QS High Speed PTZ User Manual

Table of Contents

QS High Speed PTZ User Manual ---- I
1. Safety matters ---- 1
2. Product introduction ---- 2
2.1 Product description and features ---- 2
2.2 Technical parameters ---- 2
3. Product appearance dimensions and installation instructions ---- 4
3.1 QS High Speed PTZ External dimensions ---- 4
3.2 Installation instructions ---- 5
4. Network and login configuration ---- 6
4.1 Network configuration ---- 6
5. Preview ---- 8
5.1 Device Home Interface ---- 8
5.2 Preview operation ---- 8
5.3 Image adjustment ---- 9
5.4 OSD configuration ---- 10
5.5 Image connection ---- 10
5.6 PTZ control ---- 11
5.6.1 Direction control ---- 11
5.6.2 Zoom ---- 11
5.6.3 Focus ---- 11
5.6.4 Wiper ---- 12
5.6.5 Auxiliary focusing ---- 12
5.6.6 Presets ---- 12
5.6.7 Cruise ---- 12
6. Picture ---- 13
7. System configuration ---- 13
7.1 System ---- 13
7.1.1 Device Information ---- 13
7.1.2 RS485 ---- 14
7.1.3 Time setting ---- 14
7.1.4 Maintain ---- 15
7.1.5 Log ---- 16
7.1.6 User management ---- 16
7.2 Local storage ---- 17
7.3 Network ---- 17
7.3.1 TCP/IP ---- 17
7.3.2 Multicast ---- 18
7.3.3 Port ---- 18
7.3.4 Port Mapping ---- 19

7.3.5 Email ---- 20
7.3.6 FTP ---- 20
7.3.7 White list ---- 21
7.4 Video Configuration ---- 22
7.4.1 Video Streaming ---- 22
7.5 VCA ---- 23
7.5.1 Global Settings ---- 23
7.5.2 VCA settings ---- 24
7.6 Image Configuration ---- 25
7.6.1 Image parameter settings ---- 25
7.6.2 OSD Setting ---- 26
7.6.3 PIP ---- 27
7.6.4 Blind element processing ---- 27
7.7 Event ---- 28
7.7.1 Alarm set ---- 28
7.7.2 Fire source detection ---- 29
7.8 Storage ---- 32
7.8.1 Schedule ---- 32
7.8.2 SD card management ---- 32
7.9 Temperature ---- 33
8. Alarm Center ---- 37

1. Safety matters

Warning

- In the process of installation and use of the equipment, the various electrical regulations of the State and the areas in use must be strictly observed.
- Please use the power adapter from a regular manufacturer. The specific requirements of the power adapter can be found in the product parameter table.
- Do not connect multiple devices to the same power adapter.
(Exceeding the adapter load may cause excessive heat or fire)
- Be sure to disconnect the power supply of the device during wiring, disassembly and other operations. Do not operate on a live line.
- If the device smokes, smells or makes a noise, switch off the power immediately and unplug the power cord, Get rid of it and contact our company in time.
- If the device does not work properly, please contact our company and do not disassemble or modify the integrated machine in any way.
(The Company is not responsible for problems caused by unauthorized modifications or repairs)
- Do not aim the lens of the device at bright objects, such as the sun, or damage the thermal imaging detector.

Attention

- Avoid dropping objects on the device or strong vibration device, keep the device away from places where magnetic field interference exists.
- Avoid installing the device where the surface is prone to vibration or shock (ignoring this may damage the device).
- Do not use the device at high temperature, low temperature or high humidity. Refer to the parameter table of the device for specific temperature and humidity requirements.
- Do not place the equipment in an environment with corrosive gases, which may damage the equipment.
- Devices accessing the Internet may face network security problems. Please strengthen the protection of personal information and data security.
- Contact us as soon as you find potential network security hazards on your device.
- It is your responsibility to properly configure all passwords and other related product security settings, and to properly keep your username and password.
- Please keep all the original packaging materials of the equipment properly so that if problems arise, the equipment can be packed with the packaging materials and sent back to the manufacturer for disposal.
- The Company is not liable for accidental damage in transit caused by non-original packaging materials.

Quality requirements for installation and maintenance personnel

- Has the qualification certificate or experience to install and repair the video monitoring system, and has the qualification to do related work.

In addition, you must have the following knowledge and operational skills.

- Basic knowledge and installation skills of video monitoring systems and components.
- Basic knowledge and operation skills for low voltage wiring and low voltage electronic wiring.
- Has basic network security knowledge and skills, and can read this manual.

2. Product introduction

2.1 Product description and features

- QS high speed PTZ is a security network camera that combines infrared thermal imaging, visible light and remote network services. It has built-in video encoding and network services, supports functions such as high temperature alarm and VCA, and has reliable and stable performance.

Product characteristics:

- Built-in embedded high performance processor chips for high efficiency, stability and reliability
- H.264, H. 265 Efficient video compression algorithm to save bandwidth and storage
- Supports temperature measurement and high temperature alarm programs.
- Local storage is supported, data storage is secure and fast.
- Support intelligent analysis, intelligent recognition of human, vehicles, board, etc.
- Supports TCP/IP, HTTP, DDNS and other network communication protocols.
- Supports network standard interface protocols such as ONVIF and PSIA.
- Support network remote upgrade for remote maintenance.
- Support multi-level video quality configuration, encoding complexity configuration
- Supports high resolution display, and captures clear and detailed images
- Supports bi-spectrum single IP addresses to reduce network usage.

2.2 Technical parameters

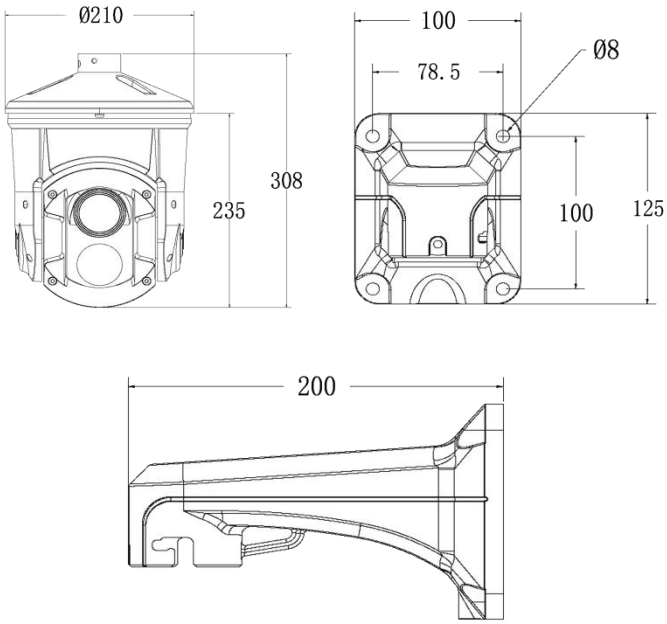
	parameters	QS High Speed PTZ	
	Thermal Module	QS3	QS6
Infrared	Detector type	Uncooled FPA	
	Resolution/Pixel spacing	384x288/12μm	640x512/17μm
	Spectral range	8-14μm	
	NETD	≤50mK	

	Focal length		25mm	35mm	50mm
	FOV	QS3	10.5x7.9	7.5x5.7	5.3x4.0
		QS6	24.6x19.8	17.7x14.2	12.4x10.0
	Aperture		F1.0		
	Digital zoom		1-8X continuous		
	Focus way		Motorized		
	Color palette		14 color palettes to choose from (including iron red, rainbow, black and white, etc.), can be customized color scale		
Image Effect	Image calibration		Automatic/manual shutter correction, background correction		
	Image gain		AGC, NUC, IDE, HDR, DNR		
Visible	Image device		1/2.8” Progressive Scan CMOS		
	Focal length		5.5-180mm		
	FOV		60.5°-2.3° (wide-tele)		
	Aperture		F1.5-4.0		
	Focus way		Motorized		
	Resolution		4MP		
	Low illuminance		Color: 0.01 Lux @(F1.5,AGC ON); Black:0.001Lux @(F1.5,AGC ON);		
	Shutter Speed		1/25s ~ 1/100000s		
Images	Infrared algorithm		AGC、NUC、IDE、HDR、DNR		
	PIP		Support		
	Bi-spectrum Image Fusion		Display the details of optical channel on thermal channel		
Intelligent function	VCA		4 VCA types (motion detection, cross line, intrusion, area entry and exit), max. 10 VCA rules		
	Fire source detection		Support		
	Thermal imaging intelligent function		Human,vehicles,vessels,animals detection		
	Temperature measurement		3 temperature measurement rule types, 30 rules in total(10 points,10 lines,10 areas)		
	Temperature range		-20℃~+150℃（-4℉~302℉）		
	Temperature accuracy		±8℃（±14.4℉）		
Video and sound	Main stream (visible)		25fps (1920*1080,1280*720)		
	Sub stream (visible)		25fps (1280*720,768*576,640*480)		
	Main stream(Infrared)		25fps (1280*720,768*576,640*512,384*288,352*288)		
	Sub stream(Infrared)		25fps (768*576,640*480,384*288,352*288)		
	Video compression standard		H.264/H.265		
Network	Protocol		IPv4,HTTP,HTTPS,FTP,DNS,NTP,RTSP,RTCP,RTP,TCP,UDP,IGMP,ICMP,DHCP,ONVIF		
	API		ISAPI, SDK, Third party management platform ONVIF and CGI		

	Simultaneous live viewing	6 users
	User level	Up to 10 users, 3 levels: administrator, operator, general
	Security	Support password protection, binding MAC ID and IP filtering
	Client	Support third-party software such as Thermtec platform and ONVIF
	WEB browser	Google Browser
Interface	Communication interface	RJ45 10 M/100 M Adaptive Ethernet interface
	Serial port	RS-485 1ch
	Audio in/out	1ch in, 1ch out
	Alarm in/out	1ch in, 1ch out
Basic	Web language	English
	Power supply	DC12V
	Power waste	30W
	Operating temperature/humidity	Temperature: -20℃~60℃(outdoors), humidity＜90%RH
	Wiper	Optional
	Degree of protection	IP66
	Size	Φ210mm x 308mm
	Weight	＜7.4kg

3. Product appearance dimensions and installation instructions

3.1 QS High Speed PTZ External dimensions



3.2 Installation instructions

During the installation and fixation of the device, the cables have been combed and connected. On the premise of ensuring the correct installation of the wick, connect the power supply for power-on self-check.

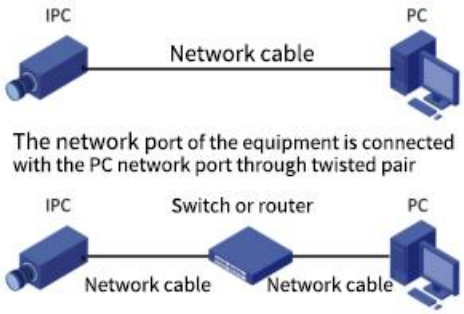
- If the device can be turned on normally and display the screen, the installation of the device is over.
- When the device is normal, if the device cannot be turned on normally, please check whether the cable interface is connected properly; if the cable connection is normal, you need to check the cable wiring, etc. .
- It is recommended to supply power to the device nearby. If you need to extend the power supply line, please ensure that the voltage and current of the extended line can meet the power supply standard.

4. Network and login configuration

4.1 Network configuration

After the device is installed, it needs to configure the function and set the parameters. You can configure the related function through the browser. Before configuring, make sure the device is connected to the computer and can access the product you need to set up. There are two ways to connect:

The upper side is a diagram connected through a direct line, and the lower side is a diagram connected through a switch or router.



Connection diagram

The default IP address of the device is 192.168.1.128. You need to set the IP address of the computer you are operating on to the same network segment as the device before you can login and use it properly. You can access and use the device function through the browser.

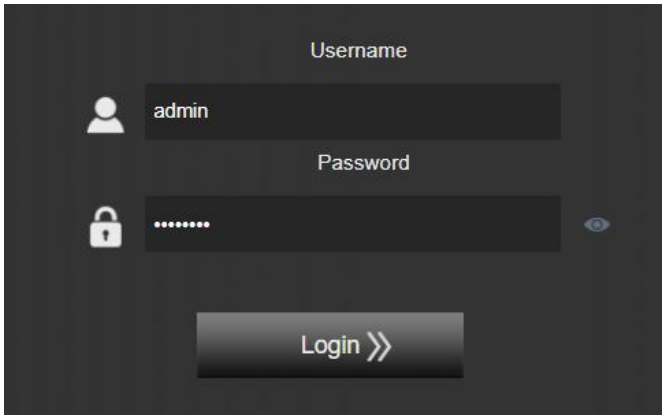
To protect your privacy and corporate data and avoid network security issues with camera products, it is recommended that you set a strong password that complies with security specifications.

- Device default IP address: 192.168.1.128
- Device account: admin
- Device password: admin123

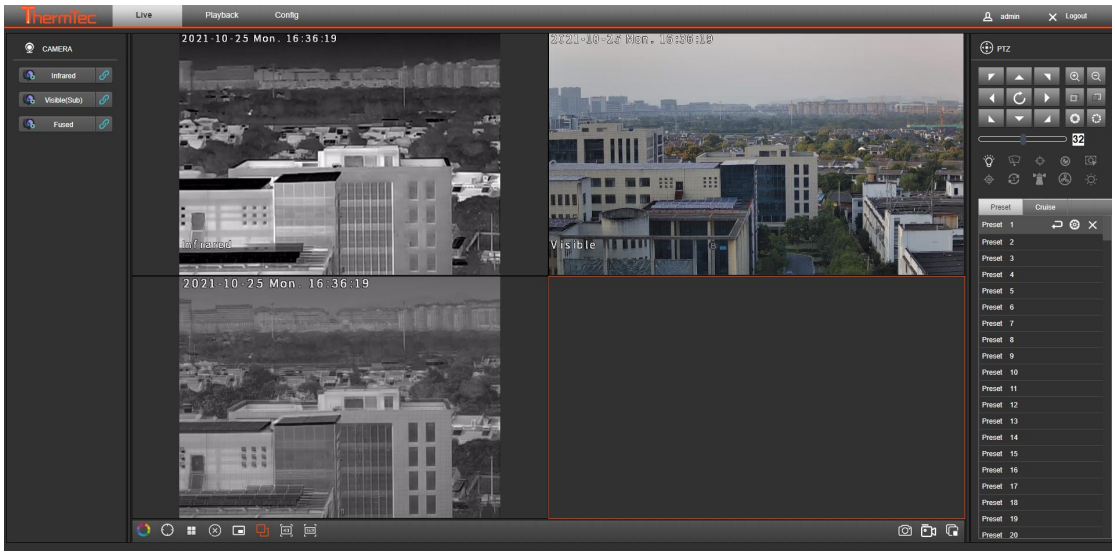
Step 1 Opens the Google browser, enters the IP address of the wick in the address bar and press Enter. After successful connection, the Web displays the interface shown.



Step 2 Enter the user name and password to enter the Web operation interface (factory default administrator user name admin, password admin123).

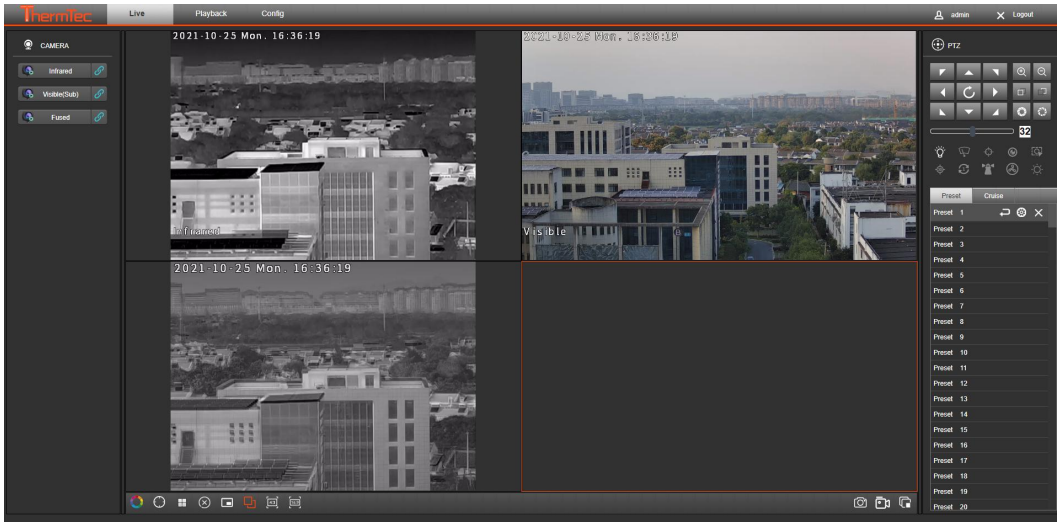


Step 3 After entering your password, you will jump to the video preview interface. When you enter the main interface of the device, you can click "Log Out" in the upper right corner to exit the system safely.



5. Preview

5.1 Device Home Interface

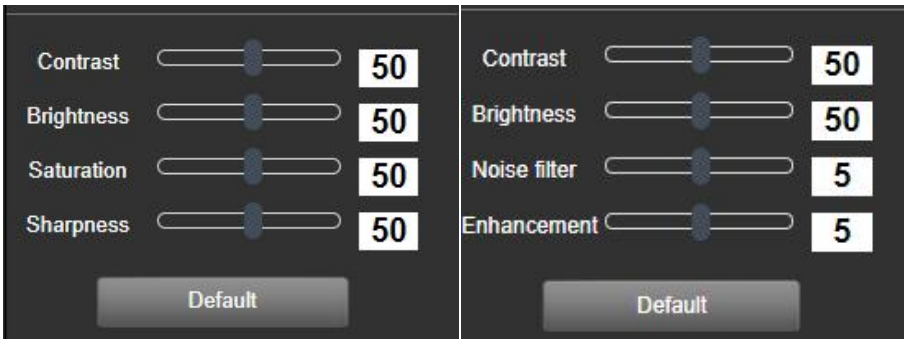


5.2 Preview operation

Click the Preview button to enter the device preview interface and do the following preview:

- Color palette change: You can switch between nine false color pictures, and the selected false color can be clicked to save the false color state.
- Zeroing: After clicking, the mechanical shield will move to calibrate the thermal imager. You can hear the sound of the calibration action of the mechanical shield.
- Screen segmentation: It can be divided into one picture and four pictures. Normally, it is only used to view three images, thermal image, white light and fusion image. One picture can be viewed by enlarging the selected image. Double click the image to view the selected image in full screen.
- Clear: Eliminate the dot line frame in the image, which will be used in the subsequent temperature measurement function.
- PIP: It is used to open the picture in picture function of visible light image
- Image fusion: Used to turn on the fusion mode of thermal image.
- Capture: Grab a real-time preview image and keep it to the local path.
- Record: Record the video, click again to stop recording, and the video file will be saved in the set path.
- Preview Start Stop: Click the key to open all previews of the device, and click the key again to close all previews.
- Picture scale: It indicates that the preview screen size is 4:3 and 16:9 respectively.

5.3 Image adjustment



- Visible light image adjustment function, which can adjust the brightness, contrast, saturation and sharpness of the visible light image browsed by the local Web terminal.

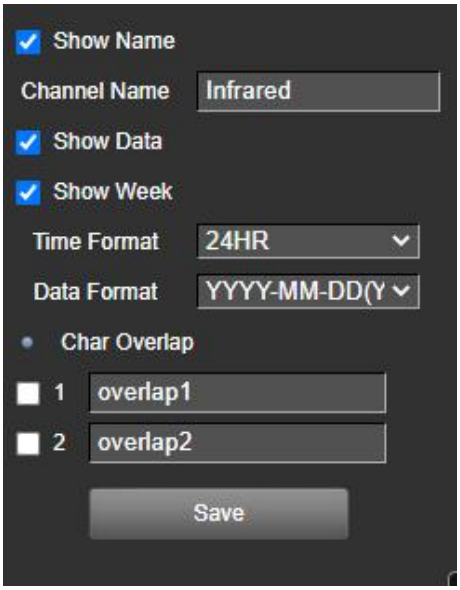
- Thermal imaging image adjustment function, which can adjust the brightness, contrast, saturation and sharpness of the local Web browsing thermal imaging image.

Parameter	Description
Contrast	Adjust the brightness of the browsing screen
Brightness	Adjust the contrast of browsing screen
Saturation	Adjust the saturation of the browsing screen
Sharpness	Adjust the sharpness of the browsing screen
Default	Click this icon to restore the brightness, contrast, saturation and sharpness to the default values

Parameter	Description
Contrast	Adjust the brightness of the browsing screen
Brightness	Adjust the contrast of browsing screen
Noise filter	Adjust the browsing image to reduce noise
Enhancement	Adjust the browsing screen image enhancement
Default	Click this icon to restore the brightness, contrast, noise reduction and image enhancement to the default values

5.4 OSD configuration

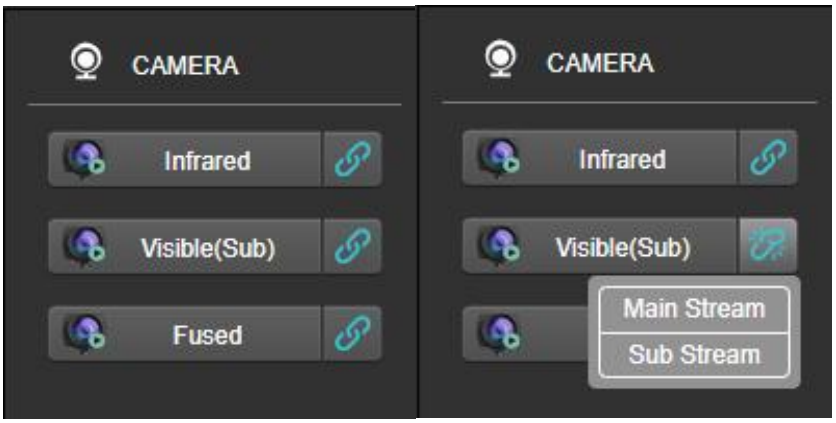
OSD refers to the character information superimposed on the screen with video images. The content of OSD includes time customization and other information.



- The channel name can be set according to the user's needs. The display name, display date and display week can be enabled or not according to the actual needs.
- Time format "24 hour system" and "12 hour system" are optional.
- Multiple OSD display date formats are available
- The device supports characters superimposed on the image screen, and the content of each line shall not exceed 15 characters.
- Input the required characters in the character content column, and save it to preview the characters displayed in the image. Drag the mouse to select the display position of the characters, and click Save to display the corresponding characters in the screen.

5.5 Image connection

There are three image connection methods: thermal imaging, visible light, and fusion image. When connecting visible light images, the main stream and the sub stream can be selected. When logging in to the preview interface, the three-channels image will be automatically connected. Clicking the image connection shortcut key will disconnect the connection. Double clicking the image shortcut key will reconnect the selected image.



5.6 PTZ control

5.6.1 Direction control

8 directions, up,down,left,right,top left,down left,top right,down right.Adjust the PTZ speed through the speed bar under the direction ;



5.6.2 Zoom

: Used to observe distant targets, the observed field of view will be correspondingly smaller;

:Used to observe close-range targets, the observed field of view will become larger accordingly;

5.6.3 Focus

:Used to observe long range target to adjust clarity;

:Used to observe close range target to adjust clarity;

5.6.4 Wiper

:Wiper start 1 minute non-stop sweep back and forth, click the button again can directly interrupt the wiper sweep;

5.6.5 Auxiliary focusing

:When the image is not clearly focused, auxiliary focusing can make the image presented by the device clearer;

5.6.6 Presets

If need to quickly monitor a target, call the preset monitoring point by running the command of the control device.

Preset settings:

:set the preset point, control the direction to where need to observed and click this button;

:Call the preset point, click to call the preset point which you want to observe;

:Delete the preset point where no need to observe;

5.6.7 Cruise

The pan/tilt moves back and forth between several fixed preset points, and the scanning speed and cruise time between two preset points can be set.

Cruise settings:

- Select set cruising path, click  add new presets and set the cruise speed and cruise time, repeat the above operation point to new preset, click  to save;
- Click  to start the cruise;
- Click  to stop cruise;

Note: Add at least two preset points before starting the cruise.

6. Picture

It is used to query and download captured images after an event is triggered.

Channel: Visible/Infrared;

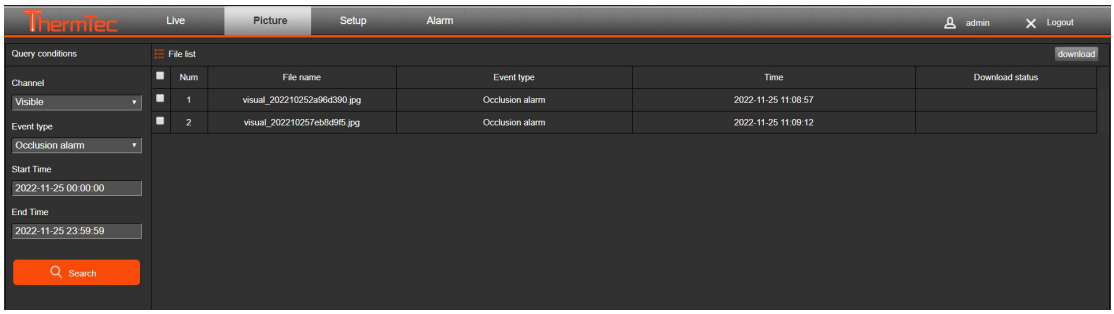
Event Type: All of the VCA events as optional;

Start time: Search time of start;

End time: Search time of end;

All of the above configurations were set, click search button,the corresponding events snapshot will displays.

Attention: This function needs to check snapshot upload option when set the event configuration,and set the corresponding event trigger snapshot in the snapshot option,refer to 7.8.1;

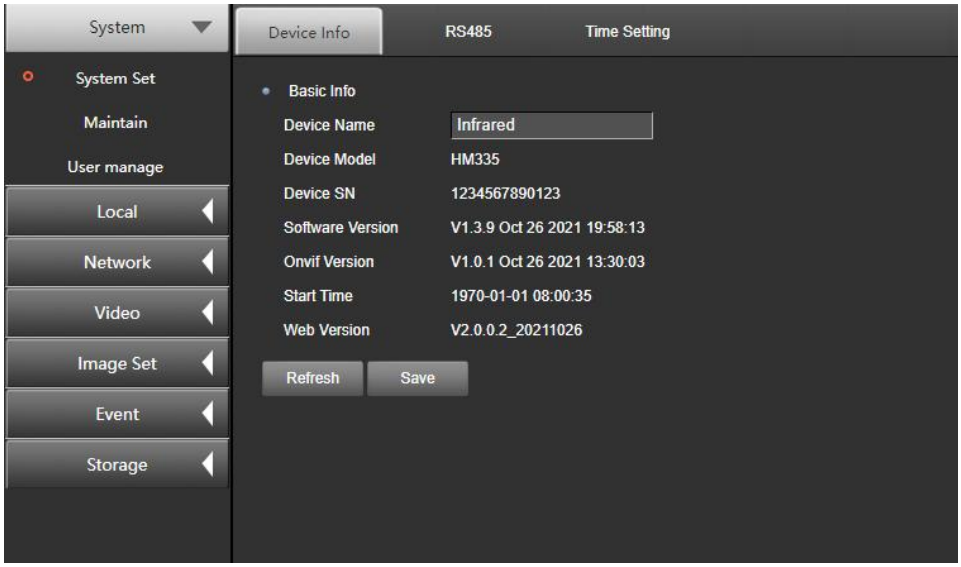


7. System configuration

7.1 System

7.1.1 Device Information

In the device information configuration interface, you can view the camera's "device model", "device serial number", "software version", "WEB version" and other information. You can modify the "Device Name" of the device and click the Save button to save the settings.



7.1.2 RS485

The interface can be matched by configuring the parameters of the serial port.

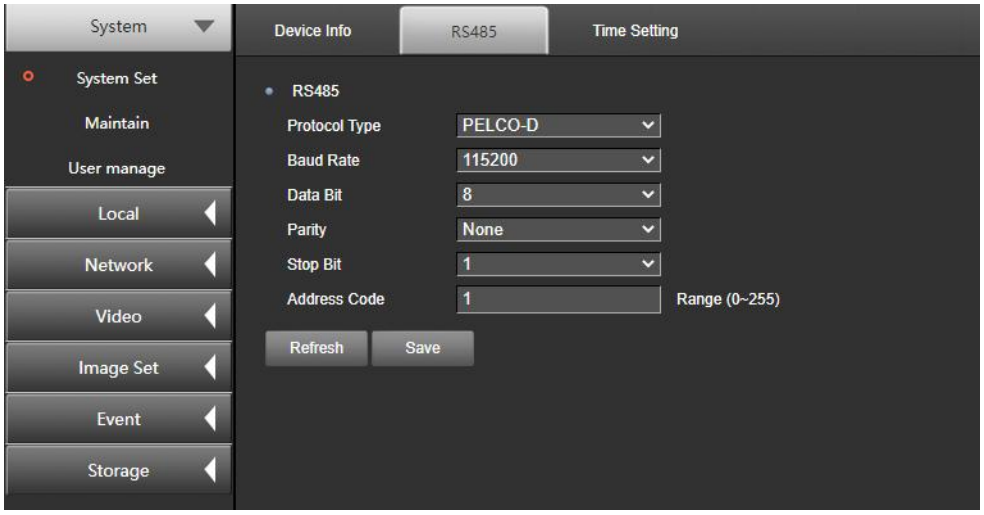
Baud rate: "2400" - "115200" multiple options.

Data bits: "5", "6", "7" and "8" are optional.

Check digit: "None", "Odd check" and "Even check" can be selected.

Stop bit: "1" and "2" are two options.

Decoder type and address: set according to actual needs.

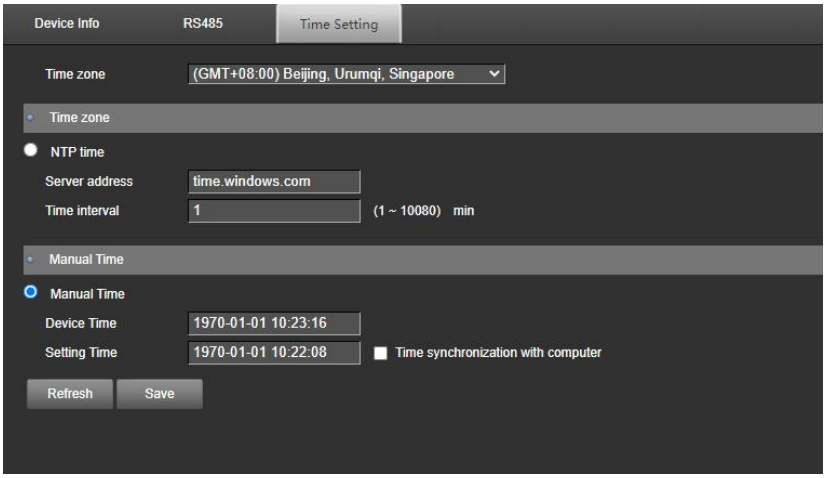


7.1.3 Time setting

“Time zone”displays the time zone of the current device and can be set according to the actual situation.

The timing methods are divided into NTP timing and manual timing. NTP timing: set the NTP server address, NTP port number and timing interval, and the device can be timed every other period of time according to the settings; Manual timing: set the device time manually. When "Time synchronization with computer" is checked, the time of the device and the local PC host can be kept consistent.

Click Save after setting parameters.



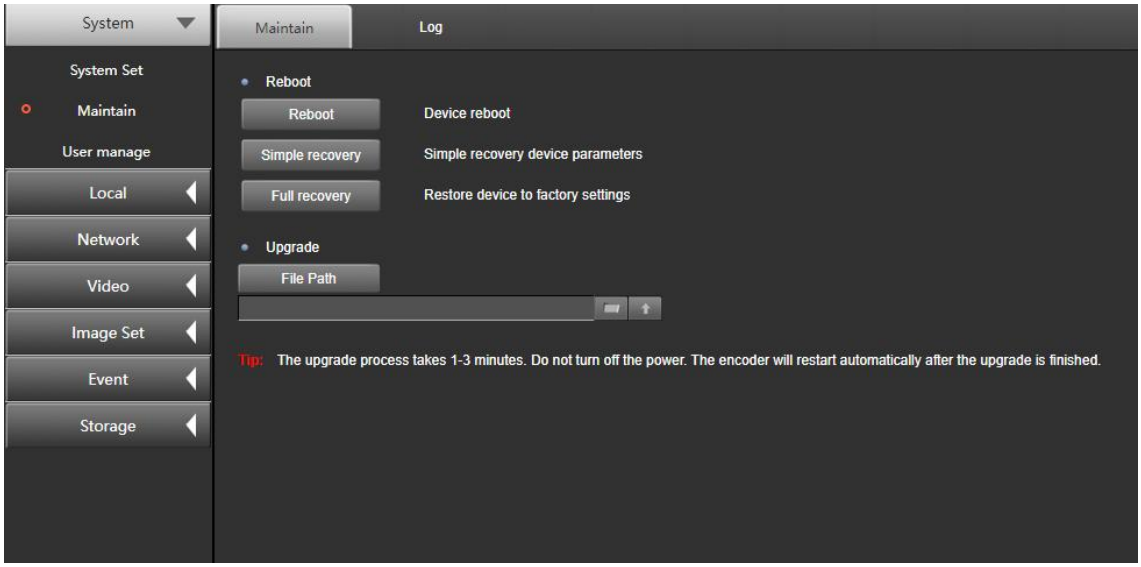
7.1.4 Maintain

Device restart: click "Reboot" to restart the device.

Simple recovery: Simple recovery of device parameters means that all parameters except IP address, subnet mask and gateway are restored to factory settings.

Full recovery: full recover the camera parameters to the factory settings.

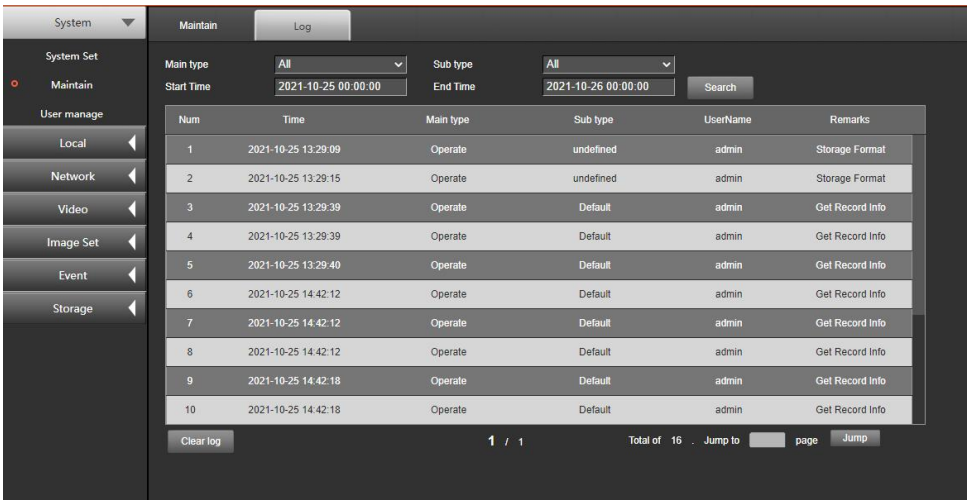
System upgrade: click Browse, select the directory where the local upgrade file is located, and then click Upgrade to start the upgrade. Please do not power off during the upgrade. The device will restart automatically after the upgrade.



7.1.5 Log

Log Search: Select the main type, sub type and query time of the log to be queried, and click Search to search for qualified log records.

Log Information: The log list displays the log information of "SN", "Time", "main Type", "Sub Type", "User name", and "Remarks".

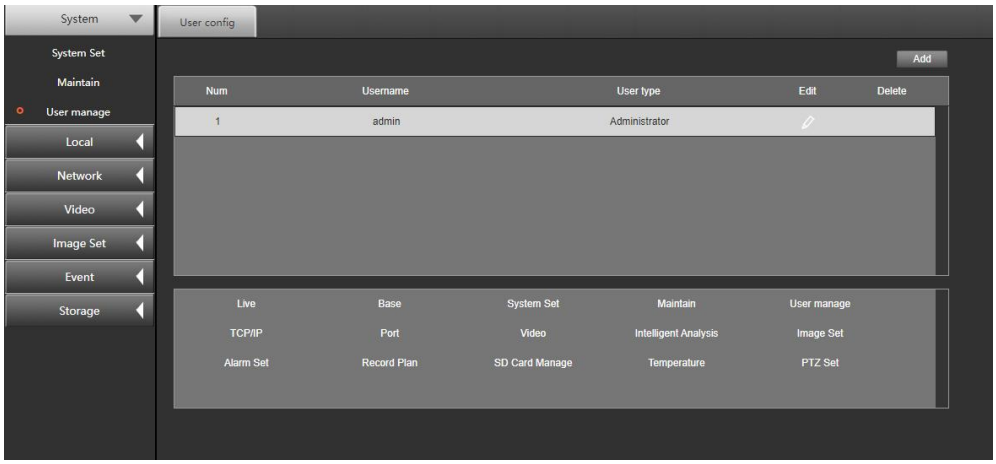


7.1.6 User management

- When the former user is the super user "admin", other users can be created according to actual needs, up to 9 users can be created.
- Add User: Click Add to display the Add User Interface, where you can set the user name and password. User Permissions can be used to set the basic permissions and channel permissions

of the added users, and then click OK

- Modify User: select the user to modify, and click Modify to enter the Modify User Interface.
- Users added or modified can set their Basic Permission and Channel Permission.
- Delete User: select the user to delete and click Delete to confirm deletion.



7.2 Local storage

- Preview capture path: the local path where the image file is stored after the preview capture.
- Video saving path: the local path where video files are saved after previewing the video.



7.3 Network

7.3.1 TCP/IP

- The "Network card type", "Device IPv4 address", "IPv4 subnet mask" and "IPv4 default gateway" can be set for the network card parameter configuration. The automatic IP address acquisition is set to ON, and the device can automatically acquire the network address and related network parameters.
- DNS server configuration can be set to "preferred DNS server" and "alternate DNS server".

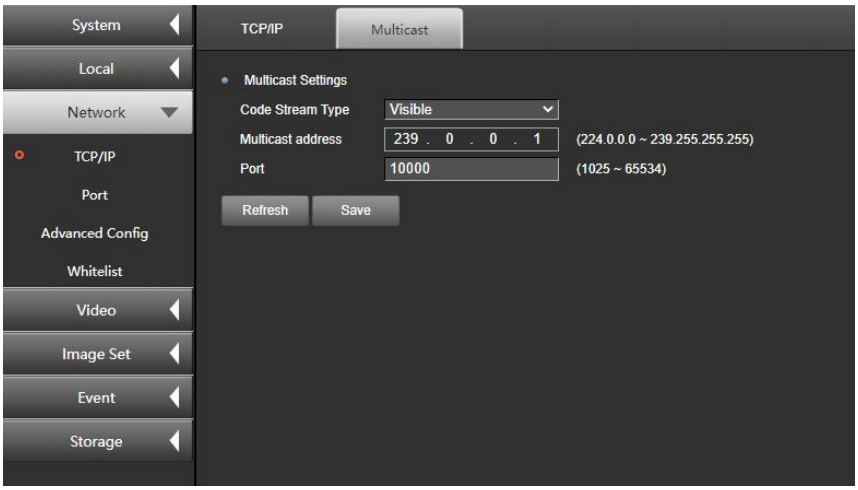
Domain name access can be used normally only after the correct DNS address is set.

- MAC address: display device MAC address.



7.3.2 Multicast

The video screen is previewed through the network access device. If the upper limit of the device access is exceeded, the video screen cannot be previewed. At this time, you can set the multicast IP address for the device and use the multicast protocol access method to solve the problem. Select "Enable" to enable multicast, enter the multicast address and port, and click "OK" to complete the configuration.

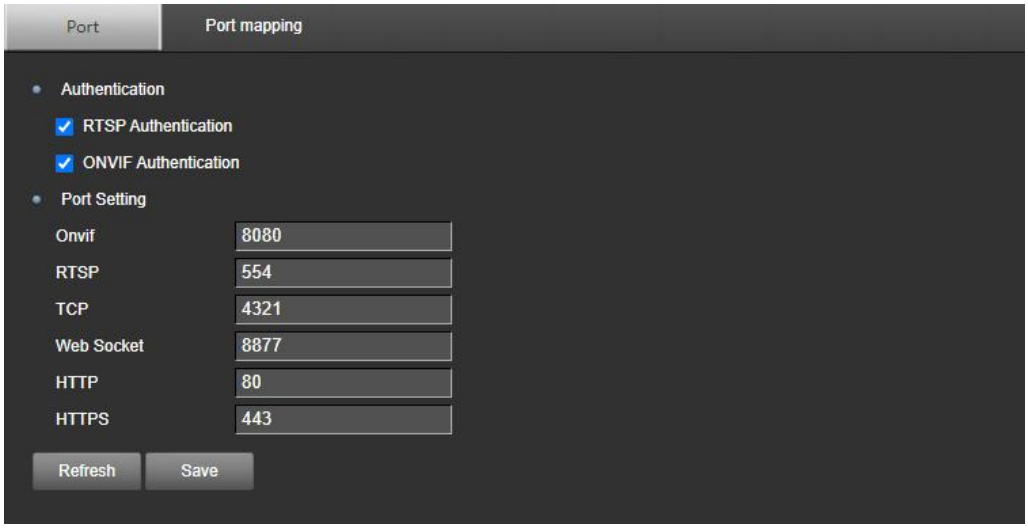


7.3.3 Port

Support RTSP, ONVIF and other network protocol access

The port configuration parameters can be set to "ONVIF port (default 8080)", "HTTP port (default 80)", "HTTPS port (default 443)", "RTSP port (default 554)", "TCP port (default 4321)", "Web Socket port (default 8877)"

When accessing devices through the network, you can set corresponding ports as required.



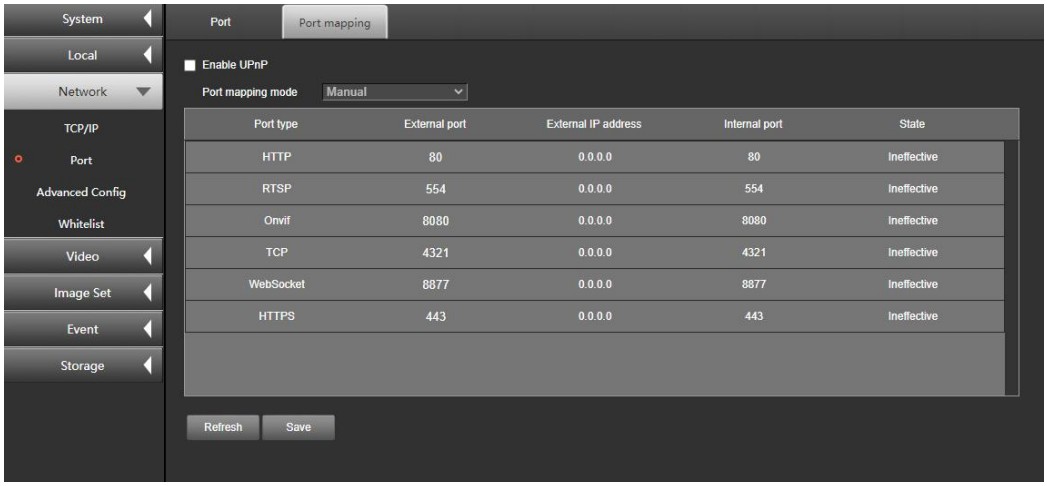
7.3.4 Port Mapping

Set "UPnP Enable" to ON, and enable the port mapping function. The port mapping methods are "Manual" and "Automatic".

In "Automatic" mode, the user does not need to modify the mapping port, and the device can automatically map the port to the public network.

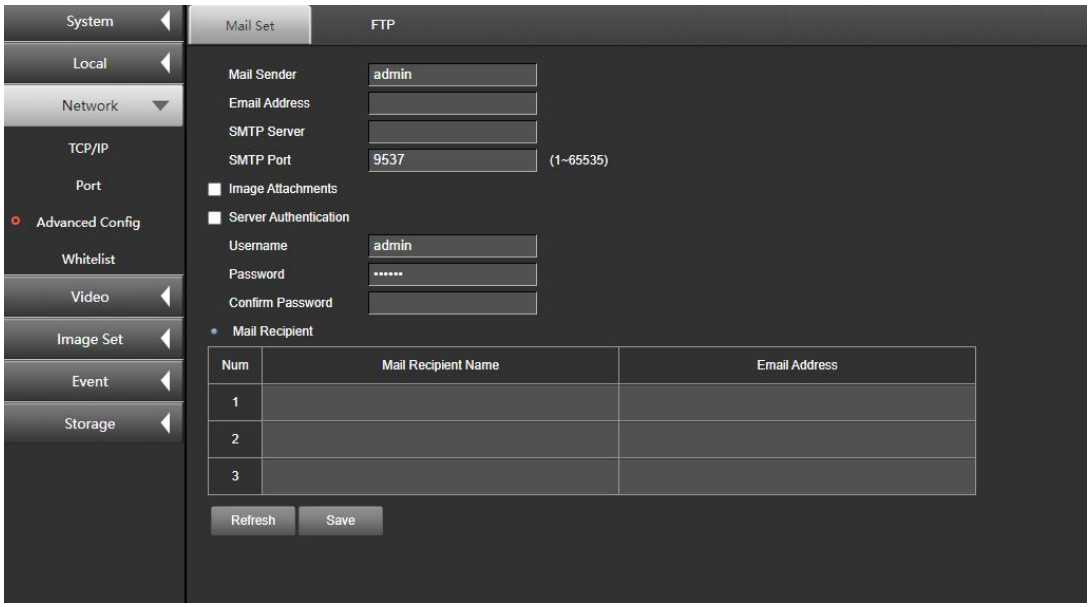
In the "Manual" mode, you can manually modify the external ports to be mapped under the specified public network. You do not need to modify the port of the device itself to map the device port to the public network.

On a computer system with the UPnP protocol enabled in the same LAN broadcast domain, users can directly search the network of the system for the camera and display the model and serial number. Double click the icon, and a browser page will automatically pop up to access the current IP address of the device.



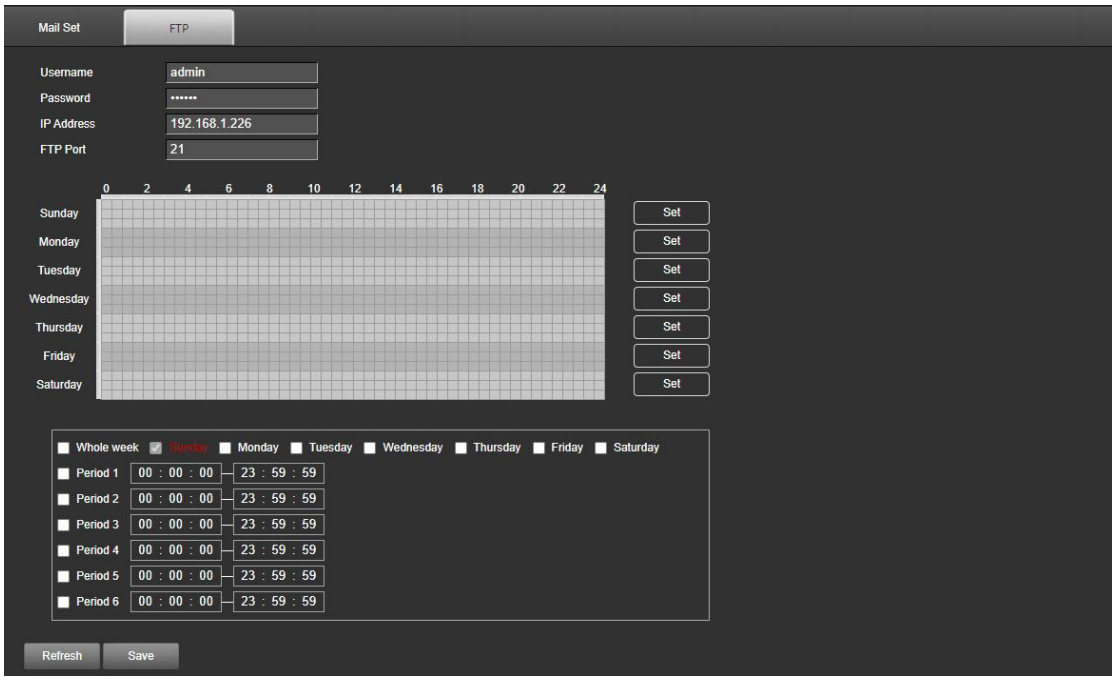
7.3.5 Email

By setting mail parameters, when an alarm occurs, you can send mail to the specified mailbox.
Sender information: enter the sender's email address, SMTP server address, SMTP port number (default 9537), user name, and password.
Message encryption: SSL, TLS and no encryption can be selected.
Picture attachment: After checking, an instant snapshot will be attached to the email.
Recipient information: input the email address of the recipient, click the "Save" button to confirm the email address.



7.3.6 FTP

By configuring FTP parameters, you can realize bidirectional file transmission on a specific FTP server.
Set the address and port number of the FTP server, user name and password with upload permission, and check Set Date and Time.
After the relevant parameters are modified, click Save to save the relevant settings.

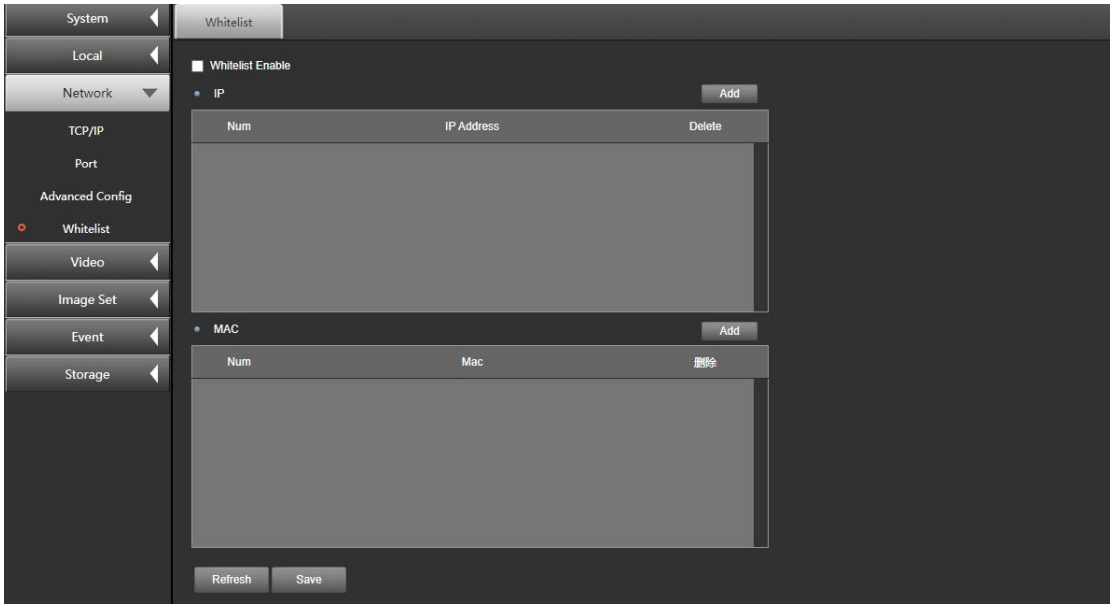


7.3.7 White list

Users can set the users allowed to access the device through IP permissions

White list: add IP/MAC of users who can log in to the device. If the user selects the white list, only the user's IP/MAC is in the list can he log in to the device; If white list is not selected, there is no restriction on users accessing this device

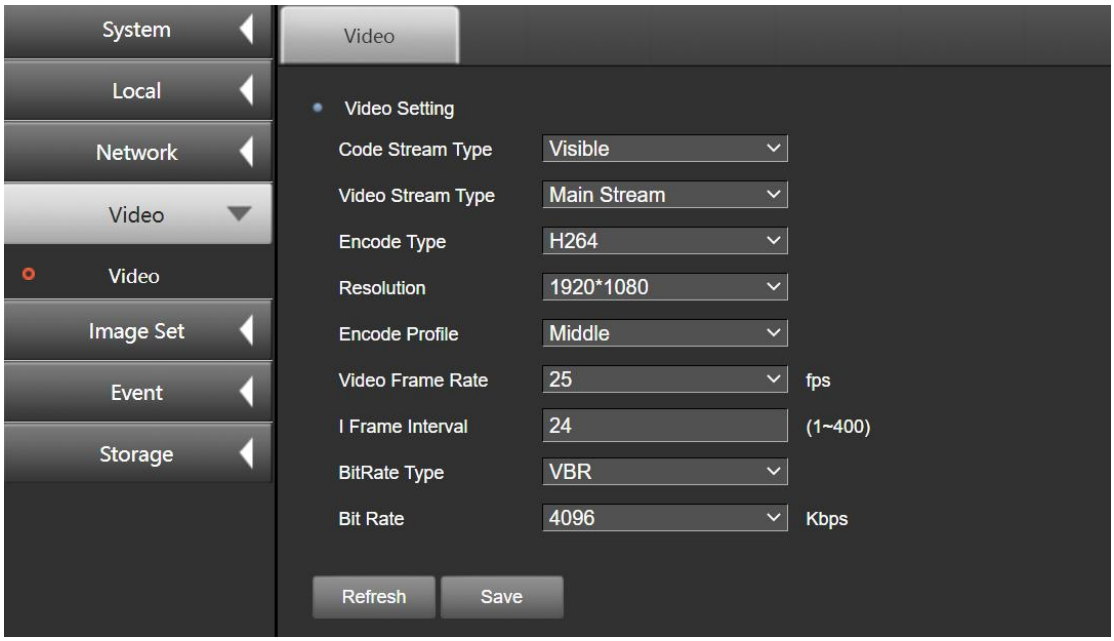
MAC verification takes effect only when the IP addresses of the device and PC are in the same LAN.



7.4 Video Configuration

7.4.1 Video Streaming

You can set the image format and stream parameters of each stream according to the support of the device, and select to open the main stream and the sub stream according to the actual needs.

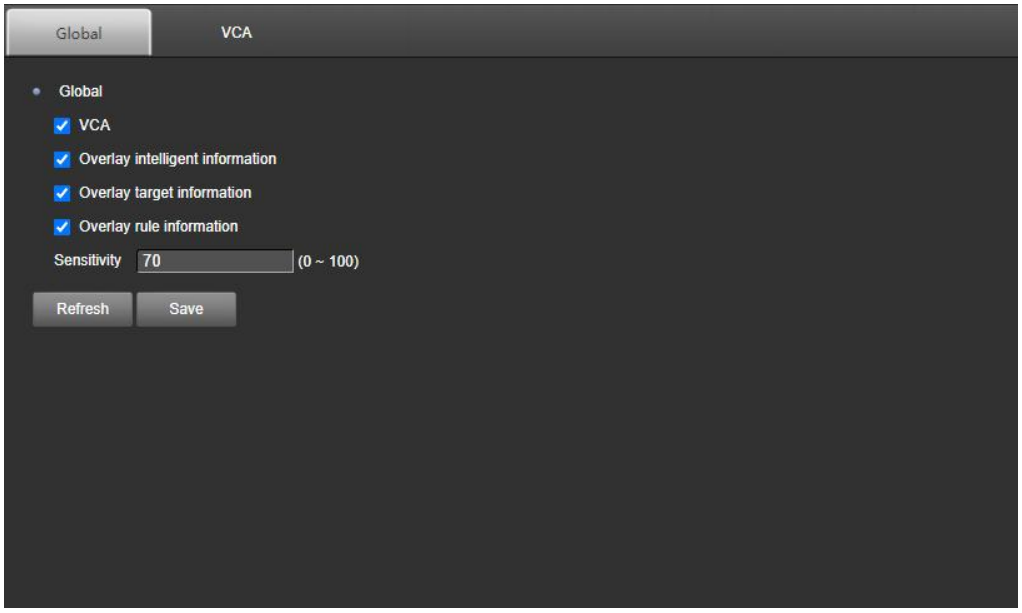


- Code Stream type: can be set to switch between visible and infrared image types
- Video Stream type: video parameters of main stream and sub stream can be set.
- Encode Type: H.265 and H.264 can be set. The specific encoding type is subject to the actual equipment.
- Resolution: The required resolution size can be set according to the actual needs. The higher the resolution, the higher the requirements for network bandwidth.
- Encode Profile: the encoding level is divided into three levels: low, medium and high. The higher the level, the better the image quality
- Video frame rate: refers to the number of frames per second of the video. It can be set according to the actual needs. The higher the frame rate, the higher the requirements for network bandwidth, and the higher the storage space required.
- I Frame Interval: refers to the number of frames between the two keyframes. The larger the I frame interval is, the smaller the rate fluctuation is, but the lower the image quality is, on the contrary, the higher the image quality is.

- Bit rate Type: The bit rate type can be used to set the fixed bit rate, variable bit rate and average bit rate. Fixed bit rate means the transmission of the set bit rate size, which is fast in compression, but may cause video mosaic. The variable bit rate means that it changes automatically without exceeding the size of the bit rate. The compression speed is slow, but the image clarity in complex scenes is guaranteed.

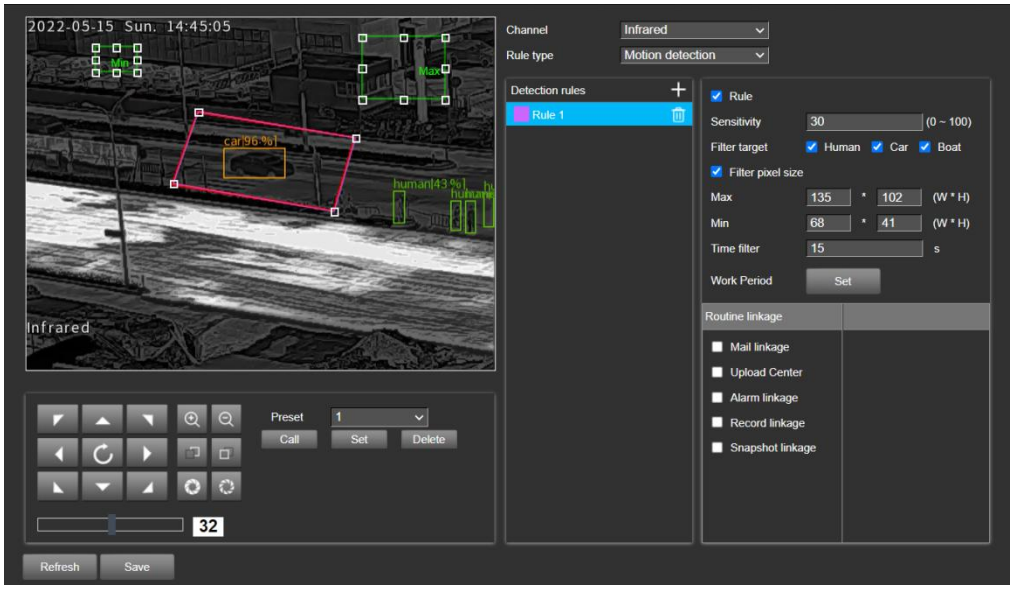
7.5 VCA

7.5.1 Global Settings



- VCA: support a key to open or close all VCA events
- Overlay intelligent information: overlay target identification box in the preview
- Overlay target information: overlay target type in the preview
- Overlay rule information: overlay the event rule in the preview
- Sensitivity: The detection sensitivity of all VCA events can be configured with this option, sensitivity range is 0~100,the higher the sensitivity, the easier the target is to detect, but the false positive rate also increases. Its recommended to use the default sensitivity configuration

7.5.2 VCA settings



Through the VCA settings to configure VCA event

- Channel:There are two channels of visible light and thermal image, and the different channel VCA events need to be configured separately；
- Rule Type: Select the specific VCA event type, with a total of 5 VCA events, including motion detection, cross the cordon, regional intrusion, and other VCA events to choose from;
- Detection Rules: Click ‘＋’ to add new event rules,the same event type supports up to 4 detection rules,click delete icon to delete the corresponding detection rules;
- Rule: Event enable option,check to active the event
- Sensitivity: Each area can be set with different sensitivity, the value range of 0~100, the higher the level, the more sensitive detection;
- Filter Target: The target alarm identification of human,vehicle,board targets can be set,the checked target will alarm after triggering the alarm event,unchecked target automatically filters out the target's detection settings that do not trigger an alarm
- Filter pixel size: The pixel size value of the target trigger alarm can be set. When the area proportion of the target in the area exceeds the set pixel range, the alarm will be reported, that is, the maximum detection target and the minimum detection target;
- Time filter: The interval between VCA event triggering, means between the end of event 1 and event 2 triggering；
- Work Period: Set the alarm time period: the alarm event will be started within the set time range, there are 6 periods for setting, select the check box before the time period is valid, select the number of weeks, select the check box before the weeks, can be set separately for several days or seven days of the week.
- Alarm Linkage

1) Mail linkage: The email address can be set in the network Settings, and this function can also send the information of alarm video and alarm capture to the mailbox. Before enabling this function, the Settings of alarm capture and video should be completed. When the alarm is triggered, the device will send an email to notify the user.

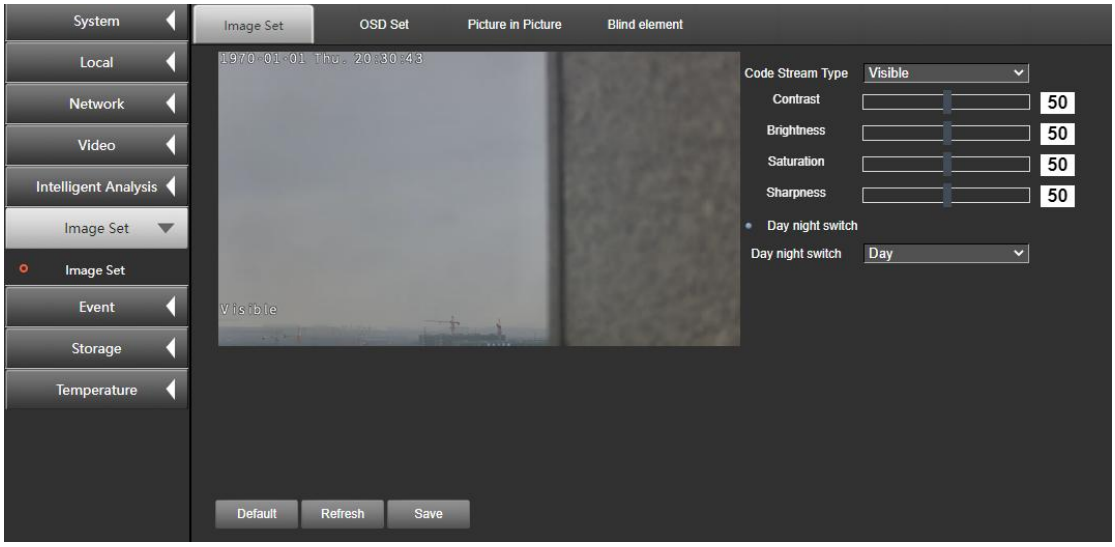
2) Upload center: enable this function need to complete before the server interface Settings. When the alarm is triggered, the device will send alarm data information to the central server.
3) Alarm linkage: local alarm linkage, when the event triggered will create a I/O signal,the related configuration please refer to 6.7.3
4) Record linkage: start record when the alarm triggered till the alarm finished
5) Snapshot linkage: capture a picture when the alarm triggered

7.6 Image Configuration

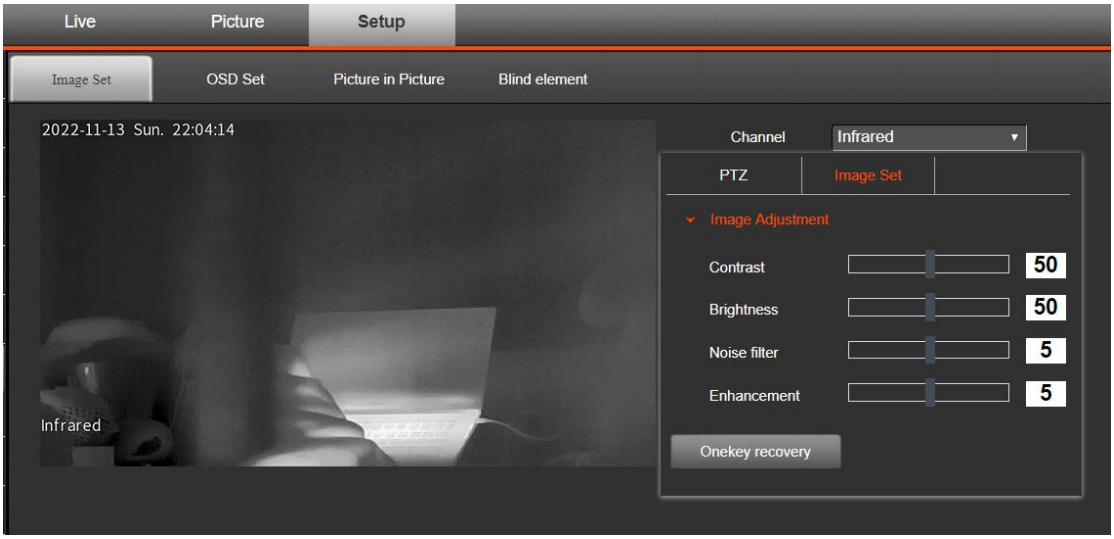
7.6.1 Image parameter settings

Set the image parameters of different scenes according to the preview screen currently played by the device, so as to meet the needs of image effects in different scenes.

- Visible light image adjustment: "brightness", "contrast", "saturation" and "sharpness" of the camera can be adjusted according to the image effect
- Day night switching of visible light: "day", "night", "automatic" and "regular switching" can be selected.
- Daytime mode: the image is in color.
- Night mode: the image is black and white.
- Timed switching mode: the user needs to set the start time and end time of the day. During this period, the device will automatically use the day mode, and outside this period, the device will automatically use the night mode.



- Thermal image adjustment: "brightness", "contrast", "image noise reduction" and "image enhancement" of the camera can be adjusted according to the image effect

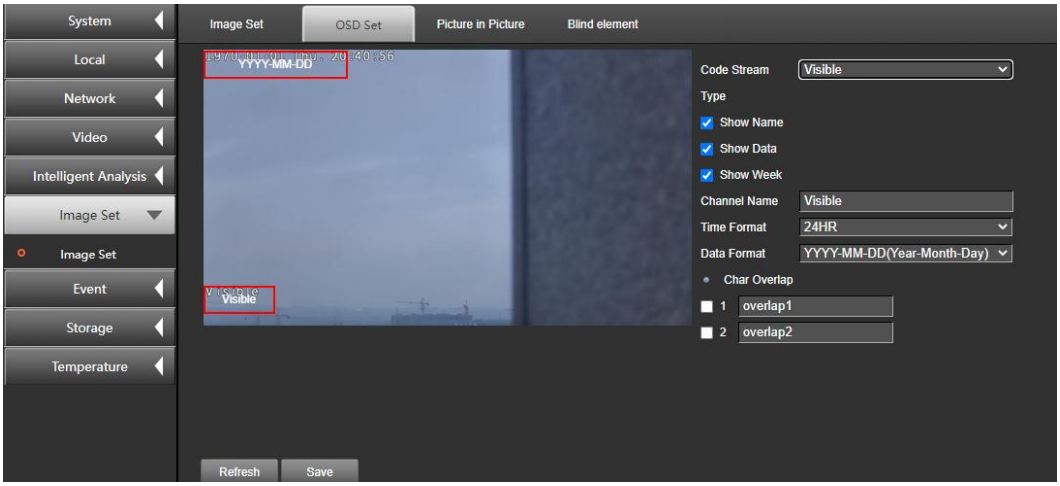


7.6.2 OSD Setting

OSD is the character information overlay on the screen with the video image. OSD content includes time customization and other information.

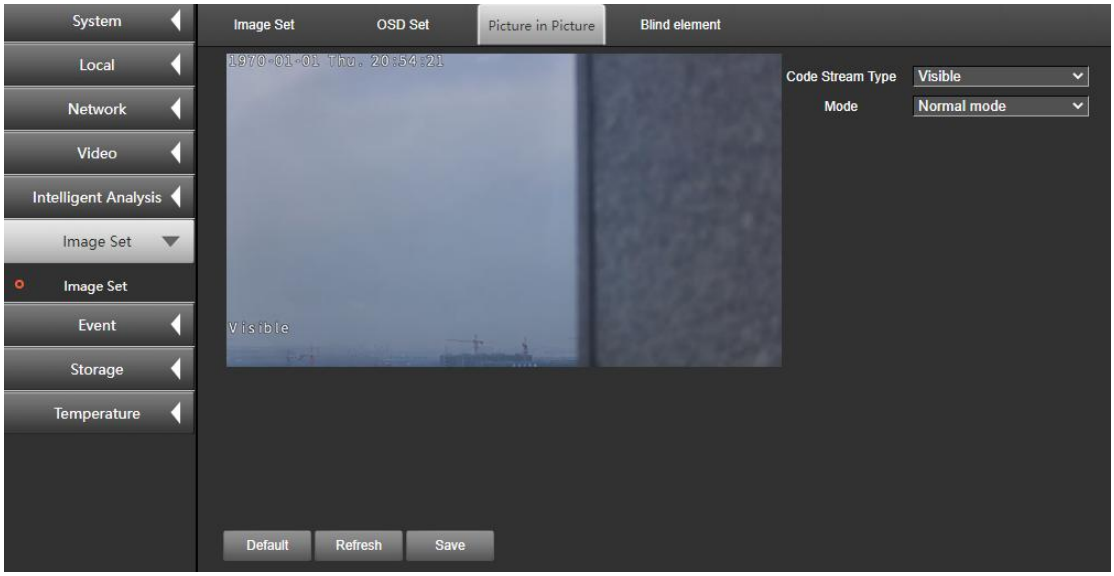
- Channel: can be set to switch between visible and infrared image types
- The channel name can be set according to the user's needs. The display name, display date and display week can be enabled or not according to the actual needs.
- The time format can be "24-hour" or "12 hour".
- Various OSD display date formats are available
- The device supports characters superimposed on the image screen, and can support up to 3 lines of characters superimposed content, with each line of content no more than 15 characters.

Enter the required characters in the character content column. After saving, the entered characters will be displayed in the preview image. Drag the mouse to select the display position of the characters, and click Save to display the corresponding characters in the screen.



7.6.3 PIP

The visible light is selected as the image type. Under the visible light option, there will be a normal mode and a picture in picture mode. After the picture in picture mode is selected, a small infrared image box will appear in the visible light image. After it is successfully opened, it can normally display the visible light hot image that can be painted in picture.



7.6.4 Blind element processing

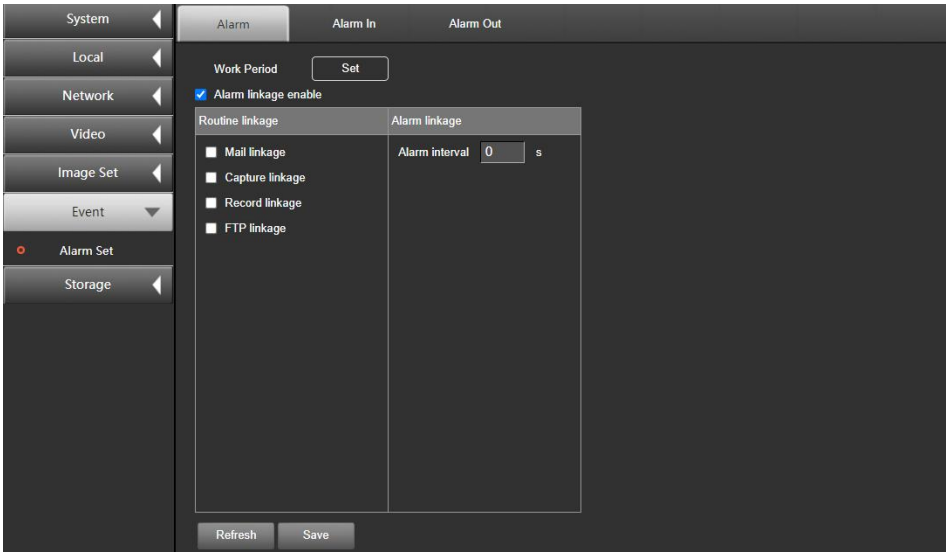
Open blind element processing through the menu to check the changes of image display. If there are spot, spot or linear blind elements in the image, use the direction keys to control the place where blind element processing is required, and click the blind element processing to eliminate it. If there are too many spots in the image, you can also select automatic blind element processing. After the blind element processing operation is completed, click the Save button.



7.7 Event

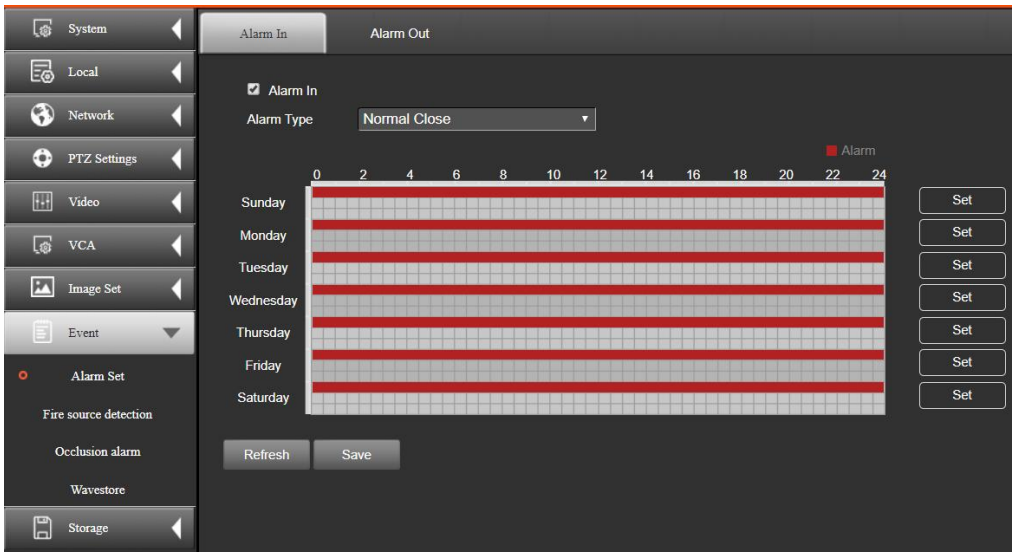
7.7.1 Alarm set

Alarm reporting can be realized through alarm settings. Triggered alarms can be linked to certain or several types of actions by configuring linkage actions of other devices, so that users can timely handle alarms and their corresponding linkage actions. Linkage methods include mail linkage, picture capture linkage, video linkage, FTP linkage. In addition, alarm interval and working time can be set.



➢ Alarm input

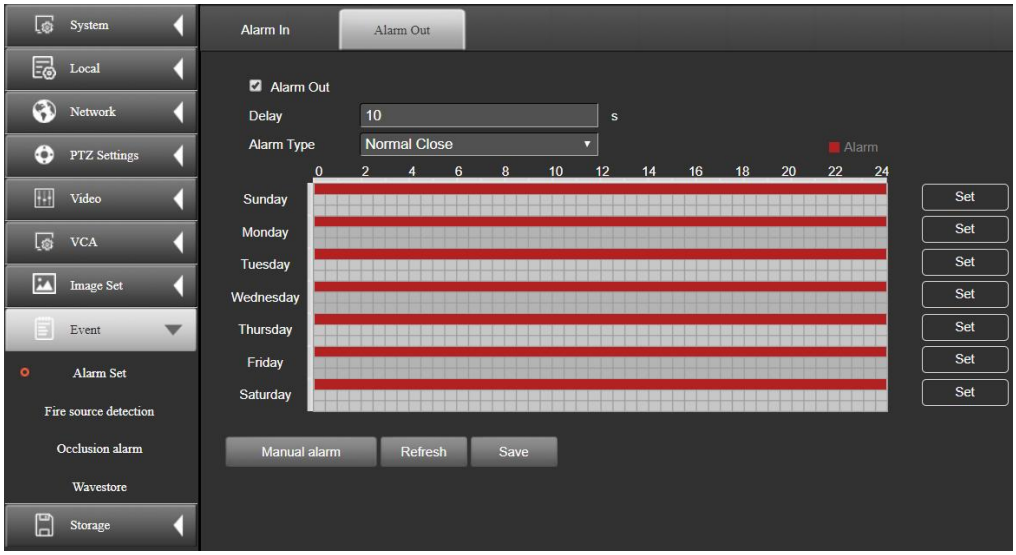
Check to enable the alarm input linkage function. The alarm type can be set as normally open and normally closed. Click Edit to edit the deployment time. You can set the deployment of the whole week or one day of a week, and you can set the start time and end time of six time periods for a day in detail.



➢ Alarm output

Check to enable the alarm output linkage function. The alarm type can be set as normally open or normally closed. Select the alarm delay time. The alarm delay time represents the duration after the alarm is triggered. It can be set between 5 seconds and 10 minutes, or it can be set manually to close the alarm manually. The alarm state cannot be set.

Click Edit to edit the deployment time. You can set the deployment of the whole week or one day of a week, and you can set the start time and end time of six time periods for a day in detail.



7.7.2 Fire source detection

➢ Fire point detection

When the device detects a fire source, it will display screens, link alarms and upload alarm information according to the configured strategy. The fire source detection can be used together

by adjusting the sensitivity, which can improve the accuracy of detection and linkage, and is suitable for fire prevention environments such as indoors, scenic spots, forests, and tunnels.

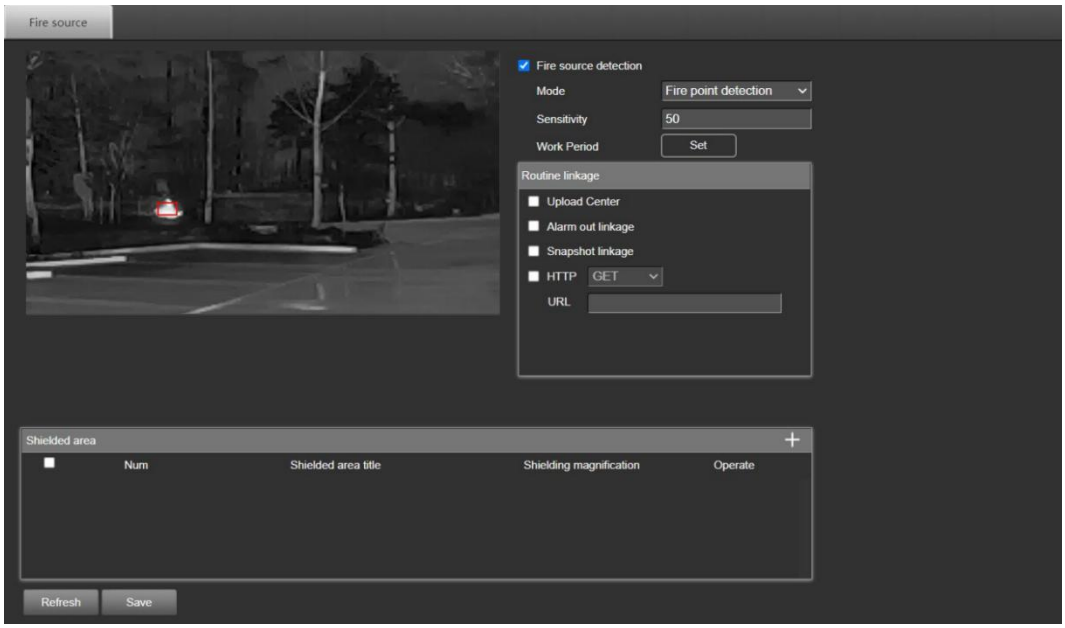
Fire source detection can be applied outdoors and indoors. The monitoring range depends on the size of the infrared lens. Currently, the largest lens is a 35mm infrared lens.In order to achieve the best detection effect, please select according to the following requirements point.

• The selected installation point must be the commanding height within the detection range.

• Try to choose a location with convenient transportation and complete basic power supply and network facilities, such as communication signal towers, watchtowers, and the tops of high-rise buildings.

➢ Fire source detection settings

To reduce potential fire source security risks, configure the fire detection function in areas where fire sources may exist. This parameter is used to detect whether there is a fire point in the scenario.



1) On the Fire Detection screen, you can set the option of enabling thermal imaging fire point detection;

2) Select Fire Detection to enable the fire detection function;

3) Select the corresponding fire point detection option;

4) Set the event sensitivity;

◆ Sensitivity: The value ranges from 0 to 100. The higher the sensitivity, the easier it is to detect suspicious ignition points. However, the false alarm rate is higher

◆ Work period: Edit the event deployment time.

◆ Shielding area: check the shielding area.

1. Click Add drawing area, click the end points of the polygon area in turn in the live screen, and then click the left button of the mouse to complete the drawing, forming a closed area, and click Save after drawing.

2. Click Clear All to clear the mapped mask area.

3. Click the drawn area and adjust the mask area parameters.

4. Click the area title to modify the title displayed in the masked area.

5. Shielding ratio: The shielding area can be adjusted according to the magnification of the lens. The default value is 1, which cannot be changed (this device does not have the function of magnification for the time being).

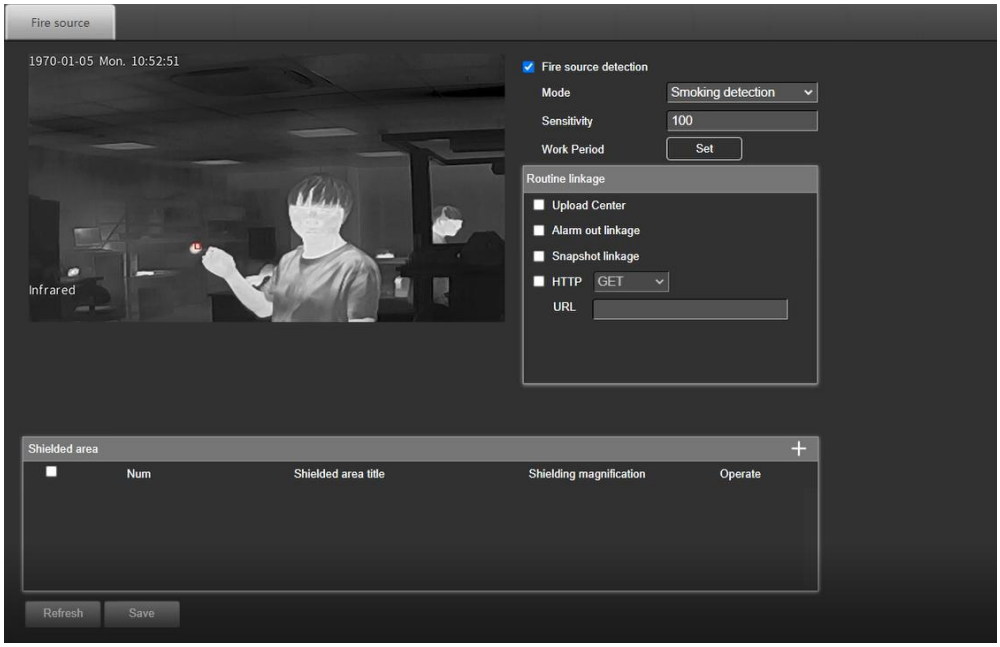
6. Optional operations: You can set multiple masking zones using the preceding method. Set the masking zones based on site requirements.

7. Click Save.

◆ Routine Linkage: The related event can set as linkage alarm, the details please refer to the 6.5.2 linkage alarm.

➢ Smoking detection

In order to reduce fire safety risks, the smoking detection function is set up in areas where fire sources may exist. This parameter is used to detect smoking in the scene.



1) Select smoking detection from mode option

2) Smoking detection parameters settings

◆ Sensitivity: The value ranges from 0 to 100. The higher the sensitivity, the easier it is to detect suspicious ignition points. However, the false alarm rate is higher

◆ Work period: Edit the event deployment time.

◆ Shielding area: check the shielding area.

1. Click Add drawing area, click the end points of the polygon area in turn in the live screen, and then click the left button of the mouse to complete the drawing, forming a closed area, and click Save after drawing.

2. Click Clear All to clear the mapped mask area.

3. Click the drawn area and adjust the mask area parameters.

4. Click the area title to modify the title displayed in the masked area.

5. Shielding ratio: The shielding area can be adjusted according to the magnification of the lens. The default value is 1, which cannot be changed (this device does not have the function of magnification for the time being).

6. Optional operations: You can set multiple masking zones using the preceding method. Set the masking zones based on site requirements.

7. Click Save.

- Routine Linkage: The related event can set as linkage alarm, the details please refer to the 6.5.2 linkage alarm.

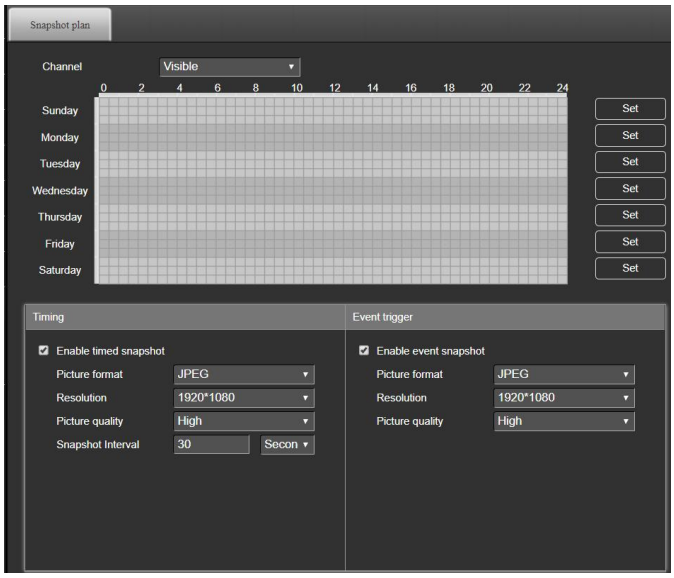
7.8 Storage

7.8.1 Schedule

Edit the video deployment time. Select the required video type(timing or event trigger), set the deployment of the whole week or one day of a week, and you can set the start time and end time of six time periods for a day in detail. In addition, you can set the time interval of the video package (1-60 minutes).

- Snapshot Plan

Set the capture of visible and thermal images respectively, and configure the corresponding defense time and capture mode, which can be divided into timing snapshot and event-triggered snapshot (check the snapshot linkage for corresponding events).



7.8.2 SD card management

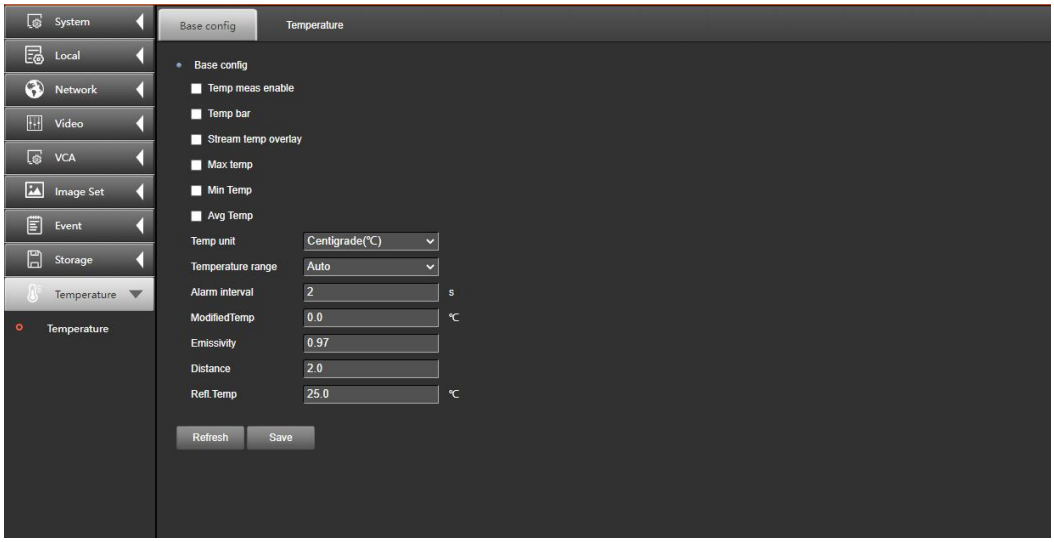
- SD card management is used to view the capacity and status of the storage device, and can format the storage device.
- SD card information displays the configured information, including total capacity, remaining space, used space, and status.
- Tick the detected SD card and click "Format". When the SD card status changes from "Unformatted" to "Normal", it can be used normally.
- Click Save after settings finished.

7.9 Temperature

- It is used for real-time temperature monitoring,When the temperature exceeds the alarm threshold value, the device is triggered to execute the linkage action

Attention:

- The target surface is as perpendicular to the optical axis and the inclined angle is not greater than 45°
- Target imaging pixels are not less than 3x3.
- When measuring a certain area, use line or box temperature.



- Base Configuration

- **Temp meas enable**

Temperature measurement enables, check to open the temperature measurement function

- **Temp bar**

Check to indicate that the live view will display the information of the temperature bar.

- **Stream temp overlay**

Check to indicate that the detected temperature and temperature measurement box information are overlay in the stream.

- **Max/Min/Avg Temp**

Check to indicate that in the real-time stream, thermal channel displays the highest,lowest and average temperature.

- **Temp unit**

Set up the unit of the temperature measurement.

- **Temperature range**

Set the temperature range of the measured target.

- **Alarm interval**

Time interval for uploading alarm information. Within the interval time, for multiple alarms of the same event, only one alarm upload is performed.

The greater the alarm time interval, the greater the possibility of false negatives, please set according to actual needs or use the default value of the device

- **Modified Temp**

Effectively compensate for the defects of equipment temperature measurement in the environment. Users can select the temperature to be compensated according to the actual scene.

- **Emissivity**

Set the emissivity of the temperature measuring target.

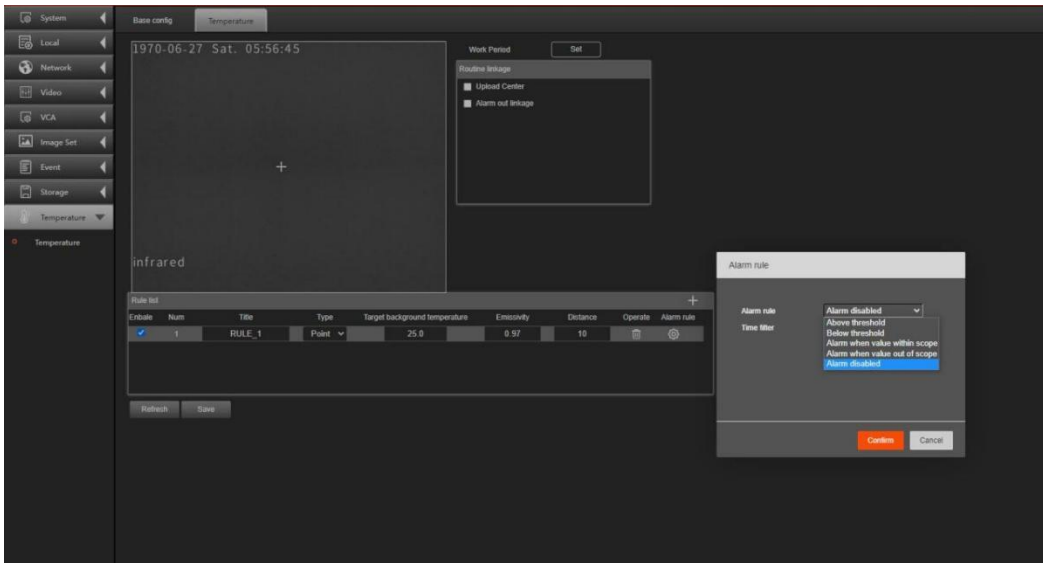
- **Distance**

Represents the straight-line distance between the temperature measured target and the device. The distance is set according to the device and the temperature measured target.

- **Refl. Temp**

Background ambient temperature of the device. Set the value based on the current ambient temperature.

■ Temperature Settings



① The temperature configuration page is displayed as above picture.

② Click the "+" symbol mode on the right to set the temperature measurement function of the device area.

③ Set temperature measurement parameters

- Title：Name the temperature measurement area
- Drawing area：Select the rule type to draw the temperature measurement method and area.

1.**Point**：Indicates that the temperature measurement point is clearly defined in the scene, and the temperature of the image of this point is measured. Type selection point.

Click the live screen to display a cross-marked temperature measurement point in the live screen.

Click and drag the temperature measurement point to adjust to the temperature measurement point.

Click Preview to open the thermal imaging channel image to view the temperature information and rule information of that point.

2. **Line**：Indicates that a regular line is drawn in the scene, and the image of the line segment is measured for temperature. Type select line, click the live screen, and drag the mouse to draw a ruled line.

Click the ruled line to adjust the two ends of the ruled line to adjust the length of the ruled line;

Click and drag the ruled line to adjust the position of the ruled line.

Click Preview to open the thermal imaging channel image to view the maximum temperature and rule information of the ruled line.

3. **Area/Box**: It means to draw an area in the scene and measure the temperature of the image of the area. Type selection area.

Click the live screen, drag the mouse to draw a polygon, and right-click to end the drawing.

You can click a rule zone to adjust the endpoint of a rule zone to adjust its shape or size.

To adjust the position of a rule region, click and drag. Click Preview to open the Thermal Imaging channel image

④ Set temperature measurement parameters

- Target background temperature：current device in the background of environmental temperature, according to the current environment temperature to set the values.
- Emissivity: Each target has a corresponding emissivity. Set the emissivity of the temperature measuring target. There are fixed values of emissivity from rough to smooth respectively. You can also query the emissivity corresponding to the target according to the monitored target and customize the emissivity value (default is 0.97).
- Distance: indicates the straight-line distance between the temperature measurement scene and the device. The distance is set based on the device and the temperature measurement target. The unit of distance is m
- Alert rules：
  1) Above threshold: When the temperature is detected to exceed the set alarm threshold and reach the set filtering time, the device will alarm.
  2) Below threshold: When the temperature is detected below the set alarm threshold and reaches the set filtering time, the device will alarm.
  3) Alarm when value within scope: Set the temperature range of the measured target, and reach the set filtering time, the target within the temperature range will alarm.
  4) Alarm when value out of scope: Set the temperature range of the measured target, and reach the set filtering time, the target equipment outside the temperature range will alarm.
  5) Alarm disable：Turn off the alarm function.Only the temperature bar will be displayed, but it will not alarm。
  6) Click Save. You can set multiple temperature measurement rules using

the above method.

⑤ **Working period settings**

- Set working period: the alarm event will be activated within the set time range, there are six time periods for setting every day, select the check box in front of the time period, the set time period will be valid, select the number of weeks , select the check box in front of the week number to set individual days or all seven days of the week.

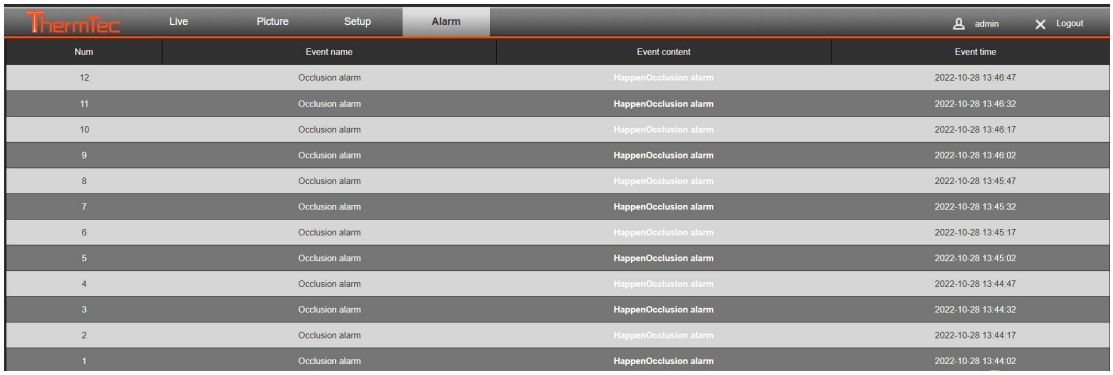
⑥ **Alarm linkage**

- Alarm linkage: Check the alarm input, set the name and type. The alarm type can be set to normally open or normally closed, switch from normally open to normally closed, turn on the alarm; switch from normally closed to normally open, turn off the alarm, and the name of the alarm can be customized. Select the alarm output channel corresponding to the linkage, when the alarm is triggered, the device will trigger the corresponding I/O alarm, set the alarm name and alarm duration. The alarm name can be customized, and the alarm duration indicates the continuation time after the alarm is triggered, which can be set between 5 seconds and 10 minutes, or manual, which means that the alarm is turned off manually.
- Record linkage: can set video recording time, video delay, stream type,and other video parameters. After the alarm is triggered, video recording will be performed until the alarm stops. The video can be saved to the default storage path or the path of video saving can be selected
- Snapshot linkage: Capture parameters such as stream type, image format, resolution, image quality, capture time interval, capture number can be set. After the alarm is triggered, capture images will be carried out until the alarm stops. Capture images can be saved to the default storage path or the path for saving capture images can be selected
- Mail linkage：The email address can be set in the network Settings, and this function can also send the information of alarm video and alarm capture to the mailbox. Before enabling this function, the Settings of alarm capture and video should be set. When the alarm is triggered, the device will send an email to notify the user.
- Upload Center：Before enabling this function, you need to complete the Settings on the server page. After setting, click Save. When the alarm is triggered, the device will send alarm data information to the central server
- HTTP linkage：First of all, you need to deploy the local server, and then fill in the URL with GET or POST. After the device alarms, the server alarm information will be displayed.

⑦ When the Settings are complete, click Save.

8. Alarm Center

After configuring the event linkage and checking the upload center, when the event is triggered, the alarm center will generate corresponding alarm information, including the alarm type, alarm content, and alarm trigger time;



Num	Event name	Event content	Event time
12	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:46:47
11	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:46:32
10	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:46:17
9	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:46:02
8	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:45:47
7	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:45:32
6	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:45:17
5	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:45:02
4	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:44:47
3	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:44:32
2	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:44:17
1	Occlusion alarm	HappenOcclusion alarm	2022-10-28 13:44:02