positioned to the set location
Focal Locate	Input lens focal length, click the focal length positioning, the lens focal length is

	automatically positioned to the set location
Focus Locate	Enter the lens focus value, click on the focus positioning, the lens focus is automatically positioned to the set location
Focus Get	Click on the focus value, the system queries the current lens focus value and display
Angle Calibration	After entering the horizontal angle, after the pitch angle, click the horizontal calibration and pitch calibration, and the current horizontal angle and the pitch angle can be calibrated into set values.
PTZ Check	After clicking, Pan Tilt self-test
PTZ Warm	After clicking, the cloud is warm, and the device is free to use.
Network Transmissions	Using the Remote Configuration Protocol to call the data back pass after the network camera function interface, open the data after the remote call function interface, close, do not return
PELCO-D Transmissions	When the client is turned on, the function is turned on, and can return to the azimuth, the angle of view, and close, do not return.
Horizontal drive\ Pitch drive	After the shutdown, the level and pitch motor cannot be driven, and after opening, the level and pitch motor can be rotated.
Horizontal stability \ Vertical stability	Used in The Adjust of The Image Stabilization Adjustment, After Opening, Adjustment Horizontal Zero Noises and Pitch Zero Bias, Optimized Flexographic Effects.
Power Off	After opening, the device residence time is more than 30 seconds, which will remember this location and stay in this position after the power is restarted. After the shutdown, the device is powered on restarted on the No. 0 preset.

Limit Set	Set horizontal limit and pitch limit position, enable horizontal limit, pitch limit, can limit the rotation range of pan
Speed Auto Adjust	After opening, the visible light is on the telephoto position, and the control of the cloud will automatically adjust the speed according to the size of the field of view.
Zero Setting	You can set the current horizontal position and the pitch position to 0 bits, namely 0 degrees, pitch 0 degrees.

6.6.2 Timed Task

Different tasks can be set in different periods, including preset, cruise,Scan, Watch Function, etc.

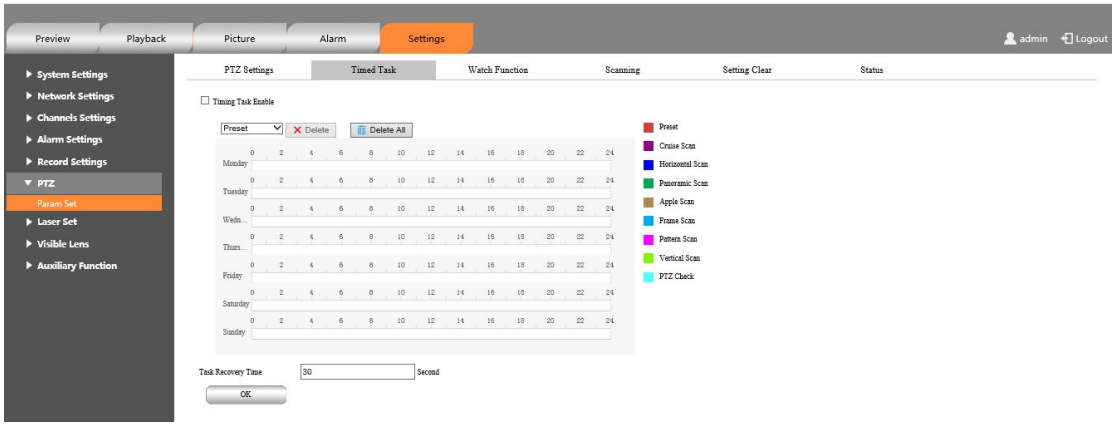


Figure 6-64 Timing task

6.6.3 Watch Function

After turning on the watch, there is no operation of the device to be over the set, which will automatically perform the desired watchmaking, including preset, cruise, horizontal scan.

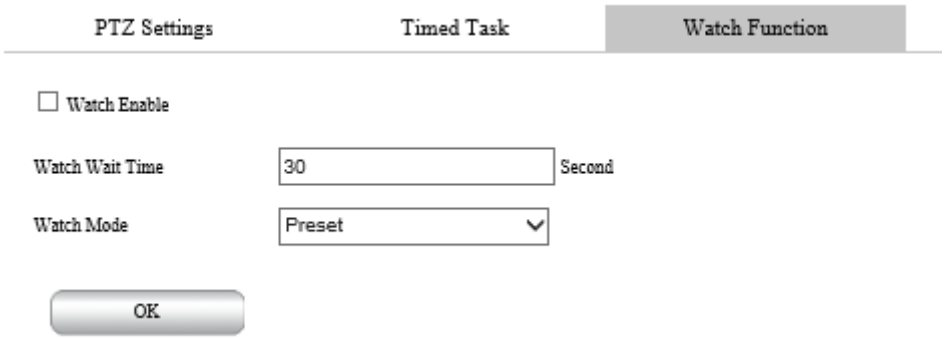


Figure 6-65 Watch Functions

6.6.4 Scanning

Including Horizontal San, Panoramic scan, Apple scan, Frame scan, Pattern scan, Vertical scan.

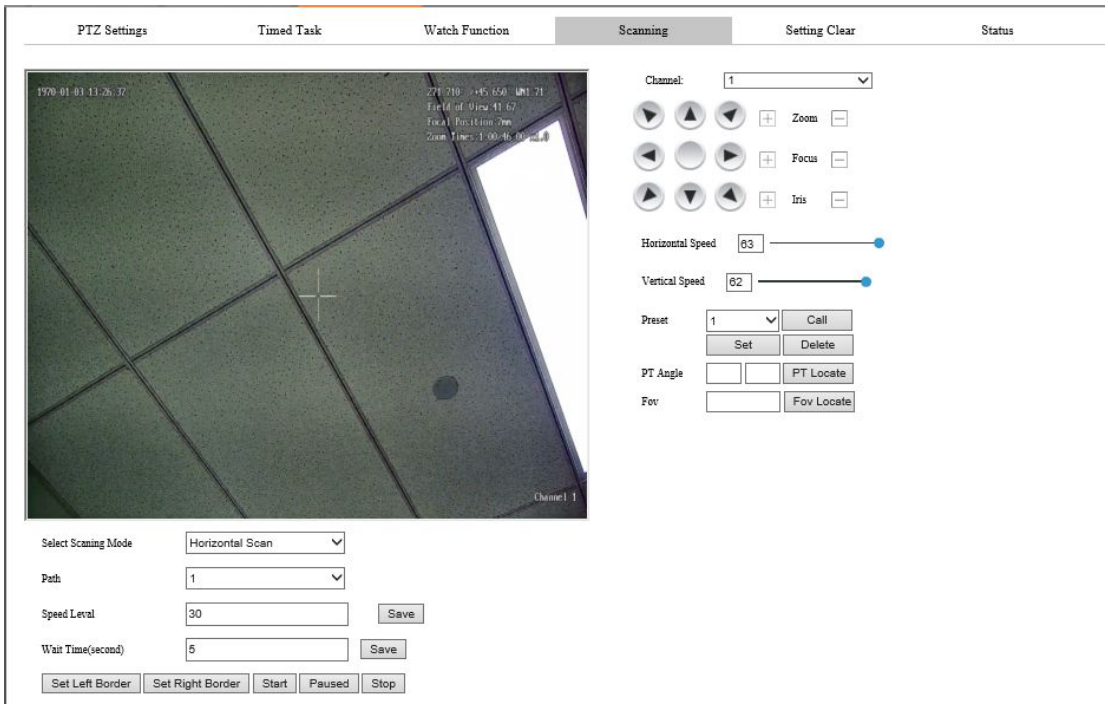


Figure 6-66 Scanning

For details, see Table 6-35.

Table 6-35 Scan parameter description

Function	Description
Horizontal Scan	After starting, scan according to the set left and right borders, and set the scanning speed and the dwell time of the left and right borders

Panoramic Scan	Perform a panoramic scan after startup
Apple Scan	After startup, scan according to the set lower left boundary and upper right boundary, and the scanning speed and boundary stay time can be set
Frame Scan	After starting, scan horizontally, stay every 120 degrees, dwell time and scan speed can be set
Pattern Scan	You need to record the track first. After the recording is complete, click Start to scan the track according to the recorded track.
Vertical Scan	After startup, scan according to the set upper and lower boundaries, and set the scanning speed and boundary dwell time

6.6.5 Setting Clear

Various rules can be cleared.

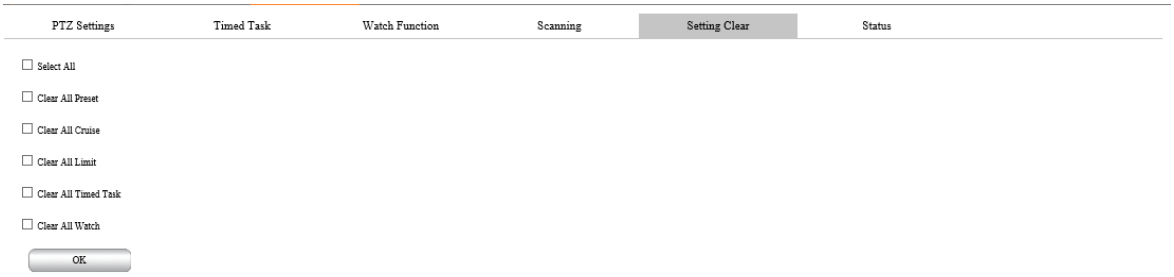


Figure 6-67 Setting Clear Configuration

For detailed function description, see Table 6-36.

Table 6-36 Description of Setting Clear Configurations

Function	Description
Select All	Clear all rules, including preset positions, cruise paths, limit settings, timed tasks, and watch. After selecting, click OK to take effect

Function	Description
Clear All Preset	After selecting, click OK to take effect
Clear All Cruise	After selecting, click OK to take effect
Clear All Limit	After selecting, click OK to take effect
Clear All Time Task	After selecting, click OK to take effect
Clear All Watch	After selecting, click OK to take effect

6.7 Visible Lens Setting

It is used to download the optical lens data, the field of view angle reading, 3D correction, etc.

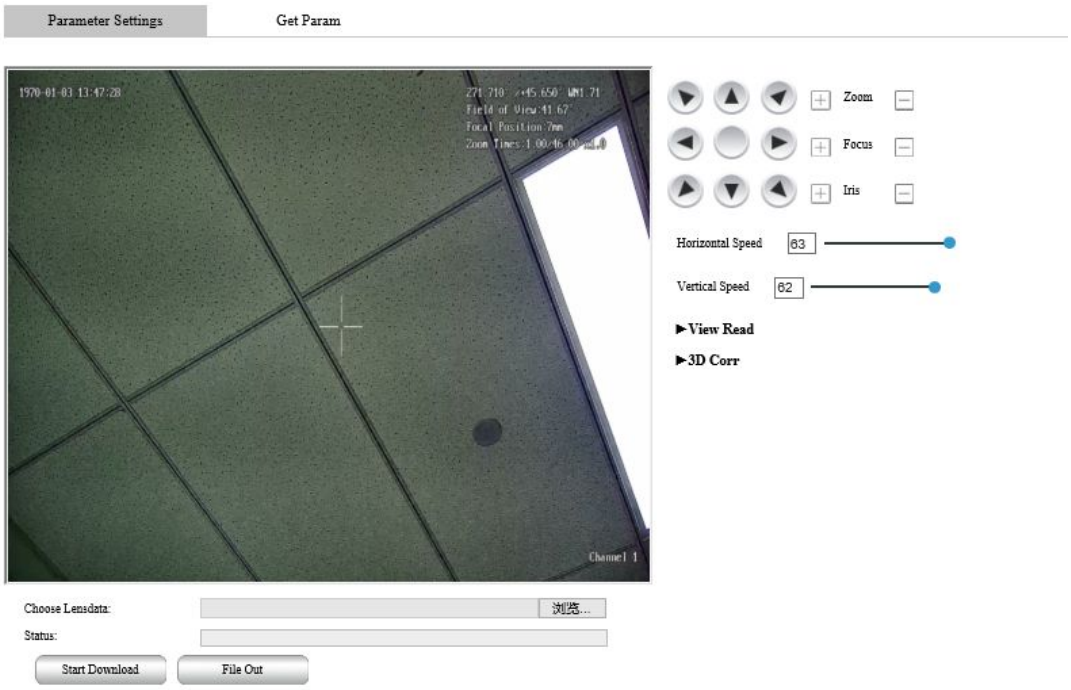


Figure 6-68 Setting Parameters

6.7.1 FOV Read

The field of view reading is used to read the corresponding relationship between the field of view and the AD value. After the read data is processed in a standard format, the download operation of 6.7.2 is carried out.

Zoom the lens to the widest angle, control the direction of the turntable to rotate so that the edge of a marker in the scene coincides with the left border of the field of view, click "Set Left Border" to obtain the azimuth of the left border, and control the direction of the turntable to make the mark The edge of the object coincides with the right boundary of the field of view, click "Set Right Boundary" to get the azimuth of the right boundary, click "Lens Position" to get the lens AD value, and click "File Write"; zoom + operation of the lens to make the lens When the field of view becomes smaller, follow the same steps and operate in a loop for about 30 times (it should be relatively dense during the longest focal length acquisition), until the lens is zoomed to the longest focal length, and then click "File Export".

To make the field of view of the lens smaller, follow the same steps and operate in a loop for about 30 times (it should be relatively dense during the longest focal length acquisition) until the lens is zoomed to the longest focal length, and then click "File Export".

6.7.2 Download Lens Data

Select the visible light lens data file and click "Start Download". After the download is complete, open the visible light OSD to check whether the data information such as the angle of view superimposed on the visible light is correct. Click "File Export" to export the visible light lens data file.

6.7.3 3D Correction

3D correction is used to adjust the accuracy of 3D positioning.

Turn on the visible light cross cursor, zoom the lens to the widest angle, aim the cross cursor at a target in the distance, regard the cross cursor as the origin of a two-dimensional coordinate system, and continuously perform the zoom + operation. When the target is found to deviate After a certain distance of the cross cursor, control the pan/tilt to realign the cross cursor to the target, and check the "Horizontal Positive" and "Pitch Positive" buttons according to the actual position of the target deviation, the upper right is positive, and the unchecked is negative (for example The target is in the lower right corner of the cross cursor, then just check "Horizontal Forward") and click "File Write", and then repeat this operation until the lens is zoomed to the longest focus.

Finally, export the file, each line is: serial number, 3D horizontal correction data, 3D pitch correction data, 3D AD data, fill in the corresponding positions of the last three items in the lens data in turn, and finally re-import the lens data.

Note:

Our equipment has completed the lens setting operation before leaving the factory. This chapter is mainly used for the debugging and use of our internal technicians. Non-professionals should not operate.

6.8 Laser Set

Used for laser control, lens alignment, laser lens data download, etc.

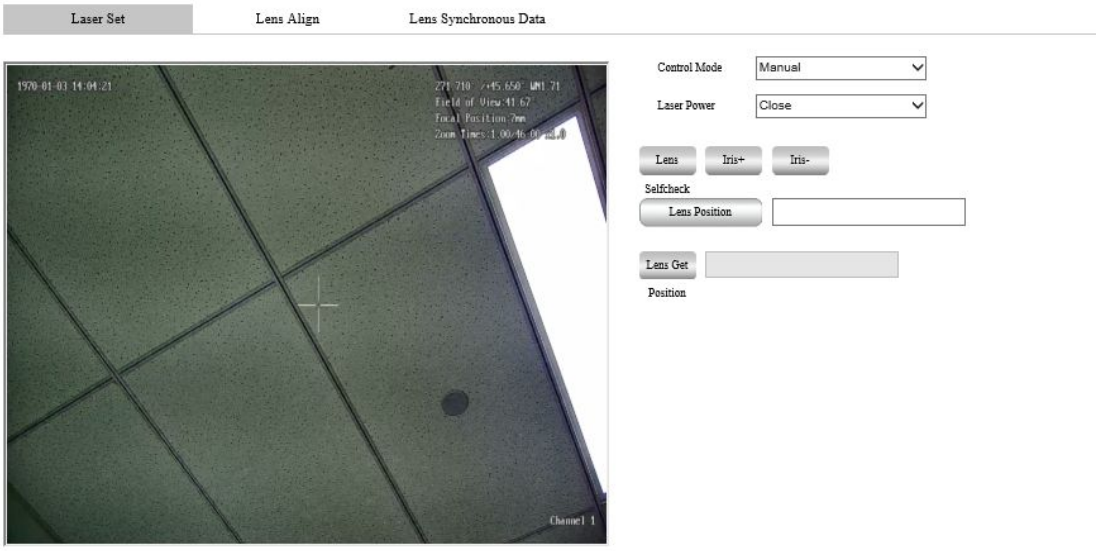


Figure 6-69 Laser Settings

6.8.1 Laser settings

In manual mode, you can manually turn on the laser (color to black) and turn off the laser (black to a color); in photosensitive auto mode, the laser is turned on when the photosensitive detection surrounding light becomes dark, and the laser is turned off when the surrounding light becomes stronger.

After turning on the laser, you can control the size of the aperture through the aperture +/ aperture -, click the lens self-check button, the laser lens can perform a self-check. Click the lens position to query the current laser lens position, and enter the laser lens circle number to locate the laser lens.

6.8.2 Lens alignment

When the laser aperture is not in the center of the field of view, you can adjust the position of the aperture through the electric alignment device, input the lens to adjust the click speed: horizontal speed (1-100) tilt speed (1-100), click up, down, left, and right to control the laser The aperture moves.

6.8.3 Lens synchronization data

Click the visible light lens data to query the current AD value of visible light, click the laser lens data to query the current laser circle number, click file write to write the visible light AD value and laser circle number into the TXT file, click file export to download the written TXT file.

Tick Sync on to make the laser aperture change synchronously with the field of view of the visible light lens. The synchronization effect has four effects: upper and lower inner cut to horizontal outer cut, inner cut, outer cut, and full screen.

The laser lens data can be downloaded through browsing or exported. After downloading the new lens data, it is found that the synchronization effect is very poor. You need to clear the first correction and clear the overall correction. If it is not possible, you can manually correct the first and overall correction.

6.9 Auxiliary Function

It is used to control the wiper, white light, infrared light, and defrost functions.

For details, see "3.4.4 Auxiliary Functions".

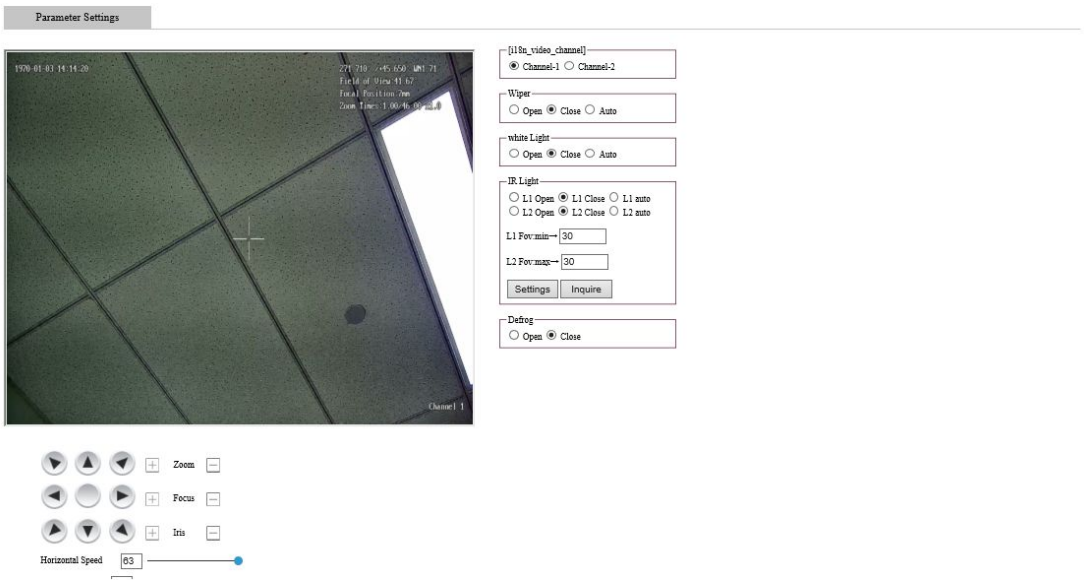


Figure 6-70 Auxiliary functions

Here is a description of the infrared lamp's automatic switching function according to the angle of view: when the infrared lamps are in automatic mode and the ambient light meets the requirement to trigger the infrared lamp to turn on, when the camera's field of view is within the longest focal length of point A, lamp 1 is on. Will turn on; when the camera's field of view is at the widest angle to point B, light 2 will turn on; A and B can be set by themselves, and points AB can be separated, tangent, and intersected.

7. Alarm Event

Used to subscribe to alarm events. When an alarm event that the user has subscribed to is triggered, the system will record the alarm information in the right window bar, as shown in Figure 7-1.

Note:

Different equipment has different alarm types, please refer to the specific equipment.

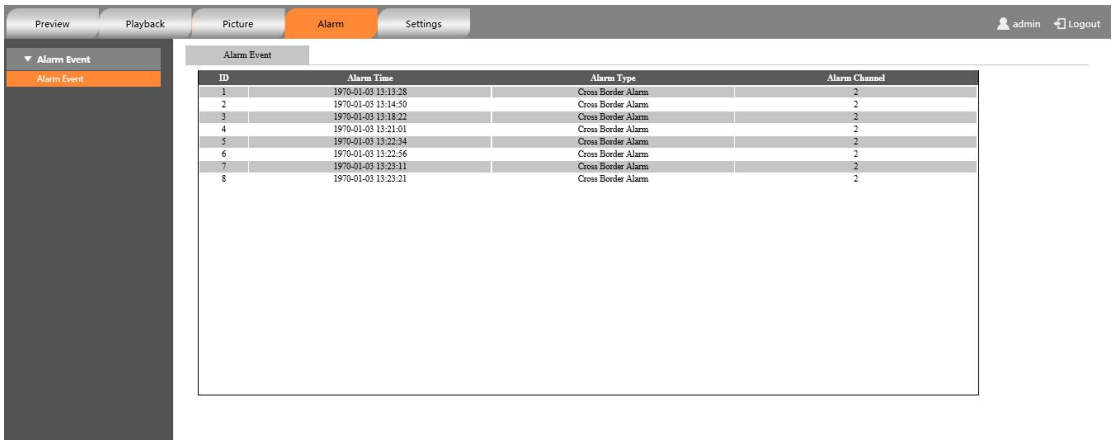


Figure 7-1 Alarm event

Refer to Table 7-1 for detailed alarm types.

Table 7-1 Alarm types

Alarm Type	Description
Hot warning	Generate an alarm when a hot target is detected
IO alarm	Generate an alarm when an external IO alarm signal input is detected
Intrusion Detection Alarm	Generate an alarm when an intelligent analysis-area intrusion is detected
Motion Detection alarm	Generate an alarm when a moving target is detected
Entered Detection alarm	Generate an alarm when it detects that the target enters the area

Exited Detection alarm	Generate an alarm when it detects that the target has left the area
Loitering Detection alarm	Generate an alarm when the target is detected to be hovering
Cross-line Detection alarm	Generate an alarm when it detects that the target is out of bounds
Rapid Movement Alarm	Generate an alarm when the target is detected to move quickly
Crowd Detection Alarm	When it is detected that the focus of the person exceeds the set threshold, an alarm is generated
Video block alarm	Generate an alarm when it detects that the video is blocked
Network abnormal alarm	Generate an alarm when an abnormal network is detected
IP conflict alarm	Generate an alarm when an IP conflict is detected
No SD card alarm	Generate an alarm when it detects that there is no SD card
SD card abnormal alarm	Generate an alarm when an abnormal SD card is detected
SD card full alarm	Generate an alarm when it detects that the SD card storage space is full
Illegal access alarm	When an illegal access to the camera is detected, an alarm is generated

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