

KEDACOM

User Manual for HD Thermal & Optical Bi-spectrum Laser PTZ Camera

V1 (January, 2020)

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Target Audience

Administrators and Operators of Video Surveillance Products

Document Version

V1


Applicable Models

IPC525-R series

Related Document

Quick Start Guide

Convention

Icon	Convention
	Notes and warning: necessary supplement of operations
Sign	Convention
BOLD	Menu, e.g. Drag to Zoom
>	Connector between menus of different level, e.g. Settings > Camera

Safety Instruction

These instructions are intended to ensure that the user can use the product correctly to avoid danger or property loss. Please read this Guide carefully before using the product, and keep it properly for future reference. If the product cannot work normally or is damaged because the user does not follow the safety instructions, we shall not assume any responsibility.

Before installation, please follow the instructions below:

Instructions

1. Please adopt power supply in the safety voltage range.
2. If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble or repair the product yourself in any way.
3. Do not drop the camera or subject it to physical shock.
4. When cleaning the lens, please use a rubber dust blower to remove dust on the lens or filter, and use dry soft cleaning cloth to remove the dirt on camera surface. For some hard dirt, user can apply some detergent to the cleaning cloth and wipe gently. Never apply any volatile solvent, such as ethanol, benzene and diluents, to avoid damage to surface coating.
5. Do not focus the camera lens on strong light such as the sun or incandescent lamp. The strong light can cause overexposure or light leak (not camera malfunction), which may shorten camera lifetime.
6. Do not expose the camera in the environment not defined in the Manual. Maintenance and fee due to exposure of product in the wrong conditions will be user's responsibility.
7. Indoor Dome Camera cannot be installed at rainy or wet places. If the Indoor Dome Camera has a

connecting rod on the bracket, make sure there is no hole on the rod to avoid water.

8. Outdoor Dome Camera must be completely sealed to avoid dampness. Make sure there is no hole on the connecting rod of bracket to avoid water.
9. While shipping the camera, pack it in the factory packing or use materials with equivalent quality.
10. When it is necessary to replace a part, please contact your dealer in advance and replace the part with specified model or part of the same features. We shall not assume any responsibility for problems caused by unauthorized replacement.
11. Do not shield the sensor at front of the lens housing.
12. When power off the camera, reboot it after 30 seconds.

Anti-thunder and Anti-surge

The camera adopts built-in anti-thunder technology and can withstand instant 4KV thunder when it is well grounded. To prevent damage caused by thunders exceeding the built-in anti-thunder level, an independent anti-thunder engineering must be carried out. When installing it outdoor, please note the following tips to reduce damage efficiently such as thunder.

1. The distance between the signal wire and the high-tension apparatus or high voltage cable should be at least 50m.
2. Try to route cables along the eave when installing outdoor.
3. When installing camera in an open field, route cables inside sealed steel pipes under the earth and ground the pipes with one point. Never route cables in aerial way.
4. In heavy thunderstorm area or high-tension zone (such as high voltage transformer substation), an extra superpower anti-thunder apparatus and lightning rod must be installed.
5. The anti-thunder and grounding design of outdoor apparatus and wires must consider the anti-thunder requirements of the building and conform to the requests of national and industrial standards.
6. The system must be grounded with equipotential. The grounding apparatus must be anti-interference and electrically safe. It cannot be short-circuited or hybrid connected to the null line of high-voltage power grid. When it is grounded independently, the ground impedance is $\leq 4\Omega$ and the earth lead section surface must be $\geq 25\text{mm}^2$.
7. The anti-thunder grounding wire of the dome camera uses multi-strand copper cable with section surface $\geq 4\text{mm}^2$ (strand diameter about $\geq 2.3\text{mm}$).

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1. Product Brief

The HD Thermal & Optical Bi-spectrum Laser PTZ Camera IPC525-R is not only equipped with HD telephoto defogging lens, starlight camera, follow-up laser fill light and high precision heavy PTZ, but also supports thermal imaging channel and matched intelligent alarm. It is applicable to scenes with no light or light interference at night but requiring wide-angle surveillance such as the forest, frontier and coast defense, prairie, harbor and military installation.



Picture 1-1 IPC525-R series

2. Start Up

Please refer to the *Quick Start Guide* for the installation and wiring of the device.

After the camera is installed, configure parameters and functions through the web client. Please ensure the mutual network communication between the camera and the PC before configuring.

i Note: You are responsible for risks of accessing cameras to the Internet, including but not limited to possible cyber-attack, hacking attack, virus infection and etc. This company is not responsible for the product failures and information disclosure caused thereby, but will provide timely technical support for the cameras.

Requirements of PC for installing the client:

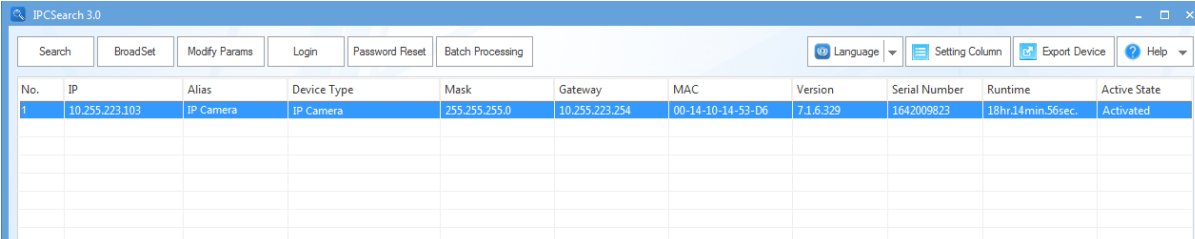
- Processor: 3.3 GHz CORE®i3 series and later version or other equivalent processors
- RAM Memory: 4GB or above
- Operating System: Windows 7 or higher versions
- Browser: recommend IE kernel browsers, otherwise some functions of the web client may fail
- DirectX: 9.0 C

2.1 Activate Camera

When the camera is first used, user should activate it and set the login password for normal use.

There are 2 methods to activate the camera: though IPCSearch or through browser.

- Activate through IPCSearch
 - a) Get IPCSearch from our website (<https://www.kedacom.com/cn/softtools/index.jhtml>) and install it according to the prompts.
 - b) After finishing installation, open IPCsearch and the system will search the cameras in LAN and display the list as shown below.



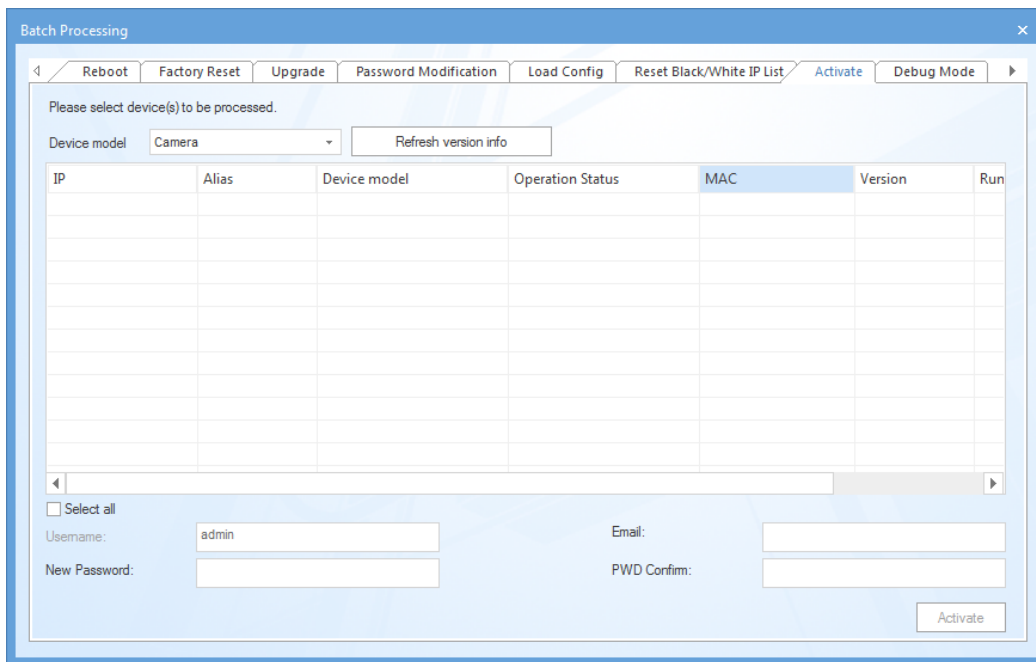
No.	IP	Alias	Device Type	Mask	Gateway	MAC	Version	Serial Number	Runtime	Active State
1	10.255.223.103	IP Camera	IP Camera	255.255.255.0	10.255.223.254	00-14-10-14-53-D6	7.1.6.329	1642009823	18hr,14min,56sec	Activated

Picture 2-1 IPCSearch

i Note: Device type and alias is subject to the search result.

- c) Select the camera to be activated, right click and select "Activate". On the popup interface, configure admin user password and email for claiming password. Click "Activate".

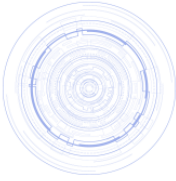
i Note: When there are more than one non-activated devices, select the devices and click "Batch processing". On the popup interface, set admin user's password and the email address to claiming password. Click "Activate" and wait for rebooting.



Picture 2-2 Batch Processing

- Activate through browser
 - a) Configure the IP addresses of PC in the same network segment as the camera and input the camera IP address in browser, the device activation interface will pop up, ass shown below:

Login



WeakStrong

Please choose a password with 8-16 characters. Your password must also contain two or more combinations of upper and lowercase letters, numbers, and symbols.

When admin's password gets lost, find it back through this email. Make sure this email address is safe and valid.

Active

Picture 2-3 Activate through browser

- b) Configure admin user password and email for claiming password. Click “Activate”.

Note:

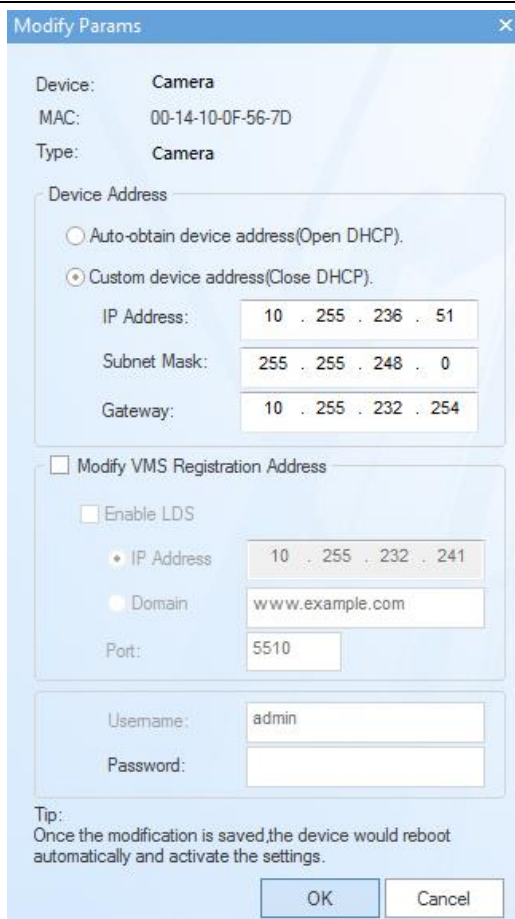
- ◆ To ensure the safety of device on internet, it is strongly recommended that you set a strong password composed of at least 2 kinds of the following, numbers, upper-case letters, lower-case letters or specific symbols with length of 8 to 16 characters.
- ◆ Please modify the password periodically such as once every 3 months. If the device is used in highly risky environment, suggest modifying the password monthly or weekly.
- ◆ Please keep your username and password safe.

2.2 Quick Setting of Network Parameters

After activating the device, user can quickly modify the network parameters of the camera through IPCSearch,

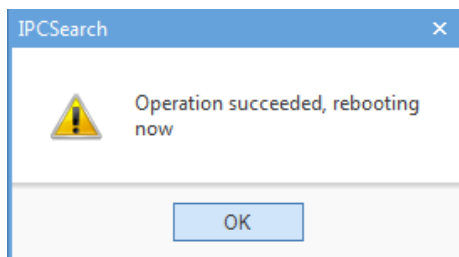
including IP address, subnet mask, gateway and etc.

- 1) Open IPCsearch and the system will search the cameras in LAN automatically and display the results on the list;
- 2) Select a camera to be configured, click “**Modify Params**” or right click the mouse. Modify parameters and fill the password set during activation.



Picture 2-4 Modify Parameter

- 3) Click “OK” and in the popup window click “OK”. Wait for rebooting.



Picture 2-5 Reboot device

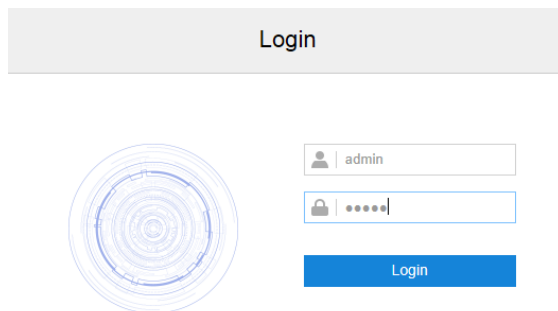
i Note: To configure more parameters, login to the web client and modify. Please refer to Chapter 4 for details.

2.3 Login and Log Out

- Login


After modification, the device will reboot automatically and please wait patiently. After reboot, the button will be enabled again. Select either of the following methods to login to the web client.

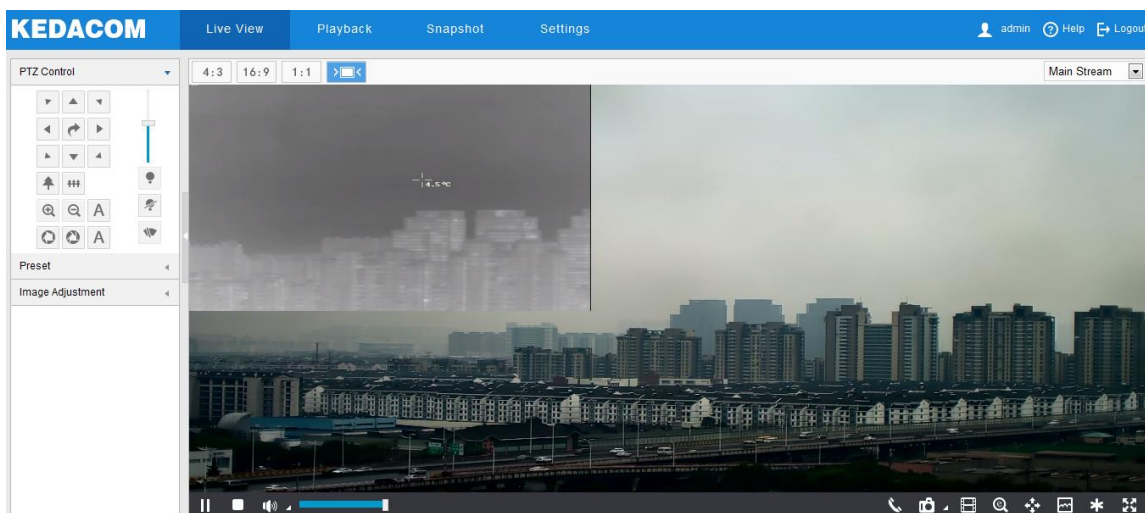
- Please select the device again and click **“Login”** or double click the device name to enter web client. Input username and the password set during activation and click **“Login”**, as shown in the following picture.
- Enter camera IP address in the address bar of the browser to login to the web client. Input username and the password set during activation and click **“Login”**, as shown in the following picture.




Picture 2-6 Login Interface

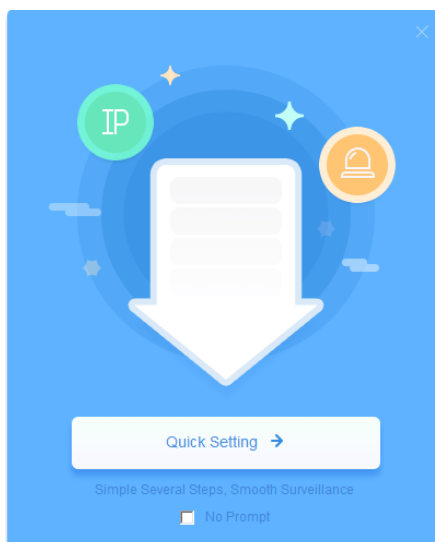
When login successfully for the first time, please download and install the plug-in. Close browser during installation. After finishing, re-login to the web client. Interface after login is shown below.

 Attention: Recommend using IE kernel browsers, otherwise some functions of the web client may fail.



Picture 2-7 Web Client Interface

 Note: After logging into the web client successfully for the first time, the “Quick Setting” window will pop up. Click “Quick Setting ->” to enter quick setting interface and perform simple settings. To disable quick setting, go to **Settings > Local Setting** and unselect “Enable Configuration Guide” checkbox; or select “No Prompt” under “Quick Setting ->” on the quick setting interface.




Picture 2-8 Quick setting interface


Quick Settings	LAN
IP Address	IP Address Configuration
Access Protocol	NIC: GLAN1
Device Info	IP Version: IPV4
Time	Mode: Static
	IP Address: 10.255.32.117 <input type="button" value="Test"/>
	Subnet Mask: 255.255.224.0
	Default Gateway: 10.255.63.254
	MAC Address: 00-14-10-1E-9C-60
	MTU: 1500 (1280~1500)
	DNS Server Setting
	Automatically Obtain DNS: <input type="checkbox"/>
	Preferred DNS Server: <input type="text"/>
	Alternate DNS Server: <input type="text"/>
	<input type="button" value="Skip"/> <input type="button" value="Next"/>

Picture 2-9 Quick setting

➤ Log Out

On the live view interface, click  to log out.

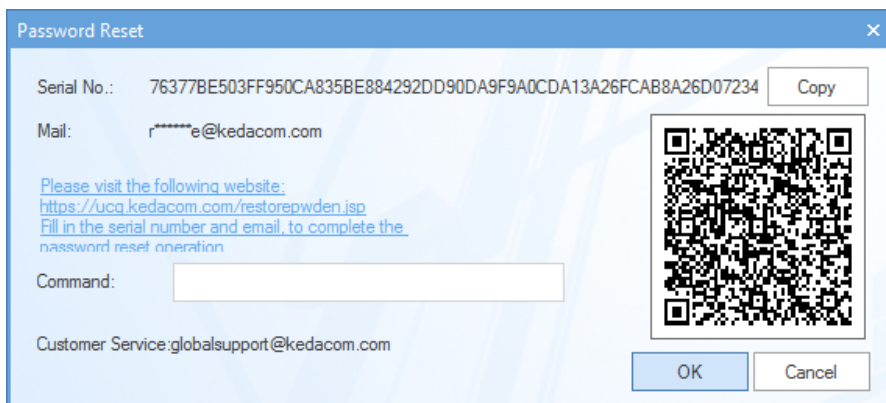
➤ Help

Click the icon  at the top right corner of the window and the help file interface will pop up. User can view the help file of the device.

2.4 Password Reset

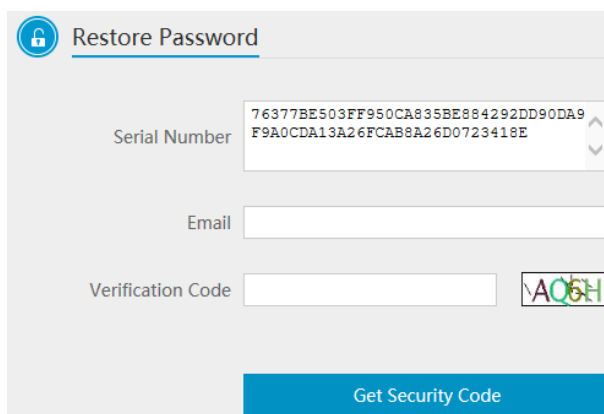
If user enters a wrong username or password for 6 times, the camera IP will be locked up for 10 minutes, during which user cannot login to this camera.

- 1) Open IPCSearch and select the device whose password needs to be reset. Click “**Password Reset**” and a window will pop up, as shown below:



Picture 2-10 Password Reset

- 2) Click the password reset link or scan the QR code in above picture with a mobile device and fill in the Serial Number and Email address in the following picture. Click “Get Security Code”;



Picture 2-11 Password Reset

- 3) Login to the email address to get a security code and fill in "**Command**" blank in Picture 2-10 and click "**OK**". Please remember the new password on the popup window and click "OK". The device will reboot.

2.5 Main Interface

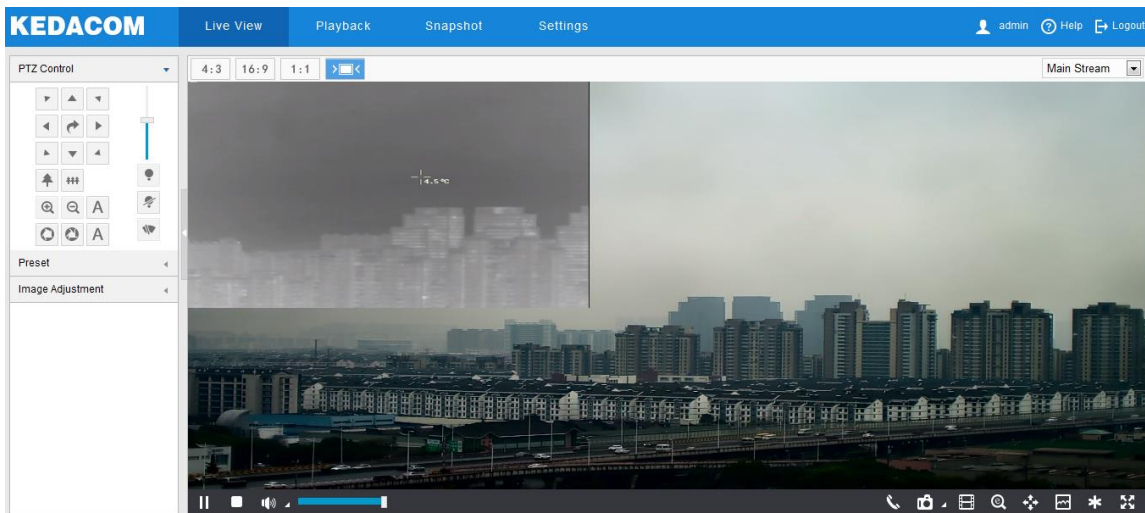
On the main interface of camera, you can view live video, playback video records, manage snapshots and configure settings.

- Live View: preview camera live video and adjust camera parameters;
- Playback: search, playback and download video records by timeline or record types;
- Snapshot: view, search and download snapshots by picture types;
- Settings: configure camera functions and system parameters.

3. Basic Functions

3.1 Live View

Click "Live View" to enter the preview interface.

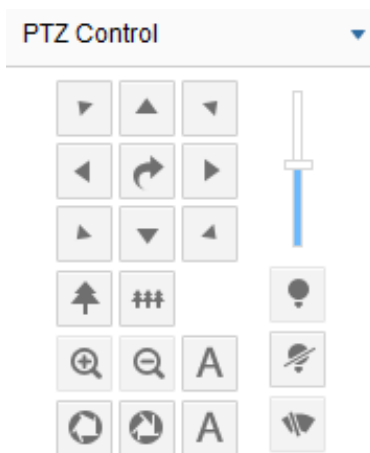


Picture 3-1 Live View

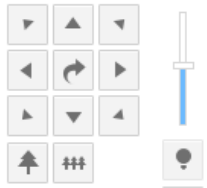

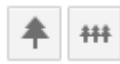











Click the hidden button on the left of the interface to hide PTZ control, Preset and Image Adjustment interfaces. Click it again to show the interfaces.

3.1.1 PTZ Control


Click **PTZ Control** to show the following interface:



Picture 3-2 PTZ Control

Icon	Note
	<p>Click the 8 direction buttons to control the pan and tilt rotation of the PTZ;</p> <p>Click  and the camera will patrol in pan; click again to stop;</p> <p>Drag the slide bar to adjust camera rotation step length. The larger the step length is, the faster the image will rotate.</p>
	<p>Click on  to zoom in and object is magnified;</p> <p>Click on  to zoom out and object is narrowed.</p>
	<p>Click on  to focus nearby object clear and distant object will become misty;</p> <p>Click on  to focus distant object and nearby object will become misty;</p> <p>Click on  to focus automatically.</p>
	<p>Click on  to enlarge aperture and the image becomes bright;</p> <p>Click on  to narrow aperture and the image becomes dark;</p> <p>Click on  to adjust aperture automatically.</p>
	<p>Wiper is used to clean the glass dome. In the PTZ control part of the Live View interface, Click the icon to enable wiper and click again to disable it.</p> <p>The wiper will stop automatically after 10 brushes. Click it to enable it again if necessary.</p>


3.1.2 Preset


Click  to show the following interface:




Picture 3-3 Preset

After setting and saving presets, you can load, edit or delete the presets anytime. Alternatively, go to **Settings > Camera > PTZ > Preset**, and refer to chapter of **Presets** for details.

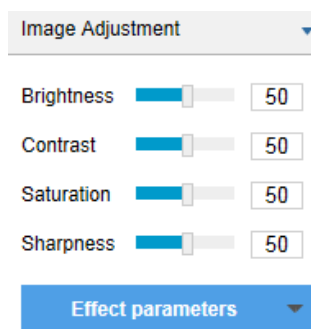
 **Load:** Click this icon to load a preset and the PTZ camera will rotate to the preset and display the image according to the set parameters.

 **Save:** Select a position and adjust lens direction and field of view to the requirements. Then select a preset from the list and click the icon to save the position as a preset.

 **Delete:** Click this icon to delete a preset.

3.1.3 Image Adjustment

Click **Image Adjustment** to show the following interface:







Picture 3-4 Image adjustment

- **Brightness:** Drag Brightness slide bar or enter a value behind the slide bar to adjust image brightness by request. The higher the value is, the brighter the image will be.
- **Contrast:** Drag Contrast slide bar or enter a value behind the slide bar to adjust image contrast by request. The higher the value is, the clearer contrast between the dark and the bright of the image there will be.
- **Saturation:** Drag Saturation slide bar or enter a value behind the slide bar to adjust image saturation by request. The higher the value is, the fresher the image will be.
- **Sharpness:** Drag Sharpness slide bar or enter a value behind the slide bar to adjust image sharpness by request. The higher the value is, the more distinct the objects on the image will look.
- **Effect parameters:** Load set image parameters by request. Go to **Settings > Camera > Visible Image > Image Quality**, and refer to chapter of **Effect Parameters** for details.


3.1.4 Live View Window

➤ Aspect Ratio






-  means the live view window displays image in standard screen ratio 4:3.
-  means the live view window displays image in wide screen ratio of 16:9.
-  means the live view window displays image in actual size 1:1.
-  makes the image window adaptive to your PC resolution.








➤ Stream Selection

- Main Stream: Display the composite image of thermal image and visible image. It is the encoding format of live view, and can be set in **Settings > Camera > Video > Encoding Format**.
- Secondary Stream: Display the HD visible image. It is the encoding format of live view, and can be set in **Settings > Camera > Video > Encoding Format**.
- Third Stream: Display the SD visible image. It is the encoding format of live view, and can be set in **Settings > Camera > Video > Encoding Format**.
- Fourth Stream: Display the thermal image. It is the encoding format of live view, and can be set in **Settings > Camera > Video > Encoding Format**.

 Note: Only when user selects “Quad-Stream” on the **Encoding Format** interface can the third stream and fourth stream be displayed on live view window.

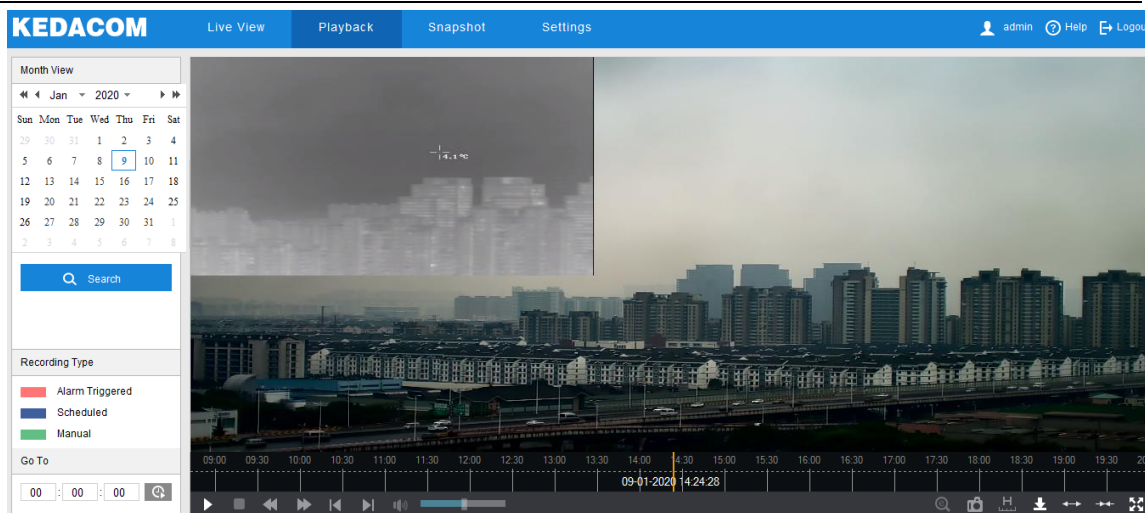
➤ Toolbar

-  Play/ Pause, click this button to play or pause a viewing.
-  Stop, click this button to stop live view.
-  Volume, it is the local decoding volume. Click the white triangle icon to select audio channel.
-  Drag the slide bar to adjust volume
-  Click this button to call and talk to camera. Click again to stop talking.

-  Snapshot, click this button to capture current image. Snapshot includes Camera Snapshot and Local Snapshot. The former means the camera captures an image and sends it to local client; the latter means the web client captures an image and saves it locally.
-  Start/ Stop recording, click this button to start recording and click again to stop recording.
-  Click this icon to enable the e-PTZ function. Left click and drag toward lower right to draw an area. The pixels of this area will be amplified and will cover the whole screen. Left click and drag toward upper left to draw an area, then image will recover.
-  PTZ, click the icon to zoom. Left click and drag toward lower right to draw an area. The pixels of this area will be amplified and will cover the whole screen. Left click and drag toward upper left to draw an area, then the image will recover. Double click a point in the image and the point will be centered.
-  Status, click this button to display the frame rate and bitrate of the live video, and click again to hide. This button is hidden by default. To enable this function, go to Settings > Local Setting > Play, select “**Display Status Info**” and click “Save”.
-  Video freeze, click this button and the image will freeze at the last frame before clicking. Click again to recover image. During video freeze, the PTZ function is disabled.
-  Full screen, click this button to display in full screen. Double click in full screen or press Esc to exit.

3.2 Playback


Click “**Playback**” to enter the interface of recording management. User can search, view and download video records in SD card.




Picture 3-5 Playback














Operation steps:

- 1) Select recording duration from the calendar. If there is a blue triangle on a date, it means there is recording on that day.
- 2) Click "**Search**" and the video will be displayed directly in the timeline on the right (the highlight parts on the timeline).

 **Note:** Red means alarm video recordings, blue meaning scheduled video recordings, and green meaning manual video recordings.

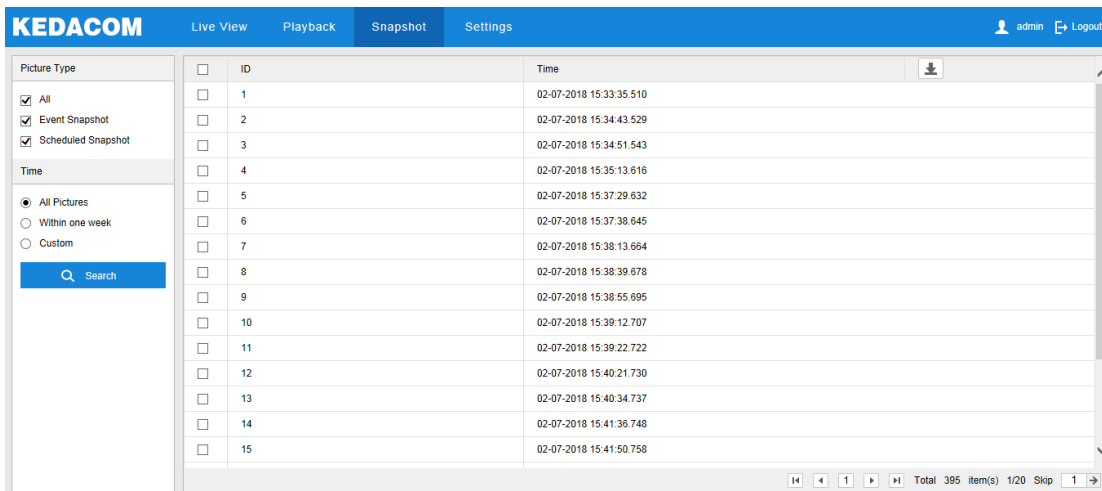
- ◆ Alarm video recording: Enable video recording when an alarm event occurs such as motion detection triggered video recording. Go to **Settings > Event > Intelligent Function > Motion Detection**, and select "Recording Linkage".
 - ◆ Scheduled video recording: Enable video recording automatically during certain durations. Configure on the interface of **Settings > Storage > Recording**.
 - ◆ Manual video recording: When the camera is disconnected from VMS or NVR, the video recording will be enabled by default.
- 3) Click the "Play" button on the interface to playback the video recording. During the playback, user can perform operations such as clipping, accelerating and downloading the video recording.
 - 4) Put the cursor of the mouse on the timeline to show the time of the video. Double-click or press the left button of the mouse and drag the timeline to the left or right to skip playing. Also, user can set playback time under "Go To" and click  to select playback time.

Buttons on the playback interface:

Icon	Note
	Play/ Pause, click the icon to play the video and click again to pause.
	Stop, click the icon to stop playing the video.
	Decelerate playing speed; click the icon to decelerate the speed of playing the video, one-click to decelerate by 1/2x and one more click by 1/4x, max by 1/8x.
	Accelerate playing speed; click the icon to accelerate the speed of playing the video, one-click to accelerate by one time, max 8 times.
	Previous video section, click the icon to play the previous video section and user can click it continuously. Click it in continuous video and it skips 1 hour by default.
	Next video section, click the icon to play the next video section and user can click it continuously. Click it in continuous video and it skips 1 hour by default.
	Volume, click the button to enable sound and click again to disable sound. Drag the slide bar to adjust volume.
	ePTZ, click this icon to enable the ePTZ function. Left click and drag toward lower right to draw an area. The pixels of this area will be amplified and will cover the whole screen. Left click and drag toward upper left to draw an area, then image will recover.
	Snapshot, click the icon to capture current playback image. The save path for playback snapshots can be set in Settings > Local Setting.
	Clip, click this icon to start clipping current video and click again to stop clipping. The save path for clipped playback videos can be set in Settings > Local Setting.
	Download, click the icon to pop up the download interface. On the popup interface, configure the start time, end time and select video type(s) to download. Click " Search " to display expected videos. Select the files to be downloaded and click " Download ". User can view the download progress on the list. Save path can be set in Settings > Local Setting.
	Zoom in/ Zoom out timeline, adjust the scale interval on the timeline. Click the icons to zoom in or zoom out the timeline. The scale intervals on the timeline include 5 min, 10 min and 30 min. Zooming of the timeline will not affect the playback of current video.
	Full screen, click this button to display the video in full screen. Double-click on the screen or press Esc to exit.


3.3 Snapshot

Click **“Snapshot”** to enter the interface of snapshot management. User can view or download snapshots in SD card.



Picture 3-6 Snapshot

Snapshot search and download steps:

- 1) Select required picture type(s) on the left checkboxes;
- 2) Select duration of snapshots from "Time". If selecting "Custom", specify the Start Time and End Time;
- 3) Click **“Search”** and the search result will show on the right list, from which you can see picture ID and snapshot time;
- 4) Select pictures and click the icon  to download the selected pictures. Snapshot save path can be set in **Local Setting > Camera Snapshot Save Path**.

3.4 Local Setting

On the interface of **“Local Setting”**, user can configure parameters of video playing, the size and save path of video records and snapshots on local PC, as shown in the following picture.

Local Setting

Play

Protocol	<input checked="" type="radio"/> TCP	<input type="radio"/> UDP		
Performance	<input type="radio"/> Real-time	<input checked="" type="radio"/> Balanced	<input type="radio"/> Smooth	
Decoded Process Mode	<input type="radio"/> Default	<input checked="" type="radio"/> Brightness Enhance		
Enable Image Noise Reduction	<input type="checkbox"/>			
Noise Reduction Level	<input type="range" value="1"/>			1
Enable Vertical Synchronization	<input type="checkbox"/> (Enabling this function will increase the CPU Utilization.)			
Display Status Info	<input checked="" type="checkbox"/>			
Rule information display	<input checked="" type="checkbox"/>			
Hard Decode Preferred	<input type="checkbox"/>			

Recording

Packet size	<input type="radio"/> 256M	<input checked="" type="radio"/> 512M	<input type="radio"/> 1G		
Local Recording Save Path	<input type="text" value="C:\Users\jnz\Documents\IPCWeb\Rec"/>	<input type="button" value="View"/>	<input type="button" value="Opendir"/>		
Clipping Save Path	<input type="text" value="C:\Users\jnz\Documents\IPCWeb\Video\PlayBack"/>	<input type="button" value="View"/>	<input type="button" value="Opendir"/>		
Download Save Path	<input type="text" value="C:\Users\jnz\Documents\IPCWeb\RecPlayback"/>	<input type="button" value="View"/>	<input type="button" value="Opendir"/>		

Snapshot

Local Snapshot Save Path	<input type="text" value="C:\Users\jnz\Documents\IPCWeb\Pic\Preview"/>	<input type="button" value="View"/>	<input type="button" value="Opendir"/>		
Camera Snapshot Save Path	<input type="text" value="C:\Users\jnz\Documents\IPCWeb\Pic\PuGrab"/>	<input type="button" value="View"/>	<input type="button" value="Opendir"/>		
Snapshot Save Path	<input type="text" value="C:\Users\jnz\Documents\IPCWeb\Pic\PlayBack"/>	<input type="button" value="View"/>	<input type="button" value="Opendir"/>		

Others

Enable Configuration Guide	<input checked="" type="checkbox"/>			
Download Plug-in	<input type="button" value="Download Plug-in"/>			

Picture 3-7 Local setting

➤ Play

- Protocol: Select the stream output protocol, options including UDP and TCP, default being TCP; UDP is applicable when the request for image quality is not high and the network is unstable.
- Performance: Select playing level from "Real-time", "Balanced" and "Smooth", default being "**Balanced**". "Balanced" mode gives consideration of both real-time playing and smooth playing; "real-time" ensures the shortest latency of video playing but affects the

smoothness of the video; "smooth" ensures smooth playing of the video but affects the real-time performance of the video.

- Decoded Process Mode: Select the process mode after decoding, options including "Default" and "Brightness Enhance".
 - Enable Image Noise Reduction: After selecting it, drag the slide bar below to adjust the noise reduction level, including 4 levels. Enabling image noise reduction will change the resolution of current image. When the level is too high, it will cause tailing effect on moving objects. Usually it's unnecessary to enable it.
 - Enable Vertical Synchronization: When there is image tearing, enable vertical synchronization to improve image quality. Usually it's unnecessary to enable this option as it will increase CPU utilization.
 - Display Status Info: After enabling this function, there will be a status icon in the menu bar at the bottom of the live view window. Click it to view frame rate, bitrate and packet loss rate.
 - Rule Information Display: If a device supports intelligent functions, when this option is selected, the settings on **Settings > Event > Intelligent Function** interfaces and on **Settings > Camera > Video > Video Info Overlay** interface will be shown in the intelligent zone on live view window such as the rule box and target box of guard line alarming, on which user can perform operations if necessary.
- Recording
- Packet Size: Configure the size of single local recording, options including 256M, 512M and 1G.
 - Local Recording Save Path: Configure the local save path for recordings recorded during live viewing. Click the button of "**View**" to customize the save path. Click "**Opendir**" to open the folder where the recordings are saved currently.
 - Clipping Save Path: Configure the local save path for video clippings clipped during playback. Click the button of "**View**" to customize the save path. Click "**Opendir**" to open the folder where the clippings are saved currently.

- Download Save Path: Configure the local save path for recordings downloaded during playback. Click the button of "**View**" to customize the save path. Click "**Opendir**" to open the folder where the recordings are saved currently.

➤ Snapshot

- Local Snapshot Save Path: Configure the local save path for snapshots captured during live viewing. Click the button of "**View**" to customize the save path. Click "**Opendir**" to open the folder where the recordings are saved currently.
- Camera Snapshot Save Path: Configure the local save path for snapshots downloaded from "Snapshot" interface. Click the button of "**View**" to customize the save path. Click "**Opendir**" to open the folder where the recordings are saved currently.



Note:

- ◆ Camera Snapshot: Camera captures an image and sends it to local client. The image quality is good, but there is some time delay caused by network.
- ◆ Local Snapshot: Client captures an image and saves it locally. The image quality is ordinary, but there is no time delay.
- Snapshot Save Path: Configure the local save path for snapshots captured during playback. Click the button of "**View**" to customize the save path. Click "**Opendir**" to open the folder where the recordings are saved currently.

➤ Others

- Enable Configuration Guide: When it is selected, the configuration guide will pop up during login and lead user to the Quick Settings interface. It is selected by default.
- Download Plug-in: Use IE kernel browser to log into the web client. Click the button of "**Download Plug-in**" to download the video plug-in. When logging into the web client for the first time, download and install the plug-in to view the live video normally.

4. Network

Go to **Settings > Network** to configure IP and Port, Access Protocol and Other Protocols.

4.1 IP and Port

4.1.1 LAN

Go to **Settings > Network > IP and Port > LAN** and configure network parameters, including IP address, subnet mask, default gateway and etc.

LAN Port Positioning Multicast

IP Address Configuration

NIC	GLAN1	▼
IP Version	IPv4	▼
Mode	Static	▼
IP Address	10.255.32.117	Test
Subnet Mask	255.255.224.0	
Default Gateway	10.255.63.254	
MAC Address	00-14-10-1E-9C-60	
MTU	1500	1280~1500
Default Route	GLAN1	▼

DNS Server Setting

Automatically Obtain DNS	<input type="checkbox"/>
Preferred DNS Server	<input type="text"/>
Alternate DNS Server	<input type="text"/>

Picture 4-1 LAN

➤ IP Address Configuration

If selecting “IPv4”, the mode includes “Static” or “DHCP”. When selecting static mode, you need to configure IP Address, Subnet Mask and Default Gateway manually; when selecting DHCP mode, the system obtains IP address automatically;



Note: When filling the IPv4 IP address, click “Test” to confirm if the address is available.

If selecting “IPv6”, the mode includes “Manual” and “Automatically obtain”. Under the “Automatically obtain” mode, the IPv6 address is distributed from server, gateway or router. Under “Manual” mode, enter the IP address, subnet mask and default gateway according to actual conditions.

MTU: Maximum transmission unit, the maximum size of data packet transmitted through TCP/UDP protocol, ranging 500 ~ 1500, by default 1500.



Note: The larger the MTU is, the higher the communication efficiency will be and the longer the transmission latency will be. Please enter according to actual conditions.

➤ DNS Server Setting

When camera accesses to external platform in form of domain name, user needs to configure the right DNS server. You can select “Automatically Obtain DNS” or enter the IP address behind “Preferred DNS Server” manually. If selecting the former, the camera will obtain the configuration parameters of DNS server from the gateway automatically.

After finishing configuration, click “Save”.

4.1.2 Port

Go to **Settings > Network > IP and Port > Port** and configure the ports.

LAN	Port	Positioning	Multicast
HTTP Port	<input type="text" value="80"/>		1~65535
HTTPS Port	<input type="text" value="5544"/>		1~65535
RTSP Port	<input type="text" value="554"/>		1~65535

Picture 4-2 Port

- **HTTP Port:** Hypertext Transport Protocol Port. When login through browser, you need to add a port number behind camera IP address. For example, if HTTP port is edited as 83, when you login through browser, you need to input "http://camera IP address:83. The number is 80 by default, ranging 1 ~ 65535.
- **HTTPS Port:** Hypertext Transport Protocol Secure Port based on SSL. When login through browser, you need to add a port number behind camera IP address. For example, if HTTPS port is edited as 5545, when you login through browser, you need to input "http://camera IP address:5545. The number is 5544 by default, ranging 1 ~ 65535.
- **RTSP Port:** Real Time Streaming Protocol Port. When login through browser, you need to add a port number behind camera IP address. For example, if RTSP port is edited as 555, when you login through browser, you need to input "rtsp://camera IP address:555/id=0 (id=0 play

main stream, id=1 play secondary stream)". RTSP port number is 554 by default, ranging 1 ~ 65535.

After finishing configuration, click "Save".

4.1.3 Positioning

Go to **Settings > Network > IP and Port > Positioning** and configure the GPS, view current location and etc.

Positioning	
Enable	<input checked="" type="checkbox"/>
System	GPS
Speed unit	km/h
Current Location	Positioning Failed <input type="button" value="Refresh"/>
<input type="button" value="Save"/>	

Picture 4-3 Positioning

Operation steps:

- 1) Select "**Enable**" to enable positioning function;
- 2) The default system is "**GPS**";
- 3) Select speed unit, options including "km/h" and "mile/h";
- 4) After finishing configuration, click "**Save**" and view current location below.

4.1.4 Multicast

Go to **Settings > Network > IP and Port > Multicast** and configure multicast parameters such as Stream Type, Media Type and Multicast Address.



Note: Multicast is a method of data packet transmission. The source host can send the data packets to every host in the group by sending a datagram only. It also depends on the group relationship maintenance and selection by the router.

LAN	Port	Positioning	Multicast	
Stream Type			Main Stream	
Media Type			Video	
Multicast Address			0.0.0.0	
Multicast Port			61000	1~65535
Send Mode			Passive	
TTL			64	0~255
<input type="button" value="Save"/>				

Picture 4-4 Multicast

- Stream Type: the stream to be sent, the default being “Main Stream”.
- Media Type: the media type of the stream to be sent, the default being “Video”.
- Multicast Address: the address to send the stream, fill it according to the actual conditions.
- Multicast Port: the multicast port of the multicast address, the default being 61000, ranging 1 ~ 65535.
- Send Mode: options include “Passive” and “Initiative”. Under “Initiative” mode, if the multicast address is normal and valid, the default setting is to send stream to this multicast address; under “Passive” mode, only when receiving the request of multicast can the system send stream to the multicast address. If the address is set 0.0.0.0, the system will send stream to 239.2.2.2 by default.
- TTL: Time to Live, ranging 0~255.



Note: TTL means the maximum number of network segments allowed to pass through IP data packet before it is discarded by the router. It is used to avoid endless loop of sending and receiving the data packet in the network so as to save network resources.

4.2 Access Protocol

Go to **Settings > Network > Access Protocol**, and access the camera to different platforms by configuring different access protocols.

4.2.1 VSIP

The web client supports accessing to back-end platform through VSIP protocol. Configuration steps:

- 1) Go to **Settings > Network > Access Protocol > VSIP**;

Registered VMS

VMS Address	<input type="text" value="10.67.36.11"/>
VMS Port Number	<input type="text" value="5510"/> 1~65535
Camera UUID	<input type="text" value="6c658a73699d460ebee05aaa4c041c33"/>
Camera Password	<input type="password" value="....."/>
Send NAT Probe Packets	<input type="checkbox"/>

VSIP Service

Auto Networking

Picture 4-5 VSIP

- 2) Enter VMS IP address or domain name;
- 3) Enter "VMS Port Number", default being 5510;
- 4) Enter "Camera UUID" and "Camera Password". Camera UUID is distributed by VMS and the password needs no verification so you don't have to enter;
- 5) When the camera is in NAT and needs to access to the platform by cross-segment, select "Send NAT Probe Packets";
- 6) Select "Auto Networking" to enable function of auto networking. When the NVR adds devices automatically, the camera will be added to the NVR automatically;
- 7) After finish, click "**Save**" to validate setting.



Note:

- ◆ For the operations of adding front-end devices to back-end platform, please refer to the user manual of PMC client.
- ◆ VSIP protocol only supports registering to back-end platform of this company or other SDK-integrated back-end platforms.

4.2.2 ONVIF

The client supports adding device to the back-end platform through ONVIF protocol, which enables different network video products such as cameras and recorders from different manufacturers to communicate with each other.

Configuration steps are as follows:

- 1) Go to **Settings > Network > Access Protocol > ONVIF**;

The screenshot shows a web interface for configuring ONVIF. It is divided into two main sections: 'Basic' and 'Authentication'. In the 'Basic' section, there is a checkbox for 'Enable' which is checked, and a text input field for 'Server Address (URL)' containing the value 'http://10.255.32.117:80/onvif/device_service'. The 'Authentication' section contains a label 'Authentication Method' followed by two radio button options: 'N/A' and 'WS-Username token'. The 'WS-Username token' option is selected. Below these sections is a blue 'Save' button.

Picture 4-6 ONVIF

- 2) Select **“Enable”**. Afterwards, the device will generate a server address (URL) automatically, default port number being 80;
- 3) Set authentication method for ONVIF login. When selecting "N/A", user can login freely; when selecting "WS-Username token", user needs to verify username and password before login;
- 4) Click **“Save”** to validate settings.

4.2.3 GB28181

On GB28181 interface, add the camera to GB platform according to the requirements of GB/T28181.

Configuration steps are as follows:

- 1) Go to **Settings > Network > Access Protocol > GB28181**;
- 2) Select the **“Registered VMS”** (Registered VMS 1 or Registered VMS 2). The camera supports registered to 2 different VMS;
- 3) Select **“Enable”**;
- 4) Enter Network Access ID, VMS ID, VMS Port Number, User Name/ Password and Video Encoding Channel ID, which are all provided by VMS;
- 5) Click **“Save”** to validate settings.

Registered VMS	Registered VMS 1	
Enable	<input checked="" type="checkbox"/>	
Local Port Number	5060	1024-65535
Network Access ID	31000000001120000195	
Camera Name	IPCAMERA	
VMS ID	31000000002000000000	
VMS Address	10.67.38.11	
VMS Port Number	5511	1024-65535
User Name	31000000001120000026	
Password	••••••	
Renewal Time	60	(s) 30-999999
Heartbeat Signaling Interval	30	(s) 10-1000
Camera Ownership	owner	
Administrative Region		
Guard Area		
Installation Address		

Video Encoding Channel ID	Video Encoding Channel Name	IPC Stream Type
31000000001320000196	enc	Main Stream
31000000001320000197	enc-2	Secondary Stream
31000000001320000198	enc-3	Third Stream
31000000001320000199	enc-4	Fourth Stream

Alarm ID	Alarm Name	Validity
Chinese GB Standard Compatibility Order		
Chinese GB Standard-->Chinese GB Standard Extension(2014)-->Chinese GB Standard Extension(2016)		
<input type="button" value="Modify Chinese GB Standard Compatibility Order"/>		
<input type="button" value="More Setting->"/>		

Picture 4-7 GB28181

4.3 Other Protocol

4.3.1 DDNS

DDNS (Dynamic Domain Name Server) is to connect the camera to various servers so that user can login to the camera through servers. Apply domain names at different server websites and then visit the device by domain names directly even if the IP address has been modified.

Configuration steps are as follows:

- 1) Go to **Settings > Network > Other Protocols > DDNS**;

Enable	<input type="checkbox"/>
DDNS Server	ORAY <input type="button" value="v"/>
Domain	<input type="text"/>
User Name	admin
Password	•••••
Status	

Picture 4-8 DDNS

- 2) Select "Enable";
- 3) Select DDNS Server type from the dropdown list, options including "ORAY", "DYNDS" and "NOIP". When selecting "DYNDS" or "NOIP", the domain name should be filled;
- 4) Enter username and password according to the selected DDNS server;
- 5) Click "**Save**" to validate setting.

4.3.2 FTP

File Transfer Protocol, the web client supports FTP protocol and user can upload the pictures of the camera to specific FTP server.

Configuration steps are as follows:

- 1) Go to **Settings > Network > Other Protocols > FTP**;

Server Address	192.168.1.1	
Port	21	1-65535
User Name	admin	<input type="checkbox"/> Anonymous
Password	<input type="text"/>	
Directory Structure	Using root directory	<input type="button" value="v"/>

Picture 4-9 FTP

- 2) Enter FTP server address and port;
- 3) Enter FTP server username and password, and you can select "Anonymous" to visit FTP server anonymously;
- 4) Configure directory structure, i.e. file save path. Select from the dropdown list by actual request, options including "Using root directory", "Using level one directory" and "Using level two directory";

- Level one directory options include "Use device name", "Use device IP" and "Custom".
 - Level two directory options include "Use channel number" and "Custom".
- 5) Click "**Test**" to verify if current FTP is available, and the result will show on the dialogue box;
 - 6) Click "**Save**" to validate setting.

4.3.3 PPPoE

PPPoE (Point-to-Point Protocol over Ethernet) function is to access camera to the internet by dialing the account provided by ISP (Telecom, Unicom and CMCC).

Configuration steps are as follows:

- 1) Go to **Settings > Network > Other Protocols > PPPoE**;

Enable	<input checked="" type="checkbox"/>
DHCP	<input type="text" value="0.0.0.0"/>
User Name	<input type="text" value="root"/>
Password	<input type="password" value="••••"/>

Picture 4-10 PPPoE

- 2) Select "Enable" to enable PPPoE function;
- 3) Input user name and password provided by ISP;
- 4) Click "**Save**" to validate setting. It will show dynamic IP after dialing succeeds.

4.3.4 K-SNMP

K-SNMP means KEDACOM private network management protocol.

Configuration steps are as follows:

- 1) Go to **Settings > Network > Other Protocols > K-SNMP**;

Network Management Server IP Address	<input type="text" value="0.0.0.0"/>	
Network Management Server Port Number	<input type="text" value="1727"/>	
Device Location	<input type="text" value="0"/>	
CPU Utilization Threshold	<input type="text" value="100"/>	1~100
Memory Utilization Threshold	<input type="text" value="100"/>	1~100
Packet Loss Rate Threshold	<input type="text" value="100"/>	1~100

Picture 4-11 K-SNMP

- 2) Input "Network Management Server IP Address" and "Device Location";
- 3) Configure "CPU Utilization Threshold", "Memory Utilization Threshold" and "Packet Loss Rate Threshold". The default values are all 100, ranging 1 ~ 100;
- 4) Click "**Save**" to validate setting.

4.3.5 802.1X

802.1X is a port based network access control protocol. User can select "Protocol Type" manually to control if the device connected to the LAN can access to the LAN, which will support the requirements of network authentication, charging, safety and management well.

Configuration steps are as follows:

- 1) Go to **Settings > Network > Other Protocols > 802.1X**;

Enable	<input checked="" type="checkbox"/>
Protocol Type	EAP-MD5
EAPOL Version	1
User Name	root
Password	••••
<input type="button" value="Save"/>	

Picture 4-12 802.1X

- 2) Select "Enable" to enable IEEE 802.1X protocol;
- 3) Select "Protocol Type" from the dropdown list and select version from the list of "EAPOL Version";
- 4) Input user name and password;
- 5) Click "**Save**" to validate setting.

4.3.6 QoS

QoS stands for Quality of Service, which can solve the problem of network delay and network congestion efficiently. Configuration steps are as follows:




Note: QoS function needs the support from network transmission device such as a router or a switch.

- 1) Go to **Settings > Network > Other Protocols > QoS**;

Enable	<input checked="" type="checkbox"/>
DSCP for Audio/Video	0 0~63
DSCP Management	0 0~63
<input type="button" value="Save"/>	

Picture 4-13 QoS

- 2) Select "Enable" to enable QoS function;
- 3) Configure "DSCP for Audio/Video" and "DSCP Management", ranging 0 ~ 63;


 **Note:** There are 64 DSCP priority levels (0-63), which identify different priority levels of packets, 0 with the lowest priority and 63 with the highest. Select and keep packets according to their priority levels. Different levels occupy different bandwidths with different packet loss rates during network congestion, thus the quality of service is ensured.

 **Attention:** You need to configure the same value on the router.

- 4) Click "**Save**" to validate setting.

4.3.7 UPnP

By UPnP protocol, it is able to set up mapping relation between private network and the internet. Internal port is camera port while external port is router port. User can visit camera when accessing to the external port. Configuration steps are as follows:

 **Note:** For a camera in an Ethernet, UPnP function can make gateway or router perform auto-port-mapping which maps the camera monitor port from gateway or router to the Ethernet device, thus the firewall module on the gateway or router starts to open this port to other PCs on the internet.

- 1) Go to **Settings > Network > Other Protocols > UPnP**;

Enable

Alias

Port Mapping

Mapping Mode

Mapping Port Table

Select	Protocol	IP	External Port Number	Status
<input checked="" type="checkbox"/>	<input type="text" value="HTTP"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	Not Take Effect
<input checked="" type="checkbox"/>	<input type="text" value="RTSP"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	Not Take Effect
<input checked="" type="checkbox"/>	<input type="text" value="SDK"/>	<input type="text" value="0.0.0.0"/>	<input type="text" value="0"/>	Not Take Effect

Picture 4-14 UPnP

- 2) Select "Enable" to enable UPnP function;
- 3) Set alias, then user can search the alias directly from the network on PCs which have enabled UPnP protocol in the broadcast domain of the same Ethernet. Double-click the icon and the system will pop up a page automatically for user to visit current IP address;
- 4) Select "Auto" or "Manual" for Mapping Mode. When selecting "Manual", enter external port number manually;
- 5) Click "**Save**" to validate setting.

4.3.8 SNMP

SNMP means Simple Network Management Protocol. It is an application level protocol consisting of a set of network management standards that support a network management system for monitoring devices connected to the network for any management concerns.

Configuration steps are as follows:

- 1) Go to **Settings > Network > Other Protocols > SNMP**;

SNMP Version	<input type="checkbox"/> SNMP v1	<input type="checkbox"/> SNMP v2	<input type="checkbox"/> SNMP v3
SNMP Port	<input type="text" value="161"/>	1~65535	
Read community	<input type="text" value="public"/>		
Write community	<input type="text" value="private"/>		
Trap Address	<input type="text" value="0.0.0.0"/>		
Trap Port	<input type="text" value="162"/>	1~65535	
Trap Group name	<input type="text" value="public"/>		
Camera ID	<input type="text" value="00000000000000000000000000000000"/>		

Picture 4-15 SNMP

- 2) Select "SNMP Version" to enable SNMP;
- 3) Enter "Read community" and "Write community" names;
- 4) Configure "Trap Address" and "Trap Port" (default being 162). The camera can send exception alarm to the management base;
- 5) Configure "Trap Group Name";
- 6) Enter "Camera ID";
- 7) Click "**Save**" to validate settings.



Attention: Before configuring SNMP protocol parameters, make sure the SNMP server is already equipped and correctly configured.

4.3.9 SMTP

SMTP means Simple Message Transfer Protocol. When an alarm is triggered, the system will send email notification automatically through SMTP protocol. Configuration steps are as follows:

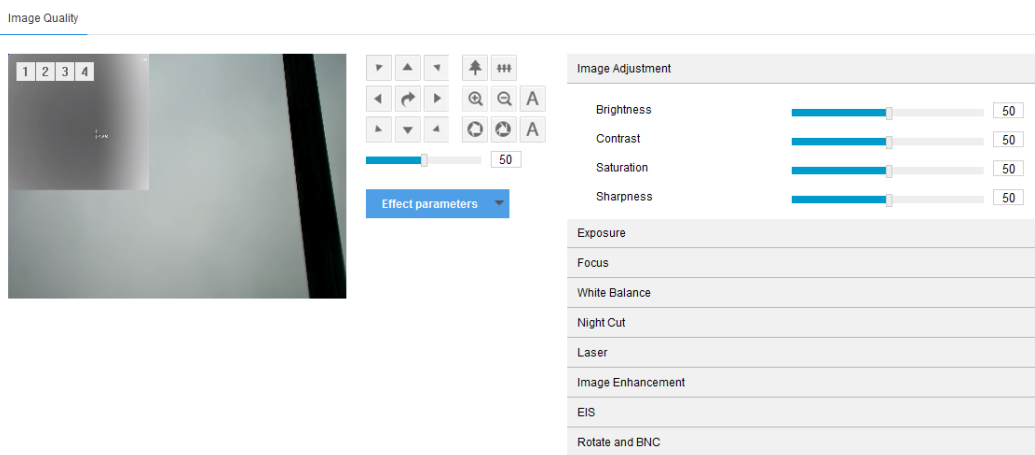
- 1) Go to **Settings > Network > Other Protocols > SMTP**;

5. Camera

Go to **Settings > Camera** to configure camera parameters, including Image, OSD, Video, Audio and etc.

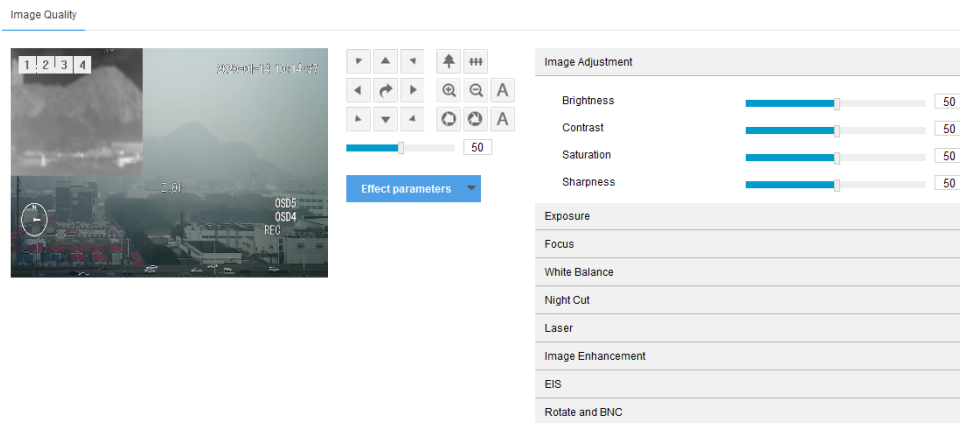
5.1 Image

Go to **Settings > Camera > Visible Image**, and configure image adjustment, exposure, focus and etc.



Picture 5-1 Image

5.1.1 Image Adjustment



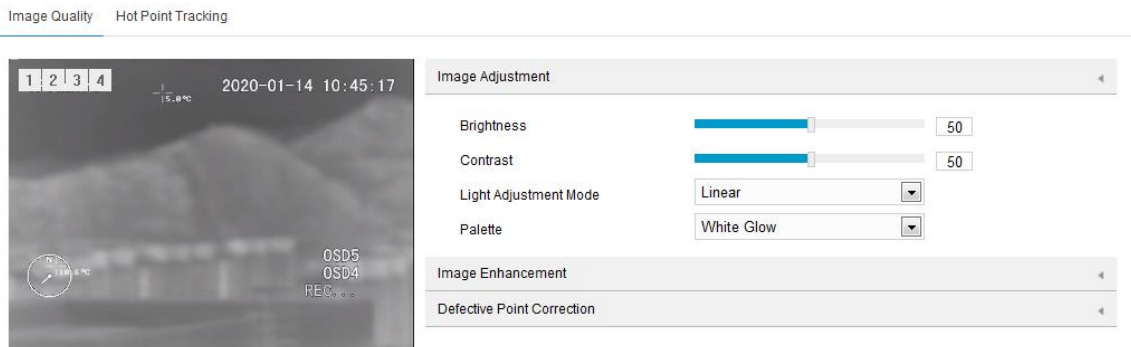
Picture 5-2 Image adjustment

The image adjustment in this part is the same as that on the Live View interface, which can be referred to in the chapter of Image Adjustment.

5.1.2 Palette

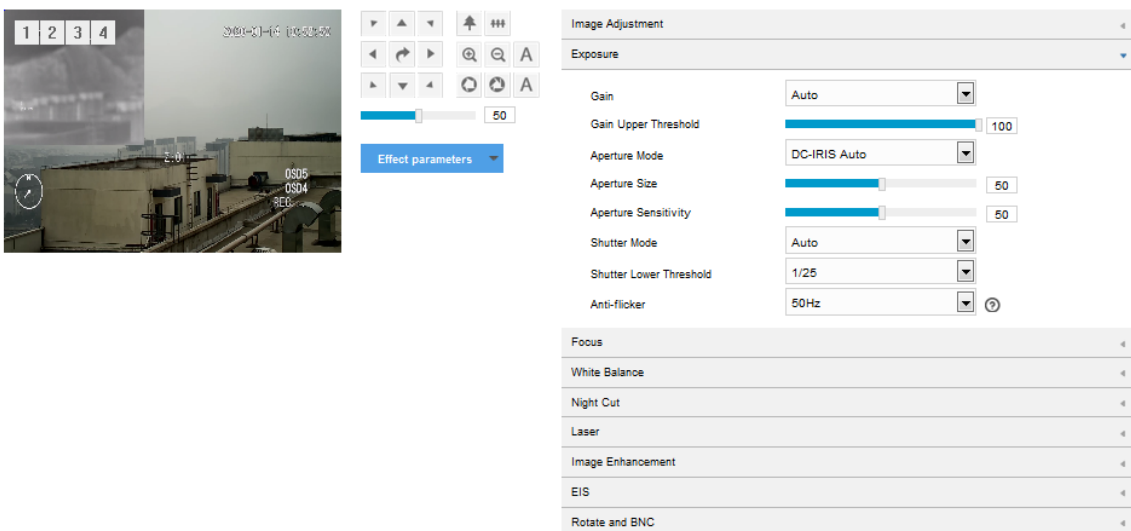
Cooperating with the function of hot point tracking, the temperature range in the image will be mapped into 256 color gradations, different temperature showing different colors, options including

white glow, black hot, rainbow and etc. Each palette corresponds to a color gradation. Please select by request.



Picture 5-3 Palette

5.1.3 Exposure



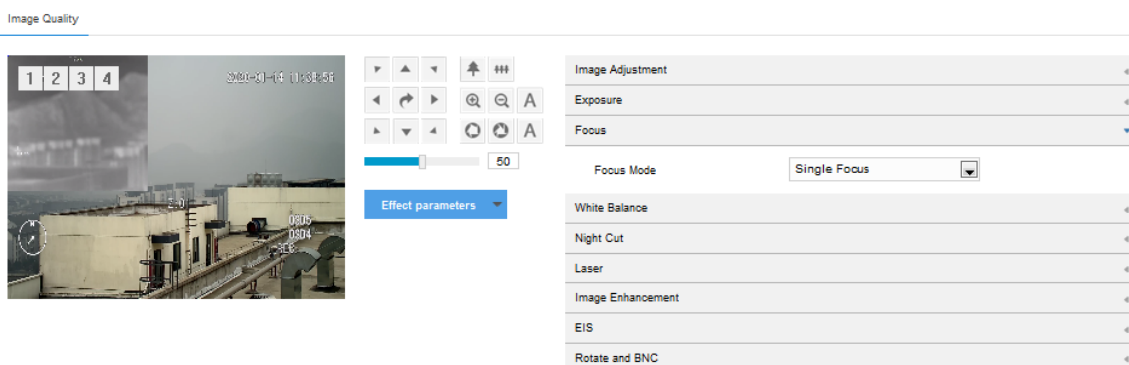
Picture 5-4 Exposure

- Gain: A higher gain will make the image look brighter. However, meanwhile there will be more noise points on the image. Auto mode is suggested.
 - When selecting "Auto" mode, drag the slide bar below to set Gain Upper Threshold. Then the value of gain can only be adjusted automatically within the range of 0 to the set upper threshold;
 - When selecting "Manual" mode, drag the slide bar below to set Gain Level and the value will remain.

- Aperture Mode: Aperture controls the light input through the lens. A large aperture allows more light input and the image looks bright. Options including “DC-IRIS Auto” and “DC-IRIS-Manual”. Auto mode is suggested.
 - If selecting “DC-IRIS Auto”, drag the slide bar of Aperture Size and Aperture Sensitivity.
 - If selecting “DC-IRIS Manual”, drag the slide bar of Aperture Size to set the value and the aperture will remain as the set value.
- Shutter Mode: Camera shutter means the exposure shutter speed of image pixels. The smaller the value is, the darker the image will look. Options include "Auto" and "Manual". Suggest “Auto”.
 - When selecting "Auto", you can select Shutter Lower Threshold from the dropdown list below. Then the shutter will be adjusted within the range from the lower threshold to the minimum shutter value automatically;
 - When selecting "Manual", you can select Shutter Level from the dropdown list below. Then the value of shutter will remain.
- Anti-flicker: When there are floating cross stripes on the image, select the correct anti-flicker frequency (50Hz or 60Hz or natural light) to solve the problem. The frequency should be in accordance with that of the nation's AC frequency and light frequency.

5.1.4 Focus

Focusing is the process of controlling a beam of light or particle flow and trying to gather it to a point. It is necessary to form images. Adjustment of focus mode will help obtaining optimum and clear target images.



Picture 5-5 Focus

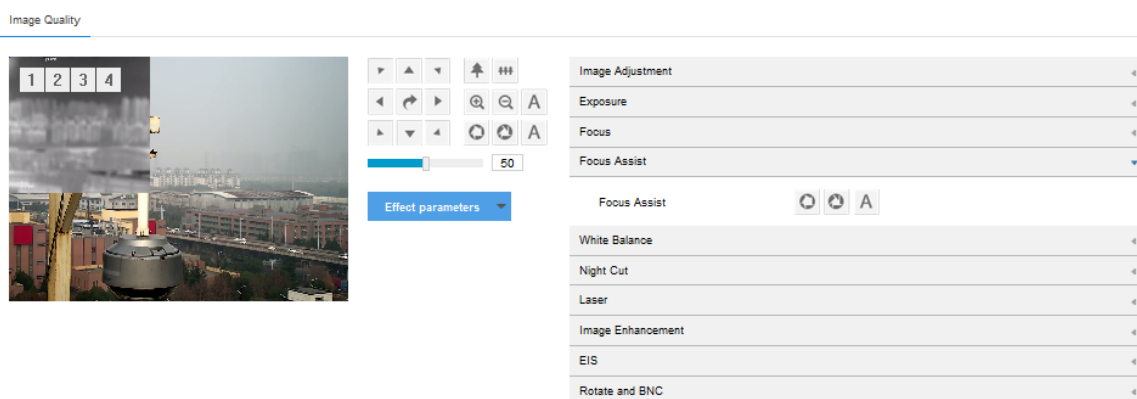
- Focus Mode: Select a mode from the dropdown list by request. The default mode is “Single Focus”.

- Manual: On the live view interface, click focus icons to perform manual focusing;
- Single Focus: The camera will trigger automatic focusing once the PTZ changes.


5.1.5 Focus Assist


Go to **Settings > System > System Maintenance** and in the “Advanced Configuration” part, click “Configuration” and select “Enable” behind Focus Assist. If the camera cannot focus clearly, adjust the zoom ratio to the minimum and use “focus assist” function to adjust the back focal length of the camera and make the image clear.

 Note: Operation steps can be referred to in chapter 8.6.1 System Maintenance.



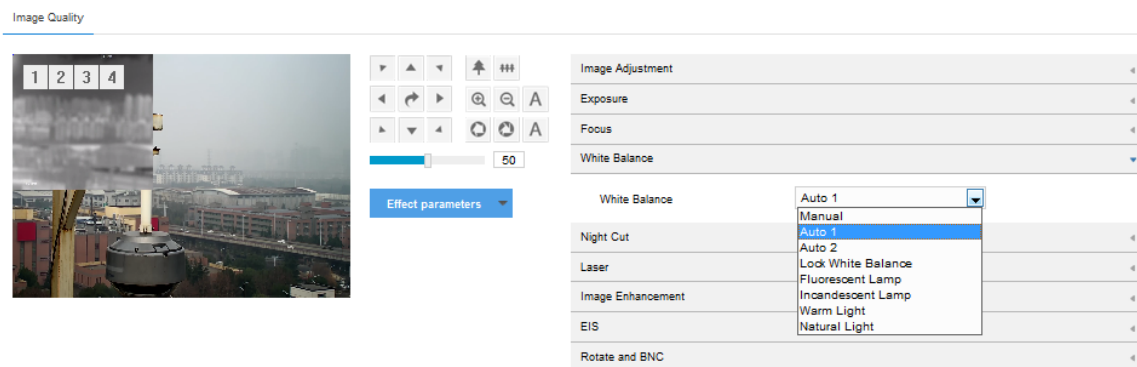
Picture 5-6 Focus assist

Click  to manually adjust focus slightly.

Click  to adjust back focal length automatically and obtain clear images.

5.1.6 White Balance

Under different light conditions, there will be color cast in different images. White balance adjustment can restore white objects to be white regardless of the color temperature of the light source.



Picture 5-7 White Balance

Select an option from the dropdown list of white balance mode. Suggest "Auto".

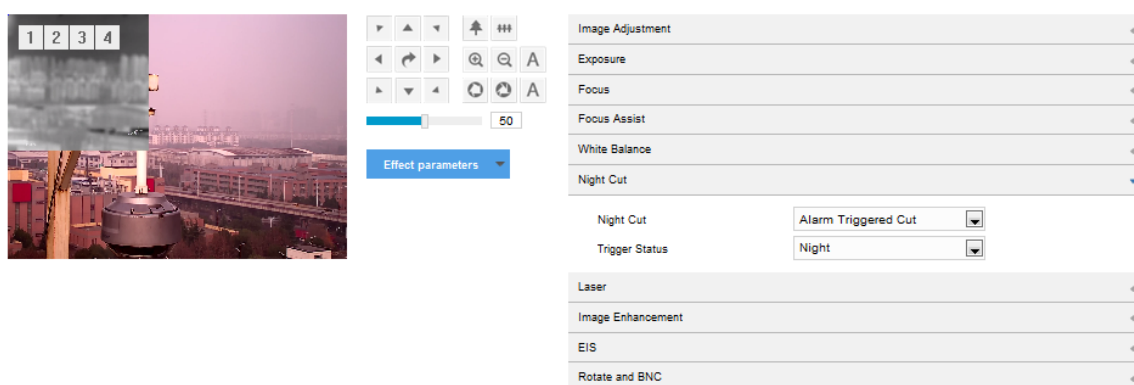
- Manual: support R Gain and B Gain adjustment. Drag the slide bar of White Balance R Gain and White Balance B Gain to adjust the value, ranging 0 ~ 100.
- Auto 2: has a larger white balance range than "Auto 1", though both are auto mode.
- Lock White Balance: lock current color correction matrix.

If the camera works under light which provides fixed light condition, select from the following 4 options according to actual environment.

- Fluorescent Lamp: for color temperature of 6500K.
- Incandescent Lamp: for color temperature of 3000K.
- Warm Light: for color temperature of 4000K.
- Natural Light: for color temperature of 5500K.

5.1.7 Night Cut

Image Quality



Picture 5-8 Night Cut

Select night cut mode from the dropdown list up to request. Explanation of different modes is as follows:

- Day: Under "Day" mode, the image keeps colored all the time.
- Night: Under "Night" mode, the image keeps black and white all the time.
- Auto (gain triggered): The camera switches day/night mode automatically according to the gain values. When selecting this mode, configure Sensitivity, Latency and Night Cut Threshold according to actual request.

- Sensitivity: The switching sensitivity from night mode to day mode. The lower the sensitivity is the higher brightness in the condition the camera needs to switch to day mode; the higher the sensitivity is the lower brightness in the condition the camera needs.
 - Latency: When the camera detects that the light condition is satisfactory to trigger night cut and the time lasts longer than the preset latency, the camera will switch night cut automatically. The range of it is 5 s to 120 s.
 - Night Cut Threshold: The switch threshold from day mode to night mode. The lower the value is, the easier it is to switch from day mode to night mode.
- Auto (photo-sensor triggered): The camera detects light strength and triggers night cut according to the returned value. When selecting this mode, configure Photosensitivity, Latency and Night Cut Threshold according to actual request.
- Photosensitivity: The switching sensitivity from night mode to day mode. The lower the sensitivity is the higher brightness in the condition the camera needs to switch to day mode; the higher the sensitivity is the lower brightness in the condition the camera needs.
 - Latency: When the camera detects that the light condition is satisfactory to trigger night cut and the time lasts longer than the preset latency, the camera will switch night cut automatically. The range of it is 5 s to 120 s.
 - Night Cut Threshold: The switch threshold from day mode to night mode. The lower the value is, the harder it is to switch from day mode to night mode.
- Scheduled Day/Night: Under "Scheduled Day/Night" mode, click "Edit Time" and configure "Day Mode Start Time" and "Day Mode End Time" on the popup interface. The camera will switch day and night modes according to the scheduled durations.

Edit Time

	Day Mode Start Time	Day Mode End Time
<input checked="" type="checkbox"/> Everyday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Sunday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Monday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Tuesday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Wednesday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Thursday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Friday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Saturday	07:00:00	18:00:00

Confirm
Cancel

Picture 5-9 Edit time

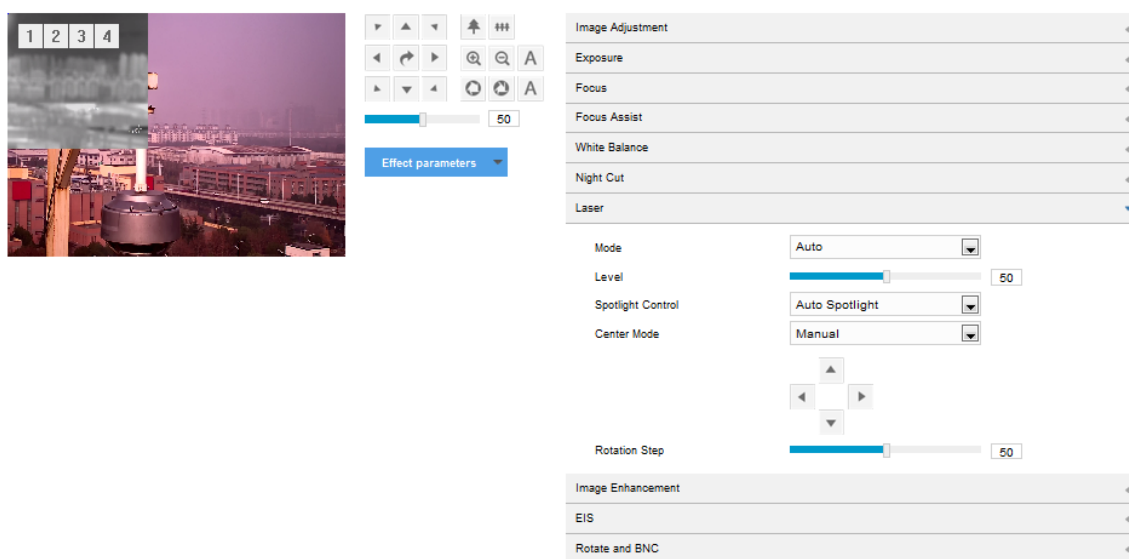
- Alarm Triggered Cut: It is the night cut triggered by alarm input. After selecting "Alarm Triggered Cut" mode, select day or night from the dropdown list. If selecting "Day", it will switch to day mode after alarm triggered.



Note: Only some models support this function. Please configure according to actual models.

5.1.8 Laser

Image Quality



Picture 5-10 Laser

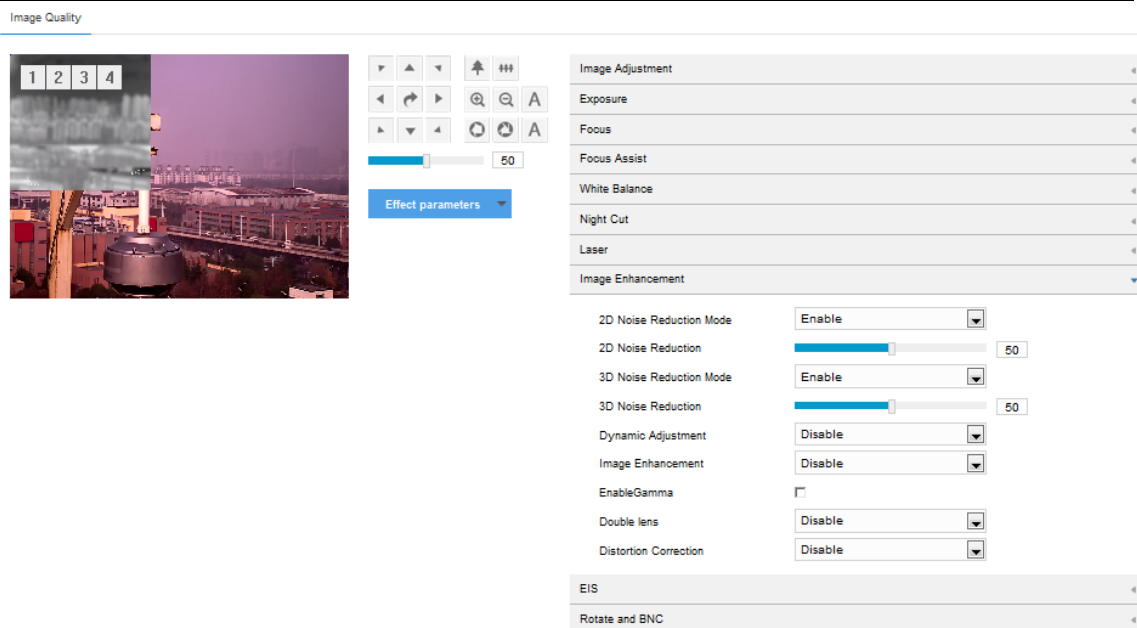
In low light condition, laser can be enabled to compensate light and help get better images.

Configuration steps are as follows:

- 1) The default mode is "Auto";
- 2) Drag the slide bar of Level to adjust laser strength, ranging 0 ~ 100;
- 3) On the dropdown list of Spotlight Control, select "Auto Spotlight" or "Manual Spotlight". If selecting the latter, adjust the spotlight size through the buttons on the right;
- 4) User can adjust laser center manually and drag the slide bar of Rotation Step to configure the rotation speed, ranging 0 to 100; adjust laser center through the direction button above.

5.1.9 Image Enhancement

When there are many noise points caused by environment and camera lens, noise reduction function can be enabled to correct images. Images processed by 2D noise reduction will look softer; while those processed by 3D noise reduction will have obviously fewer noise points and will look much clearer.



Picture 5-11 Image enhancement

- 2D Noise Reduction: You can select "Enable" or "Disable". After enabling, you can drag the slide bar to adjust 2D noise reduction level.
- 3D Noise Reduction: You can select "Enable" or "Disable". After enabling, you can drag the slide bar to adjust 3D noise reduction level.

 **Note:** When the 3D noise reduction level is too high, there will be hauling tail on moving objects. Usually, it's unnecessary to edit this parameter.

- Dynamic Adjustment: When there is strong light background, which causes sharp contrast between the light and the dark part of the image, you can adjust and optimize images through dynamic adjustment. Select a mode from the dropdown list according to actual requirements.
 - Disable: the default option is "Disable", which disables dynamic adjustment.
 - Backlight compensation: Backlight compensation can provide optimal exposure of target when there is strong background light. When selecting "Backlight Auto", drag the slide bar to adjust "Backlight Sensitivity"; when selecting "Backlight Manual", drag the slide bar to adjust "Backlight Sensitivity" and select an option from the dropdown list of "Backlight Area". If selecting "Custom", click "**Edit**" below the image window and drag mouse to draw a backlight compensation area, and click "**Setting**" to finish.

- HLC: The HLC function can avoid unclear image caused by strong light interference. Select "HLC" from the drop-down list of Dynamic Adjustment and drag the slide bar of "HLC Level". It is usually used under night conditions to obtain clear plate number.
- SmartIR: SmartIR can adjust IR light illumination automatically. Select "SmartIR" and drag the slide bar of SmartIR sensitivity.
- WDR: WDR can provide optimal exposure when there is sharp contrast between the background and foreground light (the former being too bright while the latter being too dark). Select "WDR" from the drop-down list of Dynamic Adjustment and drag the slide bar of "WDR Sensitivity".
- Image Enhancement: "Defog" is disabled by default. When there is slight fog in the scene, enable "Defog" and drag the slide bar of Defog Sensitivity.
- Enable Gamma: Select the checkbox to enable the function. It can distinguish the dark part and the bright part of the image effectively so as to improve image contrast.
- Double Lens: Enabling this function will increase camera focal length, magnifying the original focal length into two times.

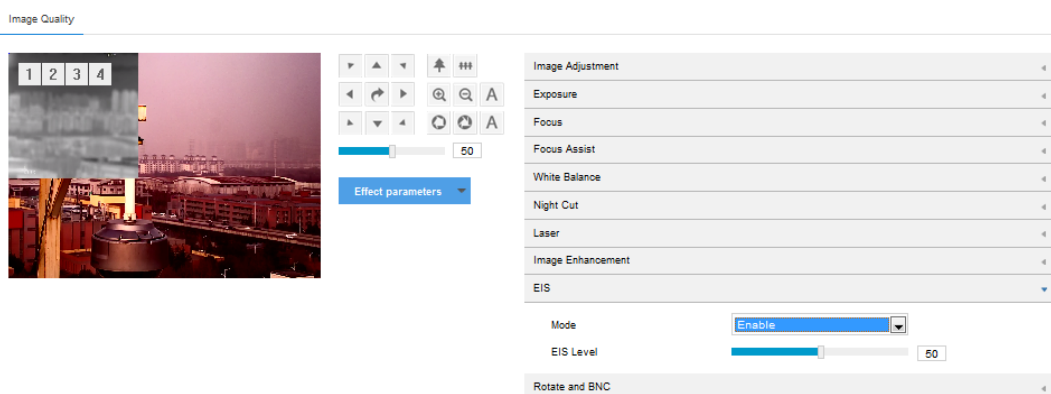


Note: Only some models support this function.

- Distortion Correction: It is disabled by default. When the radian of camera lens is too large and the image is distorted, enable this function to correct the image and reduce image distortion. Enabling this function will cause some loss of the image.

5.1.10 EIS

When the camera is installed in unstable environment, enable EIS to improve the stability of images.

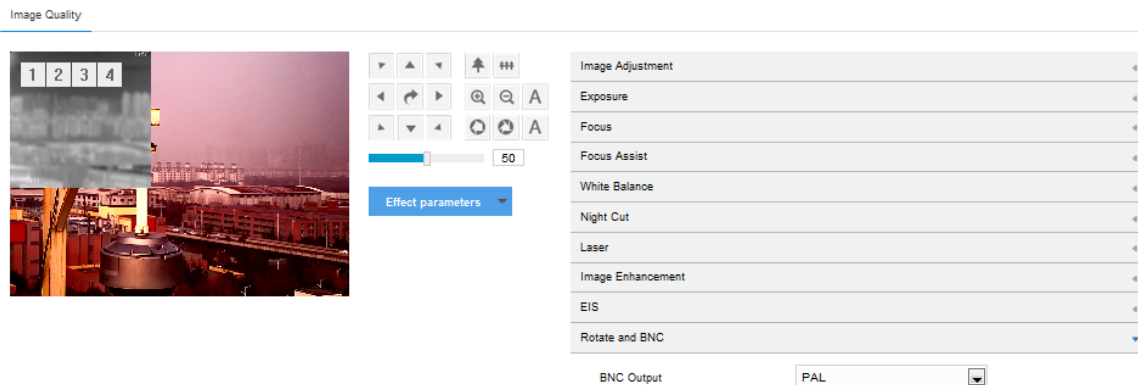


Picture 5-12 EIS

On the dropdown list of Mode, select “Enable” or “Disable” and drag the slide bar of EIS Level.

i Note: After enabling EIS, the field of view of the camera will be narrowed and the higher the EIS level is, the smaller the field of view will become.

5.1.11 Rotate and BNC



Picture 5-13 Rotate and BNC

BNC Output: For cameras supporting BNC output, it can be enabled to output analog image directly to the local output port.


- PAL: Progressive scanning to output analog image, with high definition.
- NTSC: Interlaced scanning to output analog image, with low definition.

5.1.12 Hot Point Tracking

Image Quality Hot Point Tracking

Enable

Hot Point Tracking



1 2 3 4

12.7°C

11.2°C

Navigation icons: left, right, up, down, zoom in, zoom out, auto, refresh, reset, auto.

Slider: 50

Preset No. 1

Enable Presets Not Set

Preset Name preset-1

Set Delete Load

Programme 1

Associated Preset Bits Built in Preset Bits

Select Area Full Screen

Area Setting Edit Delete All

Show Highest-Temperature Cursor Enable

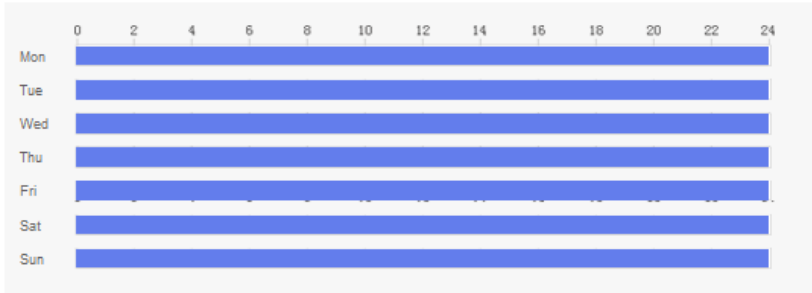
Color of Highest-Temperature Cursor White

Show Lowest-Temperature Cursor Enable

Color of Lowest-Temperature Cursor White

Duration

Delete Delete All



Day	Start	End
Mon	0	24
Tue	0	24
Wed	0	24
Thu	0	24
Fri	0	24
Sat	0	24
Sun	0	24

Save

Picture 5-14 Hot point tracking

Go to **Settings > Camera > Thermal Image > Hot Point Tracking**.

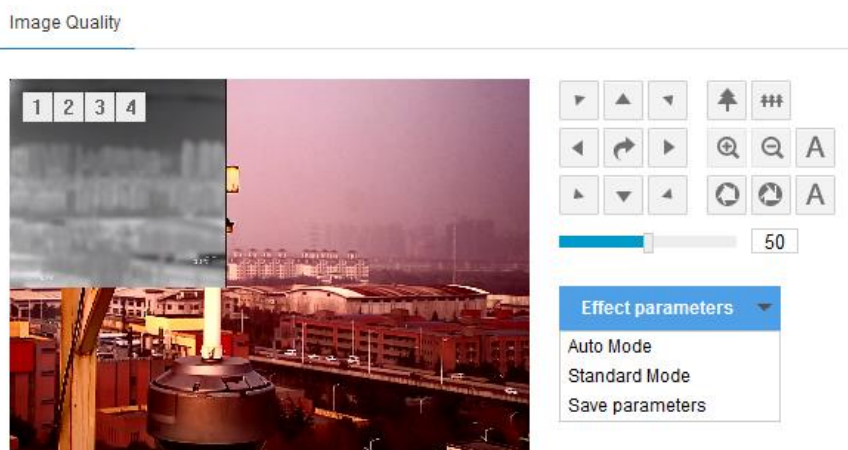
After selecting “Enable”, the camera will track hot points and display the tracking results on live view window. The black cross cursor on the thermal image means the hottest point while the white cross cursor means the coldest point.



Picture 5-15 Hot point tracking image

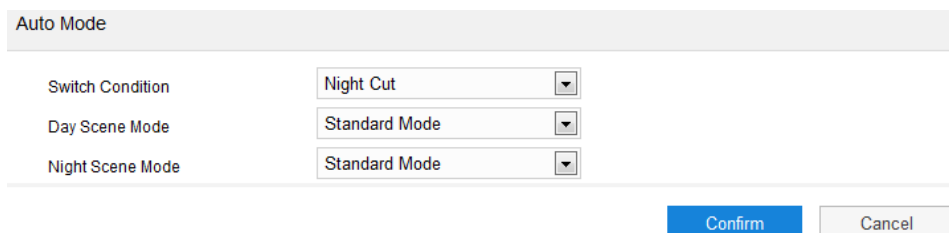
5.1.13 Effect Parameters

Effect parameters include “Auto Mode”, “Standard Mode” and “Save Parameters”.



Picture 5-16 Effect parameters

- Auto Mode: Select “Auto Mode” and configure the switch conditions on the popup interface, options including “Night Cut” and “Time Schedule”. If selecting the former, configure day scene mode and night scene mode; if selecting the latter, configure the start time and end time of switching.



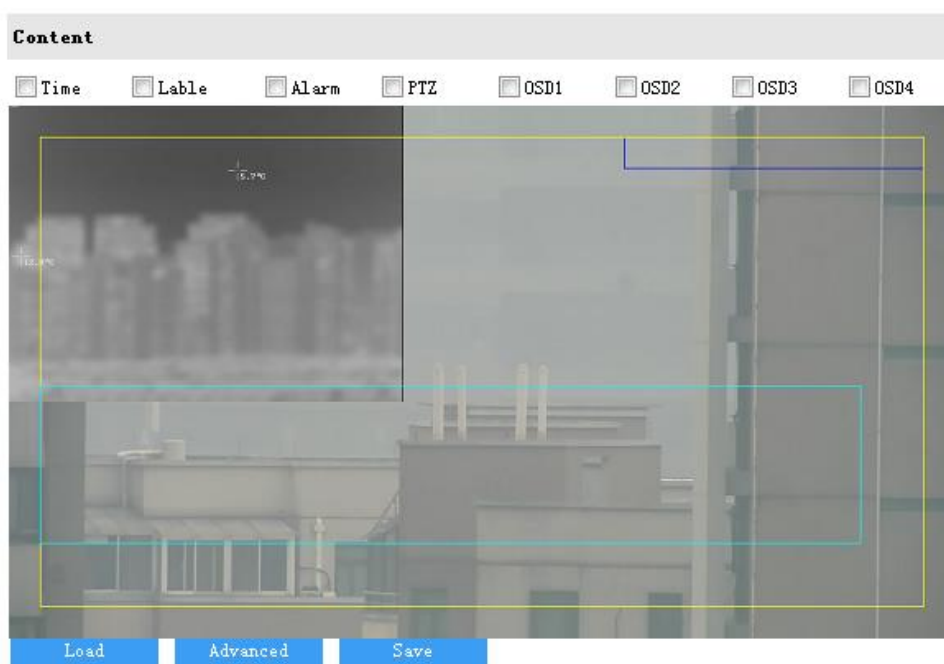
Picture 5-17 Auto mode

- Standard Mode: Select "Standard Mode" and all parameters will restore to defaults.
- Save Parameters: Select "Save Parameters" and enter "Scene Name" on the popup interface and click "OK". Then all the configured parameters will be saved under the scene name and will show as a mode option on the dropdown list of "Effect Parameters" for future use.

5.2 OSD

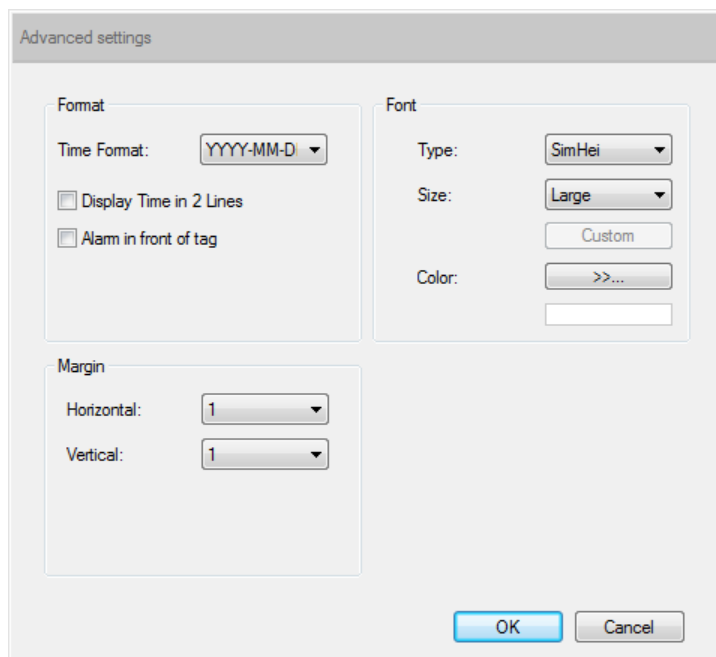
On OSD interface, you can configure OSD text on the surveillance window. Configuration steps are as follows:

- 1) Go to **Settings > Camera > OSD**;



Picture 5-18 OSD

- 2) Select options in "Content" according to requirements and preview the effect in the window below, options including "Time", "Label", "Alarm", "PTZ" and "OSD";
- 3) Click "**Advanced**" to set "Format", "Font" and "Margin";
 - In format, you can set "Time Format", "Display time in 2 lines" and "Alarm in front of tag";
 - In font, you can set font "Type", "Size" and "Color";
 - In margin, you can adjust the distance between OSD border and image border, i.e. the distance from the yellow frame to the image border;



Picture 5-19 Advanced setting

- 4) Edit OSD texts: select the checkbox to show the content, double click the OSD textbox and input characters on the popup interface. In "Content Type", select "Static" or "Magnification";
 - When selecting static characters, enter the characters in the textbox below and click "OK" to show it on the image.
 - When selecting magnification, click "OK" and the image will display the content in the set zoom ratio.
- 5) Edit OSD positions: select the OSD in the window with mouse and drag to change its position. The dark blue box and the light blue box can move freely in the yellow box and they can even overlap with each other. The time, label and alarm OSDs in the dark blue box move with the box; while the custom OSDs and PTZ OSD in the light blue box move freely in the light blue box and the light blue box can be downsized within the yellow box up to actual request;
- 6) Load font: Click "**Load**" to configure the OSD font conveniently. Options include "Default Font", "Large Font", "Medium Font" and "Small Font";
- 7) Click "**Save**" to validate setting.



Note:

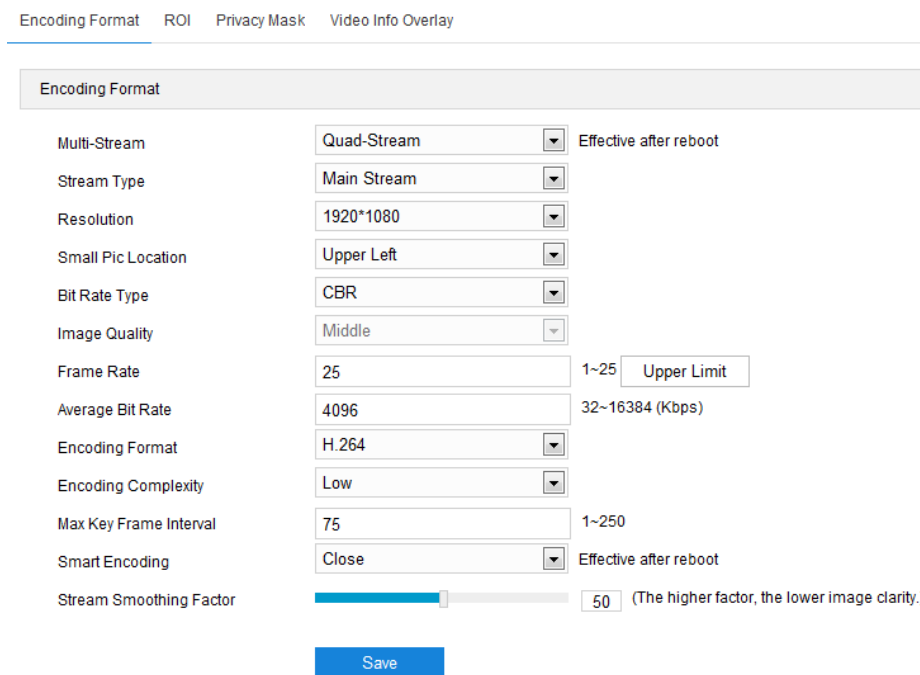
- ◆ The OSD box size changes with the font size, and the sizes of dark blue and light blue boxes change with the sizes of OSD boxes.
- ◆ A number, an English letter or a punctuation mark occupies one character.
- ◆ You can load "Default Font", "Large Font", "Medium Font" or "Small Font". Then edit content and position according to the above steps.

5.3 Video

Go to **Settings > Camera > Video** and configure Encoding Format, ROI, Privacy Mask and Video Info Overlay.

5.3.1 Encoding Format

Go to **Settings > Camera > Video > Encoding Format** and configure parameters of stream type, resolution, bit rate type and etc.



Picture 5-20 Encoding Format

- Multi-Stream: It means the same video source is encoded in several streams with different resolutions. This parameter can be configured according to actual request and the setting will be validated after reboot.
- Stream Type: Configure the resolution and bitrate of main or secondary stream. The main stream is the HD composite image of thermal image and visible image; the secondary stream

is the HD visible image; the third stream is the visible image and the fourth image is the thermal image.

- Resolution: According to the requirements of image quality by user, select resolution from the dropdown list. The higher the resolution is, the more bandwidth it requires.
- Bit Rate Type: Options include CBR and VBR, by which you can control stream rate. CBR is fixed bit rate while VBR means the bit rate is adaptive within the upper limit. CBR transfers stream by average bitrate with high speed compressing, but there may be mosaic on the images; while VBR adjusts bitrate automatically with slow compressing, but could ensure image sharpness under complex conditions.
- Image Quality: When selecting “VBR”, select image quality level from the dropdown list according to actual requirements. The higher the level is, the clearer the image will look.
- Frame Rate: Set the encoding frames per second. The higher the frame rate is, the more bandwidth is required and the more storage it will take.
- Average Bit Rate: Set the average bit rate for CBR.
- Encoding Format: Select according to actual requirements, options including H.264, H.265 and MJPEG.
- Encoding Complexity: Select encoding complexity level according to actual request. Under the same bitrate, the higher the complexity level is, the better quality the image will have and the bandwidth it will require. When the encoding format is MJPEG, the encoding complexity is certain to be low while when the encoding format is H.265, the encoding complexity is certain to be middle.
- Max Key Frame Interval: Configure the interval frames between two key frames, ranging 1 ~ 250. Suggest applying the default value 75. The larger the value is, the less fluctuation of the stream there will be and the worse the image will be, vice versa.
- Smart Encoding: Enabling “Smart Encoding” will reduce the frame rate. When enabling Smart Encoding under low bit rate, the image quality will be improved. Please select according to actual request. It takes effect after reboot.



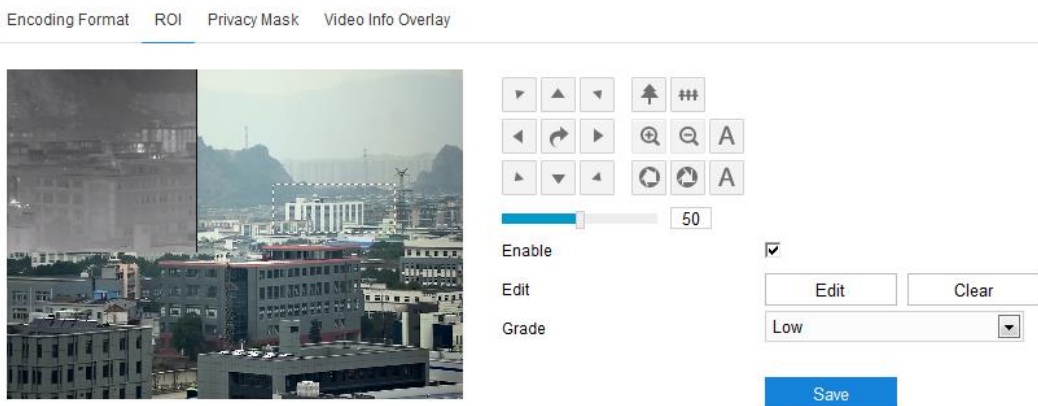
Note:

- ◆ The parameter of Image Quality is enabled only when “VBR” is selected and it will remain “Middle” when “CBR” is selected.
- ◆ Different encoding formats have different levels of encoding complexity.
- ◆ The higher the Encoding Complexity is, the more the stream will be compressed. In this way it will relieve bandwidth restriction somehow, but meanwhile it will also occupy the CPU resource of more devices. Suggest using the default level.
- ◆ After enabling Smart Encoding, some functions will be disabled, such as ROI and Max Key Frame Interval.

5.3.2 ROI

ROI means Region of Interest. The camera only encodes specific area of interest to improve image quality of this area while at the cost of decreasing the image quality outside this area. It not only ensures the image quality of ROI area, but also reduces the bit rate. Configuration steps are as follows:

- 1) Go to **Settings > Camera > Video > ROI**;



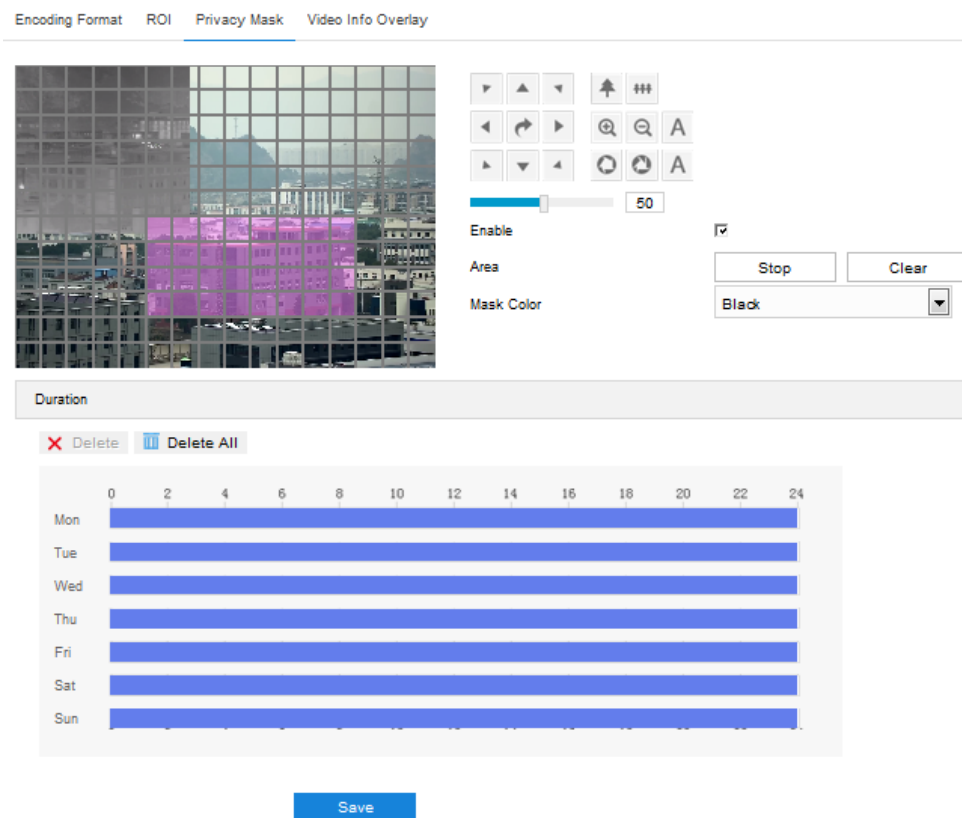
Picture 5-21 ROI

- 2) Select “Enable” to enable ROI function;
- 3) Click “Edit” and drag an area from the left window as the clipping area. Select encoding grade from the dropdown list. Click “Clear” to clear edition and reset area;
- 4) Click “Save” to validate setting.

5.3.3 Privacy Mask

Privacy mask is to mask sensitive and private part of the image so as to keep sensitive information private. Configuration steps are as follows:

- 1) Go to **Settings > Camera > Video > Privacy Mask**;




Picture 5-22 Privacy mask

- 2) Select "Enable" to enable privacy mask;
- 3) Click "Edit", and the image is divided into 16 columns and 12 rows of small squares. Click any square and drag an area toward lower right, then this area is the privacy mask detection area. Click "Clear" to reset the area;
- 4) Select a color from the dropdown list of "Mask Color";
- 5) Configure arming duration. The default arming duration is 24 hours in blue bars, or you can customize the durations;



Picture 5-23 Arming durations

- Set duration: Select a day of the week and click the white bar behind it and drag mouse to make a blue bar as the task duration of the day. Select the duration and there will be a window showing the start time and end time of the duration, and you can edit the time duration more accurate. Click "Save" to validate setting. There can be multiple durations (max 10) on one day and different durations cannot overlap with each other.
- Copy: Click the copy icon  behind the duration to copy the duration setting of that day to another day or many other days.
- Delete: Click "Delete All" on the top of the duration bars to clear all durations. Click one and click "Delete" on the popup window or on the top of the duration bars to remove this duration.

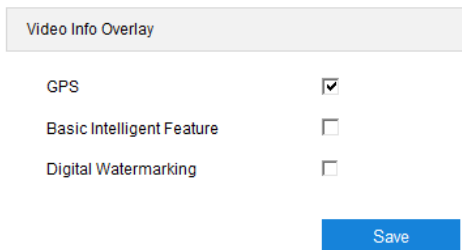
6) Click "Save" to validate the settings.



Note: A camera supports maximum 4 Privacy Mask areas.

5.3.4 Video Info Overlay

Go to **Settings > Camera > Video > Video Info Overlay**, and composite basic intelligent feature and digital watermarking into the surveillance image.



Picture 5-24 Video info overlay

- **GPS:** Select **GPS** to show camera coordinates in the image.
- **Basic Intelligent Feature:** After configuring intelligent functions (on the interface of **Settings > Event > Intelligent Function**), select this option and select "Rule Information Display" in **Settings > Local Setting**, then the intelligent area(s) will be displayed in the live view window.
- **Digital Watermarking:** Select **Digital Watermarking** to show digital watermarking in the videos. It is used to protect the video recordings and avoid tampering.

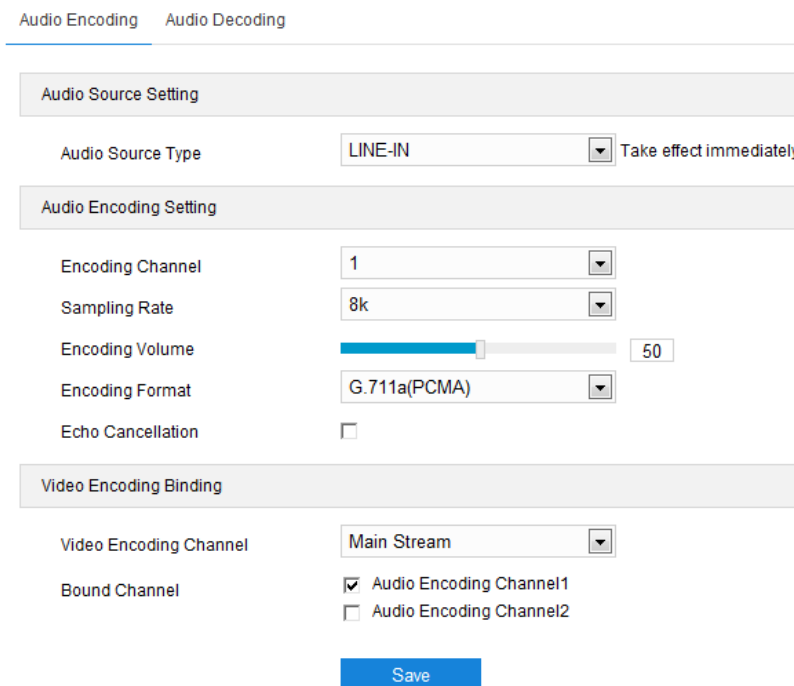
Click "Save" to validate settings.

5.4 Audio

Go to **Settings > Camera > Audio**, and configure audio encoding and audio decoding.

5.4.1 Audio Encoding

Go to **Settings > Camera > Audio > Audio Encoding**, and configure Audio Source Setting and Audio Encoding Setting.



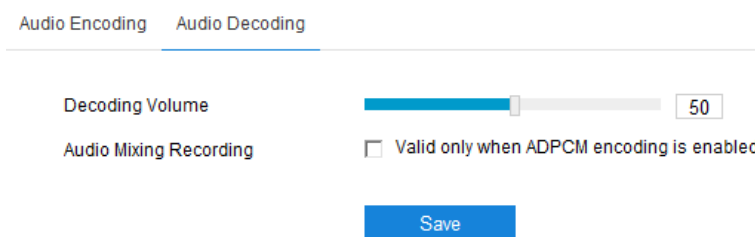
Picture 5-25 Audio encoding

- Audio Source Setting
 - Audio Source Type: the audio input method, options including LINE-IN or MIC-IN. You can select according to actual requests. LINE-IN means linear input while MIC-IN means microphone input.
- Audio Encoding Setting
 - Sampling Rate: It means the sampling times to sound signals by the audio-recording device in 1 second. The higher the sampling rate is, the more real and natural the sound reproduction will be.
 - Encoding Volume: Drag the slide bar to adjust audio encoding volume, i.e. audio input volume. The larger the value is, the higher the voice will be.
 - Encoding Format: Select audio encoding format from the dropdown list, by default G.711 a (PCMA).
 - Echo Cancellation: Select the checkbox to cancel noises in the input audio and to improve the audio quality. To enable this function, go to the advanced configuration interface, referring to chapter 8.6.1.
- Video Encoding Binding
 - Video Encoding Channel: Select video encoding channel from the dropdown list according to the supported streams of the device.
 - Bound Channel: Bind the audio encoding channel with corresponding video encoding channel and select according to the capacity of the device. When selecting one channel, you can hear the sound of this channel through the platform; when selecting both channels at the same time, you will hear mixed sound.

Click "Save" to validate settings.


5.4.2 Audio Decoding

Go to **Settings > Camera > Audio > Audio Decoding**, and configure audio decoding.



Picture 5-26 Audio decoding


- Decoding Volume: i.e. audio output volume, drag the slide bar to adjust audio decoding volume.
- Audio Mixing Recording: Select the checkbox to enable audio mixing recording function, which is valid only when “ADPCM” is selected.

 Note: When “Audio Mixing Recording” is disabled, there will be only heard sound without calling sound during video recording; when it is enabled, there will be both heard and calling sound during video recording.

Click “Save” to validate settings.

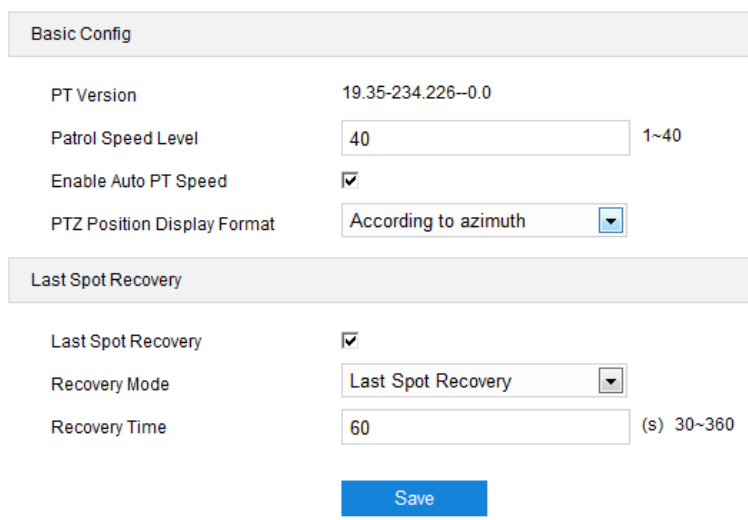
5.5 PTZ

The camera is equipped with digital PTZ, which is suitable for wide range surveillance and enlarges the field of view. User can control PTZ manually through the web client on the live view interface. Details can be referred to in chapter 3.1.1.

 Note: The PTZ holder will stop rotation when reaching its pan limits. Please strictly follow the *Quick Start Guide* during installation so that the functions of preset loading and path patrol will work normally.

5.5.1 Basic Configuration

Go to **Settings > Camera > PTZ > Basic Config**, and configure basic parameters of the PTZ, as shown in the following picture.



The screenshot shows a web interface for PTZ configuration. It is divided into two sections: 'Basic Config' and 'Last Spot Recovery'. The 'Basic Config' section includes: 'PT Version' (19.35-234.226--0.0), 'Patrol Speed Level' (input field with 40, range 1~40), 'Enable Auto PT Speed' (checked checkbox), and 'PTZ Position Display Format' (dropdown menu with 'According to azimuth' selected). The 'Last Spot Recovery' section includes: 'Last Spot Recovery' (checked checkbox), 'Recovery Mode' (dropdown menu with 'Last Spot Recovery' selected), and 'Recovery Time' (input field with 60, range (s) 30~360). A blue 'Save' button is located at the bottom of the form.

Picture 5-27 Basic Configuration

➤ Basic Config

- PT Version: Display the version of current PT.
- Patrol Speed Level: Configure speed level (1 ~ 40) during patrol. The larger the value is, the faster it patrols, vice versa.
- Enable Auto PT Speed: Select the checkbox to enable. Under different fields of view, the PT will rotate by the same linear speed. When it is zoomed out, the PT will reduce its linear speed; zoomed in, increase.
- Preset Video Freeze: Select the checkbox to enable. When the PT rotates from one preset to another, the video freezes at the image of the first preset and switches to that of the second preset when arriving at it without showing the images during the move.
- PTZ Position Display Format: Options include "According to azimuth" and "Display According to PT position". Go to Settings > Camera > OSD and select PTZ; then select "According to azimuth" on this interface, and the PT position will show on the live view interface in azimuth format; when selecting "Display According to PT position", the PT position will show on the live view interface in PT position format.

➤ Last Spot Recovery

Configure the rotation position of the PTZ after recovering from power-off. Configuration steps are as follows:

- 1) Select the checkbox to enable Last Spot Recovery;
- 2) Select recovery mode. Options include "Last Spot Recovery" and "Load Preset When Power On";
 - If selecting "Last Spot Recovery", the PT will load to the last position before powering off automatically when it is powered again. Configure recovery time;
 - If selecting "Load Preset When Power On", the PT will load to the selected preset directly. Configure preset No.
- 3) Recovery Time: Configure the recovery time when the power is off, ranging 30 ~ 360s, by default 60s.



Note:

- ◆ When the time for which the PT stops at a position before powering off exceeds the set Recovery Time, it will return to this position automatically after powering on again. If the

time is shorter than the set Recovery Time, the PT will return to the previous position of the one when it is powered off.

- ◆ When selecting “Load Preset When Power On” as the recovery mode, “Recovery Time” will change into “Preset”. Select a preset number from the dropdown list for the PT to load to when it recovers from power-off.

Click “Save” to validate settings.

5.5.2 Guard Tour

Guard Tour means the dome camera can perform preset operations if not receiving any command in a specific period of time (i.e. the Waiting Time on the interface). Configuration steps are as follows:

- 1) Go to **Settings > Camera > PTZ > Guard Tour**;

Enable	<input checked="" type="checkbox"/>	
Guard Tour		<div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">Load Preset ▼</div>
Waiting Time	<div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">1</div>	(min) 1~255
Preset No.	<div style="border: 1px solid #ccc; padding: 2px; display: inline-block;">1 ▼</div>	
<div style="background-color: #007bff; color: white; padding: 5px 15px; border: none; cursor: pointer;">Save</div>		

Picture 5-28 Guard Tour

- 2) Select “**Enable**”;
- 3) Select a mode from the dropdown list of “Guard Tour”;
 - Pan Mode: Camera rotates in pan direction from 0° to 360° automatically. The Waiting Time is configurable.
 - Load Preset: After user stops operating on the camera for a certain period of time, the camera will return to a preset position automatically. The Waiting Time and Preset No. are configurable. Please refer to chapter 5.5.3.
 - Path Mode: After user stops operating on the camera for a certain period of time, camera will enable Path Mode automatically. The Waiting Time is configurable. Please refer to chapter 5.5.5.
- 4) Set “Waiting Time” according to the mode.

- 5) Click **“Save”** to validate setting.

5.5.3 Preset Position

Preset position includes information of PT position and lens focal length. It is set by user and can be loaded, edited or deleted anytime. The maximum number of presets allowed to be set is 512.

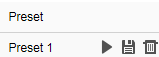
Configuration steps are as follows:

- 1) Go to **Settings > Camera > PTZ > Preset;**



Picture 5-29 Preset

- 2) Adjust PTZ to expected position, and configure the focal length, aperture and etc.;
- 3) Select **Preset No.** from the drop-down list and input **Preset Name**;
- 4) Click **“Set”** to finish preset setting. User can set different preset positions;
- 5) Click **“Load”** to load the expected preset;
- 6) Click **“Delete”** to remove the preset;

- 7) In the preset part of the **Live View** interface, user can also select a preset  to load, save or delete. Details can be referred to in chapter 3.1.2.

5.5.4 Restricted Patrol

Restricted Patrol includes “Manual” and “Auto” modes. After enabling this function, user can define borders of PTZ patrol. Configuration steps are as follows:

- 1) Go to **Settings > Camera > PTZ > Restricted Patrol;**



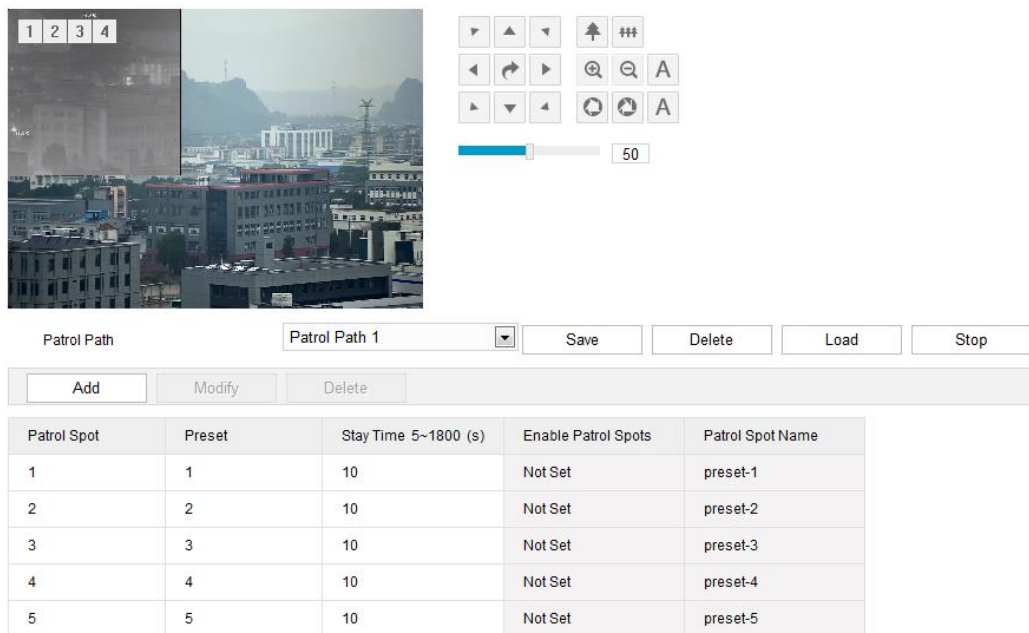
Picture 5-30 Restricted Patrol

- 2) Select “Manual” or “Auto”, adjust the PTZ to a proper position and set it as the Left Limit. Adjust the PTZ again to another position and set it as the Right Limit.
- 3) The setting takes effect immediately. To clear limits, set one position both as the left and the right limit, then the limits will be cleared.
- 4) When enabling manual mode, user can control the PTZ manually and rotate it only between the left and the right limits; when enabling auto mode, the PTZ will patrol horizontally only between the left and the right limits.

5.5.5 Path Mode

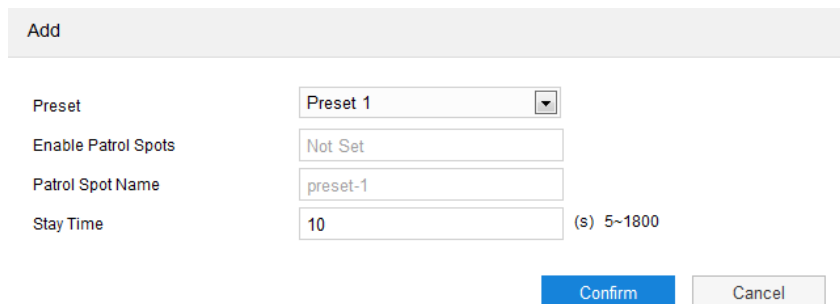
Path Mode means the camera patrols around all the valid presets on a path. After enabling this function, click any button on PTZ control to disable it. Currently, the camera supports 8 paths and the maximum allowed number of patrol spots on each path is 32 which can be selected from the 512 presets. Configuration steps are as follows:

- 1) Go to **Settings > Camera > PTZ > Path Mode**.



Picture 5-31 Path mode

- 2) Select path from the dropdown list of **Patrol Path**.
- 3) Click **“Add”**. Set Patrol Spots and Stay Time in the popup interface. The maximum allowed number of patrol spots on each path is 32 which can be selected from the 512 presets.



Picture 5-32 Add patrol point

- 4) Click **“Save”**.
- 5) Click **“Delete”**, **“Load”** or **“Stop”** to perform respective operations if necessary.

5.5.6 Scheduled Task



Enable Scheduled Task and set durations and tasks. Camera will complete the tasks within the set durations. Configuration steps are as follows:

- 1) Go to **Settings > Camera > PTZ > Scheduled Task**;

Enable




Task Recovery Time (s) 5~720

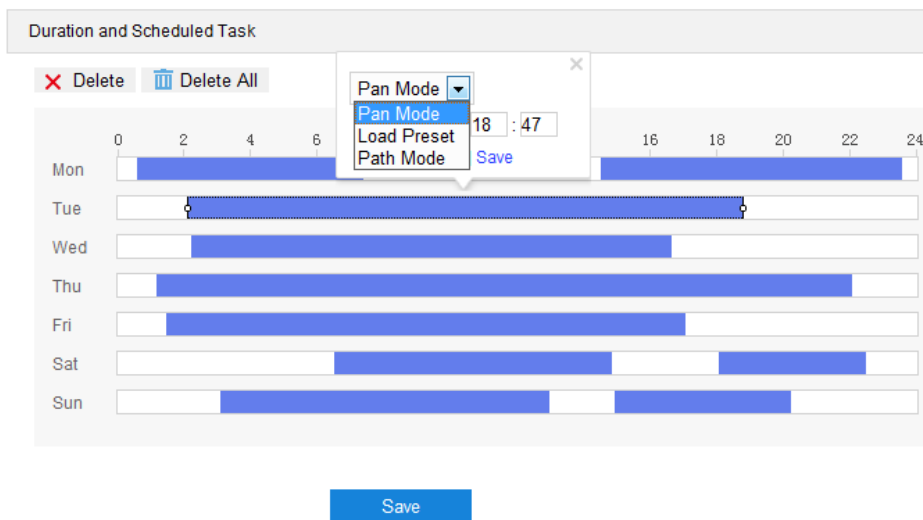
Duration and Scheduled Task

 Delete  Delete All

	0	2	4	6	8	10	12	14	16	18	20	22	24
Mon	<input type="text"/>												
Tue	<input type="text"/>												
Wed	<input type="text"/>												
Thu	<input type="text"/>												
Fri	<input type="text"/>												
Sat	<input type="text"/>												
Sun	<input type="text"/>												

Picture 5-33 Scheduled Task

- 2) Select “Enable” to enable scheduled task;
- 3) Enter “Task Recovery Time” (5~720s). Take 5s as example, if user performs other PTZ operations during the task, camera will recover the scheduled task in 5 seconds.
- 4) Configure scheduled tasks and arming durations: the default task durations are 24 hours displaying in blue bar, or user can define durations up to request. It allows maximum 10 durations on one day.
 - a) Click any point on the timeline on any day and drag mouse rightward to make a blue bar as task duration on that day;
 - b) Click the duration and a window will pop up for editing the scheduled task. Select the scheduled task from the dropdown list. Or you can edit the start time and end time otherwise. Click “Save” to finish configuration of scheduled task;
 - c) Click any free point on the timeline and configure the next duration. Different durations cannot overlap;
 - d) Click the icon  behind the timeline and the copy window will pop up. Select several weekdays or “**Select All**” and click “**Copy**” to copy the scheduled task of the duration to the selected weekdays.
 - e) Click “Delete” on the window of editing scheduled task or click  Delete below “Duration and Scheduled Task” to cancel the scheduled task. Click  Delete All below “Duration and Scheduled Task” to cancel all the scheduled tasks in one week.

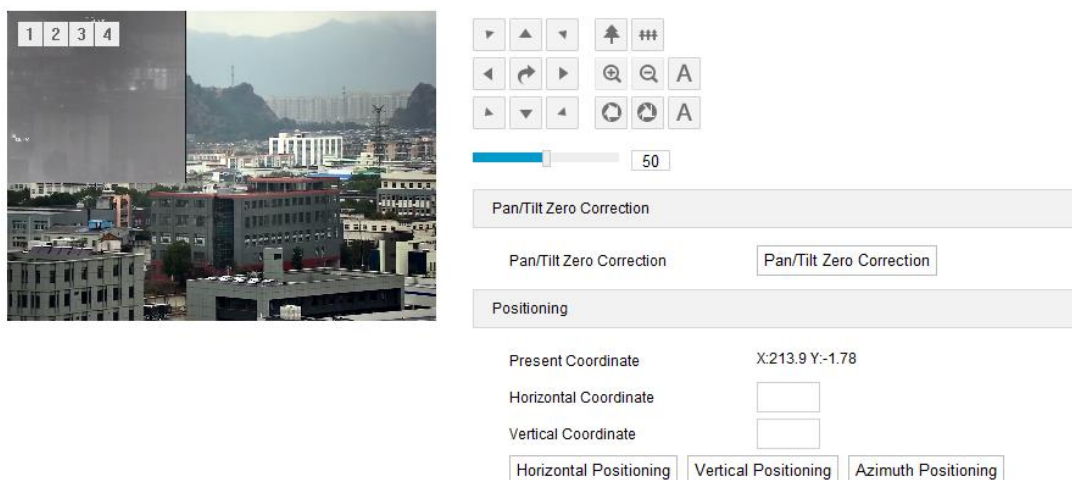


Picture 5-34 Edit scheduled task

5) Click “Save” to validate settings.

5.5.7 Positioning

Go to **Settings > Camera > PTZ > Positioning**, and configure camera positioning. Positioning means to configure the location of the camera, including its pan/tilt zero correction and positioning.



Picture 5-35 Positioning

Configuration steps are as follows:

➤ Zero Correction

When the PTZ position fails to synchronize with the positioning or user wants it to return to the zero position, zero correction can be performed. After zero correction, camera will return to the mechanical zero position automatically. Click “Pan/Tilt Zero Correction” to perform.

- Positioning
 - Present Coordinates: show the coordinates of current PTZ position.
 - Horizontal Coordinate: fill the target horizontal coordinate and click “Horizontal Positioning”, then the PTZ will rotate to the target pan position.
 - Vertical Coordinate: fill the target vertical coordinate and click “Vertical Positioning”, then the PTZ will rotate to the target tilt position.
 - Azimuth Positioning: it means the PTZ camera faces to the due north. Rotate the camera to a specific position and click “Azimuth Positioning”. Save this position and set it as the due north direction. After azimuth positioning is set, when user enables “PTZ” OSD, it will show the live direction of the camera.

5.5.8 Wiper

Go to **Settings > Camera > PTZ > Wiper** and enable wiper to clean the camera lens, options including common wiper and sprayer wiper.

- Common Wiper
 - a) Select “Common Wiper” from the dropdown list of Wiper Mode, and the wiper will brush 1 round;
 - b) Select “Enable” to start cyclic mode;
 - c) Configure duration, which lasts for 1 minute by default; configure the interval, which is 5s by default; after enabling the wiper, it will work continuously in the configured duration; unselect “Enable” or select “Sprayer Wiper” to stop it;
 - d) Click “Save” to validate settings.

Wiper Mode	Common wiper
Cyclic Mode	<input type="checkbox"/>
Enable	<input type="checkbox"/>
Duration	0 Hour 1 Minute
Interval	5 (s) 2~300
<input type="button" value="Save"/>	

Picture 5-36 Common wiper

- **Sprayer Wiper**
 - a) Select “Sprayer Wiper” from the dropdown list of Wiper Mode, and the wiper will sprayer water and brush 2 rounds;
 - b) Select “Enable” to start scheduling mode;
 - c) Configure scheduling cycle, which is “Everyday” by default; configure scheduling time, which is 8:00 by default; after enabling the wiper, it will spray and brush at the scheduled time;
 - d) Click “Save” to validate settings.

Wiper Mode	Sprayer wiper
Scheduling Mode	
Enable	<input type="checkbox"/>
Scheduling cycle	Everyday
Scheduling time	08:00:00
<input type="button" value="Save"/>	

Picture 5-37 Sprayer wiper

6. Event

6.1 Intelligent Function

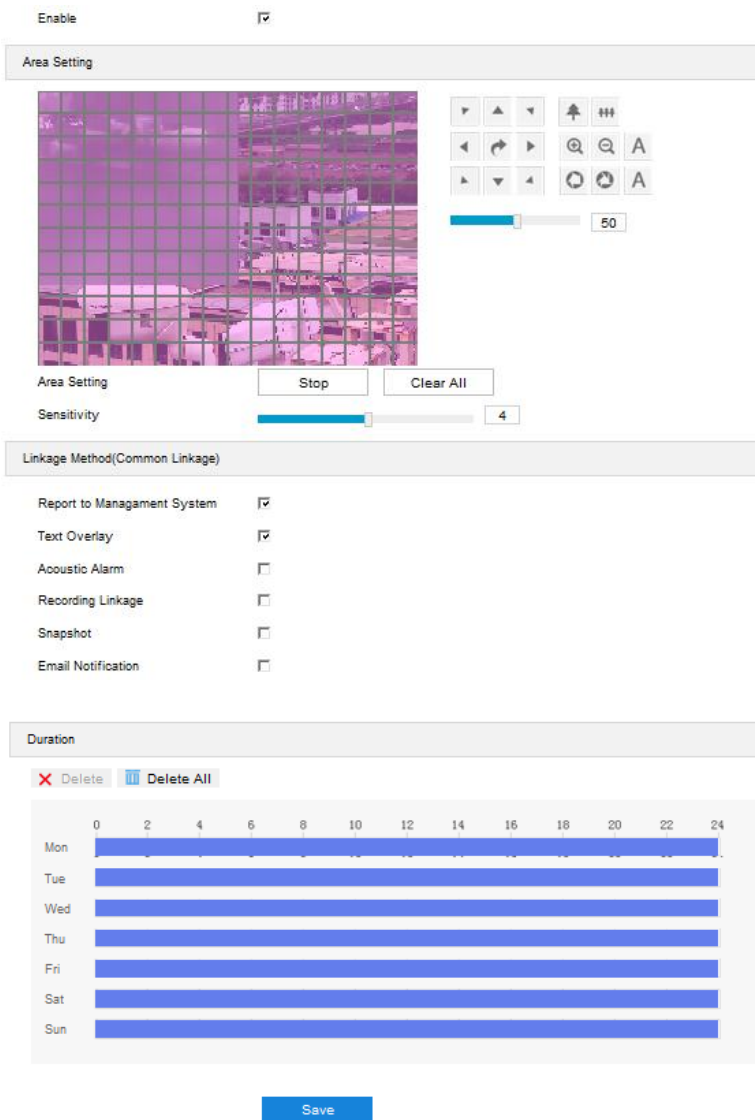
Go to **Settings > Event > Intelligent Function**, and configure the intelligent functions of the camera.

The intelligent functions of a camera include motion detection, video blocked, guard line, defocus, scene change, entry guard area, exit guard area, enter guard area, object left, object removal, gathering, audio surge, fire detection and temperature. In this chapter, we will introduce the configuration steps of each event one by one.

6.1.1 Motion Detection

Motion detection is to detect if there is any moving object in specific areas during certain periods of time. Once the moving object exceeds the defined sensitivity, the system will start video recording or trigger an alarm according to the linkage method set by user. Configuration steps are as follows:

- 1) Go to **Settings > Event > Intelligent Function > Motion Detection**;
- 2) Select **"Enable"**;
- 3) Adjust the surveillance scene through the PTZ;
- 4) Set motion detection area, the default being full area detection. Click **"Clear All"** and then **"Edit"** and the image will be divided into 16 columns and 12 lines of small squares. Click a square, drag toward lower right and click **"Stop"**. Then the area is the detected area and it turns purple red. A camera can support max 4 motion detection areas at the same time. Draw an area toward upper left that contains the defined area, or click the defined squares one by one to clear setting, or click **"Clear All"** to clear setting;
- 5) Drag the slide bar to adjust the **"Sensitivity"** of motion detection. The higher the sensitivity is, the easier it will trigger an alarm;
- 6) Select linkage type(s), which is/are the alarm output method(s) when motion detection triggers an alarm;





Picture 6-1 Motion detection

- 7) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations; the maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-2 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

 Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

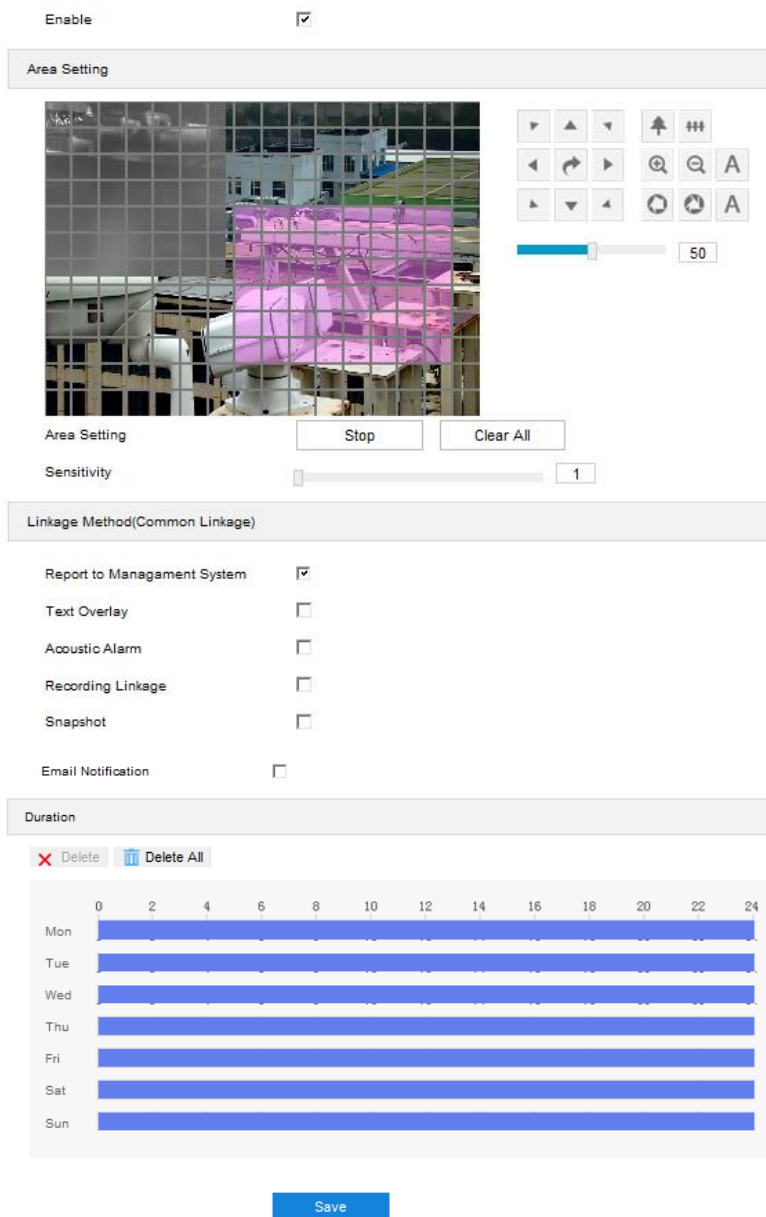
- 8) Click "**Save**" to validate settings.

6.1.2 Video Blocked

When the preset area is blocked intentionally and affects normal surveillance of this area, an alarm will be triggered. After receiving the alarm, user can find the cause of video blocked quickly and recover the surveillance scene. Configuration steps are as follows:

- 1) Go to **Settings > Event > Intelligent Function > Video Blocked**;
- 2) Select "**Enable**";
- 3) Adjust the surveillance scene through the PTZ;
- 4) Set video blocked area, the default being full area detection. Click "**Clear All**" and then "**Edit**" and the image will be divided into 16 columns and 12 lines of small squares. Click a square, drag toward lower right and click "**Stop**". Then the area is the detected area and it turns purple red. A camera can support max 1 video blocked area at the same time;
- 5) Drag the slide bar to adjust **Sensitivity**; the higher the sensitivity is, the easier it will trigger an alarm;

- 6) Select linkage type(s), which is/are the alarm output method(s) when video blocked triggers an alarm;





Picture 6-3 Video blocked

- 7) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations; the maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-4 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

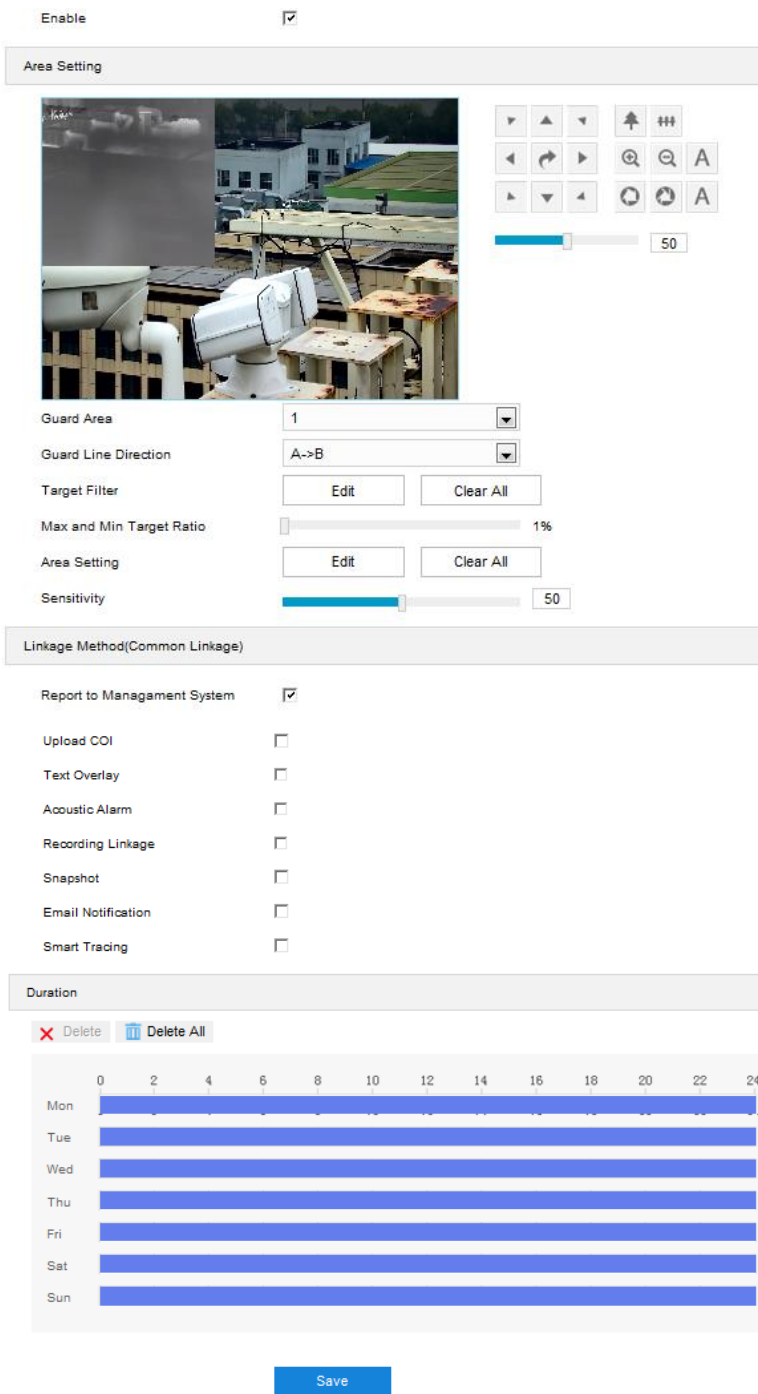
 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

8) Click "**Save**" to validate settings.

6.1.3 Guard Line

Guard line is to trigger an alarm once there is any object entering the guard line. Configuration steps are as follows:

- 1) Go to **Settings > Event > Intelligent Function > Guard Line;**



Picture 6-5 Guard line


- 2) Select “**Enable**”;
- 3) Adjust the surveillance scene through the PTZ;
- 4) Select a number from the dropdown list of Guard Area, which can be set one by one and takes effect after each time of saving. It supports max 4 guard lines;
- 5) Select a direction from the dropdown list of Guard Line Direction, options including "A->", "B->" and "A->&&B->"; "A->" means only when the object moves from A to B the system will trigger an alarm, "B->" meaning only when objects move from B to A the system will trigger an alarm,


- while "A->&&B->" meaning the system will trigger an alarm when object move from A to B and B to A;
- 6) Set "Target Filter", i.e. target area. Click "Edit" and drag the mouse in the scene to draw a rectangle. Click "Stop" after finishing and drag the slide bar of "Max and Min Target Ratio" (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard line(s);
 - 7) Area Setting: to set guard lines. Click "Edit" and drag the mouse in the scene to draw a guard line. User can click its starting or end point to adjust its length and angle, click "Stop" to stop editing;
 - 8) Drag the slide bar of "Sensitivity" to set the guard line's sensitivity to moving objects; the higher the sensitivity is, the easier it will trigger an alarm;
 - 9) Select linkage type(s), which is/are the alarm output method(s) when guard line triggers an alarm;
 - 10) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-6 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "Save" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.

- Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

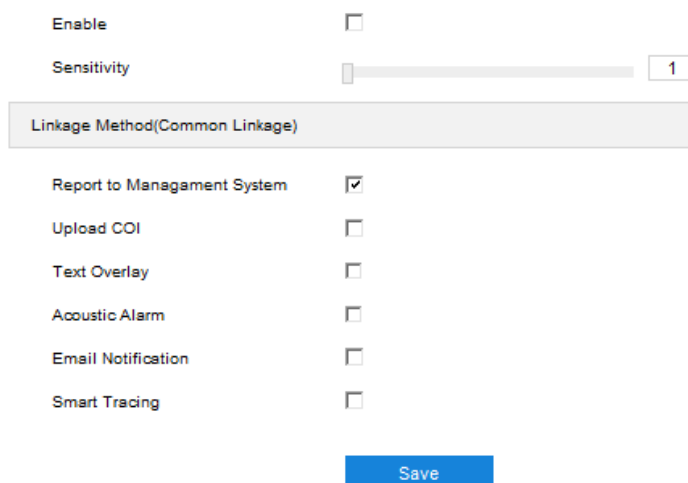
 Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

11) Click "**Save**" to validate settings.

6.1.4 Defocus

Defocus detection is to detect if the surveillance image is out of focus. The camera will judge if it is necessary to trigger an alarm. Configuration steps are as follows:

1) Go to **Settings > Event > Intelligent Function > Defocus**;



Enable	<input type="checkbox"/>
Sensitivity	<input type="text" value="1"/>
Linkage Method(Common Linkage)	
Report to Management System	<input checked="" type="checkbox"/>
Upload COI	<input type="checkbox"/>
Text Overlay	<input type="checkbox"/>
Acoustic Alarm	<input type="checkbox"/>
Email Notification	<input type="checkbox"/>
Smart Tracing	<input type="checkbox"/>

Save

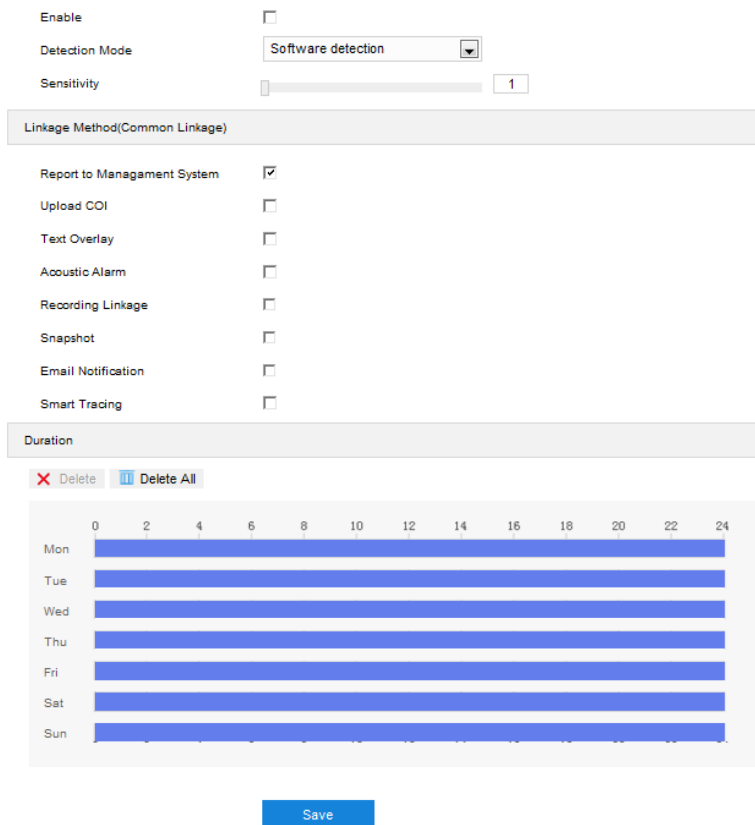
Picture 6-7 Defocus

- 2) Select "Enable";
- 3) Drag the slide bar of "Sensitivity"; the higher the sensitivity is, the easier it will trigger an alarm;
- 4) Select linkage type(s), which is/are the alarm output method(s) when defocus triggers an alarm;
- 5) Click "**Save**" to validate settings.

6.1.5 Scene Change

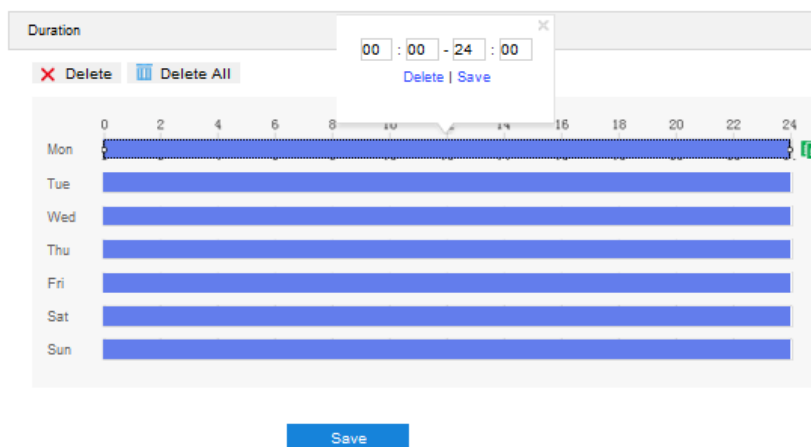
Scene change detection is to detect if the surveillance scene changes. The camera will judge if it is necessary to trigger an alarm. Configuration steps are as follows:

- 1) Go to **Settings > Event > Intelligent Function > Scene Change**;





Picture 6-8 Scene change

- 2) Select "Enable";
- 3) Select a detection mode from the dropdown list and drag the slide bar of "Sensitivity"; the higher the sensitivity is, the easier it will trigger an alarm;
- 4) Select linkage type(s), which is/are the alarm output method(s) when scene change triggers an alarm;
- 5) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-9 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

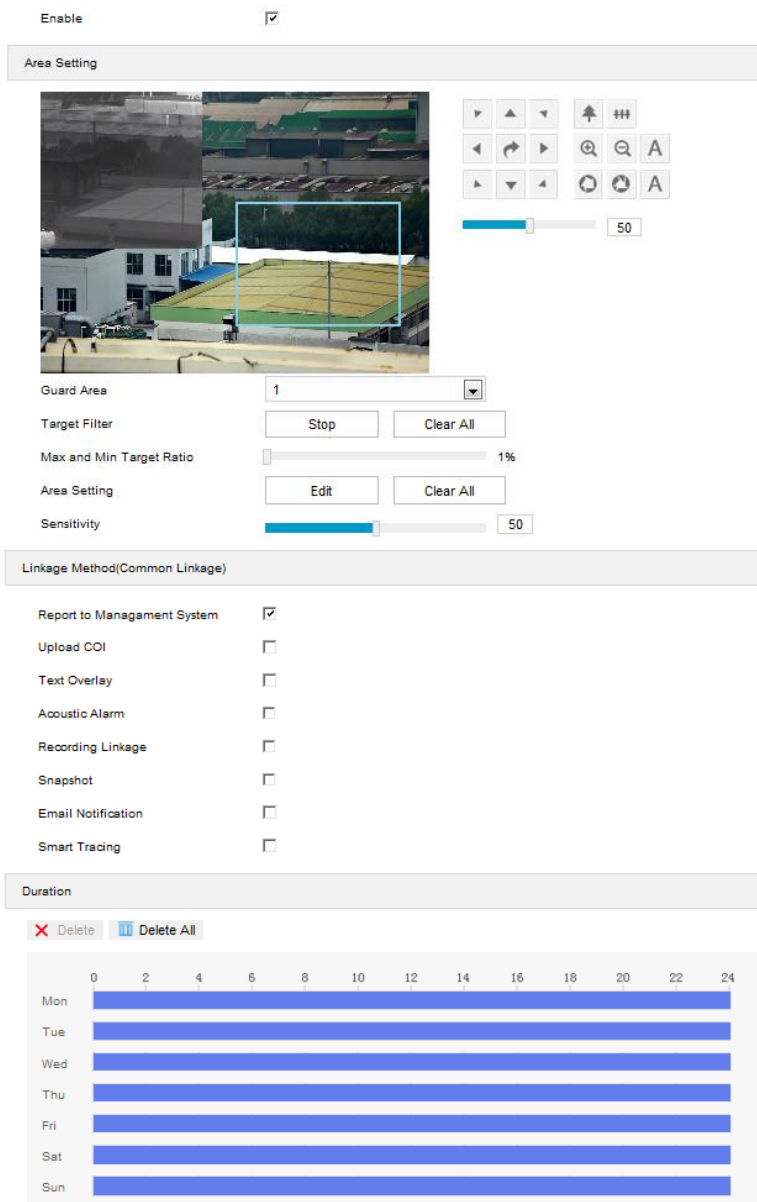
 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

- 6) Click "**Save**" to validate settings.

6.1.6 Entry Guard Area

The function is to detect if there is anything entering the set guard area, and the camera will judge if it is necessary to trigger an alarm. Configuration steps are as follows:

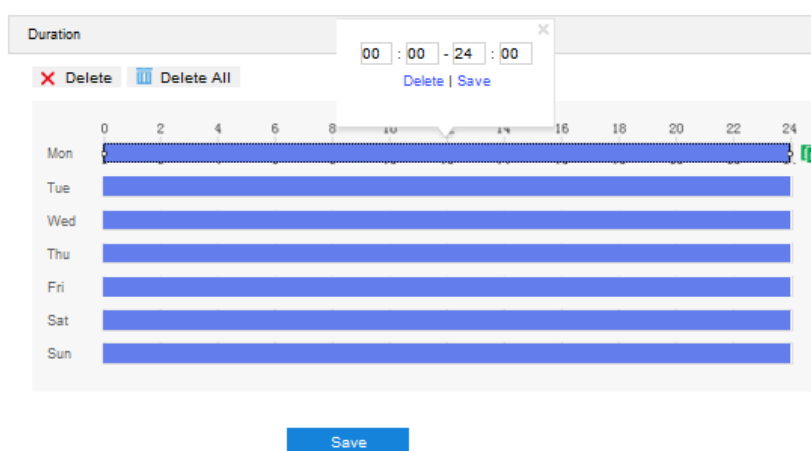
- 1) Go to **Settings > Event > Intelligent Function > Entry Guard Area**;




Picture 6-10 Entry guard area

- 2) Select "Enable";
- 3) Adjust the surveillance scene through the PTZ;
- 4) Select a number from the dropdown list of **Guard Area** and user can set only one area at one time. After saving it, user can set another and max 4 guard areas can be set;
- 5) **Target Filter**: to set target area. Click "**Edit**" and drag the mouse in the scene to draw a rectangle. Click "**Stop**" after finishing and drag the slide bar of "Max and Min Target Ratio" (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);

- 6) **Area Setting:** to set guard area. Click “**Edit**” and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or ending point to close the area. Click “**Stop**” to finish editing;
- 7) Drag the slide bar of “**Sensitivity**”; the higher the sensitivity is, the easier it will trigger an alarm;
- 8) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;
- 9) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-11 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any white square, left-click and drag to edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

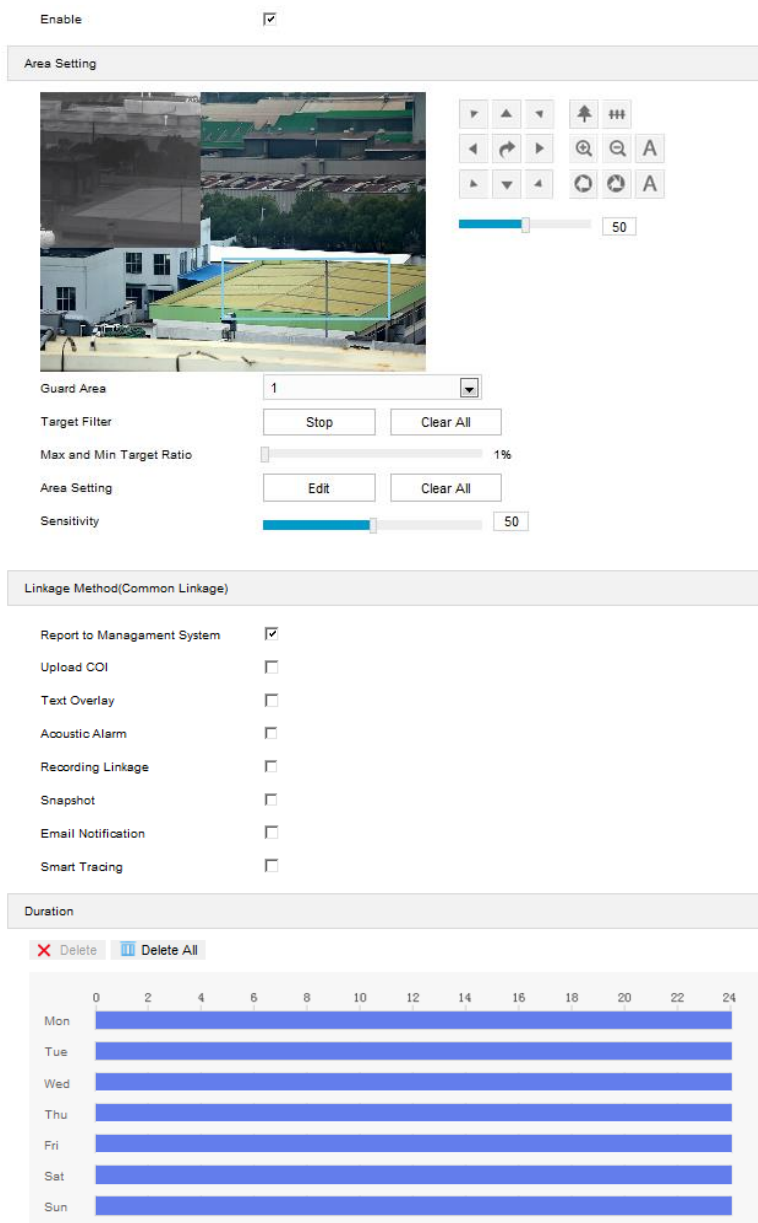
i Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

10) Click "Save" to validate settings.

6.1.7 Exit Guard Area

The function is to detect if there is anything leaving the set guard area, and the camera will judge if it is necessary to trigger an alarm. Configuration steps are as follows:

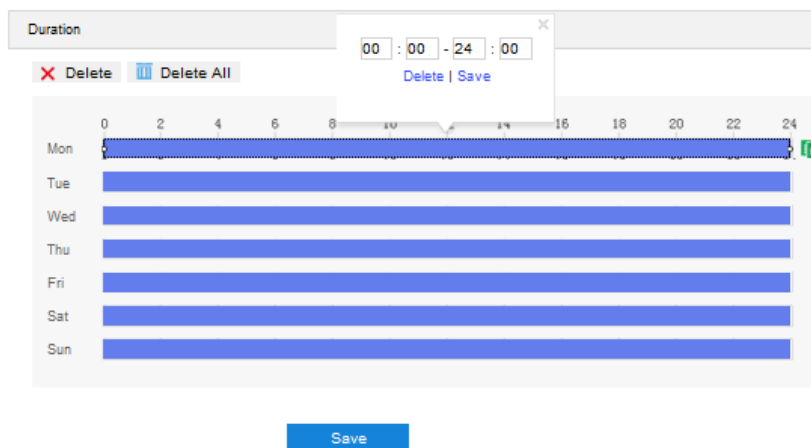
1) Go to **Settings > Event > Intelligent Function > Exit Guard Area**;



Picture 6-12 Exit guard area


2) Select "Enable";


- 3) Adjust the surveillance scene through the PTZ;
- 4) Select a number from the dropdown list of **Guard Area** and user can set only one area at one time. After saving it, user can set another and max 4 guard areas can be set;
- 5) **Target Filter**: to set target area. Click **"Edit"** and drag the mouse in the scene to draw a rectangle. Click **"Stop"** after finishing and drag the slide bar of **"Max and Min Target Ratio"** (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);
- 6) **Area Setting**: to set guard area. Click **"Edit"** and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or ending point to close the area. Click **"Stop"** to finish editing;
- 7) Drag the slide bar of **"Sensitivity"**; the higher the sensitivity is, the easier it will trigger an alarm;
- 8) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;
- 9) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-13 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click **"Save"** to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.

- Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

 Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

10) Click "**Save**" to validate settings.

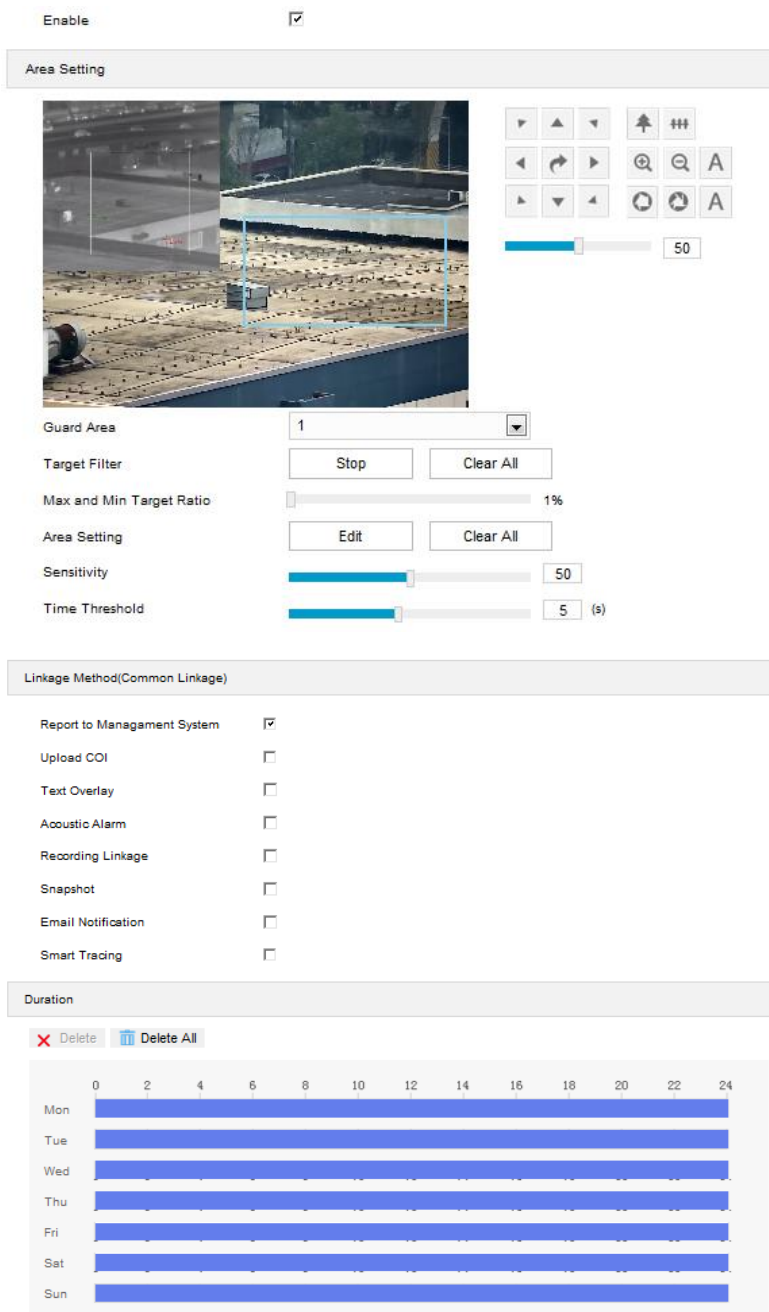
6.1.8 Enter Guard Area

The function is to detect if there is anything entering the set guard area and staying for a period of time reaching the set threshold. The camera will judge if it is necessary to trigger an alarm.

Configuration steps are as follows:

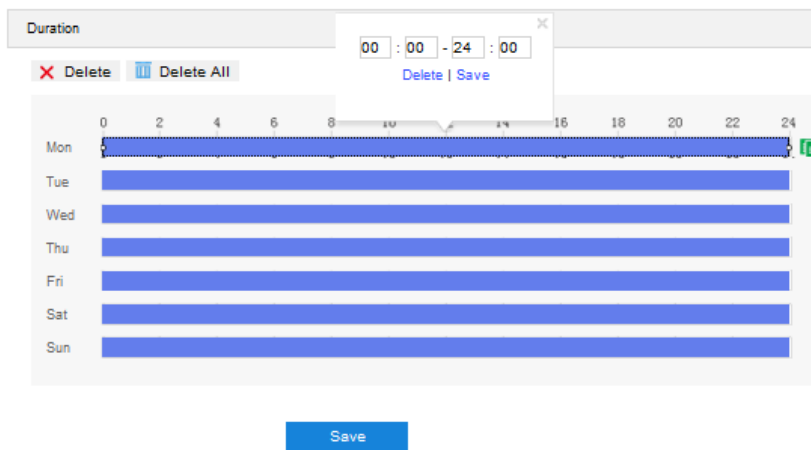
- 1) Go to **Settings > Event > Intelligent Function > Enter Guard Area**;
- 2) Select "Enable";
- 3) Adjust the surveillance scene through the PTZ;
- 4) Select a number from the dropdown list of **Guard Area** and user can set only one area at one time. After saving it, user can set another and max 4 areas can be set;
- 5) **Target Filter**: to set target area. Click "**Edit**" and drag the mouse in the scene to draw a rectangle. Click "**Stop**" after finishing and drag the slide bar of "Max and Min Target Ratio" (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);
- 6) **Area Setting**: to set guard area. Click "**Edit**" and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or end point to close the area. Click "Stop" to finish editing;
- 7) Drag the slide bar of "Sensitivity"; the higher the sensitivity is, the easier it will trigger an alarm

- 8) Drag the slide bar of "Time Threshold", i.e. the maximum allowed time for the object to stay in the area. For example, if it is set 5 s, when there is an object entering the guard area and stays for 5 s, it will trigger an alarm;
- 9) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;





Picture 6-14 Enter guard area

- 10) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-15 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

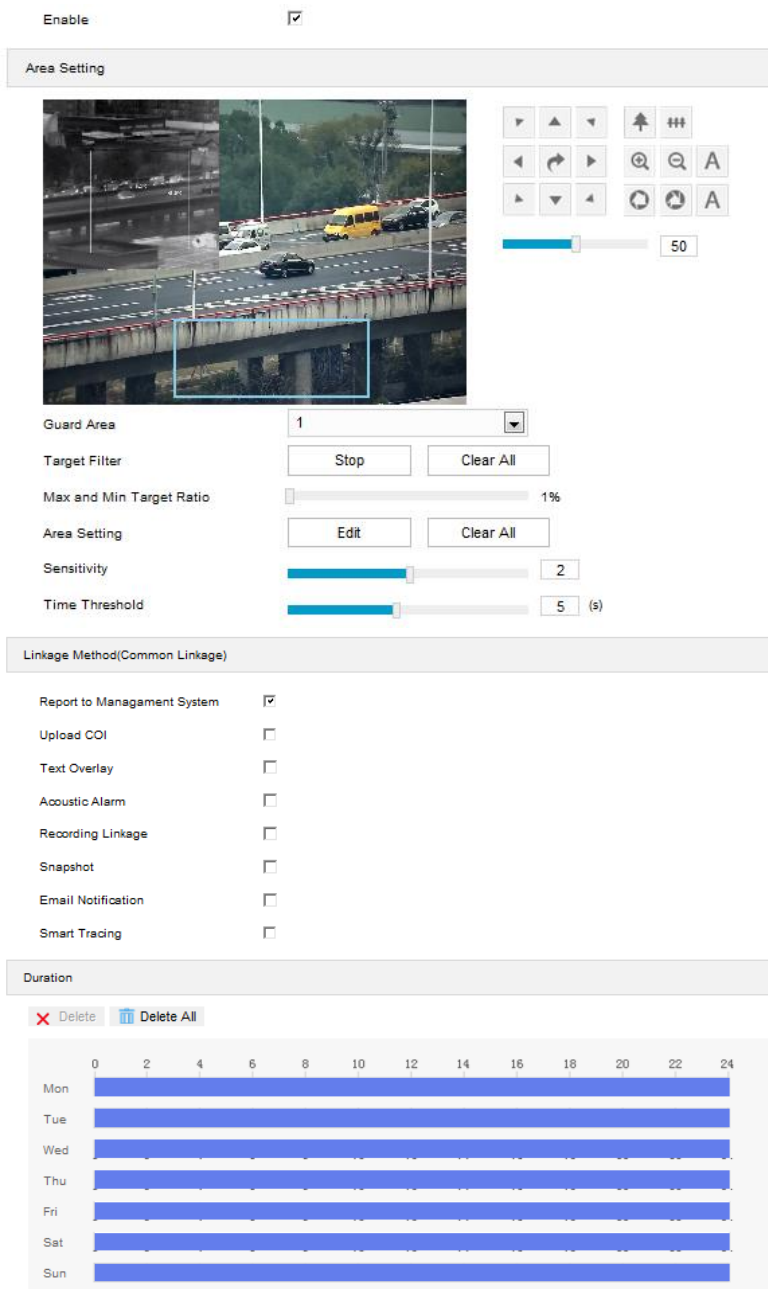
11) Click "**Save**" to validate settings

6.1.9 Object Left

The function is to detect if there is any object being left in the set guard area and staying for a period of time reaching the set threshold. The camera will judge if it is necessary to trigger an alarm.

Configuration steps are as follows:

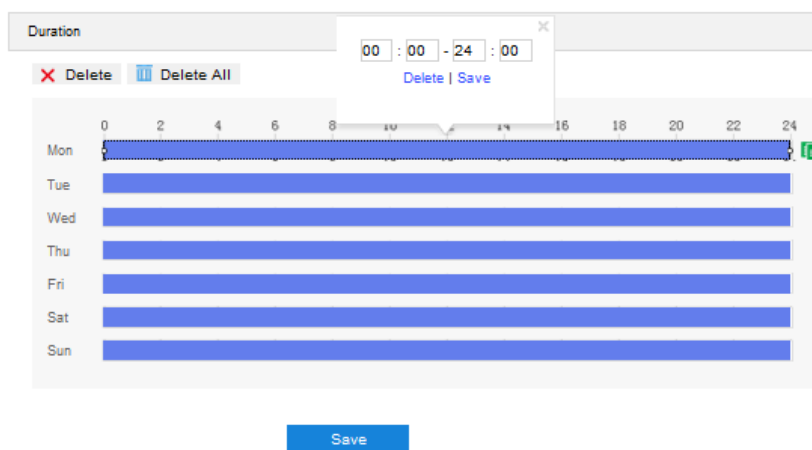
1) Go to **Settings > Event > Intelligent Function > Object Left;**




Picture 6-16 Object Left

- 2) Select "Enable";
- 3) Select a number from the dropdown list of **Guard Area** and user can set only one area at one time. After saving it, user can set another and max 4 areas can be set;
- 4) **Target Filter:** to set target area. Click "**Edit**" and drag the mouse in the scene to draw a rectangle. Click "**Stop**" after finishing and drag the slide bar of "Max and Min Target Ratio" (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);


- 5) **Area Setting:** to set guard area. Click “Edit” and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or end point to close the area. Click “Stop” to finish editing;
- 6) Drag the slide bar of “Sensitivity”; the higher the sensitivity is, the easier it will trigger an alarm
- 7) Drag the slide bar of "Time Threshold", i.e. the maximum allowed time for the object to stay in the area. For example, if it is set 5 s, when there is an object entering the guard area and stays for 5 s, it will trigger an alarm;
- 8) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;
- 9) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-17 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.

- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

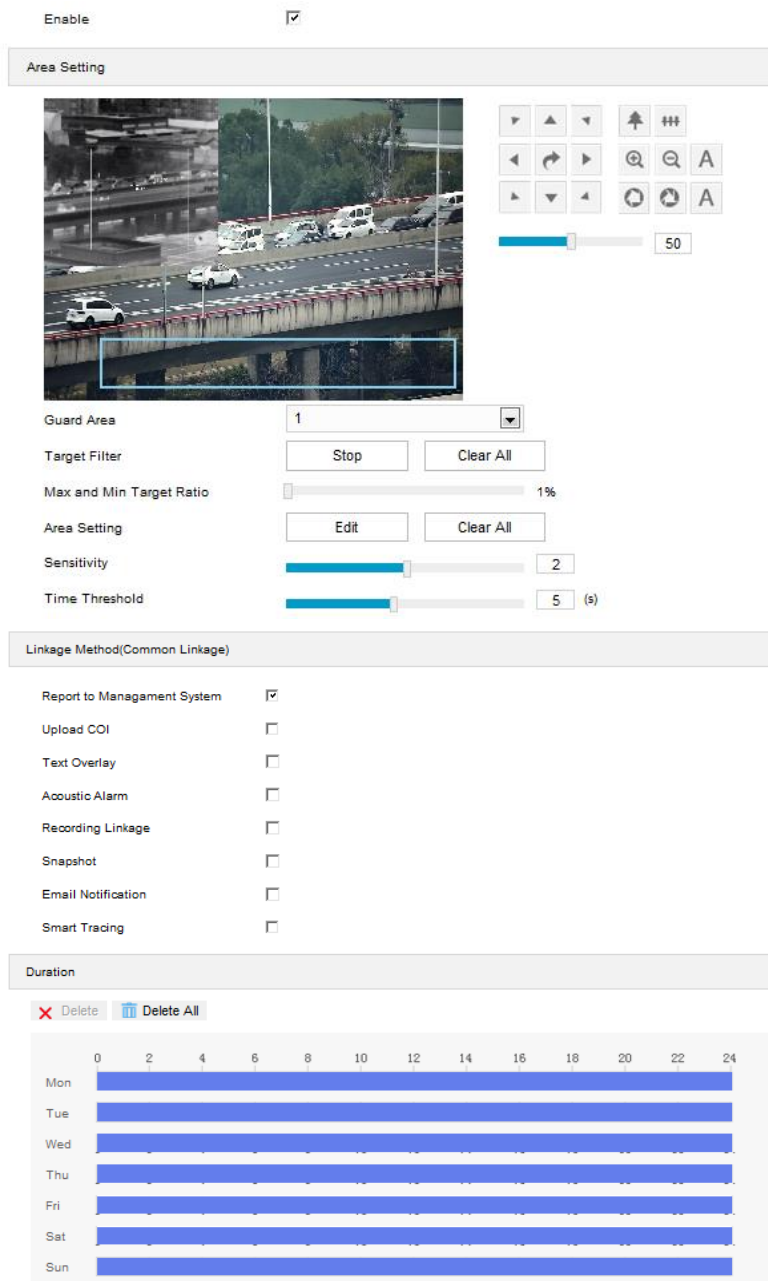
 Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

- 10) Click "**Save**" to validate settings.

6.1.10 Object Removal

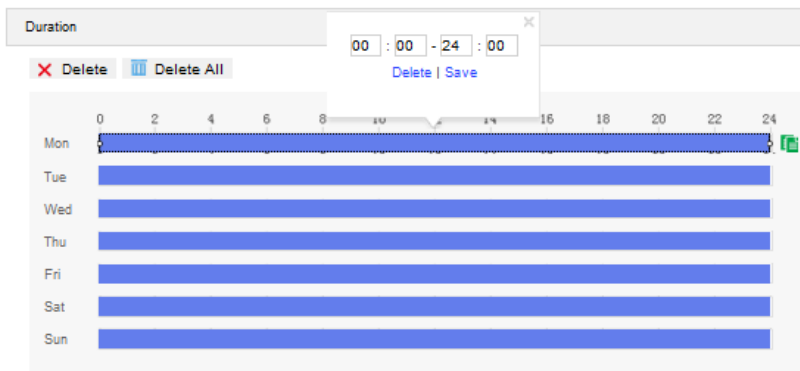
The function is to detect if there is any object disappearing from the set guard area reaching the set time threshold. The camera will judge if it is necessary to trigger an alarm. Configuration steps are as follows:

- 1) Go to **Settings > Event > Intelligent Function > Object Removal**;
- 2) Select "Enable";
- 3) Select a number from the dropdown list of **Guard Area** and user can set only one area at one time. After saving it, user can set another and max 4 areas can be set;
- 4) **Target Filter**: to set target area. Click "**Edit**" and drag the mouse in the scene to draw a rectangle. Click "**Stop**" after finishing and drag the slide bar of "Max and Min Target Ratio" (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);
- 5) **Area Setting**: to set guard area. Click "**Edit**" and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or end point to close the area. Click "Stop" to finish editing;
- 6) Drag the slide bar of "Sensitivity"; the higher the sensitivity is, the easier it will trigger an alarm
- 7) Drag the slide bar of "Time Threshold", i.e. the maximum allowed time for the object to disappear from the area. For example, if it is set 5 s, when the object disappears from the guard area for 5 s, it will trigger an alarm;
- 8) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;





Picture 6-18 Object removal

- 9) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-19 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

 Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

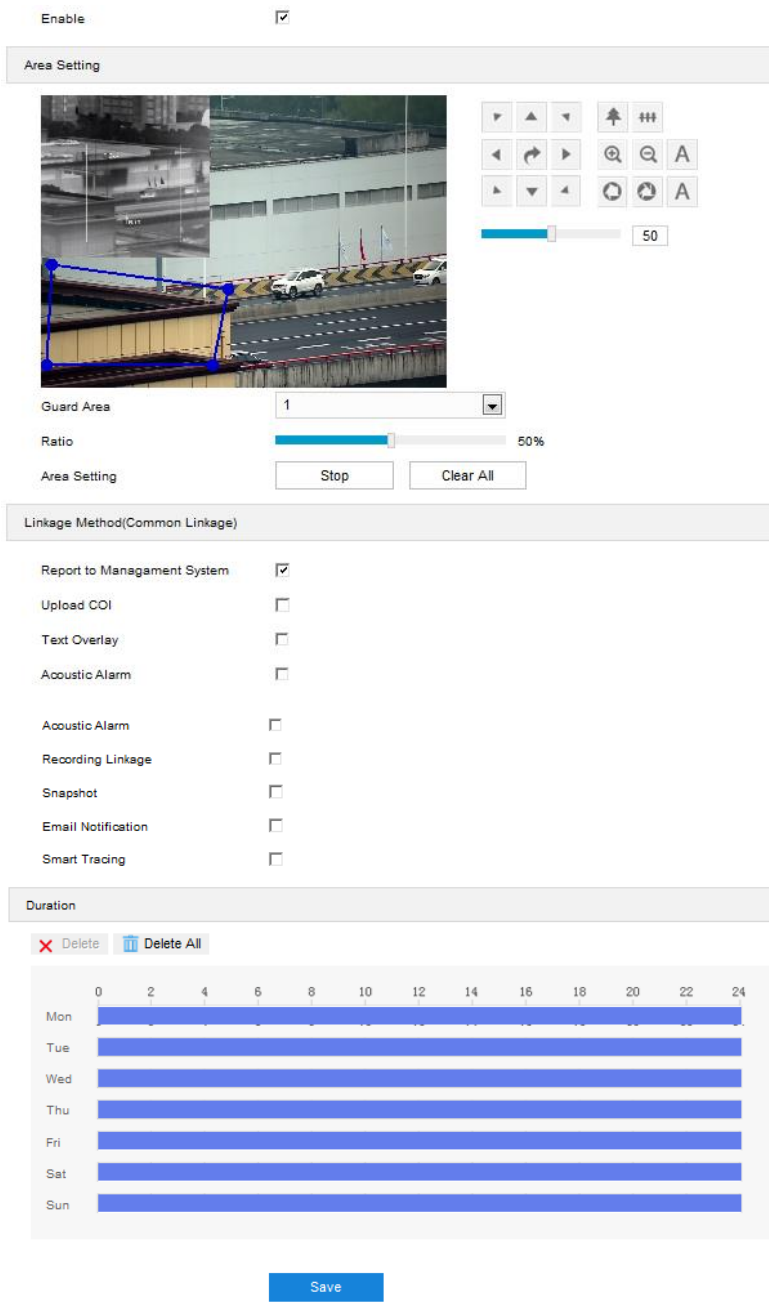
10) Click "**Save**" to validate settings.

6.1.11 Gathering

When the coverage of people in the guard area exceeds a set ratio, the camera will judge if it is necessary to trigger an alarm. For example, if the ratio is set 50%, when 50% or more of the area is covered by people, an alarm will be triggered. Configuration steps are as follows:

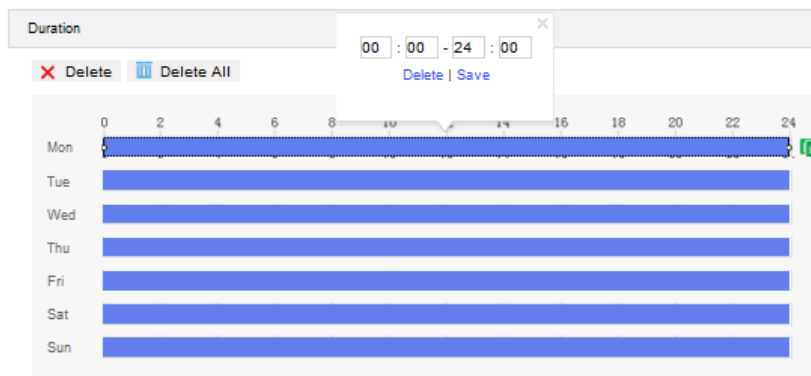
- 1) Go to **Settings > Event > Intelligent Function > Gathering**;
- 2) Select "**Enable**";
- 3) Adjust the surveillance scene through the PTZ;
- 4) Select a number from the dropdown list of **Guard Area** and user can set only one area at one time. After saving it, user can set another and max 4 areas can be set;
- 5) Drag the slide bar of "Ratio" to set the coverage of people in the set area;
- 6) **Area Setting**: to set area. Click "**Edit**" and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or end point to close the area, and click "**Stop**" to finish;

- 7) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;





Picture 6-20 Gathering

- 8) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-21 Arming durations


- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

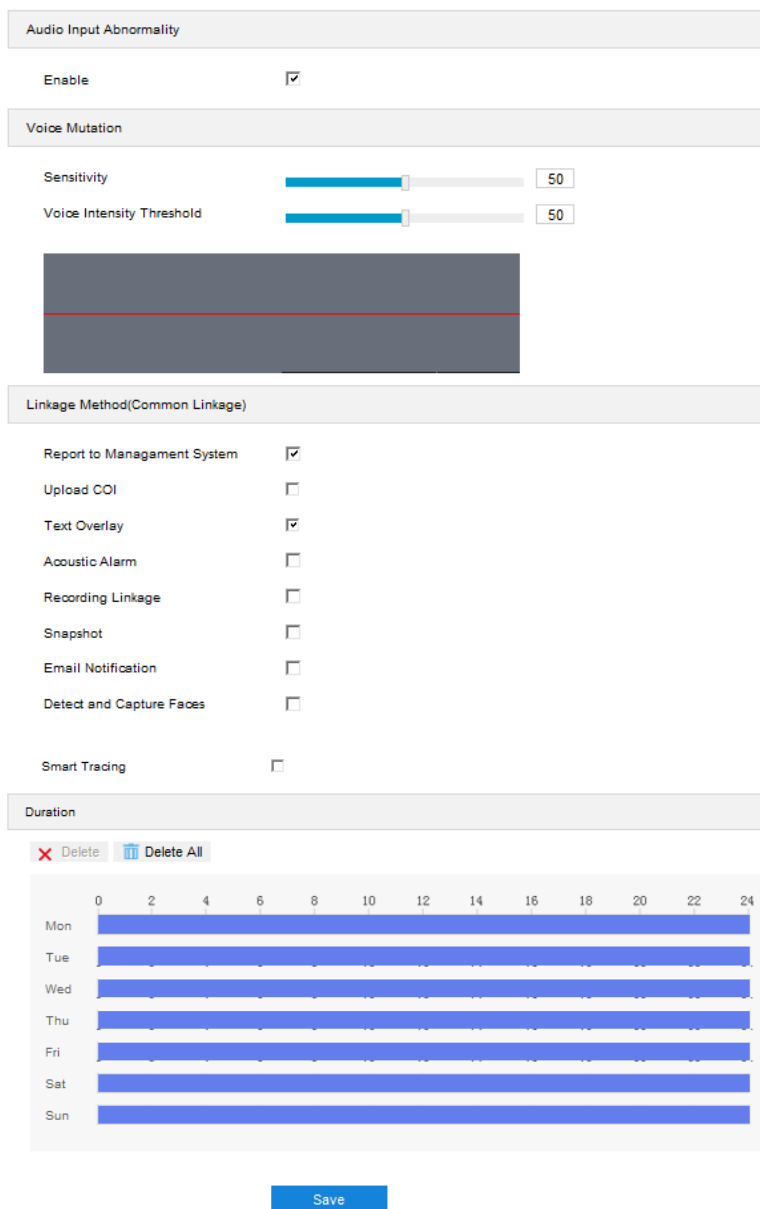
9) Click "**Save**" to validate settings.

6.1.12 Audio Surge

When there is audio surge, the camera will judge if it is necessary to trigger an alarm. Configuration steps are as follows:

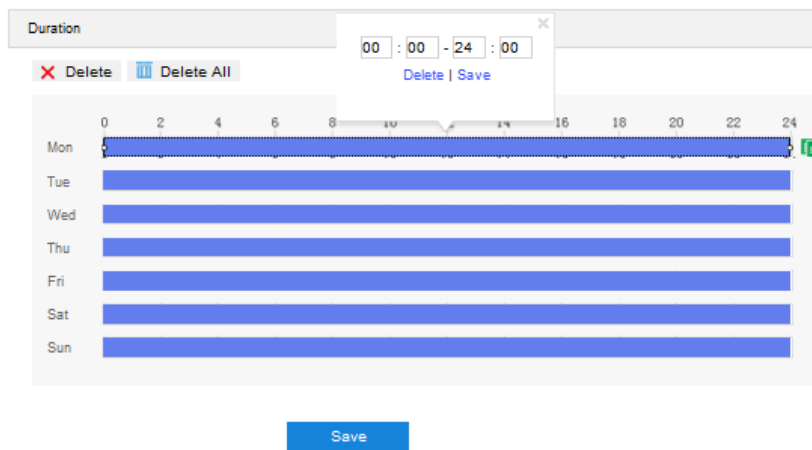
 **Attention:** Audio surge detection is only available when the PTZ camera is connected to an external sound pick-up.

- 1) Go to **Settings > Event > Intelligent Function > Audio Surge**;





Picture 6-22 Audio surge

- 2) Select “Enable”;
- 3) Drag the slide bar of **Voice Intensity Threshold** to adjust the detection sensitivity to voice mutation. The higher the Voice Intensity Threshold is, the more sensitive it is to Voice Mutation and the more easier it is to trigger an alarm;
- 4) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;
- 5) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-23 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

6) Click "**Save**" to validate settings.

6.2 Alarm Input

Before starting configuration, make sure that the camera has connected to alarm input devices such as smoke-detector, alarm bell or sprayer through the parallel port. Configure parameters for each alarm input devices and the camera will judge by the received alarm signal if it is necessary to trigger an alarm. Configuration steps are as follows:

- 1) Go to **Settings > Event > Alarm Input**;

Alarm Input

Enable

Parallel Port Extension 0

Alarm Input ID 1

Alarm Name Alarm1

Alarm Type Always Enabled

Linkage Method(Common Linkage)

Report to Management System

Text Overlay

Acoustic Alarm

Recording Linkage

Snapshot

Email Notification

Linkage Method(Other Linkage)

Duration

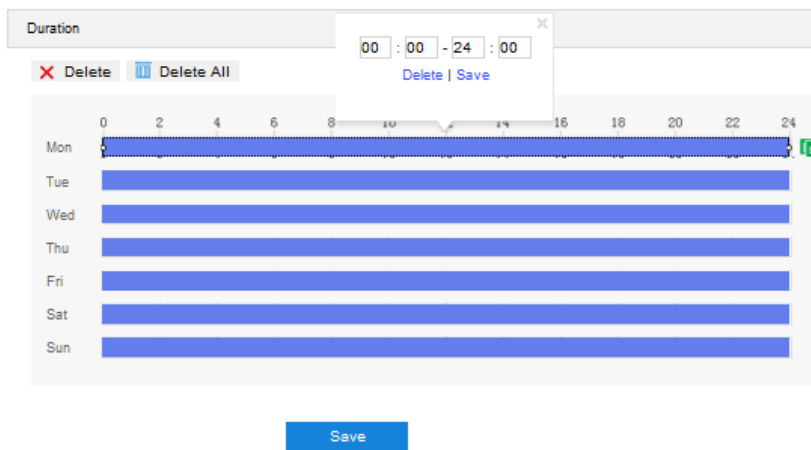
Delete Delete All

	0	2	4	6	8	10	12	14	16	18	20	22	24
Mon	[Blue bar]												
Tue	[Blue bar]												
Wed	[Blue bar]												
Thu	[Blue bar]												
Fri	[Blue bar]												
Sat	[Blue bar]												
Sun	[Blue bar]												


Save


Picture 6-24 Alarm Input

- 2) Select **Enable**;
- 3) Select a number from the dropdown list of **Alarm Input ID**;
- 4) Enter alarm name, i.e. the name of alarm input device such as "front door smoke-detector";
- 5) Select alarm type from the dropdown list. If the alarm input device is always disabled, which means the circuit is usually open, user must select **Always Disabled**. If the alarm input device is always enabled, which means the circuit is usually loop, user must select **Always Enabled**;
- 6) Select linkage method to trigger actions when an alarm is triggered;
- 7) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 10 on one day and different durations cannot overlap with each other;



Picture 6-25 Arming durations

- Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
 - Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

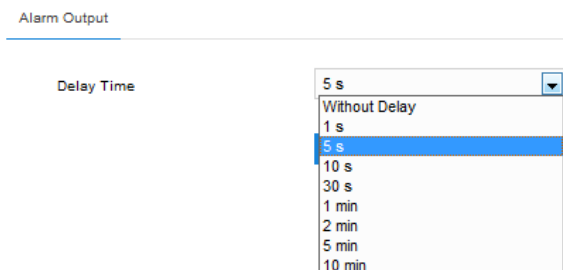
 Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration

- 8) If user sets several alarm input ports, select "All" under "Copy to Alarm" to copy all configurations of current alarm input to other alarm input ports;
- 9) Click "**Save**" to validate setting.

6.3 Alarm Output

Before starting configuration, make sure that the camera has connected to alarm output devices such as alarm bell. The camera will transfer the received alarm signal to the alarm output device to trigger an alarm. Configuration steps are as follows:

- 1) Go to **Settings > Event > Alarm Output**;



Picture 6-26 Alarm output

- 2) Please select an option from the dropdown list according to actual request. Options vary from “Without Delay” to “10 min”, and the default is 5s. After the “Delay Time”, the alarm will be cancelled automatically;



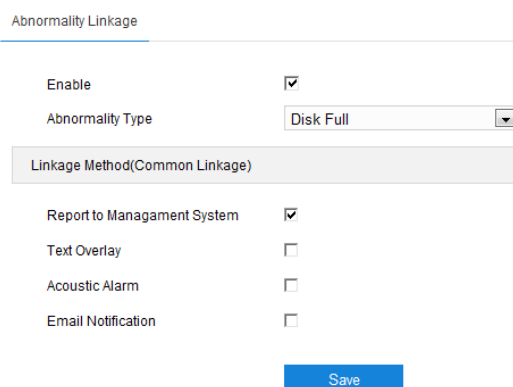
Note: The default duration of alarm output is 5s, and the delay time means the prolonged period of time after the default 5s.

- 3) Click **“Save”** to validate setting.

6.4 Abnormality Linkage

Configure the alarm linkage method for abnormal events, and the camera will judge if it is necessary to trigger an alarm. Configuration steps are as follows:

- 1) Go to **Settings > Abnormality Linkage**;



Picture 6-27 Abnormality Linkage

- 2) Select "Enable";
- 3) Select an option from the dropdown list of Abnormality Type;



Note:

- ◆ Disk Full: when the disk storage is insufficient.
 - ◆ Disk Error: when the disk cannot be recognized.
 - ◆ Internet Disconnected: when the device isn't connected to the internet normally.
- 4) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;
 - 5) Click "**Save**" to validate settings.

7. Storage

7.1 Storage Management

Go to **Settings > Storage > Storage Management** to configure strategy for disk full, view storage device list, format the storage card, and configure the save path for snapshots.



Note: When the camera is installed with a storage card and works normally, you can configure scheduled recording and scheduled snapshot.

Storage Management

Disk Full Strategy:

Storage Device List | Formatting

Disk ID	Capacity	Remaining Space	Status	Type	Attribute	Progress
<input type="checkbox"/> 1	0M	0M	Does not Exist	Local External	Read-write	

Snapshot

Event	Scheduled	Alarming
Local storage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
FTP	<input type="checkbox"/>	<input type="checkbox"/>

Picture 7-1 Storage Management

- Disk Full Strategy: Configure the video recording strategy when there is insufficient storage space.
 - Overwrite earlier data: when there is insufficient storage space, overwrite the oldest videos;
 - Stop: when there is insufficient storage space, stop video recording automatically.
- Go to **Settings > Event > Abnormality Linkage** and select "Disk Full" as Abnormality Type to remind user that local video recording has stopped.
- Storage Device List: Display the status, capacity, progress and other information of all storage devices.
 - Disk ID: display the serial number of the storage device.
 - Capacity: display the storage space of the storage device.
 - Remaining Space: display the remaining space of the storage device.

- Status: show the status of storage devices such as "Normal" (with a storage card which can read and write normally), "Does not Exist" (without a storage card), "Not Formatted" (need to be formatted when first inserted) and etc.
 - Type: show the installation method of the storage device.
 - Attribute: display the read and write attributes of the storage device, Read-only, Write-only or Read-write.
 - Progress: show the percentage of the formatting progress of the storage card.
Select the disk and click "**Formatting**" to format the selected disk.
- Snapshot: Configure the save path for the snapshots. According to actual requirements, select "Local storage" (TF card in the camera) or "FTP" (server) to save the scheduled snapshots and alarm snapshots.



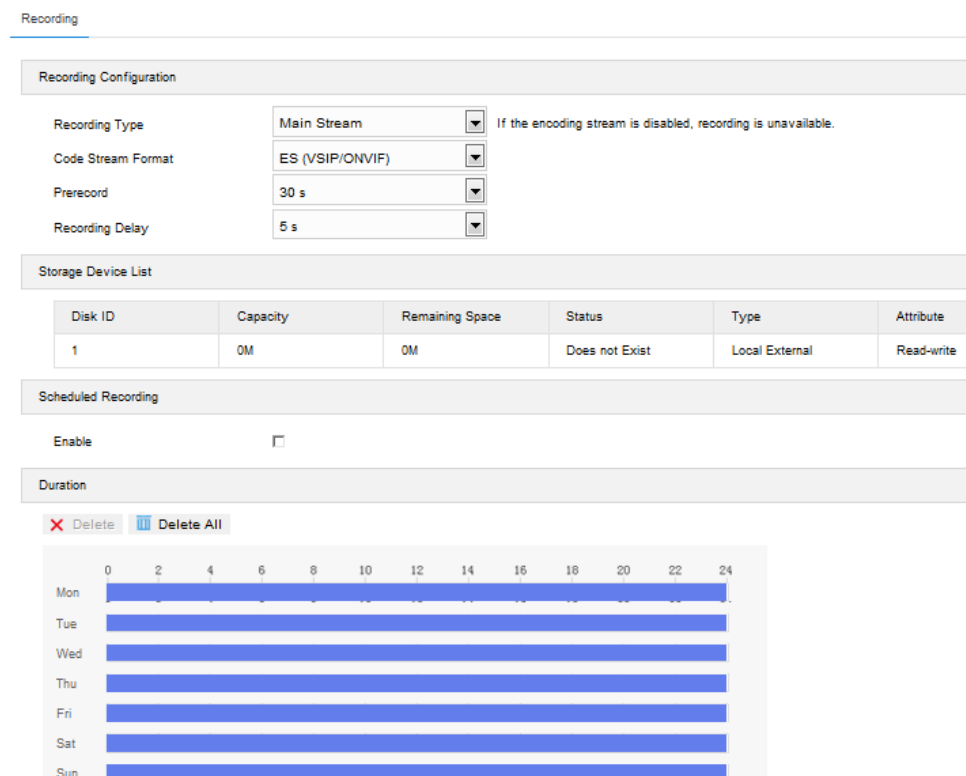
Note: The storage card is installed in the camera when going out of the factory. When using the local storage card for the first time, please click "Formatting" first.

7.2 Recording

After configuring scheduled recording, the camera will perform different video recording tasks automatically in the configured durations and save the videos in the storage card. Configuration steps are shown below:

- 1) Go to **Settings > Storage > Storage Management** to configure disk full strategy and format the storage card recognized by the camera. If formatting is successful, the Status will turn "Normal" which means the storage card can be used normally;
- 2) Go to **Settings > Storage > Recording** to configure video recording;
 - Recording Type: Select the stream to be recorded. If none is selected, it will not be able to record videos.
 - Code Stream Format: Select a video packaging format according to the type of access protocol.
 - Prerecord: Select prerecord duration, i.e. the prerecord duration before recording starts. It is certain to be 30s.

- Recording Delay: Select recording delay time, i.e. the prolonged recording duration after the configured duration.




Picture 7-2 Scheduled recording


- 3) Select "Enable" to enable Scheduled Recording;
- 4) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations. The maximum allowed number of durations is 4 on one day and different durations cannot overlap with each other;



Picture 7-3 Arming durations

- Set duration: configure arming durations according to actual requirements.

- Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.
- Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any white square, left-click and drag to edit the start time and end time.
- Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration

- 5) Click "**Save**" to validate setting.

7.3 Snapshot

After configuring scheduled snapshot, the camera will perform different snapshot tasks automatically in the configured durations and save the pictures in the storage card.

Configuration steps are shown below:

- 1) Go to **Settings > Storage > Storage Management** to configure disk full strategy and format the storage card recognized by the camera. If formatting is successful, the Status will turn "Normal" which means the storage card can be used normally;
- 2) Go to **Settings > Storage > Snapshot** to configure;
 - Format: only support .jpeg format.
 - Resolution: same as that of current main stream.
 - Quality: the quality of captured image.

Snapshot

Format:

Resolution:

Quality:

Storage Device List

Disk ID	Capacity	Remaining Space	Status	Type	Attribute
1	0M	0M	Does not Exist	Local External	Read-write

Scheduled Snapshot

Enable:

Snapshot Type:

Time Interval: (s) 1-3600

Event Snapshot


Enable:


Time Interval: (s) 1-3600

Number of Snapshots: 1-65535

Picture 7-4 Scheduled snapshot

- 3) Configure scheduled snapshot:
 - a) Select "Enable" enable scheduled snapshot;
 - b) Snapshot Type: select "According to the time" or "According to the number";
 - c) Time Interval: select the interval between snapshots;
 - d) Configure durations for scheduled recording. The default setting is 24 hours in bright blue bar, or you can customize the durations;
 - Set duration: configure arming durations according to actual requirements.
 - Click the blue bar to pop up a window for editing the accurate start time and end time; click "Save" to validate setting.
 - Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.

- Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.
- Copy duration: click the copy icon  behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

 Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

- 4) Configure event snapshot:
 - a) Select "Enable" to enable event snapshot;
 - b) Configure time interval;
 - c) Configure the number of snapshots captured at each event.
- 5) Click "**Save**" to validate settings.

8. System

8.1 Device Info

Go to **Settings > System > Device Info**.

Device info includes device name, device model, device serial No. and etc. User can customize device name and select "Set as OSD text". Device name doesn't support specific symbols. If "Set as OSD text" is selected, click "Save" and the device name will be synchronized to the OSD, interface shown below:

Device Name	<input type="text" value="IPCamera"/>	<input type="checkbox"/> Set as OSD text.
Device Model	IPC525-R	
Device Serial No.	01814A02F2	
Hardware Version	1.1.0	
Software Version	7.2.3.413 Jan 19 2020 07:16:18	
Web Version	17-01-2020	
Web Plugin Version	7.2.3.575200(15-11-2019)	
ISP Version	2.5.0.a20dcf99.20200114	
Number of Video Sources	1	

Picture 8-1 Device info

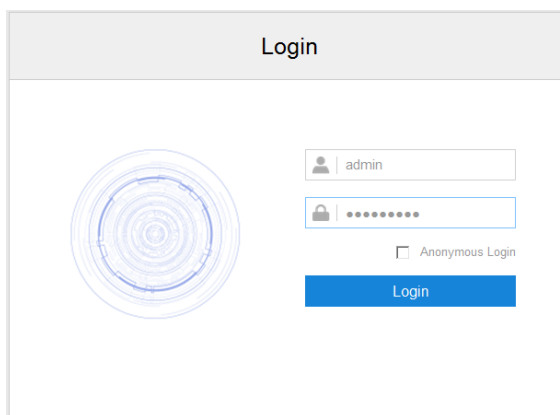
8.2 User Security

Go to **Settings > System > User Security**, and configure user information, RTSP authorization, IP filter and security service.

8.2.1 User

Go to **Settings > System > User Security > User**, you can add user, delete user, edit username and password, configure user authorizations and etc.

- **Anonymous Access:** After selecting the checkbox, you will be able to select "Anonymous Login" on the login interface.



Picture 8-2 Anonymous login

i Note: Anonymous user has the authorization of live view only.

- Add user: Click “Add”, and enter user name and password on the popup interface. Select user type from the dropdown list, and assign operation rights to newly added user from the Authorization List. After setting, click “Confirm”.

Add User

User Name

Password

Weak Strong

A password can be 8-16 characters long and must consist of digits, upper/lower-case letters, and special characters.

Password Confirm

User Type

Authorization List	
<input checked="" type="checkbox"/> View	
<input checked="" type="checkbox"/> Playback/Picture	
<input checked="" type="checkbox"/> PTZ Control	
<input type="checkbox"/> Parameter Configuration	
<input type="checkbox"/> Storage	
<input type="checkbox"/> Reboot, Discover, Auto maintenance	
<input type="checkbox"/> System Maintenance	

Picture 8-3 Add user



Note:

- ◆ By default, all options are available to administrator users; Live View, Playback/ Snapshot, and PTZ Control options are available to operator users; a browser can only view the live video from the camera.
 - ◆ Some settings take effect after rebooting the camera, which requires user with both the authorizations of configuration and reboot.
- Modify user: Select user and click “**Modify**” to modify on the popup interface.

Modify User

User Name

Old Password

Password

Weak
Strong

A password can be 8-16 characters long and must consist of digits, upper/lower-case letters, and special characters.

Password Confirm

User Type ▼

Email

Authorization List	
<input checked="" type="checkbox"/> View	
<input checked="" type="checkbox"/> Playback/Picture	
<input checked="" type="checkbox"/> PTZ Control	
<input checked="" type="checkbox"/> Parameter Configuration	
<input checked="" type="checkbox"/> Storage	
<input checked="" type="checkbox"/> Reboot, Discover, Auto maintenance	
<input checked="" type="checkbox"/> System Maintenance	

Picture 8-4 Modify user

- Delete user: Select user and click “**Delete**” to delete the user.

Tips

Delete the user?

Picture 8-5 Delete user



Attention: “admin” user cannot be deleted, nor its username be modified.

8.2.2 RTSP Authorization

Go to **Settings > System > User Security > RTSP Authorization**, and select authorization type from the dropdown list, options including “none”, “basic/digest” and “digest”. By default, it is “basic/digest”.



Note: “basic” means basic authorization, which transfers messages without encryption and has a severe safety risk; “digest” means digest authentication, which transfers information through MD5 Hash conversion and has a higher level of safety.

User RTSP Authorization IP Filter Security service

Authorization Type

Note: Some protocol will modify the safety level by force automatically.

Picture 8-6 RTSP Authorization

8.2.3 IP Filter

By setting IP filter, user can manage access limitation to the web client. Configuration steps are as follows:

- 1) Go to **Settings > System > User Security > IP Filter**;

IP Filter

Serial No.	IP

Picture 8-7 IP Filter

- 2) Select IP filter from the dropdown list up to request, options including “Disable”, “Black List” and “White List”;
 - Disable: IP filter is disabled.
 - White List: IP list allowed visiting the device.
 - Black List: IP list not allowed visiting the device.
- 3) Configure IP address list;

- Add Black/ White List: Select filter method, click “**Add**” and input IP address on the popup interface, and click “**Confirm**”.
 - Modify Black/ White List: Select IP address from the black/ white list and click “**Modify**” to modify the IP address, and click “**Confirm**”.
 - Delete Black/ White List: Select IP address from the black/ white list and click “**Delete**” to delete the IP address. Click “**Delete All**” to clear all the added IP addresses.
- 4) Click “**Save**” to validate settings.


8.2.4 Security Service

Go to **Settings > System > User Security > Security Service**, and configure the parameters to protect user safety.

Enable SSH Login	<input checked="" type="checkbox"/>
Enable HTTPS Login	<input type="checkbox"/>
Enable Unauthorized Login Locking	<input checked="" type="checkbox"/>
Illegal Login Retry Times	<input type="text" value="6"/> 3~10
Illegal Login Lock Time	<input type="text" value="10"/> (min) 10~60

Picture 8-8 Security Service

- Enable SSH Login: Select the checkbox to enable SSH login, which means SSH service is enabled and you can login by SSH mode. Usually it's unnecessary to enable when the camera works normally.
- Enable HTTPS Login: Select the checkbox to enable HTTPS login, which means HTTPS service is enabled and you can login by HTTPS mode.
- Enable Unauthorized Login Locking: Select the checkbox to enable unauthorized login locking, and configure illegal login retry times and illegal login lock time.
 - Illegal Login Retry Times: Configure illegal login retry times, default being 6 times.
 - Illegal Login Lock Time: Configure illegal login lock time, default being 10 minutes.

 Note: After enabling unauthorized login locking, when the configured locking conditions occur, the user IP will be locked up.

Click "Save" to validate settings.

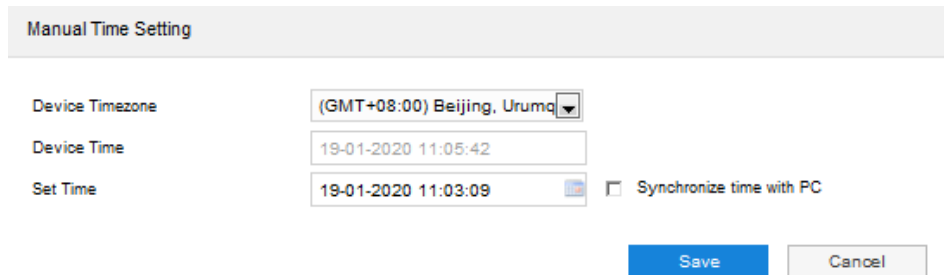
8.3 Time

Go to **Settings > System > Time**, and configure Device Time Zone, Device Time, Auto Time Correction, NTP Clock Synchronization and DST. Configure parameters by actual requests and click "**Save**" to validate setting.

Device Timezone	(GMT+08:00) Beijing, Urumq	
Device Time	19-01-2020 11:04:50	Manual Setting
Auto Time Correction		
Auto Timing	<input checked="" type="checkbox"/>	
Timing Scheme	Adaptive	
Timing Priority	<input checked="" type="checkbox"/> NTP Server <input checked="" type="checkbox"/> VSIP VMS <input checked="" type="checkbox"/> ONVIF Protocol <input checked="" type="checkbox"/> GB28181-1 VMS <input checked="" type="checkbox"/> GB28181-2 VMS	<input type="button" value="Up"/> <input type="button" value="Down"/> <input type="button" value="Default"/>
Current Timing Protection Time	60	(min) 0-65535
NTP Clock Synchronization		
Enable	<input type="checkbox"/>	
Server Address	0.0.0.0	
NTP Port	123	
Time Correction Interval	1440	(min) 1-65535
DST		
Enable DST	<input type="checkbox"/>	
Start Time	April	First Sunday 02 (o'clock)
End Time	October	Last Sunday 02 (o'clock)
Time Deviation	30 min	

Picture 8-9 Time setting

- Set device time zone and device time: Click "**Manual Setting**", select time zone and set time on the popup interface. You can select "Synchronize time with PC" and click "**Save**" to validate setting.



Picture 8-10 Manual setting of time

- Auto Time Correction: Select "Auto Timing" and the system will correct time automatically according to the selected access protocol (including NTP server, VSIP, ONVIF, GB28181) or adaptive. Configure the timing protection time.
 - Adaptive: When selecting "Adaptive", select necessary adaptive protocols, set the Timing Priority sequence and enter current Timing Protection Time (i.e. the save time during protocol switching).
 - Access protocol: the protocol of the device accessing to t platform or a server. When selecting a protocol, the system will correct time automatically according to the protocol.



Note:

- ◆ In the box of "Timing Priority", the priority level decreases from top to bottom.
 - ◆ Select a protocol and click "Up" to improve its priority and "Down" to decrease its priority; click "Default" to apply the default priority levels.
 - ◆ If selecting "NTP Server", configure the parameters thereof.
- NTP Clock Synchronization: Select "Enable" and configure "Server Address", "NTP Port" (certain to be "123") and "Time Correction Interval". When it is enabled, the camera will correct time on a time basis of the configured interval.
 - DST: DST (daylight saving time) is the practice of advancing clocks during summer months so that evening daylight lasts longer, while sacrificing normal sunrise times and the time applied during DST is called DST time. Select "Enable DST" and set "Start Time", "End Time" and "Time Deviation".

8.4 Serial Port

Go to **Settings > System > Serial Port**, and configure the serial port.

Serial port is used to control camera rotation, extended alarm input or device adjustment (subject to devices). Usually serial port is identified as RS485 A/B. Pair the ports by configuring RS485 port parameters. Please configure the parameters such as "Baud Rate", "Data Bits" and "Address Code" according to the actual conditions. Click "Save" to validate settings.



Attention: It's suggested not to edit the parameters of RS485 port in case the PTZ will be out of control.

Serial Port

Type	RS485	
Serial Post Number	1	
Name	com1	
Baud Rate	9600	
Data Bits	8	
Stop Bits	1	
Correction	None	
Stream Control	None	
Address Code	1	1~255
Control Protocol	PELCO_D_K	

Save

Picture 8-11 Serial port

8.5 Log

Go to **Settings > System > Log**, select "Enable Log Record" to enable log record. Then you can search, view and download logs by request.

Logs

Enable Log Record	<input checked="" type="checkbox"/>
Log Type	Search All
Start Time	27-03-2019 14:47:16
End Time	28-03-2019 14:47:16
	<input type="button" value="Delete logs"/> <input type="button" value="Search"/> <input type="button" value="Save logs"/>

User Name	User IP Address	Log Record Time	Contents
-----------	-----------------	-----------------	----------

Picture 8-12 Log management

Operation steps are as follows:

- 1) On the dropdown list of Log Type, select a log type, otherwise the default is "Search All";
- 2) Select Start Time and End Time, and click "**Search**". The search result will show on the list below;
- 3) Click "**Save Logs**" to download all logs locally; click "**Delete logs**" to clear all logs.

 Note:

- ◆ When selecting "User Operation" or "Alarm Info" for Log Type, you need to select a "Secondary Type" to reduce the search scope.
- ◆ The system can save maximum 2,000 entries of logs. When it is full, the latest one will overwrite the oldest one automatically.

8.6 System Maintenance

8.6.1 System Maintenance

Go to **Settings > System > System Maintenance > System Maintenance**, and perform operations of reboot, upgrade and etc.

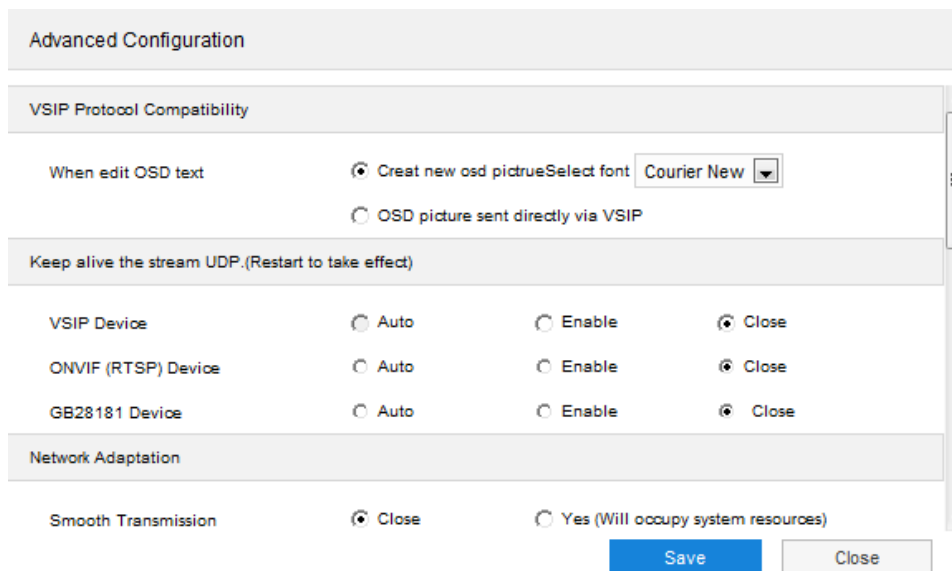
The screenshot displays the 'System Maintenance' web interface, organized into several sections:

- Reboot:** Contains two rows of buttons. The first row has a 'Reboot' button and a 'Soft Reboot' label. The second row has a 'Hard Reboot' button and a 'Hard Reboot' label.
- Discover:** Features a 'Flash Time' dropdown menu set to '5 s' and a 'Flash' button.
- Auto Maintenance:** Includes an 'Enable' checkbox (unchecked), a 'Maintenance Cycle' dropdown menu set to 'Everyday', a 'Maintenance Time' time picker set to '00:00:00', and a 'Save' button.
- PT Maintenance:** Contains a 'Restore Default PT Settings' button with a tooltip 'Restore Default PT Settings PTZ parameters related to restore factory settings', a 'PT Upgrade' button with a tooltip 'PT Upgrade PTZ version upgrade', an 'Enable' checkbox (unchecked), a 'Maintenance Cycle' dropdown menu, a 'Maintenance Time' time picker, and a 'Save' button.
- Upgrade:** Features an 'Upgrade' button with a tooltip 'Business version upgrade'.
- Configuration Management:** Includes four rows of buttons with tooltips: 'Partial Restoration' (tooltip: 'All parameters restore to factory default except camera IP address, protocols, user info and RTSP authorization.'), 'Complete Restoration' (tooltip: 'Restore to factory default'), 'Configuration Export' (tooltip: 'Export all settings to a file.'), and 'Import Parameter' (tooltip: 'All parameters are imported from the file except the network, device name, OSD setting, user info and RTSP .').
- Advanced Configuration:** Features a 'Configuration' button.

Picture 8-13 System maintenance

- Reboot: Click "**Reboot**" to reboot the camera.
 - Reboot: Click "Reboot" to reboot the device softly.
 - Hard Reboot: Click "Hard Reboot" to reboot the device hard.
- Discover: Select "Flash Time" and click "Flash" to find the device by flashing.
- Auto Maintenance: Select "**Enable**", and configure Maintenance Cycle and Maintenance Time. Click "**Save**" to validate setting.
- PT Maintenance: including restore default PT settings, PT upgrade and PT maintenance.
 - Restore Default PT Settings: Restore PT settings to factory default.
 - PT Upgrade: Upgrade the PT version.

- PT Maintenance: Select “Enable” to enable PT maintenance, and configure “Maintenance Cycle” and “Maintenance Time”. Click “Save” to validate settings.
- Upgrade: Upgrade business version. Click “**Upgrade**” and open local upgrade file in <*.pkg> format. During upgrading, please do nothing but waiting. After upgrading, re-login to the web client.
- Configuration Management: including partial restoration, complete restoration, and configuration export and import.
 - Partial Restoration: Click this button and all parameters will restore to factory default except network setting, access protocol, user info and RTSP authorization.
 - Complete Restoration: Click this button and all parameters will restore to factory default.
 - Configuration Export: After configuring camera parameters, you can export the configurations to local PC for copying. Click “**Export**” and select a local save path to export.
 - Import Parameter: You can import local configuration file from local PC without manual setting. Click “**Import**” and select local configuration file to import.
- Advanced Configuration: including “VSIP Protocol Compatibility”, “Keep Alive the Stream UDP”, “Network Adaptation”, “Function Switch”, “Working Mode” and “Audio Noise Reduction”. Only “admin” user can perform advanced configuration. Click “**Configuration**”, input the right password for advanced user and click “**Confirm**” to enter the configuration interface.



Picture 8-14 Advanced configuration

- VSIP Protocol Compatibility: select the OSD picture obtaining method for the camera when configuring OSD through VSIP; generate a new OSD picture through text and location, and change OSD font, Black or Song; or use the OSD picture sent by VSIP directly.
- Keep Alive the Stream UDP: configure VSIP, ONVIF (RTSP) and GB28181 applications separately, options including “Enable”, “Close” and “Auto”.
- Network Adaptation: enable “Smooth Transmission”, which will occupy some system resources; configure “Smooth Sending Limited Bandwidth”, subject to actual bitrate when the bitrate exceeds the limit; select “Encoding Bit Rate Mode”, options including video stream network bandwidth, video data bandwidth and audio-video stream network bandwidth.
- Function Switch: including echo cancellation, Audio Features, Audio Mix Mode, Dynamic Plug-in, Stream Extension Head, Dual IP and Focus Assist.

- Working Mode: options including “Ultra wide dynamic range”, “60 frames mode”, “Triple-Stream Mode” and “Quad-Stream Mode”. It takes effect after reboot.
- Audio Noise Reduction: configure “Collect Audio Stream” and “Decode Audio Stream”. Options including “Close”, “Low”, “Middle” and “High”; enabling this function will occupy some system resources.

8.6.2 Network Test

Go to **Settings > System > System Maintenance > Network Test**, and test the network connectivity between the device and the destination address.

- Enter an IP address in “Destination Address” and click “ping”. The test result will show on the list below;

The screenshot shows the 'Network Test' interface. It has a header 'Network Test'. Below it, there is a 'Destination Address' field which is empty. To the right of this field are two buttons: 'ping' and 'trace'. The 'ping' button is highlighted. Below the 'Destination Address' field is a 'Test Result' area, which is currently empty.

Picture 8-15 Network test- ping

- Enter an IP address in “Destination Address” and click “trace”. The test result will show the routing entries visiting the destination address. It is used to test the network routing information between the device and the destination address.

The screenshot shows the 'Network Test' interface. The 'Destination Address' field now contains the IP address '10.67.73.116'. The 'trace' button is highlighted. The 'Test Result' area displays the following text: 'Tracing route to 10.67.73.116 over a maximum of 30 hops'. Below this, there is a list of hops from 1 to 9, each followed by three asterisks and the text 'Request timeout'.

Picture 8-16 Network test- trace

9. Appendix: Glossary of Terms

1080p	Resolution of 1920*1080 pixels (16:9)
720p	Resolution of 1280*720 pixels (16:9)
ADPCM	Adaptive Differential Pulse Code Modulation
CIF	Common Intermediate Format, Resolution of 352*288 pixels
4CIF	4 Common Intermediate Format, Resolution of 704*576 pixels
DDNS	Dynamic Domain Name Server
DHCP	Dynamic Host Configuration Protocol
G.711	Pulse code modulation (PCM) of voice frequencies
G.722.1 Annex C	Low-complexity coding at 24 and 32 kbit/s for hands-free operation in systems with low frame loss
G.726	Audio coding algorithm
H.264	Advanced video coding for generic audiovisual services
H.265	High Efficiency Video Coding
HD	High-definition
IP	Internet Protocol
MPEG4	Moving Pictures Experts Group
MJPEG	Motion Joint Photographic Experts Group
NAT	Network Address Translation
NTSC	National Television Standards Committee
PAL	Phase Alternation Line
PC	Personal Computer
PPPoE	Point to Point Protocol over Ethernet
QCIF	Quarter common intermediate format, Resolution of 176*144 pixels
QXGA	Resolution of 2048*1536 pixels (4:3)
RTCP	Real-Time Transport Control Protocol
RTP	Real-time Transport Protocol
SVAC	Surveillance Video and Audio Coding
TCP	Transport Control Protocol
UDP	User Datagram Protocol
UXGA	Resolution of 1600*1200 pixels (4:3)