

**KEDACOM**

# **User Manual for HD PTZ Camera**

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V1R1 (March, 2019)

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## **Target Audience**

Administrators and Operators of Video Surveillance Products

## **Document Version**

V1R1


## **Applicable Models**

IPC523 series

## **Related Document**

*Quick Start Guide*

## Convention

Icon	Convention
	Notes and warning: necessary supplement of operations

Sign	Convention
<b>BOLD</b>	Menu, e.g. <b>Drag to Zoom</b>
>	Connector between menus of different level, e.g. <b>Settings &gt; Camera</b>

## Safety Instruction

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

Before installation, please follow the instructions below:

## Instructions

1. Please adopt power supply in the safety voltage range.
2. If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble or repair the product yourself in any way.
3. Do not drop the camera or subject it to physical shock.
4. When cleaning the lens, please use a rubber dust blower to remove dust on the lens or filter, and use dry soft cleaning cloth to remove the dirt on camera surface. For some hard dirt, user can apply some detergent to the cleaning cloth and wipe gently. Never apply any volatile solvent, such as ethanol, benzene and diluents, to avoid damage to surface coating.
5. Do not focus the camera lens on strong light such as the sun or incandescent lamp. The strong light can cause overexposure or light leak (not camera malfunction), which may shorten camera lifetime.
6. Do not expose the camera in the environment not defined in the Manual. Maintenance and fee due to exposure of product in the wrong conditions will be user's responsibility.
7. Indoor Dome Camera cannot be installed at rainy or wet places. If the Indoor Dome Camera has a connecting rod on the bracket, make sure there is no hole on the rod to avoid water.
8. Outdoor Dome Camera must be completely sealed to avoid dampness. Make sure there is no hole on the connecting rod of bracket to avoid water.
9. While shipping the camera, pack it in the factory packing or use materials with equivalent quality.
10. When it is necessary to replace a part, please contact your dealer in advance and replace the part with specified model or part of the same features. We shall not assume any responsibility for problems caused by unauthorized replacement.

11. Do not shield the sensor at front of the lens housing.
12. When power off the camera, reboot it after 30 seconds.

### **Anti-thunder and Anti-surge**

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

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

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## 1. Product Appearance



**Picture 1-1 Product appearance**



## 2. Start Up

### 2.1 Network Connection

**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.

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

Requirements of PC for installing the client:

- Processor: Intel CORE®i5 series and later version or other equivalent processors
- RAM Memory: 8GB DDR4 or above
- Hard Disk: SATA SSD or High Speed M.2
- Operating System: Windows 7 or higher versions
- Browser: IE8.0 and newer version, Firefox (49 and lower), Google Chrome (41 and lower)
- DirectX: 11.0

### 2.2 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.

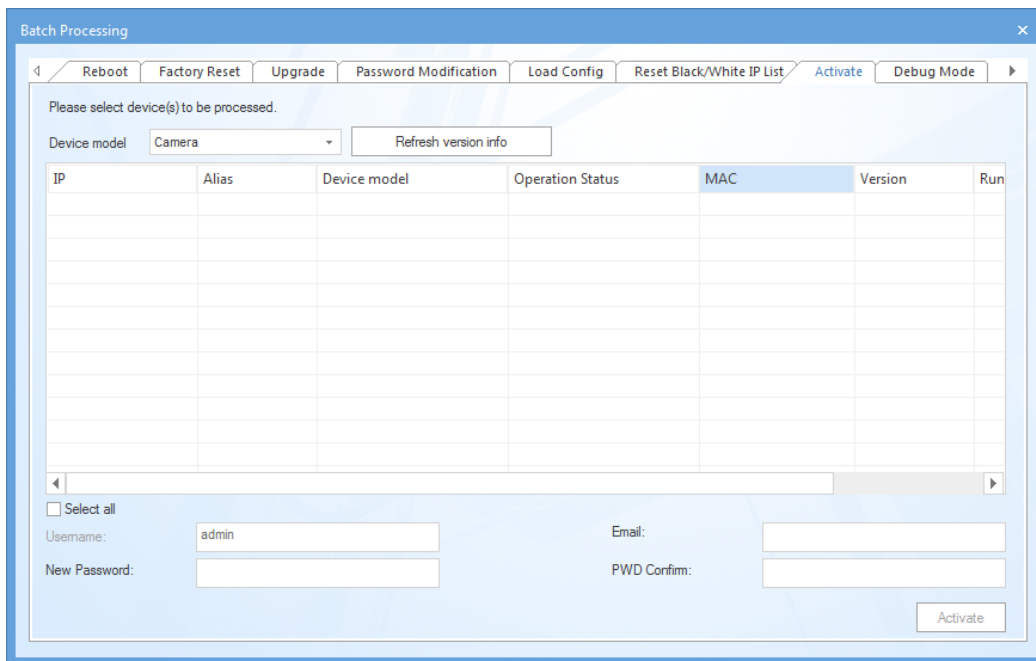
- Activate through IPCSearch
  - 1) Get IPCSearch from the attached CD and install it according to the prompts.
  - 2) After finishing installation, open IPCsearch and the system will search the cameras in LAN and display the list as shown below.

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

Picture 2-1 IPCSearch

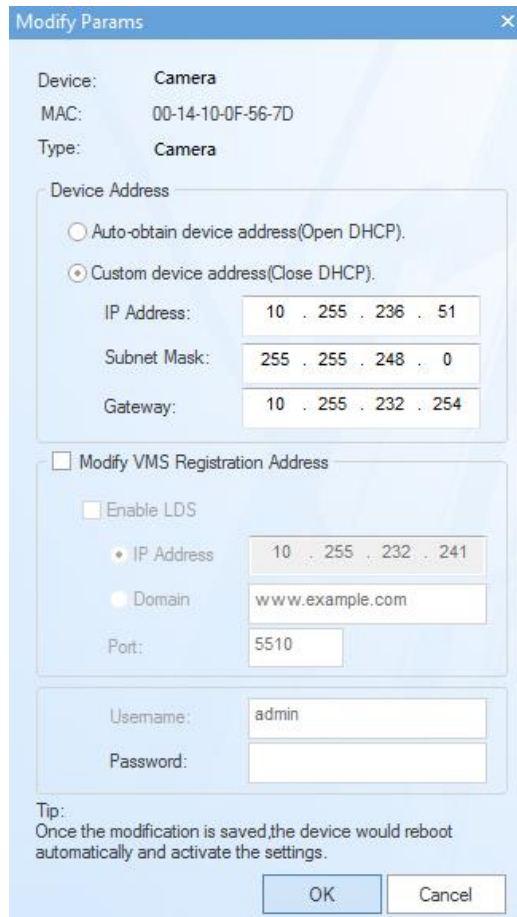
**Note:** Device type and alias is subject to the search result.

- 3) Select the camera to be activated, right click and select "Activate". On the popup interface, configure admin user password and email for claiming password. Click "Activate".
- 4) When there are more than one non-activated devices, select the devices and click "**Batch processing**". On the popup interface, set admin user's password and the email address to claiming password. Click "**Activate**" and wait for rebooting.



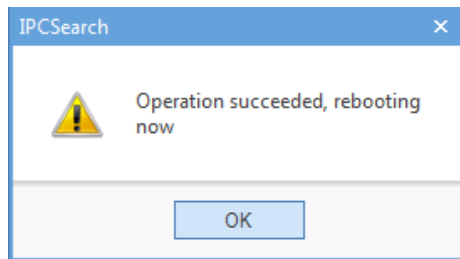
Picture 2-2 Activate through IPCSearch

- 5) Select a camera to be configured, click "**Modify Params**" or right click the mouse. Modify parameters and fill admin user name (admin) and the password set when activating the device.



Picture 2-3 Modify Parameter

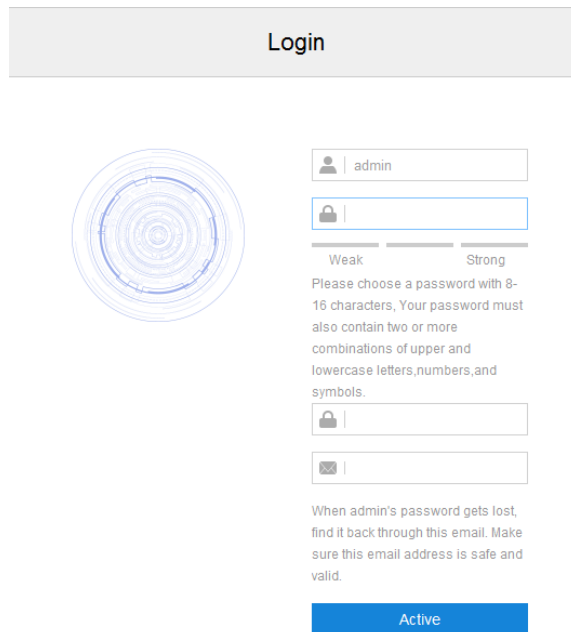
- 6) Click “OK” and in the popup window click “OK”. Wait for rebooting.



Picture 2-4 Reboot device

- Activate through browser

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



Picture 2-5 Activate through browser

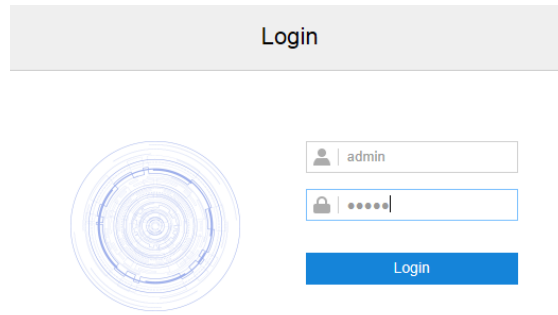
 Note:

- ◆ 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.

### 2.3 Login and Log Out

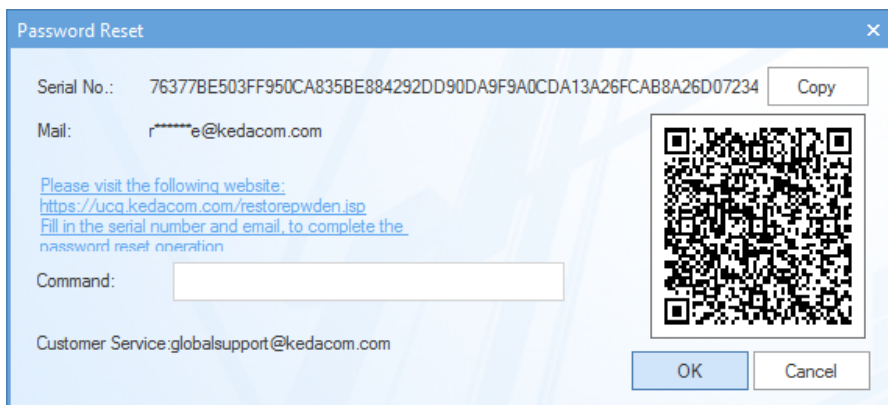
➤ Login

1) After modification, the device will reboot automatically and please wait patiently. After reboot, the button will be enabled again. Please select the device again and click “**Login**” or double click the device name to enter web client. Input username and the password set during activation and click “**Login**”, as shown in Picture 2-6.



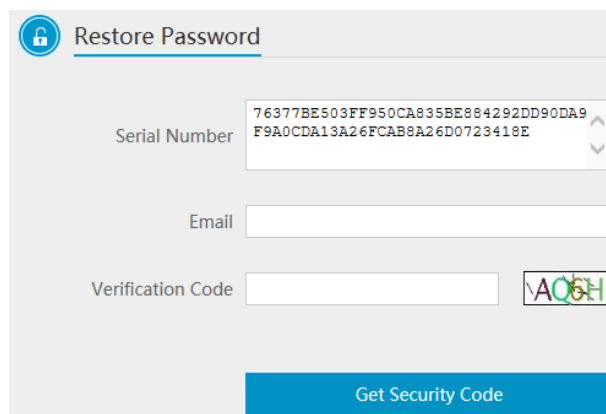
**Picture 2-6 Web Client Login Interface**

2) If user enters a wrong username or password for 3 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. Click **“Password Reset”** on IPCSearch and a window will pop up, as shown below:



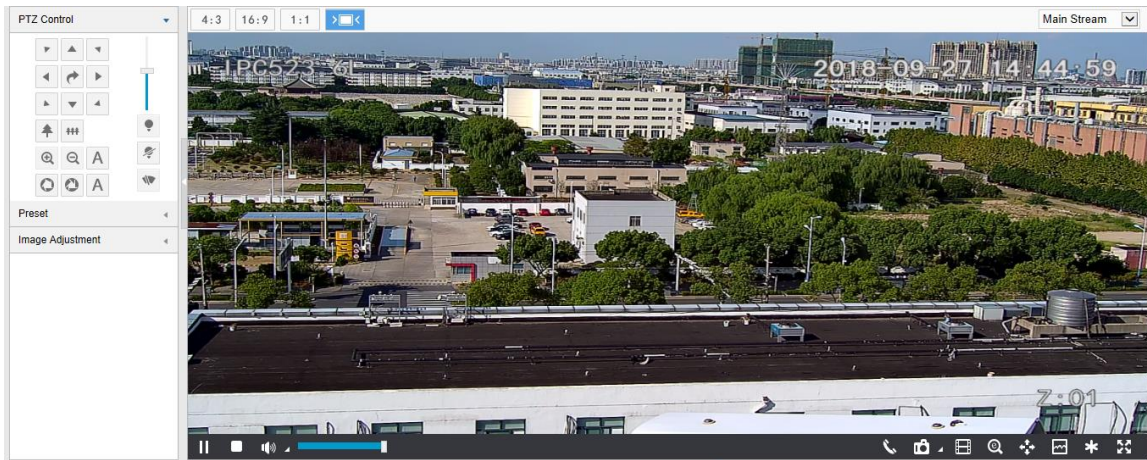
**Picture 2-7 Password Reset**

3) Click the password reset link or scan the QR code in Picture 2-7 with a mobile device and fill in the Serial Number and Email address. Then login to the email address to get a security code and fill in **“Command”** blank in Picture 2-7 and click **“OK”**. Please remember the new password (admin123 by default) and click **“OK”**. The device will reboot. After resetting the password, re-login the web client and configure the device.




**Picture 2-8 Password Reset**

4) When login successfully for the first time, download and install the plug-in. Close browser during installation. After finishing, double-click the device in IPCSearch to open browser and enter username and password. Interface after login is shown below.



**Picture 2-9 Web Client Interface**

➤ Log Out

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

## 2.4 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 parameters;
- Playback: search, playback and download video records by timeline or record types;
- Snapshot: view, search and download snapshots;
- Settings: configure camera functions and system parameters.

### 3. Basic Functions

#### 3.1 Live View

Click "Live View" to enter the preview interface.

##### 3.1.1 PTZ Control

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



Picture 3-1 PTZ Control

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


##### 3.1.2 Preset


Click **Preset** to show the following interface:




Picture 3-2 Preset

After setting and saving presets, you can load, edit or delete the presets anytime.

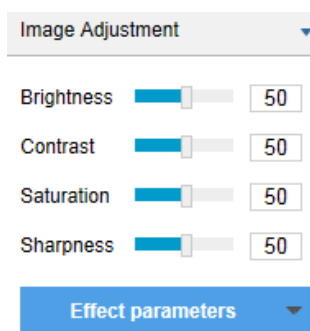
 Load: Click this icon to load a preset and the PTZ camera will rotate to the preset and display the image according to the set parameters.

 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 3-3 Image adjustment

**Brightness:** Drag Brightness slide bar to adjust image brightness by request. The higher the value is, the brighter the image will be.

**Contrast:** Drag Contrast slide bar to adjust image contrast by request. The higher the value is, the clearer contrast between the dark and the bright of the image there will be.







**Saturation:** Drag Saturation slide bar to adjust image saturation by request. The higher the value is, the fresher the image will be.

**Sharpness:** Drag Sharpness slide bar to adjust image sharpness by request. The higher the value is, the more distinct the objects on the image will look.

### 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: The encoding format of live view, can be set in **Settings > Camera > Video > Encoding Format**.
- Secondary Stream: The encoding format of live view, can be set in **Settings > Camera > Video > Encoding Format**.

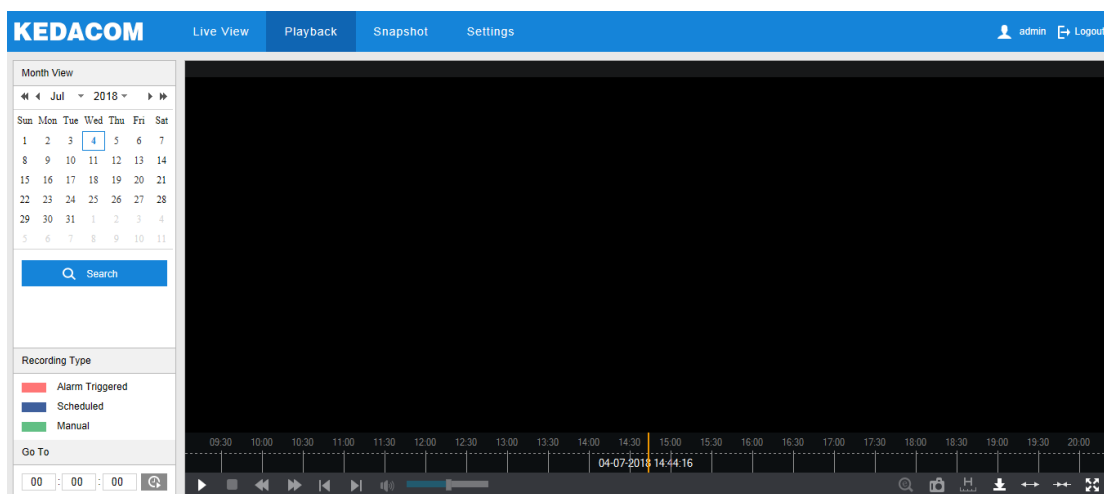
#### ➤ Toolbar

-  Play/ Pause, click this button to play or pause a viewing.
-  Stop, click this button to stop live view.
-  Volume, it is the local decoding volume. Click the white triangle icon to select audio channel.
-  Drag the slide bar to adjust volume
-  Click this button to call and talk to camera. Click again to stop talking.
-  Snapshot, click this button to capture current image. Snapshot includes Camera Snapshot and Local Snapshot. The former means the camera captures an image and sends it to local client; the latter means the web client captures an image and saves it locally.
-  Start/ Stop recording, click this button to start recording and click again to stop recording.

-  Click this icon to enable the e-PTZ function. Left click and drag toward lower right to draw an area. The pixels of this area will be amplified and will cover the whole screen. Left click and drag toward upper left to draw an area, then image will recover.
-  PTZ, click the icon to zoom. Left click and drag toward lower right to draw an area. The pixels of this area will be amplified and will cover the whole screen. Left click and drag toward upper left to draw an area, then the image will recover. Double click a point in the image and the point will be centered.
-  Status, click this button to display the frame rate and bitrate of the live video, and click again to hide. This button is hidden by default. To enable this function, go to Settings > Local Setting > Play, select “**Display Status Info**” and click “Save”.
-  Video freeze, click this button and the image will freeze at the last frame before clicking. Click again to recover image. During video freeze, the PTZ function is disabled.
-  Full screen, click this button to display in full screen. Double click in full screen or press Esc to exit.

### 3.2 Playback

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




Picture 3-4 Playback

Operation steps:

- 1) Select recording duration from the calendar. If there is background color 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 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 recording: Enable video recording automatically during certain durations. Configure on the interface of **Settings > Storage > Recording**.
- ◆ Manual recording: When the network is disconnected from VMS or NVR, video recording will be enabled by default.







- 3) Click the "Play" button on the interface to playback the video recording. During the playback, user can perform operations such as clipping, accelerating and downloading the video recording;
- 4) Put the cursor of the mouse on the timeline to show the time of the video. Double-click or press the left button of the mouse and drag the timeline to the left or right to skip playing.

 **Note:**

- 1) Press the left button of the mouse and drag to the left or right to slide on the timeline.
- 2) When the mouse moves on the timeline, the time of the video is displayed on the top of the timeline.
- 3) Click a point on the timeline to show the time in the middle of the timeline.

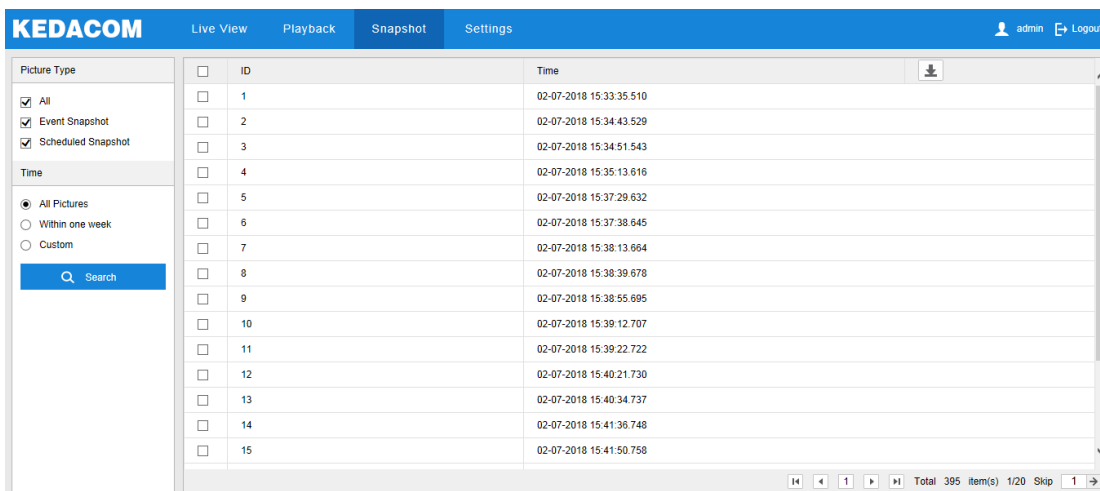
Buttons on the playback interface:

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.
	Next video section, click the icon to play the next video section and user can click it continuously.
	Volume, click the button to enable sound and click again to disable sound. Drag the slide bar to adjust volume.

	<p>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.</p>
	<p>Snapshot, click the icon to capture current playback image. Save path for playback snapshots can be set in Settings &gt; Local Setting.</p>
	<p>Clip, click this icon to start clipping current video and click again to stop clipping. Save path for clipped playback videos can be set in Settings &gt; Local Setting.</p>
	<p>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 "<b>Search</b>" to display expected videos on the list below. Select the files to be downloaded and click "<b>Download</b>". User can view the download progress on the list. Save path for downloaded videos can be set in Settings &gt; Local Setting.</p>
	<p>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, 30 min, 1 hour and 2 hours. Zooming of the timeline will not affect the playback of current video.</p>
	<p>Full screen, click this button to display the video in full screen. Double-click on the screen or press Esc to exit.</p>

### 3.3 Snapshot

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



Picture 3-5 Snapshot

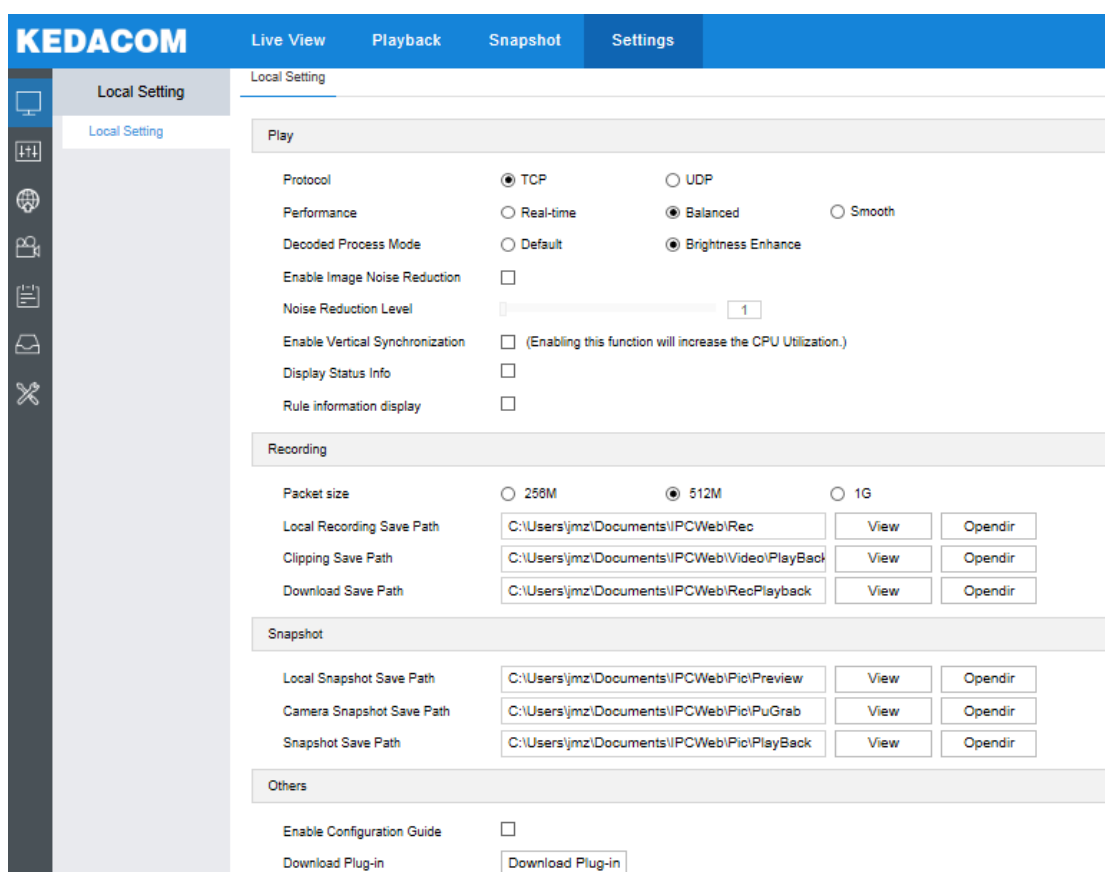
Snapshot search and download steps:

- 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 "**Download**" icon to download the selected pictures. Snapshot save path can be set in Local Setting > Camera Snapshot Save Path.

### 3.4 Local Setting

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



Picture 3-6 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: Image noise reduction is decoding noise reduction. Select this option to enable image noise reduction and it only changes the viewing effect of current user. After selecting it, drag the slide bar below to adjust the noise reduction level, including 4 levels. The higher the level is, the more obvious the noise reduction will be.
  - Enable Vertical Synchronization: When there is image tearing, enable vertical synchronization to improve image quality. Usually it's unnecessary to enable this option as it will increase CPU utilization.
  - Display Status Info: After enabling this function, there will be a status icon in the menu bar at the bottom of the live view window. Click it to view frame rate, bitrate and packet loss rate.
  - Rule Information Display: If a device supports intelligent functions, when this option is selected, the settings on Settings > Event > Intelligent Function interfaces and on Settings > Camera > Video > Video Info Overlay interface will be shown in the intelligent zone on live view window such as the rule box and target box of guard line alarming, on which user can perform operations if necessary.
- Recording
- Packet Size: Configure the size of single recording saved locally, 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 to lead the user to the Quick Settings interface. It is selected by default.
  - Download Plug-in: Click the button of "**Download Plug-in**" to download the video plug-in. When logging into the web client for the first time, download and install the plug-in to view the live video normally.

## 4. Network

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

### 4.1 IP and Port

#### 4.1.1 LAN

Configure network parameters on the interface of LAN.

IP Address Configuration

IP Version	<input type="text" value="IPv4"/>	▼	
Mode	<input type="text" value="Static"/>	▼	
IP Address	<input type="text" value="10.85.1.115"/>	<input type="button" value="Test"/>	
Subnet Mask	<input type="text" value="255.255.255.0"/>		
Default Gateway	<input type="text" value="10.85.1.254"/>		
Multicast Address	<input type="text" value="0.0.0.0"/>		
MAC Address	<input type="text" value="00-14-11-11-2E-5F"/>		
MTU	<input type="text" value="1500"/>		500~1500

DNS Server Setting

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

**Picture 4-1 LAN**

**IP Version:** Select IPv4.

**Mode:** Select Static or DHCP mode. 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;

**Multicast Address:** Multicast address for sending streams. Input according to actual request.



**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.

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

**DNS Server Setting:** When camera accesses to external platform in form of domain name, user needs to configure DNS server.



### 4.1.2 Port

On the interface of Port, configure HTTP Port, HTTPS Port, RTSP Port and Multicast Port. When logging in through network, configure corresponding ports by request.

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
Multicast Port	<input type="text" value="61000"/>	1~65535

Picture 4-2 Port

**HTTP Port:** Hypertext Transport Protocol Port. When login through browser, you need to add a port number behind camera IP address. For example, if HTTP port is edited as 83, when you login through browser, you need to input "http://camera IP address:83. The number is 80 by default, ranging 1 ~ 65535.

**HTTPS Port:** Hypertext Transport Protocol Secure Port based on SSL. When login through browser, you need to add a port number behind camera IP address. For example, if HTTPS port is edited as 5555, when you login through browser, you need to input "http://camera IP address:5555. The number is 5544 by default, ranging 1 ~ 65535.

**RTSP Port:** Real Time Streaming Protocol Port. Make sure that the port you are editing is available. RTSP port number is 554 by default, ranging 1 ~ 65535. When login by RTSP port, rtsp://camera IP address/id=0 (id=0 play main stream, id=1 play secondary stream).

**Multicast Port:** Configure multicast port up to actual request, 61000 by default, ranging 1 ~ 65535.

## 4.2 Access Protocol

### 4.2.1 VSIP

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

Registered VMS

VMS Method	<input type="text" value="IP Address"/>	▼
VMS Address (IPv4)	<input type="text" value="224.1.1.1"/>	
VMS Port Number	<input type="text" value="5510"/>	1~65535
Camera UUID	<input type="text" value="00000000000000000000000000000000"/>	
Camera Password	<input type="password" value="....."/>	
Send NAT Probe Packets	<input type="checkbox"/>	

VSIP Service

Auto Networking	<input checked="" type="checkbox"/>
-----------------	-------------------------------------

Picture 4-3 VSIP

- 1) Select a method from the dropdown list of VMS Method, "IP Address" or "Domain". If selecting "IP Address", input VMS address in "VMS Address (IPv4)"; if selecting "Domain", input VMS domain name in "Registered VMS Domain";
- 2) Input "VMS Port Number", 5510 by default;
- 3) Input "Camera UUID" and "Camera Password". Camera UUID is distributed by VMS and the password needs no verification so you don't have to input;
- 4) When the camera is in NAT, select "Send NAT Probe Packets"; you can select "Auto Networking" to enable function of auto networking;
- 5) After finish, click "**Save**" to validate setting.



Note: VSIP protocol only supports registering to VMS of this company or other SDK-integrated back-end platforms.

### 4.2.2 ONVIF

Basic

Enable

Server Address (URL)

Authentication

Authentication Method  N/A  WS-Username token

Please note that the RTSP browsing authorization should be modified at the same time, otherwise user may not be able to view images through ONVIF client.

**Picture 4-4 ONVIF**

**Basic:** ONVIF protocol is enabled by default. User can register camera to ONVIF-supported VMS, VMS port being 80 by default. The camera will generate "Server Address (URL)" automatically.

**Authentication:** 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.

### 4.2.3 GB28181

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

Registered VMS	Registered VMS 1	
Enable	<input checked="" type="checkbox"/>	
Local Port Number	5060	1024~65535
Network Access ID	00000000000000000000	
Camera Name	IPCAMERA	
VMS ID	00000000000000000000	
VMS Address (IP V4)	0.0.0.0	
VMS Port Number	5511	
User Name	00000000000000000000	
Password	●●●●●●●●	
Renewal Time	60	30~999999
Heartbeat Signaling Interval	30	(s) 10~1000
Camera Ownership	owner	
Administrative Region		
Guard Area		
Installation Address		

Video Encoding Channel ID	Video Encoding Channel Name	IPC Stream Type
00000000000000000000	enc	Main Stream

Alarm ID	Alarm Name	Validity
----------	------------	----------

Chinese GB Standard Compatibility Order

Chinese GB Standard->Chinese GB Standard Extension(2014)->Chinese GB Standard Extension(2016)->NetPosa Expansion->Fhzz Expansion

Picture 4-5 GB28181

- 1) Select "Enable" and select the "Registered VMS" (Registered VMS 1 or Registered VMS 2). The camera supports registered to 2 different VMS;
- 2) Enter Network Access ID, VMS ID, VMS Port Number, User Name/ Password and Video Encoding Channel ID, which are all provided by VMS;
- 3) Click "Save" to validate settings.

### 4.3 Other Protocol

#### 4.3.1 DDNS

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

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

**Save**

Picture 4-6 DDNS

- 1) Select "Enable";
- 2) Select DDNS Server type;
- 3) Input the domain login information according to the selected DDNS server;
- 4) Click "**Save**" to validate setting.

#### 4.3.2 FTP

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

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

**Test**   **Save**

Picture 4-7 FTP

- 1) Input FTP server address and port;
- 2) Input FTP server username and password, and you can select "Anonymous" to visit FTP server anonymously;
- 3) Configure directory structure, i.e. file save path. Select from the dropdown list by actual request;
- 4) Click "**Test**" to verify if current FTP is available, and click "**Save**" to validate setting.

### 4.3.3 PPPoE

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

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

**Picture 4-8 PPPoE**

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

### 4.3.4 K-SNMP

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

**Picture 4-9 K-SNMP**

The camera supports KEDACOM private network management protocol. Configuration steps are as follows:

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

### 4.3.5 802.1X

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

**Picture 4-10 802.1X**

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

### 4.3.6 QoS



Note: QoS function needs support of network transmission device such as a router.

Enable	<input checked="" type="checkbox"/>
DSCP for Audio/Video	0 <span style="float: right;">0~63</span>
DSCP Management	0 <span style="float: right;">0~63</span>

**Picture 4-11 QoS**

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

- 1) Select "Enable" to enable QoS function;
- 2) 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.

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

### 4.3.7 UPnP

Enable

Alias

Port Mapping

Mapping Mode

Mapping Port Table

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

Picture 4-12 UPnP



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.

By UPnP protocol, it's 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:

- 1) Select "Enable" to enable UPnP function;
- 2) 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;
- 3) Select "Auto" or "Manual" for Mapping Mode;
- 4) Click "**Save**" to validate setting.


4.3.8 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"/> ▼	
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 4-13 SMTP

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

 Note: This function is available only when email notification is enabled. Method to enable email notification can be referred to in the chapter of *Intelligent Function*.



## 5. Camera

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

### 5.1 Image

Go to Settings > Camera > Image, as shown below.

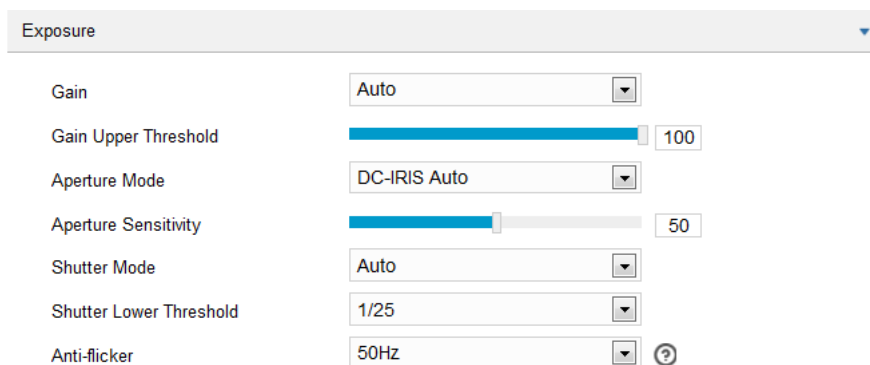


Picture 5-1 Image

#### 5.1.1 Image Adjustment

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

#### 5.1.2 Exposure

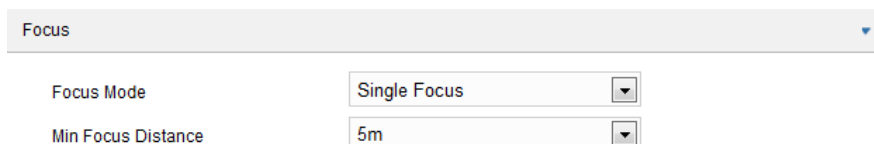


Picture 5-2 Exposure

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

### 5.1.3 Focus



Picture 5-3 Focus

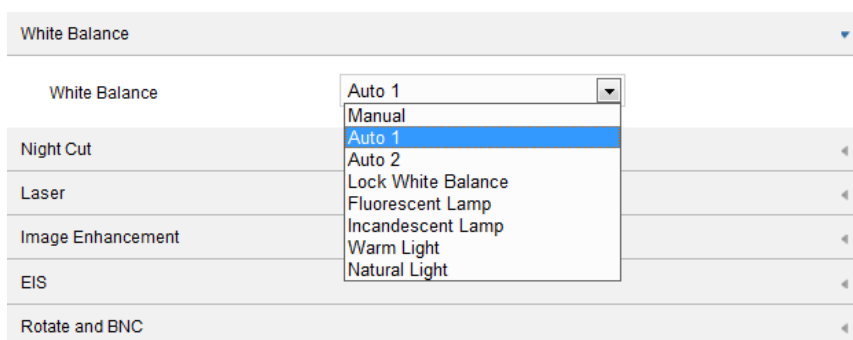
The function of focus is to make the image clear.

When selecting “Continuous Focus” from the dropdown list of Focus Mode, the camera will focus automatically once the system triggers focus;

When selecting “Single Focus” from the dropdown list of Focus Mode, the camera will focus automatically only once when the system triggers focus;

Min Focus Distance means the minimum focus distance for the lens. Shorter than the minimum focus distance, the lens will be unable to focus clear automatically. Options include 30cm, 1m, 2m, 5m, 10m and 20m.

### 5.1.4 White Balance

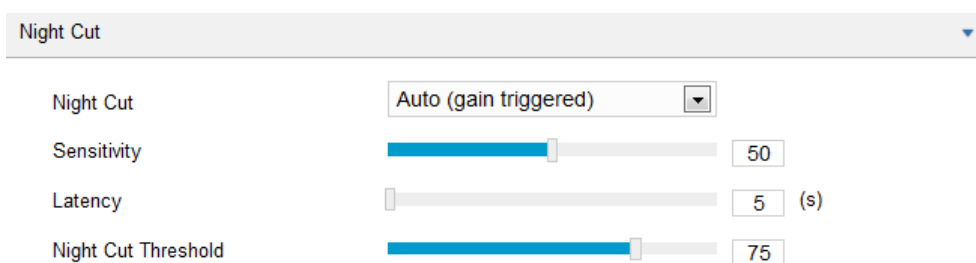


Picture 5-4 White Balance

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

- Manual: support R Gain and B Gain adjustment. Drag the slide bar of White Balance R Gain and White Balance B Gain to adjust the value, ranging 0 ~ 100.
- Auto 2: has a larger white balance range than "Auto 1", though both are auto mode.
- Lock White Balance: lock current color correction matrix. If the camera works under light which provides fixed light condition, select from the following 4 options according to actual environment.
- Fluorescent Lamp: for color temperature of 6500K.
- Incandescent Lamp: for color temperature of 3000K.
- Warm Light: for color temperature of 4000K.
- Natural Light: for color temperature of 5500K.

### 5.1.5 Night Cut



Picture 5-5 Night Cut

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

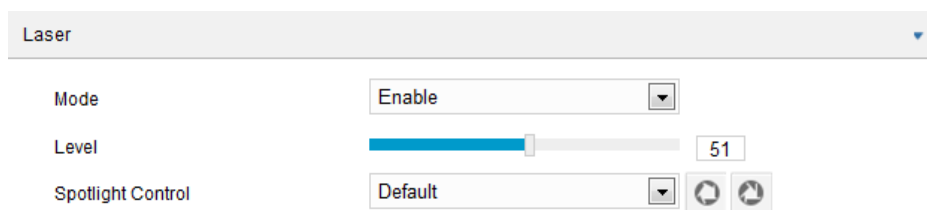
- Day: Under "Day" mode, the image keeps colored all the time.
- Night: Under "Night" mode, the image keeps black and white all the time.
- Auto (gain triggered): The camera switches day/night mode automatically according to the gain values. When selecting this mode, configure Sensitivity, Latency and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

### 5.1.6 Laser

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

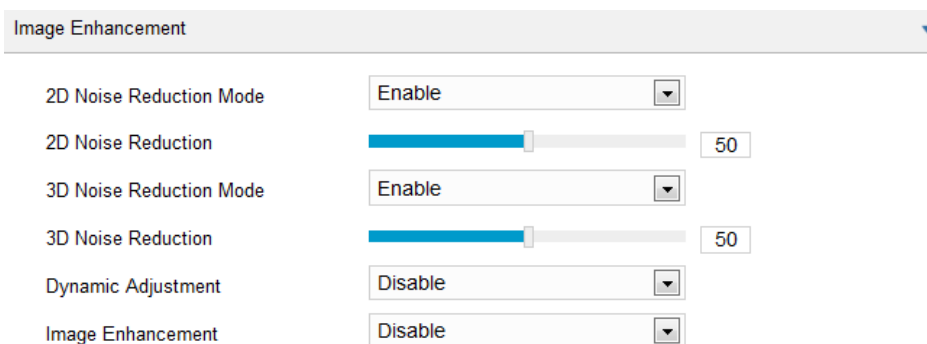
- 1) Select "Enable";

- 2) Drag the slide bar of Level to adjust laser strength, ranging 0 ~ 100;
- 3) On the dropdown list of Spotlight Control, select “Default”, “Small Spotlight” or “Large Spotlight”.



Picture 5-6 Laser

### 5.1.7 Image Enhancement



Picture 5-7 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.

- 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.



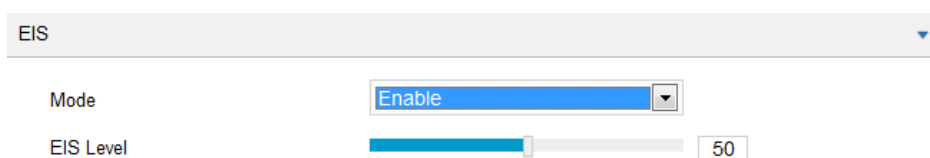
Note: When the 3D noise reduction level is too high, there will be hauling tail on the image of moving objects. Usually, it's unnecessary to edit this parameter.

- 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".
- WDR: WDR can provide optimal exposure when there is strong background light. Select "WDR" from the drop-down list of Dynamic Adjustment and drag the slide bar of "WDR Sensitivity".
- Image Enhancement: A kind of image processing method to make fuzzy images clear, improve image quality, enrich information amount and strength image recognition.
  - "Defog": When there is slight fog in the scene, enable "Defog" to make the image clearer and stay colored;
  - "Optical Fog Reduction": When there is heavy fog in the scene, enable it to make the image black and white and remain clear.

### 5.1.8 EIS



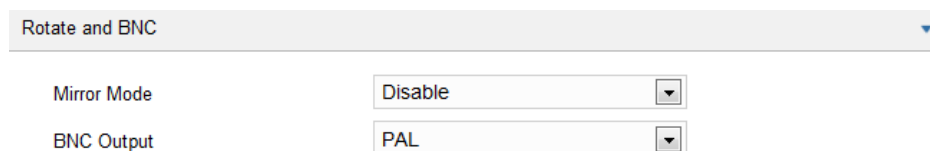
Picture 5-8 EIS

When the PTZ camera is installed in unstable environment, enable EIS to improve the stability of images. On the dropdown list of Mode, select "Enable" 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.

### 5.1.9 Rotate and BNC



Picture 5-9 Rotate and BNC

Mirror Mode: When camera is installed upside-down, correct the image upright by this function without re-installing the camera.

- Disable: default option, image will not rotate.
- Left and Right: image will be reversed horizontally but the vertical is the same.

- Up and Down: image will be reversed vertically but the horizontal is the same.
- Center: image will rotate by 180°.

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

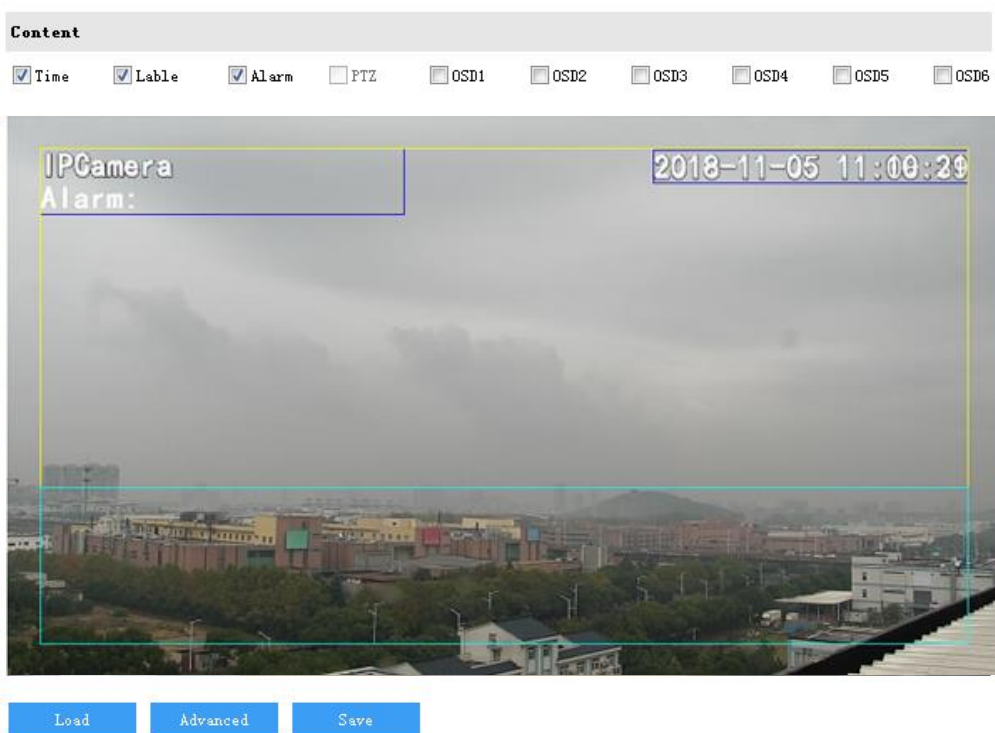
- PAL: Progressive scanning to output analog image, with high definition.
- NTSC: Interlaced scanning to output analog image, with low definition.

### 5.1.10 Effect Parameters

There are 2 modes of effect parameters by default, "Auto Mode" and "Standard Mode".

Alternatively, you can configure the parameters by actual requirements and save them as a mode for future use.

## 5.2 OSD



Picture 5-10 OSD

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

- 1) Select options in "Content" according to requirements and preview the effect in the window below, options including "Time", "Label", "Alarm", "PTZ" and "OSD";

- 2) Click **“Advanced”** to set **“Format”**, **“Font”** and **“Margin”**. In the part of format, you can set **“Time Format”**, **“Display time in 2 lines”** and **“Alarm in front of tag”**; in the part of font, you can set font **“Type”**, **“Size”** and **“Color”**; in the part of margin, you can adjust the distance between OSD and border both horizontal and vertical;
- 3) Edit OSD texts: double click the OSD textbox and input characters in the popup interface. Click **“OK”**. Each OSD can be set maximum 32 characters and so is the label;
- 4) Edit OSD positions: drag the OSD in the window with mouse to change its position. Each OSD can be dragged within the blue box only. If you want to drag it out of the blue box, move the blue box first;
- 5) Load font: Click **“Load”** to load **“Default Font”**, **“Large Font”**, **“Medium Font”** or **“Small Font”**. Then edit content and position according to the above steps;
- 6) 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.

### 5.3 Video

Video parameters include Encoding Format, ROI, Privacy Mask and Video Info Overlay.

#### 5.3.1 Encoding Format

On the interface of **“Encoding Format”**, configure parameters of stream type, resolution, bit rate type and etc., as shown below.

Encoding Format		
Multi-Stream	Dual-Stream	Effective after reboot
Stream Type	Main Stream	
Resolution	1920*1080	
Bit Rate Type	CBR	
Image Quality	Middle	
Frame Rate	25	1~25 Upper Limit
Average Bit Rate	4096	32~16384 (Kbps)
Encoding Format	H.265	
Encoding Complexity	Middle	
Max Key Frame Interval	75	1~250

**Save**

Picture 5-11 Encoding Format

- **Multi-Stream:** It means the same video source is encoded in several streams with different resolutions. This parameter can be configured according to actual request and the setting will be validated after reboot.
- **Stream Type:** Configure the resolution and bitrate of main or secondary stream. The main stream is used for HD storage and preview while the secondary or third stream is for SD storage and preview when there is insufficient network bandwidth.
- **Resolution:** According to the requirements of image quality by user, select resolution from the dropdown list. The higher the resolution is, the more bandwidth it requires.
- **Bit Rate Type:** Options include CBR and VBR, by which you can control stream rate. CBR is fixed bit rate while VBR means the bit rate is adaptive within the upper limit. CBR transfers stream by average bitrate with high speed compressing, but there may be mosaic on the images; while VBR adjusts bitrate automatically with slow compressing, but could ensure image sharpness under complex conditions.
- **Image Quality:** When selecting “VBR”, select image quality level from the dropdown list according to actual requirements. The higher the level is, the clearer the image will look.
- **Frame Rate:** Set the encoding frames per second. The higher the frame rate is, the more bandwidth is required and the more storage it will take.
- **Average Bit Rate:** Set the average bit rate for CBR.
- **Encoding Format:** Select according to actual requirements, options including H.264, H.265 and MJPEG.
- **Encoding Complexity:** Select encoding complexity level according to actual request. Under the same bitrate, the higher the complexity level is, the better quality the image will have and the bandwidth it will require.
- **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.



Note:

- 1) When the Bit Rate Type is “VBR”, the parameter of Average Bit Rate will turn Bit Rate Upper Limit and you need to configure the value manually, ranging 32 ~ 16384 (Kbps), by default 4096.
- 2) The parameter of Image Quality is enabled only when “VBR” is selected and it will remain “Middle” when “CBR” is selected.
- 3) 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.



### 5.3.2 ROI

Enable

Edit

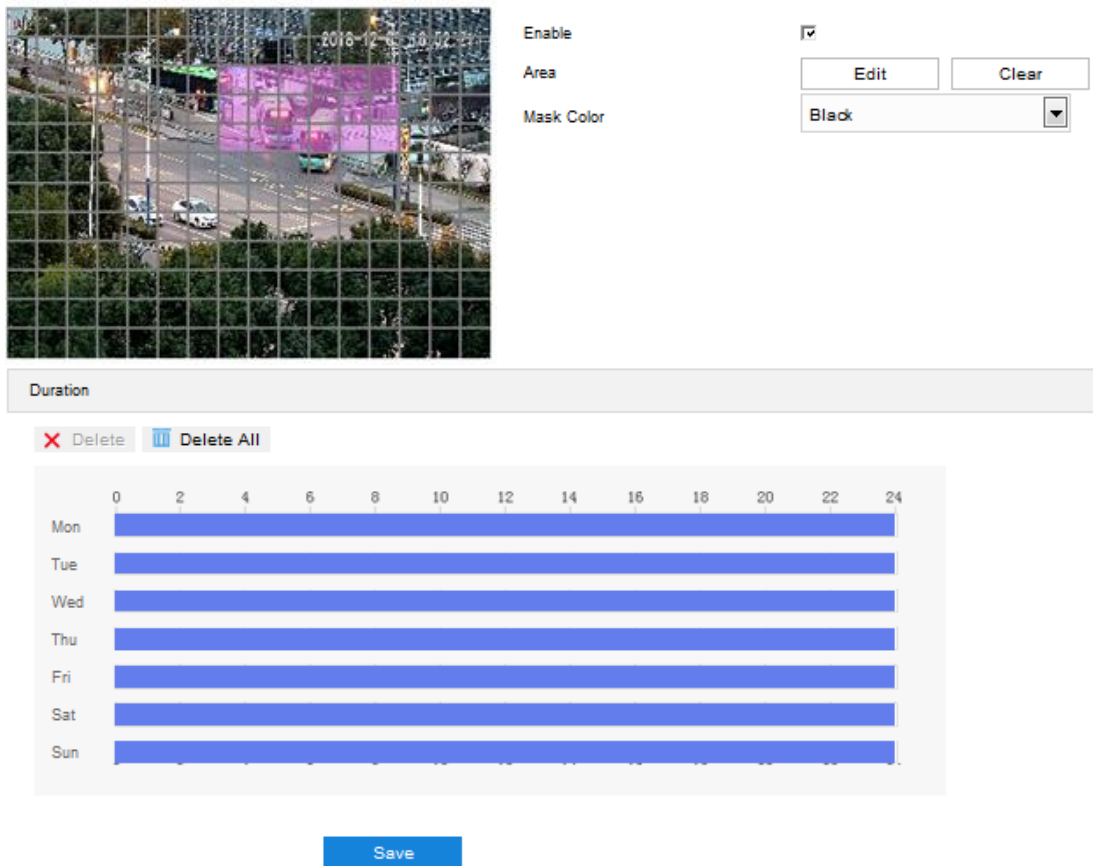
Grade

Picture 5-12 ROI

Only encode 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 bit rate. Configuration steps are as follows:

- 1) Select "Enable" to enable ROI function;
- 2) 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;
- 3) After finish setting, click "**Save**".

### 5.3.3 Privacy Mask



Enable

Area

Mask Color


Duration

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

Picture 5-13 Privacy Mask

Mask sensitive and private part of the image so as to keep sensitive information private.

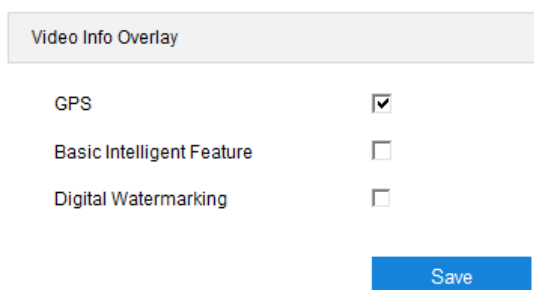
Configuration steps are as follows:

- 1) Select "Enable" to enable privacy mask;
- 2) 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;
- 3) Select a color from the dropdown list of "Mask Color";
- 4) Configure arming duration. The default arming duration is 24 hours in blue bars, or you can customize the 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.
- 5) Click "Save" to validate the settings.



Note: A camera supports maximum 4 Privacy Mask areas.

### 5.3.4 Video Info Overlay



Picture 5-14 Video info overlay

- **GPS:** Select **GPS** to show camera coordinates.
- **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 will be displayed in live view window.
- **Digital Watermarking:** Select **Digital Watermarking** to show digital watermarking.

## 5.4 Audio

### 5.4.1 Audio Encoding

**Picture 5-15 Audio encoding**

- **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. The default option is “8k”.
- **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 thus improve the audio quality.

### 5.4.2 Audio Decoding

**Picture 5-16 Audio decoding**

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

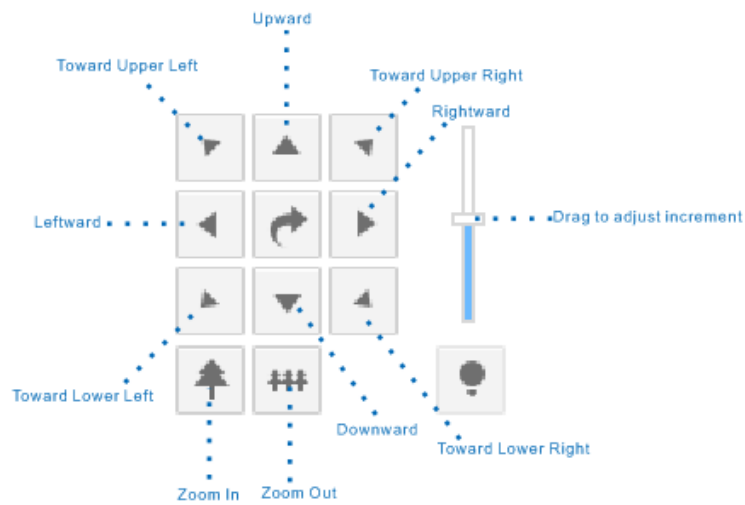


Note: When “Audio Mixing Recording” is disabled, there will be only heard sound without calling sound during video recording; when it is enabled, there will be both heard and calling sound during video recording.

## 5.5 PTZ

The camera is equipped with digital PTZ, which is suitable for wide range surveillance and enlarges the field of view. User can control PTZ via web client.

In the PTZ control part of the **Live View** interface, user can control PTZ manually, as shown below:



**Picture 5-17 PTZ Control**

**i** 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 not be affected.

### 5.5.1 Basic Configuration

Basic Config	
PT Version	1.217-0.0-F132-0
Patrol Speed Level	<input type="text" value="10"/> 1~40
Zoom Speed Level	<input type="text" value="High"/>
Enable Auto PT Speed	<input checked="" type="checkbox"/>
Preset Video Freeze	<input type="checkbox"/>
Last Spot Recovery	
Last Spot Recovery	<input checked="" type="checkbox"/>
Recovery Mode	<input type="text" value="Last Spot Recovery"/>
Recovery Time	<input type="text" value="60"/> (s) 30~360
<input type="button" value="Save"/>	

**Picture 5-18 Basic Configuration**

- Basic Config
  - PT Version: Display the version of current PT.

- **Patrol Speed Level:** Configure speed level (1 ~ 40) during patrol. The larger the value is, the faster it patrols, vice versa.
  - **Zoom Speed Level:** Select zoom speed level, i.e. the speed level during zooming in or out. Options include low, middle and high.
  - **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.
- **Last Spot Recovery**
- **Last Spot Recovery:** Select the checkbox to enable the function.
  - **Recovery Mode:** Select recovery mode. Configure recovery time when selecting "Last Spot Recovery"; configure preset No. when selecting "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. If selecting "Load Preset When Power On", the PT will load to the selected preset directly.
  - **Recovery Time:** Configure the recovery time when the power is off, ranging 30 ~ 360s, by default 60s.



Note: When the time for which the PT stops at a position before powering off exceeds the set Recovery Time, it will return to this position automatically after powering on again. If the time is shorter than the set Recovery Time, the PT will return to the previous position of the one when it is powered off.

### 5.5.2 Preset Position

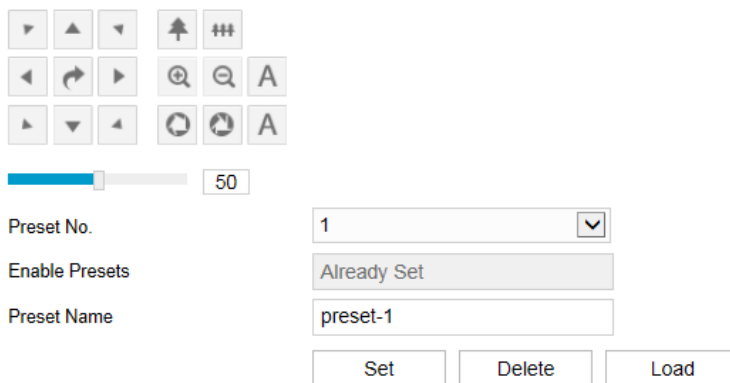
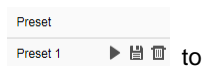
Preset position includes information of PT position and lens focal length. It is set by user and can be loaded, edited or deleted anytime.

Setting steps:

- 1) Go to **Settings > Camera > PTZ > Preset**, and adjust PTZ to expected position.
- 2) Select **Preset No.** from the drop-down list and input **Preset Name**.

- 3) Click **“Set”** to finish preset setting. User can set different preset positions.
- 4) Click **“Load”** to load the expected preset and click **“Delete”** to remove the preset.

5) In the preset part of the **Live View** interface, user can also select a preset to load, save or delete.



Picture 5-19 Preset

### 5.5.3 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). After stopping PTZ operations for a certain period of time, user can enable the Guard Tour function.

**Pan Mode:** Camera rotates in pan direction from 0° to 360° automatically. The Waiting Time is 1 minute by default (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 1 minute by default (configurable).

Please refer to the part of preset position for setting 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 1 minute by default (configurable). Please refer to the part of path mode for setting steps.

Enable   
 Guard Tour Path Mode   
 Waiting Time  (min) 1~255  
 Patrol Path  1~8

Picture 5-20 Guard Tour

Setting steps:

- 1) Go to **Settings > Camera > PTZ > Guard Tour**.
- 2) Select "Enable" and select mode from the drop-down list.
- 3) Set Waiting Time according to the mode.
- 4) Click "**Save**".

#### 5.5.4 Path Mode

Path Mode means the camera patrols around all the valid presets on a path. After enabling this function, click any button on PTZ control to disable it. Currently, the camera supports 8 paths and the maximum allowed number of patrol spots on each path is 32 which can be selected from the 255 presets.

Patrol Path

Patrol Spot	Preset	Stay Time 5~1800 (s)	Enable Patrol Spots	Patrol Spot Name
1	1	60	Already Set	preset-1
2	2	60	Already Set	preset-2
3	3	60	Already Set	preset-3
4	4	60	Already Set	preset-4
5	5	60	Already Set	preset-5

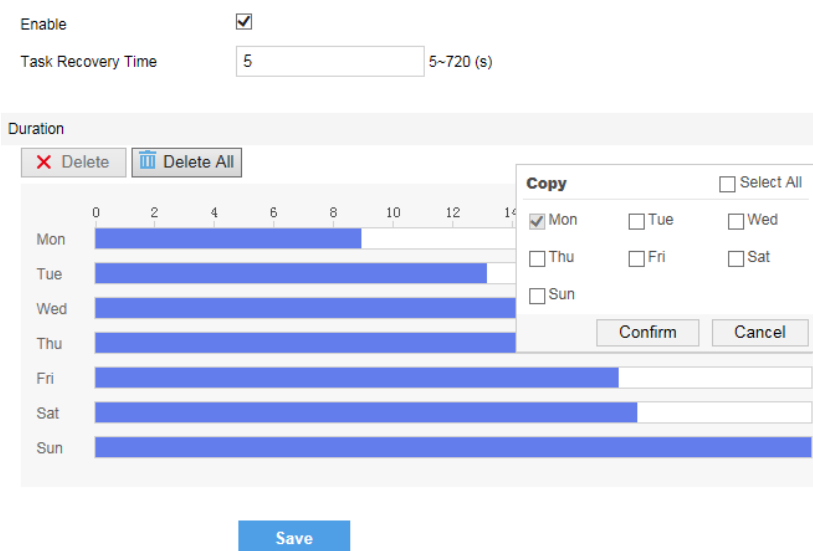
Picture 5-21 Path mode

Setting steps:

- 1) Go to **Settings > Camera > PTZ > Path Mode**.
- 2) Select path from the dropdown list of **Patrol Path**.
- 3) Click **“Add”**. Set Patrol Spots and Stay Time in the popup interface. The maximum allowed number of patrol spots on each path is 32 which can be selected from the 255 presets.
- 4) Click **“Save”**.
- 5) Click **“Delete”**, **“Load”** or **“Stop”** to perform respective operations if necessary.

### 5.5.5 Scheduled Task

Enable Scheduled Task and set durations and tasks. Camera will complete the tasks within the set durations.






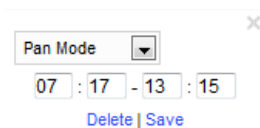
**Picture 5-22 Scheduled Task**

Setting steps:

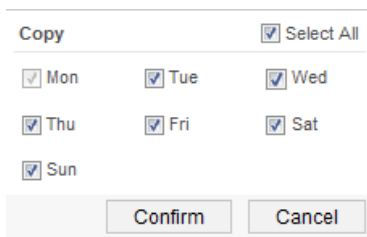
- 1) Go to **Settings > Camera > PTZ > Scheduled Task**. Select **“Enable”**.
- 2) Input **“Task Recovery Time”** (5~720s). Take 5s as example, if user performs other PTZ operations during the task, camera will recover the scheduled task in 5 seconds.
- 3) Set scheduled task and arming duration: the default task duration is 24 hours displaying in blue bar, or user can define durations up to request.
  - Click any point on the timeline and drag mouse rightward to make a blue bar as task duration for that day. Different durations cannot overlap. Click on the duration and a window like Picture 5-23 will pop up.
  - As shown in Picture 5-23, select a task and configure duration. Set the start time and end time, and click **“Save”** to finish.



- Click the icon  behind the timeline and the Copy window will pop up. Select several weekdays or **“Select All”** and click **“Copy”** to copy task durations to the weekdays, as shown in Picture 5-24. Click **“Delete”** in Picture 5-23 or  **Delete** to cancel scheduled task. Click  **Delete All** to cancel all the scheduled tasks in one week.



Picture 5-23 Edit duration



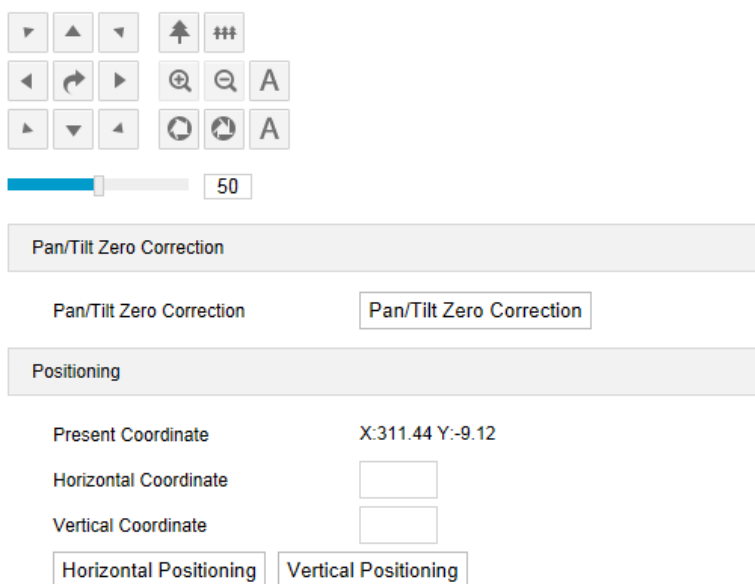
Picture 5-24 Copy

### 5.5.6 Positioning

Go to **Settings > Camera > PTZ > Positioning**.

#### 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.



Picture 5-25 Positioning

**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.

## 6. Event

### 6.1 Intelligent Function

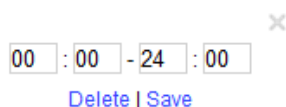
Go to **Settings > Event > Intelligent Function**.

The intelligent functions of a camera include motion detection, video blocked, guard line, entry guard area, exit guard area, enter guard area, object left, object removal, gathering and audio surge. This chapter will introduce the configuration steps of them one by one.


#### 6.1.1 Motion Detection

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

- 1) Select **“Enable”**;
- 2) 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;
- 3) Drag the slide bar to adjust **Sensitivity**; click **“Edit”** to edit PTZ Linkage (if the camera supports). On the popup interface, configure time of PTZ rotation stopping motion detection and the effective positions of motion detection;
- 4) Select linkage type(s), which is/are the alarm output method(s) when motion detection triggers an alarm;
- 5) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click **“Save”** to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.



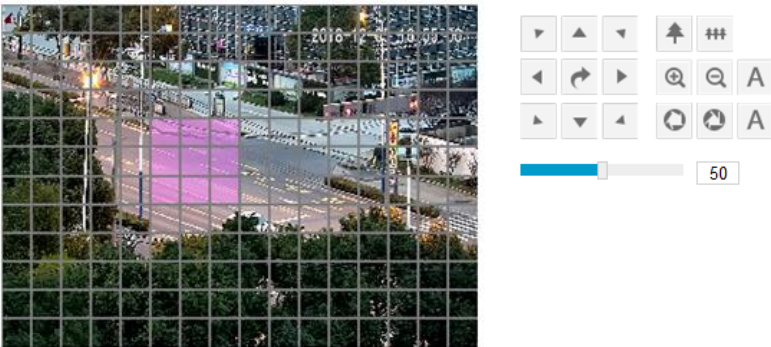
**Picture 6-1 Edit duration**

- 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**" on the top of the timeline to delete all the durations. Select duration and click "**Delete**" on the popup window or on the top of the timeline to delete the duration.
- 6) Click "**Save**" to validate settings.

Enable

Area Setting



Area Setting

Sensitivity  4

PTZ Linkage

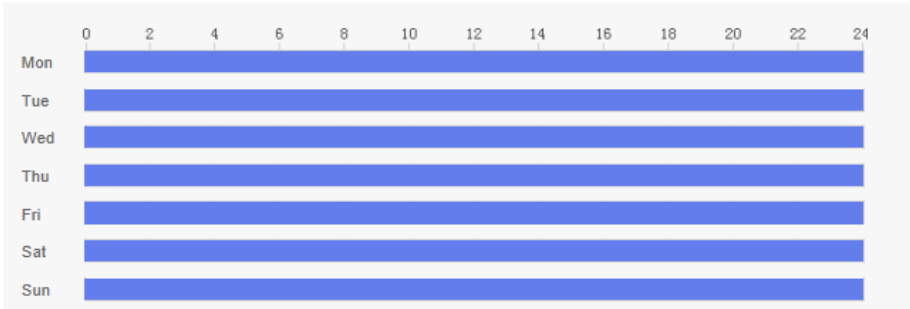
Linkage Type(Normal Linkage)

Report to Management System	<input checked="" type="checkbox"/>
Text Overlay	<input checked="" type="checkbox"/>
Acoustic Alarm	<input type="checkbox"/>
Recording Linkage	<input type="checkbox"/>
Snapshot	<input type="checkbox"/>
Email Notification	<input type="checkbox"/>

Linkage Type(Other Linkage)

Alarm Output  Alarm Output1

Duration




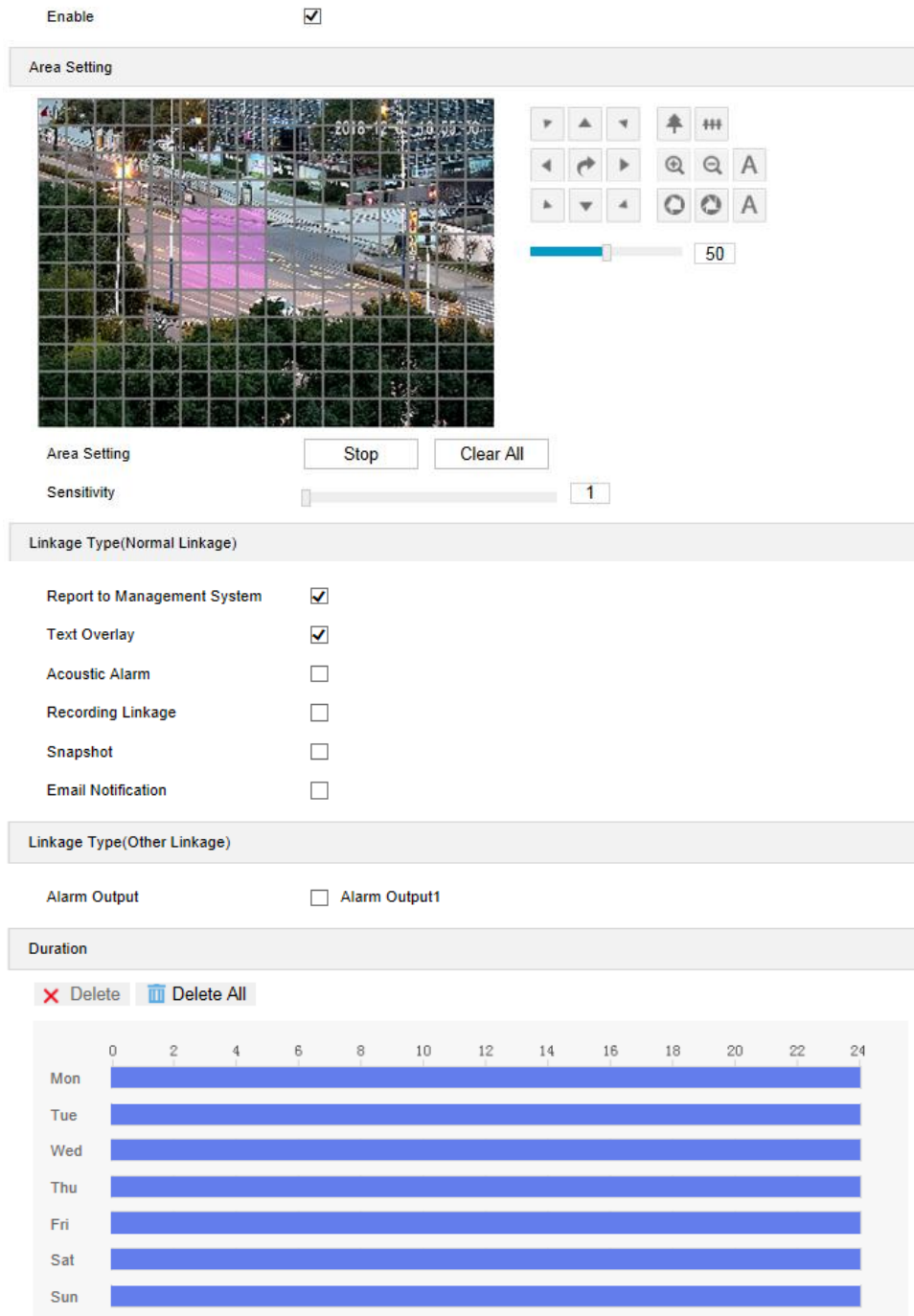
Picture 6-2 Motion Detection

### 6.1.2 Video Blocked

When the preset video blocked area is blocked intentionally which disables 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 of video blocked are as follows:

- 1) Select **"Enable"**;
- 2) 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;
- 3) Drag the slide bar to adjust **Sensitivity**;
- 4) Select linkage type(s), which is/are the alarm output method(s) when video blocked triggers an alarm;
- 5) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click **"Save"** to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.
  - 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"** on the top of the timeline to delete all the durations. Select duration and click **"Delete"** on the popup window or on the top of the timeline to delete the duration.
- 6) Click **"Save"** to validate settings.




Picture 6-3 Video Blocked

### 6.1.3 Guard Line

Guard line is to trigger an alarm once there is any object entering the guard line.


Configuration steps of guard line are as follows:

- 1) Select “**Enable**”; select a guard line from the dropdown list of Guard Area, which can be set one by one and takes effect after each time of saving. It supports max 4 guard lines;

- 2) Select a direction from the dropdown list of Guard Line Direction, options including "A->", "B->" and "A->&&B->"; take "A->" as an example, when selecting this direction, only when objects move from A to B the system will detect and trigger an alarm;
- 3) 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);
- 4) **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 and drag the slide bar of "Sensitivity" to set the guard line's sensitivity to moving objects;
- 5) Select linkage type(s), which is/are the alarm output method(s) when guard line triggers an alarm;
- 6) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.
  - 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**" on the top of the timeline to delete all the durations. Select duration and click "**Delete**" on the popup window or on the top of the timeline to delete the duration.
- 7) Click "**Save**" to validate settings.

Enable

Area Setting



Navigation and zoom controls: directional arrows, zoom in/out, and auto-focus buttons. A zoom level slider is set to 50.

Guard Area: 1

Guard Line Direction: A->

Target Filter: [Edit] [Clear All]

Max and Min Target Ratio: [Slider] 1%

Area Setting: [Stop] [Clear All]

Sensitivity: [Slider] 50

Linkage Type(Normal Linkage)


- Report to Management System
- Text Overlay
- Acoustic Alarm
- Recording Linkage
- Snapshot
- Email Notification

Linkage Type(Other Linkage)

Alarm Output  Alarm Output1

Duration

[X] Delete [Delete All]



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


Picture 6-4 Guard Line

### 6.1.4 Entry Guard Area

Enable this function and set the guard area. Once there is anything entering the area, an alarm will be triggered.

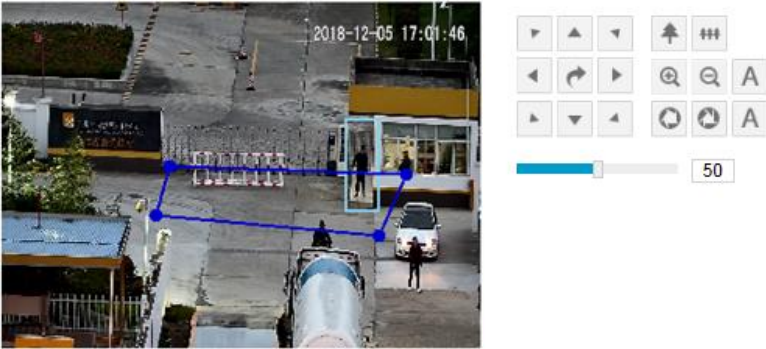


Configuration steps of defocus are as follows:

- 1) Select "Enable" and select a number from the dropdown list of **Guard Area** and user can set only one area at one time. After saving it, user can set another and max 4 guard areas can be set;
- 2) **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);
- 3) **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, and drag the slide bar of "Sensitivity" to set the sensitivity of the guard area to moving objects;
- 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;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.
  - 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**" on the top of the timeline to delete all the durations. Select duration and click "**Delete**" on the popup window or on the top of the timeline to delete the duration.
- 6) Click "**Save**" to validate settings.

Enable

Area Setting



Guard Area

Target Filter

Max and Min Target Ratio

Area Setting

Sensitivity

Linkage Type(Normal Linkage)

Report to Management System

Text Overlay

Acoustic Alarm

Recording Linkage

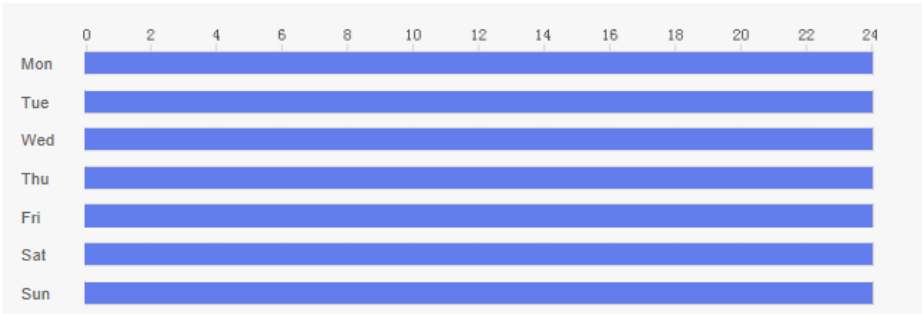
Snapshot

Email Notification

Linkage Type(Other Linkage)

Alarm Output  Alarm Output1

Duration




Picture 6-5 Entry Guard Area

### 6.1.5 Exit Guard Area

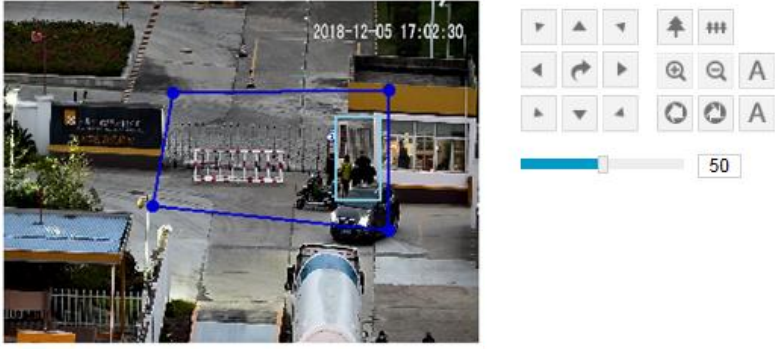
Enable this function and set guard area. Once any moving object leaves the guard area, an alarm will be triggered.

Operation steps are as follows:

- 1) Select "Enable" and select a number from the dropdown list of **Guard Area** and user can set only one area at one time. After saving it, user can set another and max 4 guard areas can be set;
- 2) **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);
- 3) **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, and drag the slide bar of "Sensitivity" to set the sensitivity of the guard area to moving objects;
- 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;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.
  - 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**" on the top of the timeline to delete all the durations. Select duration and click "**Delete**" on the popup window or on the top of the timeline to delete the duration.
- 6) Click "**Save**" to validate settings.

Enable

Area Setting



Guard Area: 1

Target Filter: Edit Clear All

Max and Min Target Ratio: 1%

Area Setting: Edit Clear All

Sensitivity: 50

Linkage Type(Normal Linkage)

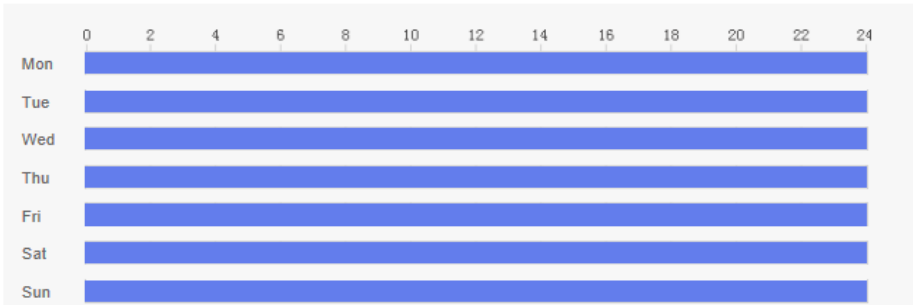
- Report to Management System
- Text Overlay
- Acoustic Alarm
- Recording Linkage
- Snapshot
- Email Notification

Linkage Type(Other Linkage)

Alarm Output  Alarm Output1

Duration

Delete Delete All




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

Picture 6-6 Exit Guard Area

### 6.1.6 Enter Guard Area

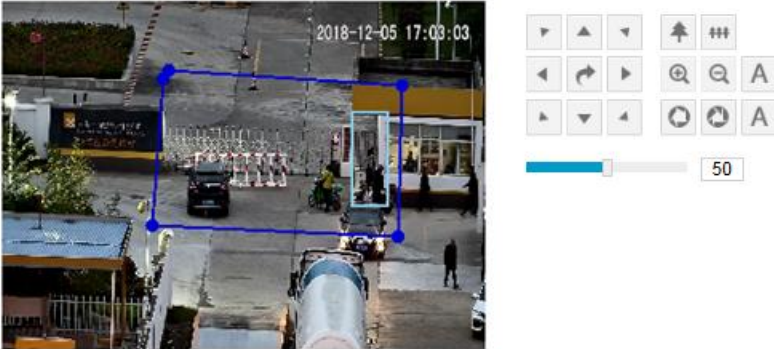
Enable this function and set the guard area. Once any moving object enters the guard area and stays for a period of time reaching the set threshold, an alarm will be triggered.

Operation steps are as follows:

- 1) Select "Enable" and 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;
- 2) **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);
- 3) **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, and drag the slide bar of "Sensitivity" and "Time Threshold";
- 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;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.
  - 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**" on the top of the timeline to delete all the durations. Select duration and click "**Delete**" on the popup window or on the top of the timeline to delete the duration.
- 6) Click "**Save**" to validate settings.

Enable

Area Setting



Guard Area 1

Target Filter Edit Clear All

Max and Min Target Ratio 1%

Area Setting Edit Clear All

Sensitivity 50

Time Threshold 5 (s)

Linkage Type(Normal Linkage)

Report to Management System

Text Overlay

Acoustic Alarm

Recording Linkage

Snapshot

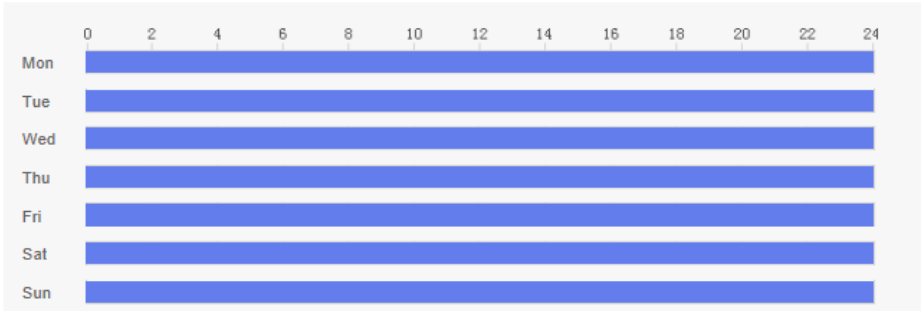
Email Notification

Linkage Type(Other Linkage)

Alarm Output  Alarm Output1

Duration

Delete Delete All




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

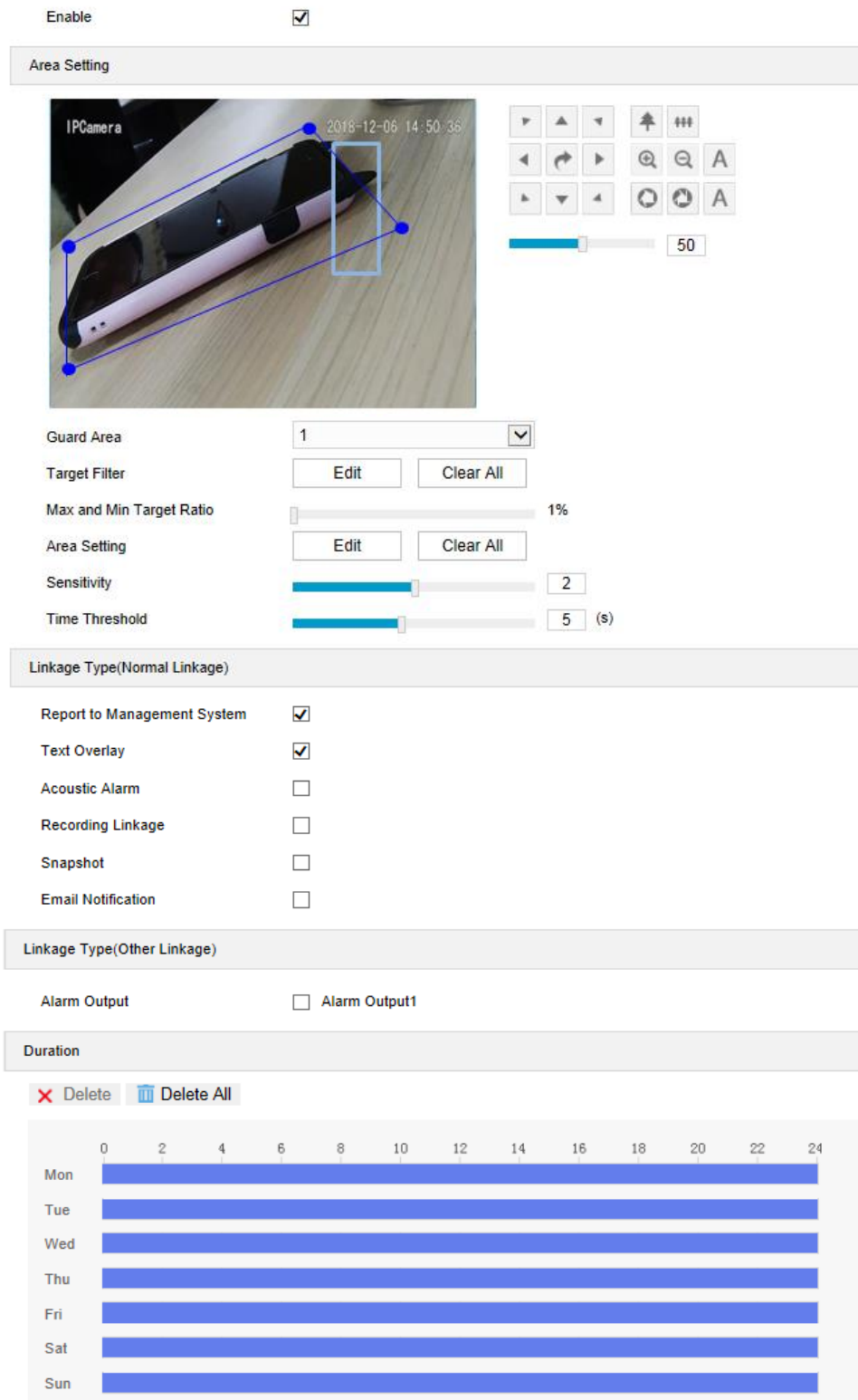
Picture 6-7 Enter Guard Area

### 6.1.7 Object Left

Enable this function and set guard area. When any object is left in the area for a period of time reaching the time threshold, an alarm will be triggered.

Operation steps are as follows:

- 1) Select **"Enable"** and 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;
- 2) **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);
- 3) **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 drag the slide bar of **"Sensitivity"** and **"Time Threshold"**;
- 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;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click **"Save"** to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.
  - 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"** on the top of the timeline to delete all the durations. Select duration and click **"Delete"** on the popup window or on the top of the timeline to delete the duration.
- 6) Click **"Save"** to validate settings.




Picture 6-8 Object Left

### 6.1.8 Object Removal

Enable this function and set the area. When any object is taken from the area for a period of time reaching the time threshold, an alarm will be triggered.




Operation steps are as follows:

- 1) Select "**Enable**" and 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;
- 2) **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);
- 3) **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 drag the slide bar of "Sensitivity" and "Time Threshold";
- 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;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.
  - 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**" on the top of the timeline to delete all the durations. Select duration and click "**Delete**" on the popup window or on the top of the timeline to delete the duration.
- 6) Click "**Save**" to validate settings.

Enable

Area Setting



Guard Area: 1

Target Filter: Edit Clear All

Max and Min Target Ratio: 1%

Area Setting: Edit Clear All

Sensitivity: 2

Time Threshold: 5 (s)

Linkage Type(Normal Linkage)


- Report to Management System
- Text Overlay
- Acoustic Alarm
- Recording Linkage
- Snapshot
- Email Notification

Linkage Type(Other Linkage)

Alarm Output  Alarm Output1

Duration

Delete  Delete All




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

Picture 6-9 Object Removal

### 6.1.9 Gathering

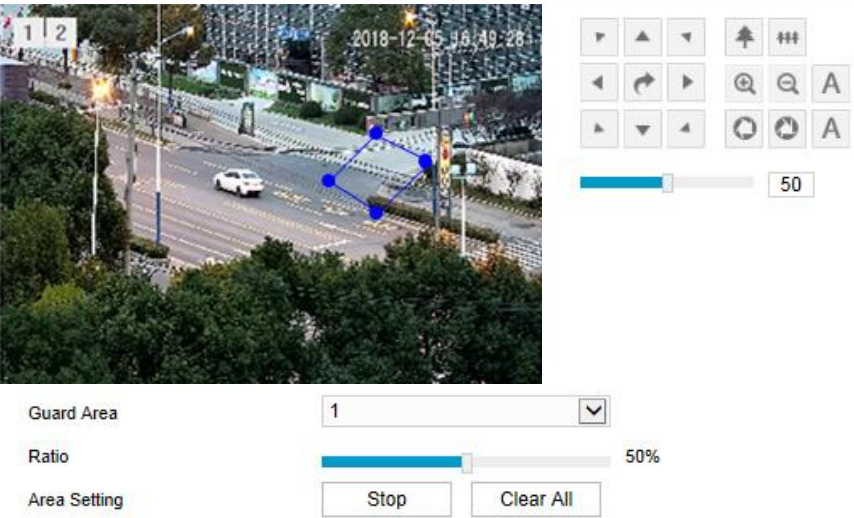
Enable this function in the interface and set guard area. When the coverage of people exceeds the set ratio, an alarm will be triggered. For example, if setting the ratio 50%, when 50% or more of the area is covered by people, an alarm will be triggered.

Operation steps are as follows:

- 1) Select **"Enable"** and 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;
- 2) Drag the slide bar of "Ratio" to set the coverage of people in the set area;
- 3) **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;
- 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;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click **"Save"** to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.
  - 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"** on the top of the timeline to delete all the durations. Select duration and click **"Delete"** on the popup window or on the top of the timeline to delete the duration.
- 6) Click **"Save"** to validate settings.

Enable

Area Setting



Guard Area 1

Ratio 50%

Area Setting Stop Clear All

Linkage Type(Normal Linkage)

Report to Management System

Text Overlay

Acoustic Alarm

Recording Linkage

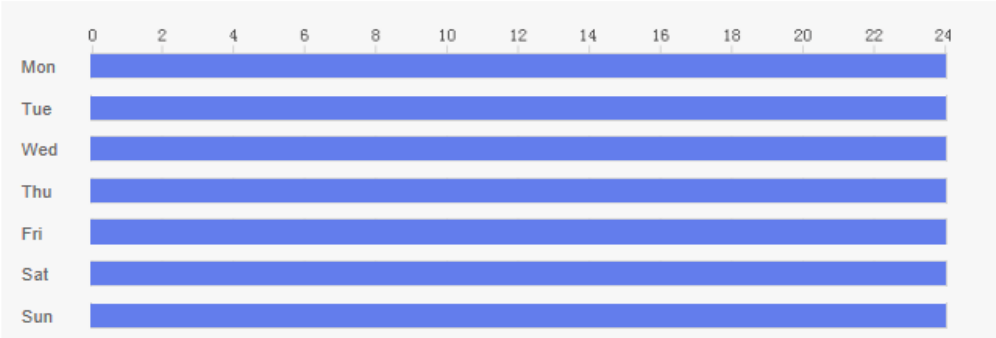
Snapshot

Email Notification

Linkage Type(Other Linkage)

Alarm Output  Alarm Output1

Duration




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

Picture 6-10 Gathering

### 6.1.10 Audio Surge

After enabling this function, when there is audio surge, an alarm is triggered.

Operation steps are as follows:

- 1) Select "Enable" and 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;
- 2) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;
- 3) Set arming duration: the default is 24 hours displaying in blue bar, or user can customize durations;
  - Set duration: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting. It allows several (max 10) durations on one day and the durations cannot overlap with each other.
  - 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**" on the top of the timeline to delete all the durations. Select duration and click "**Delete**" on the popup window or on the top of the timeline to delete the duration.
- 4) Click "**Save**" to validate settings.



Note: Audio surge alarming is effective only when the PTZ camera is connected to a pick-up.


Audio Input Abnormality

Enable

Voice Mutation

Sensitivity  50

Voice Intensity Threshold  50



Linkage Type(Normal Linkage)

Report to Management System

Text Overlay

Acoustic Alarm

Recording Linkage

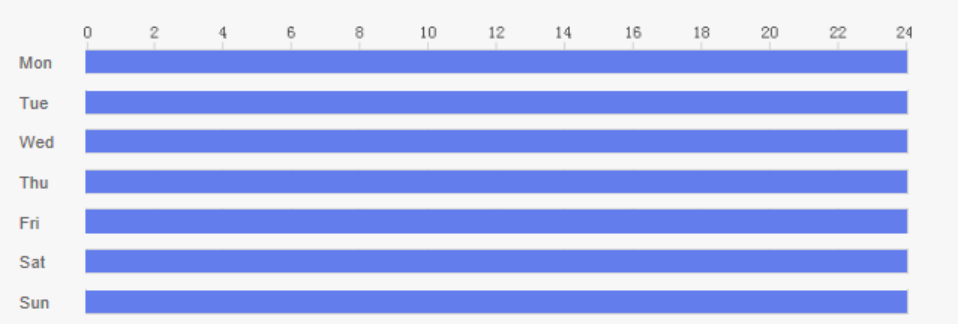
Snapshot

Email Notification

Linkage Type(Other Linkage)

Alarm Output  Alarm Output1

Duration



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

Picture 6-11 Audio Surge

## 6.2 Alarm Input

Camera supports connecting with on-off alarm devices. If the alarm input device is always disabled, when it alarms, the circuit will become a loop and the camera will trigger alarm output by the set alarm linkage type. If the alarm input device is always enabled, when it alarms, the circuit will become open and the camera will trigger alarm output by the set alarm linkage type.

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  
 PTZ Linkage  
 Preset ID:

**Copy to Alarm**

All

**Duration**

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

Picture 6-12 Alarm Input

Operation steps are as follows:

- 1) Confirm that the alarm input device is always enabled or always disabled and has been rightly connected with the alarm input port of camera;
- 2) Go to **Settings > Event > Alarm Input** and select “**Enable**”;
- 3) Select a number from the dropdown list of **Alarm Input ID** (corresponding to the connected input ID);
- 4) Enter alarm name. If the alarm input device is always disabled, which means the circuit is usually open, user must select “**Always Disabled**” from the dropdown list of Alarm Type. If the

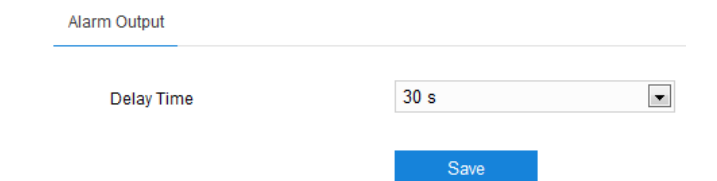
alarm input device is always enabled, which means the circuit is usually loop, user must select “**Always Enabled**” from the dropdown list of Alarm Type. The default setting is “Always Disabled”;

- 5) Select linkage method to trigger actions when an alarm is triggered;
- 6) If user sets several alarm inputs, select “All” under Copy to Alarm to copy all configurations of current alarm input to other alarm inputs;
- 7) Duration: there can be maximum 10 durations on one day and each can have a start time and end time. Please refer to the steps in chapter *Motion Detection* for details;
- 8) Click “**Save**” to validate setting.

### 6.3 Alarm Output

The default duration of alarm output is 5s, and the delay time means the prolonged period of time after the default 5s. Please select an option from the dropdown list according to actual request and click “**Save**” to validate setting.

 Note: Alarm output is effective only when “Alarm Output” is selected under Linkage Method on the interface of Alarm Input.



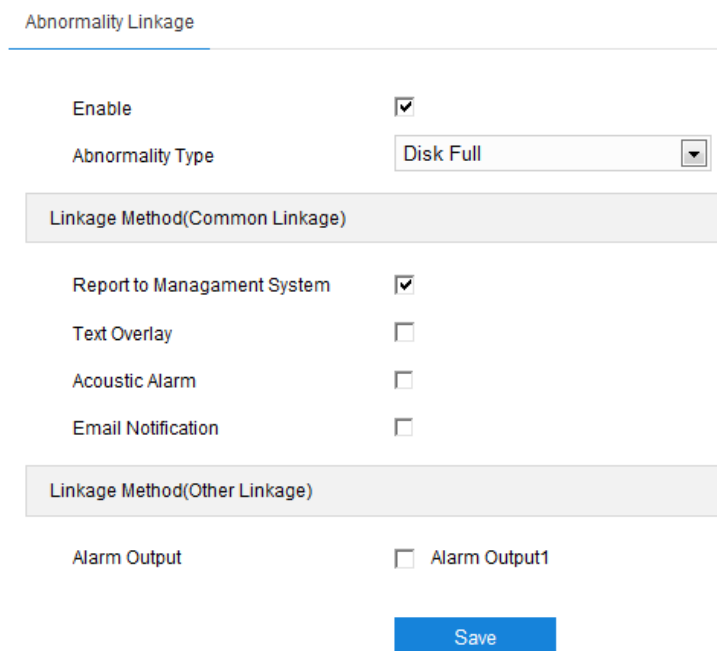
Alarm Output

Delay Time 30 s

Save

Picture 6-13 Alarm Output

### 6.4 Abnormality Linkage



Abnormality Linkage

Enable

Abnormality Type Disk Full

Linkage Method(Common Linkage)

Report to Management System

Text Overlay

Acoustic Alarm

Email Notification

Linkage Method(Other Linkage)

Alarm Output  Alarm Output1

Save

Picture 6-14 Abnormality Linkage



Configure the alarm linkage method for abnormal events. Operation steps are as follows:

- 1) Select "Enable" and select an option from the dropdown list of Abnormality Type;



Note:

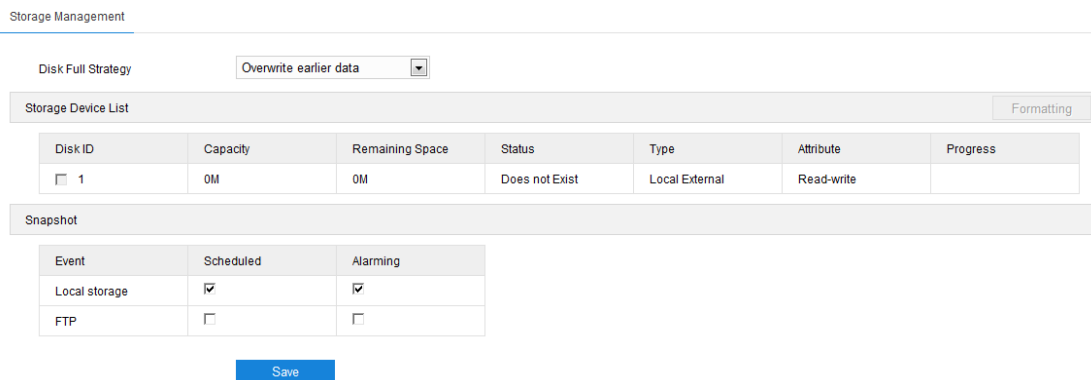
- ◆ Disk Full: when the disk storage is insufficient.
- ◆ Disk Error: when the disk cannot be recognized.
- ◆ Internet Disconnected: when the device isn't connected to the internet normally.

- 2) Select linkage type(s), which is/are the alarm output method(s) when an event triggers an alarm;
- 3) Click "**Save**" to validate settings.

# 7. Storage


## 7.1 Storage Management

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



**Picture 7-1 Storage Management**


- Disk Full Strategy:** Configure the video recording strategy when there is insufficient storage space. Overwrite earlier data: when there is insufficient storage space, overwrite the oldest videos; Stop: when there is insufficient storage space, stop video recording automatically. Go to **Event > Abnormality Linkage** and select "Disk Full" for 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; in "Status" column, it shows the status of storage devices such as "Normal" (with a card and normally read and write), "Does not Exist" (without a card), "Not Formatted" (need to format when first inserting a card) and etc.; in "Progress" column, it shows 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 of snapshots. According to actual requirements, select "Local storage" (TF card in camera) or "FTP" (server) to save scheduled snapshots and alarming snapshots.

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

## 7.2 Recording

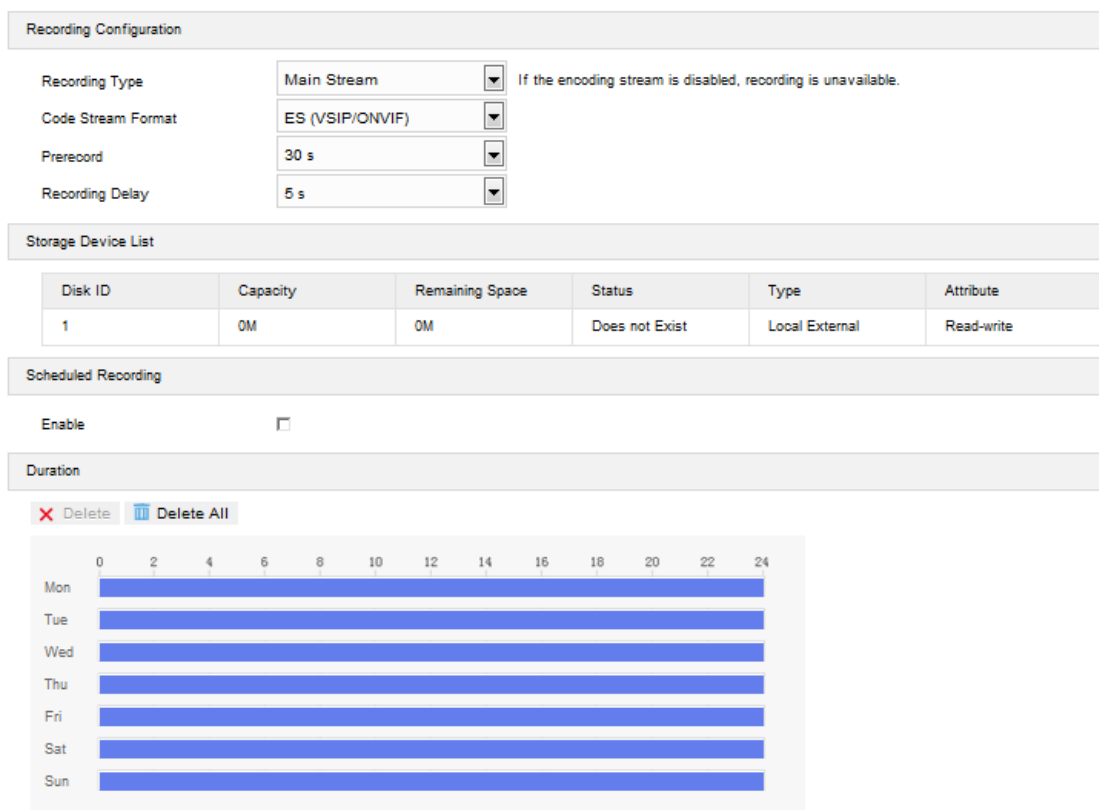
When scheduled recording is enabled, the camera will record videos automatically in the configured durations and save the videos in the storage card.

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;
  - Recording Type: select the stream to be recorded;
  - Code Stream Format: select according to the type of access protocol;
  - Prerecord: select prerecord duration, i.e. the prerecord duration before recording starts, by default 30s;
  - Recording Delay: select recording delay time, i.e. the prolonged recording duration plus to the configured duration;
- 3) Select "Enable" to enable Scheduled Recording;
- 4) Configure durations for scheduled recording. The default setting is 24 hours in bright blue color bars, or you can customize the durations;
  - Set durations: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting. It allows several (max 4) durations on one day and the durations cannot overlap with each other;
  - Copy: click the copy icon  behind the timeline and copy the durations on the day to one or several other days;
  - Delete: click "**Delete All**" on the top of the timeline to delete all the durations. Select a duration and click "**Delete**" on the popup window or on the top of the timeline to delete the duration;
- 5) Click "**Save**" to validate settings.



Note: When the camera registers to GB platform, the Code Stream Format must be "PS (GB28181)".




Picture 7-2 Scheduled Recording

### 7.3 Snapshot

After configuring snapshot parameters, the camera will capture images automatically.

- 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;
- 3) Configure scheduled snapshot:
  - Enable: select the checkbox to enable scheduled snapshot;
  - Snapshot Type: select "According to the time" or "According to the number";
  - Time Interval: select the interval between snapshots;
- 4) Configure durations for scheduled recording. The default setting is 24 hours in bright blue color bars, or you can customize the durations;
  - Set durations: select a day and put the mouse on a point of the timeline, left-click and drag the mouse to the right to draw a bright blue color bar, on the top of which shows the start time and end time; click the color bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting. It allows

several (max 4) durations on one day and the durations cannot overlap with each other;

- Copy: click the copy icon  behind the timeline and copy the durations on the day to one or several other days;
  - Delete: click "**Delete All**" on the top of the timeline to delete all the durations. Select a duration and click "**Delete**" on the popup window or on the top of the timeline to delete the duration;
- 5) Select the checkbox behind "Enable" under Event Snapshot, and configure time interval and number of snapshots (the number of snapshots captured at each event).
  - 6) Click "**Save**" to validate settings.

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  1~85535

Picture 7-3 Scheduled Snapshot

## 8. System

### 8.1 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, the device name will be synchronized to the OSD, interface shown below:

Device Info

---

Device Name	<input type="text" value="8"/>	<input type="checkbox"/> Set as OSD text.
Device Model	IPC523-F255-NL	
Device Serial No.	0180ZA0JSS	
Hardware Version	1.1.0	
Software Version	7.2.1.392 Mar 28 2019 06:47:02	
Web Version	28-03-2019	
Web Plugin Version		
ISP Version	2.5.0.fc96447a.20190328	
Number of Video Sources	1	

Picture 8-1 Device info

### 8.2 User Security

#### 8.2.1 User

On "User" interface, you can add or delete user, edit username and password, configure user authorizations and etc.

User RTSP Authorization IP Filter Security service

---

Anonymous Access

User list

Serial No.	User Name	User Type
1	admin	Administrator

Picture 8-2 User

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



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**”.

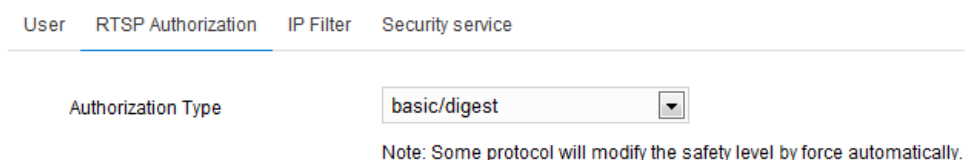


Note:

- ◆ 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.
- Delete user: Select user and click “**Delete**” to delete the user.
- Modify user: Select user and click “**Modify**” to modify on the popup interface.

### 8.2.2 RTSP Authorization

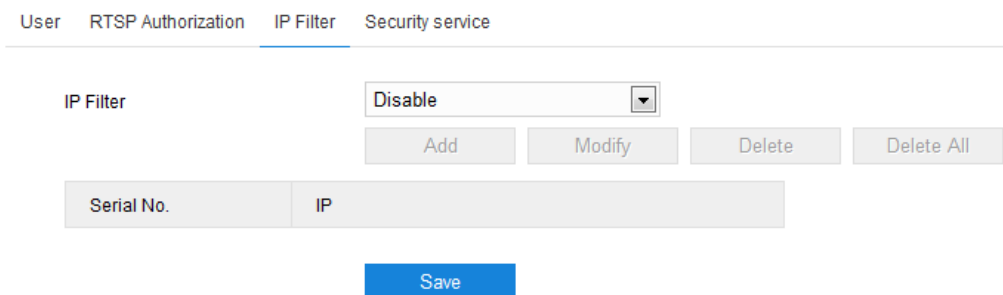
Select authorization type from the dropdown list, options including “none”, “basic/digest” and “digest”. By default, it is “basic/digest”.



Picture 8-3 RTSP Authorization

### 8.2.3 IP Filter

By setting IP filter, user can manage access limitation to the web client. White List includes IP addresses able to access to the client while Black List includes IP addresses unable to access to the client.



Picture 8-4 IP Filter

Configuration steps are as follows:

- 1) Select IP filter from the dropdown list up to request, options including “Disable”, “Black List” and “White List”;

 Note: If selecting "Disable", IP filter is disabled.


- 2) After selecting filter method, click "Add" and input IP address on the popup interface, and click "Confirm";
- 3) After finish setting, click "Save" to validate setting.
  - 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.

### 8.2.4 Security Service

User	RTSP Authorization	IP Filter	Security service
			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
<input type="button" value="Save"/>			

Picture 8-5 Security Service

- Enable SSH Login: Select it 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 Unauthorized Login Locking: Select it to enable unauthorized login locking.
- Illegal Login Retry Times: Configure illegal login retry times.
- Illegal Login Lock Time: Configure illegal login lock time.

 Note: Select "Enable Unauthorized Login Locking" and configure Illegal Login Retry Times and Illegal Login Lock Time. Click "Save". When user logs in and input wrong user name or password for the configured times (3 ~ 10, configurable), the user IP will be locked up for a certain period of time (10 ~ 60 minutes, configurable), during which the user cannot log in.

## 8.3 Time

Time setting includes Device Timezone, Device Time, Auto Time Correction and DST. Configure parameters by request and click "Save" to validate setting.



Time Setting

---

Device Timezone

Device Time

**Auto Time Correction**

Auto Timing

Timing Scheme

Timing Priority

- NTP Server
- VSIP VMS
- Onvif Protocol
- GB28182-1 VMS
- GB28182-2 VMS

Current Timing Protection Time  (min)

**NTP Clock Synchronization**

Enable

Server Address

NTP Port

Time Correction Interval  (min)

**DST**

Enable DST


Start Time     (o'clock)

End Time     (o'clock)

Time Deviation

**Picture 8-6 Time Setting**

- Time Setting: Set Device timezone and device time. Click "**Manual Setting**", select timezone and set time on the popup interface. You can select "Synchronize time with PC" and click "**Save**" to validate setting.
- Auto Time Correction: Select "Auto Timing" and the system will correct time automatically according to access protocol or NTP server or adaptive. When selecting a protocol, the system will correct time automatically according to the protocol; when selecting "NTP server", you need to fill NTP Server Address and NTP Port and configure Time Correction Interval; 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).

 Note: Access protocol means the protocol that the camera connects to a platform; NTP means Network Time Protocol, a protocol for clock synchronization between computer systems.

- NTP Clock Synchronization: Select "Enable" and configure "Server Address", "NTP Port" and "Time Correction Interval". When it is enabled, the camera will correct time on a time basis of the configured interval.

- DST: DST (daylight saving time) is the practice of advancing clocks during summer months so that evening daylight lasts longer, while sacrificing normal sunrise times and the time applied during DST is called DST time. Select "Enable DST" and set "Start Time", "End Time" and "Time Deviation".

### 8.4 Serial Port

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. Match 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.

Serial Port

---

Type	<input type="text" value="RS485"/>	
Serial Post Number	<input type="text" value="1"/>	
Name	<input type="text" value="com1"/>	
Baud Rate	<input type="text" value="9600"/>	
Data Bits	<input type="text" value="8"/>	
Stop Bits	<input type="text" value="1"/>	
Correction	<input type="text" value="None"/>	
Stream Control	<input type="text" value="None"/>	
Address Code	<input type="text" value="1"/>	1~255
Control Protocol	<input type="text" value="PELCO_D_K"/>	

Picture 8-7 Serial port

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

### 8.5 Log

On Log interface, you can select "Enable Log Record" to search, view and download logs.

Logs

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

User Name	User IP Address	Log Record Time	Contents

Picture 8-8 Log

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: The system can save maximum 2,000 entries of logs.

## 8.6 System Maintenance

Reboot	
Reboot	<input type="button" value="Reboot"/> <input type="button" value="Soft Reboot"/>
Auto Maintenance	
Enable	<input type="checkbox"/>
Maintenance Cycle	Everyday
Maintenance Time	00:00:00
	<input type="button" value="Save"/>
Upgrade	
Upgrade	<input type="button" value="Upgrade"/> Business version upgrade
PT Upgrade	<input type="button" value="PT Upgrade"/> PTZ version upgrade
Configuration Management	
Partial Restoration	<input type="button" value="Partial Restoration"/> All parameters restore to factory default except camera IP address, protocols, user info and RTSP authorization.
Complete Restoration	<input type="button" value="Complete Restoration"/> Restore to factory default
Restore Default PT Settings	<input type="button" value="Restore Default PT Settings"/> PTZ parameters related to restore factory settings
Configuration Export	<input type="button" value="Export"/> Export all settings to a file.
Import Parameter	<input type="button" value="Import"/> All parameters are imported from the file except the network, device name and OSD setting.
Advanced Configuration	
Advanced Configuration	<input type="button" value="Configuration"/>

**Picture 8-9 System maintenance**

On the interface of "System Maintenance", you can reboot and upgrade cameras or perform other maintenance over the device.

- Reboot: Click "**Reboot**" to reboot the camera.
- Auto Maintenance: Select "**Enable**", and configure Maintenance Cycle and Maintenance Time. Click "**Save**" to validate setting.
- Upgrade: Upgrade system 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. If it is necessary to upgrade the web client, the system will prompt to download the plug-in.



Note: PT Upgrade is necessary only when there is BUG in the PT version.

- Configuration Management: including partial restoration, complete restoration, configuration export and import parameter.
  - 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.
  - Restore Default PT Settings: Reset PT settings to factory default.
  - Configuration Export: After configuring camera mode, you can export the configuration to local PC for copying the configurations. Click "**Export**" and select a local save path to export.
  - Import Parameter: You can import local configuration file from PC without manual setting. Click "**Import**" and select local configuration file to import.
- Advanced Configuration: Only "admin" user can perform advanced configuration. Click "**Configuration**", input the right password for advanced user and click "**Confirm**" to enter the configuration interface. You can configure parameters such as VSIP Protocol Compatibility, Keep Alive the Stream UDP and Network Adaptation if necessary.

## 9. Appendix: Glossary of Terms

Term	Explanation
HD	High Definition
QXGA	Resolution of 2048*1536 pixels (4:3)
UXGA	Resolution of 1600*1200 pixels (4:3)
1080P	Resolution of 1920*1080 pixels (16:9)
720P	Resolution of 1280*720 pixels (16:9)
CIF	Resolution of 352*288 pixels
QCIF	Resolution of 176*144 pixels
PC	Personal Computer
IP	Internet Protocol
MPEG4	Moving Pictures Experts Group
NAT	Network Address Translation
DHCP	Dynamic Host Configuration Protocol
DDNS	Dynamic Domain Name Server
PPPoE	Point to Point Protocol over Ethernet
H.265	HEVC/H.265 standard, High Efficiency Video Coding, a new digital video compression format put forward by ITU-T VCEG after H.264
H.264	AVC/H.264 standard, a new digital video compression format put forward by ISO and ITU after MPEG4
MJPEG	Motion Joint Photographic Experts Group
SVAC	Surveillance Video and Audio Coding
GB28181	Technical requirements about information transmission, exchange and control over security and surveillance networking
ROI	Region of Interest
ONVIF	Open Network Video Interface Forum
NTP	Network Time Protocol