

KEDACOM

User Manual for HD Intelligent Speed Dome Camera

V1.1 (July, 2020)

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Target Audience

Administrators and Operators of Video Surveillance Products

Applicable Models

Human recognition series: IPC425-i423-NWH, IPC445-i433-NWH, IPC489-i440-NWH

General recognition series: IPC425-i223-NWH (VER.A), IPC445-i233-NWH, IPC489-i240-NWH


Document Version

V1.1

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 $\geq 2.3\text{mm}$).

Contents

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Notice i

Target Audience ii

Applicable Models ii

Document Version ii

Related Document ii

Convention ii

1. Product Brief 4

 1.1 Product Appearance 5

 1.2 Applicable Scenarios 5

2. Start Up 7

 2.1 Activate Camera 7

 2.2 Quick Setting of Network Parameters 9

 2.3 Login and Log Out 10

 2.4 Password Reset 13

 2.5 Main Interface 13

 2.6 Installation 14

 2.6.1 Preset 14

 2.6.2 Calibration 17

3. Basic Functions 20

 3.1 Live View 20

 3.1.1 PTZ Control 20

 3.1.2 Preset 21

 3.1.3 Image Adjustment 22

 3.1.4 Live View Window 23

 3.2 Playback 24

 3.3 Snapshot 26

 3.4 Local Setting 27

4. Intelligent 31

 4.1 Intelligent Live View 31

 4.2 Intelligent Settings 33

 4.2.1 Path 33

 4.2.2 DPSS 33

 4.2.3 VIAS 34

 4.2.4 Guard Area 35

 4.2.5 Arming 36

 4.2.6 Parameters 37

 4.2.7 Vehicle Detection 39

 4.2.8 Patrol 40

 4.2.9 Vehicle OSD 41

 4.2.10 Protocol Setting 42

 4.2.11 LED Setting 42

 4.2.12 Event Setting 43

 4.2.13 Version 45

5. Network	46
5.1 IP and Port.....	46
5.1.1 LAN	46
5.1.2 Port.....	47
5.1.3 Positioning.....	47
5.1.4 *Multicast.....	48
5.2 Access Protocol.....	49
5.2.1 VSIP	49
5.2.2 ONVIF	50
5.2.3 SIP.....	50
5.2.4 VIID	51
5.2.5 PDNS	52
5.3 Other Protocol.....	53
5.3.1 DDNS	53
5.3.2 FTP.....	53
5.3.3 PPPoE.....	54
5.3.4 K-SNMP	55
5.3.5 802.1X.....	55
5.3.6 QoS	56
5.3.7 UPnP	56
5.3.8 SNMP	57
5.3.9 SMTP	58
5.4 Cloud Service	59
6. Camera	60
6.1 Image.....	60
6.1.1 Image Adjustment	60
6.1.2 Exposure	60
6.1.3 Focus.....	61
6.1.4 White Balance	62
6.1.5 Night Cut	62
6.1.6 *IR	64
6.1.7 Image Enhancement.....	64
6.1.8 *Image Stabilization	65
6.1.9 Rotate and BNC	65
6.1.10 Effect Parameters	66
6.2 OSD	67
6.3 Video.....	68
6.3.1 Encoding Format.....	69
6.3.2 ROI.....	70
6.3.3 *Privacy Mask	71
6.3.4 Video Info Overlay.....	72
6.4 Audio.....	72
6.4.1 Audio Encoding	72
6.4.2 Audio Decoding.....	73
6.5 PTZ.....	74
6.5.1 Basic Configuration	74
6.5.2 Guard Tour	75
6.5.3 Preset Position	76
6.5.4 Restricted Patrol.....	77
6.5.5 Path Mode.....	78
6.5.6 Mixed Mode.....	79
6.5.7 Scheduled Task.....	79
6.5.8 Positioning.....	81
7. Event	83
7.1 Intelligent Function.....	83

7.1.1	Motion Detection	83
7.1.2	Video Blocked	85
7.1.3	Guard Line	87
7.1.4	Entry Guard Area	90
7.1.5	Exit Guard Area.....	93
7.1.6	Enter Guard Area	95
7.1.7	Object Left.....	98
7.1.8	Object Removal.....	101
7.1.9	Gathering	103
7.1.10	Audio Surge	105
7.2	Alarm Input	107
7.3	Alarm Output.....	109
7.4	Abnormality Linkage	109
8.	Storage.....	111
8.1	Storage Management	111
8.2	Recording	111
8.3	Snapshot.....	113
9.	System	115
9.1	Device Info.....	115
9.2	User Security	115
9.2.1	User.....	115
9.2.2	RTSP Authorization	117
9.2.3	IP Filter	117
9.2.4	Security Service	117
9.3	Time	118
9.4	Serial Port	119
9.5	Log.....	120
9.5.1	Logs.....	120
9.5.2	System Health.....	120
9.5.3	Service Status.....	120
9.6	System Maintenance	121
9.6.1	System Maintenance.....	121
9.6.2	Network Test.....	122
9.7	Lifetime	123
10.	Appendix: Glossary of Terms.....	124

1. Product Brief

HD intelligent speed dome camera (hereinafter referred to as “camera”) is remote HD IP Camera based on IP network technology. It encodes and transmits HD video. Also, it can be deployed at any point of a surveillance network and transmits videos via public or private IP network. It applies special chip with built-in structure and stable performance.

Camera Functions

Apply high-performance progressive scan sensor, with clear image and vivid color;

High-performance video processing chip and efficient video encoding, providing HD video image;

Support auto iris, auto focus, auto white balance and BLC

Support WDR, image adjustment, 3D noise reduction, motion detection, image flip, and privacy mask

Support multi-stream to fit different network bandwidth;

Configurable text overlay on video image

PTZ Functions

Built-in speed PT, able to rotate continuously in pan and tilt, support auto flip in tilt

Support DOF proportional zooming, auto watch, last spot recovery, PT restriction, scheduled task, mixed scan and etc.

Alarm Management

Some with audio and alarm ports, support talk-back and alarm

Motion detection and alarm linkage, make video surveillance intelligent

Support alarm linkage edition: alarm text overlay, device output, live view display and etc.

Networking Method

Support static address, DHCP or PPPoE

Support NAT traversal, DNS and multi-cast

Storage

Support storage card, for local storage when the network is disconnected

Support local snapshot, default format is .JPG

Support local recording, user can query and playback videos on PC directly

Support dual-system backup to secure data safety

1.1 Product Appearance



Picture 1-1 IPC425 series



Picture 1-2 IPC445 series



Picture 1-3 IPC489 series

 Note: The appearances of different sub-models may differ. Please subject to actual devices.

1.2 Applicable Scenarios

- Human Recognition Camera

The human recognition camera can capture human face and human body and analyze personnel attributes. They are mainly used at places requiring control over people such as finance, telecom, government institutions, school, airport, public security, judiciary authorities and safe city.


➤ General Recognition Camera

The general recognition camera can capture independent snapshots of the target. They are mainly used at places where people and vehicles are mixed together such as traffic lanes with people and vehicle, taxi pick-up and drop-off spots, bus stops, tourist distribution center, urban village inlet and outlet, and community venue entrances.

2. Start Up

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

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

 **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 of IPC4X5 series:

- 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: Browser (32 bits): 360 browser, IE11.0 or newer, Firefox (51.0 and lower versions), Google Chrome (41.0 and lower versions)
- DirectX: 9.0 C

Requirements of PC for installing the client of IPC489 series:

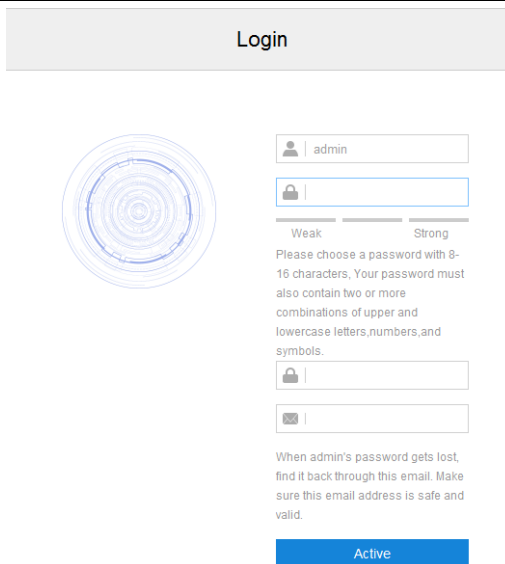
- Processor: CORE®i5-7500 and higher
- Display Card: HD-630 GPU or above
- RAM Memory: 8GB or above
- Operating System: Windows 7 or higher version
- Browser (32 bits): 360 browser, IE11.0 or newer, Firefox (51.0 and lower versions), Google Chrome (41.0 and lower versions)
- WEB Plug-in: Hardware decoding plug-in
- DirectX: 9.0c

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.



Picture 2-3 Activate through browser

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

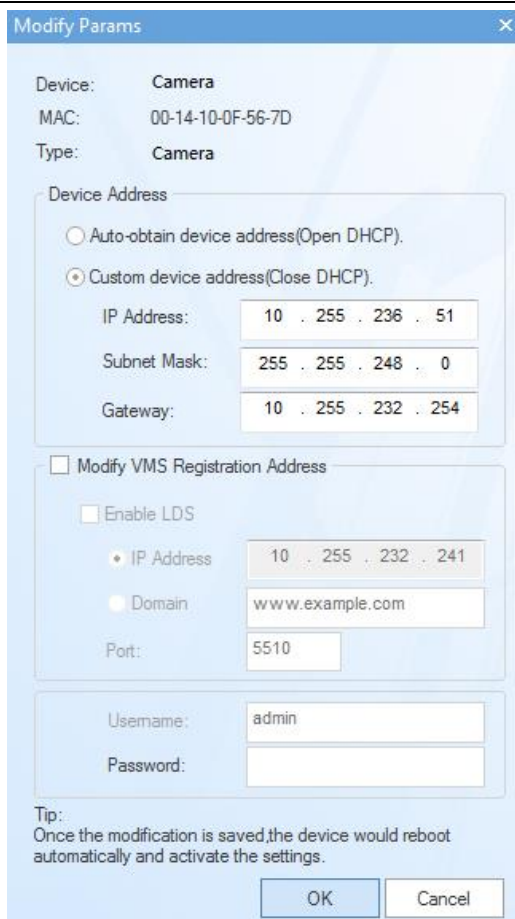
Note:

- ◆ 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

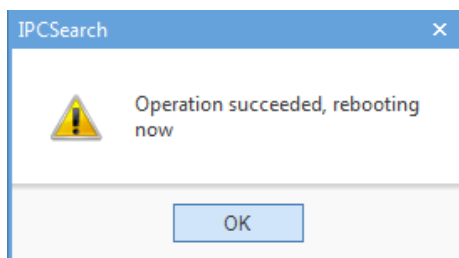
After activating the device, user can quickly modify the network parameters of the camera through IPCSearch, including IP address, subnet mask, gateway and etc.

- 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

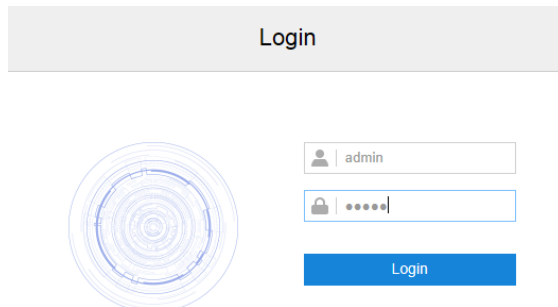
i Note: To configure more parameters, login to the web client and modify. Please refer to Chapter 5 for details.

2.3 Login and Log Out

- Login


After activating the camera and modifying the parameters, the device will reboot. After reboot, the button will be enabled again. Select either of the following methods to login to the web client.

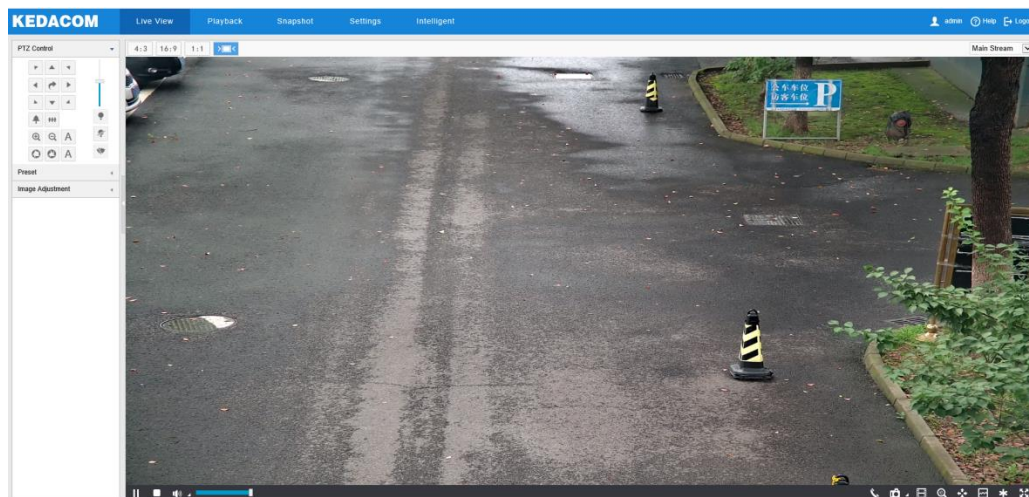
- Please select the device from IPCSearch and click “**Login**” or double click the line the device is in to enter web client. Input username and the password set during activation and click “**Login**” to enter the client.
- Enter camera IP address in the address bar of the browser to login to the web client. Input username and the password set during activation and click “**Login**” to enter the client.




Picture 2-6 Login Interface

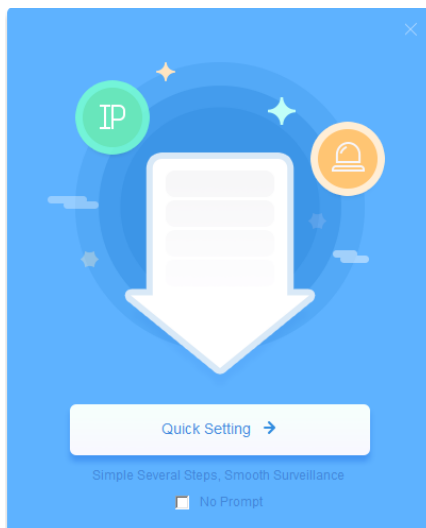
When login successfully for the first time, please download and install the plug-in. Close browser during installation. After finishing, re-login to the web client. Interface after login is shown below.

 Attention: Recommend IE kernel browser as other browsers may affect some functions of the client.



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

LAN

IP Address Configuration

NIC	GLAN1	
IP Version	IPV4	
Mode	Static	
IP Address	10.255.248.52	Test
Subnet Mask	255.255.255.0	
Default Gateway	10.255.248.254	
MAC Address	00-14-10-13-2A-42	
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"/>


Skip Next

Picture 2-9 Quick setting

➤ Log Out

On the live view interface, click  Logout to log out.

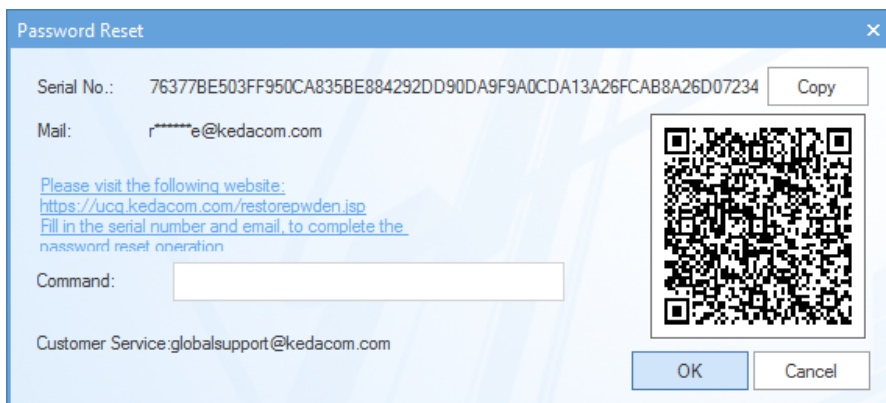
➤ Help

Click the icon  Help 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

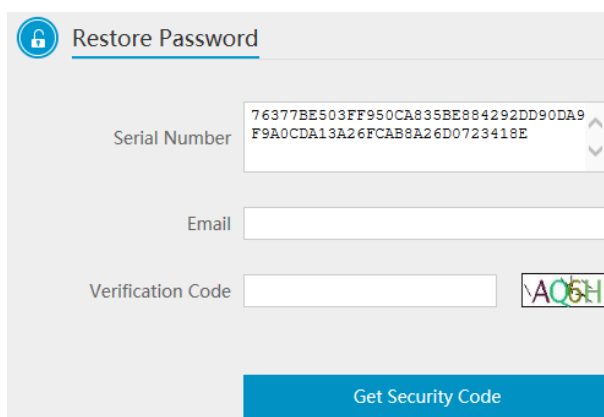
If user enters a wrong username or password for 6 times, the camera IP will be locked up for 10 minutes, during which user cannot login to this camera. If user forgets the password, reset the password.

- 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 the 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;

- Snapshot: view, search and download snapshots by picture types;
- Settings: configure camera functions and system parameters.
- Intelligent: configure the intelligent tracking system and browse the live view thereof.

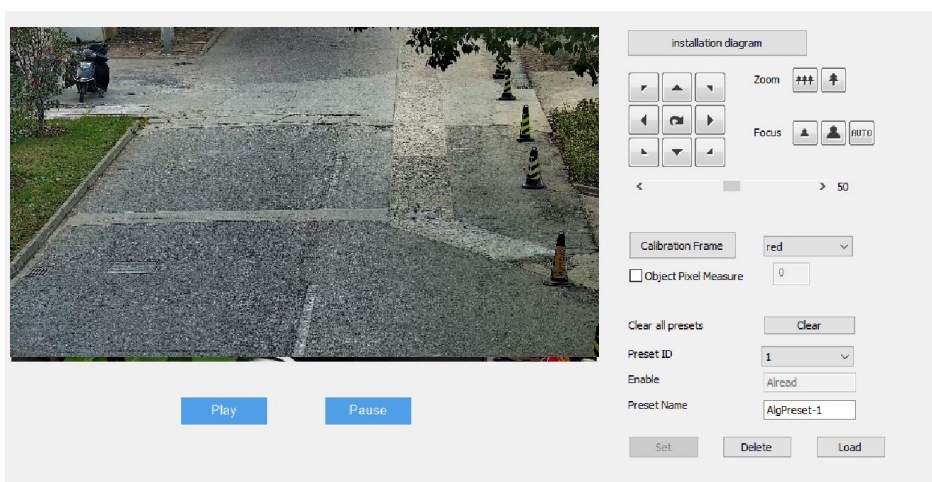
2.6 Installation

After logging into the client, adjust camera position and angles by requirements so as to make sure the camera conforms to the installation requirements. Then refer to the Quick Start Guide to configure and calibrate the camera.

i Note: The installation and setup parameters of different models may differ. Please subject to actual conditions and refer to the Quick Start Guide. This manual will take the general recognition camera to introduce the functions.

2.6.1 Preset

Go to **Intelligent > Settings > Preset Setting** and configure camera installation parameters.



Picture 2-12 Preset

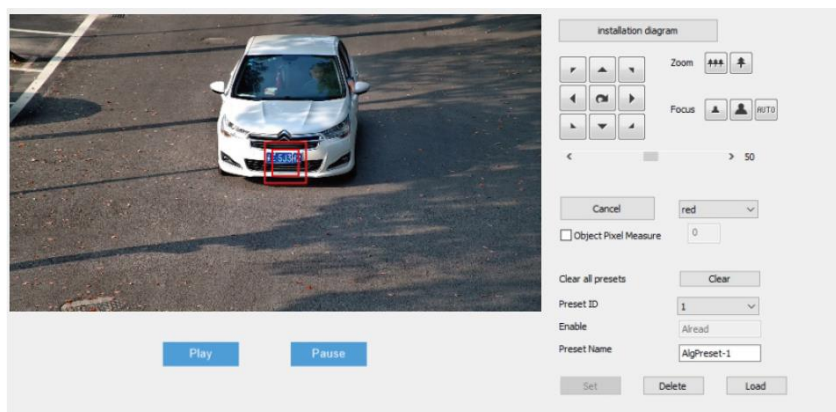
Configuration steps as follows:

- 1) Select proper installation height for the camera according to the actual environment and the Quick Start Guide. After finish installation, adjust the camera to proper angles through the PTZ control buttons on live view interface.

i [Attention] During installation, you can adjust camera installation height and angles properly to make sure the camera lens is facing rightly to the key surveillance area. The camera cannot be slanted so as to make sure the person in the picture stands upright.

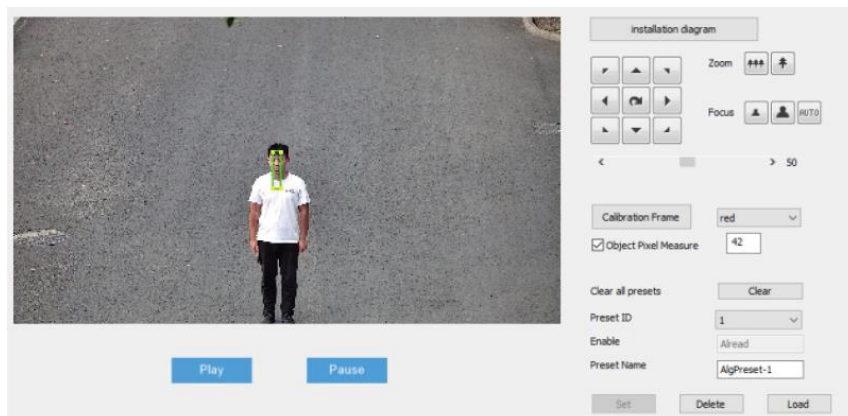
- 2) Adjust camera field of view. There are 2 methods, calibration frame adjustment and pixel adjustment.
 - Calibration frame adjustment:

- a) Select calibration frame color and click “Calibration Frame” to show the calibration frame in the selected color;

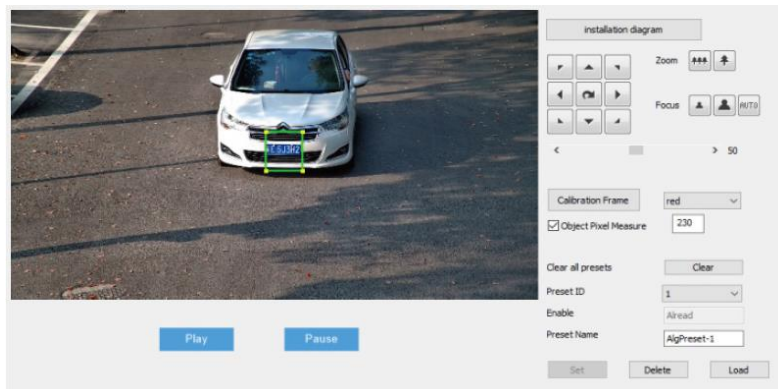


Picture 2-13 Adjust calibration frame

- b) Put the calibration board (or vehicle plate) sized 50 cm * 50 cm in the center of the image facing the lens;
 - c) Click icons of “Zoom in” or “Zoom out” to adjust the field of view and change the size of the calibration board (or vehicle plate) in the image; when the calibration board coincides with the smaller frame, it is the maximum scene; when the calibration board coincides with the larger frame, it is the minimum scene.
- Pixel adjustment:
- a) Select “Object Pixel Measure” to show the interpupillary distance (IPD) of the person or show the width of the vehicle plate in the image;



Picture 2-14 Object pixel adjustment-people



Picture 2-15 Object pixel adjustment-plate

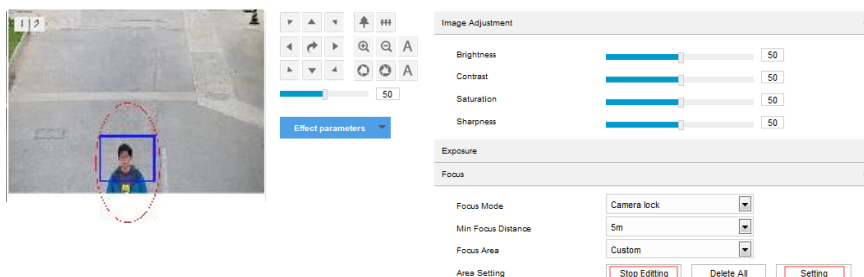
- b) Make the person or the vehicle in the center of the image;
- c) Click icons of “Zoom in” or “Zoom out” to adjust the field of view and change the size of human face or vehicle plate to ensure the IPD or the plate width is no less than the specified minimum value.

i Attention: The intelligent speed dome camera for human checkpoint has only one kind of method, i.e. pixel adjustment. Adjust the field of view to change the size of human face so as to determine the IPD and finish adjustment of field of view.

- 3) Focusing. The default focus mode of the camera is auto. Only when auto focusing cannot obtain clear images should user focus manually.

i Note: When the camera resolution is above 2.0 MP, you need to edit the focus area manually. You can arrange a person or put a richly-textured object in the edit area so as to improve focus accuracy.

- 1) Go to **Settings > Camera > Image > Focus**, select “Custom” for Focus Area and click “Edit” to edit key focusing area at the bottom of the image. After finish editing, click “Stop Editing”.



Picture 2-16 Focus

- 2) Click “Setting” to focus automatically.

- 4) After finishing the above steps, configure presets for intelligent analysis.
 - a) Select a preset number from the dropdown list;
 - b) Enter preset name;

- c) Click “Save” to finish preset setting; click “Load” to validate current preset and perform intelligent analysis. Click “Delete” to delete current preset; click “Clear” to clear all presets.

i Note: It supports maximum 8 preset positions.

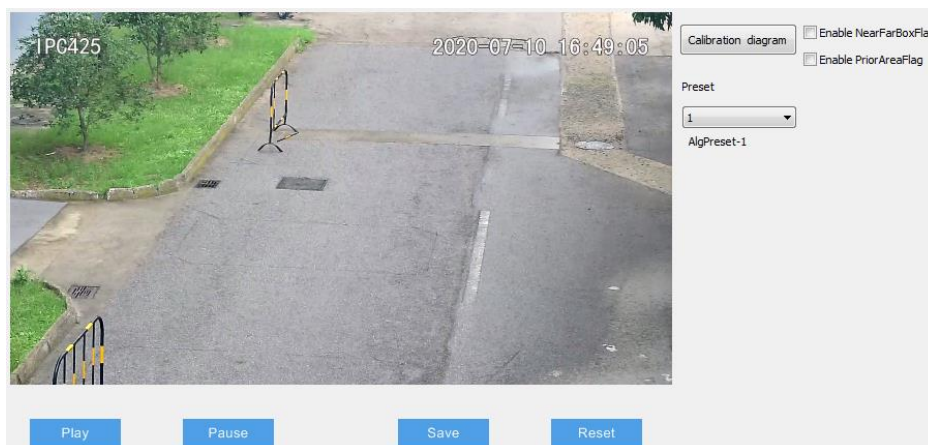
i Attention: After click “Load”, current preset takes effect and perform intelligent analysis and meanwhile its status is locked. If you adjust the PTZ or camera field of view on other interfaces, the camera will restore to locking status automatically in 5 minutes.

2.6.2 Calibration

Go to **Intelligent > Settings > Calibration** to configure calibration and prior area.

i Note:

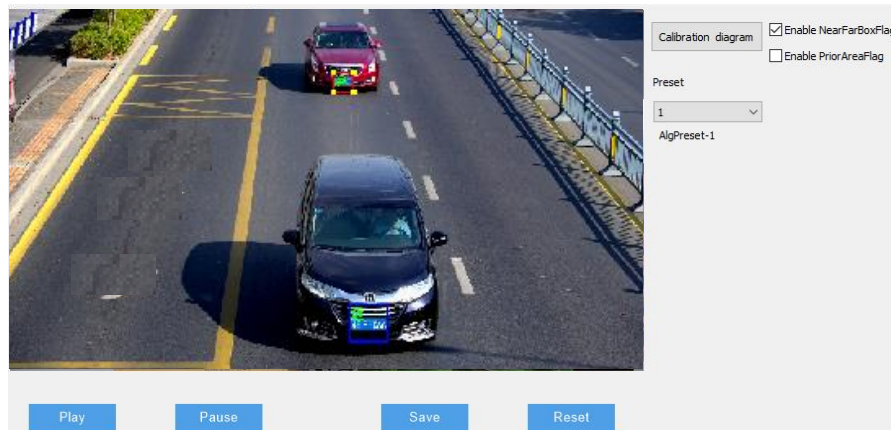
- ◆ Calibration can be done only when the camera is installed. If the camera height, angle of pitch or focal length changes, user needs to calibrate again.
- ◆ Human recognition camera does not support “Near Far Box Flag” calibration.



Picture 2-17 Calibration

- 1) Select a preset number from the dropdown list.
- 2) Calibrate. When the camera is used to capture vehicle, calibrate by referring to the vehicle plate.
 - a) Select “Enable Near Far Box Flag”. When the vehicle plate is in the center of the image, click “Pause”. Adjust the size and position of the “Far” box to make it the same width as that of the plate;

i Note: Click to select the box and drag the 4 yellow points at the corners to adjust the length and width of it; long-press on the box to select it and drag it to proper positions.



Picture 2-18 Calibration

b) Click “Play” and when the vehicle plate comes to the bottom of the image, click “Pause”. Adjust the size and position of the “Near” box to make it the same width as that of the plate;

i Attention:

- ◆ During calibration, do not adjust the field of view, i.e. do not click the zoom in or zoom out icons.
- ◆ Human recognition camera does not support calibration, so “Enable Far Near Box Flag” is disabled.
- ◆ After finishing configuration, click “Save” to validate settings and meanwhile lock camera focal length. If you adjust camera focal length on other interfaces, the camera will restore to locking status automatically in 5 minutes.

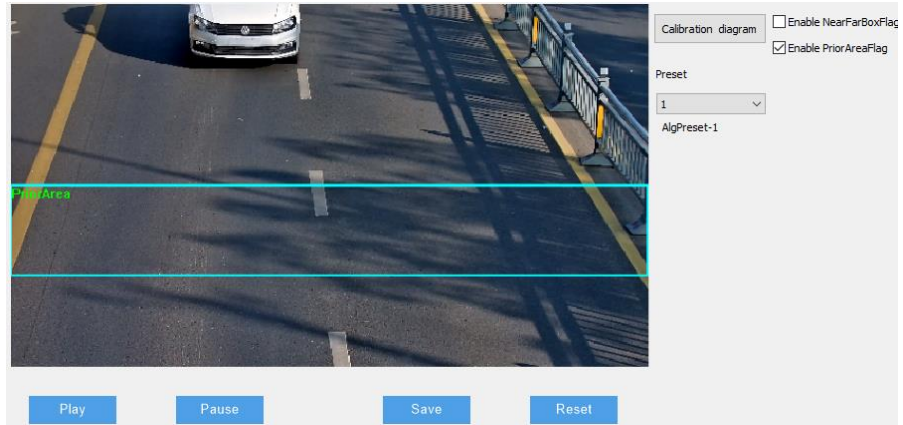
3) Configure prior area. In actual conditions, especially when the supplementary light in the field can only cover partial area, it’s necessary to configure prior areas. When “Enable Prior Area Flag” is unselected, the default prior area of the camera is full area; after selecting “Enable Prior Area Flag”, when an object enters the prior area, the camera will output the optimum snapshots in this area first.

i Note:

- ◆ Prior area configuration is used to capture human face and vehicles.
- ◆ Different models support capturing different objects.

a) Select “Enable Prior Area Flag” to display the prior area. The default prior area is 1/2 to 3/4 part from the top of the image.

b) Click the prior area frame and drag the yellow points at the corners to adjust the length and width of the area; long-press on the blue lines of the frame and drag the frame to move it to a proper position.



Picture 2-19 Prior area

- 4) Click "Save" to validate settings and click "Reset" to reset setting.

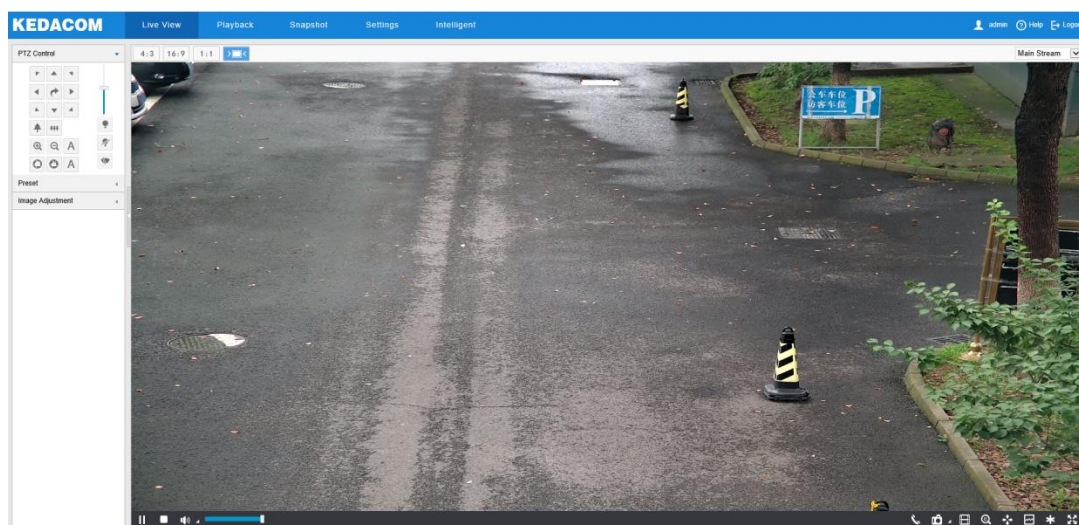
3. Basic Functions

By the web client, user can not only view live images, but also capture snapshots and record videos and configure alarm linkage. Some functions may be unavailable to some models. Please subject to actual models.

i Note: Different models may have different functions and the disabled buttons on the web client means the device does not support the function. Functions with “*” in this manual means only some models support.

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>The 8 direction buttons control the pan and tilt rotation of the PTZ. Click them to adjust the direction of image;</p> <p>Click  and the camera will patrol in pan; click again to stop.</p>
	<p>Step length adjustment button, the step length means the rotation speed of the image on each click of the direction button. Drag the slide bar to adjust. The larger the step length is, the faster the image will rotate.</p>
	<p>Buttons to adjust the camera's field of view. Field of view is the surveillance scope of the camera. The larger the field of view is, the broader the scope will be. Click  to zoom in and the object is magnified; click  to zoom out and object is narrowed.</p>
	<p>Buttons to adjust the sharpness of focused object. Click  to focus nearby object clear and distant object will become misty; click  to focus distant object and nearby object will become misty; click  to focus automatically.</p>
	<p>Buttons to adjust the size of aperture. Click  to enlarge aperture and the image becomes bright; click  to narrow aperture and the image becomes dark; click  to adjust aperture automatically.</p>
	<p>Light on/off button, click  to enable IR light detection. When the light condition turns dark, enable the IR light for lighting. Click  to disable IR light, and even the light condition turns dark, the IR light will not be on.</p>
	<p>Wiper is used to clean the glass dome. Click the icon to enable wiper and click again to disable. 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 configure.

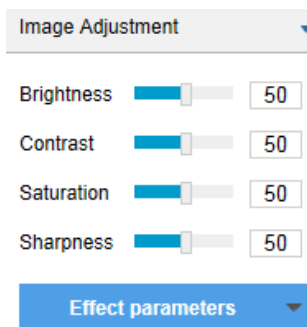
 **Load:** Click this icon to load a preset and the PTZ camera will rotate to the preset and display the image according to the set parameters.

 **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





Adjust image brightness, contrast, saturation and sharpness if necessary by dragging the slide bars or enter a value behind the slide bars.

- **Brightness:** Adjust current image brightness by actual request. The higher the value is, the brighter the image will be.

- **Contrast:** Adjust current image contrast by actual request. The higher the value is, the clearer the contrast between the dark and the bright of the image will be.
- **Saturation:** Adjust current image saturation by actual request. The higher the value is, the fresher the image will be.
- **Sharpness:** Adjust current image sharpness by actual 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 > Image > Image Quality > Effect Parameters**, and refer to **Effect Parameters** in Chapter 6 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 HD image. It is the encoding format of live view, and can be set in **Settings > Camera > Video > Encoding Format**.
- **Secondary Stream:** Display the SD image. It is the encoding format of live view, and can be set in **Settings > Camera > Video > Encoding Format**.
- **Third Stream:** Display the SD image. It is the encoding format of live view, and can be set in **Settings > Camera > Video > Encoding Format**.



Note: After enabling third stream in **Settings > Camera > Video > Encoding Format**, the live view interface will show the display option of third stream.

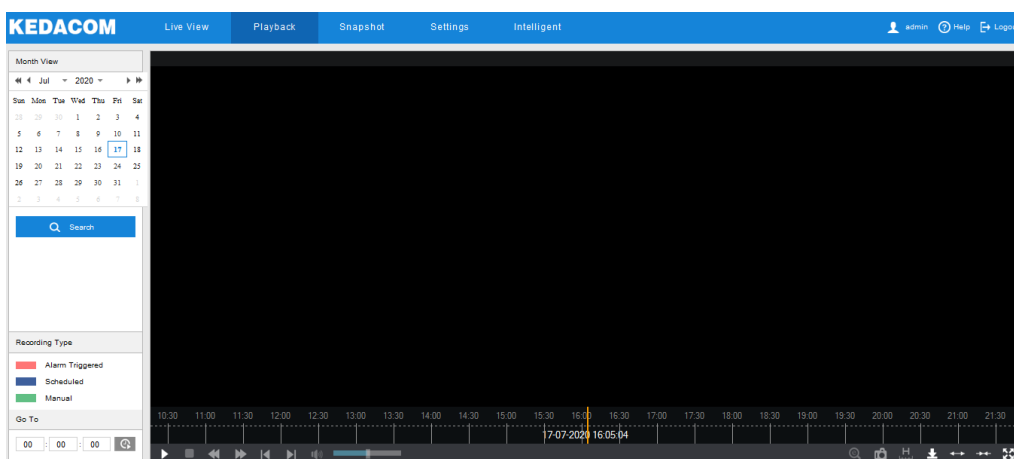
➤ Toolbar

-  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  to enable or disable voice; click  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  to capture current image; click  to select camera snapshot or 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 full screen.

3.2 Playback

Click “**Playback**” to enter the interface of recording management. User can search, view and download video records saved in the 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 skip playing. Also, user can set playback time under "Go To" and click  to select playback time.

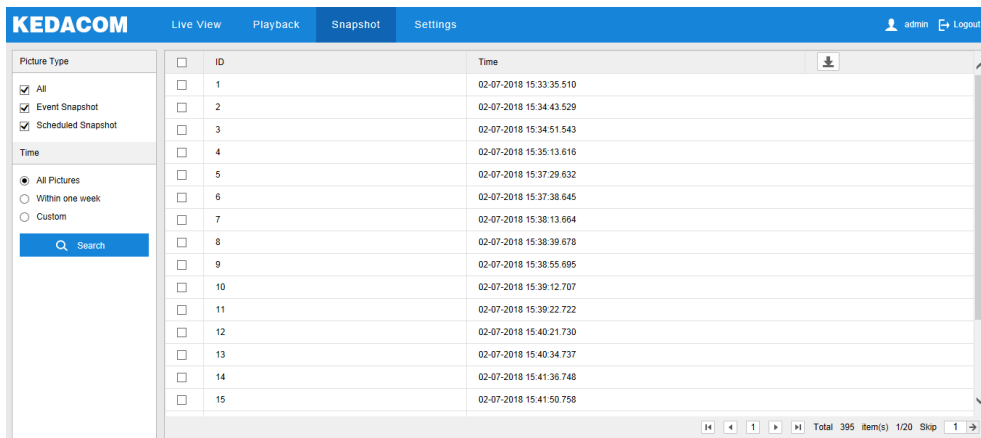
Buttons on the playback interface:

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 Chapter 3.4 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 Chapter 3.4 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 Chapter 3.4 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  to download the selected pictures. Snapshot save path can be set in **Local Setting > Camera Snapshot Save Path**.

3.4 Local Setting

Go to **Settings > Local Setting**, and configure parameters of video playing, the size and save path of video records and snapshots on local PC, as shown in the following picture.

Play

Protocol TCP UDP

Performance Real-time **Balanced** Smooth

Decoded Process Mode Default **Brightness Enhance**

Enable Image Noise Reduction

Noise Reduction Level 1

Enable Vertical Synchronization (Enabling this function will increase the CPU Utilization.)

Display Status Info

Rule information display

Hard Decode Perferred

Recording

Packet size 256M **512M** 1G

Local Recording Save Path

Clipping Save Path

Download Save Path

Snapshot

Local Snapshot Save Path

Camera Snapshot Save Path

Snapshot Save Path

Others


Enable Configuration Guide

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.
 - Hard Decode Preferred: After enabling this function, the video decoding will select hardware decoding first.
- 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.



Note: Please follow the Quick Start Guide strictly during installation; ensure the normal working of functions such as preset loading and path patrol.

4. Intelligent


4.1 Intelligent Live View

Click “Intelligent” to enter the intelligent live view interface, as shown below.

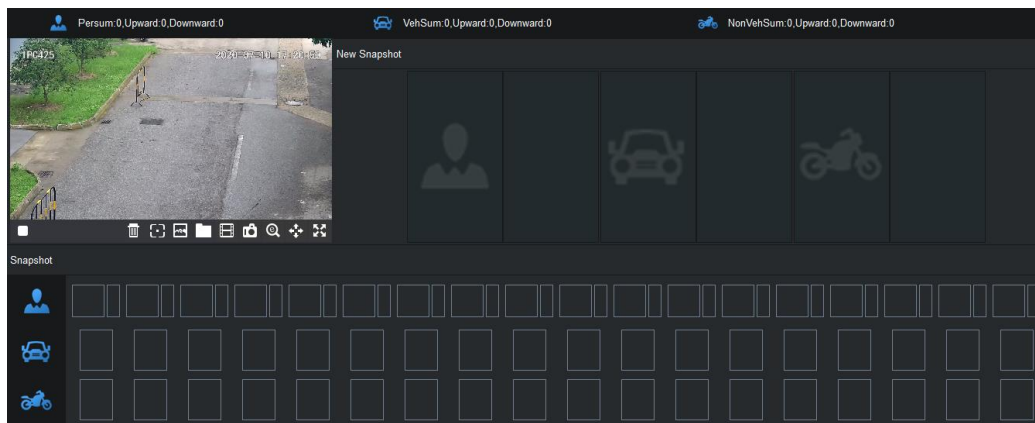


Picture 4-1 Intelligent live view

Icon	Function
	Play/Stop. Click this button to play the live view video, and click again to stop viewing.
	Zero clearing. Click this button to clear the number of people or vehicles entering the guard area during the arming durations.
	Show tracking box or not. Click this button and the image of the box camera will show the target box and tracking box of all targets entering the guard area during arming durations; click this button again to stop showing the tracking boxes.
	Capture and display optimal snapshot or not. Click this button and the system will capture and filter people, motor vehicles, and non-motor vehicles according to configurations and display the qualified snapshots in “New Snapshot” area; click this button again to disable capturing function and hide snapshots. Go to Intelligent > Settings > Parameters to configure the parameters and click “Save” to validate setting.
	Open directory of snapshot. Click this button to open the file folder of snapshots from local PC.
	Video recording. Click this button to start video recording and click again to stop video recording. Go to Intelligent > Settings > Path , and configure the save path.
	Capture snapshot. Click the button to capture current image.
	ePTZ, electrical zooming in. Click this button to enable ePTZ. 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 button. Click the button 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

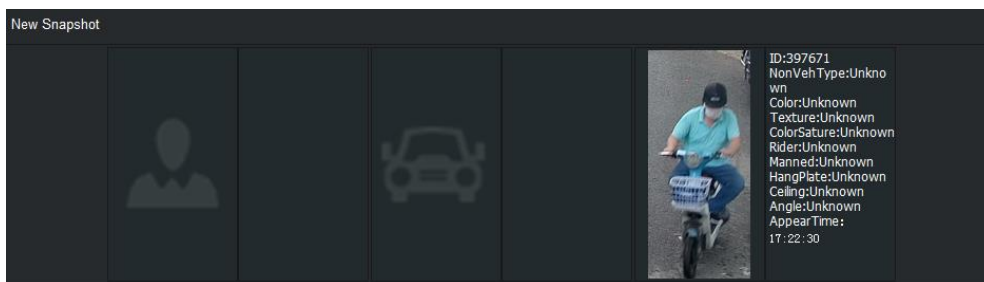
Icon	Function
	and drag toward upper left to draw an area, then the image will recover. Double click a point in the image and the point will be centered.
	Full screen. Select a viewing window and click this button to display the image in full screen. In the full screen image, double-click the left button of the mouse or press Esc to exit full screen.

Click  "Capture and display optimal snapshot or not" to view real-time statistics, latest snapshots and snapshot display.



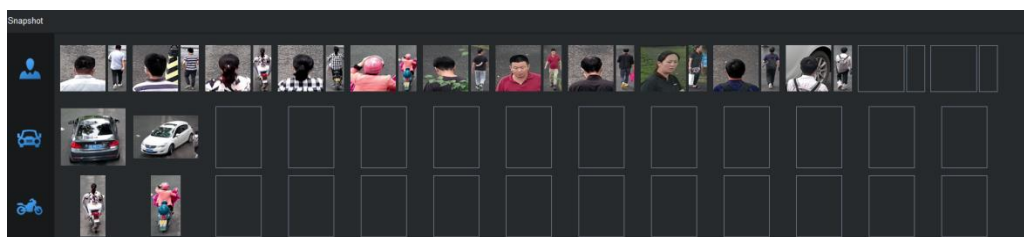
Picture 4-2 Capture and display optimal snapshot or not

- Real-time statistics: It shows the real-time statistic information on the top of the live view window, including people sum, vehicle sum and non-motor vehicle sum and the target sum of different directions.
- New Snapshot: It shows the snapshot result of latest person, vehicle or non-motor vehicle, including target close-up picture, corresponding panoramic picture and intelligent analysis information.



Picture 4-3 New snapshot

- Snapshot display: It shows the recent snapshots of people, vehicles and non-motor vehicles, including both the close-up and the panoramic snapshots.



Picture 4-4 Snapshot display

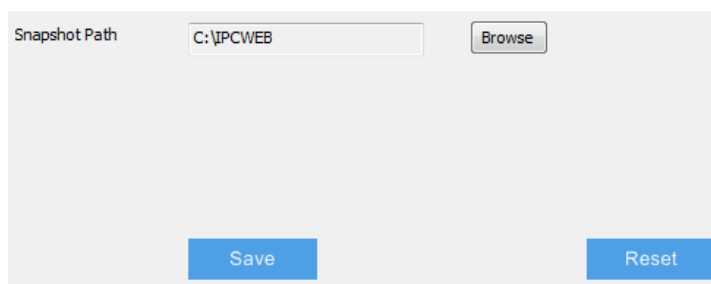
Double-click a snapshot to view the details on the popup window, including close-up image, panoramic image and intelligent analysis information. Click “Show panoramic image” to show the panoramic image of the close-up.

4.2 Intelligent Settings

Go to **Intelligent > Settings** to capture snapshots and analyze attributes, including configurations of path, DPSS and etc.

4.2.1 Path

Go to **Intelligent > Settings > Path** to configure save path of snapshots.



Picture 4-5 Path setting

Configuration steps are as follows:

- 1) Click “Browse” on the right and select the local path for saving snapshots, and click “OK”.
- 2) Click “Save” to validate setting; click “Reset” to restore default path.

4.2.2 DPSS

The camera obtains the MAC address of wireless front-end device such as a cellphone through Wi-Fi, and transfers the MAC address to back-end platform through DPSS protocol. Configuration steps are as follows:

- 1) Go to **Intelligent > Settings > DPSS**.



Picture 4-6 DPSS

- 2) Select “Enable” to enable DPSS service.
- 3) Enter DPSS server address and port number.

- 4) Click "Save" to validate setting. Click "Reset" to restore to default values.

4.2.3 VIAS

The camera could upload captured snapshots to VIAS platform as materials for future data analysis and comparison. Configuration steps are as follows:

- 1) Go to **Intelligent > Settings > VIAS**.

The screenshot shows a configuration form for VIAS. The fields and their values are as follows:

Access VIAS	VIIAS1	
<input type="checkbox"/> Enable		
Network Access ID		
VIAS Address(IPv4)	10 . 67 . 82 . 11	
VIAS Port	80	(1~65535)
User Name	admin	
Password	••••••••	
Heartbeat Signaling Interval	30	10~1000 (s)
Installation Address	rfe	
Administrative Area Code		
Sending Mode	Object List	
Connection Status	Unknown	Get
AccessRecord	Disable	
Image Transmission First	<input checked="" type="checkbox"/> Enable	

Picture 4-7 VIAS

- 2) Select a VIAS from the dropdown list of "Access VIAS". The system supports multiple VIAS platforms.
- 3) Select "Enable" to enable VIAS access function.
- 4) Enter ID of device to access to the VIAS platform.
- 5) Enter IP address and port number of VIAS platform.
- 6) Enter user name and password of VIAS platform.
- 7) Enter heartbeat signaling interval.



Note: The heartbeat signaling interval is used to detect TCP disconnection. Usually it sends simple communication packets periodically. If the system does not receive any response from the other side in the configured interval, it will judge the other side has been disconnected. For example, if the parameter is set 30, the system will send the packet once every 30 s.

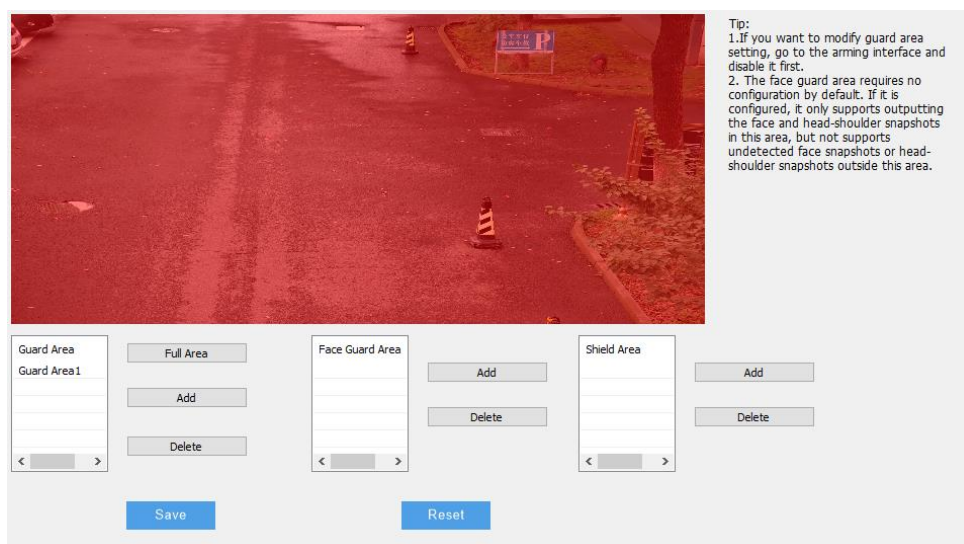
- 8) Enter "Installation Address" and "Administrative Area Code" by request for positioning the device.

- 9) Select sending mode from the dropdown list.
- 10) Click “Get” behind “Connection Status” to obtain the connection status between the device and the VIIAS platform and display in the text box.
- 11) Select a method from the dropdown list of “Access Record”.
- 12) Select “Image Transmission First” if necessary.
- 13) Click “Save” to validate settings. Click “Reset” to restore to previously saved configuration.

4.2.4 Guard Area

Guard area means one or several areas defined in the image. Any moving targets such as people, vehicles or non-motor vehicles entering the area(s), the system will lock them automatically. User can edit guard area, face guard area and shield area in the image so as to configure key snapshot area and uninterested area.:

i Note: Go to **Intelligent > Settings > Custom Setting > Arming**, select “Disable” and click “Save”. After the setting takes effect, guard area can be configured.



Picture 4-8 Guard area setting

- **Guard Area**
 After configuring guard area, the system will lock any moving targets such as people, vehicles or non-motor vehicles entering the area continuously, and capture snapshots and perform intelligent analysis. Meanwhile, the system will ignore the moving objects in the uninterested area. The default guard area is full area.
- **Face Guard Area**
 After configuring face guard area, the system will capture and analyze human faces in the face guard area only, while it will capture and analyze whole bodies of people outside the face guard area. Before configuring the face guard area, the default face guard area is full area.

➤ Shield Area

After configuring shield area, the system will shield moving targets entering the area, and there is no shield area by default. Usually, it's unnecessary to configure shield area; if the scene is special, for example, there is some scene or thing prone to cause defocus, user can configure shield area to shield it.



Note: The number of guard area, face guard area or shield area is maximum 4, and none of the area could be too small. The areas should be large enough to hold the whole person or vehicle.

The configuration steps of guard area, face guard area and shield area are as follows:

➤ Add

- 1) Go to **Intelligent > Settings > Arming**, select “Disable” and click “Save”.
- 2) Go to **Intelligent > Settings > Guard Area**, and select a preset from the dropdown list.
- 3) Click “Add” to add guard area or face guard area or shield area, and left click on the image to select 3~20 vertexes and right click to form a closed area.
- 4) After editing, click “Save” and the guard area or face guard area or shield area will be added successfully.
- 5) After finishing configuration of the guard area, perform arming configuration to realize the purpose of excluding interference. Go to **Intelligent > Settings > Arming**, and configure by actual requests. Please refer to chapter 4.2.5 for details.

➤ Full Area Guard

Click “Full Area” and the system will detect the full image as guard area.

➤ Delete

Select the guard area or face guard area or shield area to be deleted and click “Delete” to clear this area.

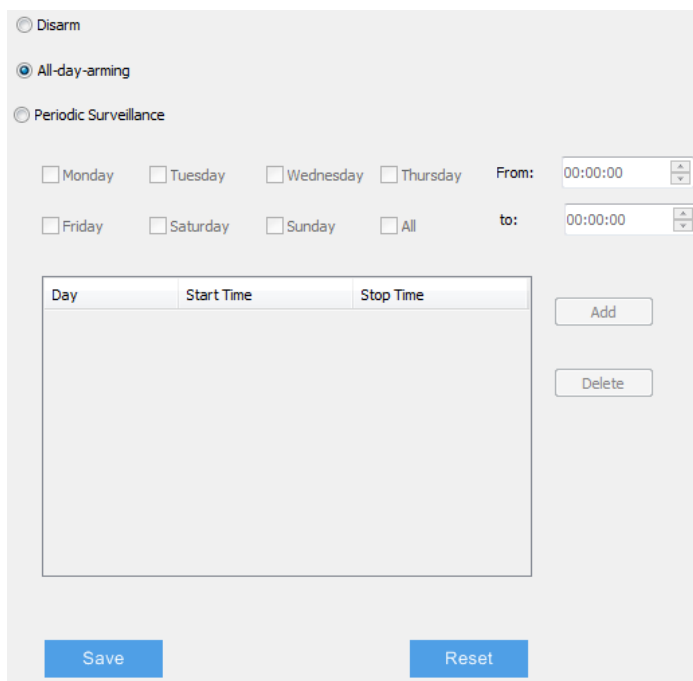
➤ Reset

Click “Reset” to restore to default configuration of guard area.

4.2.5 Arming

The camera will capture and analyze moving targets such as people, vehicles or non-motor vehicles entering the guard area according to the arming durations. Configuration steps are as follows:

- 1) Go to **Intelligent > Settings > Arming**.



Picture 4-9 Arming


2) Select arming method, options including “All-day-arming”, “Disarm” and “Periodic Surveillance”.

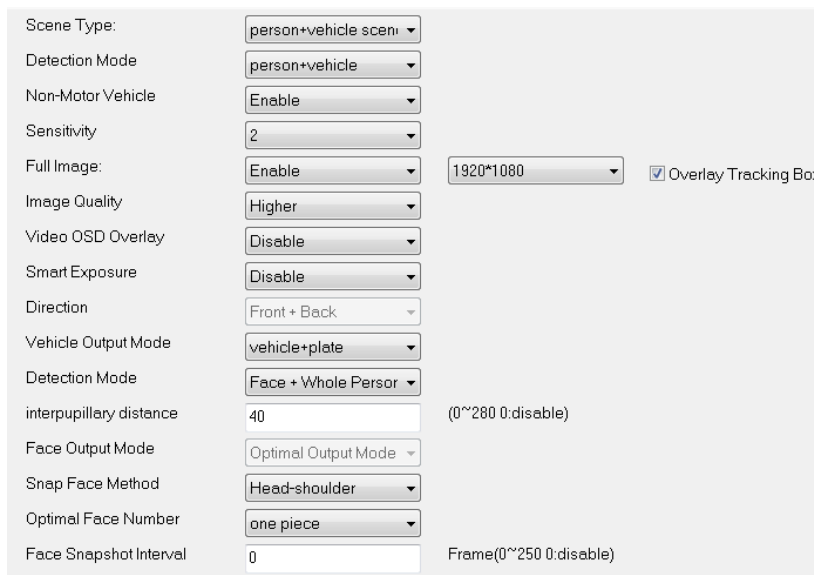
- **Disarm:** The camera does not arm at all, and it will not capture or analyze people, vehicles and non-motor vehicles entering the guard areas.
- **All-day-arming:** The camera is arming round the clock, and it captures and analyzes people, vehicles and non-motor vehicles entering the guard areas all the time.
- **Periodic Surveillance:** The camera arms in the set durations and captures and analyzes people, vehicles and non-motor vehicles entering the guard areas. Configuration steps are as follows:
 - a) Select “All” or weekdays one by one.
 - b) Set the start time (“From”) and end time (“to”).
 - c) Click”Add” and the arming duration will display in the box. Select the added duration and click “Delete” to delete the duration.
 - d) Repeat the above steps to configure different arming durations.

3) Click “Save” to validate setting. Click “Reset” to restore to default values.

4.2.6 Parameters

Go to **Intelligent > Settings > Parameters**, and configure the intelligent detection parameters of the camera. Operation steps are as follows:

 **Note:** Please configure the parameters according to the selected scene type and detection mode.




Picture 4-10 Dome camera

- 1) On the dropdown list of “Scene Type”, select a detection scene, options including “Person scene”, “Vehicle scene” and “Person + Vehicle scene”.
- 2) On the dropdown list of “Detection Mode”, select a detection mode, options including “Person”, “Vehicle” and “Person + Vehicle”.

i Note: The configuration parameters of different detection modes are different. Please subject to the actual interfaces. This manual will take “Person + Vehicle” mode as an example.

- 3) On the dropdown list of “Non-Motor Vehicle”, select “Enable” or “Disable” to output or not output non-motor vehicles.
- 4) Select a level from the dropdown list of “Sensitivity”, the range being 1~5. The lower the sensitivity is, the lower the recognition rate and the false alarm rate there will be; and vice versa.
- 5) Select “Enable” or “Disable” from the dropdown list of “Full Image”. If selecting “Enable”, you can configure the resolution of panoramic image. Select “Overlay Tracking Box” to overlay the tracking box on the panoramic image. Select a level from the dropdown list of “Image Quality”. Select “Enable” or “Disable” from the dropdown list of “Video OSD Overlay”. If selecting “Enable”, the OSD will be overlaid on the panoramic image.
- 6) Select “Enable” or “Disable” from the dropdown list of “Smart Exposure”.
- 7) On the dropdown list of “Direction”, select “Front + Back”, “Front” or “Back” to filter the output targets according to the direction (the direction facing the lens is front side).
 - Select “Front + Back” to output detected targets in front and back directions.
 - Select “Front” to output detected targets in front direction.
 - Select “Back” to output detected targets in back direction.

- 8) On the dropdown list of “Vehicle Output Mode”, select “Vehicle”, “Plate” or “Vehicle + Plate”.

 **Note:** When selecting “Plate” as the vehicle output mode, the panoramic image is enabled by default.

- 9) On the dropdown list of “Detection Mode”, select “Head-shoulder + Whole Person”, “Face + Whole Person”, “Head-shoulder”, “Whole Person” or “Face”. The default is “Head-shoulder + Whole Person”.


- If selecting “Head-shoulder” or “Head-shoulder + Whole Person”, the “Face Output Mode” is “Optimal Output Mode” by default, and the default “Optimal Face Number” is 1, or you can select “Several pieces”.
- If selecting “Whole Person”, the face-related parameters will all be disabled, such as “Face Output Mode”, “Snap Face Method”, “Optimal Face Number” and “Face Snapshot Interval”.
- If selecting “Face” or “Face + Whole Person”, the “Face Output Mode” can be “Optimal Output Mode” or “Continuous Output Mode”. The default “Optimal Face Number” is 1, or you can select “Several pieces”. Options for “Snap Face Method” include head-shoulder, upper body and upper shoulder. Configure “Interpupillary Distance” by actual condition. “Face Snapshot Interval” is 0 frame by default, or you can configure by request.

- 10) Click “Save” to validate settings. Click “Reset” to restore to previous configurations.

4.2.7 Vehicle Detection

Go to **Intelligent > Settings > Vehicle Detection** to configure vehicle detection parameters.

 **Note:** Human recognition cameras do not support vehicle detection.

 **Attention:** Go to **Intelligent > Settings > Parameters**, and only when the scene type and detection mode are selected with “vehicle” can vehicle detection configuration be available.

Picture 4-11 Vehicle detection

- Local Plate Flag: After it is selected, when the plate’s province is not recognized, it will by default be the set province automatically.
- Filming Angle: Select vehicle snapshot direction according to actual request.
- Province: Select the default province of plate according to actual request.
- Region Code: Select the default region of plate according to actual request.
- Attribute: Select vehicle attributes according to actual request, including sun visor, driver face, vehicle logo vehicle type, calling and etc.

After finishing configuration, click “Save” to validate settings. Click “Reset” to restore to default configurations.

4.2.8 Patrol

Patrol means the camera patrols among each set presets within the configured durations. Configuration steps are as follows:

- 1) Go to **Intelligent > Settings > Patrol**.

No	Name	Start Time	End Time
1	AlgPreset-1	13:00:29	13:05:28
2	AlgPreset-2	13:05:29	13:10:28
3	AlgPreset-3	13:10:29	13:15:28

Picture 4-12 Preset setting

- 2) Select a preset from the dropdown list.
- 3) Configure the start time and end time.
- 4) Click “Add” to add a patrol preset and click “Delete” to delete the selected patrol preset.
- 5) Click “Save” to validate settings and click “Load” to load patrol.

4.2.9 Vehicle OSD

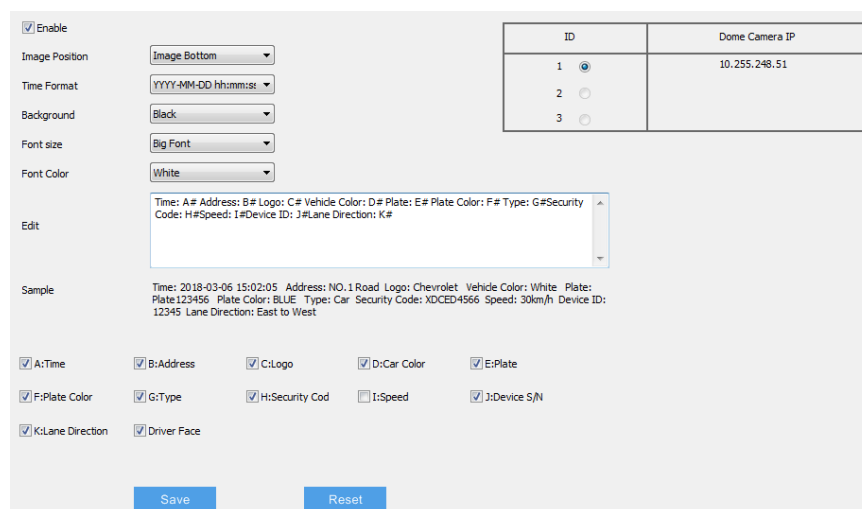
When the camera detects moving vehicles in the guard areas, it will display vehicle information according to the configured OSD. Configuration steps are as follows:



Note:


- ◆ Human recognition cameras do not support OSD configuration.
- ◆ Select “Enable”, and when the panoramic image on the dome camera interface is enabled, the OSD text will be overlaid on the panoramic image.

- 1) Go to **Intelligent > Settings > OSD**.



Picture 4-13 OSD setting

- 2) Select “Enable” to enable OSD on vehicle panoramic image.
- 3) Select a position where the OSD will display.
- 4) Select a time format from the dropdown list of “Time Format”.
- 5) Select a color from the dropdown list as the background color.
- 6) Select font size and font color from the dropdown lists.
- 7) Select the information to display and it will show in the text box. Adjust the OSD content sequence by the selection sequence. You can edit the text box according to the example below, such as address and lane direction.

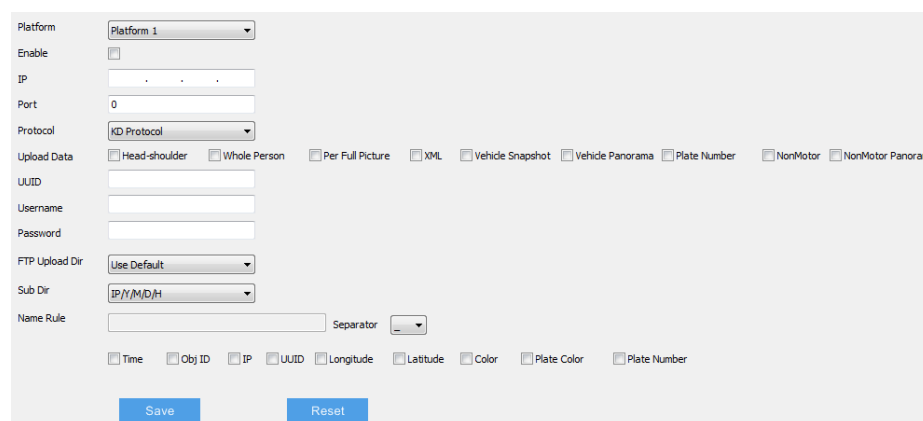
 **Note:** After selecting “B: Address” and “K: Lane Direction”, edit in the text box according to the example below. For example, “Address: B#” can be edited as “Address: Jinshan Road B#”.

- 8) Click “Save” to validate setting. Click “Reset” to restore to previously saved configurations.

4.2.10 Protocol Setting

The camera could upload snapshots and other data to platform server by configuring platform protocol. Configuration steps are as follows:

- 1) Go to **Intelligent > Settings > Protocol Setting**.

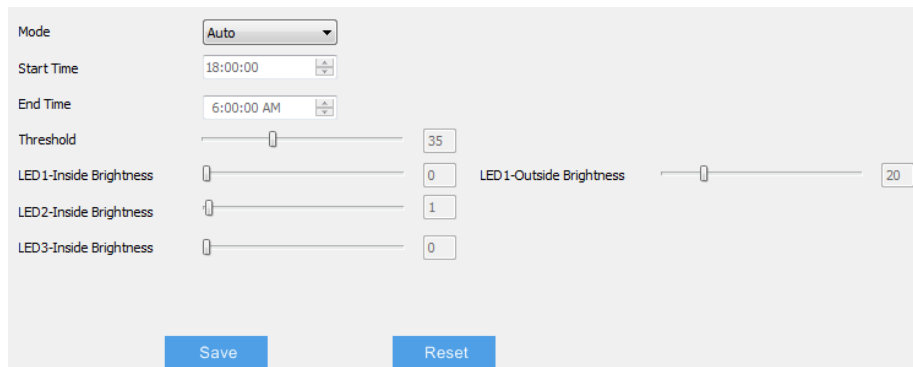


Picture 4-14 Protocol setting

- 2) Select a platform from the dropdown list of “Platform”.
- 3) Select “Enable” to enable platform service.
- 4) Enter platform IP address and port number.
- 5) Select a data transmission protocol from the dropdown list of “Protocol”.
- 6) Select data to upload to the platform.
- 7) Enter UUID address and platform user name and password.
- 8) Configure data upload directory by request.
- 9) Configure naming rule of directory folder by selecting the options by requirements.
- 10) Click “Save” to validate setting. Click “Reset” to restore to default values.

4.2.11 LED Setting

Go to **Intelligent > Settings > LED Setting** to configure the LED fill light. Configuration steps are as follows:



Picture 4-15 LED setting

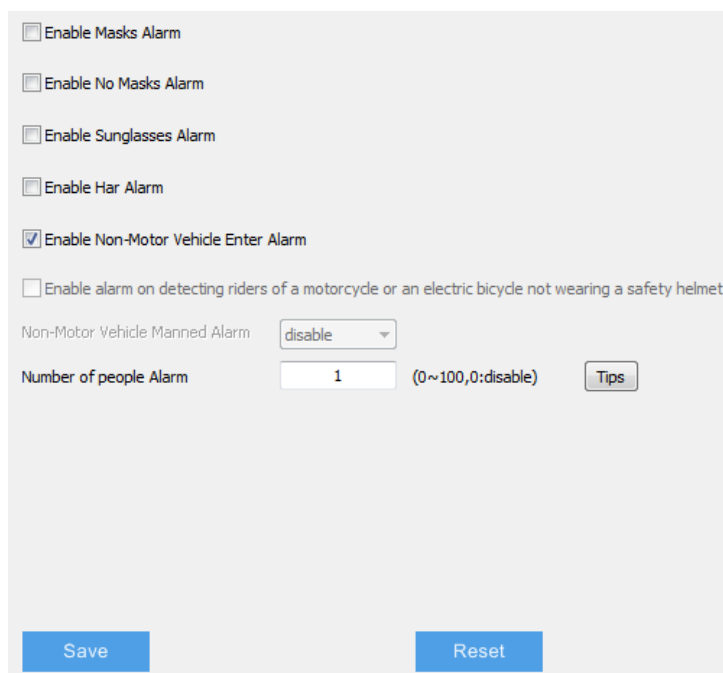
- 1) Select the enabling mode of the LED fill light, options including “Scheduled”, “Auto”, “Manual” and “Disable”, the default being “Disable”.
- 2) Under manual mode, configure LED inside and outside brightness according to actual conditions; under auto mode, as the LED fill light is gain triggered, configure the light on threshold and LED inside and outside brightness; under scheduled mode, as the LED fill light is enabled in scheduled duration, configure LED start time, end time and LED inside and outside brightness.

Note: The “Threshold” parameter is configurable under “Auto” mode only; the “Start Time” and “End Time” are configurable under “Scheduled” mode only.

- 3) Click “Save” to validate setting. Click “Reset” to restore to default values.

4.2.12 Event Setting

Go to **Intelligent > Settings > Event Setting** and select events to trigger alarms. When the selected events occur in the image, the camera will trigger alarms automatically.




Picture 4-16 Event setting


According to event types, there are attribute alarming and entry alarming. The former includes mask alarming, sunglasses alarming and hat alarming, while the latter includes non-motor vehicle entry and people entry number alarming.


Configuration steps of attribute alarming are as follows:

- 1) Go to **Intelligent > Settings > Event Setting**, and select attribute alarming events by request.
- 2) Go to **Intelligent > Settings > Parameters**, and configure “Face Snapshot Interval” by request to control the alarm output time. For example, if it is set 25 frames, when a human face is recognized, the alarm will be triggered in 1 s (the default being 0, i.e. the alarm is triggered when the person disappears).

 **Attention:** Only when the face of the person appearing in the image is recognized can the attribute alarm be triggered.

- 3) Go to **Settings > Event > Alarm Input**, and edit “Alarm Name” by actual request (i.e. the alarm text displayed when the attribute alarm is triggered). When the selected event occurs in the image, the camera will trigger alarm text automatically.

 **Attention:** If it's necessary to output alarm audio, the camera needs to connect to a loudspeaker or a voice box, which means to connect the wire “Audio Out” and “GND” to the loudspeaker or voice box. For wire connection, please refer to the *Quick Start Guide*.

 **Note:** Go to **Settings > System > System Maintenance**, and click “Configuration” to enter advanced configuration interface and configure “Minimum Alarming Interval”. The default value is 1 s and can be configured according to the audio length so as to control the play times of audio. For example, if an audio file is played once 3 seconds, the minimum alarming interval can be set 3 s. The minimum alarming interval is available to attribute alarming only.

- 4) Click “Save” to validate setting. Click “Reset” to restore to default values.

Configuration steps of entry alarming are as follows:

- 1) Go to **Intelligent > Settings > Event Setting**, and select and configure entry alarming events by request.
- 2) Go to **Settings > Event > Intelligent Function > Entry Guard Area** and select linkage method by request.
- 3) Click “Save” to validate setting. Click “Reset” to restore to default values.

 **Note:**

- ◆ Human recognition cameras do not support OSD configuration.
- ◆ When the “Number of People Alarm” is 0, it means the entry alarming is disabled; when it is 1, it means the entry alarming is enabled; when it is configured in the

range $1 < X < 100$, the people entry alarm will be triggered if the actual number of people is equal to or more than X.

- ◆ The camera starts alarming once it detects target entering the configured guard area and will stop alarming till the target leaves the guard area.

4.2.13 Version

Go to **Intelligent > Settings > Version** to view “Web Plugin Version”, “IPC APP Version” and “Algorithm Version”.

Web Plugin Version	IPC_WEB_INTELLI.SPEDVEH.1864
IPC APP Version	V7.IPC_V7R2B3SP416_R69466.INTELLI.1598.ipc_dev
Algorithm Version	spedvehdetect_v200.097 Feb 14 2020 15:24:34

Picture 4-17 Version

5. Network

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

5.1 IP and Port

5.1.1 LAN

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

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 style="width: 90%;" type="text"/>
Alternate DNS Server	<input style="width: 90%;" type="text"/>

Picture 5-1 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 (unit: byte) of data packet transmitted through TCP/UDP protocol, 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 configure 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”.

5.1.2 Port

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

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 5-2 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”.

5.1.3 Positioning

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

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

Picture 5-3 Positioning

Operation steps:

- 1) Select “**Enable**” to enable positioning function.
- 2) Select positioning mode from the dropdown list, options including “Beidou”, “GPS” and “Beidou&GPS”.
- 3) Select speed unit, options including “km/h” and “mile/h”.
- 4) After finishing configuration, click “**Save**” and view current location below.

5.1.4 *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.


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

Picture 5-4 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.

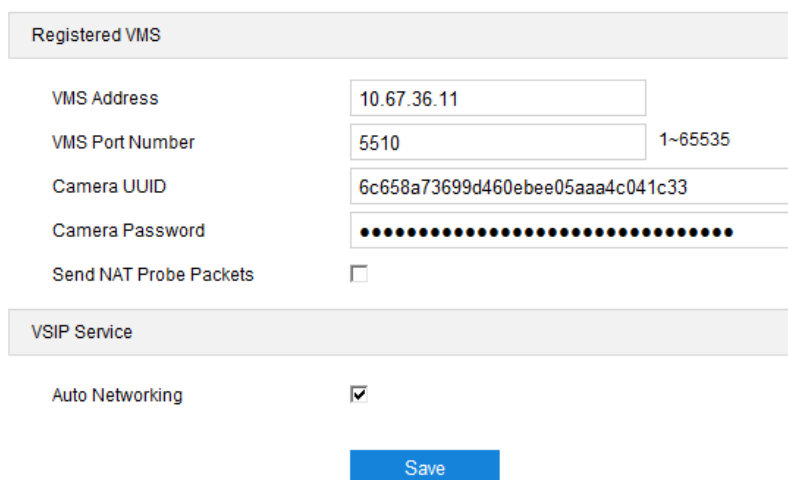
5.2 Access Protocol

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

5.2.1 VSIP


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

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



Picture 5-5 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.

5.2.2 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 configuration page for ONVIF. It is divided into two main sections: 'Basic' and 'Authentication'. In the 'Basic' section, there is a checkbox for 'Enable' which is checked. Below it is 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. At the bottom of the form is a blue 'Save' button.

Picture 5-6 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.

5.2.3 SIP

On SIP 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 > SIP**;
- 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

Local Port Number 1024-65535

Network Access ID

Camera Name

VMS ID

VMS Address

VMS Port Number 1024-65535

User Name

Password

Renewal Time (s) 30-999999

Heartbeat Signaling Interval (s) 10~1000

Camera Ownership

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="text" value="Modify Chinese GB Standard Compatibility Order"/>		
<input type="text" value="More Setting-->"/>		

Picture 5-7 SIP

5.2.4 VIID

The camera can upload the captured snapshots to VIID platform for future data analysis and comparison. Configuration steps are as follows:

- 1) Go to **Settings > Network > Access Protocol > VIID**.

VIID	<input type="text" value="VIID"/>	
Enable	<input type="checkbox"/>	
Network Access ID	<input type="text" value="00000000000000000000"/>	
VIID Address	<input type="text" value="0.0.0.0"/>	
VIID Port	<input type="text" value="8080"/>	1-65535
User Name	<input type="text" value="admin"/>	
Password	<input type="password" value="•••••"/>	
Heartbeat Time	<input type="text" value="60"/>	30-300
Installation Address	<input type="text" value="1"/>	
Regionalism	<input type="text" value="1"/>	
What to Send	<input type="text" value="Picture Set"/>	(If this option is not supported, contents to be sent are subject to actual conditions.)
Transmit Pictures Preferentially	<input type="checkbox"/>	
Auto Time Correction	<input type="checkbox"/>	
Time Correction Interval	<input type="text" value="60"/>	1-65535

Picture 5-8 VIID

- 2) Select "Enable" to enable VIID access.
- 3) Enter VIID platform ID in "Network Access ID".
- 4) Enter VIID platform IP address and port number in "VIID Address" and "VIID Port".
- 5) Enter VIID platform user name and password in "User Name" and "Password".
- 6) Heartbeat time is used to detect abnormal disconnection of TCP. Usually it sends simple communication packets periodically. If the system does not receive any response from the other side in the configured interval, it will judge the other side has been disconnected. For example, if the parameter is set 30, the system will send the packet once every 30 s.
- 7) Enter installation address and regionalism if necessary for facilitating device positioning.
- 8) Click "Save" to validate settings.

5.2.5 PDNS

When camera accesses to PDNS platform, it supports logging in the web client through the platform. Configuration steps are as follows:

- 1) Go to **Settings > Network > Access Protocol > PDNS**.

Enable	<input type="checkbox"/>	
Serial No.	<input type="text" value="489646"/>	
Name	<input type="text" value="name"/>	
APPID	<input type="text" value="appid"/>	
APPKEY	<input type="password" value="•••••"/>	
PDNS Server	<input type="text" value="pdns.bestkunlun.com"/>	
PDNS Port	<input type="text" value="4502"/>	1-65535
Connection Status	Initial	

Picture 5-9 PDNS

- 2) Select "Enable" to enable PDNS access.
- 3) Enter camera serial number and name in "Serial No." and "Name" respectively.
- 4) Enter APP ID and password in "APPID" and "APPKEY" respectively.
- 5) Enter PDNS platform IP address and port number in "PDNS Server" and "PDNS Port" respectively.
- 6) Click "Save" to validate setting. The "Connection Status" shows the connection status.

5.3 Other Protocol

5.3.1 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 5-10 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.

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

Picture 5-11 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) Select "Upload pictures" if necessary;
- 7) Click "**Save**" to validate setting.

5.3.3 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 5-12 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.

5.3.4 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 5-13 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.

5.3.5 802.1X

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	<input type="text" value="EAP-MD5"/>
EAPOL Version	<input type="text" value="1"/>
User Name	<input type="text" value="root"/>
Password	<input type="password" value="••••"/>

Picture 5-14 802.1X

- 2) Select "Enable" to enable IEEE 802.1X protocol;
- 3) Select "Protocol Type" from the dropdown list and the default is "EAP-MD5".
- 4) Select version from the list of "EAPOL Version";

- 5) Input user name and password;
- 6) Click "**Save**" to validate setting.

5.3.6 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	<input type="text" value="0"/> 0~63
DSCP Management	<input type="text" value="0"/> 0~63
<input type="button" value="Save"/>	

Picture 5-15 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.

5.3.7 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"/>	HTTP	0.0.0.0	0	Not Take Effect
<input checked="" type="checkbox"/>	RTSP	0.0.0.0	0	Not Take Effect
<input checked="" type="checkbox"/>	SDK	0.0.0.0	0	Not Take Effect

Picture 5-16 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.

5.3.8 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 SNMP v1 SNMP v2 SNMP v3

SNMP Port 1-65535

Read community

Write community

Trap Address

Trap Port 1-65535

Trap Group name

Camera ID

Read only user name

Authentication Method

Authentication password

Encryption mode

Encrypted password

Read/write user name

Authentication Method

Authentication password

Encryption mode

Encrypted password

Picture 5-17 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", "Read-only User Name", "Authentication Method", "Authentication Password", "Encryption Mode" and "Encryption Password";
- 7) Enter "Read/Write User Name", "Authentication Method", "Authentication Password", "Encryption Mode" and "Encryption Password";
- 8) Click "**Save**" to validate settings.

5.3.9 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;**

SMTP Server	<input type="text"/>	
Port	<input type="text" value="25"/>	1~65535
Sender	<input type="text"/>	
Sender Address	<input type="text"/>	
Server Authentication	<input checked="" type="checkbox"/>	
User Name	<input type="text" value="root"/>	
Password	<input type="password" value="••••"/>	
Topic	<input type="text" value="IPCMail"/>	
Attachment	<input type="checkbox"/>	
File Format	<input type="text" value="Pic"/> <input type="button" value="v"/>	
Receiver	<input type="text"/>	<input type="button" value="+"/>
	<div style="border: 1px solid #ccc; height: 40px; width: 100%;"></div>	<input type="button" value="-"/>
<input type="button" value="Save"/>		

Picture 5-18 SMTP

- 2) Input SMTP server IP address and port number, which ranges 1 ~ 65535, 25 by default;
- 3) Input "Sender" and "Sender Address"; optionally select "Server Authentication" and input correct user name and password;
- 4) Input email topic; optionally select "Attachment" and choose attached file format, then the email sent will attach the relative file;

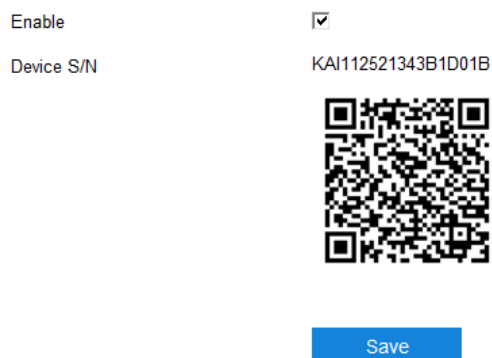
- 5) Add receiver email address. Input the receiver's email address and click the symbol "+" behind it and the address will be saved to the list below. Select an address from the list and click the symbol "-" to remove the email address;
- 6) Click "Save" to validate setting.



Note: After finishing configuration and enabling email notification, it will send alarm emails normally.

5.4 Cloud Service

Go to **Settings > Network > Cloud** to enable cloud service and install KEDACOM App on mobile devices. User can view live video on mobile devices through the App.



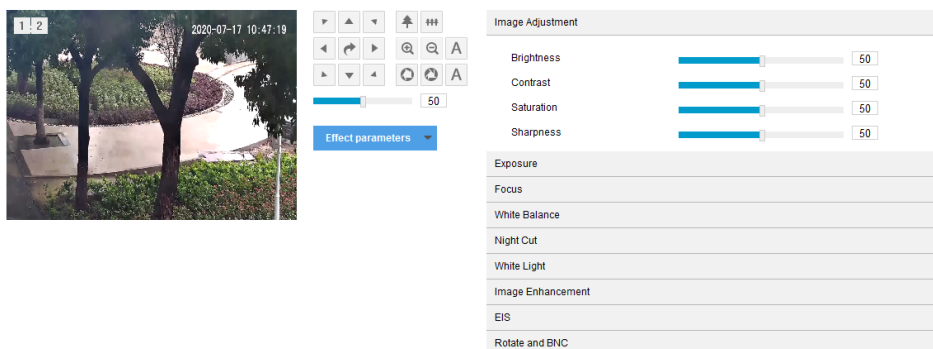
Picture 5-19 Cloud service

6. Camera

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

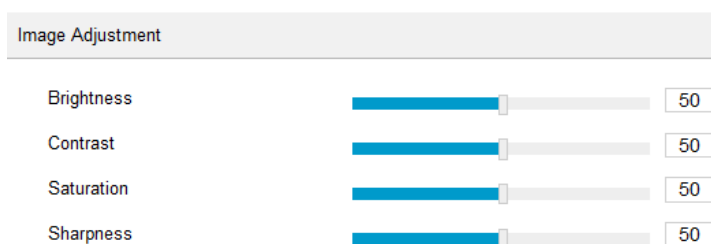
6.1 Image

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



Picture 6-1 Image

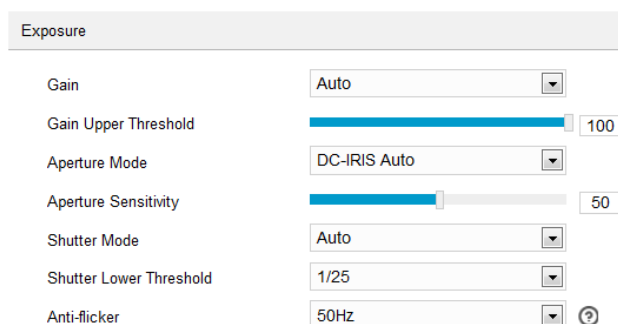
6.1.1 Image Adjustment



Picture 6-2 Image adjustment

The image adjustment in this part is the same as that on the Live View interface, which can be referred to in Chapter 3 of Image Adjustment.

6.1.2 Exposure



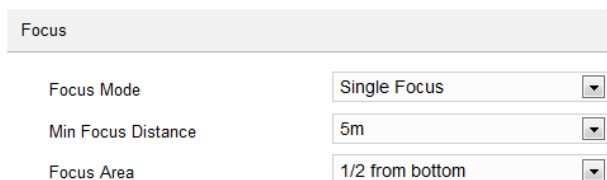
Picture 6-3 Exposure

- 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.

6.1.3 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.



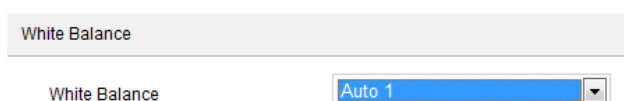
Picture 6-4 Focus

- 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;
 - Continuous Focus: The camera will trigger auto focus once there is moving object in the image.

- Single Focus: The camera will trigger auto focus once the PTZ changes.
- Min Focus Distance: It is the minimum focus distance. When the distance is shorter than this, the lens will be unable to focus automatically and clearly. Select a value from the dropdown list.
- Focus Area: Select focus area manually, options including "Center", "2/3 from bottom", "1/2 from bottom", "1/3 from bottom" and "Custom". If selecting "Custom", edit focus area manually.

6.1.4 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 6-5 White Balance

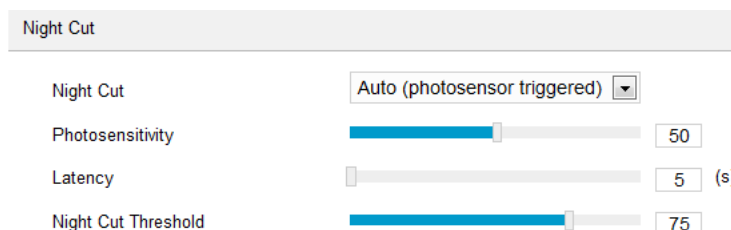
Select an option from the dropdown list of white balance mode. Suggest "Auto".

- Manual: support R Gain and B Gain adjustment.
- Auto 2: have 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 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.

6.1.5 Night Cut



Picture 6-6 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

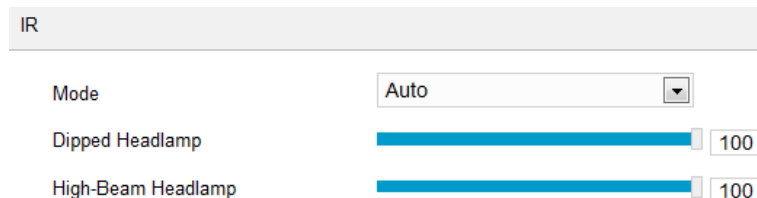
	Day Mode Start Time	Day Mode End Time
<input checked="" type="checkbox"/> Everyday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Sunday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Monday	07:00:00	18:00:00
<input checked="" type="checkbox"/> Tuesday	07:00:00	18:00:00
<input checked="" 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 6-7 Edit time

6.1.6 *IR

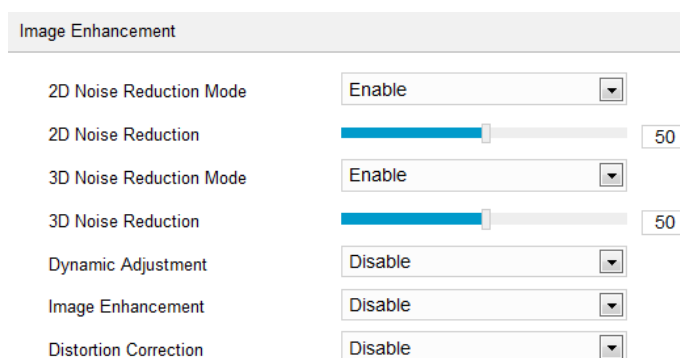
Select mode from the dropdown list, options including “Disable”, “Manual” and “Auto”, and the default is “Auto”. When there is insufficient light in the scene, the camera will enable IR light automatically to obtain clear images. Drag the slide bars to adjust IR light strength.



Picture 6-8 IR

6.1.7 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 6-9 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.

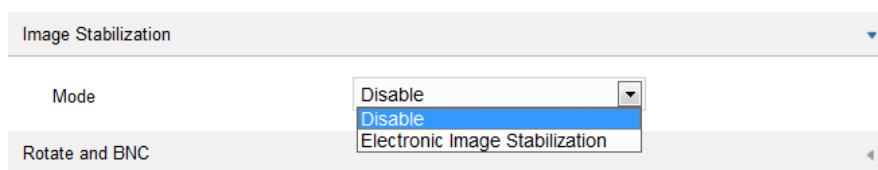
- Dynamic Adjustment: When there is strong light background, which causes sharp contrast between the light and the dark part of the image, you can adjust and optimize images through dynamic adjustment. Select a mode from the dropdown list according to actual requirements.
 - Disable: the default option 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".
- Auto WDR: The camera will adjust exposure automatically according to the light conditions.
- Image Enhancement: When there is fog in the scene, select "Gamma" or "Defog" from the dropdown list to enable image enhancement and drag the slide bar to adjust the sensitivity.
- *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.

6.1.8 *Image Stabilization

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



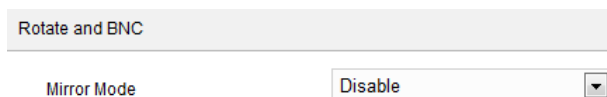
Picture 6-10 Image Stabilization

On the dropdown list of Mode, select "Electronic Image Stabilization" or "Disable" and drag the slide bar of EIS Level.



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.

6.1.9 Rotate and BNC



Picture 6-11 Rotate and BNC

Mirror Mode:

- Disable: It is disabled by default, and the image will not flip.
- Left and Right: The image will flip horizontally but vertically remains unchanged.
- Up and Down: The image will flip vertically but horizontally remains unchanged.
- Center: The image will flip by 180°.

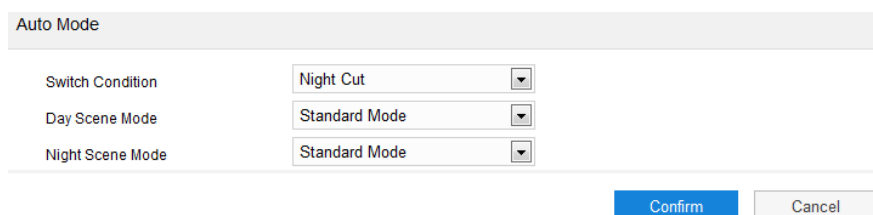
6.1.10 Effect Parameters

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



Picture 6-12 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 6-13 Auto mode

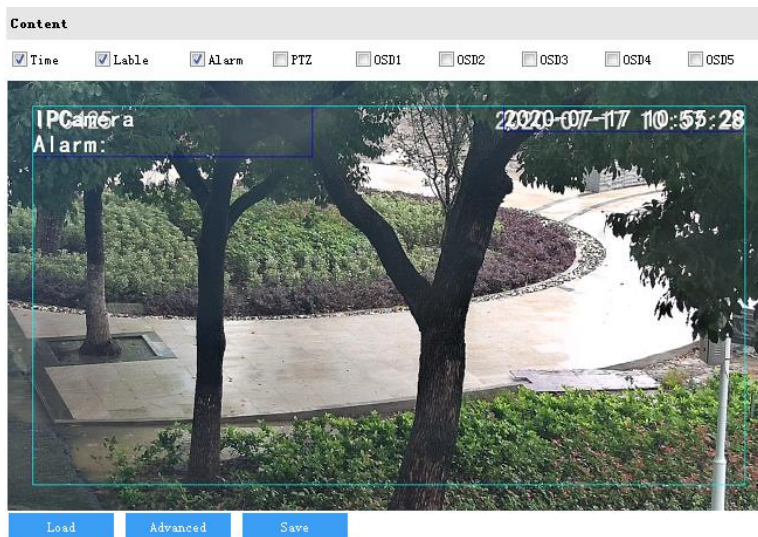
- Standard Mode: Select “Standard Mode” and all parameters will restore to defaults.
- Indoor Mode: Select “Indoor Mode” and the image brightness and noise reduction will become more suitable to indoor environment.
- Save Parameters: Select “Save Parameters” and enter “Scene Name” on the popup interface 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.

6.2 OSD

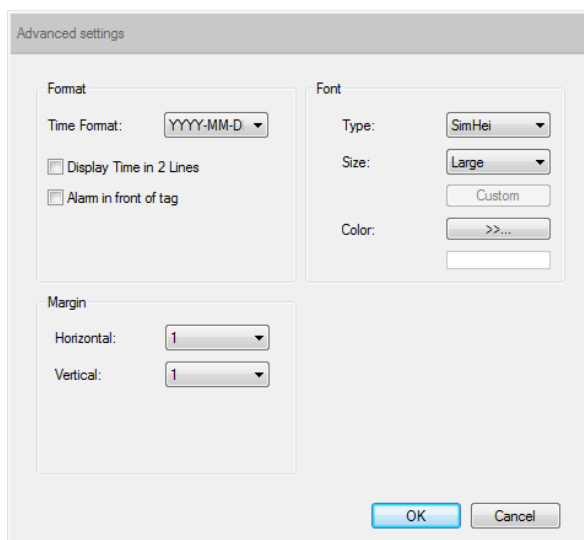
On OSD interface, you can configure OSD text on the surveillance window. Configuration steps are as follows:

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



Picture 6-14 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;



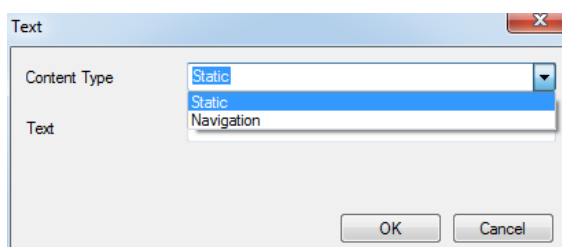
Picture 6-15 Advanced setting

- 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 "Navigation";



Attention: The default content type is static and cannot be edited. Go to Settings > System > System Maintenance > Advanced, and select "Enable" to enable dynamic plug-in to display option of "Magnification".

- When selecting "Static", enter the characters in the textbox below and click "OK" to show it on the image.
- When selecting "Navigation", click "OK" and the image will display the real-time location of the camera.



Picture 6-16 Text setting

- 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;



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.

- 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:

- ◆ 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.

6.3 Video

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

6.3.1 Encoding Format

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

The screenshot shows the 'Encoding Format' configuration page with the following settings:

- Multi-Stream: Dual-Stream (Effective after reboot)
- Stream Type: Main Stream
- Resolution: 1280*720
- Bit Rate Type: CBR
- Image Quality: Middle
- Frame Rate: 25 (1~25 Upper Limit)
- Average Bit Rate: 2048 (32~16384 (Kbps))
- Encoding Format: H.265
- Encoding Complexity: Middle
- Max Key Frame Interval: 75 (1~250)
- Smart Encoding: Close (Effective after reboot)
- Stream Smoothing Factor: 50 (The higher factor, the lower image clarity.)

A blue 'Save' button is located at the bottom of the configuration area.

Picture 6-17 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.
- **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 more 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.
- *Stream Smoothing Factor: Drag the slide bar or enter a number to configure stream smoothing factor. The smaller the value is, the clearer the video stream will be; the larger the value is, the smoother the stream transmission will be.



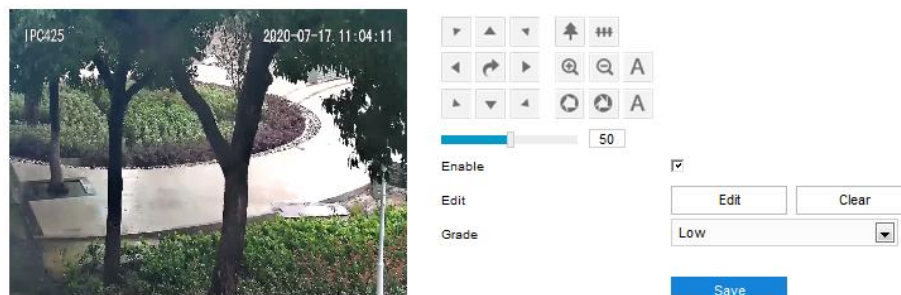
Note:

- ◆ 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.

6.3.2 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**;



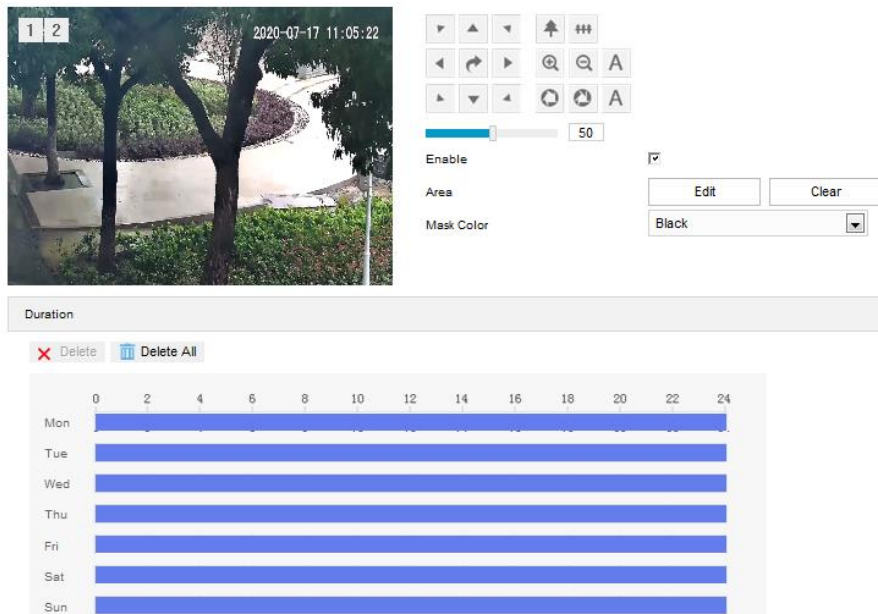
Picture 6-18 ROI

- 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.

6.3.3 *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 6-19 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;

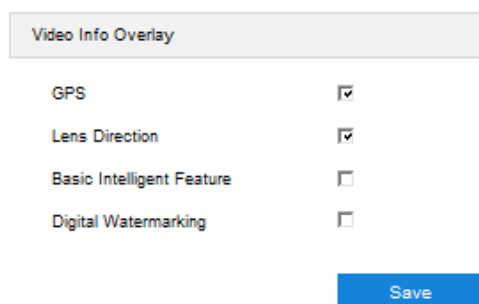


Picture 6-20 Arming durations

- 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.

6.3.4 Video Info Overlay

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



Picture 6-21 Video info overlay

- ***GPS:** Select it to show camera coordinates in the image.
- **Lens Direction:** Select it to show lens direction 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 it to show digital watermarking in the videos. It is used to protect the video recordings and avoid tampering.

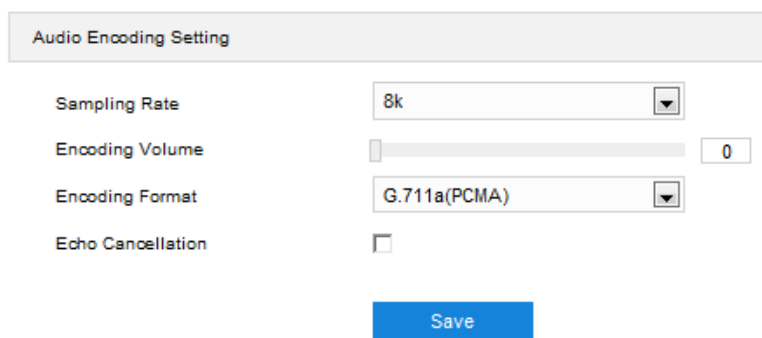
Click "Save" to validate settings.

6.4 Audio

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

6.4.1 Audio Encoding

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



Picture 6-22 Audio encoding

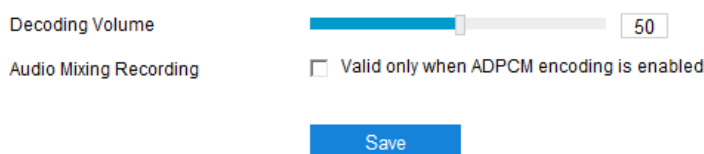
➤ Audio Encoding Setting

- 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.

Click “Save” to validate settings.

6.4.2 Audio Decoding


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



Picture 6-23 Audio decoding

➤ Audio Decoding Setting


- 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.

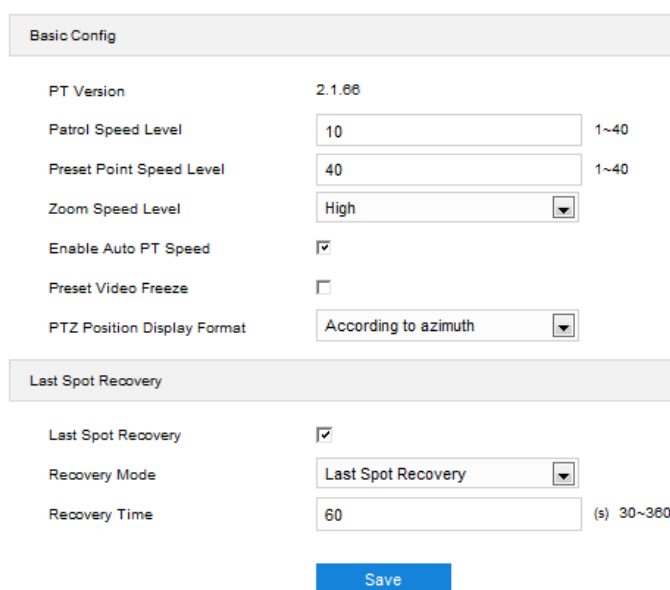
6.5 PTZ

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.

6.5.1 Basic Configuration

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



Basic Config	
PT Version	2.1.66
Patrol Speed Level	10 (1~40)
Preset Point Speed Level	40 (1~40)
Zoom Speed Level	High
Enable Auto PT Speed	<input checked="" type="checkbox"/>
Preset Video Freeze	<input type="checkbox"/>
PTZ Position Display Format	According to azimuth
Last Spot Recovery	
Last Spot Recovery	<input checked="" type="checkbox"/>
Recovery Mode	Last Spot Recovery
Recovery Time	60 (s) 30~360

[Save](#)

Picture 6-24 Basic Configuration

- **Basic Config**
 - **PT Version:** Display the version of current PT.
 - **Patrol Speed Level:** The patrol speed level of the PTZ holder. The larger the value is, the faster it patrols, vice versa.
 - **Preset Point Speed Level:** The speed level of loading presets. The larger the value is, the faster the PTZ holder will rotate to the preset, vice versa.
 - **Zoom Speed Level:** The zooming speed of the PTZ holder, options including “High”, “Middle” and “Low”.
 - **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 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.

6.5.2 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	Load Preset
Waiting Time	1 (min) 1~255
Preset No.	1

[Save](#)

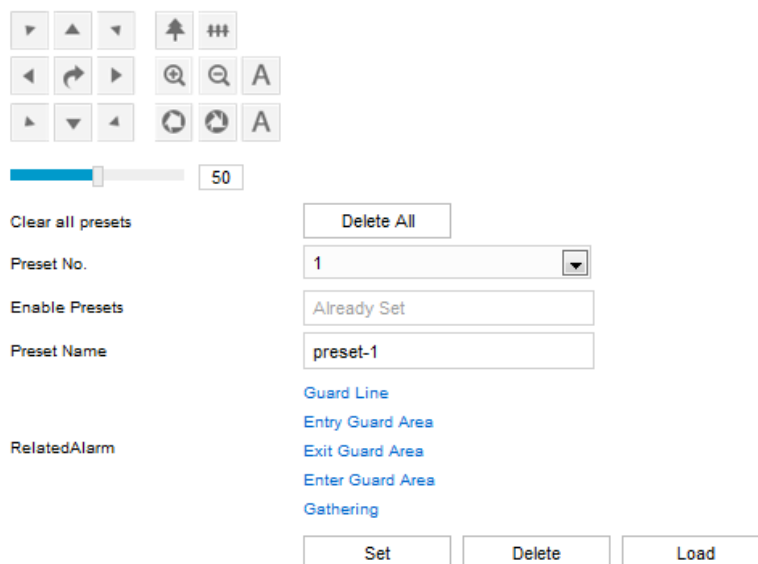
Picture 6-25 Guard Tour

- 2) Select **“Enable”**;
- 3) Select a mode from the dropdown list of “Guard Tour”;
 - Pan Mode: Camera rotates in pan direction automatically. The Waiting Time is configurable.
 - Tilt Mode: Camera rotates in tilt direction 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 is configurable. Please refer to chapter 6.5.3 for configuration steps.
 - 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 and the patrol path is selectable. Please refer to chapter 6.5.5 for configuration steps.
 - Frame Mode: In every key frame interval, camera rotates frame by frame by 90° automatically in pan direction. The Waiting Time is configurable.
 - Random Mode: Camera patrols at random speed in pan direction. The Waiting Time is configurable.
 - Panoramic Mode: Camera patrols panoramically in tilt and pan. The Waiting Time is configurable.
 - Mixed Mode: Camera patrols automatically following the historical PTZ patrol paths in a certain period of time. The Waiting Time is configurable. Please refer to chapter 6.5.6 for configuration steps.
- 4) Set “Waiting Time” according to the mode.
- 5) Click **“Save”** to validate setting.

6.5.3 Preset Position

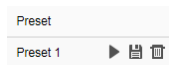
Preset position includes information of PT position and lens focal length. It is set by user and can be loaded, edited or deleted anytime. Configuration steps are as follows:


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



Picture 6-26 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 and “Delete All” to delete all presets;
- 7) In the preset part of the Live View interface, user can also select a preset

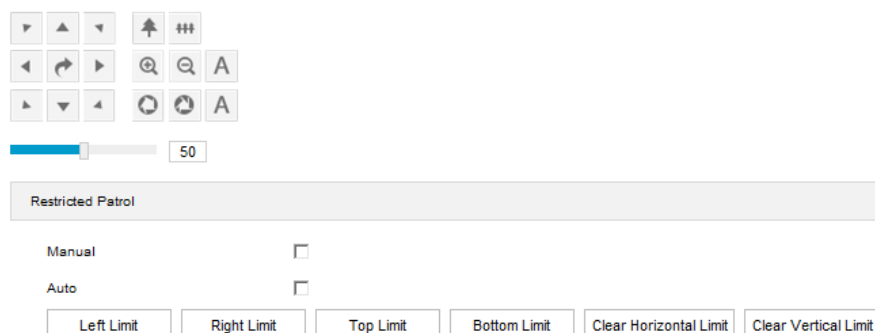
 to load, save or delete. Details can be referred to in chapter 3.1.2.

 **Note:** Click the events behind “Related Alarm” to skip to the intelligent function interfaces.

6.5.4 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**;



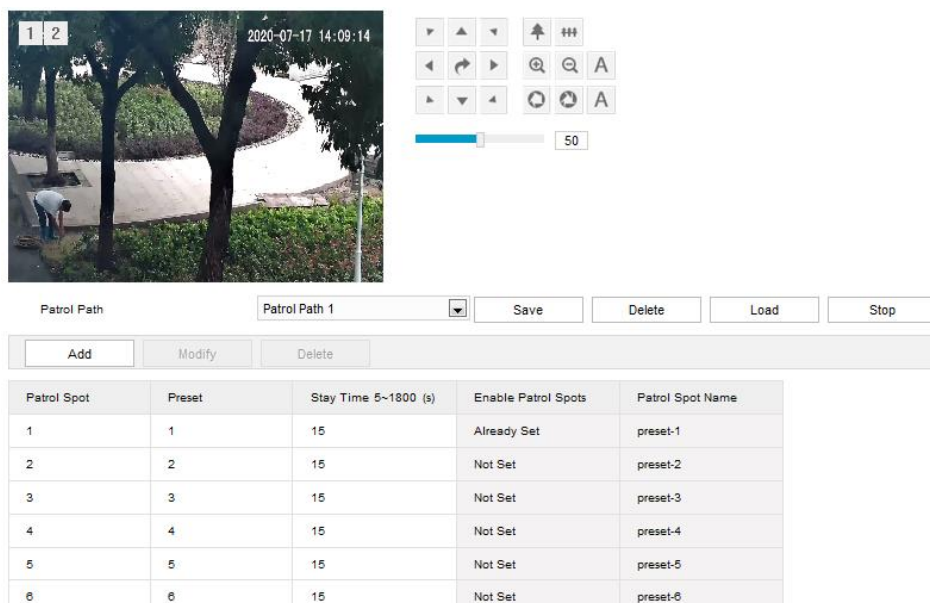
Picture 6-27 Restricted Patrol

- 2) Select "Manual" or "Auto", adjust the PTZ to a proper position and set it as the Left Limit (Top Limit). Adjust the PTZ again to another position and set it as the Right Limit (Bottom Limit);
- 3) The setting takes effect immediately. To clear limits, click "Clear Horizontal Limit" or "Clear Vertical Limit";
- 4) When enabling manual mode, user can control the PTZ manually and rotate it only between the left (top) and the right (bottom) limits; when enabling auto mode, the PTZ will patrol horizontally only between the left (top) and the right (bottom) limits.

6.5.5 Path Mode

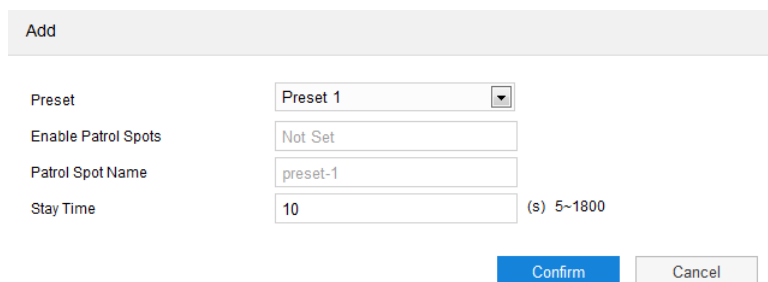
Path Mode means the camera patrols around all the valid presets on a path. After enabling this function, click any button on PTZ control to disable it. Currently, the camera supports 8 paths and the maximum allowed number of patrol spots on each path is 32. Configuration steps are as follows:

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



Picture 6-28 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.



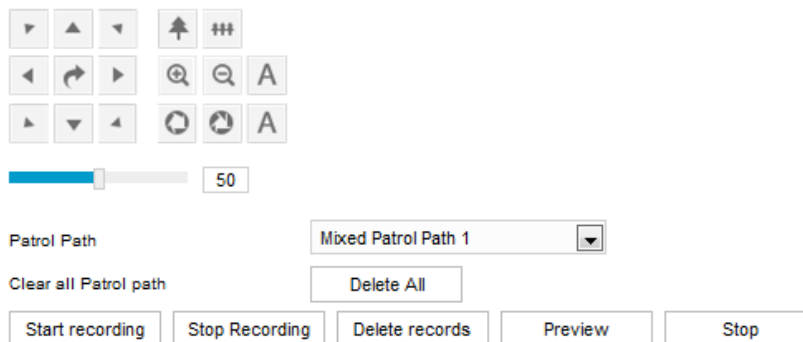
Picture 6-29 Add patrol spot

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

6.5.6 Mixed Mode

Camera patrols automatically following the historical PTZ patrol paths in a certain period of time. The maximum configurable number of mixed paths is 4. Configuration steps are as follows:

- 1) Go to **Settings > Camera > PTZ > Mixed Mode**;



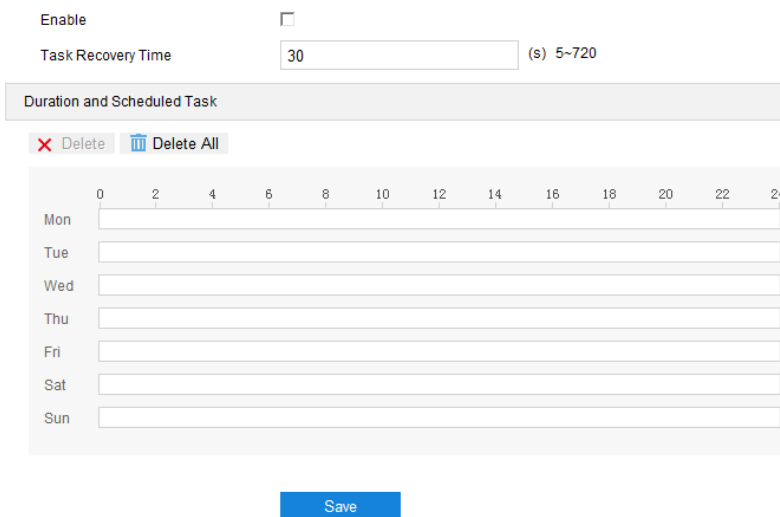
Picture 6-30 Mixed mode

- 2) Select a mixed path from the dropdown list of “Patrol Path”;
- 3) Click “Start recording” and adjust PTZ position to record PTZ rotation, steps and zooming operations; click “Stop recording” to stop recording. The maximum length of each path is 10 minutes;
- 4) Click “Preview” to preview all PTZ operations;
- 5) Click “Stop” to stop previewing;
- 6) Select path and click “Delete records” to delete all recorded PTZ operations under this path;
- 7) Click “Delete All” to clear all mixed paths.


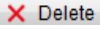

6.5.7 Scheduled Task

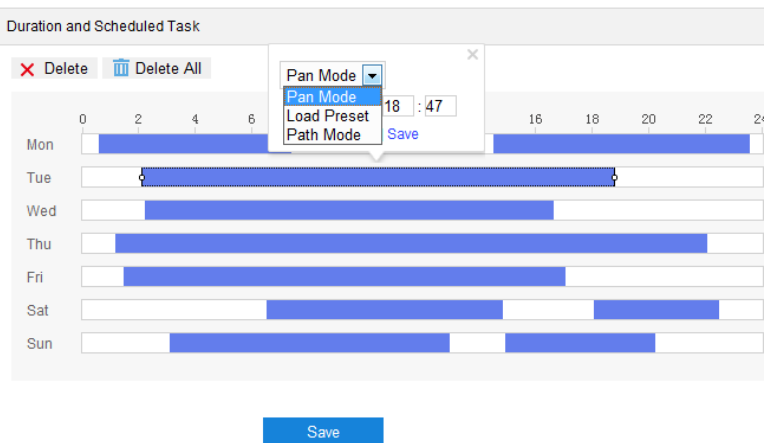
Enable Scheduled Task and set durations and tasks. Camera will complete the tasks within the set durations. Configuration steps are as follows:

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



Picture 6-31 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  below “Duration and Scheduled Task” to cancel the scheduled task. Click  below “Duration and Scheduled Task” to cancel all the scheduled tasks in one week.

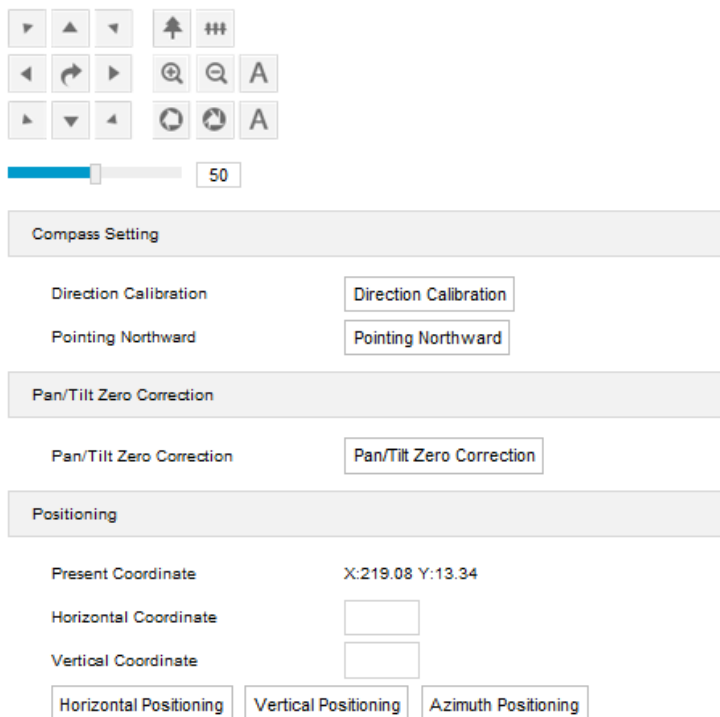


Picture 6-32 Edit scheduled task

5) Click “Save” to validate settings.

6.5.8 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. User can perform the following configurations:



Picture 6-33 Positioning

➤ *Compass Setting

- **Direction Calibration:** Click “Direction Calibration” and the device will calibrate automatically and face north when finishes calibration.
- **Pointing Northward:** After finishing direction calibration, click “Pointing Northward” and the device will set the position as due north.



Note: During direction calibration, try to keep the device as horizontal as possible.

➤ 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, go to **Settings > Camera > OSD** and select “PTZ”, it will show the live direction of the camera.

7. Event

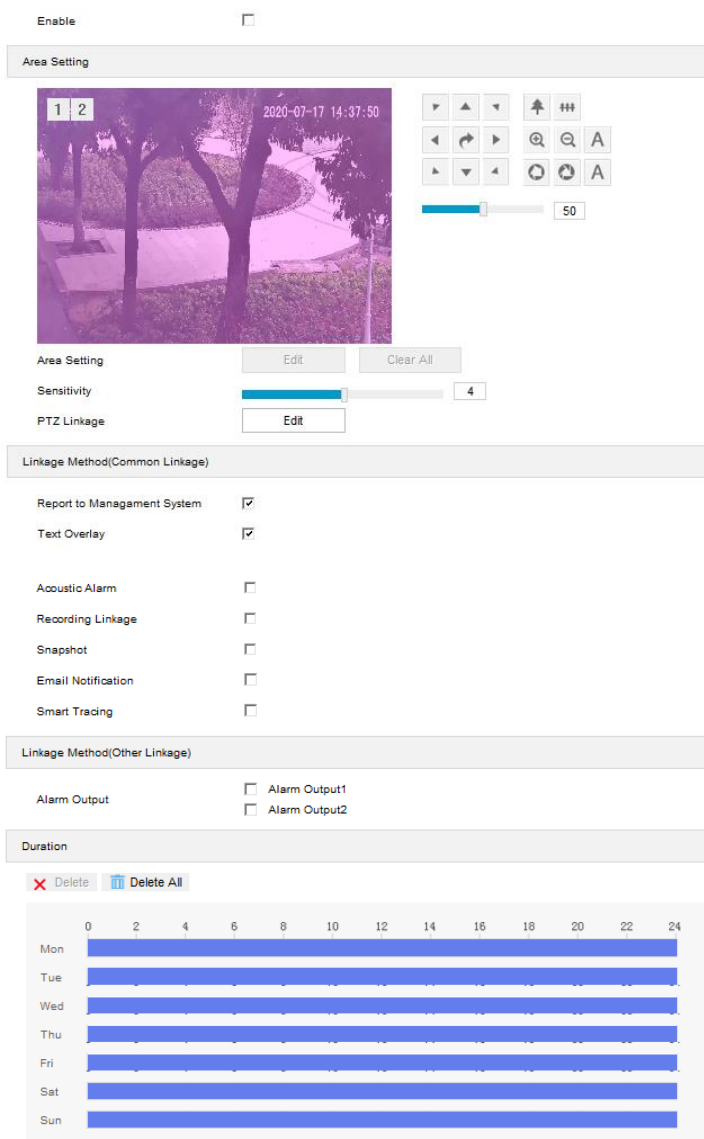
7.1 Intelligent Function

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 and etc. This chapter will introduce the configuration steps of each event.

7.1.1 Motion Detection

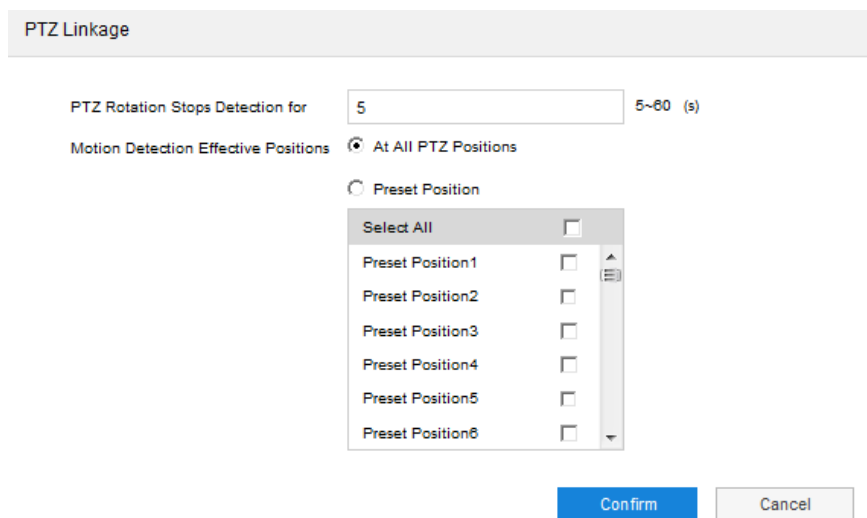
Motion detection is to detect if there is any moving object in specific areas during certain periods of time. Once the moving object exceeds the defined sensitivity, the system will start video recording or trigger an alarm according to the linkage method set by user. Configuration steps are as follows:

- 1) Go to **Settings > Event > Intelligent Function > Motion Detection**;



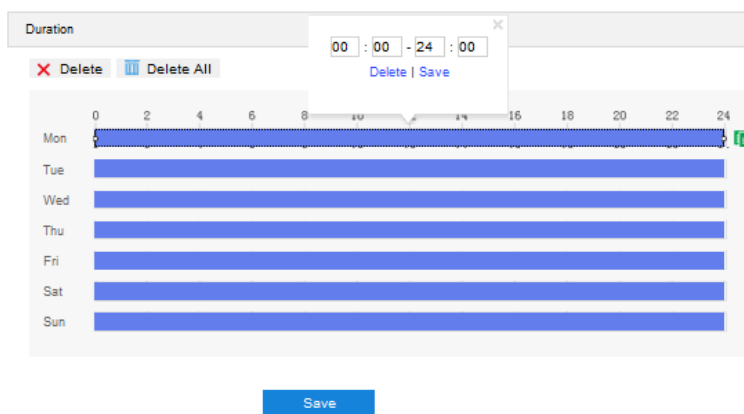
Picture 7-1 Motion detection

- 2) Select **“Enable”**;
- 3) 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;
- 4) Drag the slide bar to adjust the **“Sensitivity”** of motion detection. The higher the sensitivity is, the easier it will trigger an alarm;
- 5) Click **“Edit”** and it will pop up a window for configuring PTZ linkage;





Picture 7-2 PTZ linkage

- PTZ Rotation Stops Detection: Configure the waiting time after PTZ holder stops moving, i.e. after the PTZ stops moving for the configured duration, it will start detection.
 - Motion Detection Effective Positions: Configure the positions where motion detection takes effect.
- 6) Select linkage type(s), which is/are the alarm output method(s) when motion detection triggers an alarm;
 - 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 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 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.

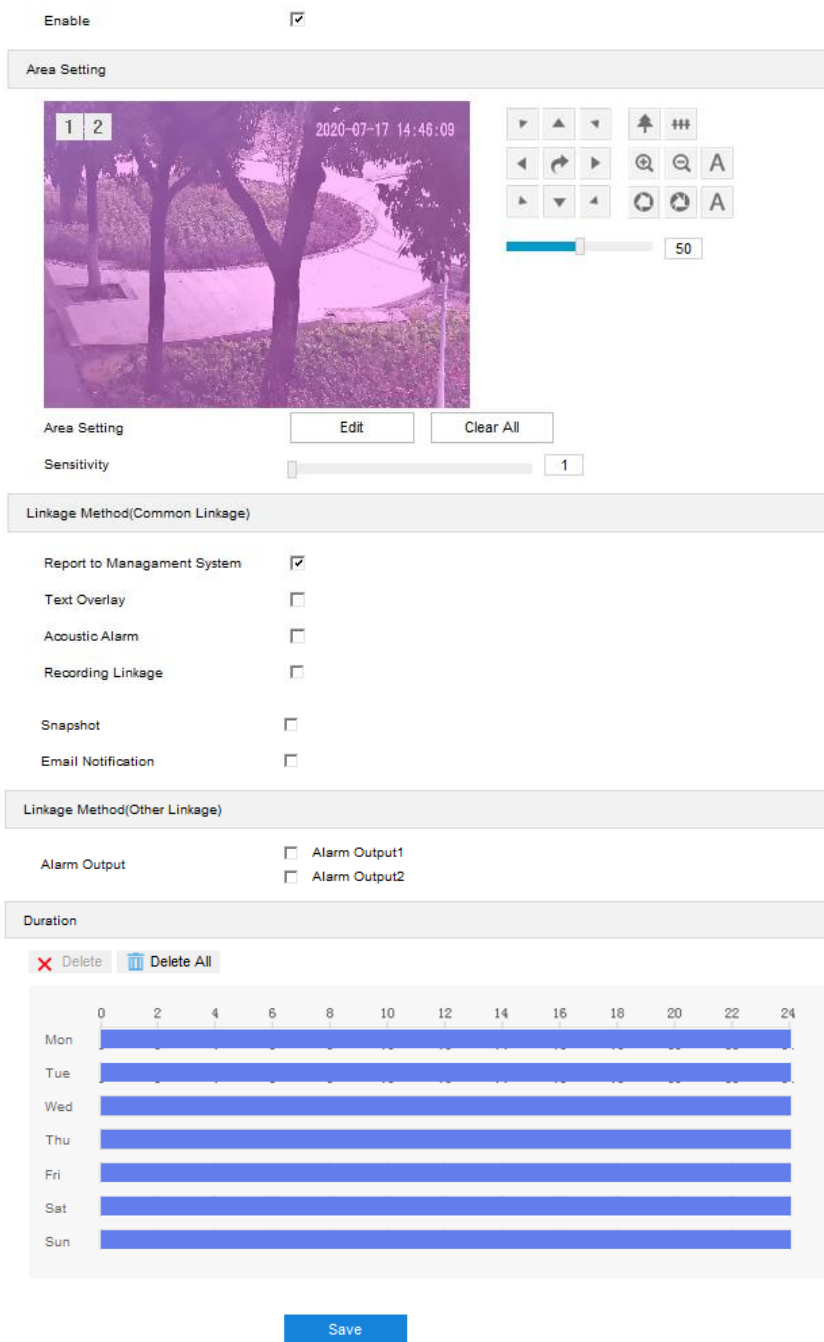
 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.2 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:

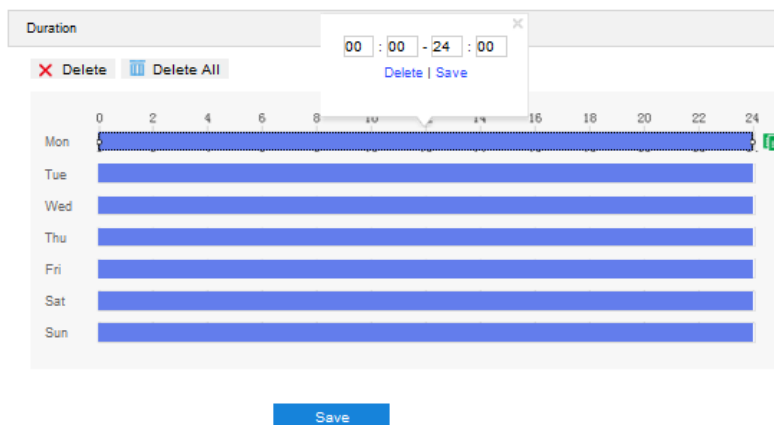
1) Go to **Settings > Event > Intelligent Function > Video Blocked**;




Picture 7-4 Video blocked


- 2) Select “**Enable**”;
- 3) 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;
- 4) Drag the slide bar to adjust **Sensitivity**; the higher the sensitivity is, the easier it will trigger an alarm;
- 5) Select linkage type(s), which is/are the alarm output method(s) when video blocked triggers an alarm;

- 6) 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 7-5 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.

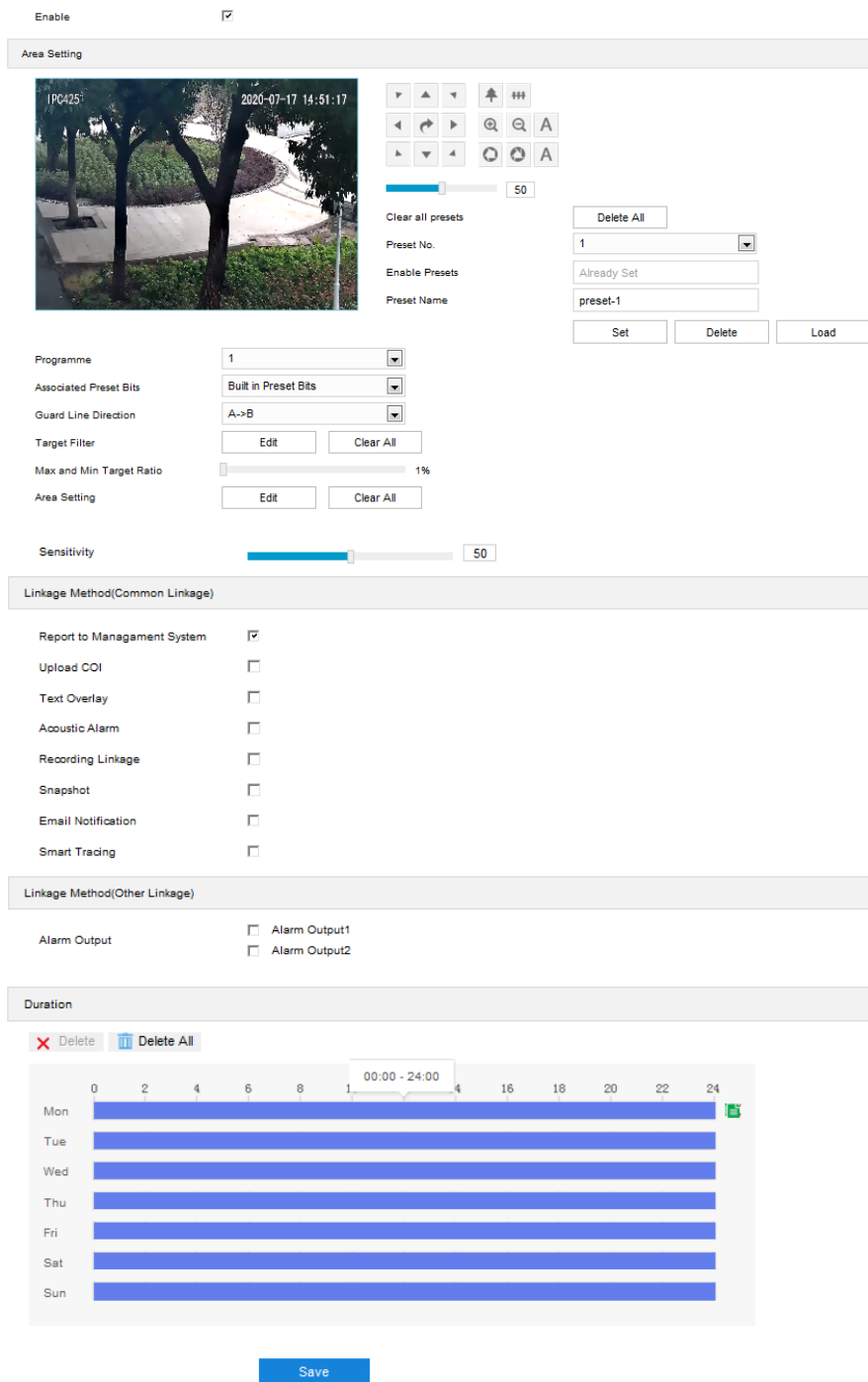
 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.3 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 7-6 Guard line

- 2) Select **“Enable”**;
- 3) Select a preset from the dropdown list of “Preset No.” and click “Set” to link the preset with the guard line alarming;
- 4) Select a program from the dropdown list of “Programme”;

i Note: One program can configure one guard area only and one area is allowed to edit only one guard line. After saving the guard line, user can configure other guard lines. It supports maximum 4 guard lines.

- 5) Select a number from the dropdown list of “Associated Preset Bits”;


Note: If selecting “Built-in Preset Bits”, when the device loads a preset and the preset is not linked with any intelligent event, it will load the intelligent event linking with built-in preset bits.


- 6) 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;
- 7) 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);
- 8) 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;
- 9) 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;
- 10) Select linkage type(s), which is/are the alarm output method(s) when guard line triggers an alarm;
- 11) 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 7-7 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.

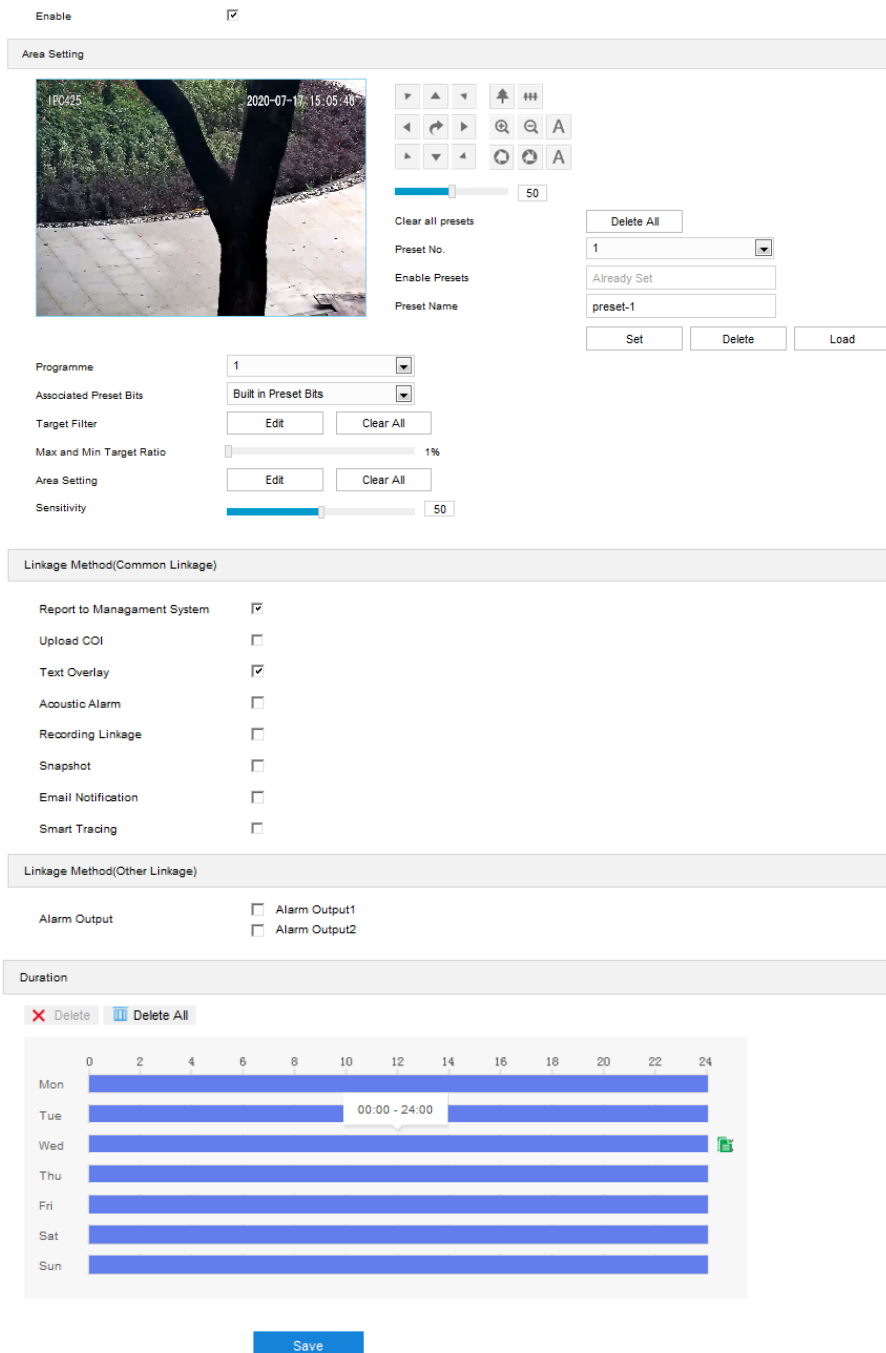
 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.4 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 7-8 Entry guard area

- 2) Select "Enable";
- 3) Select a preset from the dropdown list of "Preset No." and click "Set" to link the preset with the guard line alarming;
- 4) Select a program from the dropdown list of "Programme";

i Note: One program can configure one guard area only and one area is allowed to edit only one guard line. After saving the guard line, user can configure other guard lines. It supports maximum 4 guard lines.


- 5) Select a number from the dropdown list of "Associated Preset Bits";

Note: If selecting “Built-in Preset Bits”, when the device loads a preset and the preset is not linked with any intelligent event, it will load the intelligent event linking with built-in preset bits.


- 6) **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);
- 7) **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;
- 8) Drag the slide bar of “Sensitivity”; 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 an event 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 7-9 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.

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

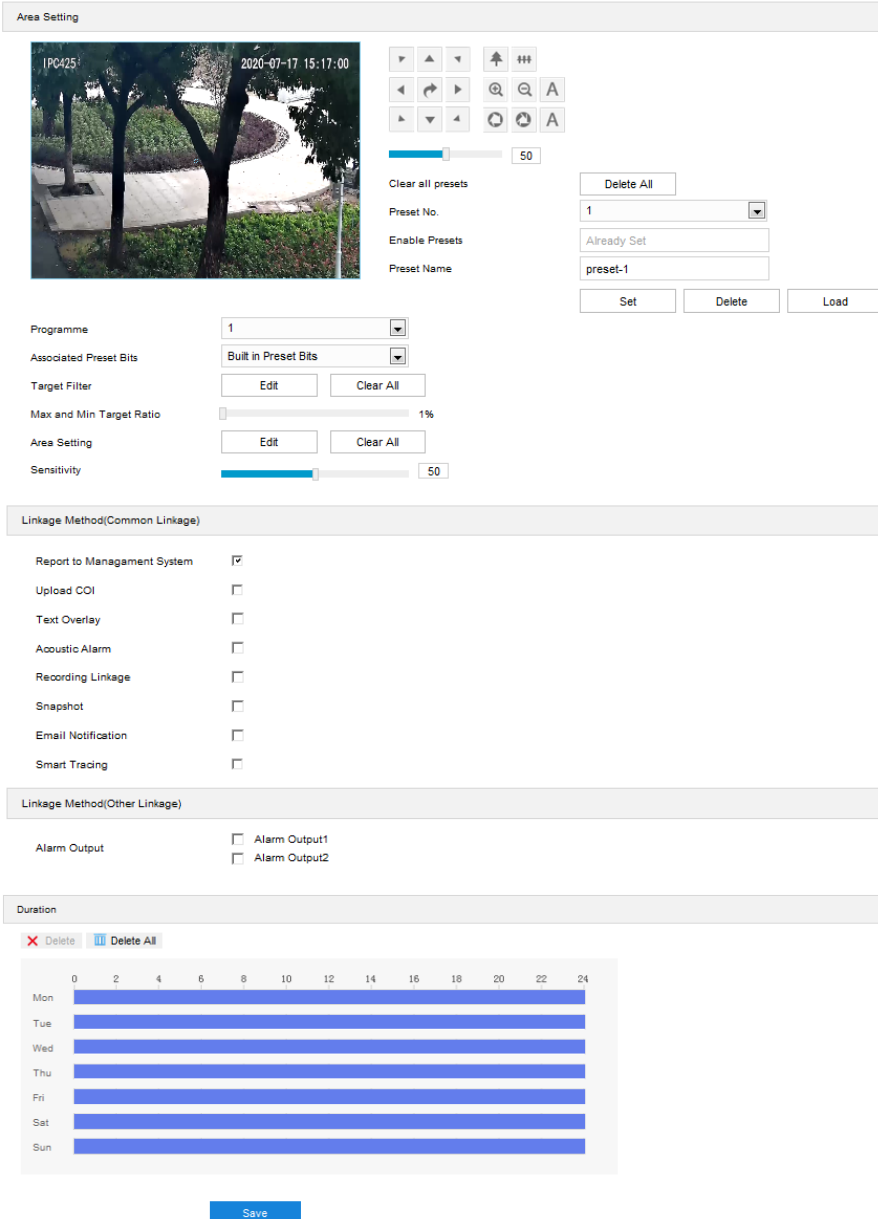
7.1.5 Exit Guard Area

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;**

Enable

Area Setting



Programme: 1

Associated Preset Bits: Built in Preset Bits

Target Filter: Edit Clear All

Max and Min Target Ratio: 1%

Area Setting: Edit Clear All

Sensitivity: 50

Linkage Method(Common Linkage)

Report to Management System

Upload COI

Text Overlay

Acoustic Alarm

Recording Linkage

Snapshot

Email Notification

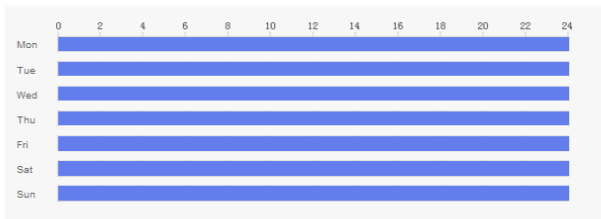
Smart Tracing

Linkage Method(Other Linkage)

Alarm Output Alarm Output1 Alarm Output2

Duration

X Delete Delete All



Save

Picture 7-10 Exit guard area

- 2) Select "Enable";
- 3) Select a preset from the dropdown list of "Preset No." and click "Set" to link the preset with the guard line alarming;
- 4) Select a program from the dropdown list of "Programme";

i Note: One program can configure one guard area only and one area is allowed to edit only one guard line. After saving the guard line, user can configure other guard lines. It supports maximum 4 guard lines.

- 5) Select a number from the dropdown list of "Associated Preset Bits";


i Note: If selecting "Built-in Preset Bits", when the device loads a preset and the preset is not linked with any intelligent event, it will load the intelligent event linking with built-in preset bits.


- 6) **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);
- 7) **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;
- 8) Drag the slide bar of "Sensitivity"; 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 an event 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 7-11 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 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.

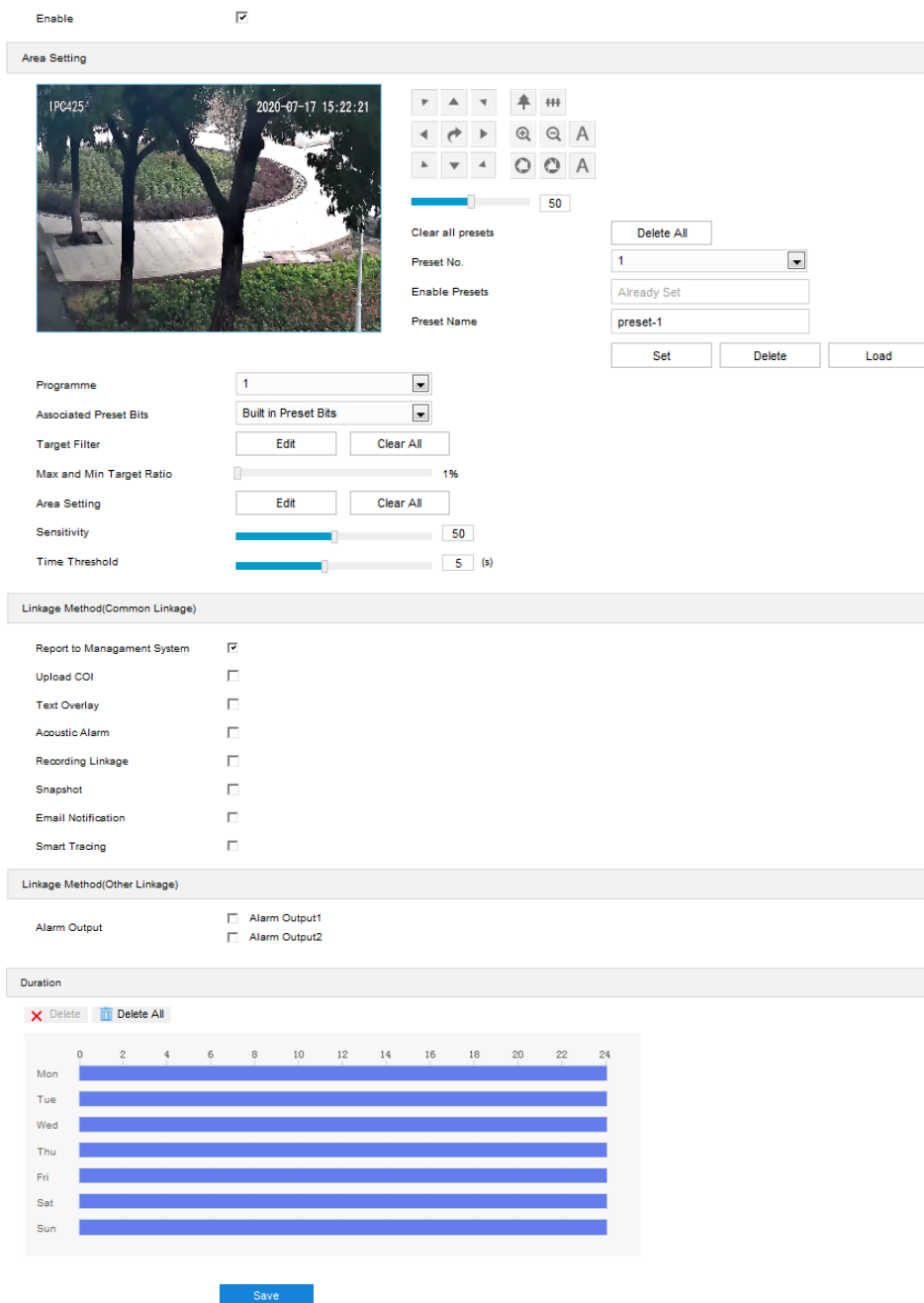
 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.6 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;**



Picture 7-12 Enter guard area

- 2) Select "Enable";
- 3) Select a preset from the dropdown list of "Preset No." and click "Set" to link the preset with the guard line alarming;
- 4) Select a program from the dropdown list of "Programme";

Note: One program can configure one guard area only and one area is allowed to edit only one guard line. After saving the guard line, user can configure other guard lines. It supports maximum 4 guard lines.

- 5) Select a number from the dropdown list of "Associated Preset Bits";


Note: If selecting “Built-in Preset Bits”, when the device loads a preset and the preset is not linked with any intelligent event, it will load the intelligent event linking with built-in preset bits.


- 6) **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);
- 7) **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;
- 8) Drag the slide bar of “Sensitivity”; the higher the sensitivity is, the easier it will trigger an alarm
- 9) 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;
- 10) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;
- 11) 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 7-13 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.

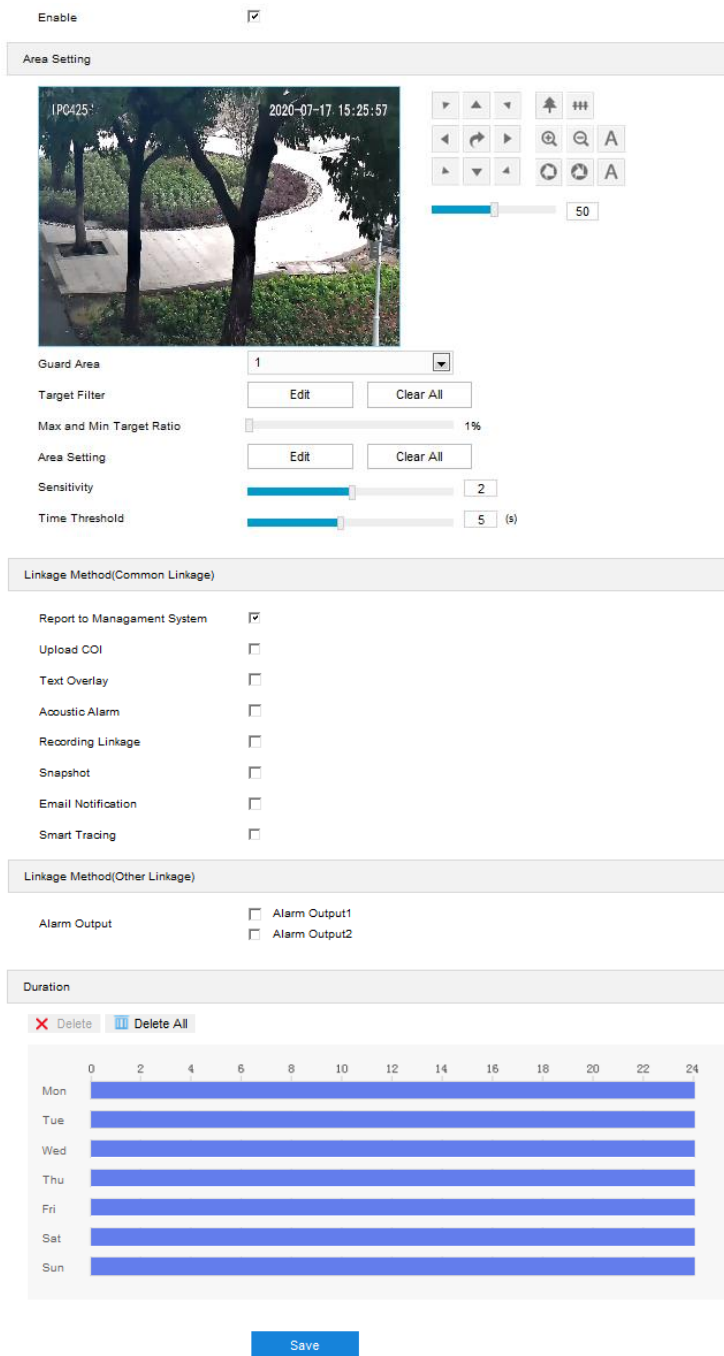
 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.7 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:

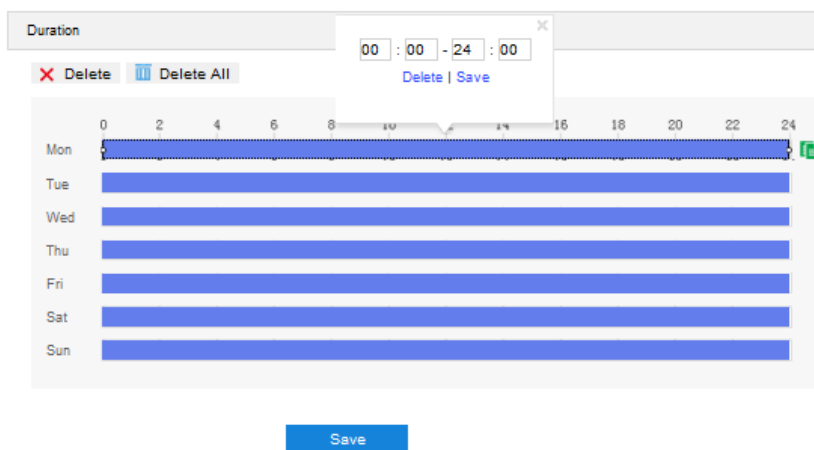
- 1) Go to **Settings > Event > Intelligent Function > Object Left;**




Picture 7-14 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 7-15 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.

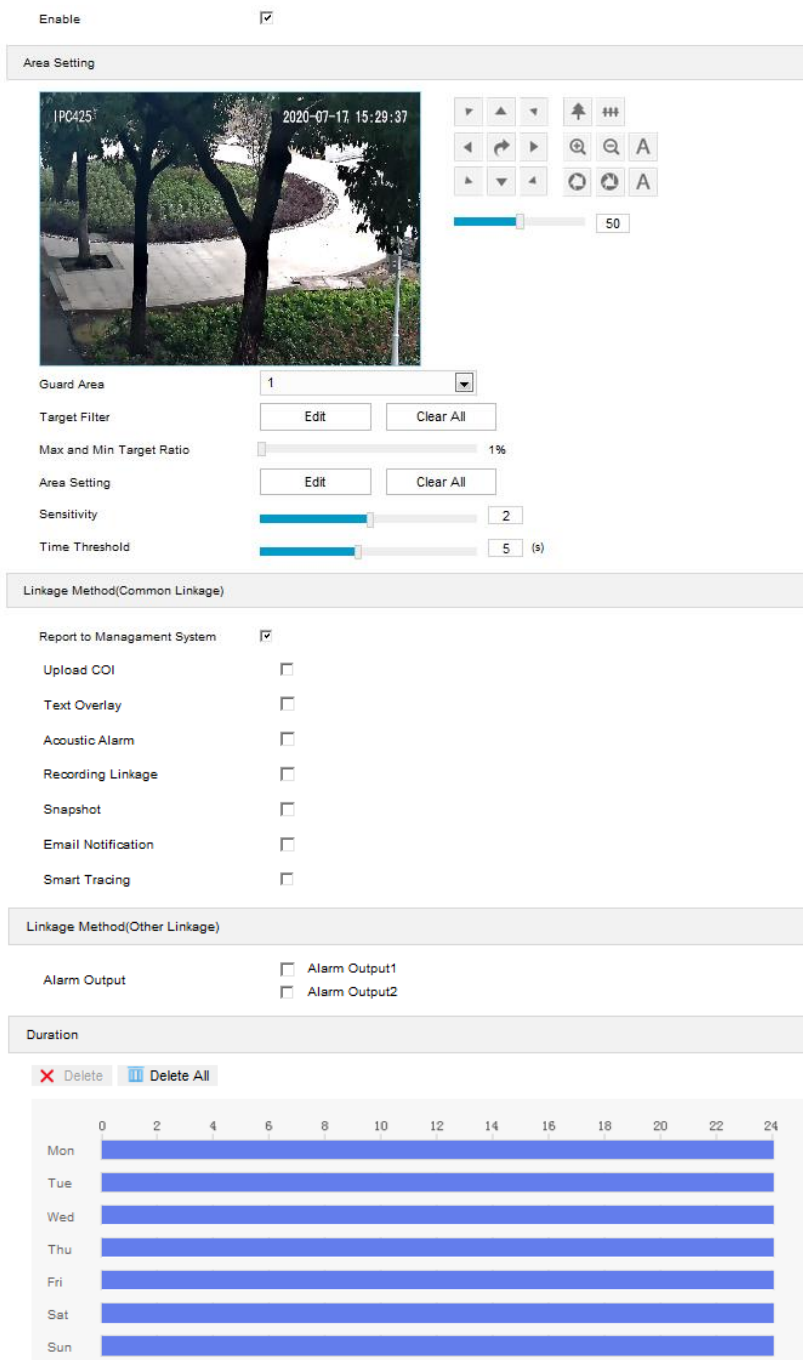
 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.8 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:

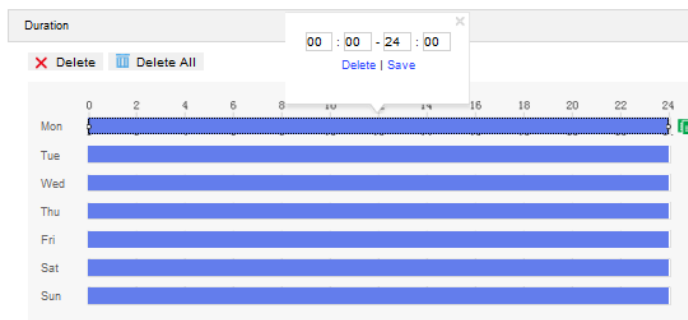
- 1) Go to **Settings > Event > Intelligent Function > Object Removal**;




Picture 7-16 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;
- 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 7-17 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.

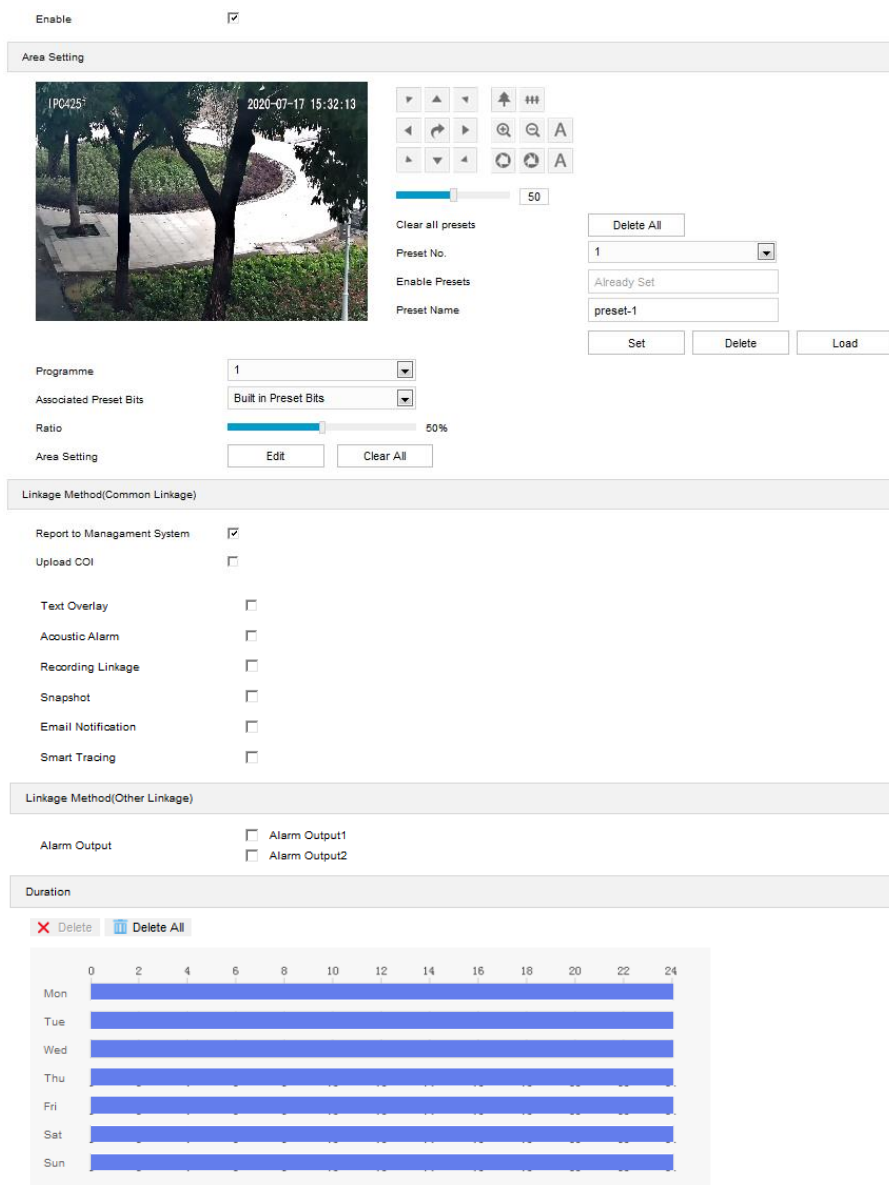
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.9 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**;



Picture 7-18 Gathering

2) Select **"Enable"**;

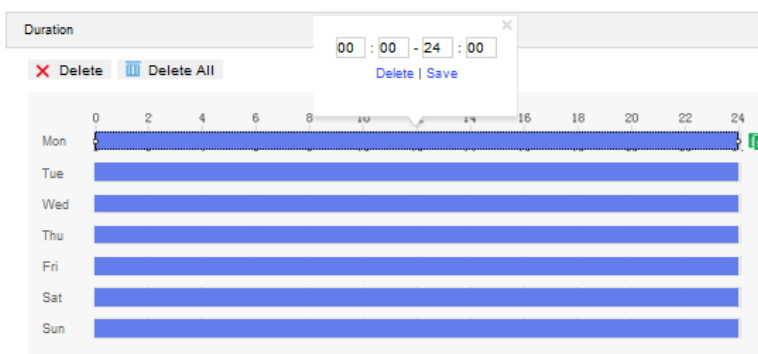
- 3) Select a preset from the dropdown list of "Preset No." and click "Set" to link the preset with the guard line alarming;
- 4) Select a program from the dropdown list of "Programme";

i Note: One program can configure one guard area only and one area is allowed to edit only one guard line. After saving the guard line, user can configure other guard lines. It supports maximum 4 guard lines.

- 5) Select a number from the dropdown list of "Associated Preset Bits";


i Note: If selecting "Built-in Preset Bits", when the device loads a preset and the preset is not linked with any intelligent event, it will load the intelligent event linking with built-in preset bits.


- 6) Drag the slide bar of "Ratio" to set the coverage of people in the set area;
- 7) **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;
- 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 7-19 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.

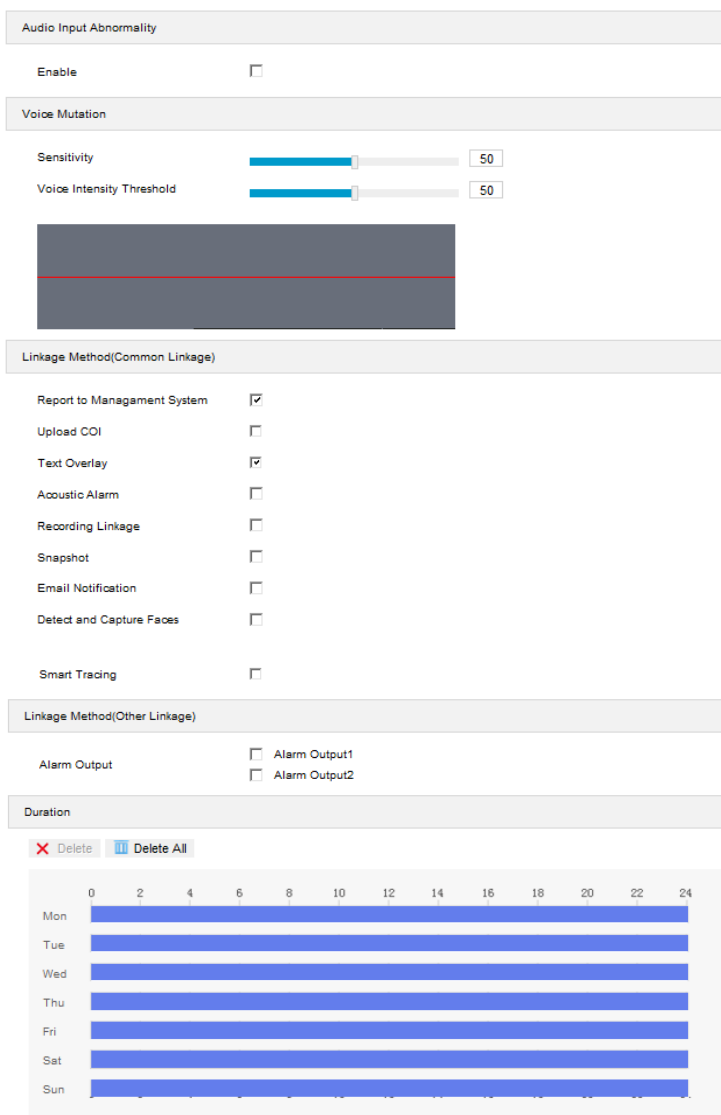
 **Note:** Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.10 Audio Surge

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

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




Save


Picture 7-20 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 7-21 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.

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

7.2 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**;

Enable

Alarm Input ID

Alarm Name

Alarm Type

Linkage Method(Common Linkage)

Report to Management System

Text Overlay

Acoustic Alarm

Recording Linkage

Snapshot

Email Notification

Linkage Method(Other Linkage)

Alarm Output Alarm Output1
 Alarm Output2

PTZ Linkage

Preset ID

Copy to Alarm

All

Duration

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

Picture 7-22 Alarm Input

- 2) Select “Enable”;
- 3) Select a number from the dropdown list of “Alarm Input ID”;


i Note: The alarm input ID corresponds to the buttcock line ID. Please refer to the *Quick Start Guide* for the sequence.


- 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 normally closed, which means the circuit is usually open, user must select "Normally closed". If the alarm input device is normally open, which means the circuit is usually loop, user must select "Normally open";
- 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 7-23 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

- 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.

7.3 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 7-24 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.

7.4 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 > Event > Abnormality Linkage**;

Picture 7-25 Abnormality Linkage

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




Note:

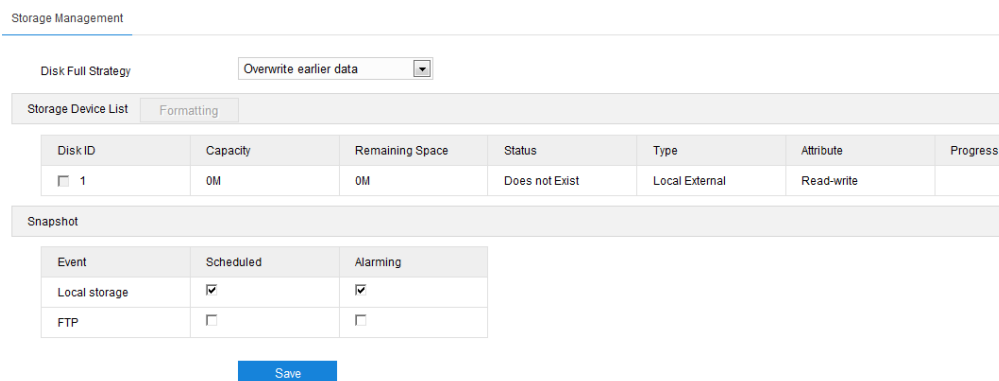
- ◆ Disk Full: when the disk storage is insufficient.
 - ◆ Disk Error: when the disk cannot be recognized.
 - ◆ Internet Disconnected: when the device isn't connected to the internet normally.
- 4) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;
 - 5)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

8. Storage

8.1 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.



Picture 8-1 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.

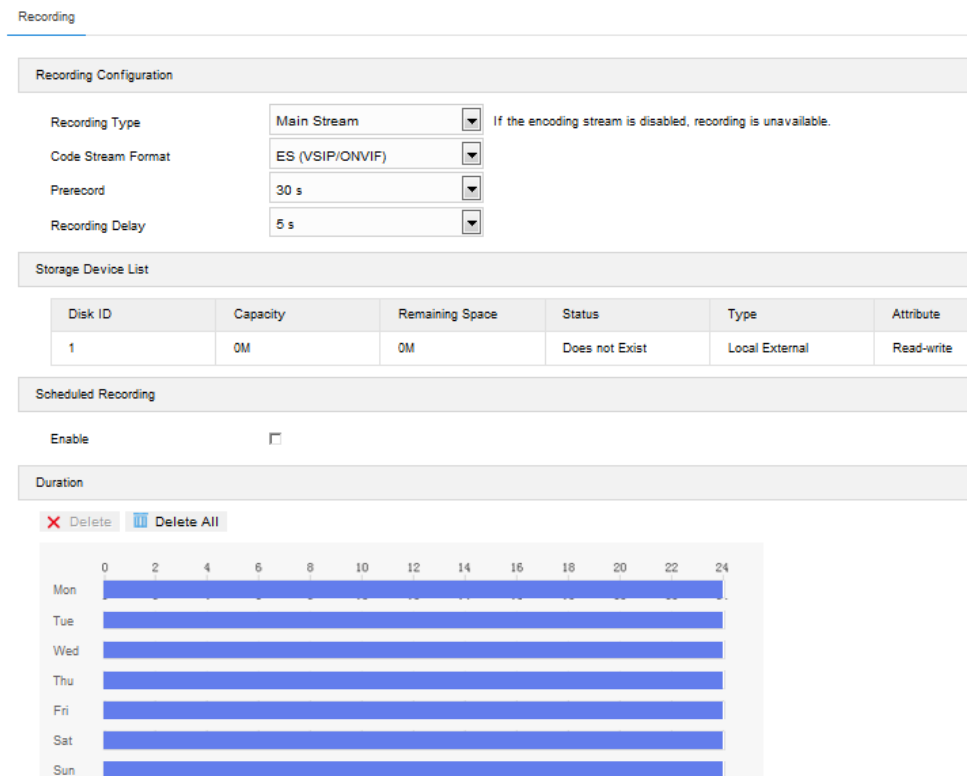
 **Note:** The storage card is installed in the camera when going out of the factory. When using the local storage card for the first time, please click "Formatting" first.

8.2 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 8-2 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 8-3 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 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

5) Click "Save" to validate setting.

8.3 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

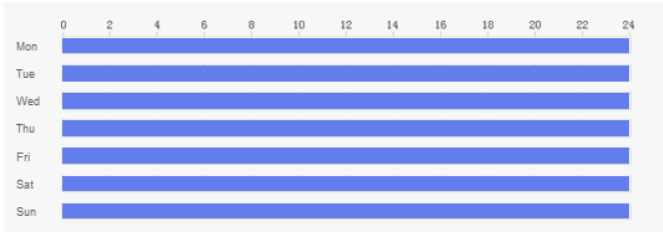
Format: Resolution: Quality:

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



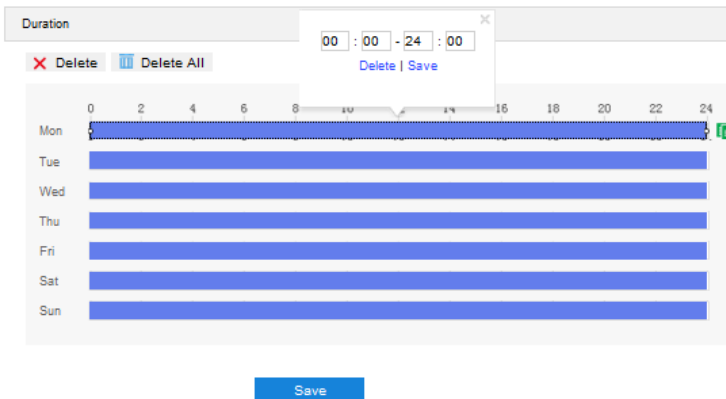
Event Snapshot

Enable: Time Interval: (s) 1~3600 Number of Snapshots: 1~65535


Picture 8-4 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". The latter requires configuration of "Number of Snapshots";
 - 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;



Picture 8-5 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 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.

9. System

9.1 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	IPC425-i023-N	
Device Serial No.	0190MA0V0C	
Hardware Version	1.0.0	
Software Version	7.2.3.410(IT.1598) Jan 20 2020 09:37:15	
Web Version	19-01-2020	
Web Plugin Version	7.3.3.618620(19-06-2020)	
ISP Version	2.5.0.54a2c95f.20200119	
Number of Video Sources	1	

Picture 9-1 Device info

9.2 User Security

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

9.2.1 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 ✔ Save success

User list	<input type="button" value="Add"/>	<input type="button" value="Modify"/>	<input type="button" value="Delete"/>
Serial No.	User Name	User Type	
1	admin	Administrator	

Picture 9-2 User information

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

Login

Anonymous Login

Picture 9-3 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”.

The 'Add User' interface contains the following elements:

- User Name:** Text input field.
- Password:** Password input field with a strength indicator below it showing 'Weak' and 'Strong' levels.
- Password Confirm:** Text input field for re-entering the password.
- User Type:** Dropdown menu currently set to 'Operator'.
- Authorization List:** A table with checkboxes for various permissions:

Permission	Checked
View	<input checked="" type="checkbox"/>
Playback/Picture	<input checked="" type="checkbox"/>
PTZ Control	<input checked="" type="checkbox"/>
Parameter Configuration	<input type="checkbox"/>
Storage	<input type="checkbox"/>
Reboot, Discover, Auto maintenance	<input type="checkbox"/>
System Maintenance	<input type="checkbox"/>
- Buttons:** 'Confirm' (blue) and 'Cancel' (grey).

Picture 9-4 Add user

i 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.

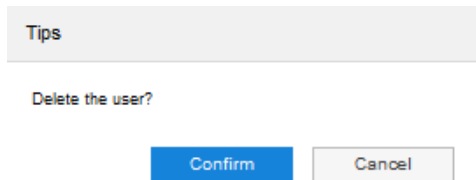
The 'Modify User' interface contains the following elements:

- User Name:** Text input field containing 'admin'.
- Old Password:** Password input field with masked characters.
- Password:** Password input field with a strength indicator below it showing 'Weak' and 'Strong' levels.
- Password Confirm:** Password input field with masked characters.
- User Type:** Dropdown menu currently set to 'Administrator'.
- Email:** Text input field containing '1@1.com'.
- Authorization List:** A table with checkboxes for various permissions, all of which are checked:

Permission	Checked
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	<input checked="" type="checkbox"/>
- Buttons:** 'Confirm' (blue) and 'Cancel' (grey).

Picture 9-5 Modify user

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



Picture 9-6 Delete user

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

9.2.2 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”.

i 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.



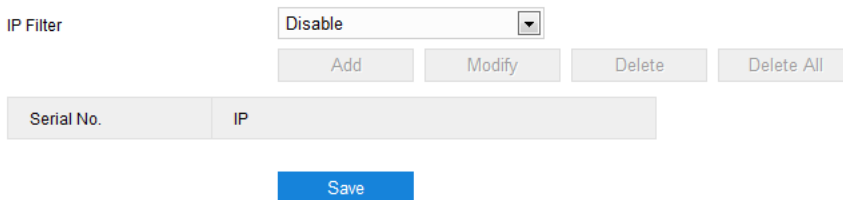
Note: Some protocol will modify the safety level by force automatically.

Picture 9-7 RTSP Authorization

9.2.3 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**;



Picture 9-8 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.

9.2.4 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

[Save](#)

Picture 9-9 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.

9.3 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	<input type="text" value="(GMT+08:00) Beijing, Urumq"/>
Device Time	<input type="text" value="19-01-2020 11:04:50"/> Manual Setting

Auto Time Correction

Auto Timing	<input checked="" type="checkbox"/>
Timing Scheme	<input type="text" value="Adaptive"/>
Timing Priority	<input checked="" type="checkbox"/> NTP Server <input type="button" value="Up"/> <input checked="" type="checkbox"/> VSIP VMS <input type="button" value="Down"/> <input checked="" type="checkbox"/> ONVIF Protocol <input type="button" value="Default"/> <input checked="" type="checkbox"/> GB28181-1 VMS <input checked="" type="checkbox"/> GB28181-2 VMS
Current Timing Protection Time	<input type="text" value="60"/> (min) 0~85535

NTP Clock Synchronization

Enable	<input type="checkbox"/>
Server Address	<input type="text" value="0.0.0.0"/>
NTP Port	<input type="text" value="123"/>
Time Correction Interval	<input type="text" value="1440"/> (min) 1~85535

DST

Enable DST	<input type="checkbox"/>
Start Time	<input type="text" value="April"/> <input type="text" value="First"/> <input type="text" value="Sunday"/> <input type="text" value="02"/> (o'clock)
End Time	<input type="text" value="October"/> <input type="text" value="Last"/> <input type="text" value="Sunday"/> <input type="text" value="02"/> (o'clock)
Time Deviation	<input type="text" value="30 min"/>

Picture 9-10 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 9-11 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".

9.4 Serial Port

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

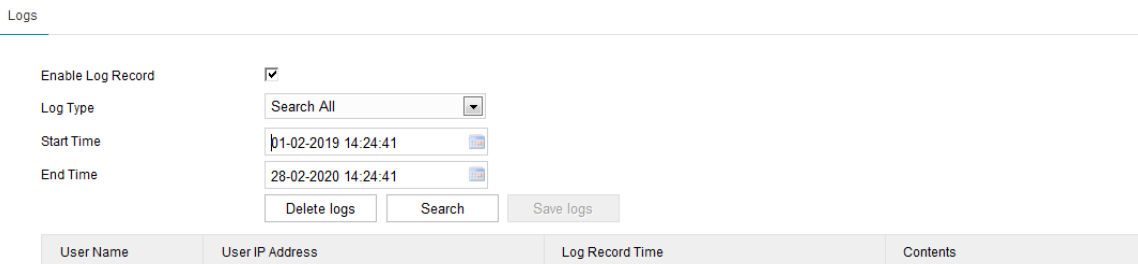
Serial port is used to control camera rotation, extended alarm input or device adjustment (subject to devices). Usually serial port is identified as RS485 A/B. Pair the ports by configuring RS485 port parameters. Please configure the parameters such as "Baud Rate", "Data Bits" and "Address Code" according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

Picture 9-12 Serial port

9.5 Log

9.5.1 Logs

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



Picture 9-13 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 narrow 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.

9.5.2 System Health

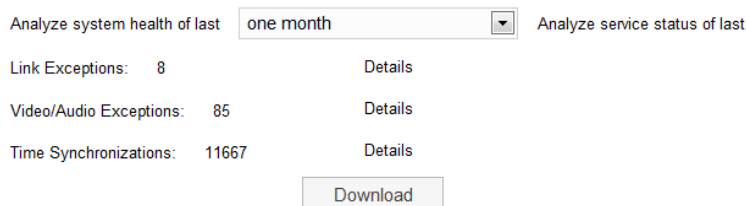
Go to **Settings > System > Log > System Health**, and select a duration from the dropdown list to view the camera health status in this duration. Click "Details" behind each item to view the detailed logs of each item.



Picture 9-14 System status

9.5.3 Service Status

Go to **Settings > System > Log > Service Status**, and select a duration from the dropdown list to view the camera running status in this duration. Click "Details" behind each item to view the detailed logs of each item; click "Download" to download logs.



Picture 9-15 Service status

9.6 System Maintenance

9.6.1 System Maintenance

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

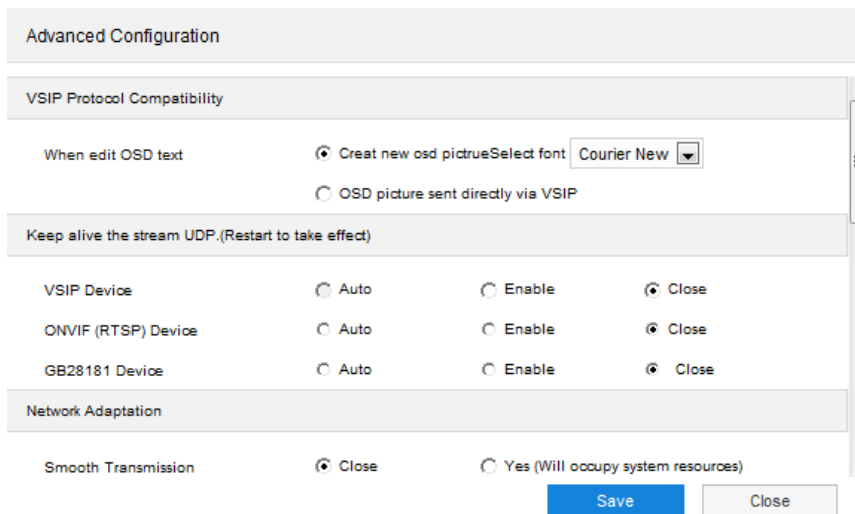
The screenshot displays the 'System Maintenance' web interface with the following sections and controls:

- Reboot:** Contains two buttons: 'Reboot' and 'Soft Reboot'.
- Auto Maintenance:** Includes an 'Enable' checkbox, a 'Maintenance Cycle' dropdown menu set to 'Everyday', a 'Maintenance Time' time picker set to '00:00:00', and a 'Save' button.
- PT Maintenance:** Includes a 'Restore Default PT Settings' button (with tooltip 'Restore Default PT Settings PTZ parameters related to restore factory settings'), a 'PT Upgrade' button (with tooltip 'PTZ version upgrade'), an 'Enable' checkbox, a 'Maintenance Cycle' dropdown menu set to 'Everyday', a 'Maintenance Time' time picker set to '00:00:00', and a 'Save' button.
- Upgrade:** Contains an 'Upgrade' button (with tooltip 'Business version upgrade').
- Configuration Management:** Includes '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' (button: 'Export', tooltip: 'Export all settings to a file.'), and 'Import Parameter' (button: 'Import', tooltip: 'All parameters are imported from the file except the network, device name, OSD setting, user info and RTSP.').
- Advanced Configuration:** Contains a 'Configuration' button.

Picture 9-16 System maintenance

- Reboot: Click "**Reboot**" to reboot the camera.
- 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.

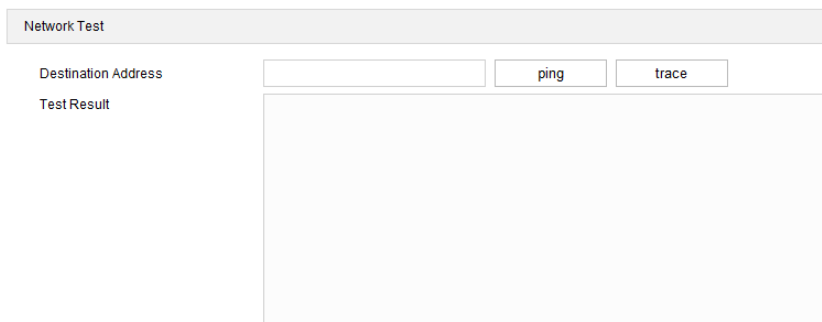


Picture 9-17 Advanced configuration

- 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 SIP devices 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 "Audio Features", "Audio Mix Mode", "Dynamic Plug-in", "Stream Extension Head" and "MRTC Adaptive".
- Working Mode: options including "Ultra wide dynamic range", "60 frames mode", "Triple-Stream Mode" and "Four split screen 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.
- Alarm: configure "Minimum Alarming Interval", range being 1~60s.

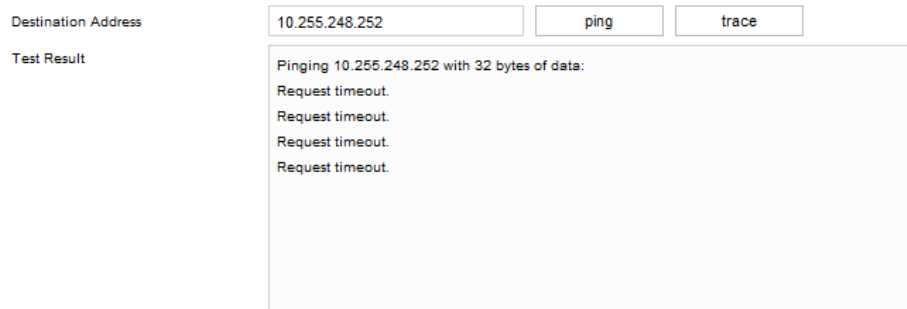
9.6.2 Network Test

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



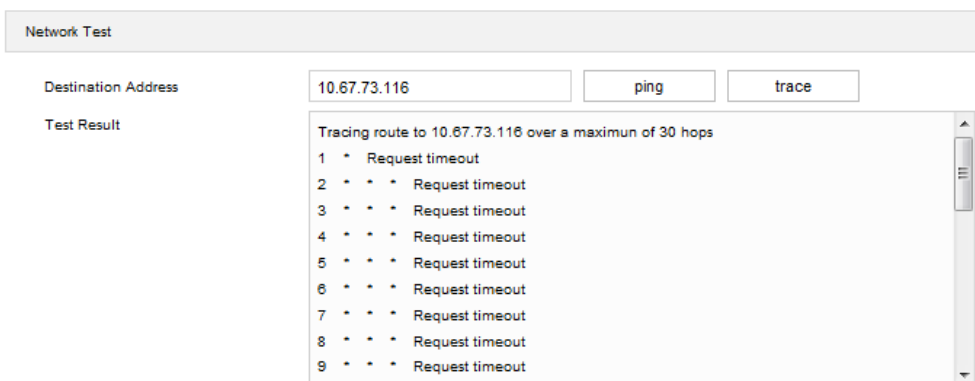
Picture 9-18 Network test

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



Picture 9-19 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.



Picture 9-20 trace

9.7 Lifetime

Go to **Settings > System > System Maintenance > Lifetime** and view device running status and data.

Total Runtime	273Day2Hour15Minute
Total Runtime under High Temperature	0Day0Hour0Minute
Total Runtime under Low Temperature	16Day15Hour40Minute
IR_CUT Switch Times	484 (times)
PTZ Rotation Times in Pan	1199308 (times)
PTZ Rotation Times in Tilt	1121452 (times)
Zoom Motor Direction Switch Times	330287 (times)

Picture 9-21 Lifetime

10. 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)