KEDACOM

User Manual for Bullet and Box and Semi-Dome Cameras

V1.2 (May, 2021)

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Target Audience

Administrators and Operators of Video Surveillance Products

Document Version

V1.2

Applicable Models

IPC123 series

IPC126/IPC146/IPC186 series

IPC2231/IPC2431 series

IPC2833 series

IPC2241 series

IPC2451 series

IPC2252/IPC2452/IPC2852 series

IPC2255/IPC2655/IPC2855 series

Software Version

7.1.6; 7.2.1; 7.2.3; 7.3.3

Related Document

Quick Start Guide

Convention

Icon/Sign	Convention
	Note/Attention: necessary supplement for operation description
BOLD	Menu/Button/Option
italic	Document name
>	Connector between menus of different levels

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1. Product Brief

The intelligent recognitive camera is remote video surveillance device based on IP network technology. It realizes HD video encoding and transferring of moving targets via public or exclusive network and can be used in the network surveillance system. It could recognize targets such as human face, people, vehicle and non-motor vehicle, detect targets by classification, track and capture targets. Meanwhile, it could analyze and abstract attributes of the targets.

Main features of the product:

Alarm Management

With audio and alarm ports, realize functions of talkback and alarm;

Motion detection and alarm linkage, make video surveillance intelligent;

Support alarm linkage edition: alarm text overlay, device output, email notification and etc.

Networking Method

Support static address, DHCP or PPPoE;

Support NAT traversal, DNS and multicast technology.

Storage Function

With storage card slot, when the network breaks down, video can be stored in local storage card;

Support local snapshot, default format being .JPG;

Support local recording, user can query and playback recording directly on the web client.

Target Snapshot

For the complicated scenario with people and vehicles mixed together, the camera could recognize target types such as people, vehicle and non-motor vehicle correctly, synthesize all moving targets in the surveillance field and output the optimal snapshot.

Night Cut

Support ultra-low star-light imaging at 0.0002Lux, built-in algorithm, day/night-adaptive, support fill light control and imaging adjustment; under low-light condition or even at night without light, it could also reach excellent surveillance effect.

Structured Analysis on Human Face and People

It could precisely recognize the age, gender, face mask, glasses and other information of the captured human face, and transmit the structure information and video stream together to the back-end big data platform to perform further structured analysis.

Structured Analysis on Vehicle and Non-Motor Vehicle

It could precisely recognize the vehicle plate, vehicle color, vehicle type and other information of the captured vehicles.

1.1 Product Appearance

Picture 1-1 IPC123 series

Picture 1-2 IPC126/IPC146/IPC186 series

Picture 1-3 IPC2451 series

Picture 1-4 IPC2255/IPC2655/IPC2855 series

Picture 1-5 IPC2252/IPC2452/IPC2852 series

Picture 1-6 IPC2231/IPC2431 series

Picture 1-7 IPC2833 series

Picture 1-8 IPC2241 series

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

1.2 Application Scenarios

- Human Recognition Camera

  Human recognition camera could capture human face and human body, and analyze human attributes. It's used in scenarios where it's necessary to manage people, such as financial institution, telecommunication facility, government, school, airport, public security bureau, judiciary authority, safe city and etc.

- Structured Analysis Camera

  Structured analysis camera could capture separate snapshot of the target. It's applied in scenarios where people and vehicles are mixed together, such as mixed passage for people and vehicle, taxi pick-up and drop-off point, bus station, tourist hub, entrance of urban village, entrance of community venue and etc.

- Low Speed ANPR Camera

Low speed ANPR camera could detect, track and capture vehicle and people, and abstract their attributes to analyze. It's applied in scenarios with lane lines and mainly featured with moving vehicles in.

2. Startup

For device installation and wiring, please refer to the *Quick Start Guide*.

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.

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

Requirements of PC for installing the client:

- Processor: 3.3 GHz Intel CORE®i3 series and later version or other equivalent processors
- RAM Memory: 4GB or above
- Operating System: Windows 7 or higher versions
- Browser: Suggest using IE Kernel browser, otherwise it will affect some functions of the client
- DirectX：9.0c

2.1 Activate Camera

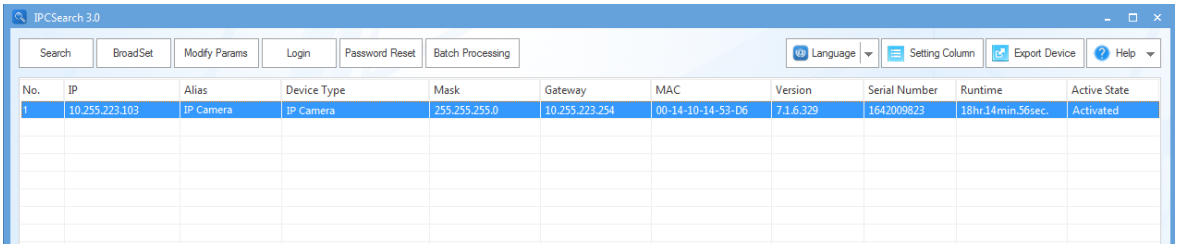
When the camera is first used, user should activate it and set the login password for normal use.

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

- Activate through IPCSearch

a) Download IPCSearch from our website (address: https://www.kedacom.com/cn/softtools/index.jhtml), and install it according to the prompts.

b) After finishing installation, run IPCsearch and the system will search the cameras in LAN and display the list as shown below.

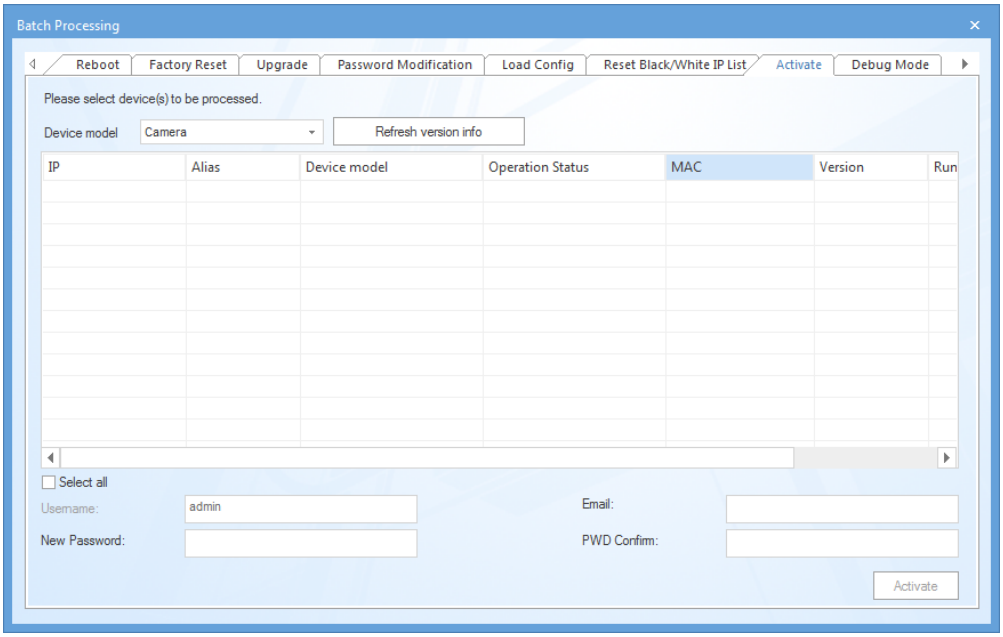


Picture 2-1 IPCSearch

Note: Camera name is subject to actual search result.

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

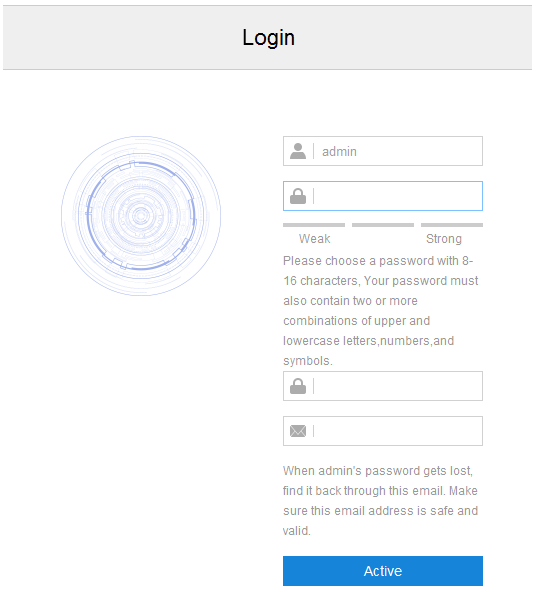
Note: When there are more than one non-activated devices, select the device and click "**Batch processing**". On the popup interface, set admin user's password and the email address to claiming password. Click "**Activate**" and wait for rebooting.



Picture 2-2 Batch Processing

➢ Activate through browser

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



Picture 2-3 Activate through browser

b) Configure admin user password and email for claiming password. Click "Activate" to activate the device.

Note:

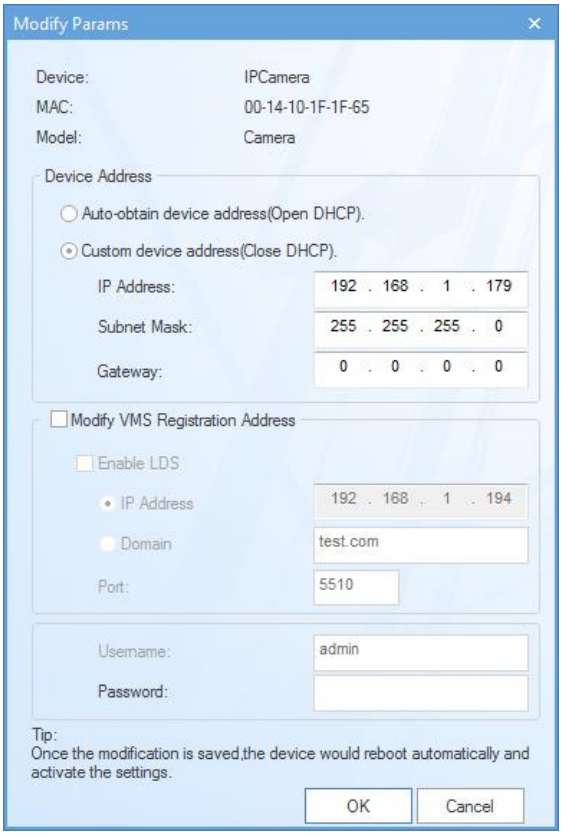
- To ensure the safety of device on internet, it is strongly recommended that you set a strong password composed of at least 2 kinds of the following, numbers, upper-case letters, lower-case letters or specific symbols with length of 8 to 16 characters.
- Please modify the password periodically such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

2.2 Configure Network Parameters

After activating the camera, modify camera network parameters through IPCSearch, such as IP address, subnet mask and gateway.

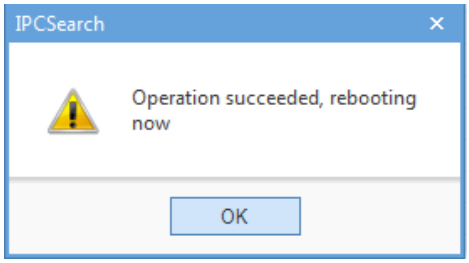
1) Run IPCSearch and the system will search the cameras in LAN automatically and display the result on the list;

2) Select a camera whose network parameters should be modified. 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 2-4 Modify Parameter

3) Click "OK" and the following window will pop up. Click "OK" and wait for the camera rebooting.



Picture 2-5 Camera Reboot

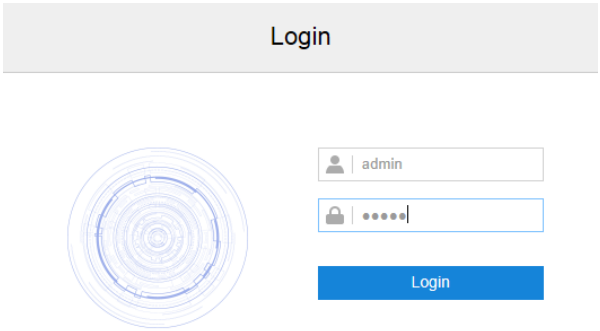
Note: For more network parameters of the camera, login to the web client and configure. Please refer to chapter 5 *Network* for details.

2.3 Login and Log Out of the Web Client

- Login to the Web Client

After activating the camera and modifying its network parameters, the camera will reboot automatically. After rebooting, select either of the following methods to login:

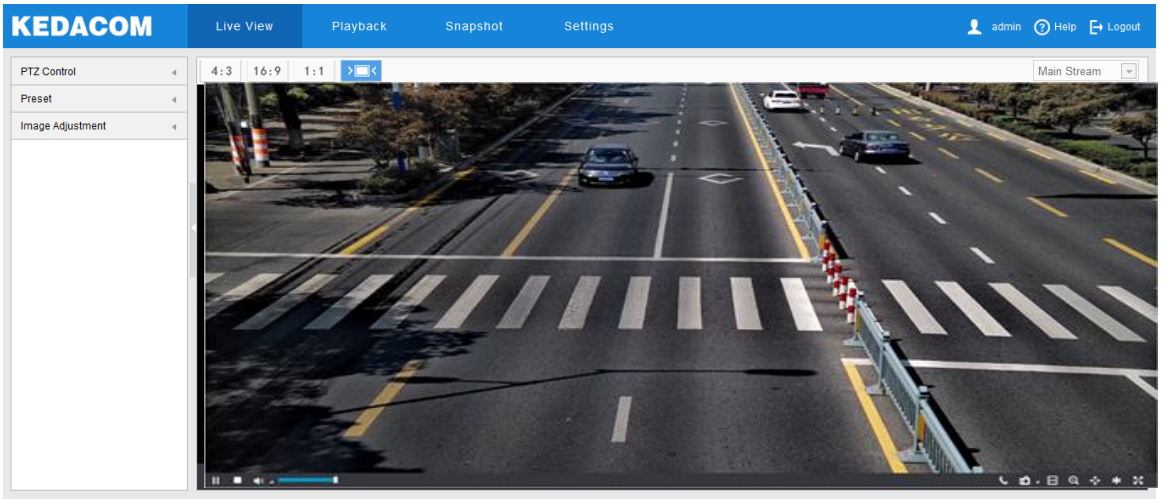
- Select the device from IPCSearch and click “Login” or double-click the line which the device is in to enter the web client. Input username (admin) and the password set during activation to enter client.
- Input camera IP address in the browser to enter the login interface. Input username (admin) and the password set during activation to enter client.



Picture 2-6 Web Client Login Interface

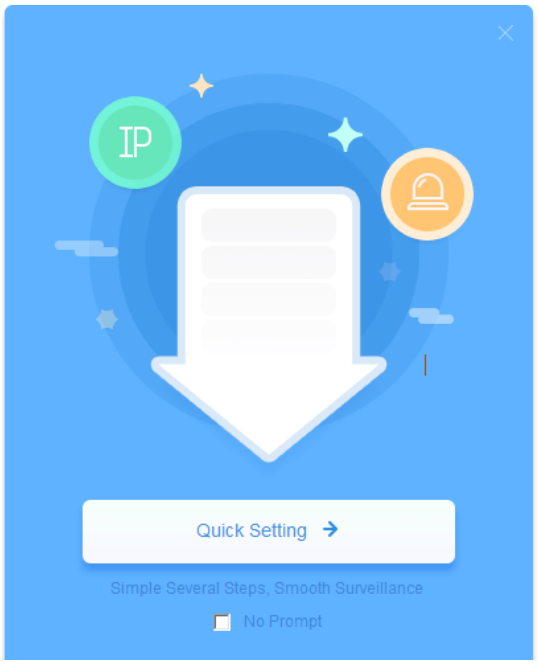
After login successfully for the first time, download and install the plug-in according to the prompts. Close browser when installing the plug-in. After finishing, re-login and enter the following interface.

Note: Suggest using IE Kernel browser, otherwise it might affect some functions of the web client.

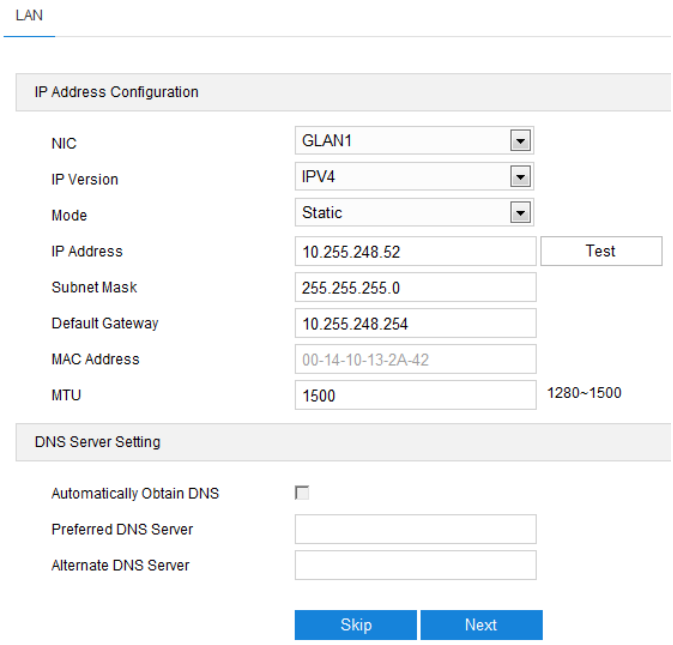


Picture 2-7 Web Client Interface

Note: After login to the web client successfully for the first time, it will pop up the quick setting interface. Click “Quick Setting” to perform simple settings to the camera. User can go to **Settings > Local Setting** and unselect “Enable Configuration Guide”, or select “No Prompt” to cancel the prompt window.



Picture 2-8 Quick setting guide



Picture 2-9 Quick setting

- Log Out

  Click the icon Logout at the top right corner of the interface to log out of the web client.

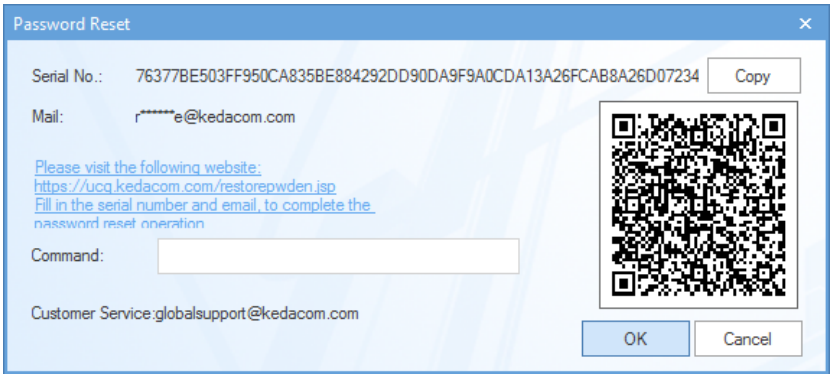
- Help

  Click the icon Help at the top right corner of the interface to view the help file of the device.

2.4 Password Reset

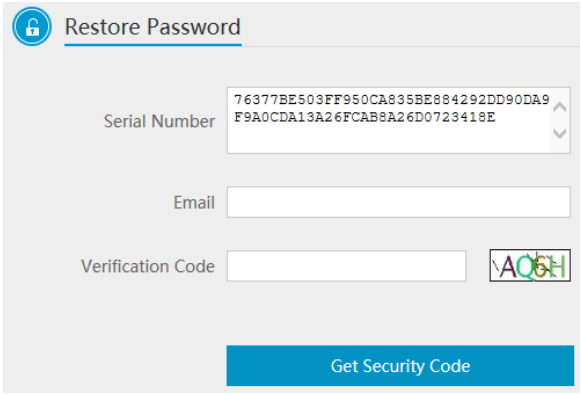
If user enters a wrong username or password for 6 times, the camera IP will be locked up for 10 minutes, during which user cannot login to this camera. If user forgets the password, reset the password.

1) Open IPCSearch and select the device whose password should be reset. Click "**Password Reset**" and a window will pop up, as shown below:



Picture 2-10 Password Reset

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



Picture 2-11 Password Reset

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

2.5 Main Interface

On the main interface of the client, 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;
- Snapshot: search, view and download snapshots by picture type;
- Settings: configure camera functions and system parameters.
- Intelligent: configure intelligent parameters of the camera, preview live video and view result of intelligent analysis.

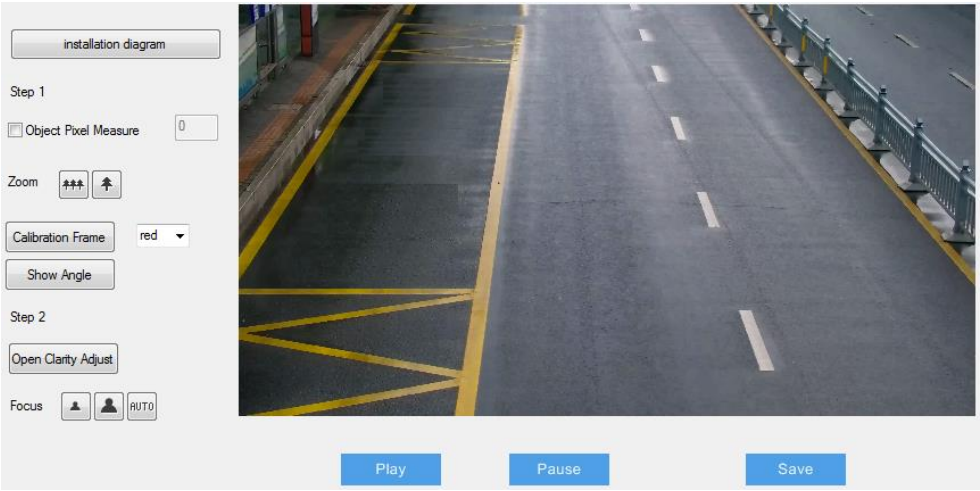
2.6 Installation

After logging into the client, adjust camera position and angle by requirements to ensure that camera installation meets the installation standards. Then configure the installation and calibration parameters, detailed steps of which can be referred to in the *Quick Start Guide*.

Note: The installation parameters, configuration and calibration of different models may differ somehow. This manual will take IPC2X55-Gi7N as an example to introduce. Please refer to the Quick Start Guide of different cameras for installation and configuration when necessary.

2.6.1 Installation Configuration

Go to **Intelligent > Settings > Install** to configure camera installation.



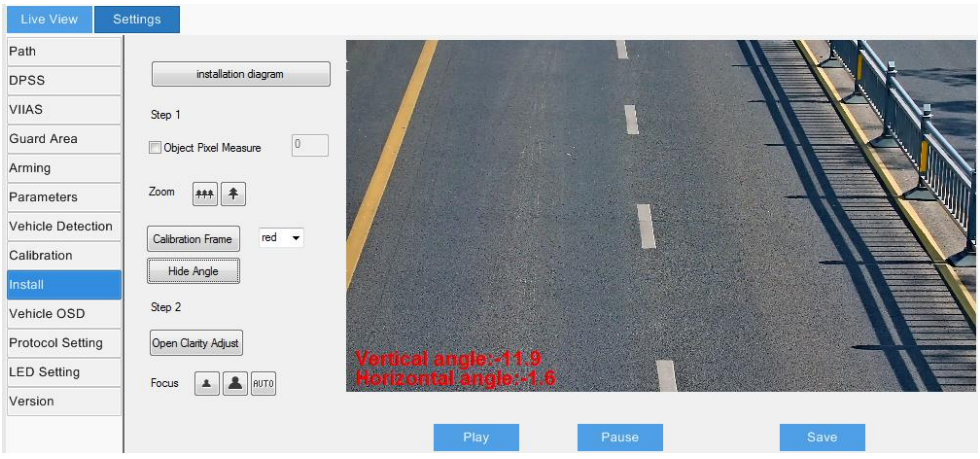
Picture 2-12 Installation configuration

Configuration steps are as follows:

1) Select proper installation height for the camera according to the actual environment and the *Reference of Installation Parameters* in the *Quick Start Guide*;

2) After finish installation, click “Show Angle” to show the horizontal and vertical angles of the camera. Adjust the camera to proper angles;

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

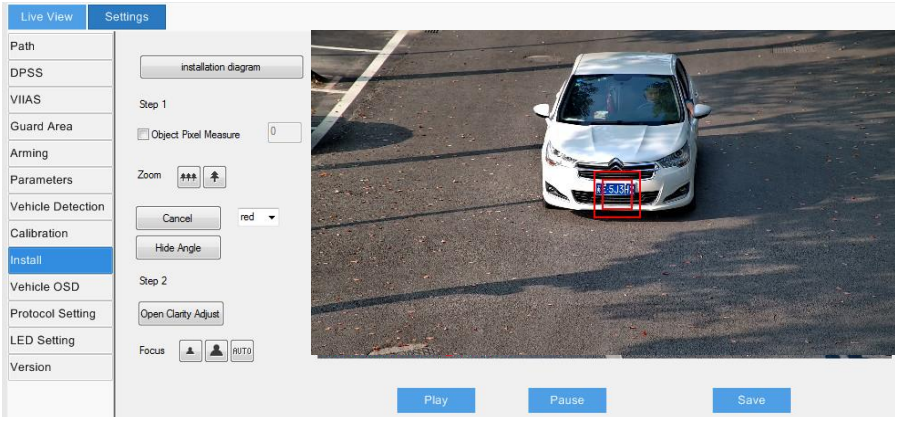


Picture 2-13 Show angle

3) Adjust camera field of view. There are 2 methods, calibration frame adjustment and pixel adjustment;

- Calibration frame adjustment:

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



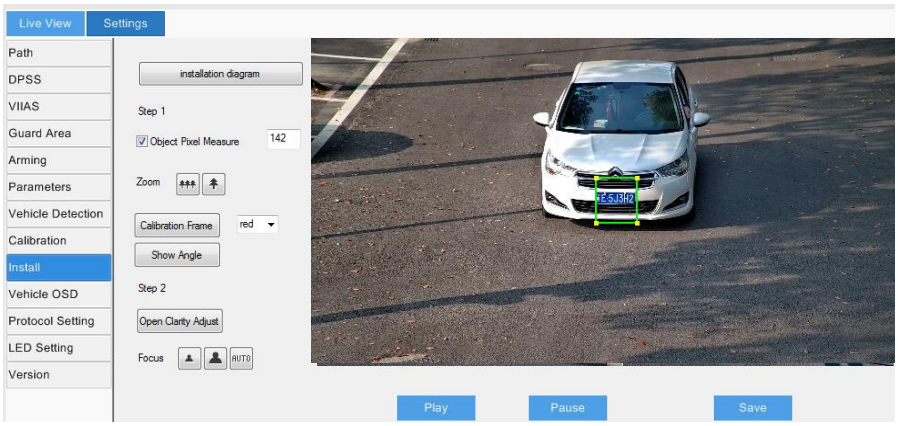
Picture 2-14 Calibration frame

b) Put the calibration board (or vehicle plate) sized 50 cm * 50 cm in the center of the image facing the lens;

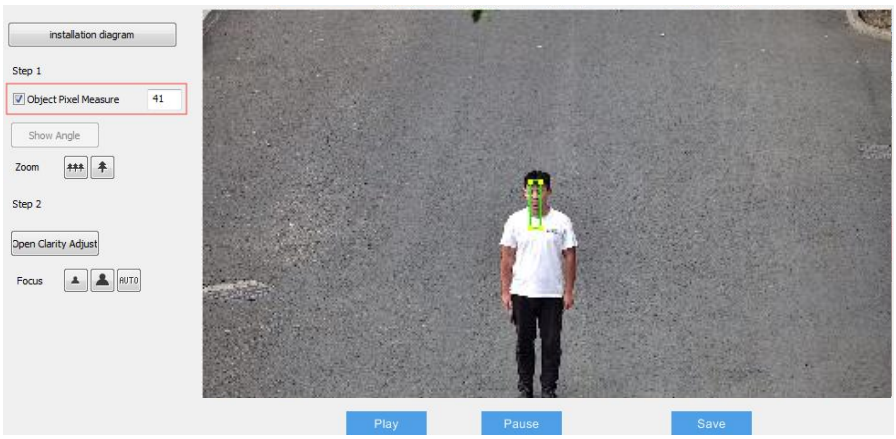
c) Click icons of “Zoom in” or “Zoom out” to adjust the field of view and change the size of the calibration board (or vehicle plate) in the image; when the calibration board coincides with the smaller frame, it is the maximum scene; when the calibration board coincides with the larger frame, it is the minimum scene.

■ Pixel adjustment:

a) Select “Object Pixel Measure” to show the interpupillary distance (IPD) of the person or show the width of the vehicle plate in the image;



Picture 2-15 Pixel adjustment-vehicle plate



Picture 2-16 Pixel adjustment-human face

b) Make the person or the vehicle in the center of the image;

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

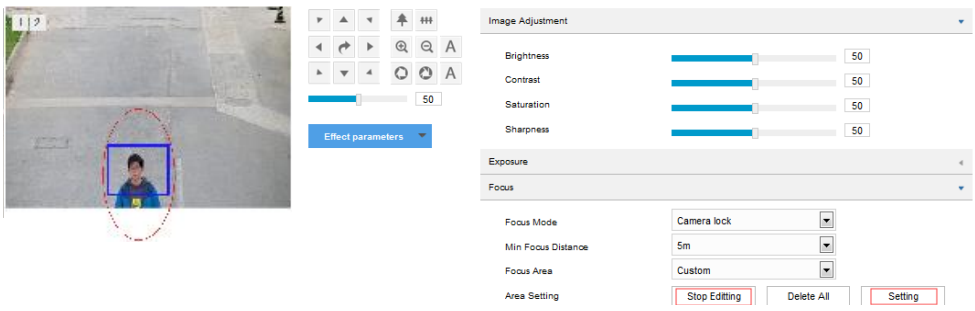
4) The default focus mode of the camera is auto. Only when auto focusing cannot obtain clear images should user focus manually;

a) Click “Open Clarity Adjust” and a red frame will display in the picture, showing the clarity coefficient. The larger the coefficient is, the higher the clarity will be;

b) Click icons of “Focus far”, “Focus near” and “Auto focus” to make the lens focus and the clarity coefficient will change accordingly. When the coefficient comes to the max, it means the camera has reached the best focus position.

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

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



Picture 2-17 Manual focus

2) Click “Setting” to focus automatically.

3) Select “Camera Lock” from the dropdown list of “Focus Mode” to lock current settings.

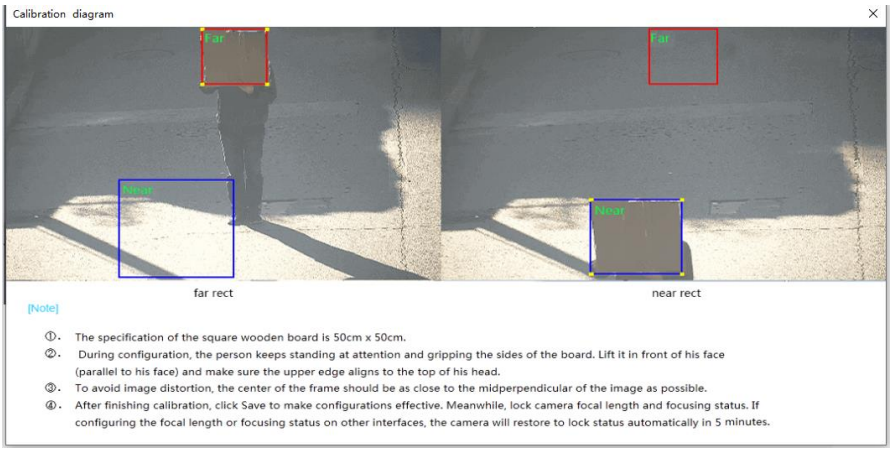
Attention:

- The clarity display function is available when the encoding format is H.264 or H.265.
- When adjusting image clarity, suggest using a richly-textured object as the adjustment board, such as newspaper.
- After finishing installation configuration, click “Save” to validate settings and meanwhile lock the camera focal length. If you configure the camera focal length on other interfaces, the camera will restore to locking status automatically in 5 minutes.
- After finishing lens adjustment, to avoid faulty operation, lock the lens parameters by going to **Settings > Camera > Image > Focus > Focus Mode** and select “Camera Lock” from the dropdown list. If you want to re-adjust the lens, select another mode from the dropdown list to unlock lens parameters.

2.6.2 Calibration

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

Note: After finishing installation of the camera, perform calibration settings. If the parameters such as camera height, angle of pitch or focal length changes, user needs to calibrate again.



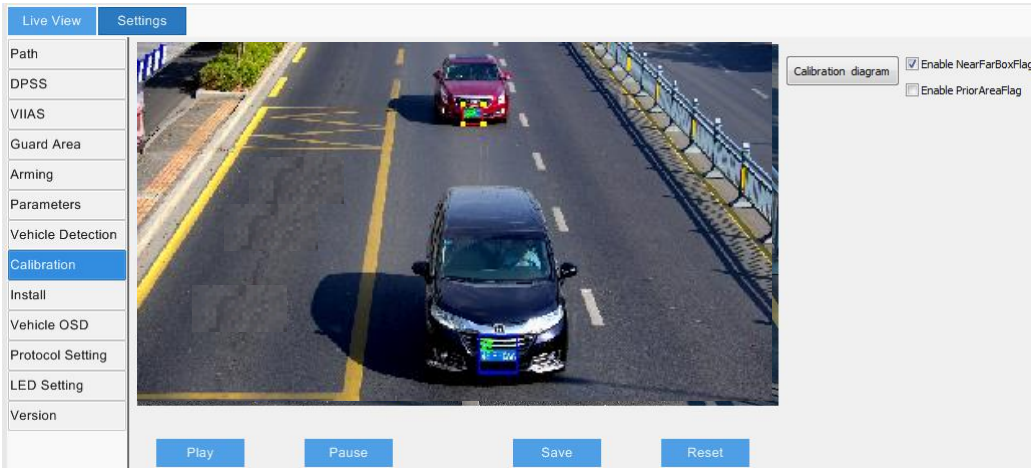
Picture 2-18 Calibration setting

- Calibration

When the camera is used to capture vehicle plates, calibrate by referring to the vehicle plate.

1) Select “Enable NearFarBoxFlag”. When the vehicle plate is in the center of the image, click “Pause”. Adjust the size and position of the “Far” box to make it the same width as that of the plate;

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



Picture 2-19 Calibration

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

Attention:

- Human recognition camera does not support calibration function, so the button “Enable NearFarBoxFlag” is disabled.
- After finishing installation configuration, click “Save” to validate settings and meanwhile lock the camera focal length. If you configure the camera focal length on other interfaces, the camera will restore to locking status automatically in 5 minutes.

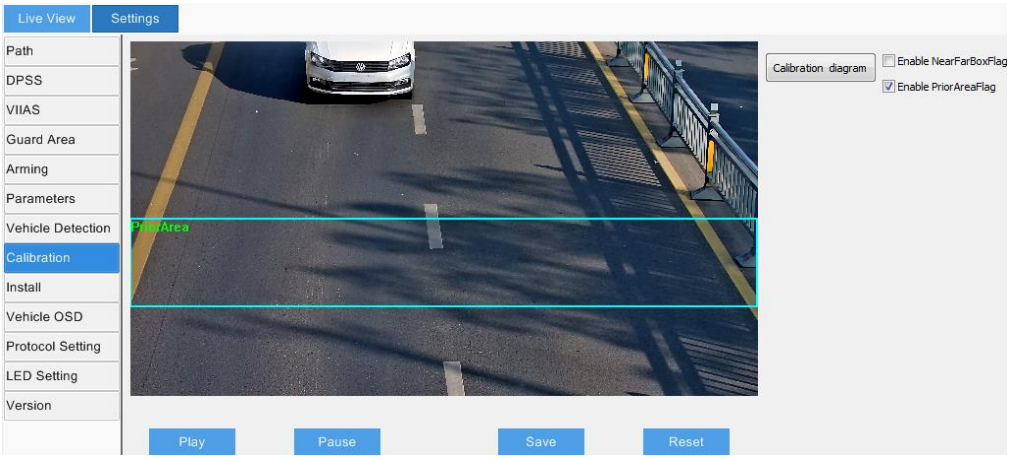
➢ Configure prior area

Under actual surveillance scene, especially in the wild field where the fill light can only cover partial area, it’s necessary to configure prior area. When “Enable Prior Area Flag” is unselected, the default prior area of the camera is full area; after selecting “Enable Prior Area Flag”, when an object enters the prior area, the camera will output the optimum snapshots in this area first.

Note:

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

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



Picture 2-20 Prior area setting

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

3) Click “Save” to validate settings.

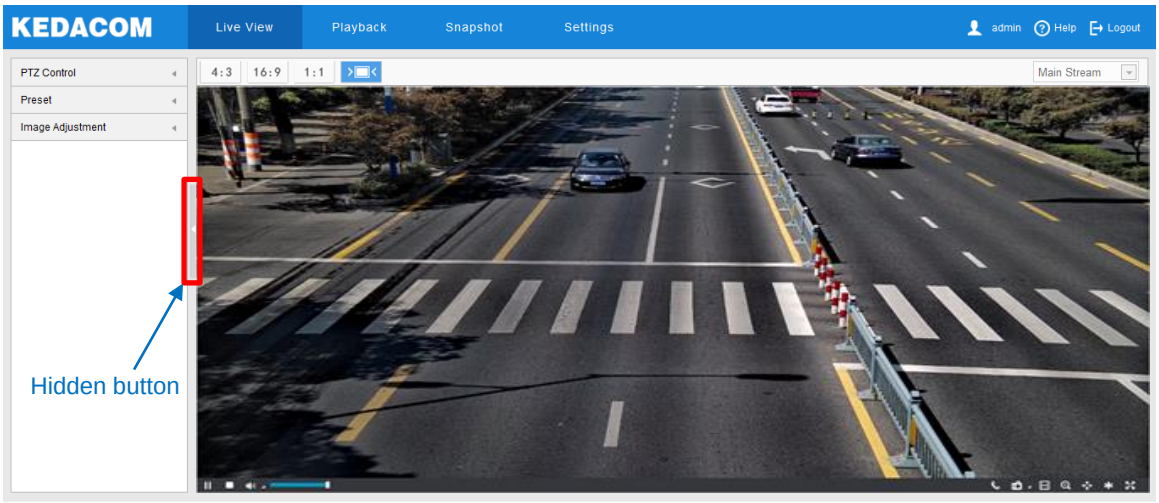
3. Basic Functions

By web client, user can not only view live video, but also perform local snapshot and recording, configure alarm linkage and etc. Some models may not support some of the following functions. Please subject to actual devices and the client.

Note: Different models may differ a little in some functions, and this manual will take the model with more functions to introduce. Functions described in this manual with "*" mean only some models support this function. Please subject to actual interface.

3.1 Live View

Click "Live View" to enter the preview interface.



Picture 3-1 Live View

Click the hidden button on the left to hide "PTZ Control", "Preset", "Image Adjustment" and "Mode". Click again to unfold them.

3.1.1 *PTZ Control

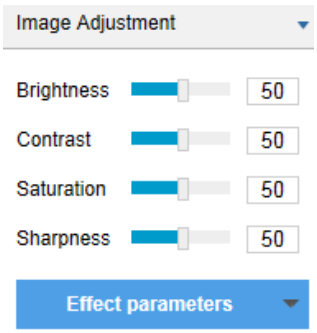
Click PTZ Control to show the following interface of PTZ control:

Picture 3-2 PTZ Control

Icon	Note
	Reset button, click it to restore to default settings.
	Buttons to adjust the camera's field of view. Field of view is the surveillance scope of the camera. The larger the field of view is, the broader the scope will be.
A	Focus nearby object/distant object/auto focus buttons, to adjust the sharpness of focused object.
A	Aperture +/Aperture -/Auto aperture buttons, to adjust the size of aperture.
/	Light on/off buttons, click to enable IR light detection. When the light condition turns dark, enable the IR light for lighting. Click again to disable IR light, and even the light condition turns dark, the IR light will not be on.
	Wiper, click to enable wiper to clean the glass housing. Click again to stop wiper. The wiper will stop automatically after 10 brushes. Click again to enable wiper again if necessary.

3.1.2 Image Adjustment

Click Image Adjustment to show the following interface:



Picture 3-3 Image adjustment

Drag the slide bar to adjust the brightness, contrast, saturation and sharpness of the live view image, or configure the values behind the slide bar.

- **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.
- **Effect Parameters:** Load preset image effects according to actual request. Configure in **Settings > Camera > Image**. Please refer to chapter 6.1.10 for details.

3.1.3 Live View Setting

➢ Aspect Ratio

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

➢ Stream Selection

Menu	Function
Main Stream	Display HD images. The encoding format of live view, can be set in **Settings > Camera > Video > Encoding Format**.
Secondary Stream	Display SD images. The encoding format of live view, can be set in **Settings > Camera > Video > Encoding Format**.
Third Stream	Display SD images. The encoding format of live view, can be set in **Settings > Camera > Video > Encoding Format**.

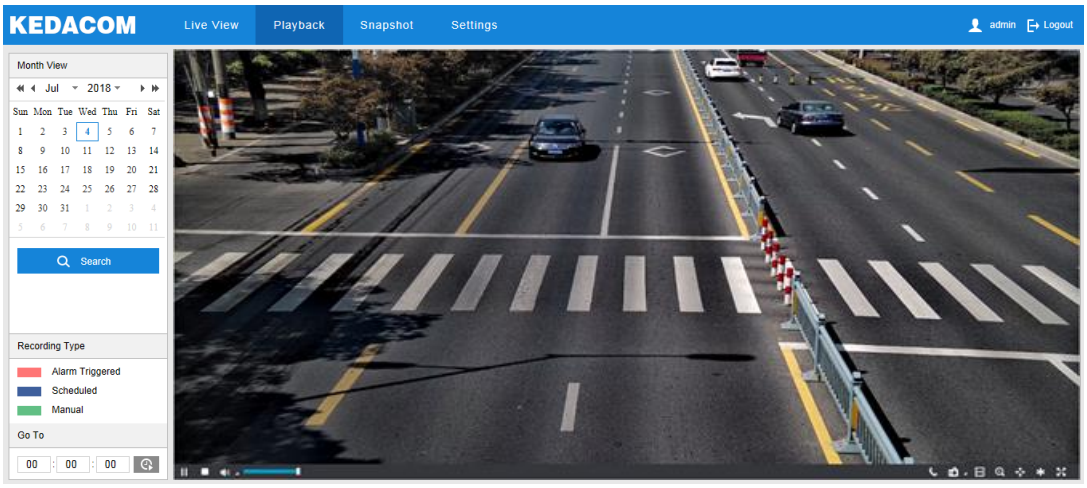
➢ Live View Toolbar

Icon	Function
/	Play/ Pause, click this button to play or pause a viewing.
	Stop, click this button to stop live view.
	Volume, it is the local decoding volume. Click to enable or disable voice; click to select audio channel.
	Drag the slide bar to adjust volume.
	Click this button to call and talk to camera. Click again to stop talking.

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



Picture 3-4 Playback

Operation steps:

1) Select recording duration from the calendar. If there is a blue triangle icon at the lower right corner of a date, it means there are recordings on that day;

2) Click "Search" and the video will be displayed directly on the timeline (the highlight parts on the timeline);

Note: The red means alarm video recordings, the blue scheduled video recordings and the green 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 camera is disconnected from the platform, video recording will be enabled by default.

3) Click "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 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. Alternatively, enter a time under “Go To” and click .

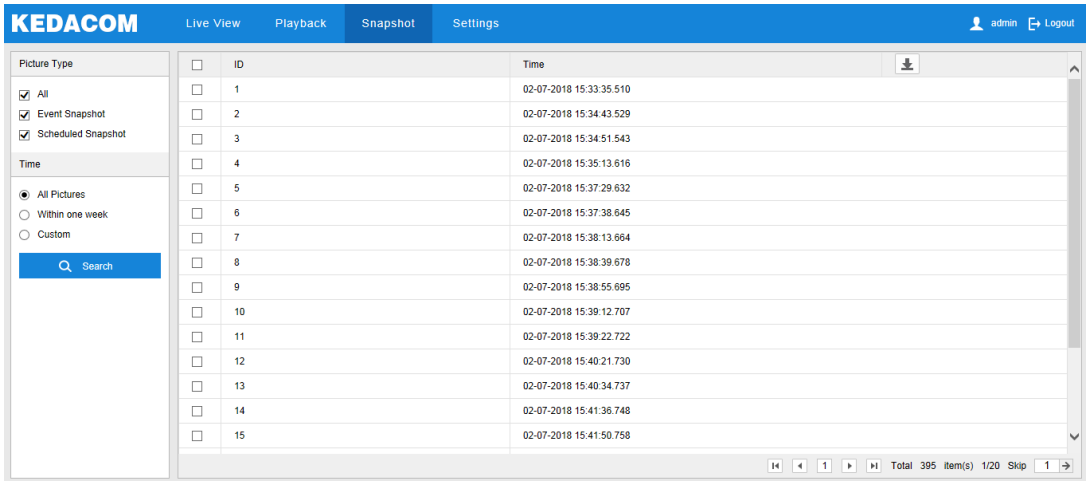
Buttons on the playback interface:

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

3.3 Snapshot

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



Picture 3-5 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;

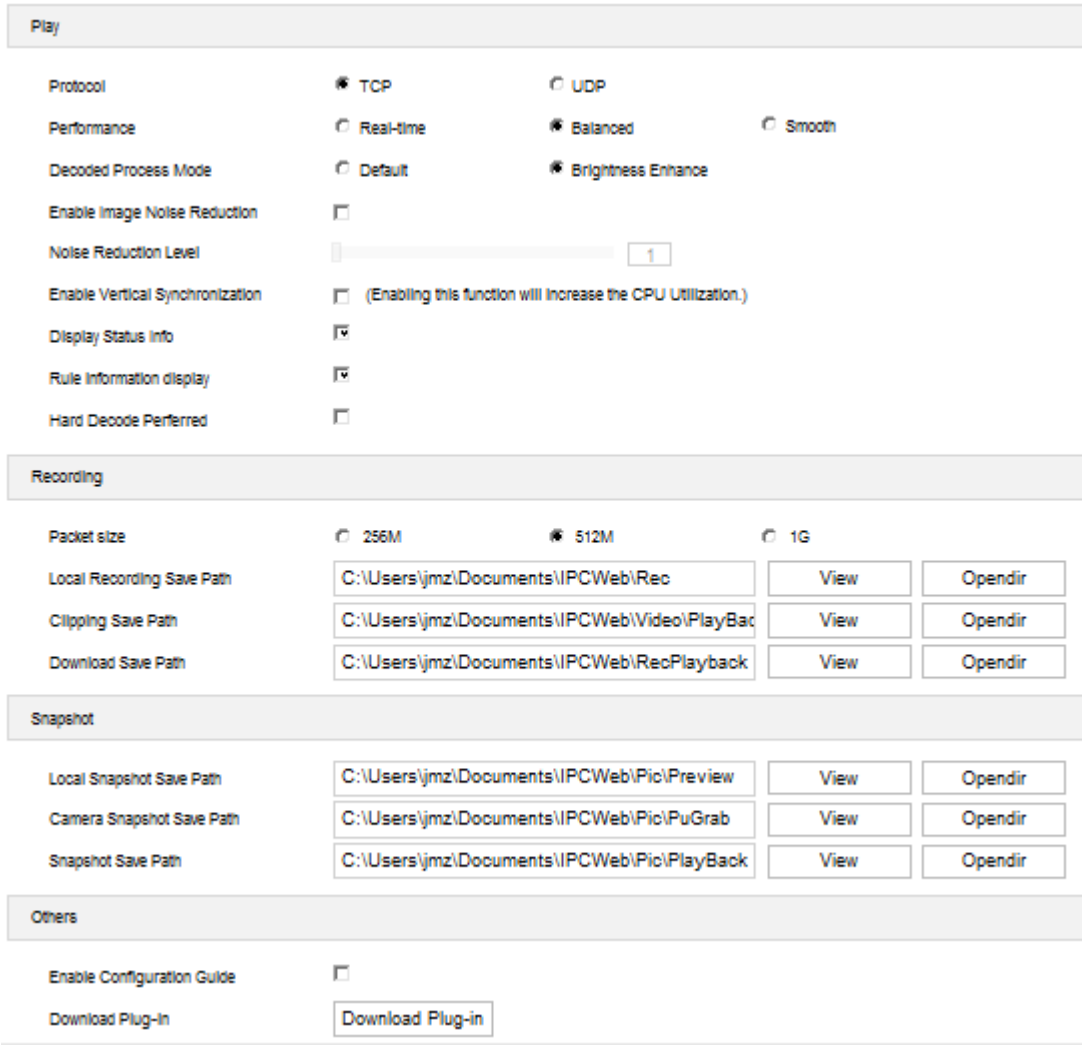
3) Click "**Search**" and the search result will show on the right list, from which you can see picture ID and snapshot time;

4) Select pictures and click icon to download the selected pictures. Snapshot save path can be set in **Settings > Local Setting > Camera Snapshot Save Path**.

Note: The maximum number of snapshots that can be searched at one time is 3600 pieces.

3.4 Local Setting

On the interface of "**Settings > 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. Usually it’s unnecessary to enable this option as it will cause streaking on moving objects.
- 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 on the menu bar at the bottom of the live view window. Click it to view frame rate, bitrate and packet loss rate.
- Rule Information Display: If a device supports intelligent functions, when this option is selected, the settings on **Settings > Event > Intelligent Function** interfaces and on **Settings > Camera >Video > Video Info Overlay** interface will be shown in the intelligent zone on live view window such as the rule box and target box of guard line alarming, on which user can perform operations if necessary.
- *Hard Decode Preferred: After enabling this function, the video will be decoded by PC hardware first so as to save CPU consumption.

➢ 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

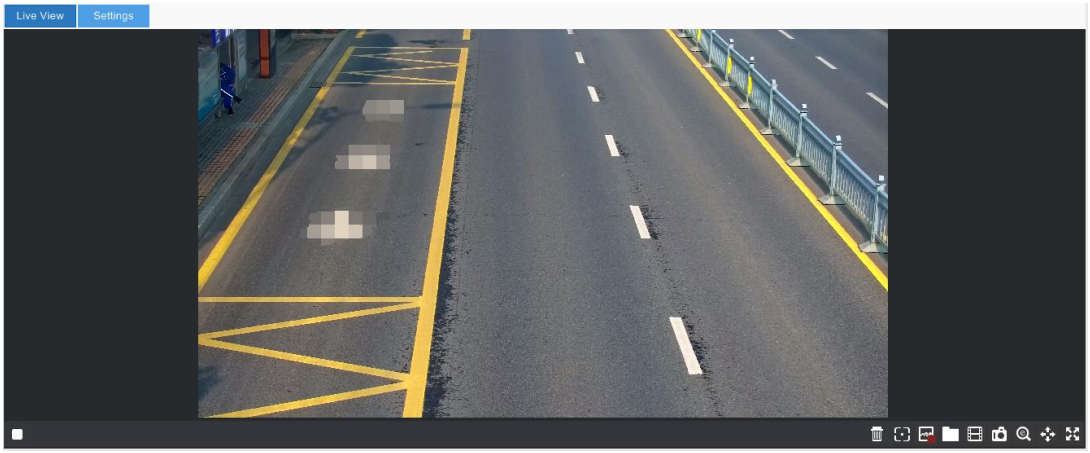
  - Enable Configuration Guide: When it is selected, the configuration guide will pop up during login to lead the user to the Quick Settings interface. It is selected by default.
  - Browser Plug-in: Options include "No support Plug-in" and "Support Plug-in". When selecting the former, it supports browsing without plug-in, which only supports SD stream in MJPEG format and the frame rate of which cannot be higher than 15 fps and meanwhile no other live view function is supported.
  - Download Plug-in: Login to the client through IE kernel browser. Click "**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. Intelligent Function

The “**Intelligent**” interface has two tabs, “Live View” and “Settings”.

4.1 Intelligent Live View

Go to **Intelligent > Live View** interface to view live view video, capture intelligent snapshots and view the analysis results.



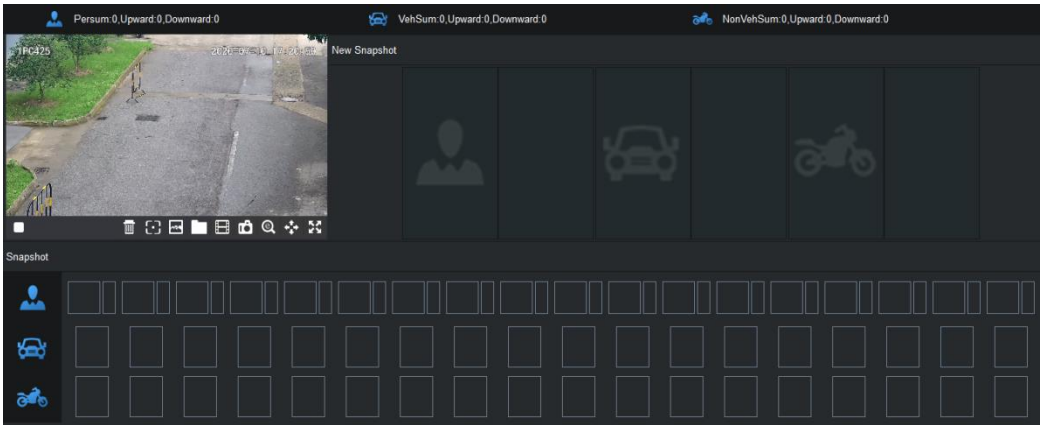
Picture 4-1 Intelligent live view

➢ Toolbar buttons on live view interface

Icon	Function Description
	Play/Stop. Click this button to play or stop viewing.
	Alarm mode switch, the default is to view the recent personnel comparison alarm and alarm record. Click this button to shift to recent event alarm and alarm record.
	Zero clearing. Click this button to clear the statistics of people or vehicles entering the guard area during the arming durations.
	Show tracking box or not. Click this button and the image of the box camera will show the target box and tracking box of all targets entering the guard area during arming durations; click this button again to stop showing the tracking boxes.
	Capture and display optimal snapshot or not. Click this button and the system will capture and filter people, motor vehicles, and non-motor vehicles according to configurations and display the qualified snapshots in “New Snapshot” area; click this button again to disable capturing function and hide snapshots. Go to **Intelligent > Settings > Parameters** to configure the parameters and click “Save” to validate setting.
	Open directory of snapshot. Click this button to open the file folder of snapshots from local PC.
	Start/Stop video recording. Click this button to start video recording and click again to stop video recording. Go to **Intelligent > Settings > Path**, and configure the save

Icon	Function Description
	path.
	Capture snapshot. Click the button to capture current image.
	ePTZ, electrical zooming in. Click this button to enable ePTZ. Left click and drag toward lower right to draw an area. The pixels of this area will be amplified and will cover the whole screen. Left click and drag toward upper left to draw an area, then image will recover.
	PTZ button. Click the button to zoom. Left click and drag toward lower right to draw an area. The pixels of this area will be amplified and will cover the whole screen. Left click and drag toward upper left to draw an area, then the image will recover. Double click a point in the image and the point will be centered.
	Full screen. Select a viewing window and click this button to display the image in full screen. Double-click the left button of the mouse or press Esc to exit full screen.

Click button to view real-time statistics, latest snapshots and snapshot display.



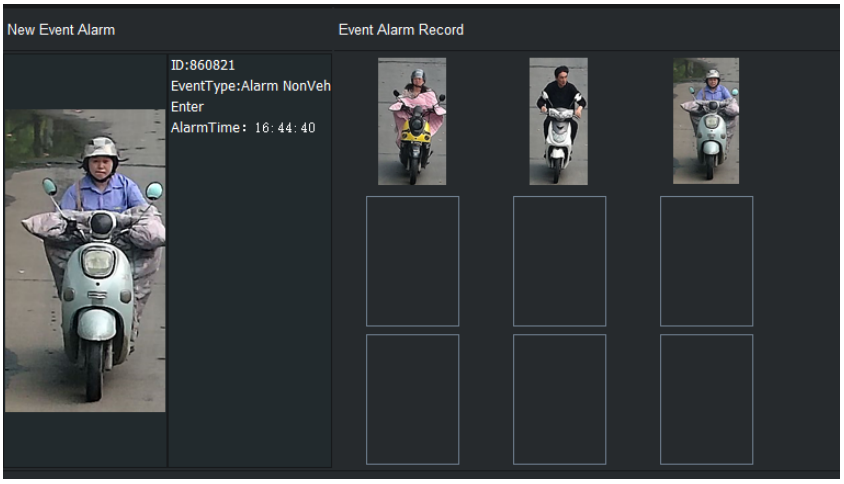
Picture 4-2 Capture and display optimal snapshot or not

- Real-time Statistics

It shows the real-time statistic information on the top of the live view window, including people sum, vehicle sum and non-motor vehicle sum and the target sum of different directions.

- Event Alarm

Event alarm includes latest event alarm and event alarm record. It shows the snapshot result of latest person, vehicle or non-motor vehicle, including target close-up picture, corresponding panoramic picture and intelligent analysis information.



Picture 4-3 Event alarm

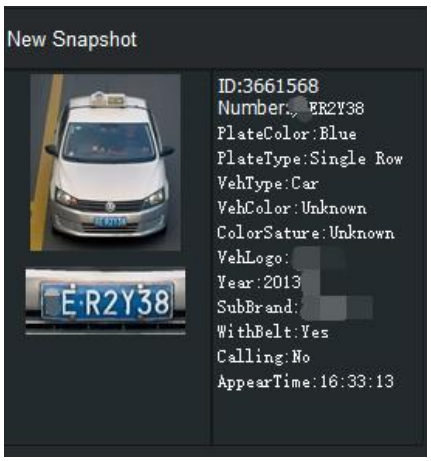
- Face Recognition Alarm

Face comparison alarm includes recent alarm and alarm record. It shows the snapshot result of latest human face comparison, including snapshot, human face archive and similarity.

Picture 4-4 Human face recognition alarm

- Recent Snapshot

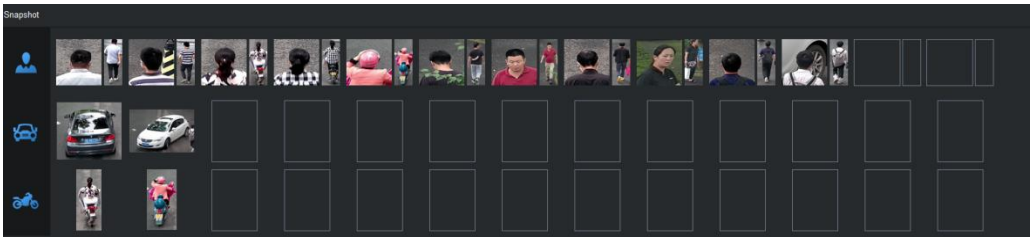
It shows the snapshot result of latest person, vehicle or non-motor vehicle, including target close-up picture, corresponding panoramic picture and intelligent analysis information.



Picture 4-5 Recent snapshot

- Snapshot Display

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



Picture 4-6 Snapshot display

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

4.2 Intelligent Settings

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

4.2.1 Path

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

Picture 4-5 Path setting

Configuration steps are as follows:

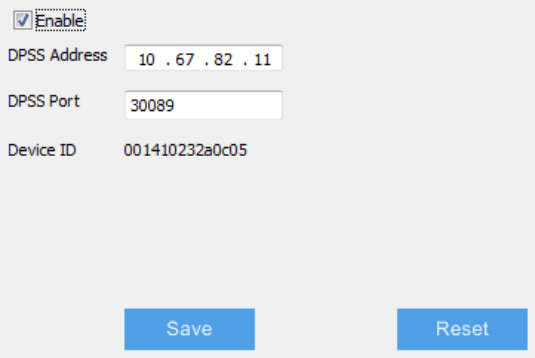
1) Click “Browse” on the right and select the local path for saving snapshots, and click “OK”.

2) Click “Save” to validate setting; click “Reset” to restore default path.

4.2.2 DPSS

The camera obtains the MAC address of wireless front-end device such as a cellphone through Wi-Fi, and transfers the MAC address to back-end platform through DPSS protocol. If there is DPSS server in the system, user should configure the DPSS parameters of the camera. Configuration steps are as follows:

1) Go to **Intelligent > Settings > DPSS;**



Picture 4-8 DPSS

2) Select “Enable” to enable DPSS service;

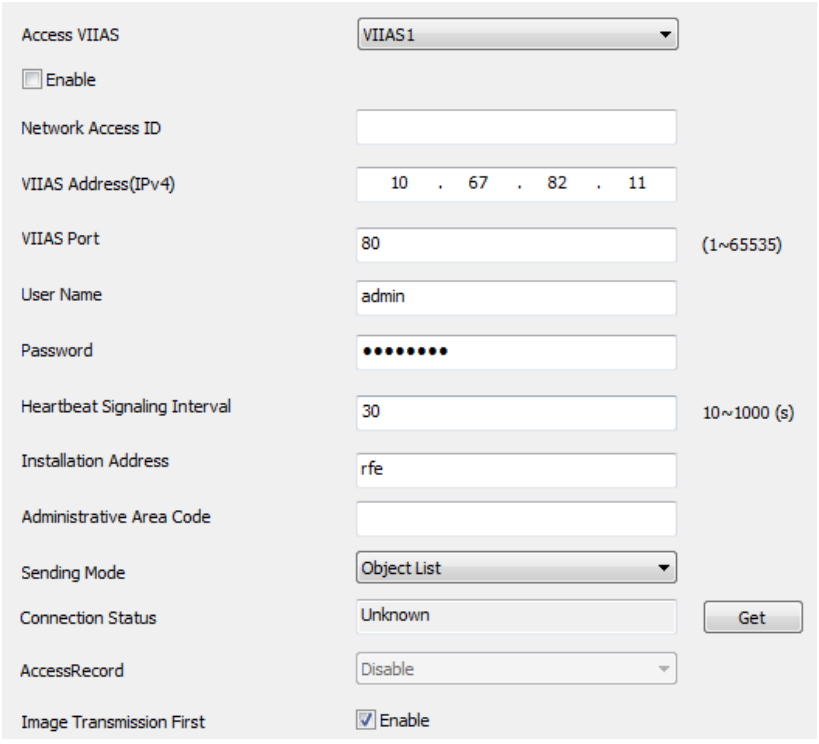
3) Enter DPSS server address and port number;

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

4.2.3 VIIAS

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

1) Go to **Intelligent > Settings > VIIAS;**



Picture 4-9 VIIAS

2) Select a VIIAS from the dropdown list of “Access VIIAS”. The system supports multiple VIIAS platforms;

3) Select “Enable” to enable VIIAS access function;

4) Enter ID of device to access to the VIIAS platform in “Network Access ID”;

5) Enter IP address and port number of VIIAS platform in “VIIAS Address (IPv4)” and “VIIAS Port”;

6) Enter username and password of VIIAS platform;

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

8) Enter “Installation Address” and “Administrative Area Code” by request for positioning the device;

9) Select a sending mode from the dropdown list, options including “Image Set” and “Object List”;

10) Click “Get” behind “Connection Status” to obtain the connection status between the device and the VIIAS platform and display in the text box;

11) Select a method from the dropdown list of “Access Record”;

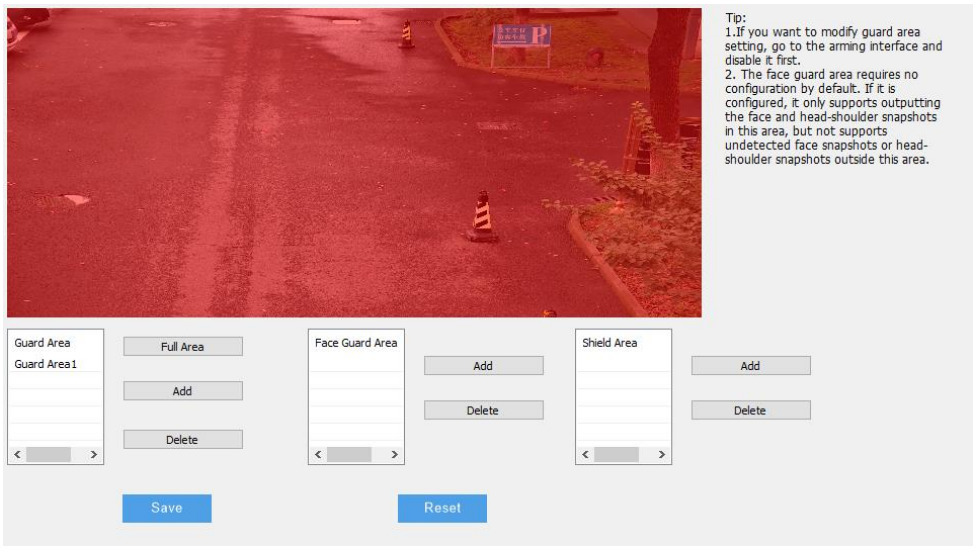
12) Select “Image Transmission First” if necessary;

13) Click “Save” to validate settings. Click “Reset” to restore to previously saved configuration.

4.2.4 Guard Area

Go to **Intelligent > Settings > Guard Area**, and edit guard area, face guard area and shield area in the image so as to configure key snapshot area and uninterested area.

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



Picture 4-10 Guard area setting

➢ Guard Area

After configuring guard area, the system will lock any moving targets such as people, vehicles or non-motor vehicles entering the area continuously, and capture snapshots and perform intelligent analysis. Meanwhile, the system will ignore the moving objects in the uninterested area. The default guard area is full area.

- Face Guard Area

  After configuring face guard area, the system will capture and analyze human faces in the face guard area only, while it will capture and analyze whole bodies of people outside the face guard area. Before configuring the face guard area, the default face guard area is full area.

- Shield Area

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

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

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

- Add

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

- Full Area Guard

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

- Delete

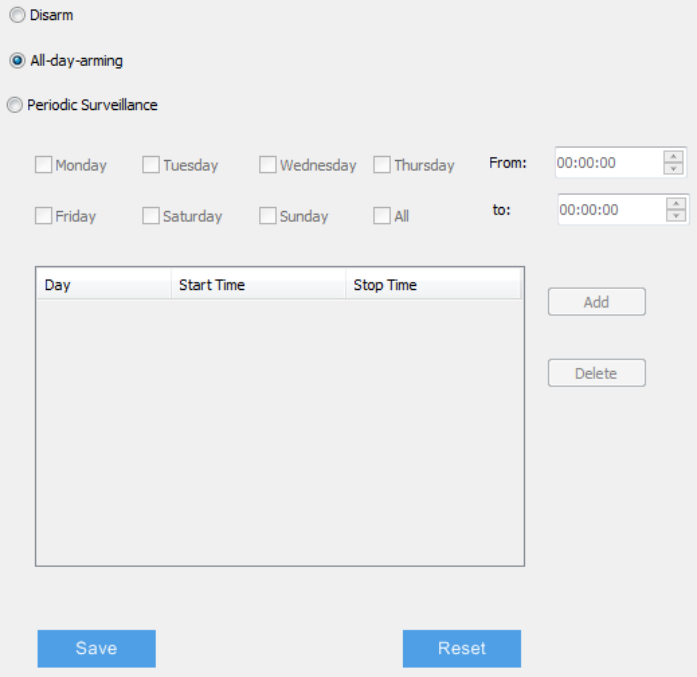
  Select the guard area or face guard area or shield area to be deleted and click "Delete" to clear this area.

- Reset

  Click "Reset" to restore to default configuration of guard area.

4.2.5 Arming

Go to **Intelligent > Settings > Arming,** and configure as follows.



Picture 4-11 Arming

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

   - **Disarm:** The camera does not arm at all, and it will not capture or analyze people, vehicles and non-motor vehicles entering the guard areas.
   - **All-day-arming:** The camera is arming round the clock, and it captures and analyzes people, vehicles and non-motor vehicles entering the guard areas all the time.
   - **Periodic Surveillance:** The camera arms in the set durations and captures and analyzes people, vehicles and non-motor vehicles entering the guard areas. Configuration steps are as follows:

     a) Select “Periodic Surveillance” to enable the function;

     b) Select “All” or weekdays one by one;

     c) Set the start time (“From”) and end time (“to”);

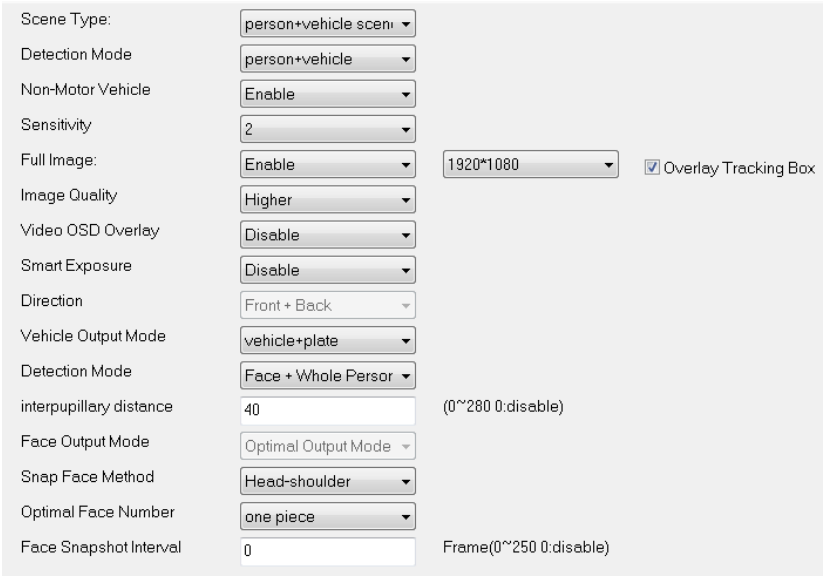
     d) Click”Add” and the arming duration will display in the box. Select the added duration and click “Delete” to delete the duration;

     e) Repeat the above steps to configure different arming durations.

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

4.2.6 Parameters

Go to **Intelligent > Settings > Parameters**, and configure the intelligent detection parameters of the camera.



Picture 4-12 Dome camera

1) On the dropdown list of “Scene Type”, select a detection scene, options including “Person scene”, “Vehicle scene” and “Person + Vehicle scene”;

2) On the dropdown list of “Detection Mode”, select a detection mode, options including “Person”, “Vehicle” and “Person + Vehicle”;

3) On the dropdown list of “Non-Motor Vehicle”, select “Enable” or “Disable” to output or not output non-motor vehicles;

4) Select a level from the dropdown list of “Sensitivity”, the range being 1~5. The lower the sensitivity is, the lower the recognition rate and the false alarm rate there will be; and vice versa;

5) Select “Enable” or “Disable” from the dropdown list of “Panoramic Image”. If selecting “Enable”, you can configure the resolution of panoramic image. Select “Overlay Tracking Box” to overlay the tracking box on the panoramic image;

6) Select a level from the dropdown list of “Image Quality” according to actual request, options including “Highest”, “Higher”, “Middle”, “Low”, “Lower” and “Lowest”;

7) Select “Enable” or “Disable” from the dropdown list of “Video OSD Overlay”. If selecting “Enable”, the OSD will be overlaid on the panoramic image;

8) Select “Enable” or “Disable” from the dropdown list of “Smart Exposure”. When enabled, the system will detect targets automatically and expose them intelligently according to the light condition;

9) On the dropdown list of “Direction”, select “Front + Back”, “Front” or “Back” to filter the output targets according to the direction (the direction facing the lens is front side);

- Select “Front + Back” to output detected targets in front and back directions.

- Select “Front” to output detected targets in front direction.
- Select “Back” to output detected targets in back direction.

10) On the dropdown list of “Vehicle Output Mode”, select “Vehicle”, “Plate” or “Vehicle + Plate”;

11) On the dropdown list of “People Output Mode”, select “Head-shoulder + Whole Person”, “Face + Whole Person”, “Head-shoulder”, “Whole Person” or “Face”. The default is “Head-shoulder + Whole Person”;

12) Interpupillary Distance: Configure the minimum interpupillary distance of human face detection. The range is 0~280, and the value 0 means disabling the function. After finishing configuration, it will capture snapshot and perform intelligent analysis only when it detects the interpupillary distance is larger than the set value;

13) Face Output Mode: The default is “Optimal Output Mode”;

14) Snap Face Method: When the people output mode is “Face+Whole Person”, user can configure snap face methos, options including “Head-shoulder”, “Upper Shoulder” and “Upper Body”;

15) Face Filter Threshold: Configure face filter threshold according to actual request. The range is 0~100, and the value 0 means disabling the function. After finishing configuration, it will capture snapshot and compare photos only when it detects the face probability number is larger than the face filter threshold;

Attention: When the scene requires to detect if the people are wearing face masks, the face filter threshold cannot be larger than 25.

16) Optimal Face Number: Select optimal face number according to actual request, options including “one piece” and “several pieces”. When selecting “one piece”, the system will select the optimal snapshot from the faces to output it;

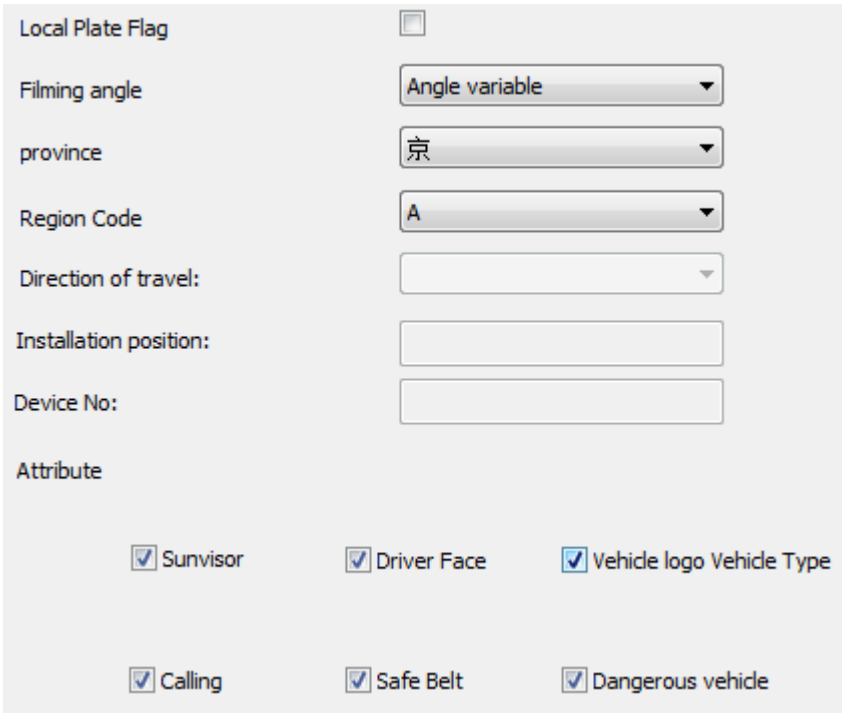
17) Face Snapshot Interval: Enter face snapshot interval according to actual request. The range is 0~250, and the value 0 means disabling the function;

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

4.2.7 Vehicle Detection

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

Note: Human recognition cameras do not support vehicle detection.



Picture 4-13 Vehicle detection

- Local Plate Flag: Select it if necessary and configure province and region code. The configuration will not affect the plate recognition of other vehicles.
- Filming Angle: Select vehicle snapshot direction according to actual request. The default is “Angle variable”.
- Province: Select the default province of plate according to actual request.
- Region Code: Select the default region of plate according to actual request.
- Attribute: Select vehicle attributes according to actual request, including sun visor, driver face, vehicle logo vehicle type, calling, safe belt and dangerous vehicle.

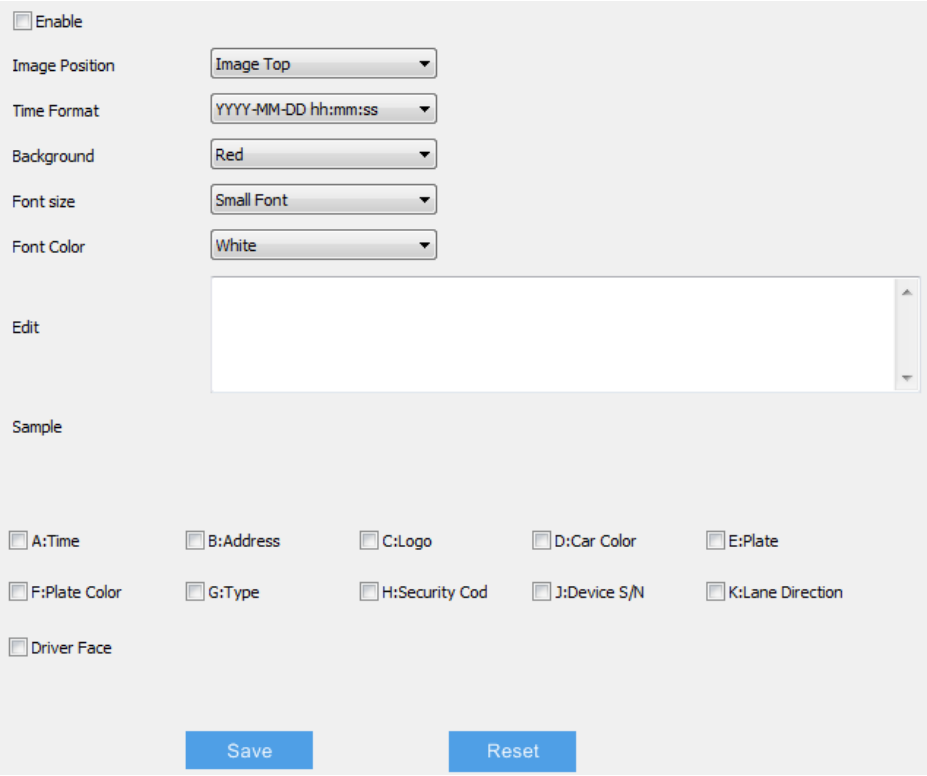
After finishing configuration, click “Save” to validate settings. Click “Reset” to restore to default configurations.

4.2.8 Vehicle OSD

Go to **Intelligent > Settings > Vehicle OSD** to edit OSD settings such as OSD position, time format, background color and etc. Select “Enable” to open panoramic image and the OSD texts will be overlaid on the panoramic image of the target vehicle.

Note:

- Human recognition cameras do not support OSD configuration.
- The OSD texts on this interface do not support being overlaid on the image of people or non-motor vehicles.



Picture 4-14 OSD setting

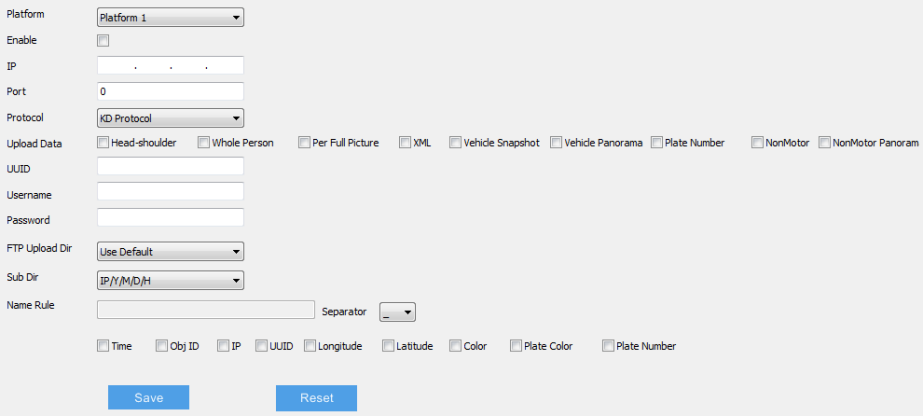
- Image Position: Select the position of OSD text in the image according to actual request, options including “Image Top” and “Image Bottom”.
- Time Format: Select a time format from the dropdown list according to actual request, options including YYYY-MM-DD or YYYY/MM/DD.
- Background: Select a color from the dropdown list as the background color, options including “Red”, “Black”, “Blue”, “Green”, “White”, “Yellow” and “Purple”.
- Font Size: Select font size from the dropdown list, options including “Big Font” and “Small Font”.
- Font Color: Select font color from the dropdown list, options including “Red”, “Black”, “Blue”, “Green”, “White”, “Yellow” and “Purple”.
- Edit: Select the information below to display as OSD; after selecting the content, it will show in the edit box and the mimetic OSD will show in the “Sample” line.

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

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

4.2.9 Protocol Setting

Go to **Intelligent > Settings > Protocol Setting** to configure platform access setting.



Picture 4-15 Protocol setting

Configuration steps are as follows:

1) Select a configured platform from the dropdown list of “Platform”. The camera supports access to maximum 4 platforms, respectively being “Platform 1”, “Platform 2”, “Platform 3” and “Platform 4”;

2) Select “Enable” to enable platform protocol setting;

3) Enter platform IP address and port number;

4) Select a data transmission protocol from the dropdown list of “Protocol”, options including “KD Protocol”, “FTP”, “BD” and etc.;

5) Select at least one kind of data to upload to the platform, options including “Head-shoulder”, “Whole Person” and etc.;

6) Enter UUID address according to actual request, unnecessary to enter if selecting FTP protocol;

7) Enter username and password to login to the platform;

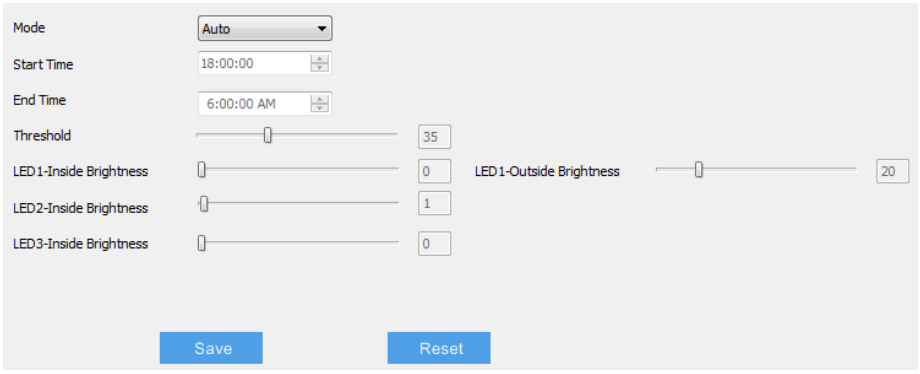
8) Select FTP upload directory from the dropdown list, options including “Use default” and “Customize”. If selecting “Customize”, enter FTP upload directory on the right by request. If selecting “Customize”, select sub directory or use default IP/Y/M/D/H;

9) Configure naming rule of directory folder by selecting the options below by requirements, options including “Time”, “Object ID”, IP and etc., and select the separator in the naming rule;

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

4.2.10 LED Setting

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



Picture 4-16 LED setting

1) Go to **Settings > System > System Maintenance > Advanced Configuration**, click “Configuration” and enter admin user password to pop up the window of advanced configuration. In the part of “Function Switch”, click “Enable” to enable dynamic plug-in and click “Save” to validate setting;

2) Go to **Settings > System > Dynamic Plug-in**, and select “Enable” to enable LED for vehicle plate mode;

Note: When and only when the camera connects to external LED, it’s necessary to enable dynamic plug-in. If it uses internal LED only, it’s unnecessary to enable dynamic plug-in.

3) Go to **Settings > Camera > Image > IR**, and select “Manual” from the dropdown list of mode. Drag the slide bar and set the value as 0 to enable intelligent control of LED;

4) Go to **Intelligent > Settings > LED Setting**, and select the mode of the LED fill light, options including “Scheduled”, “Auto”, “Manual” and “Disable”, the default being “Disable”;

5) Under manual mode, configure LED inside and outside brightness according to actual conditions; under auto mode, as the LED fill light is gain triggered, configure the light on threshold and LED inside and outside brightness; under scheduled mode, as the LED fill light is enabled in scheduled duration, configure LED start time, end time and LED inside and outside brightness;

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

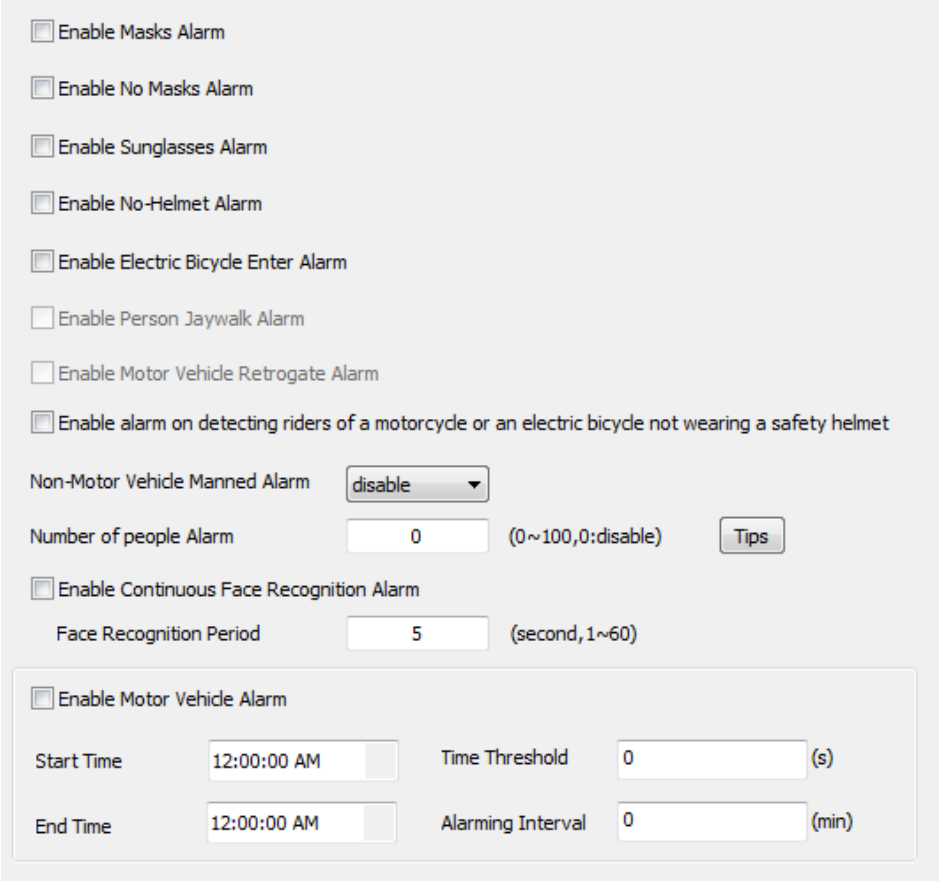
6) Click “Save” to validate setting. Click “Reset” to restore to default values.

4.2.11 Event Setting

Go to **Intelligent > Settings > Event Setting** to enable masks alarm, no masks alarm, sunglasses alarm, no-helmet alarm and so on, and perform respective configurations.

Event setting supports linkage of two alarm types, parallel alarm and area-enter alarm. Parallel alarm includes masks alarm, no masks alarm, sunglasses alarm, no-helmet alarm, riders of a motorcycle or an electric bicycle not wearing a safety helmet and motor

vehicle alarm. Area-enter alarm includes electric bicycle enter alarm and number of people alarm.



Picture 4-17 Event setting

- Masks alarm: Select “Enable Masks Alarm”, and the camera will trigger alarm when it detects people wearing masks.

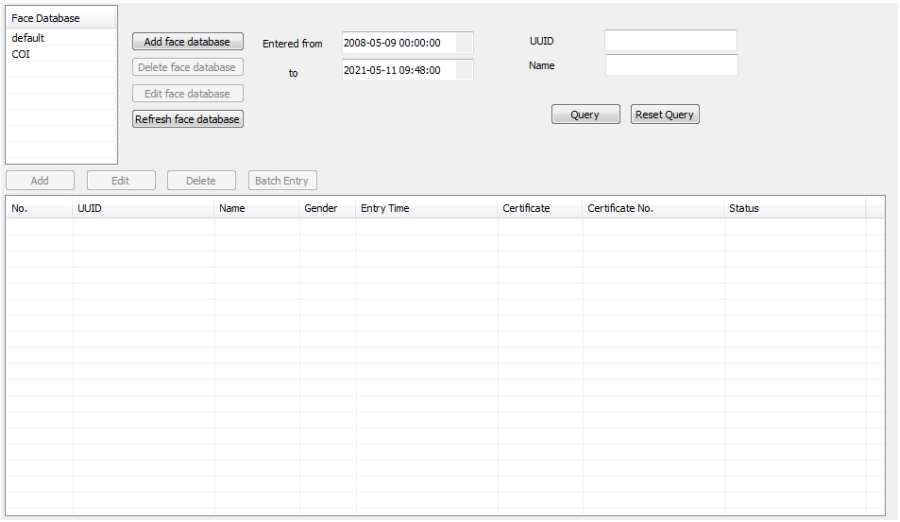
Note: After the alarm is triggered, the system will act according to the alarm linkage setting such as uploading alarm message to center, linking video recording, linking alarm output and etc. Configuration of parallel alarm linkage can be referred to in chapter *7.2 Alarm Input*, and that of area-enter alarm linkage can be referred to in chapter *7.1.6 *Enter Guard Area*.

- No masks alarm: Select “Enable No Masks Alarm”. When the camera detects people not wearing masks, it will trigger alarm.
- Sunglasses alarm: Select “Enable Sunglasses Alarm”. When the camera detects people not wearing sunglasses, it will trigger alarm.
- No-helmet alarm: Select “Enable No-Helmet Alarm”. When the camera detects people not wearing helmet, it will trigger alarm.
- Electric bicycle enter alarm: Select “Enable Electric Bicycle Enter Alarm”
- Person jaywalk alarm: Select “Enable Person Jaywalk Alarm”. When the camera detects people jaywalking, it will trigger alarm.

- Motor vehicle retrograde alarm: Select “Enable Motor Vehicle Retrograde Alarm”. When the camera detects motor vehicle retrograding, it will trigger alarm.
- Riders of a motorcycle or an electric bicycle not wearing a safety helmet: Select “Enable alarm on detecting riders of a motorcycle or an electric bicycle not wearing a safety helmet”. When the camera detects people on the motorcycle or electric bicycle not wearing safety helmet, it will trigger alarm.
- Non-Motor Vehicle Manned Alarm: Select the number of people to trigger non-motor vehicle manned alarm from the dropdown list, options including “disable”, “>=1” and “>=2”. When the camera detects the number of people carried on the non-motor vehicle reaching the value, it will trigger alarm.
- Number of People Alarm: Enter the number of people to trigger alarm according to actual requirement. The range is 0 ~ 100, and 0 means disabling the function. When it is set 1, people entry alarm is enabled and the camera will trigger alarm once someone enters. When it is set another value other than 0, the camera will trigger alarm when the number of people entering the surveillance field exceeds the set value.
- Continuous face recognition alarm: Select “Enable Continuous Face Recognition Alarm” and configure the face recognition period, range being 1 ~ 60 seconds. When the recognition interval reaches the set period, the camera will recognize the detected human face. If it recognizes the face successfully, it will trigger alarm.
- Motor vehicle alarm: Select “Enable Motor Vehicle Alarm” and configure arming start time, end time, stay time threshold and alarming interval. In the configured arming duration, when the camera detects motor vehicle in the surveillance field staying over the set time threshold, it will trigger alarm. After the alarm is triggered, if the motor vehicle still stays in the surveillance field after the set alarm interval, it will trigger alarm again.

4.2.12 Face Database

Go to **Intelligent > Settings > Face Database** to add, edit and delete face database. User can add personal information to existing face database, edit and delete existing personal information; and search personal information from the database according to entry time, UUID and name.



Picture 4-18 Face database

➢ Manage Face Database

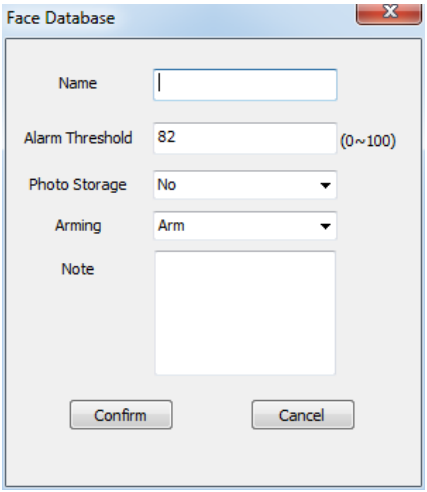
There are three methods to configure face database, batch entry, one-click entry and one-by-one entry. If the camera has accessed to smart community platform or other smart platform, it can distribute face database extra through COI protocol. There are two default face databases, “default” and “COI”. The former is for one-click entry and the latter is for accessing smart community platform or other smart platforms.

Note:

- It supports maximum 8 face databases.
- Photos in face database support four storage methods, NO, local, SD and URL. And URL storage is available only for COI database.
- If the camera is installed with SD card, please format the SD card before using.

■ Add face database:

1) Click “Add face database” to pop up dialogue box of “Face Database”;



Picture 4-19 Add face database

2) Enter name of face database, and enter note if necessary;

3) Enter alarm threshold value, the range being 0 ~ 100. When the face recognition similarity exceeds the set threshold value, it will trigger alarm;

4) Select a photo storage method from the dropdown list, options including “No”, “Local” and “SD”;

5) Configure the arming status of the face database, options including “Arm” and “Disarm”;

6) Click “Confirm” to finish.

■ Edit face database:

1) Select a face database from the list on the left, and click “Edit face database” to pop up the dialogue box of “Face Database”;

2) Edit name of face database, alarm threshold, photo storage, arming and note by actual requirements.

Note: The name of default face databases “default” and “COI” cannot be edited.

3) Click “Confirm” to finish.

■ Delete face database: Select a face database from the list on the left, and click “Delete face database” to pop up a dialogue box. Click “Yes” to delete the face database.

Note: When the face database is under “Arming” status, it cannot be deleted. To delete the database, you must select “Disarm” as the arming status first.

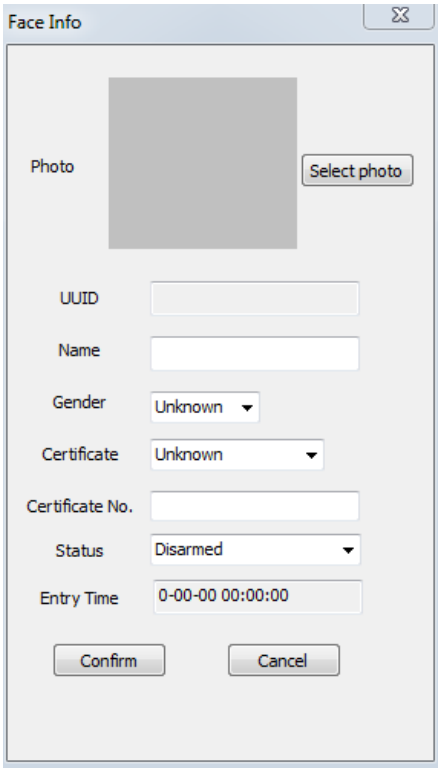
➢ Manage Personal Information

Select a face database from the list on the left. You can add personal information to the face database, search and view personal information in the database, including “No.”, “UUID”, “Name”, “Gender” and etc. Also you can edit or delete the existing personal information from the face database.

Note: When the face database is under arming status, it does not support adding, editing or deleting face information; if you would continue anyway, select “Disarm” as the arming status first.

■ Add:

1) Click “Add” to pop up dialogue box of “Face Info”;



Picture 4-20 Face info

2) Click “Select photo”, browse and upload face photo;

3) Enter personal UUID, name, gender and other information;

4) In “Status” line, select arming status of the person, options including “Armed” and “Disarmed”;

5) Click “Confirm” to finish.

■ Batch Entry:

1) Fill personal information in the template form for batch entry, including name, gender, certificate type, certificate No. and photo path;

Note:

- Batch entry supports CSV files in GBK or GB2312 format only. If the CSV file exported from the excel is neither GBK format nor GB2312 format, you can transfer it into GBK or GB2312 format through Notepad++. The 6 items of UUID, name, gender, certificate type, certificate No. and photo path must be included and be separated by 5 “,”; otherwise the batch entry may fail.
- UUID can be empty and it’s generated by the front-end automatically.

2) Select a target face database and make sure it has been disarmed. Click “Batch Entry”, browse and open the filled batch entry template form. Await the batch entry;

Note:

- The camera supports sending speed of face database of 5 pcs/s.
- Repeat entry of the same photo is not supported.
- The imported photo size cannot exceed 1080P, otherwise it may fail.

3) After finishing batch entry, you can search and view the entered personal information.

- One-click Entry: Go to **Intelligent > Live View** and click the button to enable “Capture and display the optimal snapshot”. Double-click the face snapshot in the display column and click “Insert Face Database” to import the face snapshot into the “default” face database automatically.

- Edit:

1) Select a person from the list to edit its information. Click “Edit” to pop up the dialogue box of “Face Info”;

2) Edit information such as photo, UUID and name by actual requirements;

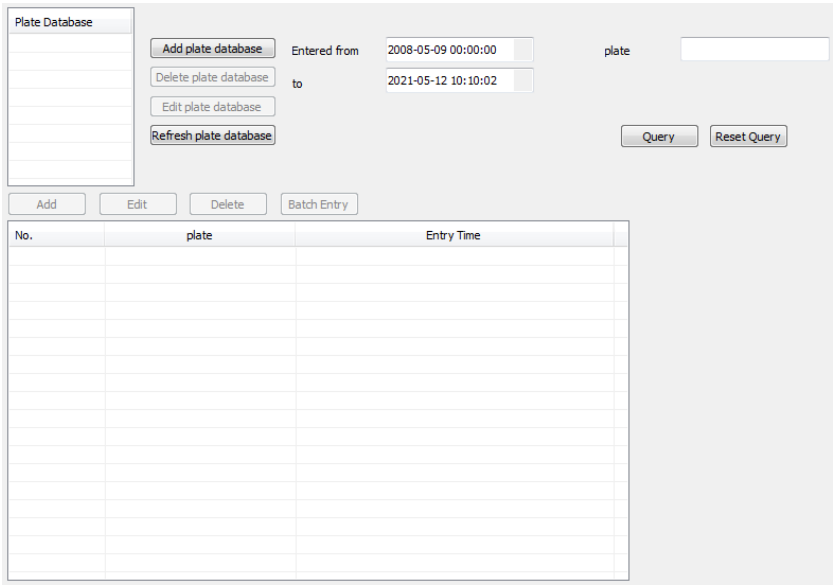
3) Click “Confirm” to finish.

- Delete: Select a person from the list, and click “Delete” to pop up a dialogue box. Click “Yes” to delete the information.

- Query: Select the start time and end time of entry, enter personal UUID or/and name, and click “Query” to filter the expected personal information and display it on the list below.

4.2.13 Plate Database

Go to **Intelligent > Settings > Plate Database** to add, edit and delete plate database. User can add plate information to existing database, edit and delete existing plate information; and search plate information from the database according to entry time and plate number.

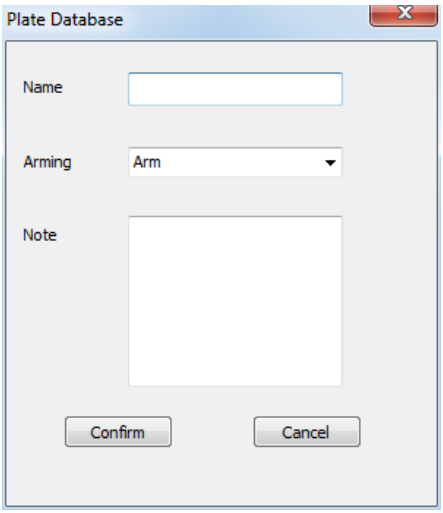


Picture 4-21 Plate database

➢ Manage Plate Database

■ Add plate database:

1) Click “Add plate database” to pop up the dialogue box of “Plate Database”;



Picture 4-22 Add plate database

2) Enter name of plate database, and add note if necessary;

3) Configure the arming status of the plate database, options including “Arm” and “Disarm”;

4) Click “Confirm” to finish.

■ Edit face database:

1) Select a plate database from the list on the left, and click “Edit plate database” to pop up the dialogue box of “Plate Database”;

2) Edit name of plate database, arming and note by actual requirements.

3) Click “Confirm” to finish.

■ Delete plate database: Select a plate database from the list on the left, and click “Delete plate database” to pop up a dialogue box. Click “Yes” to delete the plate database.

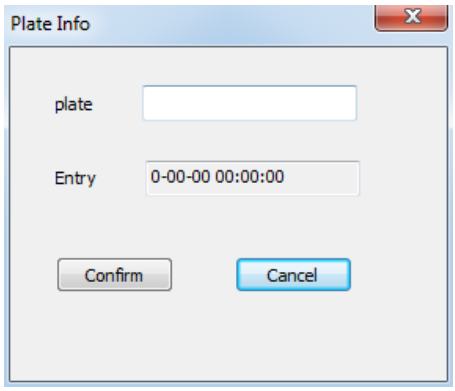
Note: When the plate database is under “Arming” status, it cannot be deleted. To delete the database, you must select “Disarm” as the arming status first.

➢ Manage Plate Information

Select a plate database from the list on the left, and you can see the plate information of this database on the list below, including plate No. and entry time.

■ Add:

1) Click “Add” to pop up dialogue box of “Plate Info”;



Picture 4-23 Face info

2) Enter plate No.;

3) Click “Confirm” to finish.

■ Batch Entry:

1) Fill plate information in the template form for batch entry, each line with one plate number;

Note: Batch entry supports CSV files in GBK or GB2312 format only, but UTF-8 is not supported. If the CSV file exported from the excel is neither GBK format nor GB2312 format, you can transfer it into GBK or GB2312 format through Notepad++.

2) Select a target plate database and make sure it has been disarmed. Click “Batch Entry”, browse and open the filled batch entry template form. Await the batch entry;

3) After finishing batch entry, you can search and view the entered plate information.

■ Edit:

1) Select a plate from the list to edit its information. Click “Edit” to pop up the dialogue box of “Plate Info”;

2) Edit plate number by actual requirements;

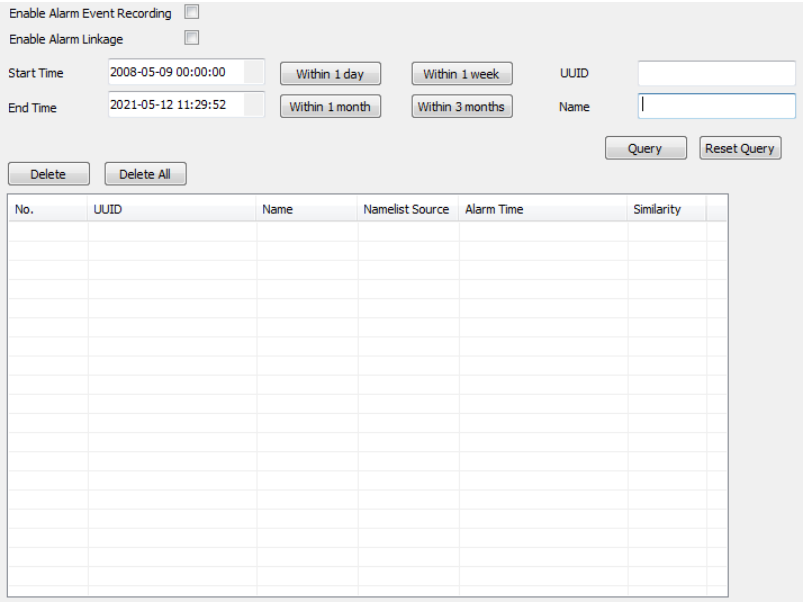
3) Click “Confirm” to finish.

■ Delete: Select a plate from the list, and click “Delete” to pop up a dialogue box. Click “Yes” to delete the information.

■ Query: Select the start time and end time of entry, enter plate number and click “Query” to filter the expected plate information and display it on the list below.

4.2.14 Face Alarm Event

Go to **Intelligent > Settings > Face Alarm Event** to enable alarm event recording and alarm linkage, and query face alarm event by alarm time, personal UUID and name to view information such as personal UUID, name and name list source.



Picture 4-24 Face alarm event

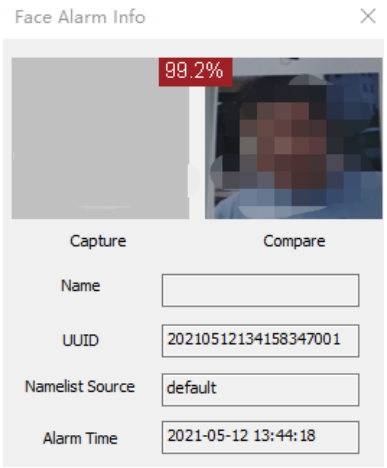
Select “Enable Alarm Event Recording” and when the camera detects faces in the database and triggers alarm, the alarm event will be recorded on the list below. The configuration of face database can be referred to in chapter *4.2.12 Face Database*.

Select “Enable Alarm Linkage” to enable alarm linkage. When alarm is triggered, the camera will output alarm according to the selected alarm linkage methods. Please refer to chapter *7.2 Alarm Input* for details.

User can search alarm event record according to alarm time, UUID and/or name. Configure start time, end time, or select duration by requirement, enter UUID and name, and click “Query” to search the expected alarm event record. Click “Reset” to clear the filter.

Double-click the alarm event record on the list to view details in the popup window of face alarm info, including “Capture”, “Compare”, “Name” and etc.

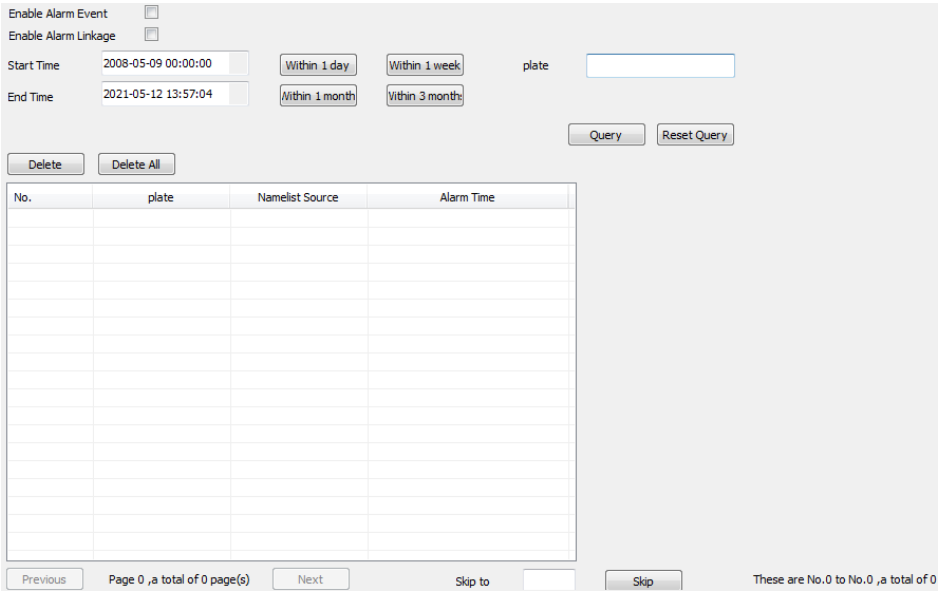
Note: The snapshot of the alarm event is stored in SD card by default. If the camera is not installed with SD card, the “Capture” photo in the alarm event is empty.



Picture 4-25 Face alarm info

4.2.15 Plate Alarm Event

Go to **Intelligent > Settings > Plate Alarm Event** to enable alarm event recording and alarm linkage, and query plate alarm event according to alarm time and plate number, and view plate number, source and alarm time.



Picture 4-26 Face alarm event

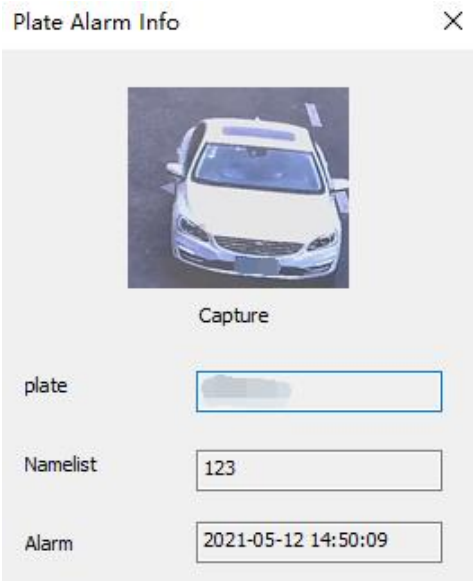
Select “Enable Alarm Event” and when the camera detects vehicles in the database and triggers alarm, the alarm event will be recorded on the list below. The configuration of plate database can be referred to in chapter *4.2.13 Plate Database*.

Select “Enable Alarm Linkage” to enable alarm linkage. When alarm is triggered, the camera will output alarm according to the selected alarm linkage methods. Please refer to chapter *7.2 Alarm Input* for details.

User can search alarm event record according to alarm time and/or plate number. Configure start time, end time, or select duration by requirement, enter plate number and click “Query” to search the expected alarm event record. Click “Reset” to clear the filter.

Double-click the alarm event record on the list to view details in the popup window of plate alarm info, including “Capture”, “Plate”, “Name list” and “Alarm”.

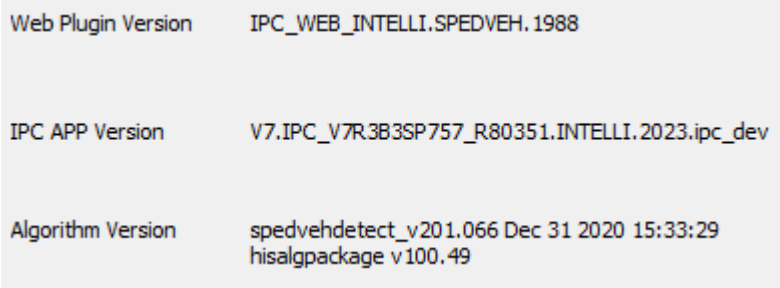
Note: The snapshot of the alarm event is stored in SD card by default. If the camera is not installed with SD card, the “Capture” photo in the alarm event is empty.



Picture 4-27 Plate alarm info

4.2.16 Version

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



Picture 4-28 Version

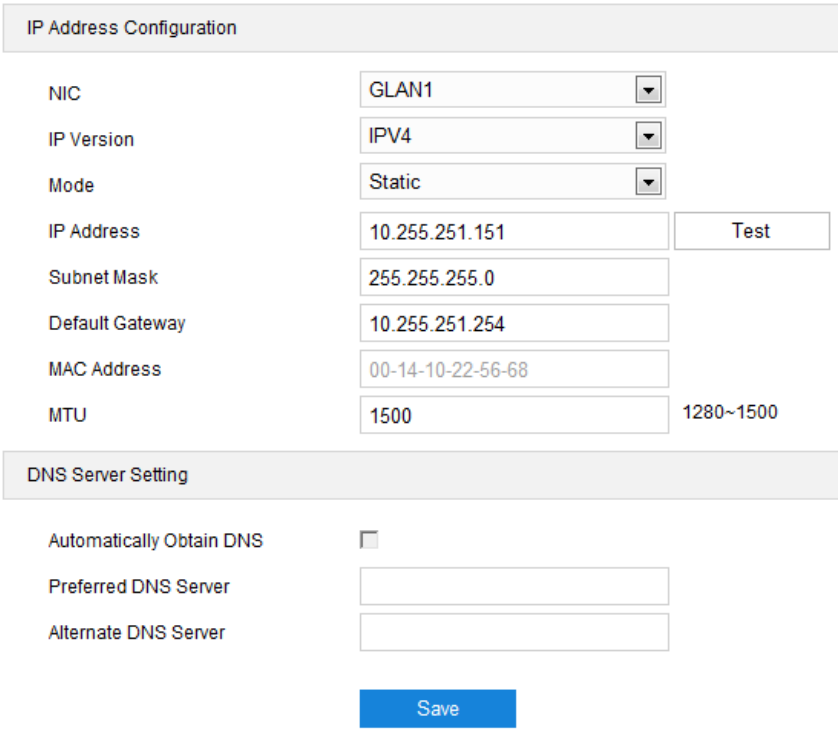
5. Network

Go to **Settings > Network** to configure network parameters of camera, including IP and Port, Access Protocol, Other Protocols and Cloud.

5.1 IP and Port

5.1.1 LAN

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



Picture 5-1 LAN

- IP Address Configuration

If selecting “IPV4”, the mode includes "Static” or “DHCP”. When selecting static mode, you need to configure IP Address, Subnet Mask and Default Gateway manually; when selecting DHCP mode, the system obtains IP address automatically;

Note: When filling the IPV4 IP address, click “Test” to confirm if the address is available.

If selecting “IPV6”, the mode includes “Manual” and “Automatically obtain”. Under the “Automatically obtain” mode, the IPV6 address is distributed from server, gateway or router. Under “Manual” mode, enter the IP address, subnet mask and default gateway according to actual conditions.

MTU: Maximum transmission unit, the maximum size (unit by byte) of data packet transmitted through TCP/UDP protocol, by default 1500.

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

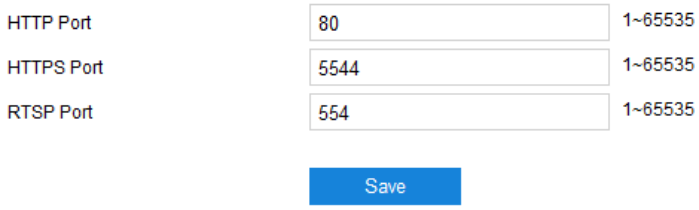
- DNS Server Setting

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

After finishing configuration, click “Save”.

5.1.2 Port

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



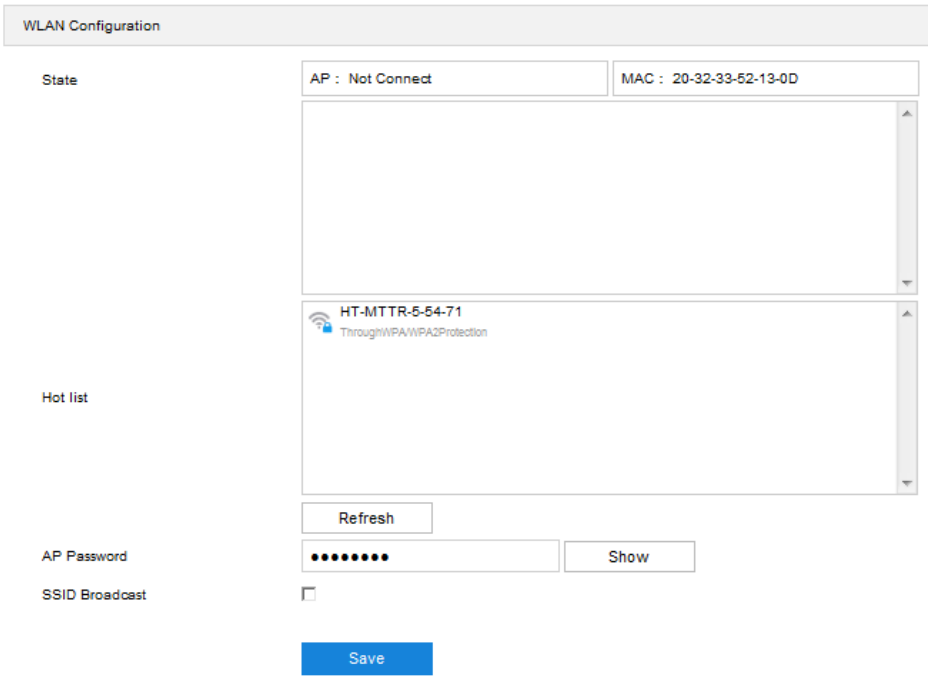
Picture 5-2 Port

- **HTTP Port:** Hypertext Transport Protocol Port. When login through browser, you need to add a port number behind camera IP address. For example, if HTTP port is edited as 83, when you login through browser, you need to input "http://camera IP address:83”. The number is 80 by default, ranging 1 ~ 65535.
- **HTTPS Port:** Hypertext Transport Protocol Secure Port based on SSL. When login through browser, you need to add a port number behind camera IP address. For example, if HTTPS port is edited as 5545, when you login through browser, you need to input "http://camera IP address:5545”. The number is 5544 by default, ranging 1 ~ 65535.
- **RTSP Port:** Real Time Streaming Protocol Port. When login through browser, you need to add a port number behind camera IP address. For example, if RTSP port is edited as 555, when you login through browser, you need to input “rtsp://camera IP address:555/id=0 (id=0 play main stream, id=1 play secondary stream)”. RTSP port number is 554 by default, ranging 1 ~ 65535.

After finishing configuration, click “Save”.

5.1.3 *Wireless

Go to **Settings > Network > IP and Port > Wireless to view wireless network status and** configure the wireless network parameters.



Picture 5-3 Wireless

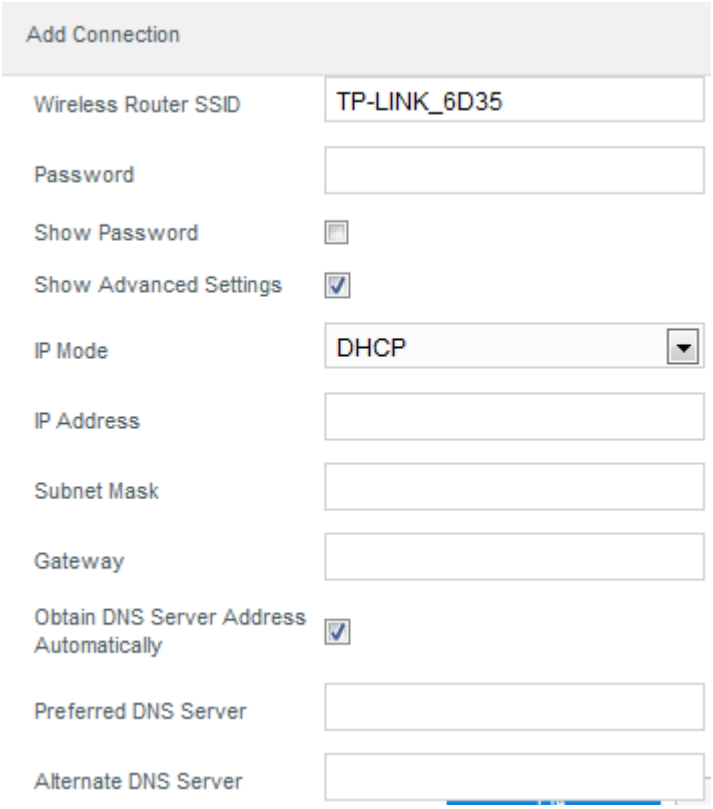
- AP Mode

  As a transmitting terminal of wireless signal, camera can connect to the wireless terminal. The default SSID of camera is “device model” + “-“ + “device SN”. The default password is “admin123”, or you can reset AP password if necessary. SSID broadcast is selected by default, or you can deselect it if necessary. After finishing configuration, click “Save”.

- STA Mode

  As a wireless terminal, camera can connect to wireless signal and access to the network. The operation steps are as follows:

  1) Click “Refresh” to display the list of available nearby wireless networks;
  2) Select a Wi-Fi name from the list and click ＋;
  3) On the popup interface, input Wi-Fi password and select “Show Advanced Settings”. The default IP mode is “DHCP”. If selecting “Static”, enter IP address, subnet mask, gateway and etc.



Picture 5-4 Add connection

4) Click “OK” to finish connection. Click “Refresh” to refresh the wireless network list.

Select a connected wireless network from the list and configure or delete it. Click button to view attributes of wireless signal and edit by request. Click “OK” to finish. Click button to adjust the sequence of connected wireless networks on the list. Click to delete connected wireless signal.

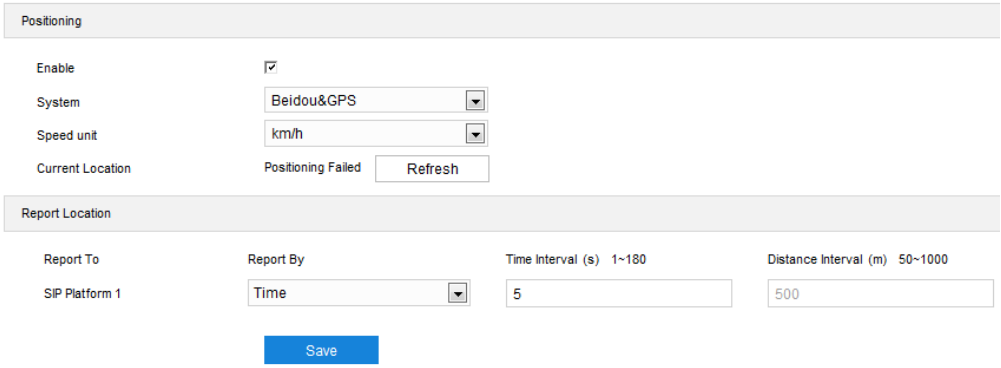
Note:

- When the camera works under AP mode, the default IP address is 192.200.1.200.
- When the camera works under STA mode, it will search the nearby wireless signal automatically.
- When the camera works under AP mode, user should edit the default gateway of LAN as 0.0.0.0, and when the device accesses Wi-Fi in the environment, it will switch to STA mode automatically. When the camera works under STA mode, user should delete all signals on the list of connected networks, and the device will be able to switch to AP mode automatically.

- When switching AP mode to STA mode, user should wait for a while and then go to **Settings > Network > IP and Port > Wireless**. The “State” line changes into STA mode. Refresh the page till it shows “connected” which means the wireless function is available.
- When the camera works under STA mode, if dialing with private network card, it will connect to the wireless terminal of the camera and could intercommunicate with the private network device.

5.1.4 *Positioning

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



Picture 5-5 Positioning

Operation steps**:**

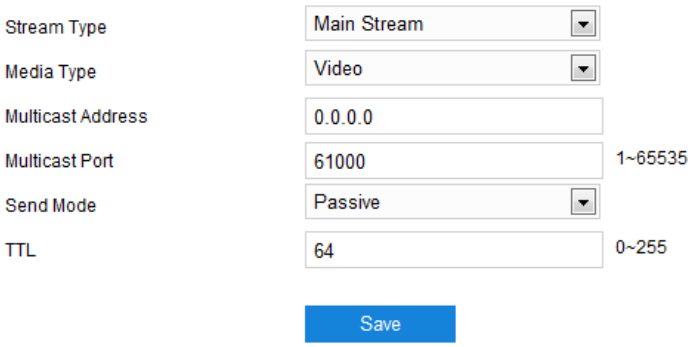
1) Select “Enable” to enable positioning function;
2) Select positioning mode from the dropdown list, options including “Beidou”, “GPS” and “Beidou&GPS”;
3) Select speed unit, options including “km/h” and “mile/h”;
4) The default report mode is scheduled, and enter time interval in the blank;
5) After finishing configuration, click “**Save**” and view current location below. Click “Refresh” to refresh status info.

Note: The report destination is the same as the camera registration platform which is recognized and generated automatically by the system.

5.1.5 *Multicast

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

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



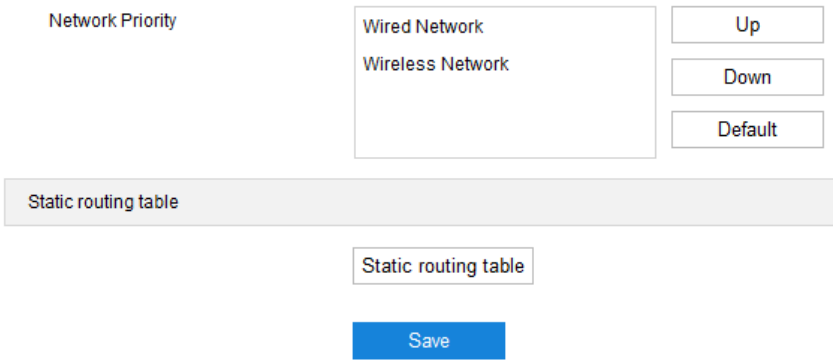
Picture 5-6 Multicast

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

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

5.1.6 *Network Priority

Go to **Settings > Network > IP and Port > Network Priority** to configure network priority, static routing table and network sharing.



Picture 5-7 Network priority

- Network Priority

  Select wired network, wireless network or mobile network by request. Click “Up” or “Down” to configure network priority. Or you can select “Default” to apply default sequence of the system.

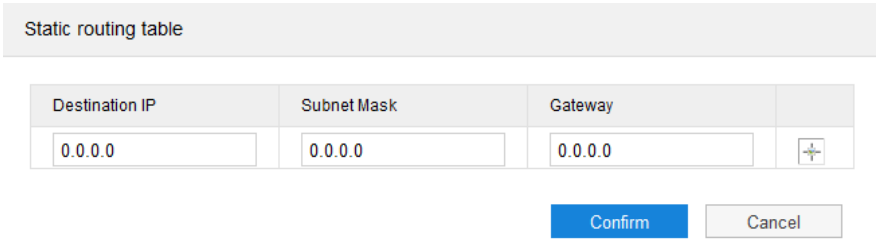
- Mobile Network Sharing

  Select “Enable” or “Disable” from the dropdown list of mobile network sharing. If selecting “Enable” and the camera works under AP mode, the wireless terminal connected to the camera can visit public network resources.

- Static Routing Table

  Click “Static routing table” and configure static routing path in the popup dialogue box.

  Enter destination IP, subnet mask and gateway. Click + button to add route. Click “Confirm” to finish routing table setting. Click “Cancel” to restore routing table to previously saved status.



Picture 5-8 Static routing table

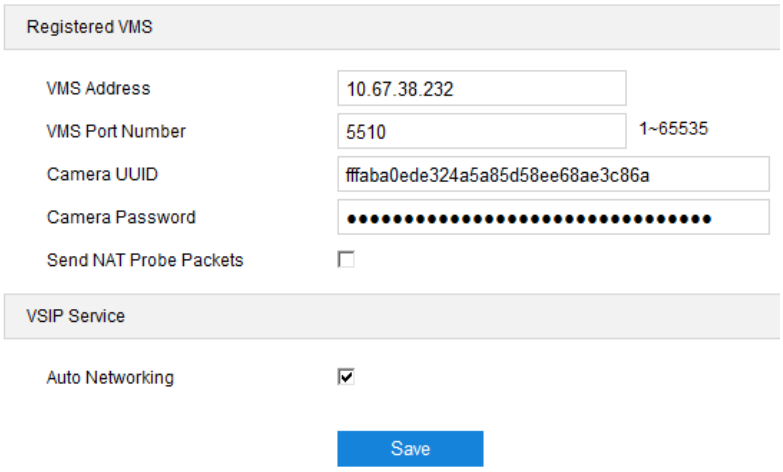
5.2 Access Protocol

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

5.2.1 VSIP

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

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



Picture 5-9 VSIP

2) Input VMS IP address or domain name in "VMS Address";

3) Input "VMS Port Number", 5510 by default;

4) Input "Camera UUID" and "Camera Password". Camera UUID is distributed by back-end platform and the password needs no edition as it requires no verification;

5) When the camera is in NAT and needs cross-segment access to VMS, select "Send NAT Probe Packets";

6) Select "Auto Networking" to enable auto networking. When NVR adds devices automatically, the camera will be added automatically;

7) Click "Save" to validate setting.

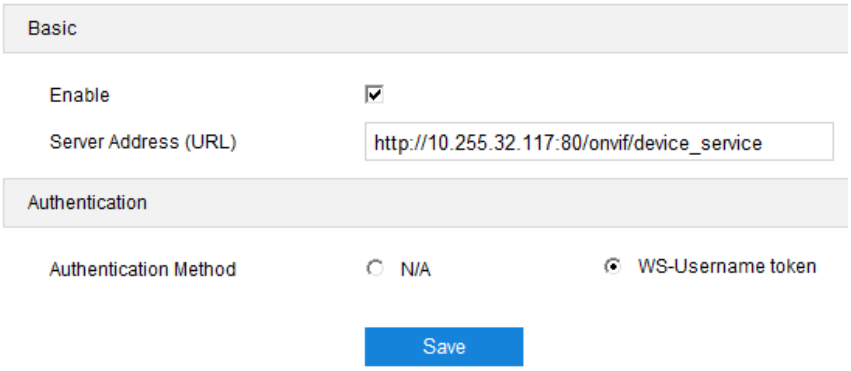
Note:

- Please refer to the User Manual for PMC Client for adding cameras to the VMS;
- VSIP protocol only supports registering to VMS of this company or other SDK-integrated back-end platforms.

5.2.2 ONVIF

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

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



Picture 5-10 ONVIF

2) Select “Enable”. Afterwards, the device will generate a server address (URL) automatically, default port number being 80;

3) Set authentication method for ONVIF login. When selecting "N/A", user can login freely; when selecting "WS-Username token", user needs to verify username and password before login;

4) Click “Save” to validate settings.

5.2.3 SIP

On SIP interface, add the camera to GB platform according to the requirements of GB/T28181. Configuration steps are as follows:

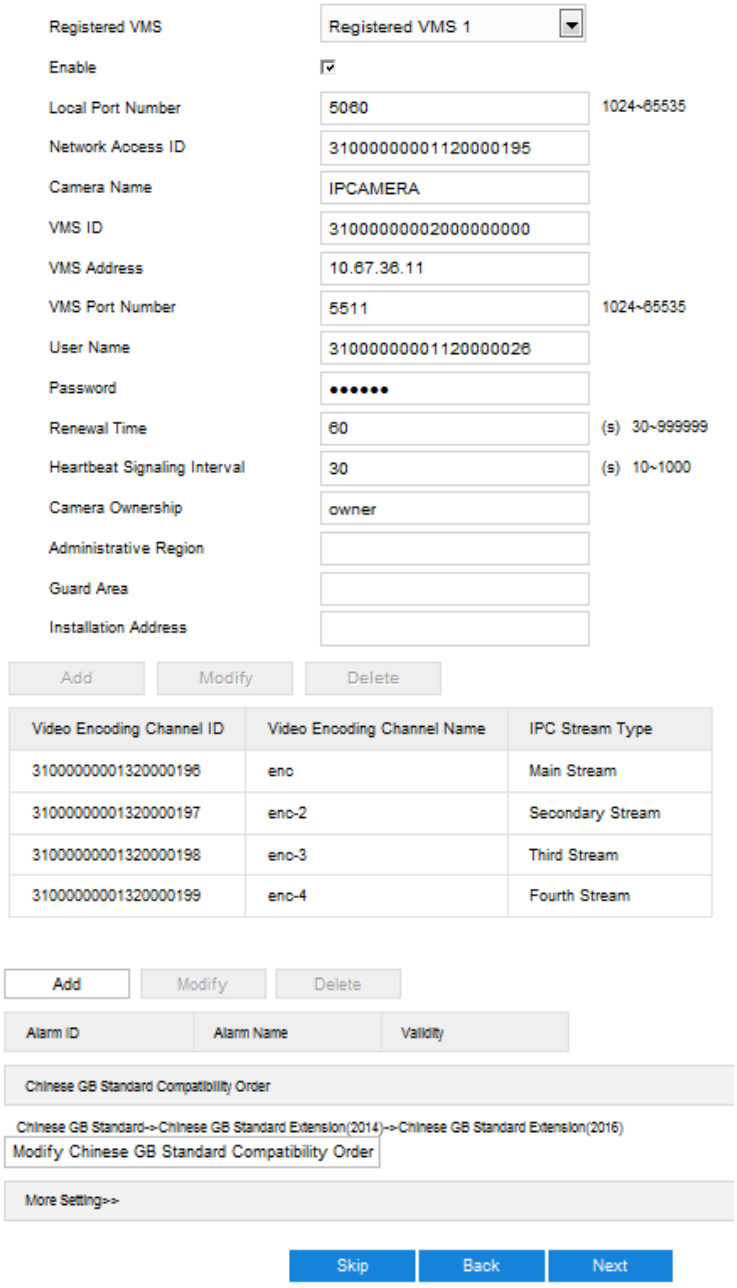
1) Go to **Settings > Network > Access Protocol > SIP;**

2) Select the “Registered VMS” (Registered VMS 1 or Registered VMS 2). The camera supports registered to 2 different VMS;

3) Select “Enable”;

4) Enter Network Access ID, VMS ID, VMS Port Number, User Name/ Password and Video Encoding Channel ID, which are all provided by VMS;

5) Click “**Save**” to validate settings.



Picture 5-11 SIP

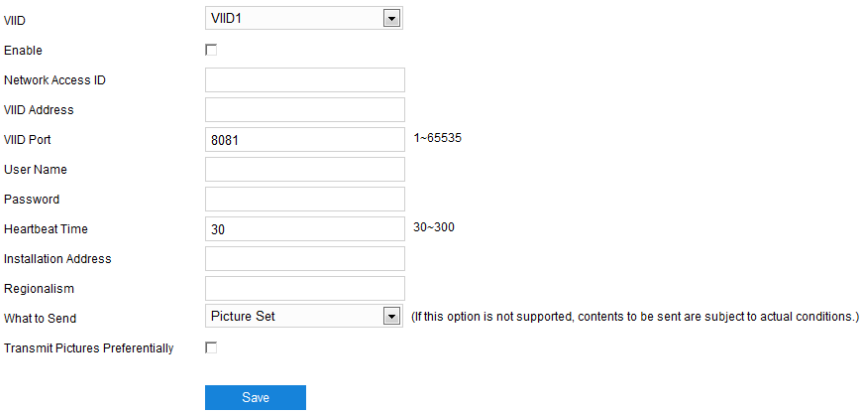
5.2.4 *VIID

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

Note: After configuring HD intelligent camera on **Intelligent > Settings > VIIAS** interface, the configurations will be synchronized to the VIID interface automatically, and user does not need to configure again. Please refer to chapter *4.2.3 VIIAS* for details.

Configuration steps are as follows:

1) Go to **Settings > Network > Access Protocol > VIID;**



Picture 5-12 VIID

2) Select a VIID from the dropdown list to register to, options including “VIID1” and “VIID2”;

3) Select “Enable” to enable VIID access;

4) Enter VIID platform ID in “Network Access ID”;

5) Enter VIID platform IP address and port number in “VIID Address” and “VIID Port”;

6) Enter VIID platform user name and password in “User Name” and “Password”;

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

7) Enter installation address and regionalism if necessary for facilitating device positioning;

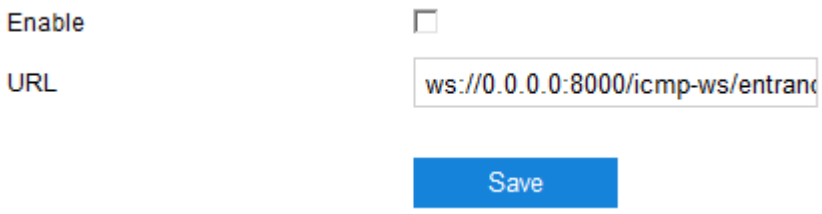
8) Select “What to Send” from the dropdown list, options including “Picture Set” and “Object List”;

9) Click “Save” to validate settings.

5.2.5 *COI

The camera can connect to corresponding back-end platform such as the smart surveillance platform and the smart community platform through COI protocol and be managed by the platform. Configuration steps are as follows:

1) Go to **Settings > Network > Access Protocol > COI**;



Picture 5-13 COI

2) Select “Enable” to enable COI access function;

3) According to actual request, change the IP address in URL line from “0.0.0.0:8000” into the platform IP address and port to connect to;

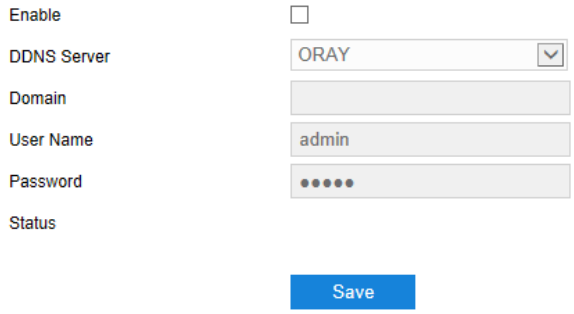
4) Click “Save” to validate setting.

5.3 Other Protocol

5.3.1 DDNS

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

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



Picture 5-14 DDNS

2) Select "Enable";

3) Select DDNS Server type from the dropdown list, options including “ORAY”, “DYNDS” and “NOIP”. When selecting “DYNDS”, “NOIP” or “CAMTRONICS”, the domain name should be filled;

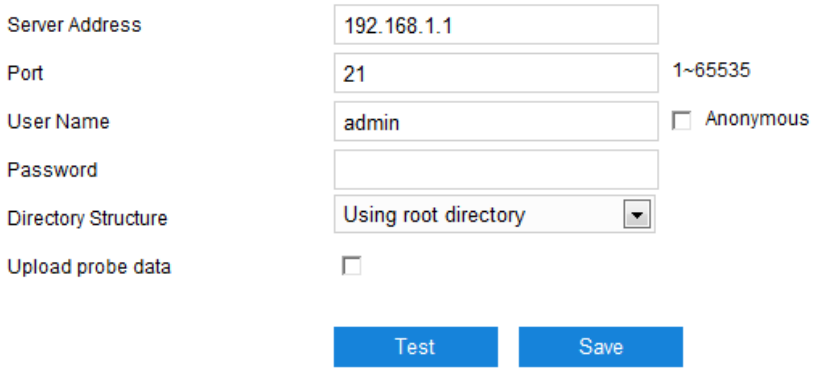
4) Enter username and password according to the selected DDNS server;

5) Click "Save" to validate setting.

5.3.2 FTP

File Transfer Protocol, the web client supports FTP protocol and user can upload the pictures of the camera to specific FTP server. Configuration steps are as follows:

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



Picture 5-15 FTP

2) Enter FTP server address and port;

3) Enter FTP server username and password, and you can select "Anonymous" to visit FTP server anonymously;

4) Configure directory structure, i.e. file save path. Select from the dropdown list by actual request, options including “Using root directory”, “Using level one directory” and “Using level two directory”;

   - Level one directory options include “Use device name”, “Use device IP” and “Custom”.
   - Level two directory options include “Use channel number” and “Custom”.

5) Click "Test" to verify if current FTP is available, and the result will show on the dialogue box;

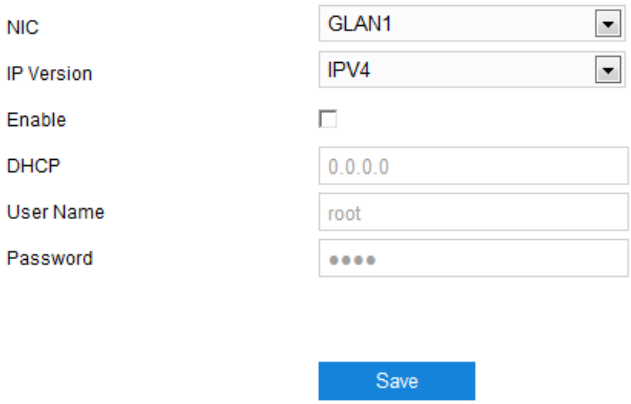
6) Select “Upload probe data” by request;

7) Click "Save" to validate setting.

5.3.3 PPPoE

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

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



Picture 5-16 PPPoE

2) The default NIC is “GLAN1”, and select IP version from the dropdown list;

3) Select "Enable" to enable PPPoE function;

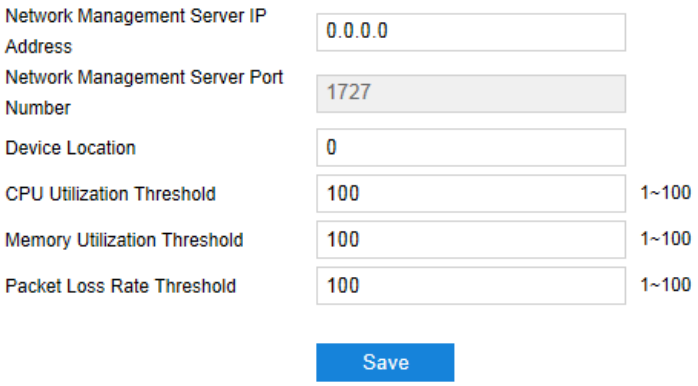
4) Input user name and password provided by ISP;

5) Click "Save" to validate setting. It will show dynamic IP after dialing succeeds.

5.3.4 K-SNMP

K-SNMP means KEDACOM private network management protocol. Configuration steps are as follows:

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



Picture 5-17 K-SNMP

2) Input "Network Management Server IP Address" and "Device Location";

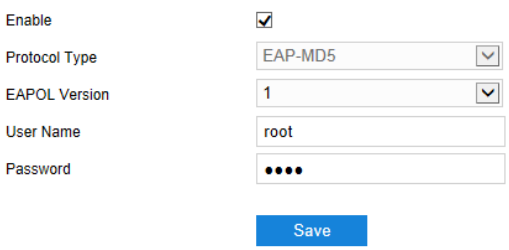
3) Configure "CPU Utilization Threshold", "Memory Utilization Threshold" and "Packet Loss Rate Threshold". The default values are all 100, ranging 1 ~ 100;

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

5.3.5 802.1X

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

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



Picture 5-18 802.1X

2) Select “Enable” to enable IEEE 802.1X protocol;

3) Select "Protocol Type" from the dropdown list and the default is “EAP-MD5”.

4) Select version from the list of "EAPOL Version";

5) Input user name and password;

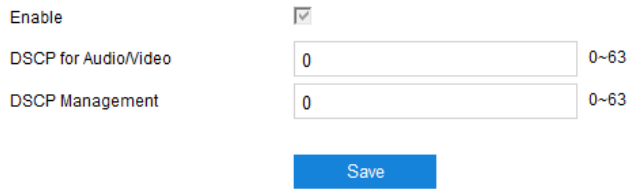
6) Click "Save" to validate setting.

5.3.6 QoS

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

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

1) Go to **Settings > Network > Other Protocols > QoS**, and it is enabled by default and non-editable;



Picture 5-19 QoS

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.

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

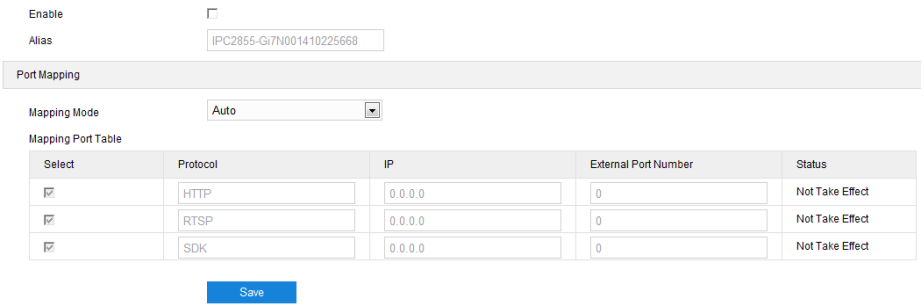
3) Click "**Save**" to validate setting.

5.3.7 UPnP

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

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

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



Picture 5-20 UPnP

2) Select “Enable” to enable UPnP function;

3) Set alias, then user can search the alias directly from the network on PCs which have enabled UPnP protocol in the broadcast domain of the same Ethernet. Double-click the icon and the system will pop up a page automatically for user to visit current IP address;

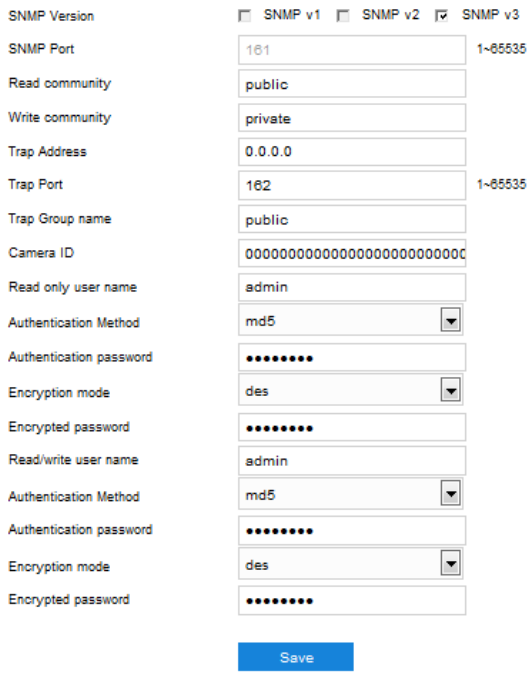
4) Select "Auto" or "Manual" for Mapping Mode. When selecting “Manual”, enter external port number manually;

5) Click "Save" to validate setting.

5.3.8 SNMP

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

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



Picture 5-21 SNMP

2) Select “SNMP Version” to enable SNMP;

3) Enter "Read community" and "Write community" names;

4) Configure "Trap Address" and “Trap Port” (default being 162). The camera can send exception alarm to the management base;

5) Configure “Trap Group Name”;

6) Enter “Camera ID”, “Read-only User Name”, “Authentication Method”, “Authentication Password”, “Encryption Mode” and “Encryption Password”;

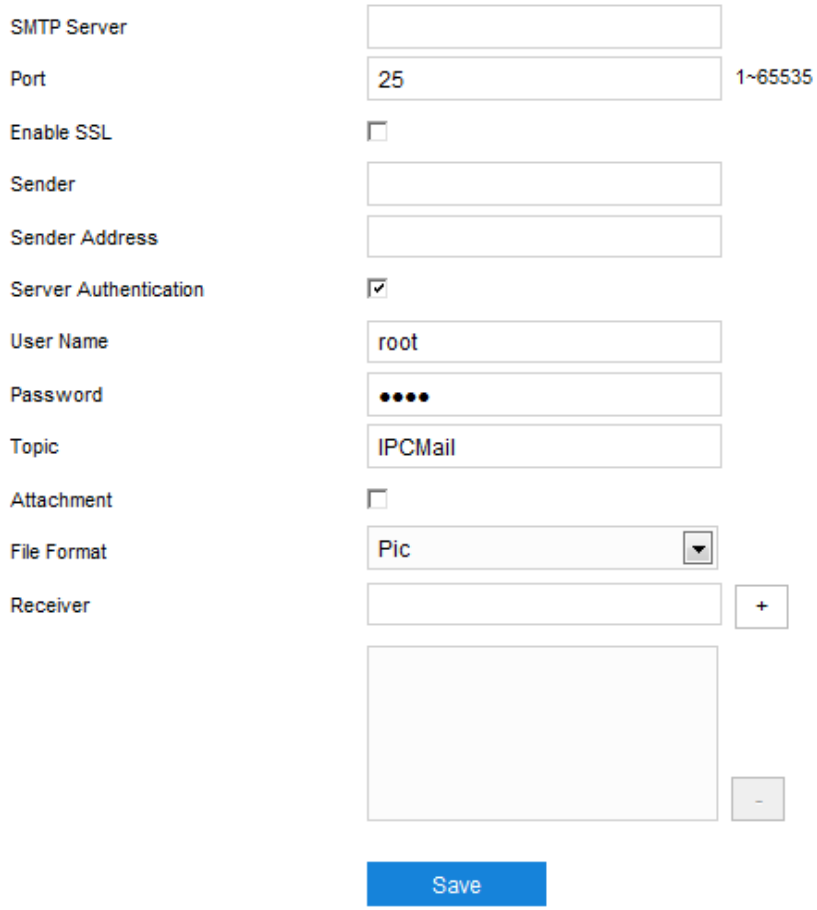
7) Enter “Read/Write User Name”, “Authentication Method”, “Authentication Password”, “Encryption Mode” and “Encryption Password”;

8) Click "Save" to validate settings.

5.3.9 SMTP

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

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



Picture 5-22 SMTP

2) Input SMTP server IP address and port number, which ranges 1 ~ 65535, 25 by default;

3) Select “Enable SSL” if necessary;

4) Input "Sender" and "Sender Address"; optionally select "Server Authentication" and input correct user name and password;

5) Input email topic; optionally select "Attachment" and choose attached file format, then the email sent will attach the relative file;

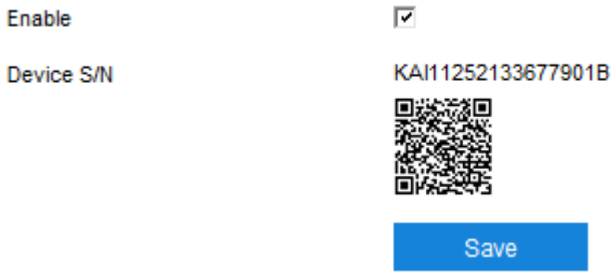
6) Add receiver email address. Input the receiver's email address and click the symbol "+" behind it and the address will be saved to the list below. Select an address from the list and click the symbol "-" to remove the email address;

7) Click "Save" to validate setting.

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

5.4 Cloud

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



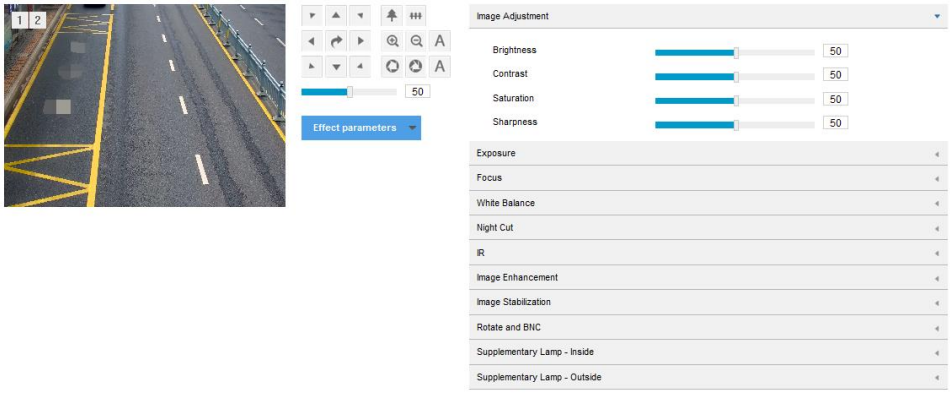
Picture 5-23 Cloud service

6. Camera

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

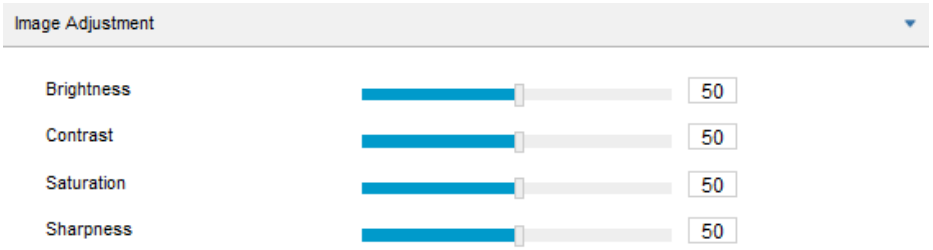
6.1 Image

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



Picture 6-1 Image

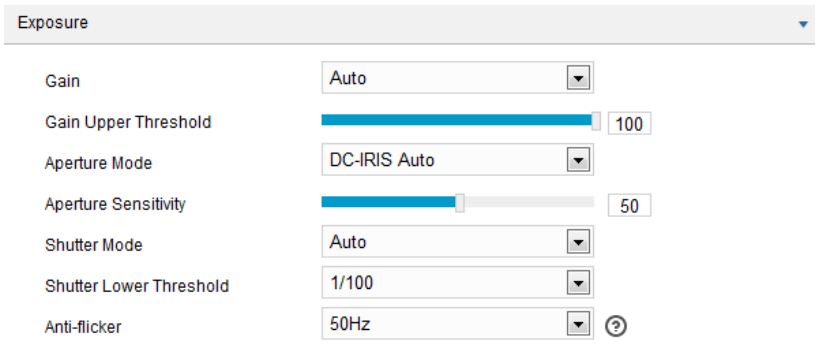
6.1.1 Image Adjustment



Picture 6-2 Image adjustment

The image adjustment in this part is the same as that on the Live View interface, which can be referred to in chapter 3.1.2 Image Adjustment.

6.1.2 Exposure



Picture 6-3 Exposure

- Gain: A higher gain will make the image look brighter. However, meanwhile there will be more noise points on the image. Auto mode is suggested.
  - When selecting "Auto" mode, drag the slide bar below to set Gain Upper Threshold. Then the value of gain can only be adjusted automatically within the range of 0 to the set upper threshold.
  - When selecting "Manual" mode, drag the slide bar below to set Gain Level and the value will remain.
- Aperture Mode: Aperture controls the light input through the lens. A large aperture allows more light input and the image looks bright. Options including “DC-IRIS Auto” and “DC-IRIS-Manual”. Auto mode is suggested.
  - If selecting “DC-IRIS Auto”, drag the slide bar of Aperture Size and Aperture Sensitivity. The aperture will adjust the size of itself automatically according to the environment. The higher the sensitivity is, the stronger the self-adjustment ability it will have.
  - If selecting “DC-IRIS Manual”, drag the slide bar of Aperture Size to set the value and the aperture will remain as the set value.
- Shutter Mode: Camera shutter means the exposure shutter speed of image pixels. The smaller the value is, the darker the image will look. Options include "Auto" and "Manual". Suggest “Auto".
  - When selecting "Auto", you can select Shutter Lower Threshold from the dropdown list below. Then the shutter will be adjusted within the range from the lower threshold to the minimum shutter value automatically;
  - When selecting "Manual", you can select Shutter Level from the dropdown list below. Then the value of shutter will remain.
- Anti-flicker: When there are floating cross stripes on the image, select the correct anti-flicker frequency (50Hz or 60Hz or natural light) to solve the problem. The frequency should be in accordance with that of the nation's AC frequency and light frequency.

6.1.3 *Focus

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

Picture 6-4 Focus

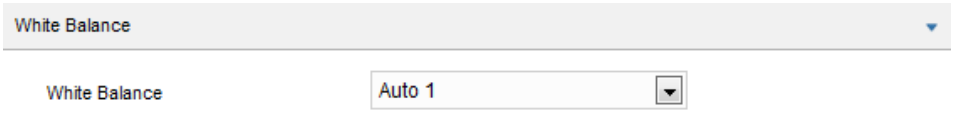
- Focus Mode: Select a mode from the dropdown list by request. The default mode is “Single Focus”.

- Manual: On the live view interface, click focus icons to perform manual focusing.
- Continuous Focus: The camera will trigger auto focus once there is moving object in the image.
- Single Focus: The camera will trigger auto focus once the PTZ changes.
- Camera Lock: Lock the parameters of current lens. Then the buttons of zooming and focusing on the “Live” interface will be disabled.
- Manual Focus (Day/Night): On the live view interface, click focus icons to perform manual focusing, and save the focus parameters at day and at night respectively for future usage.

- Min Focus Distance: It is the minimum focus distance. When the distance is shorter than this, the lens will be unable to focus automatically and clearly. Select a value from the dropdown list, 1m/ 2m/ 5m/ 10m/ 30/ Long-range mode.
- Focus Area: Select focus area manually, options including “Center”, “2/3 from bottom”, “1/2 from bottom”, “1/3 from bottom” and “Custom”. If selecting “Custom”, edit focus area manually.

6.1.4 White Balance

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



Picture 6-5 White Balance

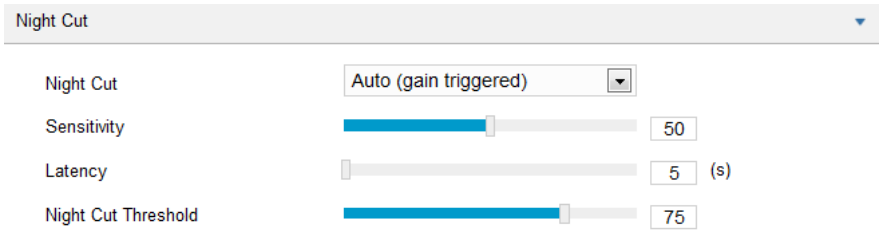
Select an option from the dropdown list of white balance mode. Suggest "Auto".

- Manual: support R Gain and B Gain adjustment.
- Auto 2: have a larger white balance range than “Auto 1”, though both are auto mode.
- Lock White Balance: lock current color correction matrix.

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

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

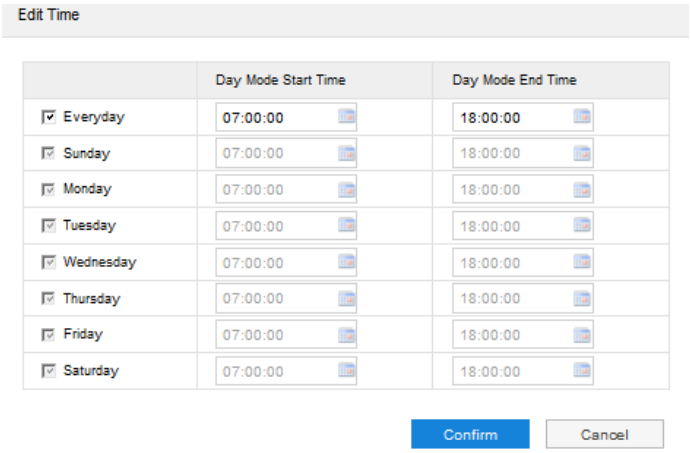
6.1.5 Night Cut



Picture 6-6 Night Cut

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

- Day: Under "Day" mode, the image keeps colored all the time.
- Night: Under "Night" mode, the image keeps black and white all the time.
- Auto (gain triggered): The camera switches day/night mode automatically according to the gain values. When selecting this mode, configure Sensitivity, Latency and Night Cut Threshold according to actual request.
  - Sensitivity: The switching sensitivity from night mode to day mode. The lower the sensitivity is the higher brightness in the condition the camera needs to switch to day mode; the higher the sensitivity is the lower brightness in the condition the camera needs.
  - Latency: When the camera detects that the light condition is satisfactory to trigger night cut and the time lasts longer than the preset latency, the camera will switch night cut automatically. The range of it is 5 s to 120 s.
  - Night Cut Threshold: The switch threshold from day mode to night mode. The lower the value is, the easier it is to switch from day mode to night mode.
- Auto (photosensor triggered): IR camera supports this mode. The camera detects light strength with photo-conductive resistance and triggers night cut according to the returned value. When selecting this mode, configure Photosensitivity, Latency and Night Cut Threshold according to actual request.
  - Photosensitivity: The switching sensitivity from night mode to day mode. The lower the sensitivity is the brighter environment the camera requires switching to day mode; the higher the sensitivity is the darker environment the camera requires.
  - Latency: When it detects the light brightness in the environment meets the night cut condition and lasts for a period of time longer than the preset latency, the camera will trigger night cut automatically. The range of it is 5s ~ 120s.
  - Night Cut Threshold: The threshold from day mode to night mode. The lower the value is, the easier it will trigger night cut.
- 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.

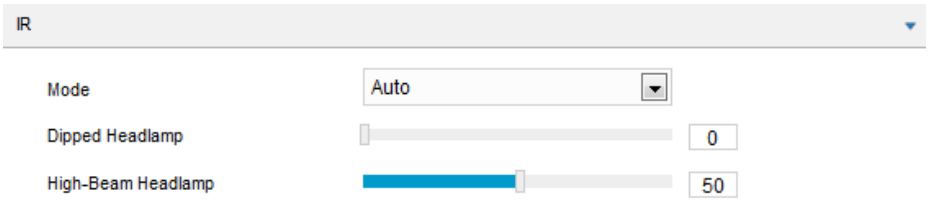


Picture 6-7 Edit time

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

6.1.6 *IR

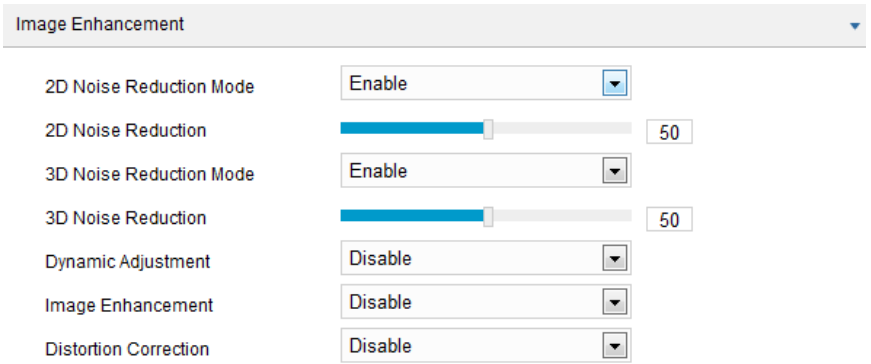
Select “Disable” or “Auto” from the dropdown list of IR mode, and the default mode is “Auto”. In low light situation, the camera will enable IR lamp automatically to get better surveillance images.



Picture 6-8 IR

6.1.7 Image Enhancement

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



Picture 6-9 Image Enhancement

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

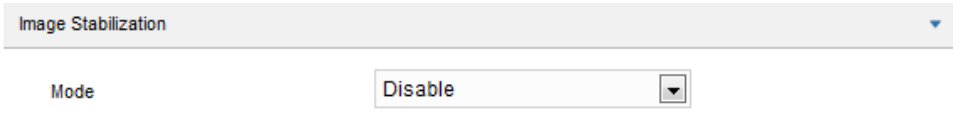
- 3D Noise Reduction: You can select "Enable" or "Disable". After enabling, you can drag the slide bar to adjust 3D noise reduction level.

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

- Dynamic Adjustment: When there is strong light background, which causes sharp contrast between the light and the dark part of the image, you can adjust and optimize images through dynamic adjustment. Select a mode from the dropdown list according to actual requirements.
  - Disable: the default option is "Disable", which disables dynamic adjustment.
  - Backlight compensation: Backlight compensation can provide optimal exposure of the object under rather strong background lighting. 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. Click "Delete All" to delete backlight area setting.
  - 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".
  - SmartIR: SmartIR can adjust IR light illumination automatically. Select "SmartIR" and drag the slide bar of SmartIR sensitivity.
  - WDR: WDR can provide optimal exposure when there is sharp contrast between the background and foreground light (the former being too bright while the latter being too dark). Select "WDR" from the drop-down list of Dynamic Adjustment and drag the slide bar of "WDR Sensitivity".
- Image Enhancement: It is disabled by default. When there is fog in the scene, select "Defog" from the dropdown list to enable image enhancement and drag the slide bar to adjust the sensitivity.
- Distortion Correction: It is disabled by default. When the radian of camera lens is too large and the image is distorted, enable this function to correct the image and reduce image distortion. Enabling this function will cause some loss of the image.

6.1.8 *Image Stabilization

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

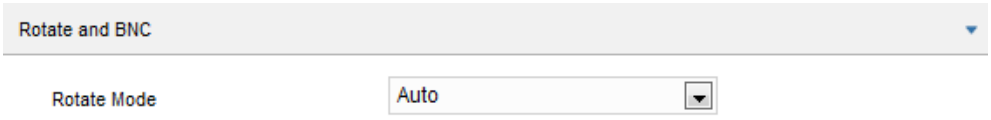


Picture 6-10 Image stabilization

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

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

6.1.9 *Rotate and BNC



Picture 6-11 Rotate and BNC

Corridor Mode: When the camera is side-mounted, user can rotate image through corridor mode to make it upright.

- Disable: default option, image will not rotate.
- Left: image will rotate anti-clockwise by 90°.
- Right: image will rotate clockwise by 90°.

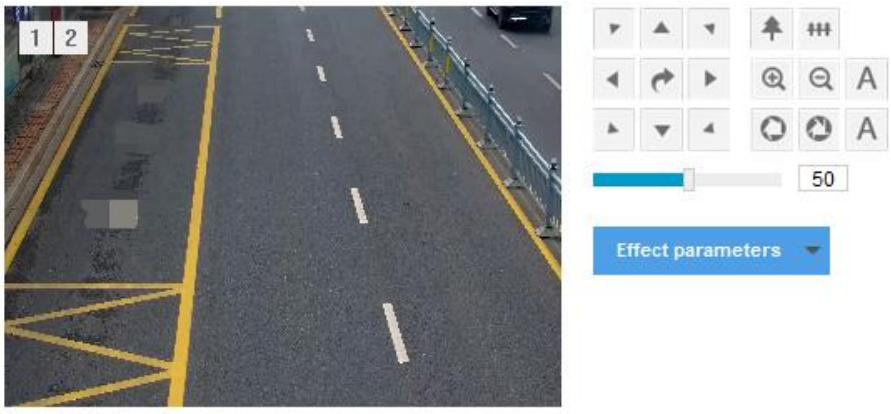
Mirror Mode:

- 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.

6.1.10 Effect Parameters

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



Picture 6-12 Effect parameters

- Auto Mode: Select “Auto Mode” and configure the switch conditions on the popup interface, options including “Night Cut” and “Time Schedule”. If selecting the former,

configure day scene mode and night scene mode; if selecting the latter, configure the start time and end time of switching.

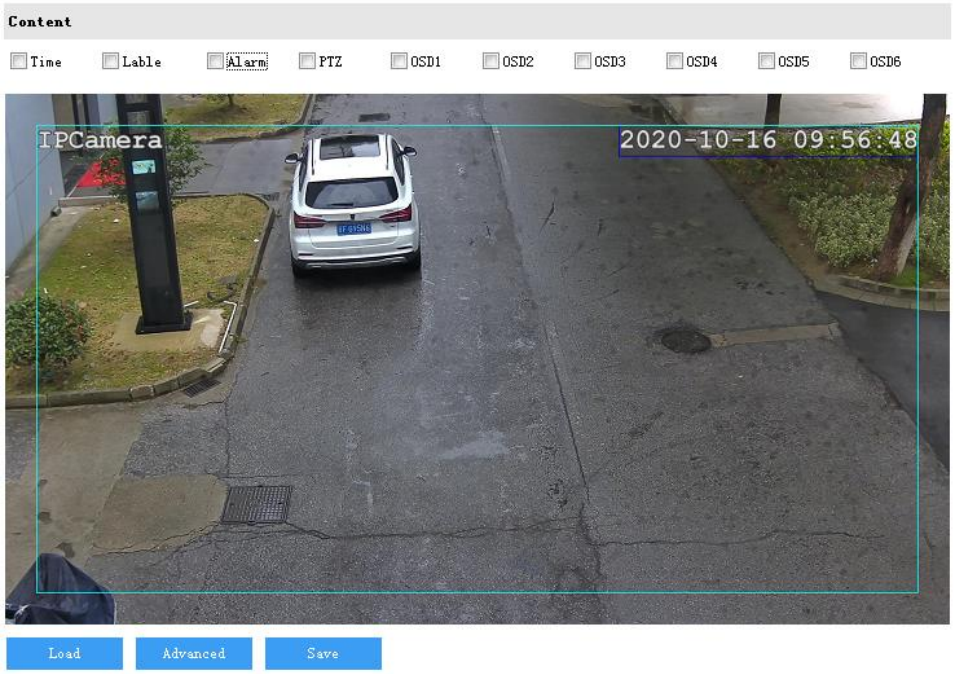
Picture 6-13 Auto mode

- Standard Mode: Select “Standard Mode” and all parameters will restore to defaults.
- Indoor Mode: Select “Indoor Mode” and the image brightness and noise reduction will become more suitable to indoor environment.
- Save Parameters: Select “Save Parameters” and enter “Scene Name” on the popup interface and click “OK”. Then all the configured parameters will be saved under the scene name and will show as a mode option on the dropdown list of “Effect Parameters” for future use.

6.2 OSD

On OSD interface, you can configure OSD text on the surveillance window, such as time, label, alarm, PTZ and video info. Configuration steps are as follows:

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

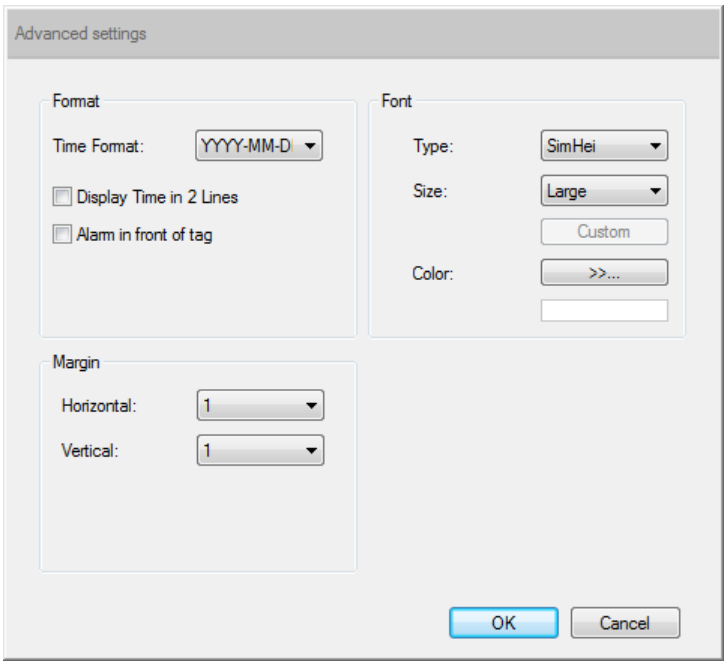


Picture 6-14 OSD

2) Select options in “Content” according to requirements and preview the effect in the window below, options including "Time", "Label", "Alarm" and "OSD";

3) Configure format. Click “Advanced” to set “Format”, “Font” and “Margin”;

- In format, you can set "Time Format", "Display time in 2 lines" and "Alarm in front of tag".
- In font, you can set font "Type", "Size" and "Color".
- In margin, you can adjust the distance between OSD border and image border, i.e. the distance from the yellow frame to the image border.

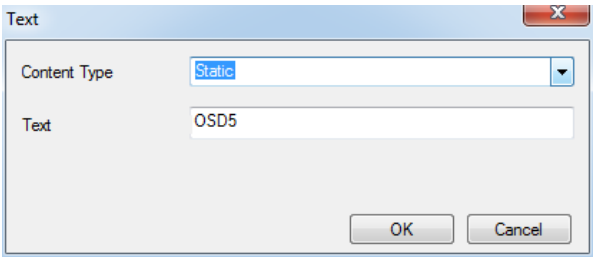


Picture 6-15 Advanced setting

4) Edit OSD texts: select the checkbox to show the content, double-click the OSD textbox and on the popup interface, select “Static”, “Magnification” or “Navigation” as content type;

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

- When selecting “Static”, enter the characters in the textbox below and click “OK” to show the text on the image.
- When selecting “Magnification”, click “OK” and the image will display in the set magnification times.
- When selecting “Navigation”, click “OK” and the image will display the navigation info.



Picture 6-16 OSD setting

5) Edit OSD positions: select the OSD in the window with mouse and drag to change its position. The dark blue box and the light blue box (displayed in full screen by default) can move freely in the yellow box and they can even overlap with each other. The time, label and alarm OSDs in

the dark blue box move with the box; while the custom OSDs and PTZ OSD in the light blue box move freely in the light blue box and the light blue box can be downsized within the yellow box up to actual request;

6) Load font: Click “Load” to configure the OSD font conveniently. Options include “Default Font”, "Large Font", "Medium Font" and "Small Font";

7) Click "Save" to validate setting.

Note:

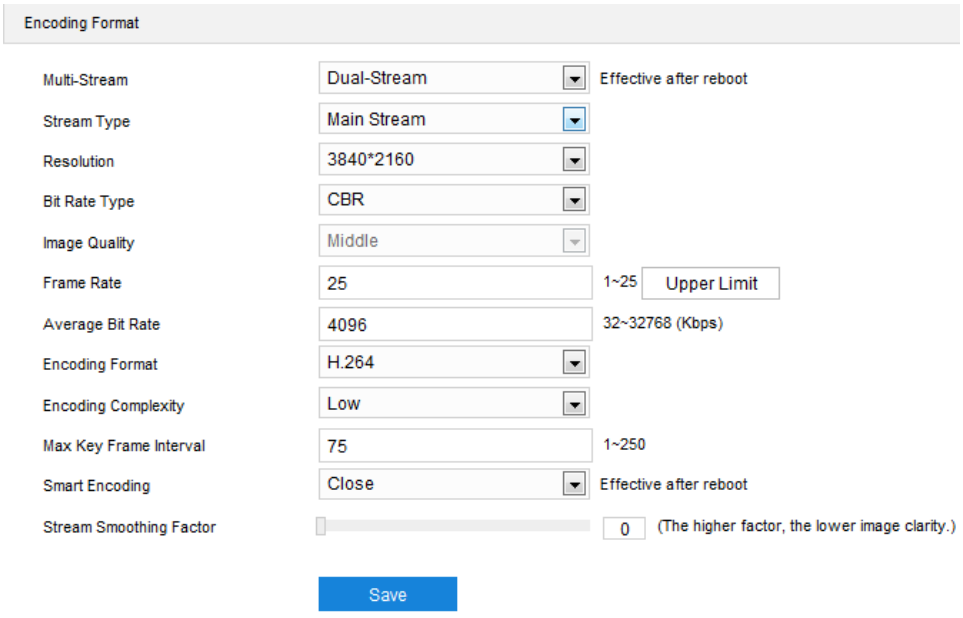
- OSD6 content is by default the navigation info.
- The OSD box size changes with the font size, and the sizes of dark blue and light blue boxes change with the sizes of OSD boxes.
- A number, an English letter or a punctuation mark occupies one character. A text box supports maximum 32 characters.
- You can load “Default Font”, "Large Font", "Medium Font" or "Small Font". Then edit content and position according to the above steps.

6.3 Video

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

6.3.1 Encoding Format

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



Picture 6-17 Encoding Format

- Multi-Stream: It means the same video source is encoded in several streams with different resolutions. This parameter can be configured according to actual request and the setting will be validated after reboot.

- Stream Type: Configure the resolution and bitrate of main or secondary stream.
- Resolution: According to the requirements of image quality by user, select resolution from the dropdown list.
- Bit Rate Type: Options include CBR and VBR.
- Image Quality: When selecting “VBR”, select image quality level from the dropdown list according to actual requirements.
- Frame Rate: Set the encoding frames per second.
- Average Bit Rate: Set the average bit rate for CBR.
- Encoding Format: Select according to actual requirements, options including H.264, H.265, MJPEG and SVAC.
- Encoding Complexity: Select encoding complexity level according to actual request. Under the same bitrate, the higher the complexity level is, the better quality the image will have and the more bandwidth it will require. When the encoding format is MJPEG, the encoding complexity is certain to be low while when the encoding format is H.265, the encoding complexity is certain to be middle.
- Max Key Frame Interval: Configure the interval frames between two key frames, ranging 1 ~ 250. Suggest applying the default value 75.
- Smart Encoding: Enabling “Smart Encoding” will reduce the frame rate. When enabling Smart Encoding under low bit rate, the image quality will be improved. Please select according to actual request. It takes effect after reboot.
- *Stream Smoothing Factor: Drag the slide bar or enter a number to set the value. The smaller the value is, the clearer the image will be; the larger the value is, the smoother the stream transmission will be.

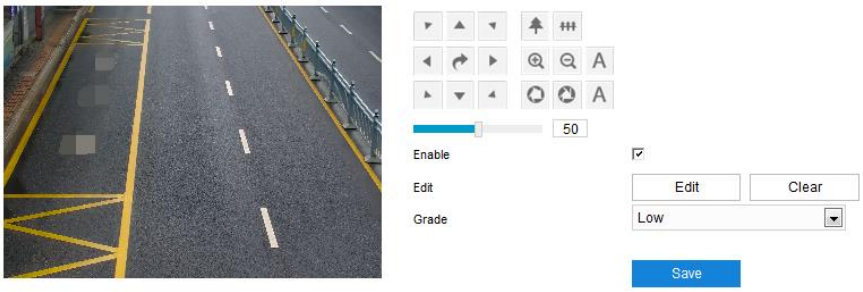
Note:

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

6.3.2 ROI

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

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



Picture 6-18 ROI

2) Select “Enable” to enable ROI function;

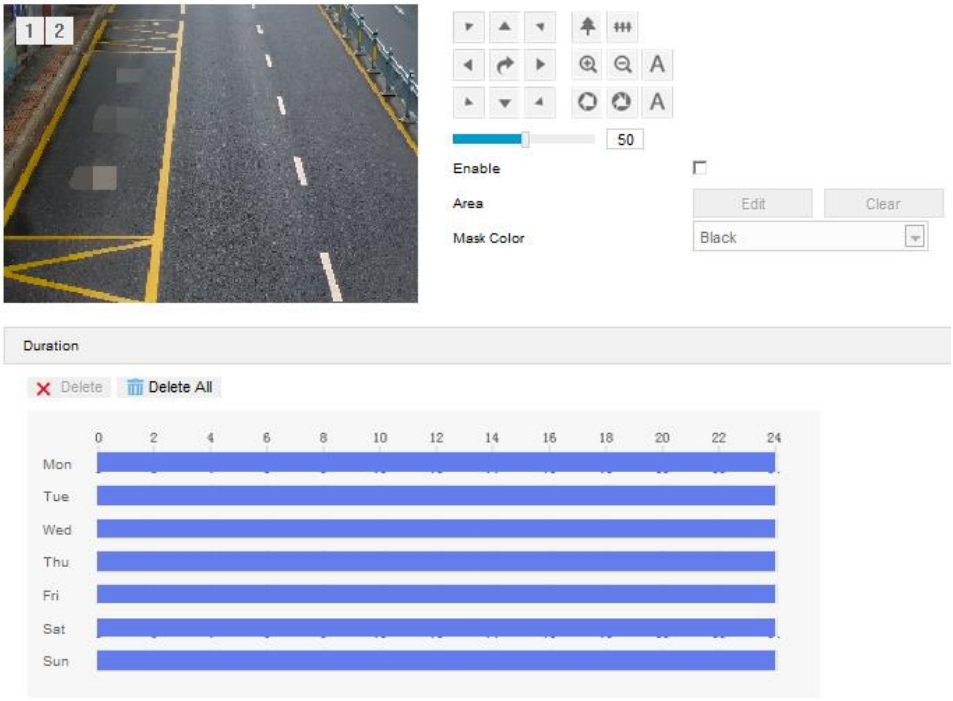
3) Click "Edit" and drag an area from the left window as the clipping area. Select encoding grade from the dropdown list. Click “Clear” to clear edition and reset area;

4) Click "Save" to validate setting.

6.3.3 Privacy Mask

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

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



Picture 6-19 Privacy mask

2) Select “Enable” to enable privacy mask;

3) Click “Edit”, and the image is divided into 16 columns and 12 rows of small squares. Click any square and drag an area toward lower right, then this area is the privacy mask detection area. Click "Clear" to reset the area;

4) Select a color from the dropdown list of "Mask Color";

5) Configure arming duration. The default arming duration is 24 hours in blue bars, or you can customize the durations;

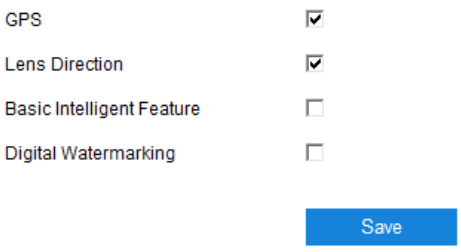
Picture 6-20 Arming durations

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

6) Click “Save” to validate the settings.

6.3.4 Video Info Overlay

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



Picture 6-21 Video info overlay

- GPS: Select it to show camera coordinates in the image.
- Lens Direction: Select it to display lens direction on live view interface.
- Basic Intelligent Feature: After configuring intelligent functions (on the interface of Settings > Event > Intelligent Function), select this option and select "Rule

Information Display" in **Settings > Local Setting**, then the intelligent area(s) will be displayed in the live view window.

- Digital Watermarking: Select it to show digital watermarking in the videos. It is used to protect the video recordings and avoid tampering.

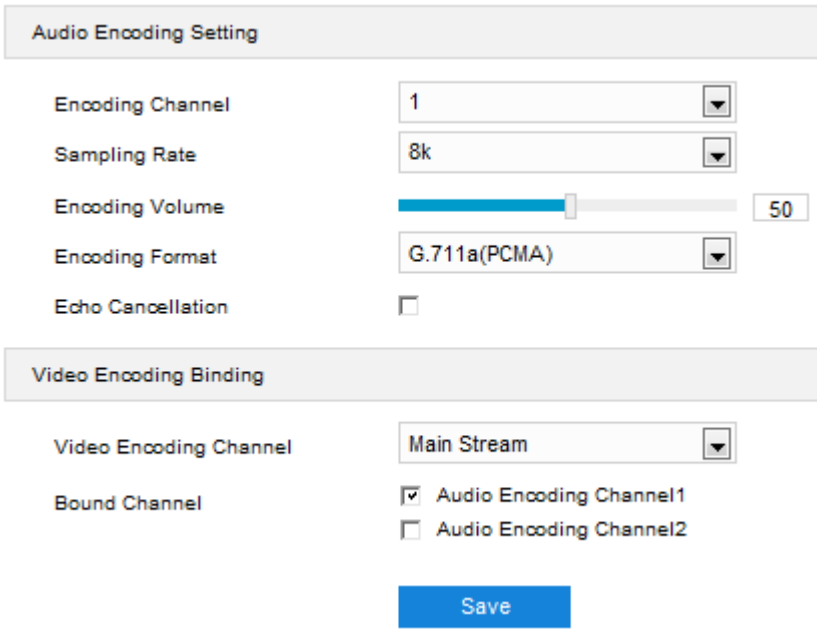
Click “Save” to validate settings.

6.4 Audio

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

6.4.1 Audio Encoding

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



Picture 6-22 Audio encoding

➢ *Audio Source Setting

- Audio Source Type: the audio input method, options including “LINE-IN” and “MIC-IN”. You can select according to actual requests. “LINE-IN” means interphone input while “MIC-IN” means microphone input.

➢ Audio Encoding Setting

- Encoding Channel: Select an audio encoding channel and configure its sampling rate, encoding volume and encoding format.
- Sampling Rate: It means the sampling times to sound signals by the audio-recording device in 1 second. The higher the sampling rate is, the more real and natural the sound reproduction will be.
- Encoding Volume: Drag the slide bar to adjust audio encoding volume, i.e. audio input volume.

- Encoding Format: Select audio encoding format from the dropdown list, by default G.711 a (PCMA).
- Echo Cancellation: Select the checkbox to cancel noises in the input audio and to improve the audio quality.

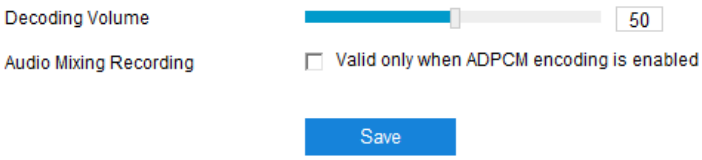
➢ Video Encoding Binding

- Video Encoding Channel: According to the streams supported by the camera, select video encoding channel from the dropdown list.
- Bound Channel: Select the audio encoding channel to be bound. When a channel is selected, user can hear sound of this channel through the platform; when selecting both channels, it means mixed sound.

Click “Save” to validate settings.

6.4.2 Audio Decoding

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



Picture 6-23 Audio decoding

➢ Audio Output Setting

- Output Type: Select audio output type, “speaker” is loudspeaker output and “lineout” is linear output.

➢ Audio Decoding Setting

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

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

Click “Save” to validate settings.

7. Event

7.1 Intelligent Function

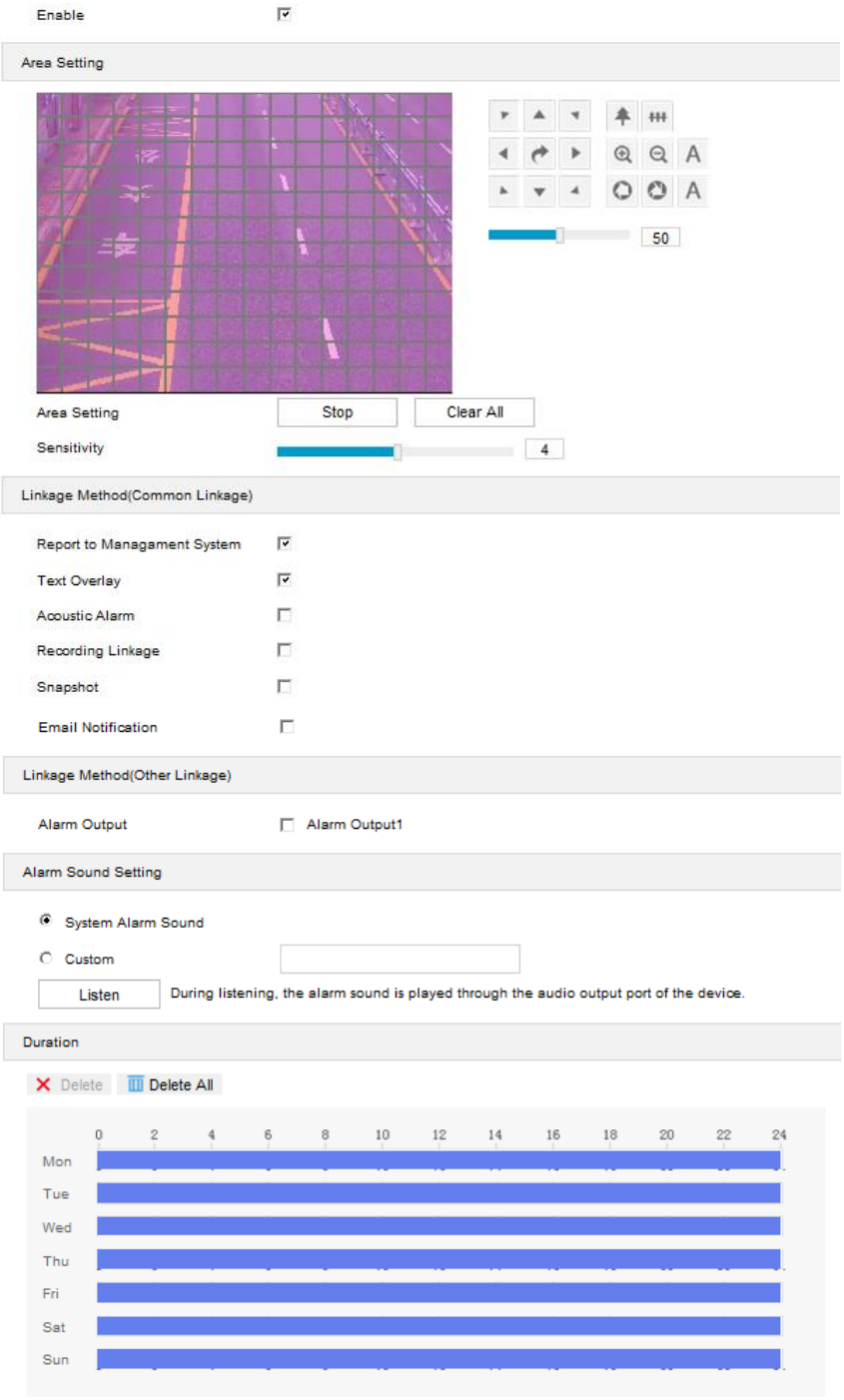
Go to **Settings > Event > Intelligent Function**, and configure the intelligent functions of the camera.

The intelligent functions of a camera include motion detection, video blocked, guard line and etc. In this chapter, we will introduce the configuration steps of each event one by one.

7.1.1 Motion Detection

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

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



Picture 7-1 Motion detection

2) Select “Enable”;

3) Set motion detection area, the default being full area detection. Click “Clear All” and then “Edit” and the image will be divided into 16 columns and 12 lines of small squares. Click a square, drag toward lower right and click “Stop”. Then the area is the detected area and it turns purple red. A camera can support max 4 motion detection areas at the same time. Draw an area toward upper left that contains the defined area, or click the defined squares one by one to clear setting, or click “Clear All” to clear setting;

4) Drag the slide bar to adjust the “Sensitivity” of motion detection. The higher the sensitivity is, the easier it will trigger an alarm;

5) Select linkage type(s), which is/are the alarm output method(s) when motion detection triggers an alarm;

6) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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

Picture 7-2 Arming durations

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

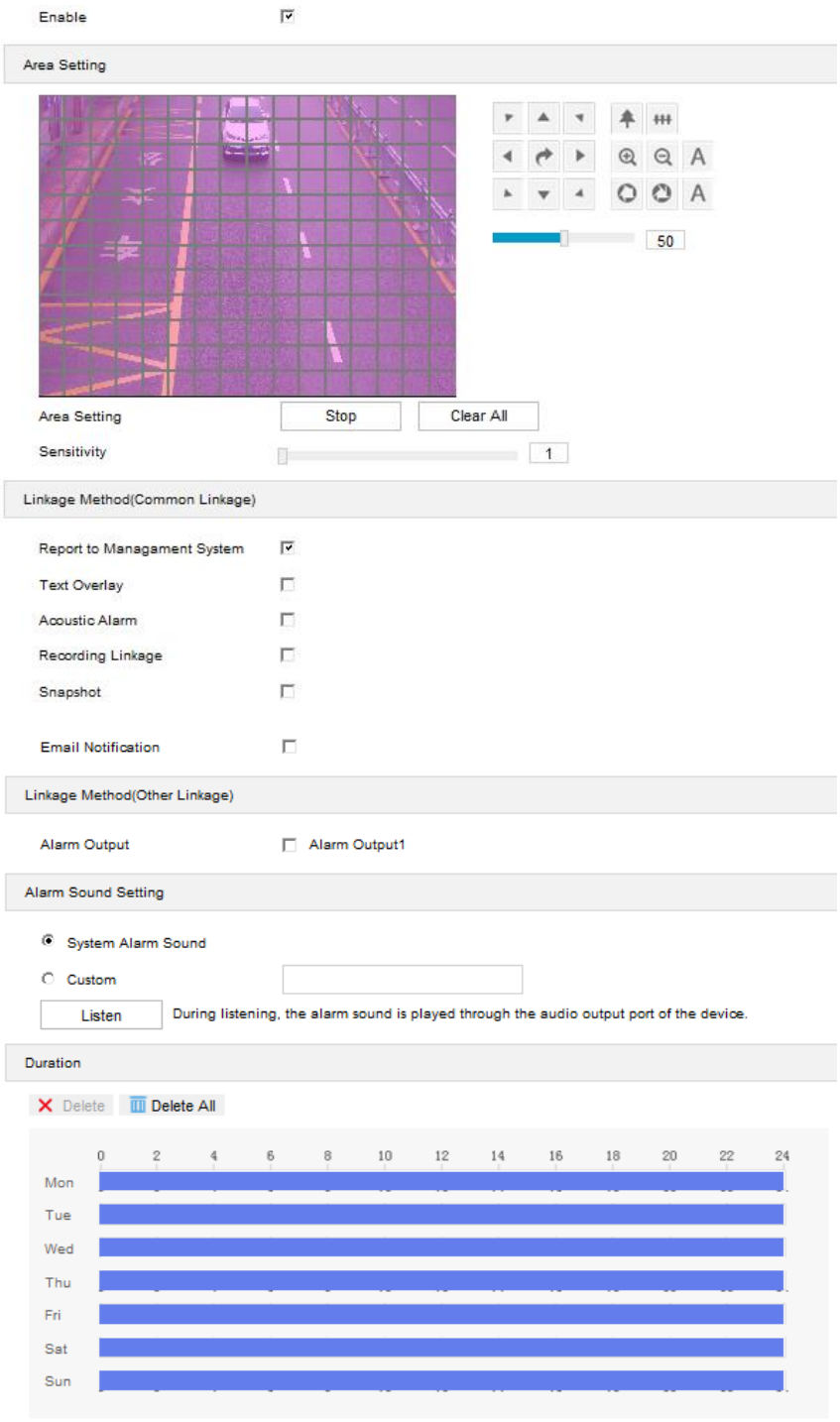
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

8) Click "Save" to validate settings.

7.1.2 Video Blocked

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

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



Picture 7-3 Video blocked

2) Select “Enable”;

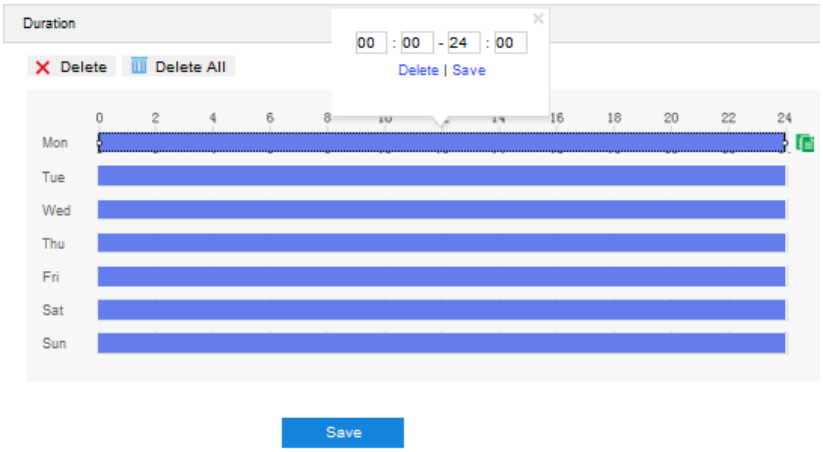
3) Set video blocked area, the default being full area detection. Click “Clear All” and then “Edit” and the image will be divided into 16 columns and 12 lines of small squares. Click a square, drag toward lower right and click “Stop”. Then the area is the detected area and it turns purple red. A camera can support max 1 video blocked area at the same time;

4) Drag the slide bar to adjust sensitivity; the higher the sensitivity is, the easier it will trigger an alarm;

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

6) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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



Picture 7-4 Arming durations

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

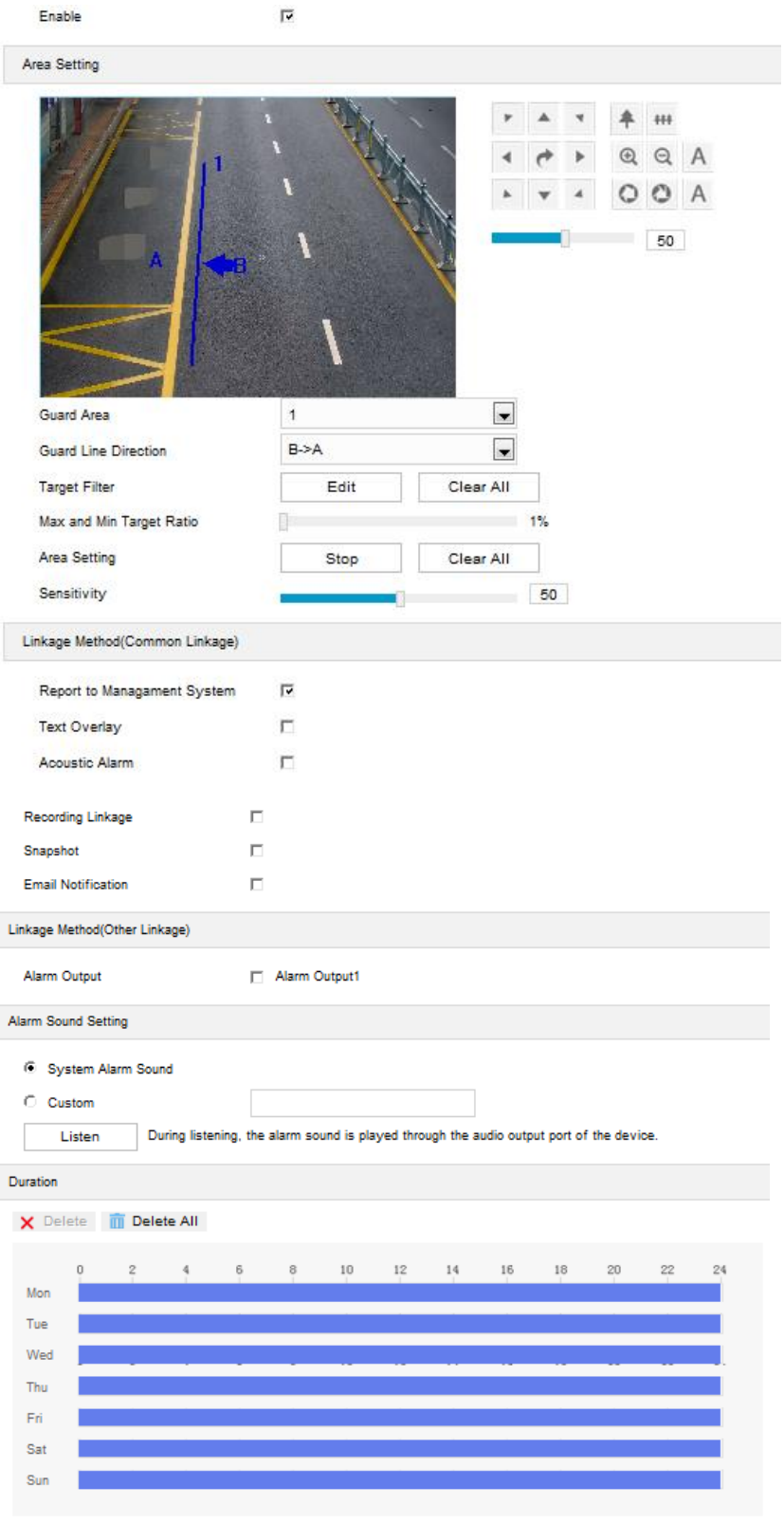
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

8) Click "Save" to validate settings.

7.1.3 *Guard Line

Guard line is to trigger an alarm once the camera detects any object entering the guard line in the set direction. Configuration steps are as follows:

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



Picture 7-5 Guard line

2) Select “**Enable**”;

3) Select a number from the dropdown list of Guard Area, which can be set one by one and takes effect after each time of saving. It supports max 4 guard lines;

4) Select a direction from the dropdown list of Guard Line Direction, options including "A->", "B->" and "A->&&B->"; "A->" means only when the object moves from A to B the system will trigger an alarm, “B->” meaning only when objects move from B to A the system will trigger an alarm, while “A->&&B->” meaning the system will trigger an alarm when object move from A to B and B to A;

5) 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);

6) 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;

7) Drag the slide bar of “Sensitivity” to set the guard line’s sensitivity to moving objects; the higher the sensitivity is, the easier it will trigger an alarm;

8) Select linkage type(s), which is/are the alarm output method(s) when guard line triggers an alarm;

9) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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

Picture 7-6 Arming durations

- Set duration: configure arming durations according to actual requirements.
  - Click the blue bar to pop up a window for editing the accurate start time and end time; click "Save" to validate setting.

- Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
- Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.

■ Copy duration: click the copy icon behind the timeline and copy the durations on the day to one or several other days.

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

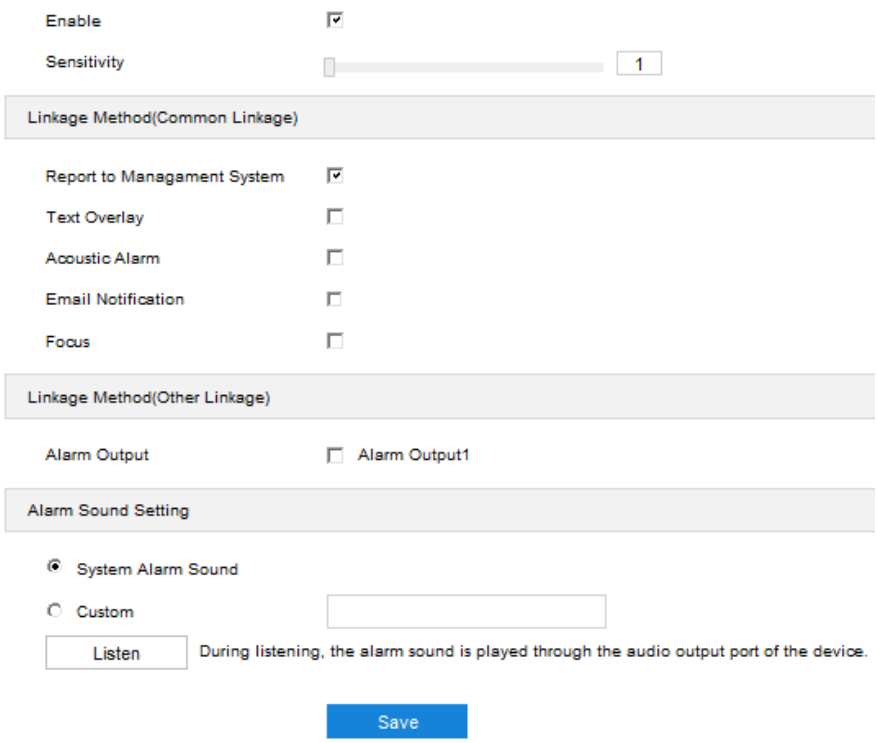
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

11) Click "Save" to validate settings.

7.1.4 *Defocus

Enable this function to detect if the image is clear and the camera will trigger alarm linkages according to the judgment. Configuration steps are as follows:

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



Picture 7-7 Defocus

2) Select “Enable”;

3) Drag the slide bar of “Sensitivity”. The larger the number is, the more sensitive the image is;

4) Select linkage type(s), which is/are the alarm output method(s) when guard line triggers an alarm;

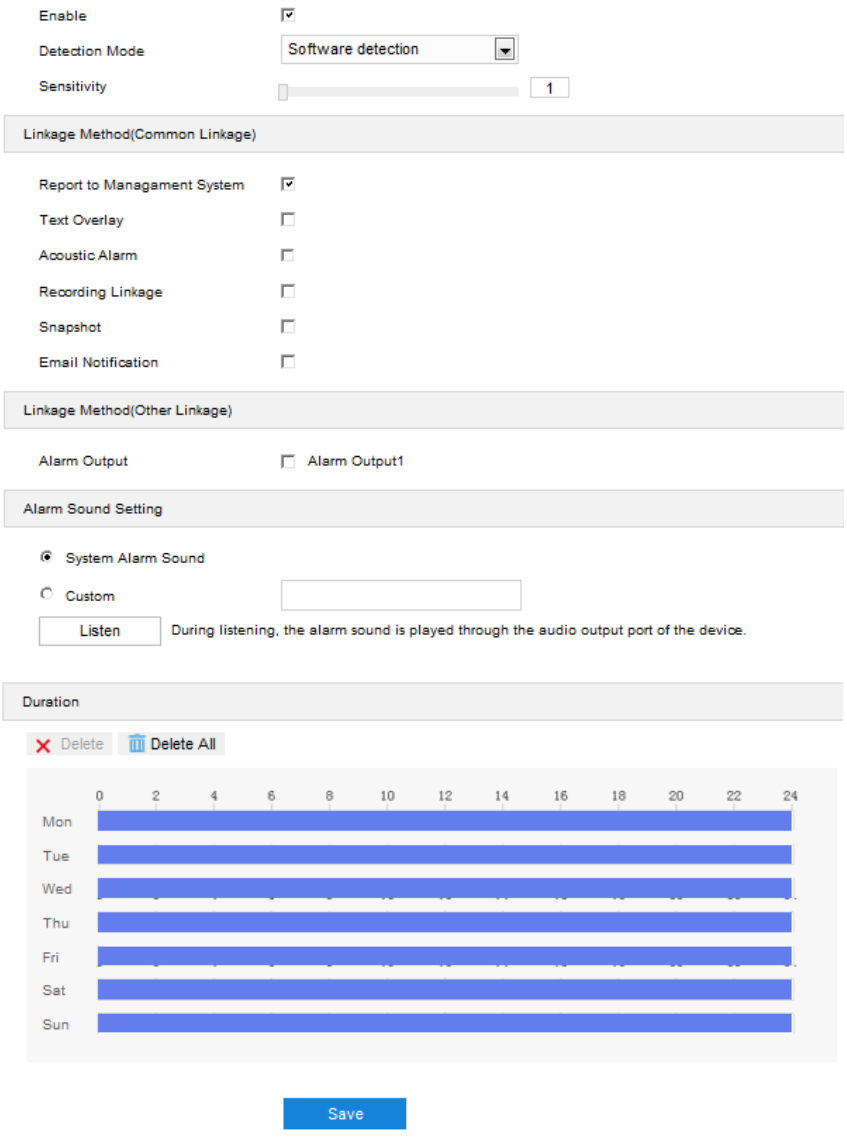
5) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

6) Click "Save" to validate settings.

7.1.5 *Scene Change

Enable this function to detect if the image scene is changed and the camera will trigger alarm linkages. Configuration steps are as follows:

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



Picture 7-8 Scene Change

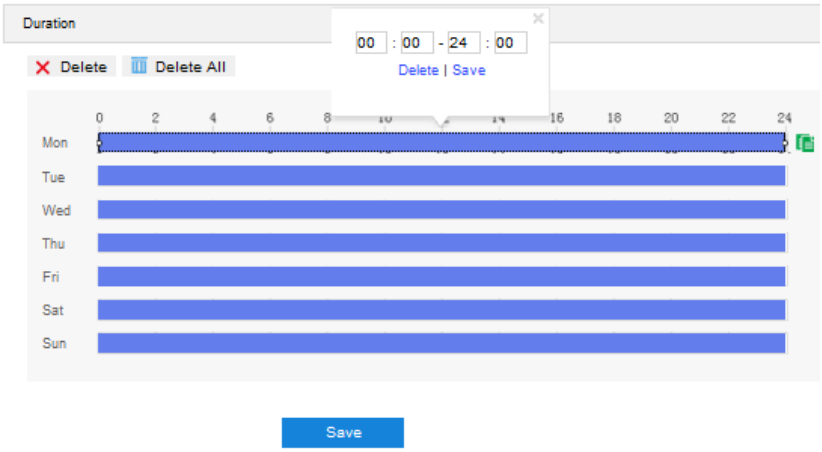
2) Select “Enable”;

3) Drag the slide bar of “Sensitivity” to adjust scene change sensitivity. The larger the number is, the more sensitive the scene change detection is;

4) Select linkage type(s), which is/are the alarm output method(s) when guard line triggers an alarm;

5) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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



Picture 7-9 Arming durations

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

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

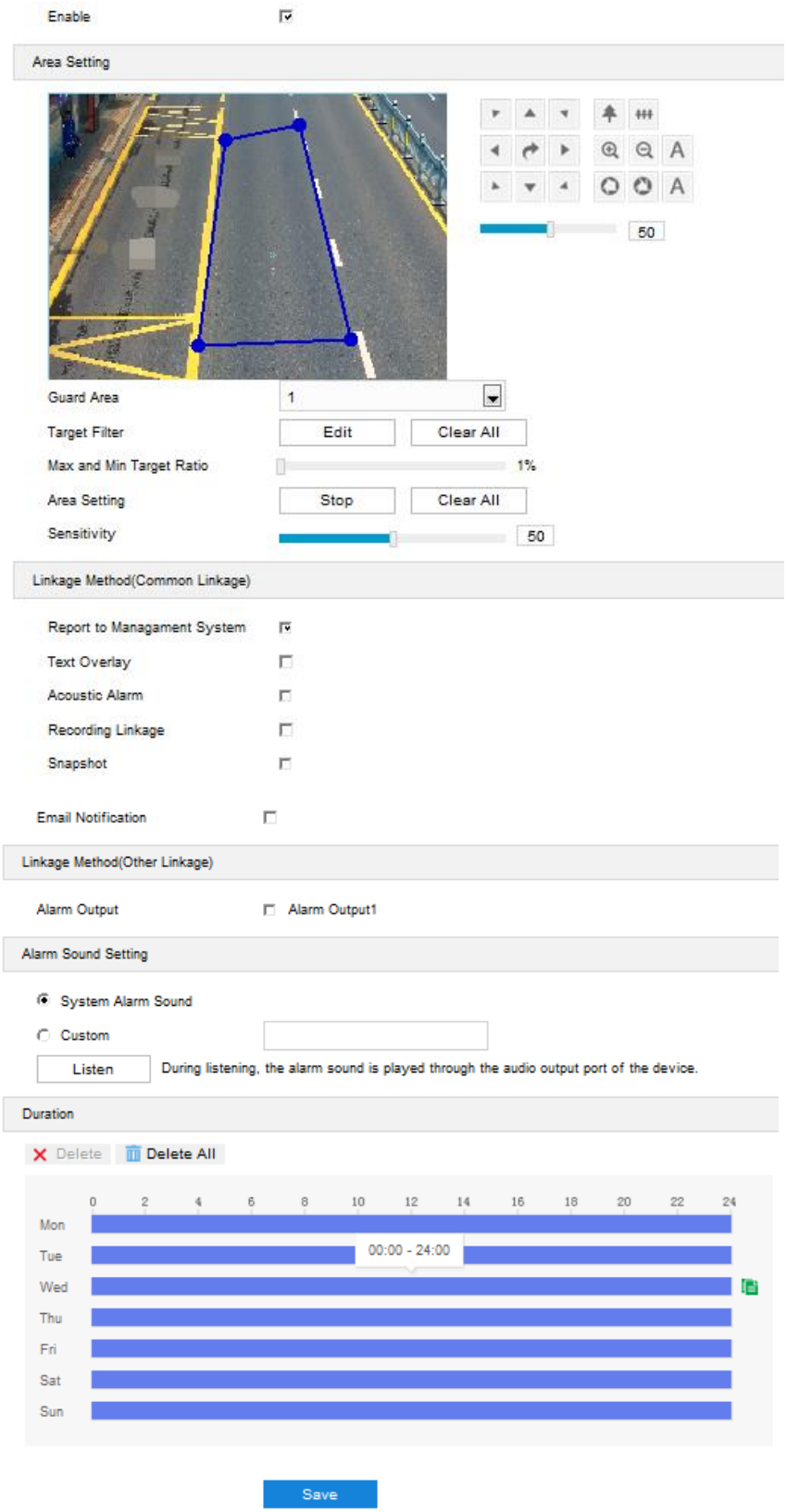
7) Click "Save" to validate settings.

7.1.6 *Entry Guard Area

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

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

Note: When configuring the entry detection of the intelligent area, it's unnecessary to select "Enable", and user just has to select the alarm linkage methods.



Picture 7-10 Entry guard area

2) Select "Enable";

3) Select a number from the dropdown list of guard area and user can set only one area at one time. After saving it, user can set another and max 4 guard areas can be set;

4) Target Filter: to set target area. Click “Edit” and drag the mouse in the scene to draw a rectangle. Click “Stop” after finishing and drag the slide bar of “Max and Min Target Ratio” (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);

5) Area Setting: to set guard area. Click “Edit” and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or ending point to close the area. Click “Stop” to finish editing;

6) Drag the slide bar of “Sensitivity”; the higher the sensitivity is, the easier it will trigger an alarm;

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

8) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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

Picture 7-11 Arming durations

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

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

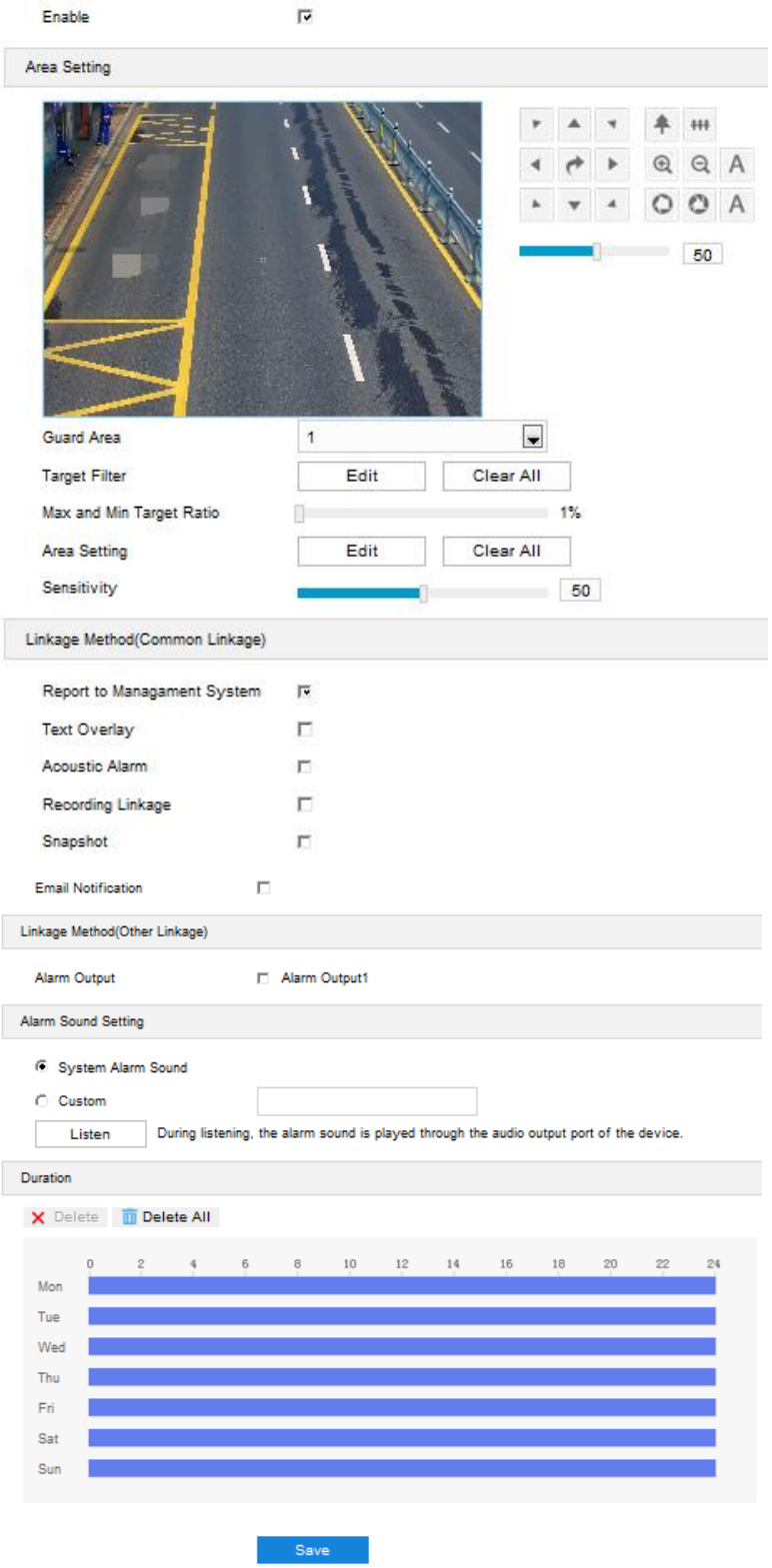
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.7 *Exit Guard Area

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

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



Picture 7-12 Exit guard area

2) Select "Enable";

3) Select a number from the dropdown list of guard area and user can set only one area at one time. After saving it, user can set another and max 4 guard areas can be set;

4) Target Filter: to set target area. Click “Edit” and drag the mouse in the scene to draw a rectangle. Click “Stop” after finishing and drag the slide bar of “Max and Min Target

Ratio" (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);

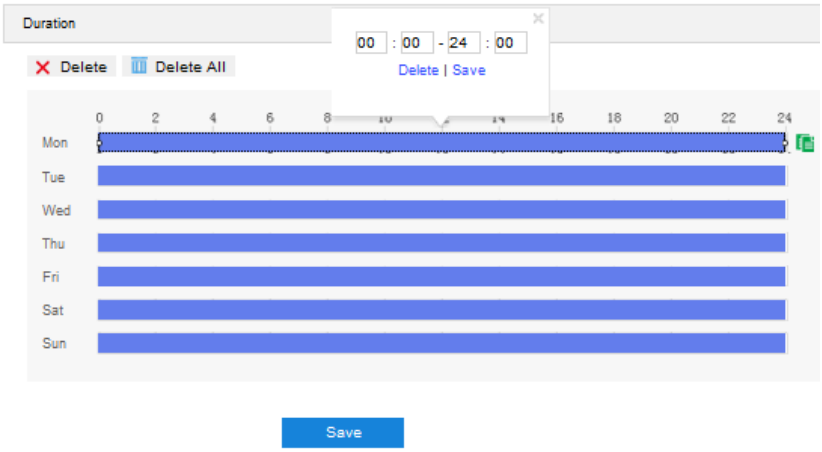
5) Area Setting: to set guard area. Click "Edit" and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or ending point to close the area. Click "Stop" to finish editing;

6) Drag the slide bar of "Sensitivity"; the higher the sensitivity is, the easier it will trigger an alarm;

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

8) Configure alarm sound. Select "System Alarm Sound" or "Custom" (enter alarm text in the text box), and click "Listen" to test the alarm sound;

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



Picture 7-13 Arming durations

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

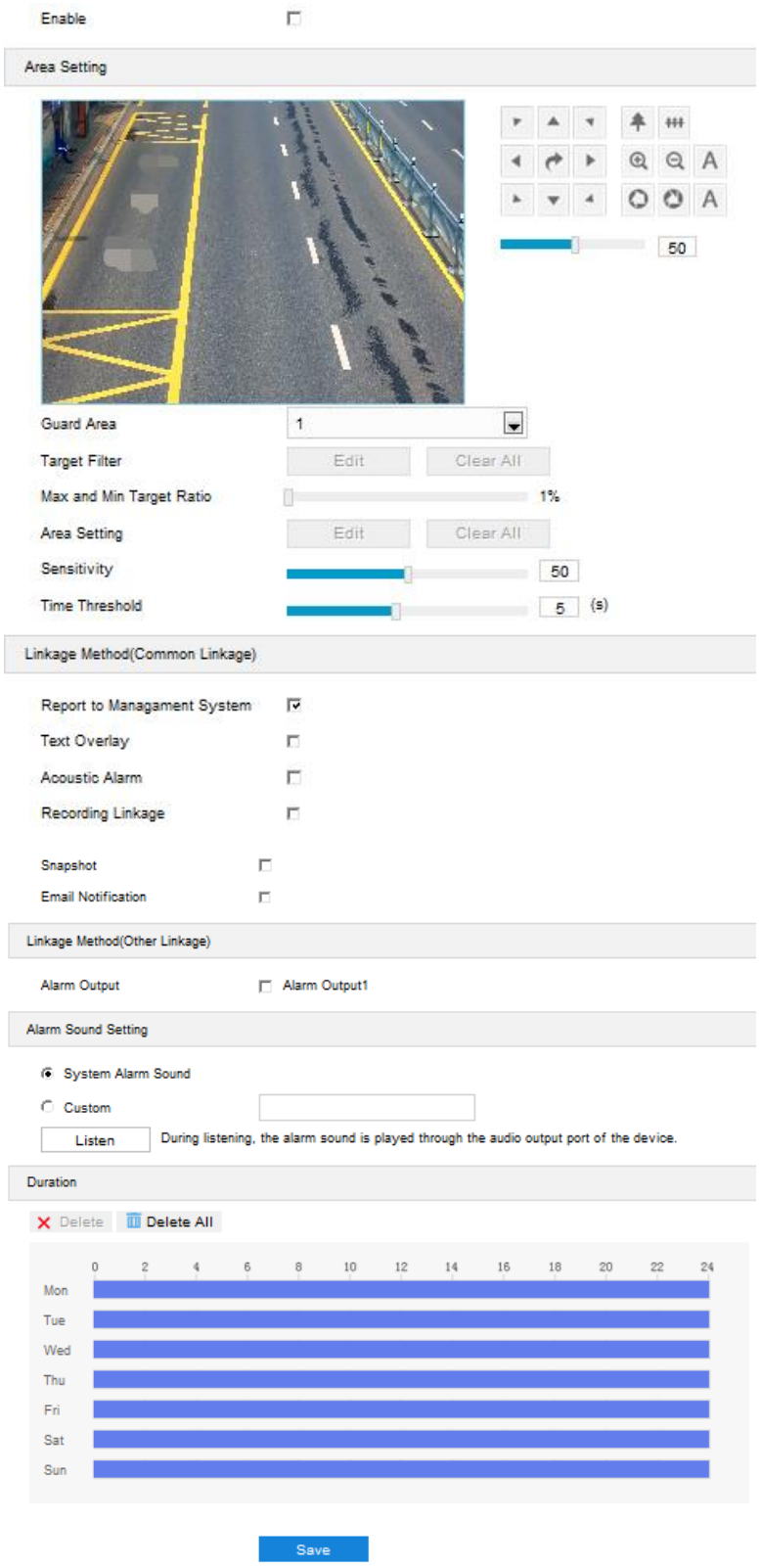
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.8 *Enter Guard Area

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

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



Picture 7-14 Enter guard area

2) Select “Enable”;

3) Select a number from the dropdown list of guard area and user can set only one area at one time. After saving it, user can set another and max 4 areas can be set;

4) Target Filter: to set target area. Click “Edit” and drag the mouse in the scene to draw a rectangle. Click “Stop” after finishing and drag the slide bar of “Max and Min Target

Ratio" (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);

5) Area Setting: to set guard area. Click "Edit" and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or end point to close the area. Click "Stop" to finish editing;

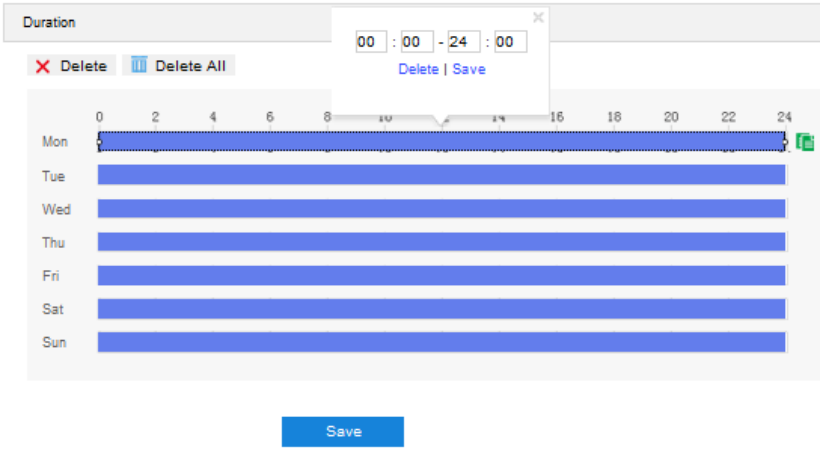
6) Drag the slide bar of "Sensitivity"; the higher the sensitivity is, the easier it will trigger an alarm;

7) Drag the slide bar of "Time Threshold", i.e. the maximum allowed time for the object to stay in the area. For example, if it is set 5 s, when there is an object entering the guard area and stays for 5 s, it will trigger an alarm;

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

9) Configure alarm sound. Select "System Alarm Sound" or "Custom" (enter alarm text in the text box), and click "Listen" to test the alarm sound;

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



Picture 7-15 Arming durations

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

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

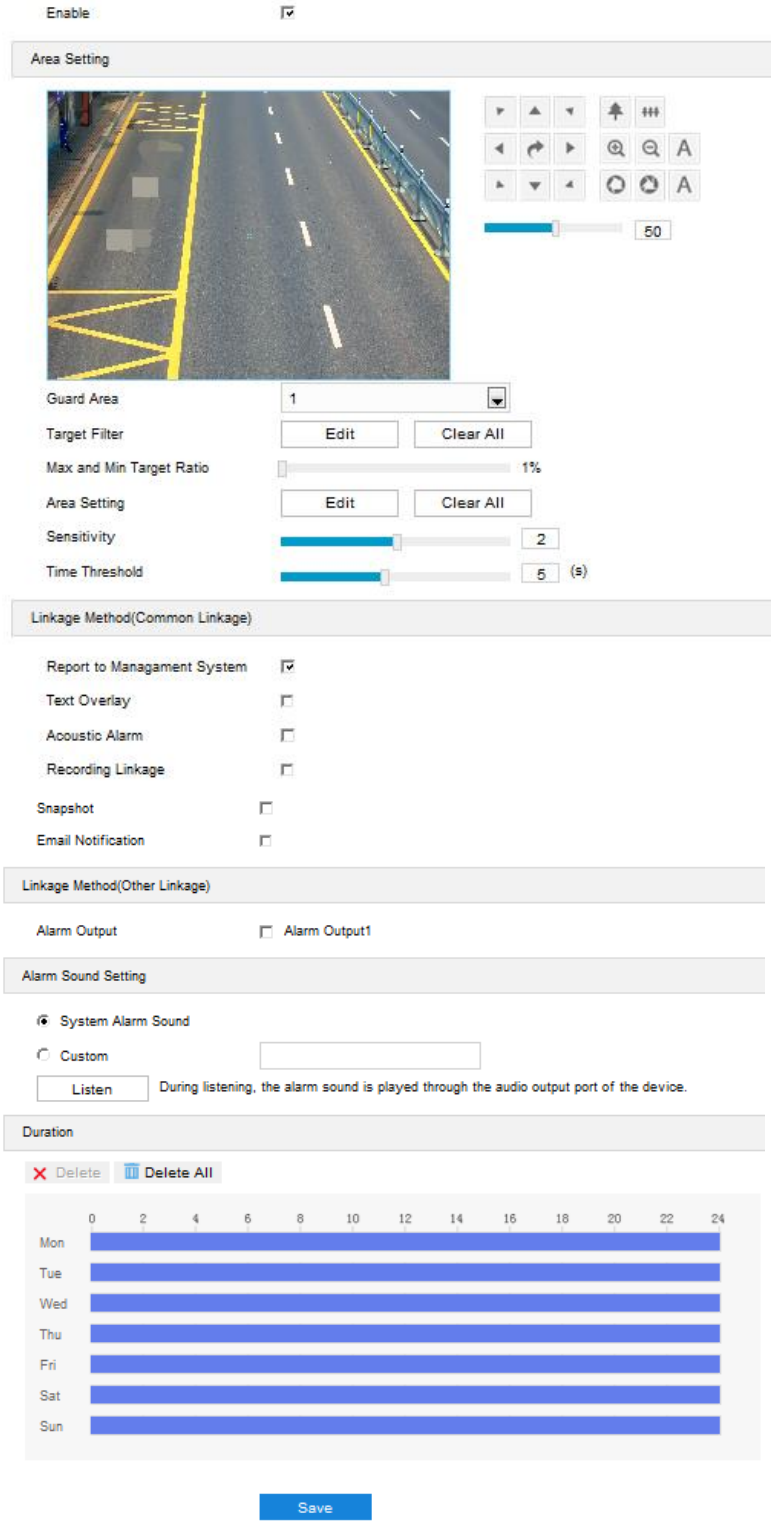
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.9 *Object Left

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

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



Picture 7-16 Object Left

2) Select “Enable”;

3) Select a number from the dropdown list of guard area and user can set only one area at one time. After saving it, user can set another and max 4 areas can be set;

4) Target Filter: to set target area. Click “Edit” and drag the mouse in the scene to draw a rectangle. Click “Stop” after finishing and drag the slide bar of “Max and Min Target Ratio” (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);

5) Area Setting: to set guard area. Click “Edit” and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or end point to close the area. Click “Stop” to finish editing;

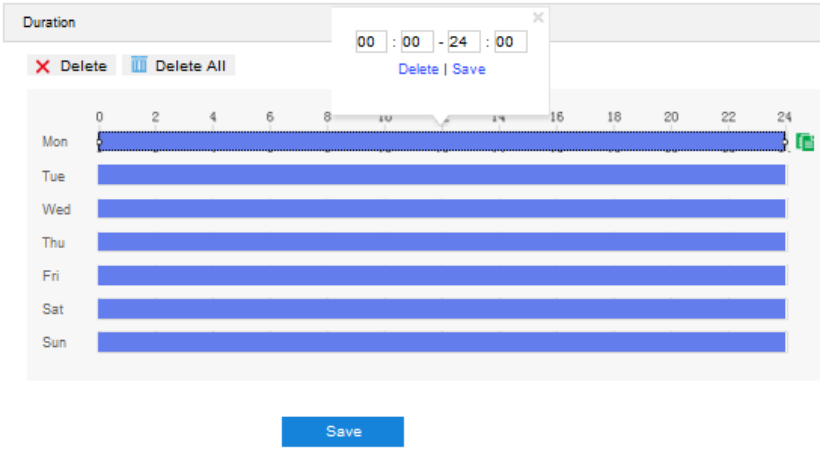
6) Drag the slide bar of “Sensitivity”; the higher the sensitivity is, the easier it will trigger an alarm;

7) Drag the slide bar of "Time Threshold", i.e. the maximum allowed time for the object to stay in the area. For example, if it is set 5 s, when there is an object entering the guard area and stays for 5 s, it will trigger an alarm;

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

9) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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



Picture 7-17 Arming durations

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

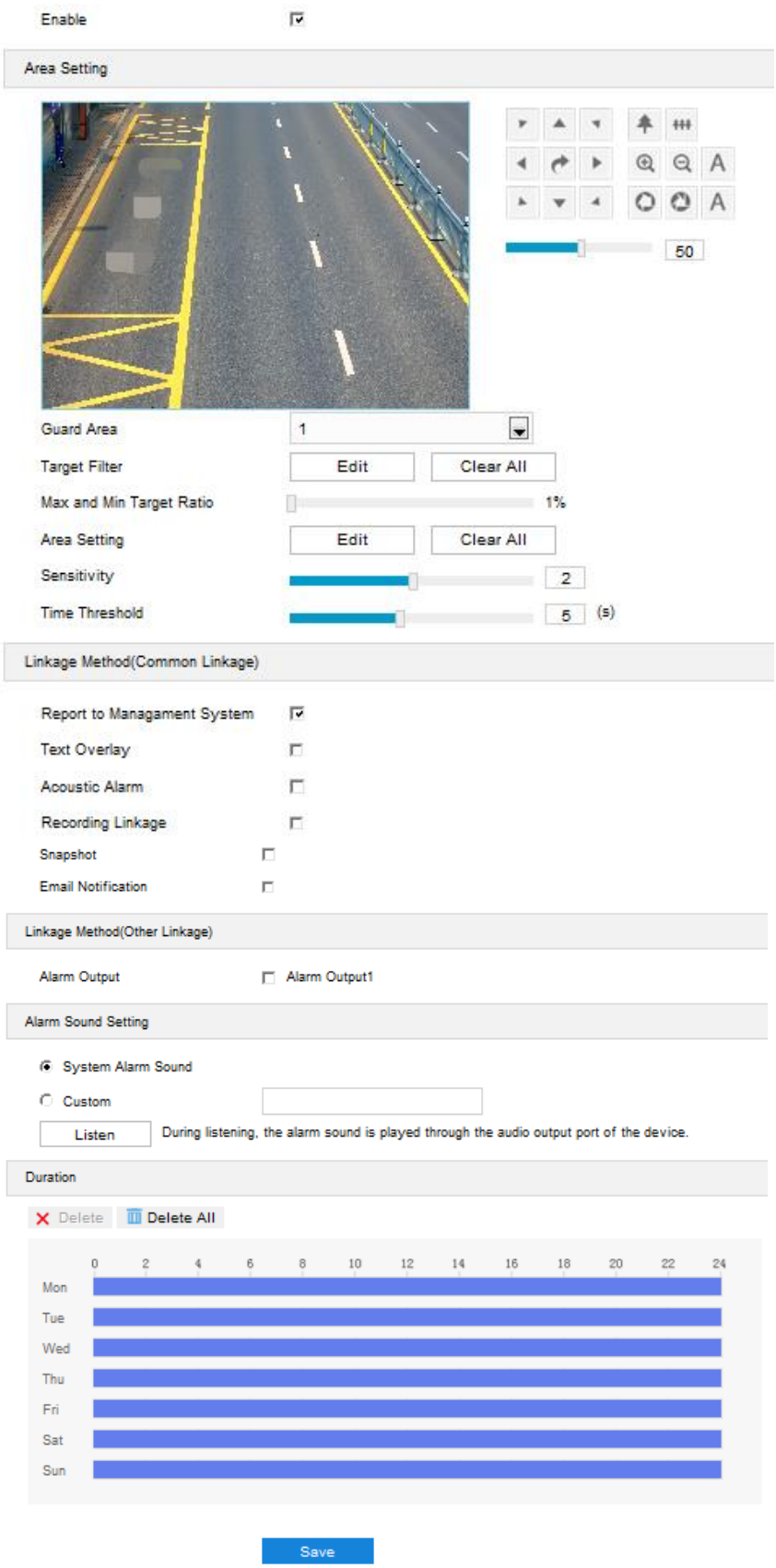
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

11) Click "Save" to validate settings.

7.1.10 *Object Removal

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

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



Picture 7-18 Object removal

2) Select “Enable”;

3) Select a number from the dropdown list of guard area and user can set only one area at one time. After saving it, user can set another and max 4 areas can be set;

4) Target Filter: to set target area. Click “Edit” and drag the mouse in the scene to draw a rectangle. Click “Stop” after finishing and drag the slide bar of “Max and Min Target Ratio” (1% by default). Moving objects over max or below min will not trigger an alarm when they enter the guard area(s);

5) Area Setting: to set guard area. Click “Edit” and click mouse to draw a closed area made up of 3 to 6 points in the scene. Right click or click the starting or end point to close the area. Click “Stop” to finish editing;

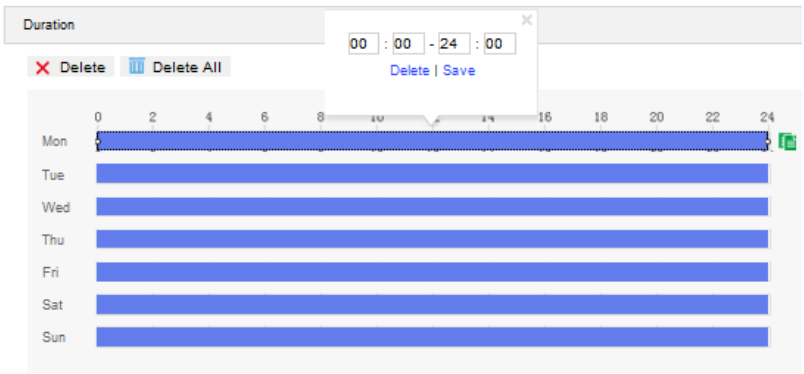
6) Drag the slide bar of “Sensitivity”; the higher the sensitivity is, the easier it will trigger an alarm

7) Drag the slide bar of "Time Threshold", i.e. the maximum allowed time for the object to disappear from the area. For example, if it is set 5 s, when the object disappears from the guard area for 5 s, it will trigger an alarm;

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

9) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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



Picture 7-19 Arming durations

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

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

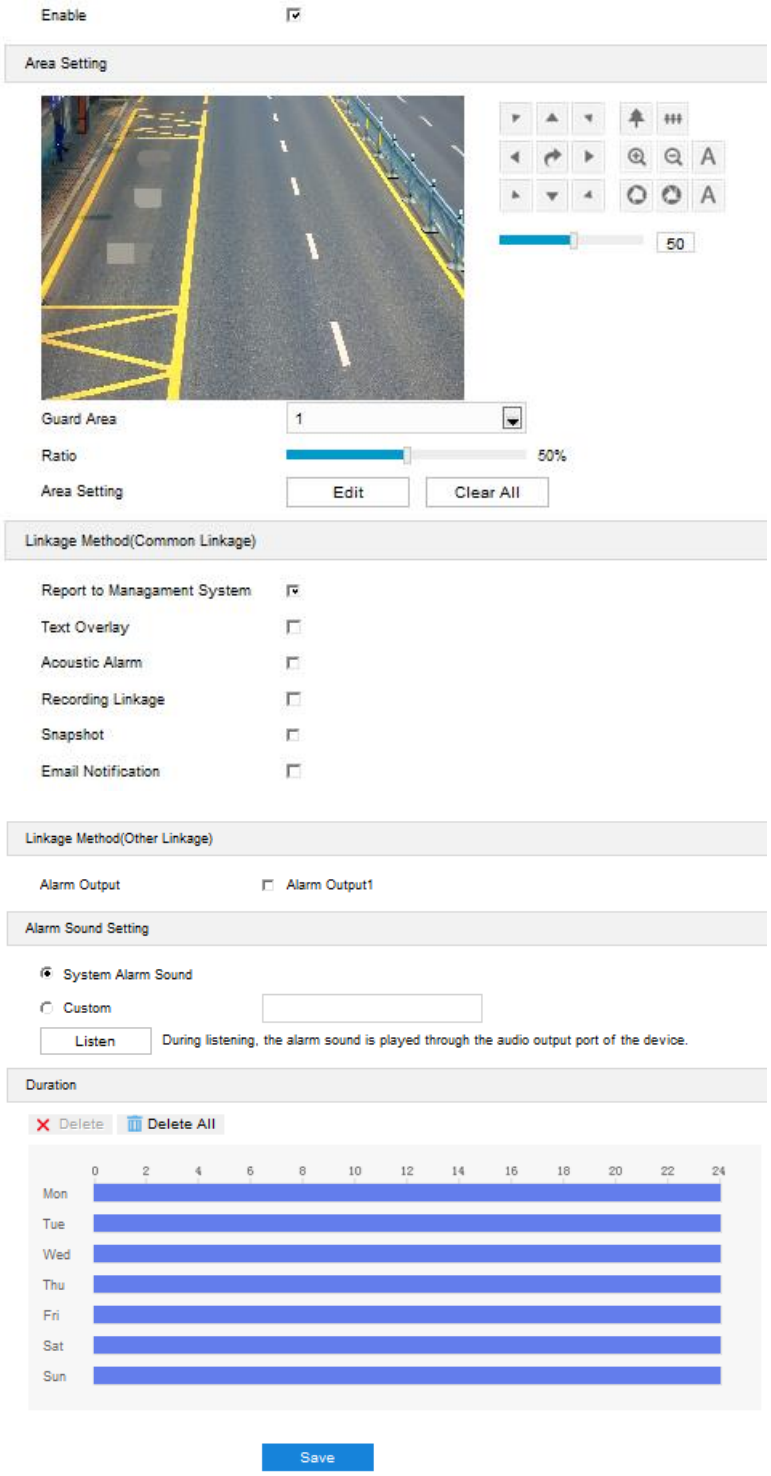
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

11) Click "Save" to validate settings.

7.1.11 *Gathering

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

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



Picture 7-20 Gathering

2) Select “Enable”;

3) Select a number from the dropdown list of Guard Area and user can set only one area at one time. After saving it, user can set another and max 4 areas can be set;

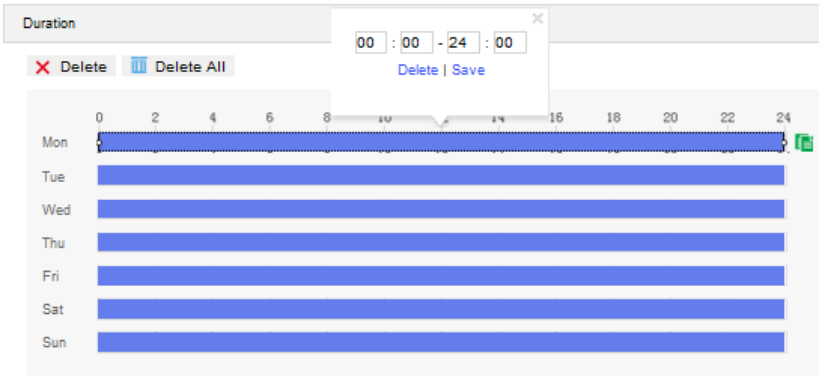
4) Drag the slide bar of "Ratio" to set the coverage of people in the set area;

5) 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;

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

7) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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



Picture 7-21 Arming durations

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

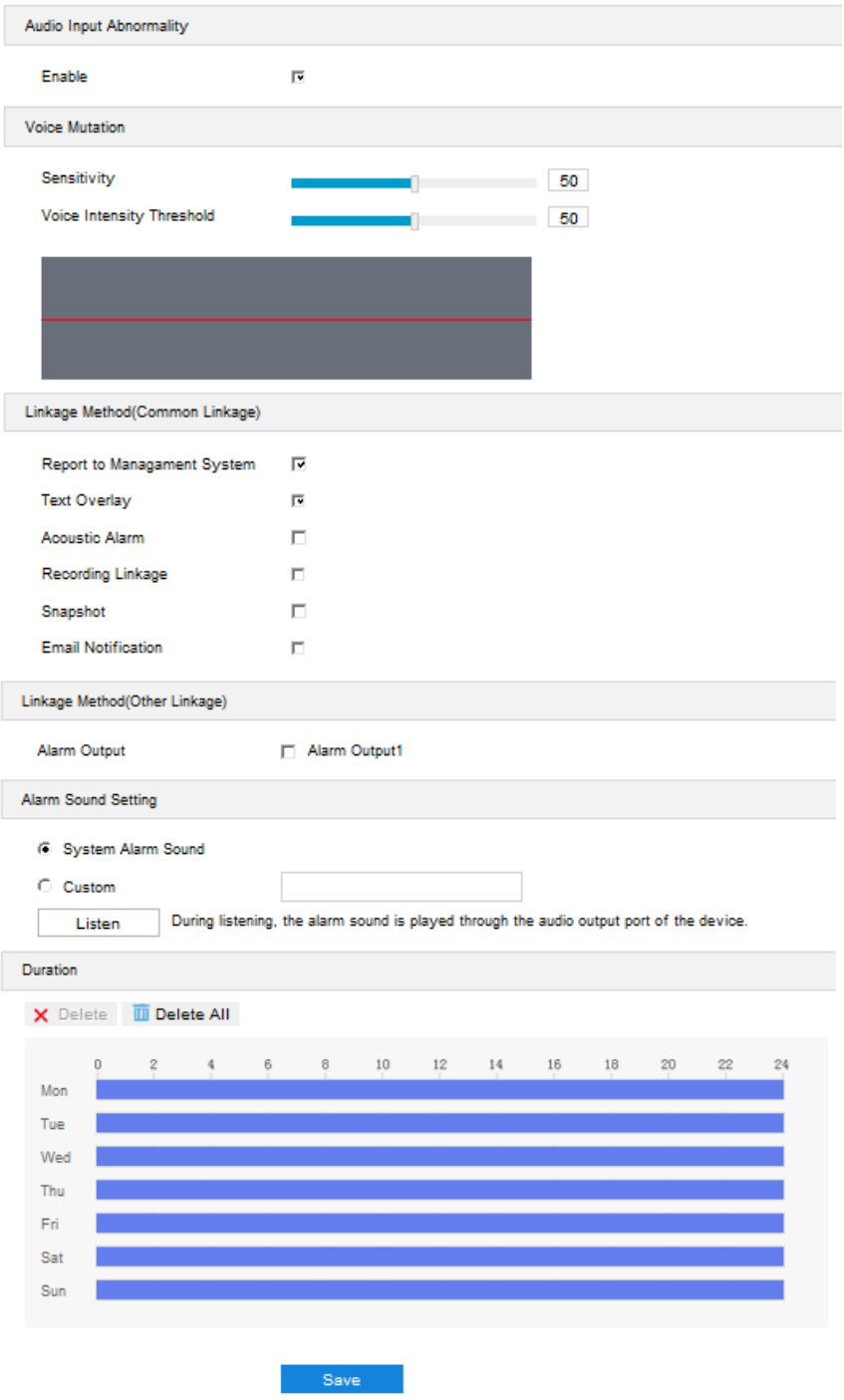
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

9) Click "Save" to validate settings.

7.1.12 *Audio Surge

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

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



Picture 7-22 Audio surge

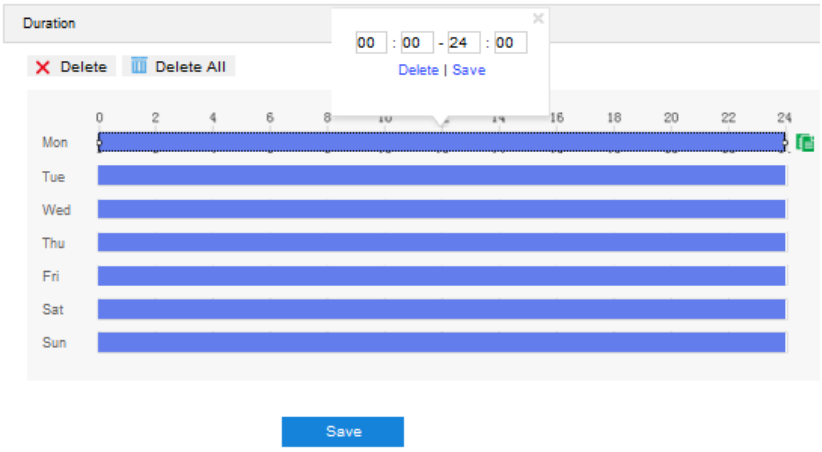
2) Select “Enable”;

3) Drag the slide bar of “Voice Intensity Threshold” to adjust the detection sensitivity to voice mutation. The higher the Voice Intensity Threshold is, the more sensitive it is to Voice Mutation and the more easier it is to trigger an alarm;

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

5) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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



Picture 7-23 Arming durations

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

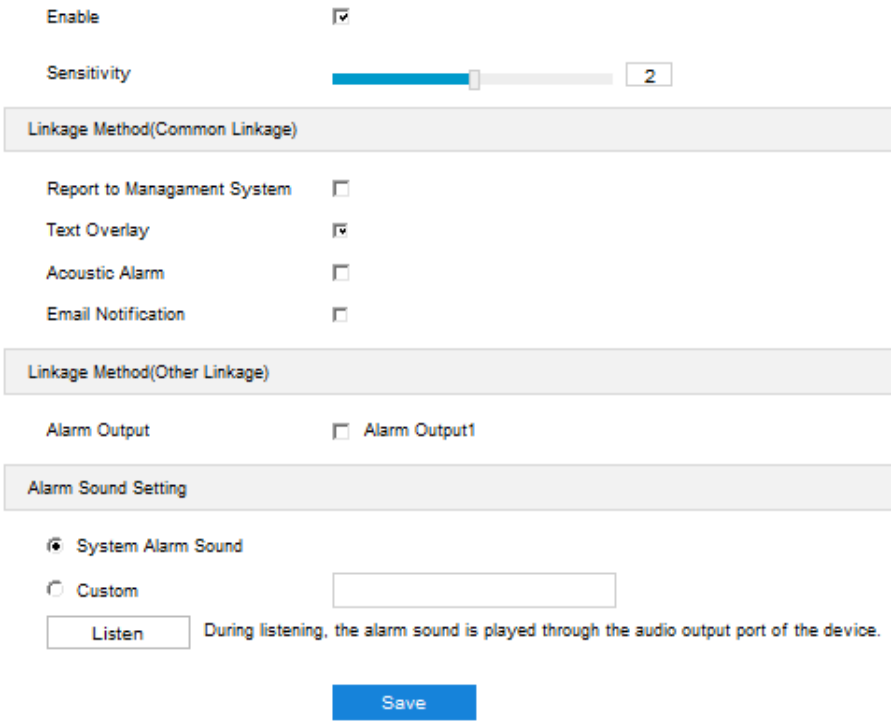
Note: Select any duration with a mouse, and drag the blue bar on the timeline as a whole without changing the length of recording duration.

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

7.1.13 *Brightness Detection

Brightness detection is to detect the brightness of the surveillance scene and the camera will judge by the result if it's necessary to trigger alarm linkage. Configuration steps are as follows:

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



Picture 7-24 Brightness detection

2) Select “Enable”;

3) Drag the slide bar of sensitivity to adjust the brightness detection. The lower the value is, the easier it will trigger an alarm;

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

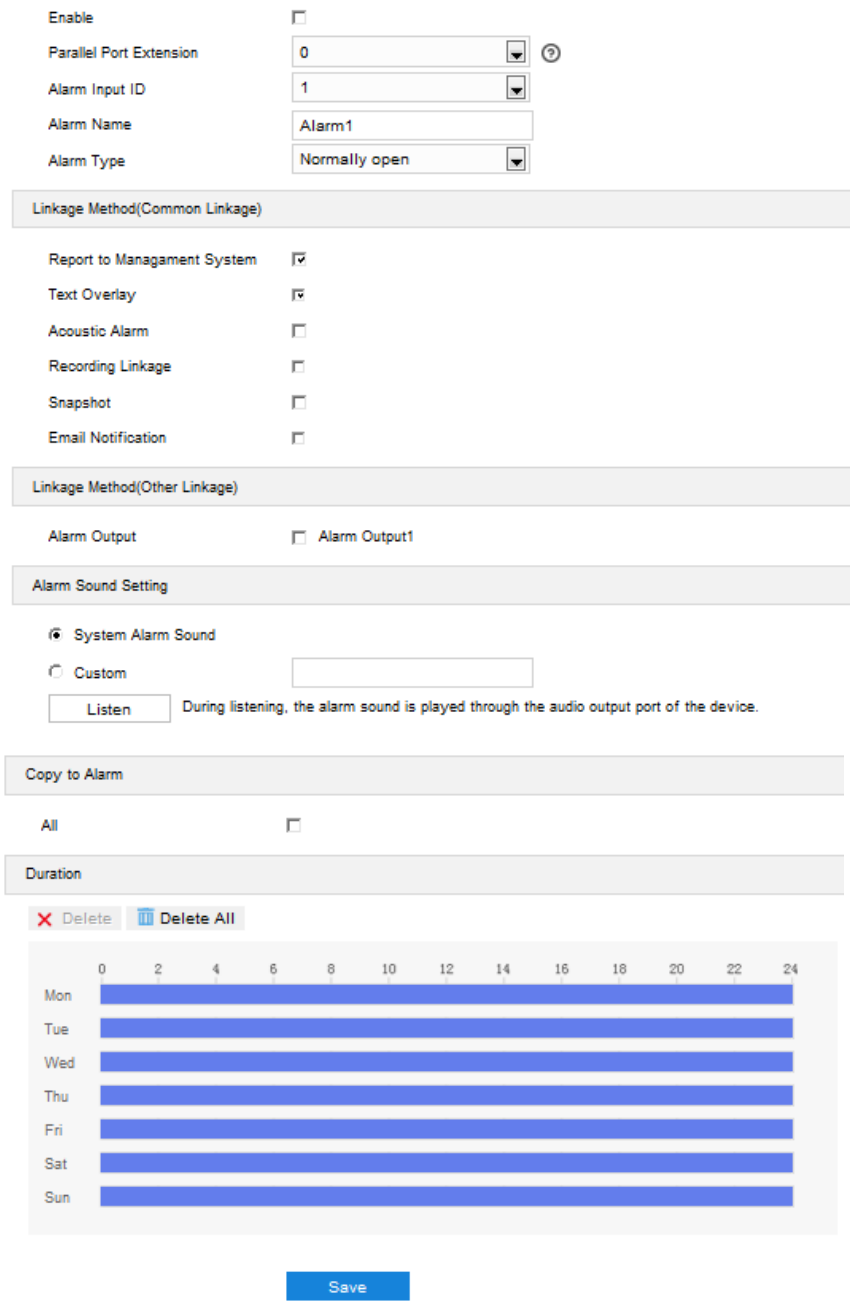
5) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

6) Click "Save" to validate settings.

7.2 Alarm Input

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

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



Picture 7-25 Alarm Input

2) Select “Enable”;

3) Select parallel port extension from the dropdown list. The default is 0 which means not connect to alarm extension device;

4) Select a number from the dropdown list of “Alarm Input ID”;

Note: Alarm input ID corresponds to the tags on the buttcock line. Please refer to the *Quick Start Guide* for details.

5) Enter alarm name, i.e. the name of alarm input device such as “front door smoke-detector”;

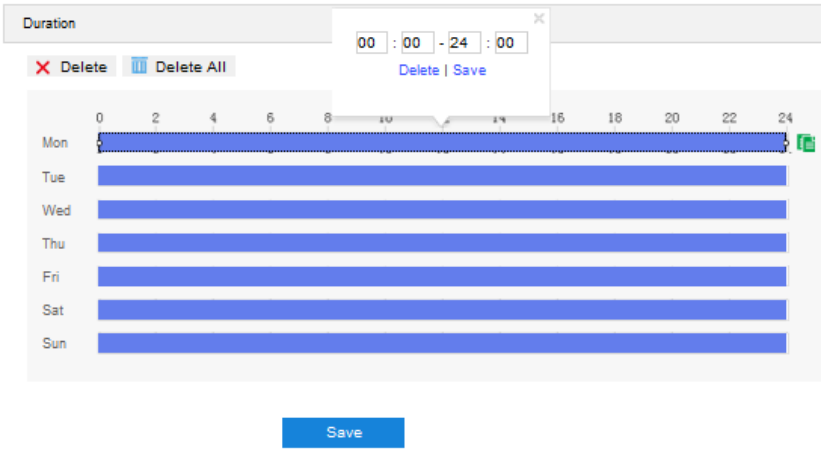
6) Select alarm type from the dropdown list. If the alarm input device is always disabled, which means the circuit is usually open, user must select “Normally closed”. If the alarm input device is always enabled, which means the circuit is usually loop, user must select “Normally open”;

7) Select linkage method to trigger actions when an alarm is triggered;

Note: When configuring parallel port alarm, you must select “Alarm Output 1” under “Linkage Method (Other Linkage)”.

8) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

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



Picture 7-26 Arming durations

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

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

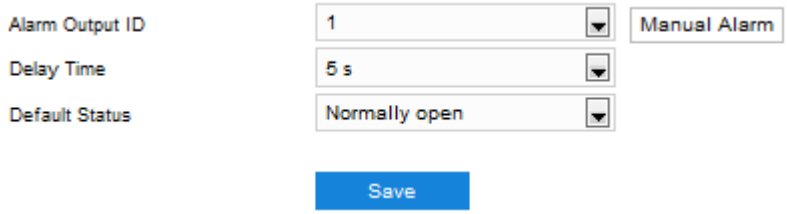
10) If user sets several alarm input ports, select “All” under “Copy to Alarm” to copy all configurations of current alarm input to other alarm input ports;

11) Click “Save” to validate setting.

7.3 Alarm Output

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

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



Picture 7-27 Alarm output

2) The default alarm output ID is 1. Click “Manual Alarm” to trigger alarm manually and click again to cancel;

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

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

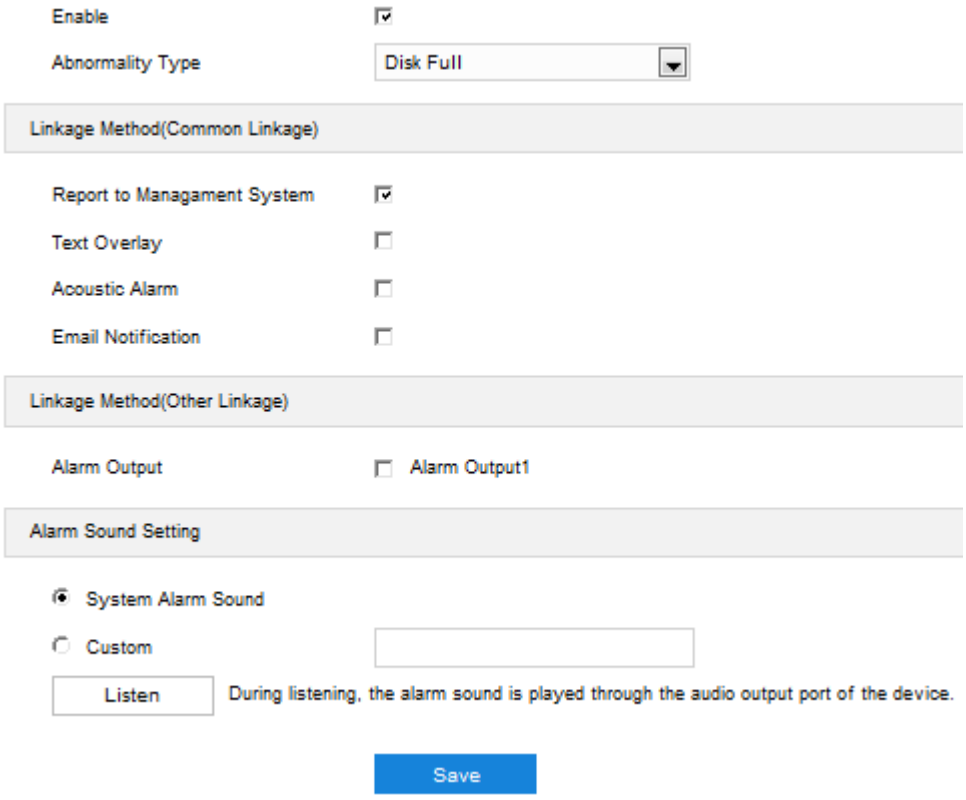
4) Select the default status from the dropdown list according to actual request, options including “Normally open” and “Normally closed”;

5) Click “Save” to validate setting.

7.4 Abnormality Linkage

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

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



Picture 7-28 Abnormality Linkage

2) Select "Enable";

3) Select an option from the dropdown list of abnormality type;

Note:

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

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

5) Configure alarm sound. Select “System Alarm Sound” or “Custom” (enter alarm text in the text box), and click “Listen” to test the alarm sound;

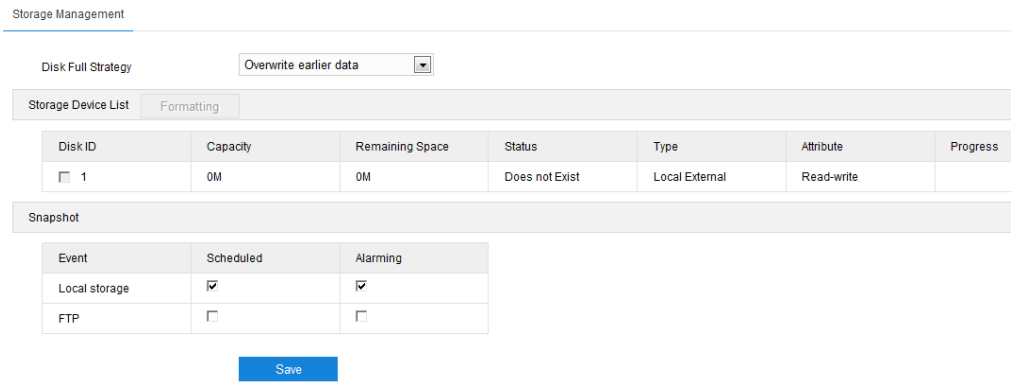
6) Click "Save" to validate settings.

8. Storage

8.1 Storage Management

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

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



Picture 8-1 Storage Management

- Disk Full Strategy: Configure the video recording strategy when there is insufficient storage space.
  - Overwrite earlier data: when there is insufficient storage space, overwrite the oldest videos;
  - Stop: when there is insufficient storage space, stop video recording automatically.

  Go to **Settings > Event > Abnormality Linkage** and select "Disk Full" as Abnormality Type to remind user that local video recording has stopped.
- Storage Device List: Display the status, capacity, progress and other information of all storage devices.
  - Disk ID: display the serial number of the storage device.
  - Capacity: display the storage space of the storage device.
  - Remaining Space: display the remaining space of the storage device.
  - Status: show the status of storage devices such as "Normal" (with a storage card which can read and write normally), "Does not Exist" (without a storage card), "Not Formatted" (need to be formatted when first inserted) and etc.
  - Type: show the installation method of the storage device.
  - Attribute: display the read and write attributes of the storage device, Read-only, Write-only or Read-write.

- Progress: show the percentage of the formatting progress of the storage card. Select the disk and click "**Formatting**" to format the selected disk.

➢ Snapshot: Configure the save path for the snapshots. According to actual requirements, select "Local storage" (TF card in the camera) or "FTP" (server) to save the scheduled snapshots and alarm snapshots.

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

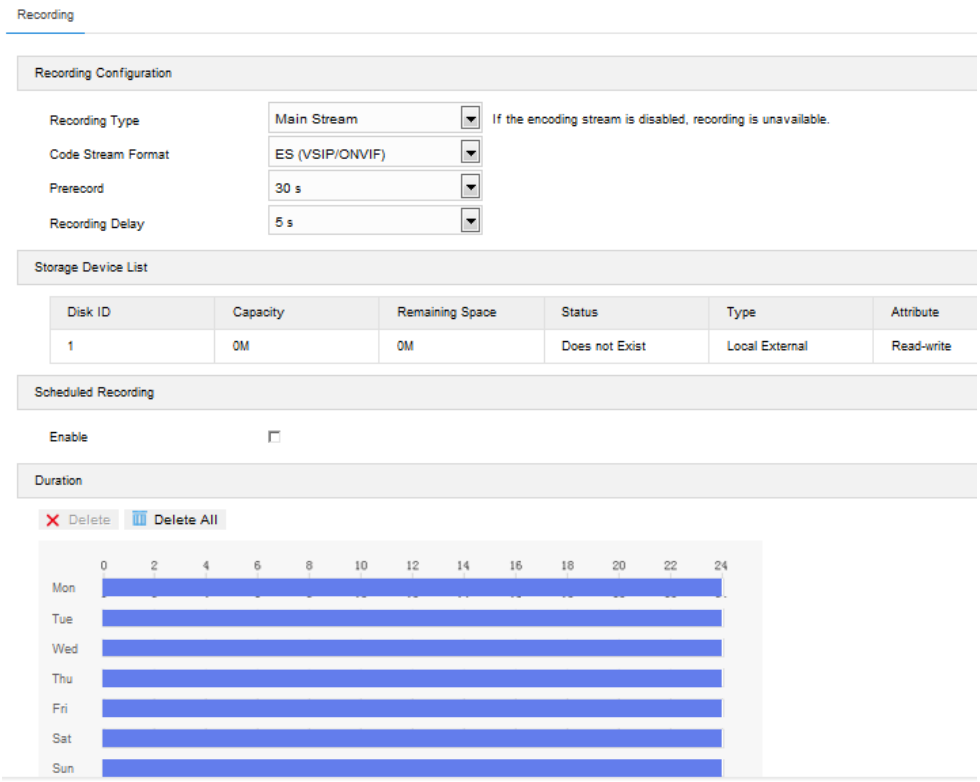
8.2 Recording

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

1) Go to **Settings > Storage > Storage Management** to configure disk full strategy and format the storage card recognized by the camera. If formatting is successful, the Status will turn “Normal” which means the storage card can be used normally;

2) Go to **Settings > Storage > Recording** to configure video recording;

- Recording Type: Select the stream to be recorded. If none is selected, it will not be able to record videos.
- Code Stream Format: Select a video packaging format according to the type of access protocol.
- Prerecord: Select prerecord duration, i.e. the prerecord duration before recording starts. It is certain to be 30s.
- Recording Delay: Select recording delay time, i.e. the prolonged recording duration after the configured duration.



Picture 8-2 Scheduled recording

3) Select "Enable" to enable Scheduled Recording;

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

Picture 8-3 Arming durations

- Set duration: configure arming durations according to actual requirements.
  - Click the blue bar to pop up a window for editing the accurate start time and end time; click "**Save**" to validate setting.

- Click any duration and there will be small white squares on the 2 ends of it. Put the mouse on any whit square, left-click and drag the edit the start time and end time.
- Select the timeline of any day and delete the default blue bar. Left click on the mouse and drag on the timeline from left to right to form a blue bar, above which it shows the start time and end time.

- Copy duration: click the copy icon behind the timeline and copy the durations on the day to one or several other days.
- Delete duration: click "**Delete All**" above the timeline to delete all the durations. Select any duration and click "**Delete**" on the popup window or above the timeline to delete the duration.

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

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

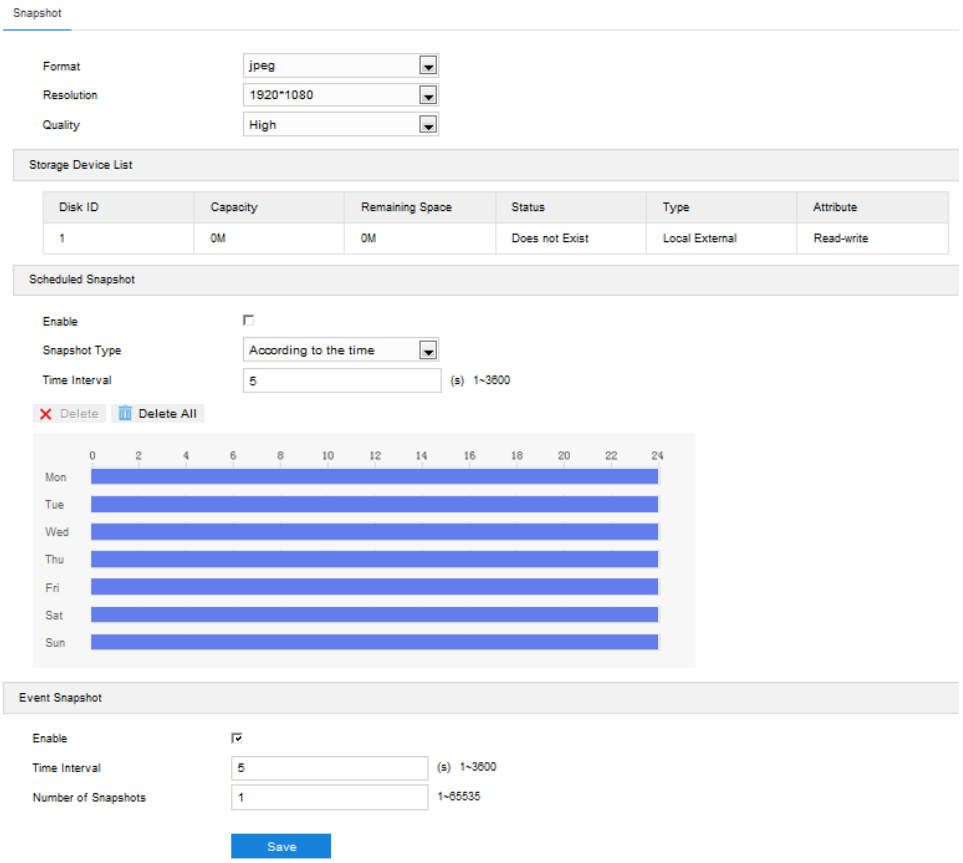
8.3 Snapshot

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

1) Go to **Settings > Storage > Storage Management** to configure disk full strategy and format the storage card recognized by the camera. If formatting is successful, the Status will turn “Normal” which means the storage card can be used normally;

2) Go to **Settings > Storage > Snapshot** to configure;

- Format: only support .jpeg format.
- Resolution: same as that of current main stream.
- Quality: the quality of captured image.



Picture 8-4 Scheduled snapshot

3) Configure scheduled snapshot:

a) Select “Enable” enable scheduled snapshot;

b) Snapshot Type: select “According to the time” or “According to the number”;

c) Time Interval: select the interval between snapshots;

d) Configure durations for scheduled recording. The default setting is 24 hours in bright blue bar, or you can customize the durations;

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

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

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

4) Configure event snapshot:

   a) Select “Enable” to enable event snapshot;

   b) Configure time interval;

   c) Configure the number of snapshots captured at each event.

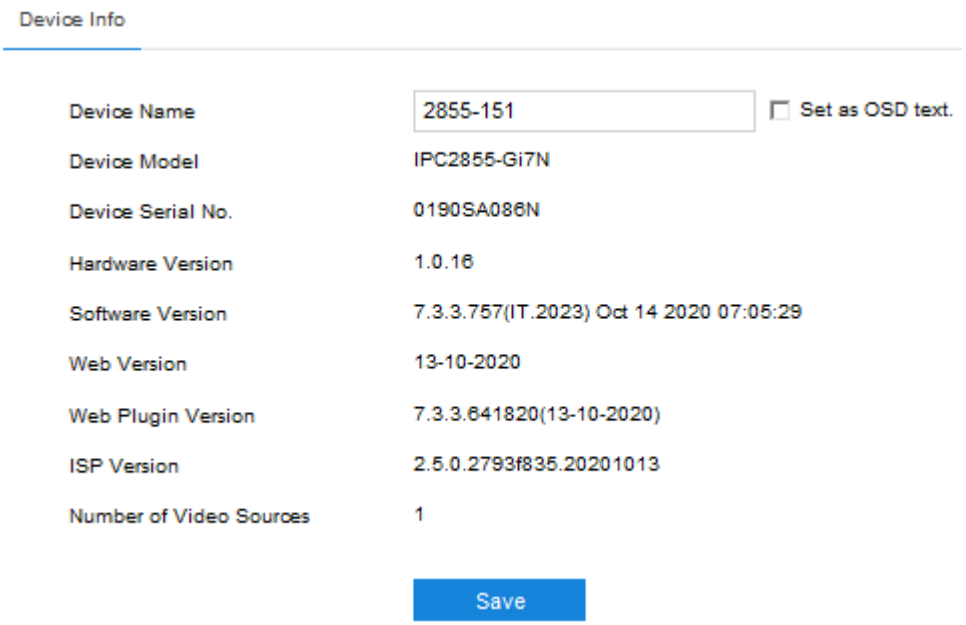
5) Click "**Save**" to validate settings.

9. System

9.1 Device Info

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

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



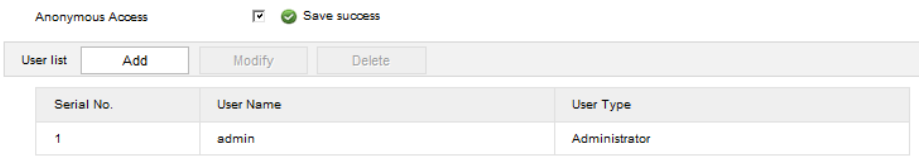
Picture 9-1 Device info

9.2 User Security

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

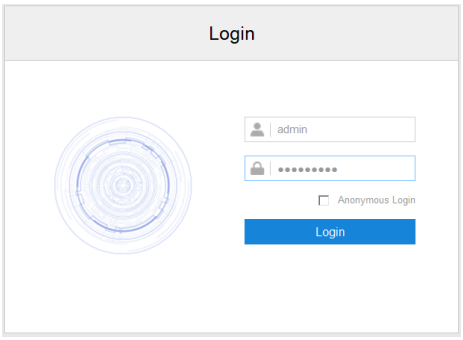
9.2.1 User

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



Picture 9-2 User info

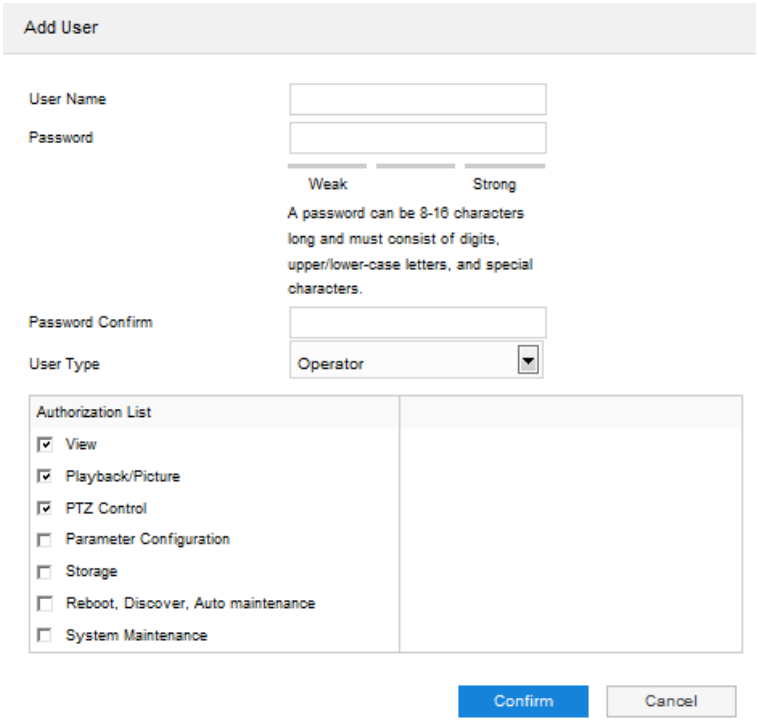
- Anonymous Access: After selecting the checkbox, you will be able to select "Anonymous Login" on the login interface.



Picture 9-3 Anonymous login

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**".

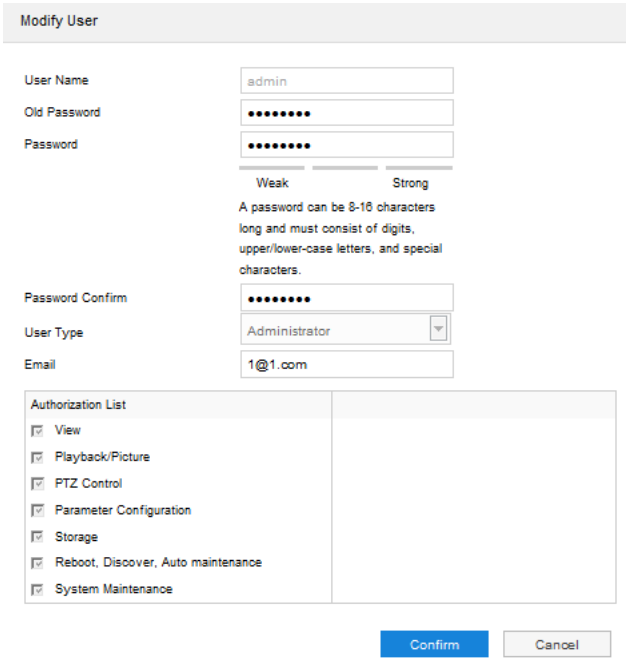


Picture 9-4 Add user

Note:

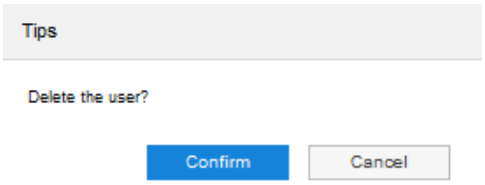
- By default, all options are available to administrator users; Live View, Playback/ Snapshot, and PTZ Control options are available to operator users; a browser can only view the live video from the camera.
- Some settings take effect after rebooting the camera, which requires user with both the authorizations of configuration and reboot.

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



Picture 9-5 Modify user

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



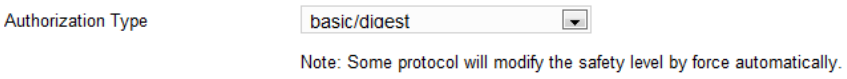
Picture 9-6 Delete user

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

9.2.2 RTSP Authorization

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

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

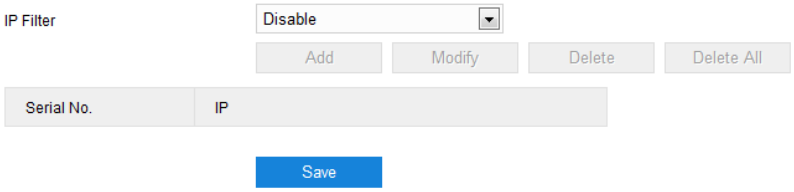


Picture 9-7 RTSP Authorization

9.2.3 IP Filter

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

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



Picture 9-8 IP Filter

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

- Disable: IP filter is disabled.
- White List: IP list allowed visiting the device.
- Black List: IP list not allowed visiting the device.

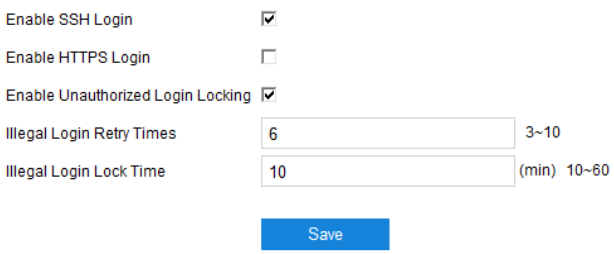
3) Configure IP address list;

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

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

9.2.4 Security Service

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



Picture 9-9 Security Service

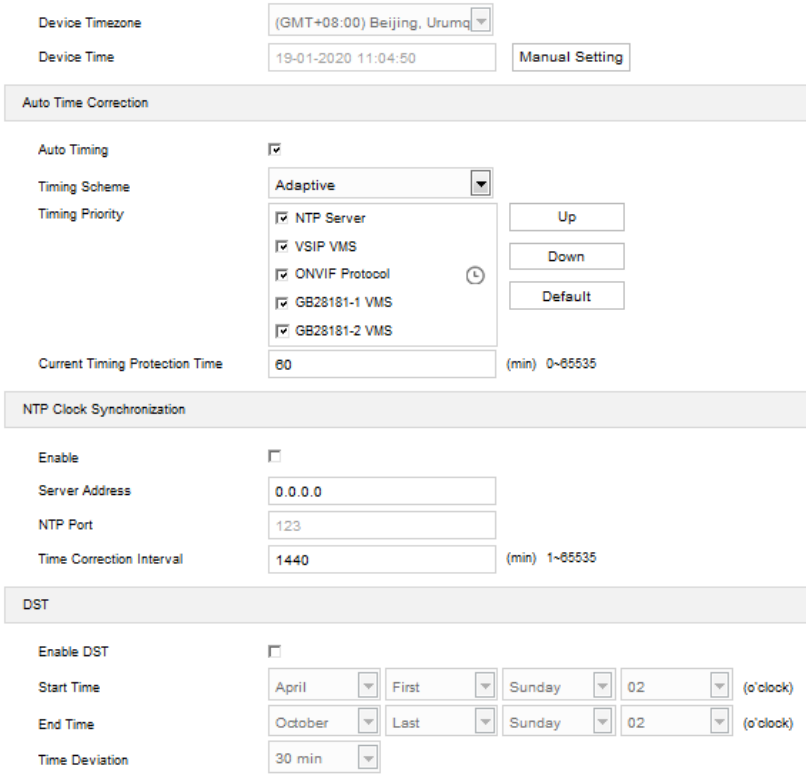
- Enable SSH Login: Select the checkbox to enable SSH login, which means SSH service is enabled and you can login by SSH mode. Usually it's unnecessary to enable when the camera works normally.
- Enable HTTPS Login: Select the checkbox to enable HTTPS login, which means HTTPS service is enabled and you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

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

Click “Save” to validate settings.

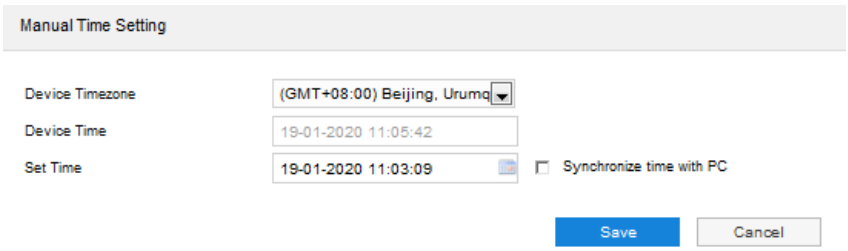
9.3 Time

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



Picture 9-10 Time setting

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



Picture 9-11 Manual setting of time

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

Note:

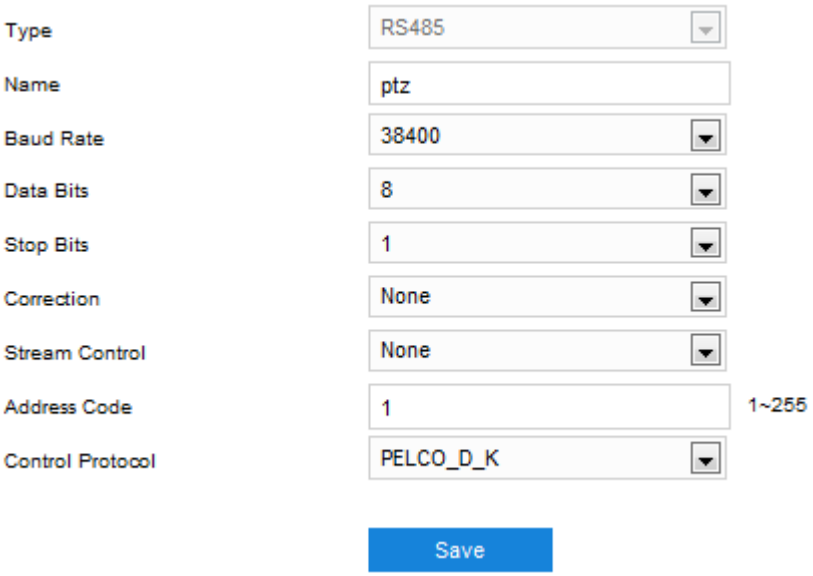
- In the box of “Timing Priority”, the priority level decreases from top to bottom.
- Select a protocol and click “Up” to improve its priority and “Down” to decrease its priority; click “Default” to apply the default priority levels.
- If selecting “NTP Server”, configure the parameters thereof.

- NTP Clock Synchronization: Select “Enable” and configure “Server Address”, “NTP Port” (certain to be “123”) and “Time Correction Interval”. When it is enabled, the camera will correct time on a time basis of the configured interval.
- DST: DST (daylight saving time) is the practice of advancing clocks during summer months so that evening daylight lasts longer, while sacrificing normal sunrise times and the time applied during DST is called DST time. Select "Enable DST" and set “Start Time”, “End Time” and “Time Deviation”.

9.4 Serial Port

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

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



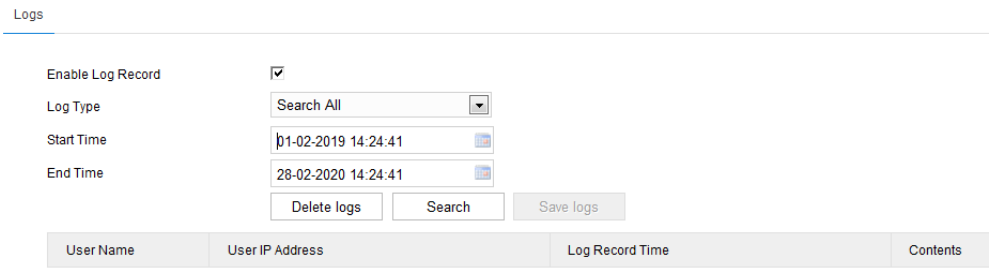
Picture 9-12 Serial port

9.5 Log

Go to **Settings > System > Log** to manage logs and view system health and service status.

9.5.1 Logs

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



Picture 9-13 Log management

Operation steps are as follows:

1) On the dropdown list of Log Type, select a log type, otherwise the default is "Search All";

2) Select Start Time and End Time, and click "**Search**". The search result will show on the list below;

3) Click "**Save Logs**" to download all logs locally; click "**Delete logs**" to clear all logs.

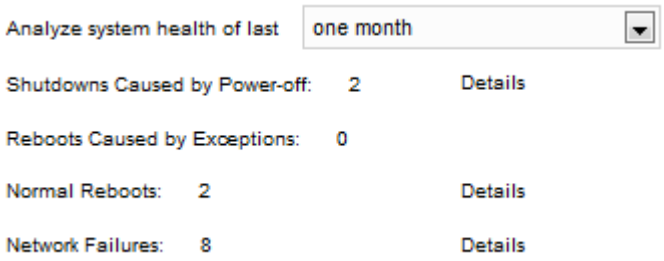
Note:

- When selecting “User Operation” or “Alarm Info” for Log Type, you need to select a “Secondary Type” to narrow the search scope.

- The system can save maximum 2,000 entries of logs. When it is full, the latest one will overwrite the oldest one automatically.

9.5.2 System Health

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

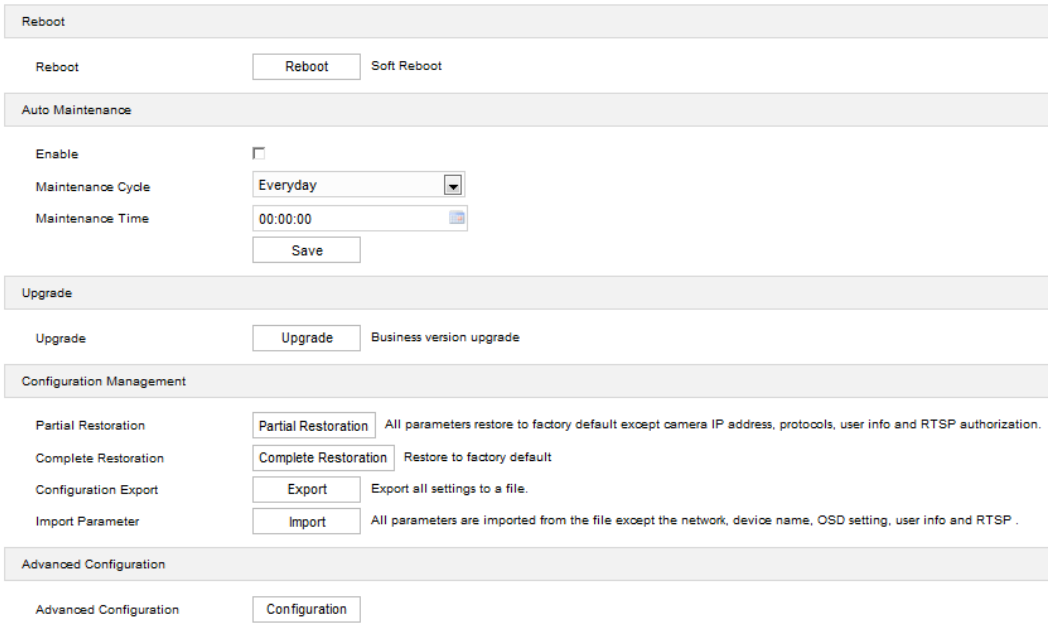


Picture 9-14 System status

9.6 System Maintenance

9.6.1 System Maintenance

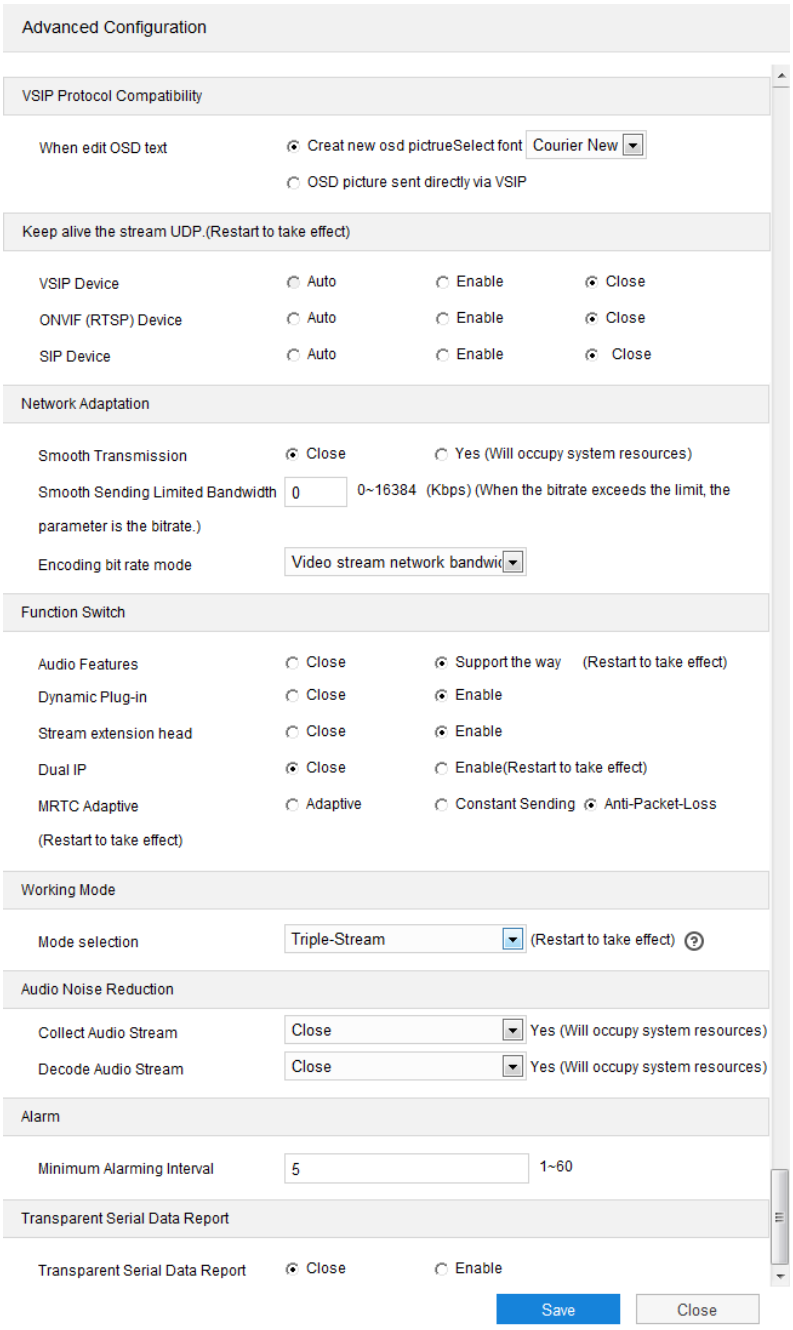
Go to **Settings > System > System Maintenance > System Maintenance**, and perform operations of reboot, upgrade and etc.



Picture 9-15 System maintenance

- Reboot: Click "**Reboot**" to reboot the camera.
- Auto Maintenance: Select "**Enable**", and configure Maintenance Cycle and Maintenance Time. Click "**Save**" to validate setting.

- Upgrade: Upgrade business version. Click “**Upgrade**” and open local upgrade file in <*.pkg> format. During upgrading, please do nothing but waiting. After upgrading, re-login to the web client.
- Configuration Management: including partial restoration, complete restoration, and configuration export and import.
  - Partial Restoration: Click this button and all parameters will restore to factory default except network setting, access protocol, user info and RTSP authorization.
  - Complete Restoration: Click this button and all parameters will restore to factory default.
  - Configuration Export: After configuring camera parameters, you can export the configurations to local PC for copying. Click "**Export**" and select a local save path to export.
  - Import Parameter: You can import local configuration file from local PC without manual setting. Click "**Import**" and select local configuration file to import.
- Advanced Configuration: Only "admin" user can perform advanced configuration. Click "**Configuration**", input the right password for advanced user and click "**Confirm**" to enter the configuration interface.



Picture 9-16 Advanced configuration

- VSIP Protocol Compatibility: select the OSD picture obtaining method for the camera when configuring OSD through VSIP; generate a new OSD picture through text and location, and change OSD font, Black or Song; or use the OSD picture sent by VSIP directly.
- Keep Alive the Stream UDP: configure VSIP, ONVIP (RTSP) and SIP applications separately, options including “Enable”, “Close” and “Auto”.
- Network Adaptation: enable “Smooth Transmission”, which will occupy some system resources; configure “Smooth Sending Limited Bandwidth”, subject to actual bitrate when the bitrate exceeds the limit; select “Encoding

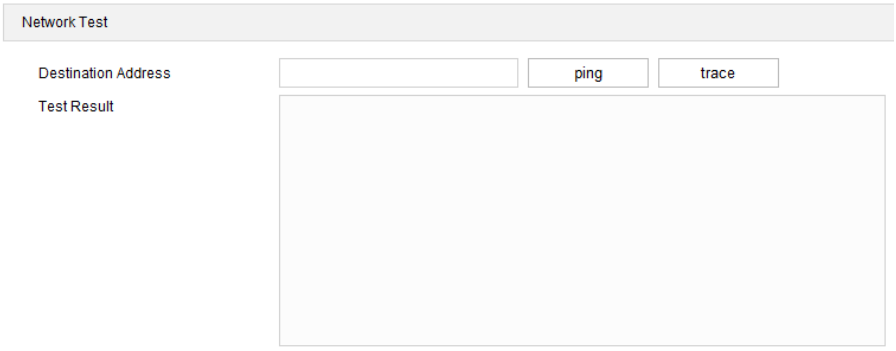
Bit Rate Mode", options including video stream network bandwidth, video data bandwidth and audio-video stream network bandwidth.

- Function Switch: including Audio Features, Dynamic Plug-in, Stream Extension Head, Dual IP and etc.
- Working Mode: configure the stream working mode. It takes effect after reboot.
- Audio Noise Reduction: configure "Collect Audio Stream" and "Decode Audio Stream". Options including "Close", "Low", "Middle" and "High"; enabling this function will occupy some system resources.
- Alarm: configure "Minimum Alarming Interval", value range being 1~60 s.
- Transparent Serial Data Report: After enabling this function, the system will report exceptions of serial port to the platform.

9.6.2 Network Test

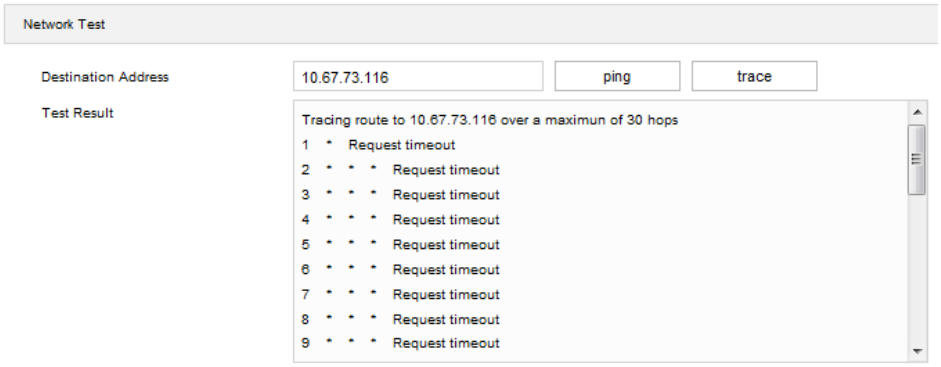
Go to **Settings > System > System Maintenance > Network Test**, and test the network connectivity between the device and the destination address.

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



Picture 9-17 Network test- ping

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



Picture 9-18 Network test- trace

10. 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