KEDACOM

User Manual for Vehicle 4G PTZ Camera IPC521-F120-G

Version 01 (Jan., 2018)

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Target Audience

Administrators and Operators of Video Surveillance Products

Document Version

Version 01

Applicable Models

IPC521-F120-G

Related Document

Quick Start Guide

Convention

Icon	Convention
ⓘ	Notices and warning: necessary supplement of operations

Sign	Convention
BOLD	Menu, e.g. **Drag to Zoom**
>	Connector between menus of different level, e.g. **Settings > Camera**

Safety Instruction

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

Before installation, please follow the instructions below:

Instructions

1. Please adopt power supply in the safety voltage range.

2. If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble or repair the product yourself in any way.

3. Do not drop the camera or subject it to physical shock.

4. When cleaning the lens, please use a rubber dust blower to remove dust on the lens or filter, and use dry soft cleaning cloth to remove the dirt on camera surface. For some hard dirt, user can apply some detergent to the cleaning cloth and wipe gently. Never apply any volatile solvent, such as

ethanol, benzene and diluents, to avoid damage to surface coating.

5. Do not focus the camera lens on strong light such as the sun or incandescent lamp. The strong light can cause overexposure or light leak (not camera malfunction), which may shorten camera lifetime.

6. Do not expose the camera in the environment not defined in the Manual. Maintenance and fee due to exposure of product in the wrong conditions will be user's responsibility.

7. Indoor Dome Camera cannot be installed at rainy or wet places. If the Indoor Dome Camera has a connecting rod on the bracket, make sure there is no hole on the rod to avoid water.

8. Outdoor Dome Camera must be completely sealed to avoid dampness. Make sure there is no hole on the connecting rod of bracket to avoid water.

9. While shipping the camera, pack it in the factory packing or use materials with equivalent quality.

10. When it is necessary to replace a part, please contact your dealer in advance and replace the part with specified model or part of the same features. We shall not assume any responsibility for problems caused by unauthorized replacement.

11. Do not shield the sensor at front of the lens housing.

12. When power off the camera, reboot it after 30 seconds.

Anti-thunder and Anti-surge

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

1. The distance between the signal wire and the high-tension apparatus or high voltage cable should be at least 50m.

2. Try to route cables along the eave when installing outdoor.

3. When installing camera in an open field, route cables inside sealed steel pipes under the earth and ground the pipes with one point. Never route cables in aerial way.

4. In heavy thunderstorm area or high-tension zone (such as high voltage transformer substation), an extra superpower anti-thunder apparatus and lightning rod must be installed.

5. The anti-thunder and grounding design of outdoor apparatus and wires must consider the anti-thunder requirements of the building and conform to the requests of national and industrial standards.

6. The system must be grounded with equipotential. The grounding apparatus must be anti-interference and electrically safe. It cannot be short-circuited or hybrid connected to the null line of high-voltage power grid. When it is grounded independently, the ground impedance is ≤4Ω and the earth lead section surface must be ≥25mm^2.

7. The anti-thunder grounding wire of the dome camera uses multi-strand copper cable with section surface ≥4mm^2 (strand diameter about ≥2.3mm).

Contents

1. Product Brief

The vehicle 4G PTZ camera IPC521-F120-G is a portable arming camera integrating functions of video encoding, storage, network transmission and power supply. It has efficient array IR lamps, supports 3G/ 4G/ WiFi network and has highly magnetic chucks.

Camera Functions

➢ Apply dedicated ceiling PTZ structure, designed for all weather, small, fine and portable

➢ Built-in high-capacity lithium battery pack, ultra-long time of endurance

➢ Highly magnetic chucks at the bottom, for vehicle mount or fixed with specific tripod bracket, free from installation and wiring

➢ Passed the Type Inspection of Ministry of Public Security, IP66-rated protection (anti-thunder, anti-surge and etc.)

➢ 20x 2MP optical zooming, starlight effect

➢ Minimum illumination color 0.003Lux/ F1.5, B/ W 0.0003Lux/ F1.5, 0Lux when IR lamp is on

➢ 80m IR distance, enhancing night view effect

➢ H.264/ H.265 video encoding, support triple streams

➢ Support 4G/ WiFi/ wired network

➢ Multiple encryption methods, ensure safety of user data

➢ Support 256 presets, 8 patrol paths, each supports 32 presets

➢ Self-adaptive bandwidth: bitrate and frame rate adjusts according to 4G/ WiFi bandwidth, ensure smooth playing of high quality images

➢ Support WDR, image adjustment, 3D noise reduction, image flip, and video freeze

➢ Support CBR and VBR

➢ Able to configure settings, view images and upgrade and maintain remotely through web or client

➢ Support quick positioning of click to center and select to zoom

PTZ Functions

➢ Rotate continuously by 360° in pan and -15°~90° in tilt

➢ Support DOF proportional zooming, last spot recovery, PT restriction and etc.

Alarm Management

➢ Motion detection and alarm linkage, make video surveillance intelligent

➢ Support alarm linkage edition: Alarm Text Overlay, Live View Display and etc.

Networking Method

➢ Support protocols of TCP/ IP, UDP, HTTP, DHCP, DNS/DDNS, RTP/RTCP, RTSP, PPPoE, FTP and VSIP

➢ NAT traversal

Storage

➤ Support local snapshot, default format is .JPG

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

➤ Support max 128G TF card storage

2. Appearance

Picture 2-1 IPC521-F120-G

ⓘ Notice: The camera can be either white or black and the above picture is for your reference only.

3. Start Up

Please refer to the *Quick Start Guide* for the installation and wiring of the device. After installation, electrify the device. When the batteries are fully charged, press on the switch for 3s to power it on, or connect it to the original power adaptor to start it automatically. To power it off, press on the switch for 3s or disconnect it from the power adaptor.

ⓘ Notice: When powering it on or off through the original power adaptor, no need to long-press the switch.

3.1 Client Installation Conditions

➢ Operating System: Windows 7 or later versions

➢ Browser: IE7.0 or later versions (excluding IE11.0 or later), Firefox, Google Chrome (41 and below versions)

➢ Processor: 3.3 GHz CORE®3 series and later version or other equivalent processors

➢ RAM Memory: 4GB or above
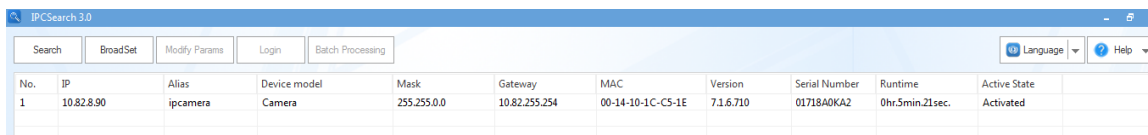
➢ DirectX：9.0c

This manual will take IE8.0 as an example.

3.2 Initial Configuration

3.2.1　Activation

When the device is used for the first time, user needs to activate it through either IPCSearch or Web client. When it accesses to wired network, user can activate it through either IPCSearch or Web client; when it accesses to wireless network, user can only activate it through web client.

3.2.1.1　Activate Through IPCSearch

1) Get IPCSearch from the attached CD or from the website https://www.kedacom.com (**Service & Support > Downloads > Software Tools**).

No.	IP	Alias	Device model	Mask	Gateway	MAC	Version	Serial Number	Runtime	Active State
1	10.82.8.90	ipcamera	Camera	255.255.0.0	10.82.255.254	00-14-10-1C-C5-1E	7.1.6.710	01718A0KA2	0hr.5min.21sec.	Activated

Picture 3-1 IPCSearch interface

2) Run IPCSearch and the system will search devices in LAN automatically and display the list as shown in the above picture. Select the target camera.

3) Click "**Batch Processing**". In the popup interface, set admin user's password and the email address to claim the password. Click "**Activate**" and wait for rebooting, as shown in Picture 3-2. Please wait patiently till the button recovers. Select the device again and click "**Login**" or double-click the device to enter the login interface of web client.

Picture 3-2 Activate

If you want to modify network parameters, please follow the steps below:

1) Select a camera to be configured, click "**Modify Params**" or right click the mouse. Interface is shown in Picture 3-3. Modify parameters and fill admin user name (admin) and the password set when activating the device.

Picture 3-3 Network parameters

5

2)   Click "**OK**" and in the popup window click "**OK**". Wait for rebooting.
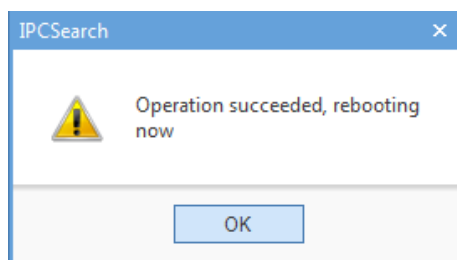
Picture 3-4 Reboot device

3)   Please wait patiently during rebooting till the button recovers. Select the device again and click "**Login**" or double-click the device to enter the login interface of web client.

3.2.1.2   Activate Through Web Client

➢ **Wired Network Connection**

1)   Run IPCSearch and the system will search devices in LAN automatically and display the list as shown in the above picture. Select the target camera and click "**Modify Params**" to view device IP address.

2)   Open browser and input the IP address to go to the activation interface, as shown in the following picture.

3)   Configure admin user name, password and the email address for claiming password.

4)   Click "**Activate**". After activation, it will skip to the login interface automatically.
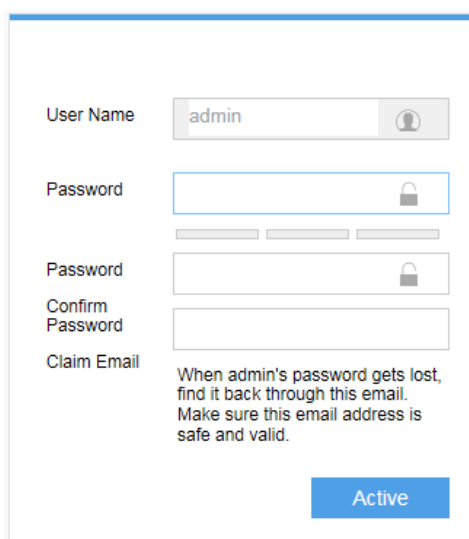
Picture 3-5 Activate through web client

ⓘ Notice: If activation through web client fails, activate through IPCSearch.
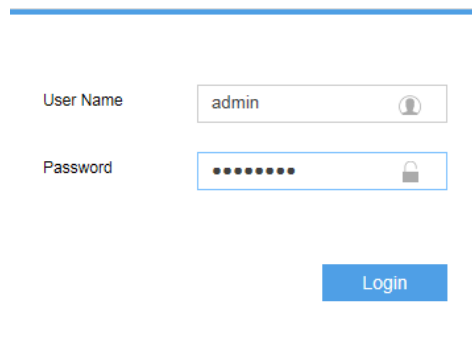
➢ **Wireless Network Connection**

1)   Search the wireless signal sending out from the camera. The default SSID is "IPCamera+ XXXXXXXXXXXX (wireless MAC address)" such as IPCamera001410111e63. After editing device name, the system will replace the IPCamera in SSID with the new name.

2)   After PC accesses to the wireless signal of the camera, open browser and input the IP address (default is 192.200.1.200) to go to the activation interface, as shown in Picture 3-5.

3)   Configure admin user name, password and the email address for claiming password.

4)   Click "**Activate**". After activation, it will skip to the login interface automatically.

3.2.2 Web Client Interface

1)   After activation, go to the login interface of Web client, as shown in the following picture.

Picture 3-6 Login interface at web client

Notice:

1)   To ensure the safety of device on internet, it is strongly recommended that you set a strong password which is composed of at least 2 kinds of the following, digits, case-sensitive letters or specific symbols, and whose length ranges from 8 to 16 bits.

2)   Please modify the password periodically and once every 3 months is recommended. If the device is used in highly risky environment, suggest modifying the password monthly or weekly.

3)   Please keep your user name and password safe.

2)   Click "**Login**" to enter Web client of the device.

3)   Enter user name and password: when login for the first time, download and install the plug-in. Close browser when installing. After finishing, double-click the device in IPCSearch to open browser and enter user name and password. Interface after login is shown in Picture 3-7.
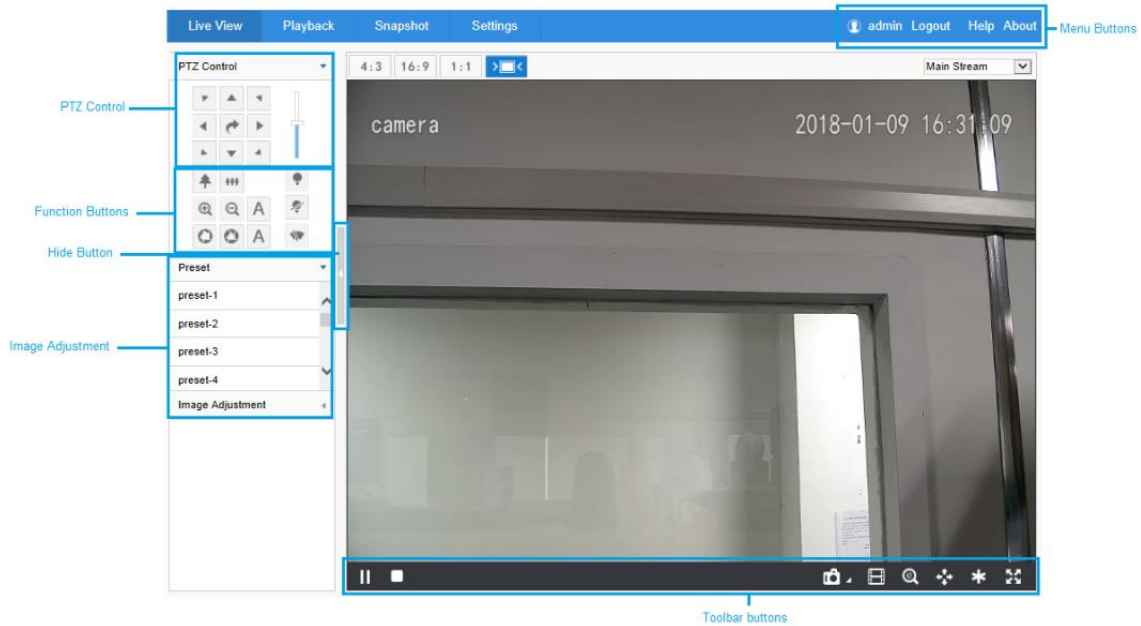
Picture 3-7 Web Client Interface

3.2.3 Password Reset

1) If user enters a wrong user name or password for 3 times, the camera IP will be locked up for 10 minutes, during which user cannot login to this camera. If user forgets the password, reset the password. Click "**Password Reset**" and a window will pop up, as shown below.
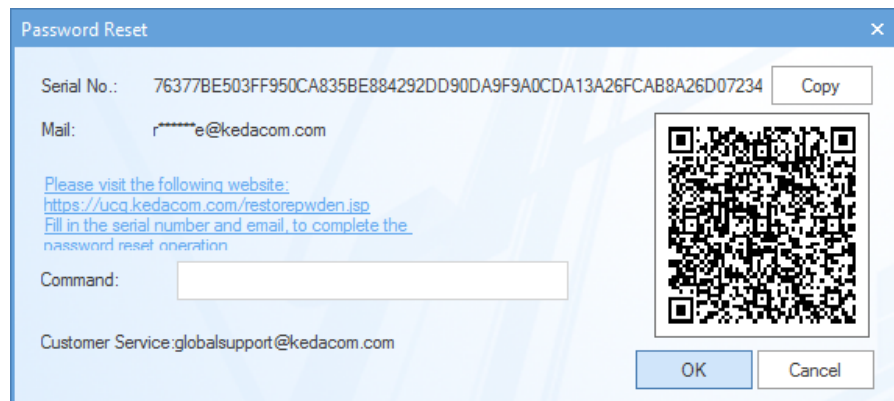
Picture 3-8 Password Reset

2) Click the password reset link first and the following picture pops up with the Serial Number filled by default. Please input Email address and Verification Code manually. Click "**Get Security Code**".

3) Login to the email address to get the security code and fill in "**Command**" blank in Picture 3-8 and click "**OK**".

4) Please remember the new password (admin123 by default) shown in the popup window and click "**OK**". The device will reboot.

5) Re-login to the web client with the new password. For security's concern, go to **Settings > System > User Security > User** and modify the password. Please refer to the chapter of User Management.

ⓘ Notice: Alternatively, you can scan the QR code in Picture 3-8 with a mobile device and complete this step.

Picture 3-9 Password reset

4. Product Functions

By web client, user can not only view live video, but also perform local snapshot and recording, and set alarm linkage.

ⓘ Notice: Disabled button in the web client means the model doesn't support the function. Function with * in this Manual means only some models support this function.

4.1 Live View

The default interface after user logs in is live video view, or user can click Live View to enter the interface. The default image effect is Standard Mode. When the camera is used on vehicle, edit it as Vehicle Mode manually.

4.1.1 Toolbar Buttons

Picture 4-1 Toolbar Buttons

Play/Pause ▶/Ⅱ

Click this button to play or pause a viewing.

Stop ☐

Click this button to stop live view.

Snapshot 📷

Click this button to capture an image.

Snapshot includes Camera Snapshot 📷 and Local Snapshot ⬚. User can set in Settings>Local Setting.

ⓘ Notice:

Camera Snapshot: Camera snapshots an image and sends it to local client in .JPG format. The image quality is good, but there is some time delay caused by network.

Local Snapshot: Client snapshots an image and save it locally. The image quality is ordinary, but there isn't any time delay.

Picture 4-2 Snapshot and recording setting

Recording

Click this button to start recording and click again to stop recording. Recording is saved on local PC. User can set or modify snapshot or recording save path in Settings>Local Setting.

EPTZ

Click this button 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 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.

Video Freeze

Click this icon and the image will freeze for a moment.

Status Info

Click this button to display the frame rate and bit rate of the live video. This button is hidden by default. To enable this function, go to Settings > Local Setting > Play, check "**Display Status Info**" and click "Save".

Full Screen

Click this button to display full screen. Double click or press Esc to exit.

**4.1.2 PTZ Control Buttons**

Picture 4-3 PTZ Control

Table 4-1 Buttons on PTZ Control Panel

Button	Explanation
	Click the 8 direction buttons to control the pan and tilt rotation of the PTZ; Click and the camera will patrol in pan; click again to stop; Drag the slide bar to adjust camera rotation step length. The larger the faster.
	Click on to zoom in and object is magnified; Click on to zoom out and object is narrowed.
	Click on to focus nearby object clear and distant object will become misty; Click on to focus distant object and nearby object will become misty; Click on to focus automatically.
	Click on to enlarge aperture and the image becomes bright; Click on to narrow aperture and the image becomes dark; Click on to adjust aperture automatically.
	Auxiliary function buttons, subject to actual models. Click to enable (IR) light; Click to disable (IR) light; Click to enable/ disable wiper.

4.1.3 Image Adjustment

4.1.3.1   Focus

The function of focusing is to make image clear.

In the interface of **Live View**, click (Focus Near), (Focus Far) or (Auto Focus). Alternatively, go to Settings > Camera > Image >Focus, and select "**Manual**" for Focus Mode.

In the interface of **Settings > Camera > Image >Focus**, select **"Continuous Focus"** and the camera will focus automatically every time the system triggers focusing.

In the interface of **Settings > Camera > Image >Focus**, select **"Single Focus"** and the camera will focus automatically only once when the system triggers focusing.

In the interface of **Settings > Camera > Image >Focus**, select "30cm/ 1m/ 2m/ 5m/ 10m" from the dropdown list of Min Focus Distance (i.e. the min. focus distance for the lens, the lens will be unable to focus automatically when the distance is less than the selected one).

4.1.3.2   Brightness

Due to low light situation, the image will look completely or partially dark and hard to recognize. Web client provides the following methods to increase image brightness and ensure surveillance quality.

➢ **Enable IR Light**

In low light situation, IR lamp can be started to get better surveillance images. Click   to enable and   to disable.

➢ **Increase Image Brightness**

In the interface of Live View, click Image Adjustment and show the parameters, or go to **Settings > Camera > Image > Image Adjustment** and drag the slide bar of brightness.

➢ **Aperture**

The function of aperture is to control the amount of input light. A large aperture allows more light and thus the image is brighter.

In the interface of **Live View**, click (Aperture+)/ (Aperture-) and adjust aperture.

In the interface of **Settings > Camera > Image > Exposure**, select "DC-IRIS Auto/ DC-IRIS Manual" for **Aperture Mode** and drag the slide bar of **Aperture Sensitivity** to adjust aperture. Auto mode is suggested.

➢ **Longer Time of Shutter**

Camera shutter time means the cycle of the sensor calculating light input amount. Therefore, the larger the value is, the brighter the image will be. Auto mode is suggested.

ⓘ Notice: If the target object is moving fast, this method is not applicable.

Go to **Settings > Camera > Image > Exposure**, user can set Shutter Mode (Auto/ Manual) and Shutter Lower Threshold or Shutter Level.

➢ **Increase Gain**

Camera gain means the light sensitivity of a sensor. A high gain may reduce light exposure for low light situation.

ⓘ Notice: However, the higher the gain is, the more noise points there will. Auto mode is suggested.

Apply default values, or select "Auto" and set Gain Upper Threshold in the interface of **Settings > Camera > Image > Exposure**. If selecting "Manual", drag the slide bar to adjust gain level.

➢ **Enable WDR**

WDR can provide optimal exposure in intense backlight conditions.

Go to **Settings > Camera > Image > Image Enhancement**, select "WDR" in the drop-down list of Dynamic Adjustment and drag the slide bar of WDR Sensitivity.

➢ **Enable HLC**

The HLC function can avoid unclear image caused by strong light interference.

Go to **Settings > Camera > Image > Image Enhancement**, select "HLC" in the drop-down list of Dynamic Adjustment and drag the slide bar of HLC Level.

➢ **Enable Backlight**

Backlight compensation can also provide optimal exposure in intense backlight conditions, but it may result whitening of the bright part of the image.

Go to **Settings > Camera > Image > Image Enhancement**, select "**Backlight Auto/ Backlight Manual**" in the drop-down list of Dynamic Adjustment and drag the slide bar of Backlight Sensitivity. When selecting "Backlight Manual", user can set or select Backlight Area in the live

view image. In the interface of Live View, click [icon] to enable and click [icon] to disable backlight.

➢ **Smart IR**

SmartIR is to adjust the brightness of IR lamp automatically. Detecting the brightness of multiple areas in the image, it adjusts image brightness curve intelligently and avoids image overexposure or underexposure. Therefore, it solves the problem of overexposure of IR camera shooting near image and ensures the IR efficiency for near objects, making image brightness evenly distributed and image restoration true and fine.

Go to **Settings > Camera > Image > Image Enhancement**, select "SmartIR" in the drop-down list of Dynamic Adjustment and drag the slide bar of SmartIR Sensitivity.

➢ **Anti-flicker**

When there are floating cross strips in the image under indoor fluorescent lamp, select the right anti-flicker frequency (50Hz/ 60Hz/ Natural Light) in the interface of **Settings > Camera > Image > Exposure** to solve the problem.

4.1.3.3   White Balance

The basic concept of white balance is "to restore white objects to be white regardless of the color temperature of the light source". It can compensate color cast in pictures taken in specific light source.

Go to **Settings > Camera > Image > White Balance**, select white balance mode from the drop-down list.

When selecting "Manual", drag the slide bar of White Balance R (red) Gain and White Balance B (blue).

4.1.3.4   Night Cut

Day (Night) mode means the image switches to color (B/W), thus to get optimal images for day (sufficient light source) and night (insufficient light source) conditions.

Go to **Settings > Camera > Image > Night Cut**, select night cut mode.

➢   **Day**

Select Day from the dropdown list of Night Cut mode and the image will become colored.

➢   **Night**

Select Night from the dropdown list of Night Cut mode and the image will become black and white.

➢   **Auto**

Select Auto (gain triggered)/ *Auto (photo sensor triggered) from the dropdown list of Night Cut mode and configure Photosensitivity, Latency and Night Cut Threshold. The system will switch day/night mode automatically.

ⓘ Notice: The default mode of Night Cut is Auto, which further is subject to the actual model of camera because different models may have different auto type.

➢   **Scheduled Day / Night**

In this mode, camera switches to day/night mode automatically in the preset period of time.

When **selecting** Scheduled Day/Night from the dropdown list, click **Edit Time**, and edit Day Mode Start Time and Day Mode End Time in the popup interface.

4.1.3.5   Noise Reduction

When **there** are many noise points caused by environment and camera lens, Noise Reduction function can be enabled to adjust images.

Go to **Settings > Camera > Image > Image Enhancement**, enable 2D/ 3D Noise Reduction and drag the **slide** bar to adjust 2D/ 3D Noise Reduction level. When selecting "Disable", this function will be disabled.

4.1.3.6   Defog

This function is suitable for outdoor foggy scene and after enabling it, the camera is able to see through the fog.

Go to **Settings > Camera > Image > Image Enhancement**, select "Defog" from the dropdown list of Image Enhancement and drag the slide bar of Defog Sensitivity.

4.1.3.7   EIS

EIS function is to prevent image flicker when the camera is zoomed in too much.

Go to **Settings > Camera > Image > EIS**, select "Enable" from the dropdown list of Mode and drag the slide bar of EIS Level.

4.2 PTZ Control

The camera is equipped with digital PTZ, which is suitable for wide range monitoring and enlarges the field of

view. User can control PTZ via web client. In the PTZ control part of the **Live View** interface, user can control PTZ manually.

4.2.1 Basic Configuration

Go to **Settings > Camera > PTZ > Basic Config**. Perform basic configurations to the PTZ and set Last Spot Recovery.

➢ **Basic Config**

Patrol Speed Level: the speed level when the PTZ patrols, the larger the value is, the faster the speed is; otherwise, the speed is slower.

Preset point speed level: the speed to load preset position, the larger the value is, the faster the speed is; otherwise, the speed is slower.

Zoom Speed Level: the speed level of focusing, the larger the value is, the faster the speed is.

Enable Auto PT Speed: check this option and the auto PT speed function will be enabled, i.e. the dome camera changes according to the zooming factor of PTZ control automatically. When it zooms in, the dome camera moves slower automatically; when it zooms out, the dome camera moves faster automatically.

PTZ position display format: support display according to azimuth angle or PT position.

Tilt Angle Range: the rotation angle range in tilt direction, -15° ~ 90°.

➢ **Last Spot Recovery**

Check it to enable last spot recovery function.

Last Spot Recovery: Before the dome camera is powered off, it stays at a position for a certain period of time and this position is remembered by the system.

When the camera is powered again, it can restore to the position before powering off. If the stay time of the camera at the last spot before powering off is shorter than the specified time, it will recover to the last but one position when being powered again.

Recovery Mode: select **Last Spot Recovery** from the dropdown list and set Recovery Time. Click "**Save**".

Load Preset When Power On: when the dome camera is powered off and powered on again, it will recover to the set preset position directly. Select Load Preset When Power On in the dropdown list of Recovery Mode, and choose a preset No., and click "**Save**".

**Picture 4-4 Basic Config**

4.2.2 Preset Position

Preset position includes information of PT position and lens focal length. It is set by user and can be loaded, modified or cancelled any time.

Setting steps:

1)   Go to **Settings > Camera > PTZ > Preset**, adjust PTZ to expected position.

2)   Select **Preset No.** from the drop-down list and input **Preset Name**.

3)   Click **"Set"** to finish preset setting. User can define different preset positions.

         Click "**Load**" to load the expected Preset No. and click "**Delete**" to remove the preset ID.

In the preset part of the **Live View** interface, user can also select a preset ID to load, set or clear.
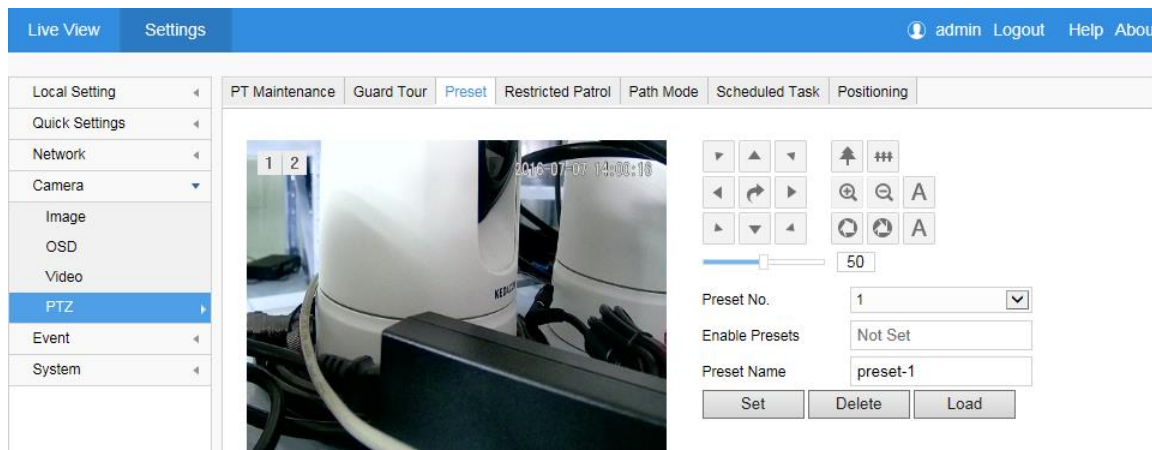
Picture 4-5 Preset Position

4.2.3 Guard Tour

Guard Tour means the dome camera can perform the preset operation if not receiving any command in a specific period of time (i.e. the Waiting Time in the setting interface). After stop PTZ operation for a certain period of time, user can enable the Guard Tour function.

➢ **Pan Mode**

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

➢ **Load Preset**

After user stops operation on the camera for a certain period of time, the camera will return to the defined preset position automatically. The Waiting Time is 3 minutes by default (configurable). Please refer to the part of preset position for setting steps.

➢ **Path Mode**

After user stops operation on the camera for a certain period of time, camera will enable Path Mode automatically. The Waiting Time is 1 minute by default (configurable). Please refer to the part of path mode for setting steps.
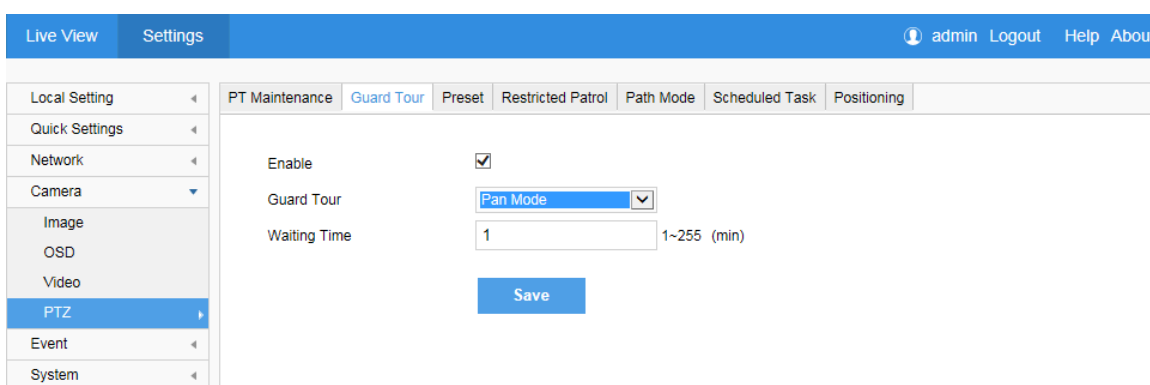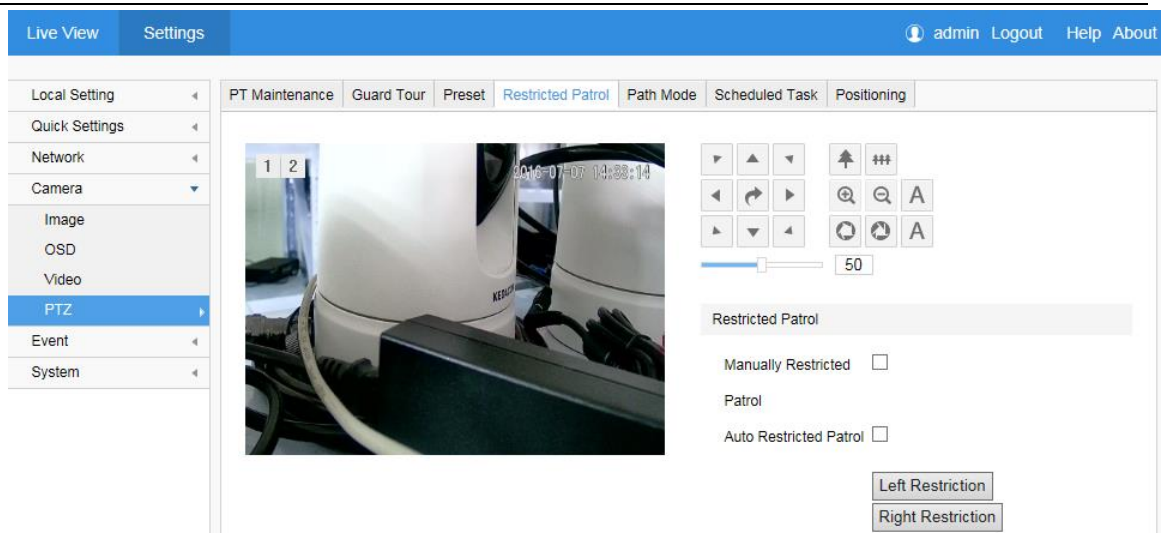

Picture 4-6 Guard Tour

Setting steps:

1)   Go to **Settings > Camera > PTZ > Guard Tour.**

2)   Check "**Enable**" and select mode from the drop-down list.

3)   Set Waiting Time according to the mode.

4)   Click "**Save**".

4.2.4 Restricted Patrol

Restricted Patrol includes Manually Restricted Patrol and Auto Restricted Patrol. After enabling this function, user can define borders of PTZ patrol.

Picture 4-7 Restricted Patrol

Setting steps:

1) Go to **Settings > Camera > PTZ > Restricted Patrol.**

2) Check "Manually Restricted Patrol" or "Auto Restricted Patrol". Adjust the PTZ to a proper position and set it as the **Left Restriction**. Adjust the PTZ again to another position and set it as the **Right Restriction.**

3) Settings take effect right after configuration. To clear restrictions, set one position both as the left and the right restriction, then the restrictions will be cleared.

4) When checking **Manually Restricted Patrol**, user can control the PTZ manually to make it rotate between the left and the right restrictions only; when checking **Auto Restricted Patrol**, the PTZ can only rotate in pan direction between the left and the right restrictions.

4.2.5 Path Mode

Path Mode means the camera patrols around all the valid preset patrol spots on a path. After enabling this function, clicking any PTZ control button will disable this function. Currently, the camera supports 8 paths and the max allowed number of patrol spot on each path is 256.
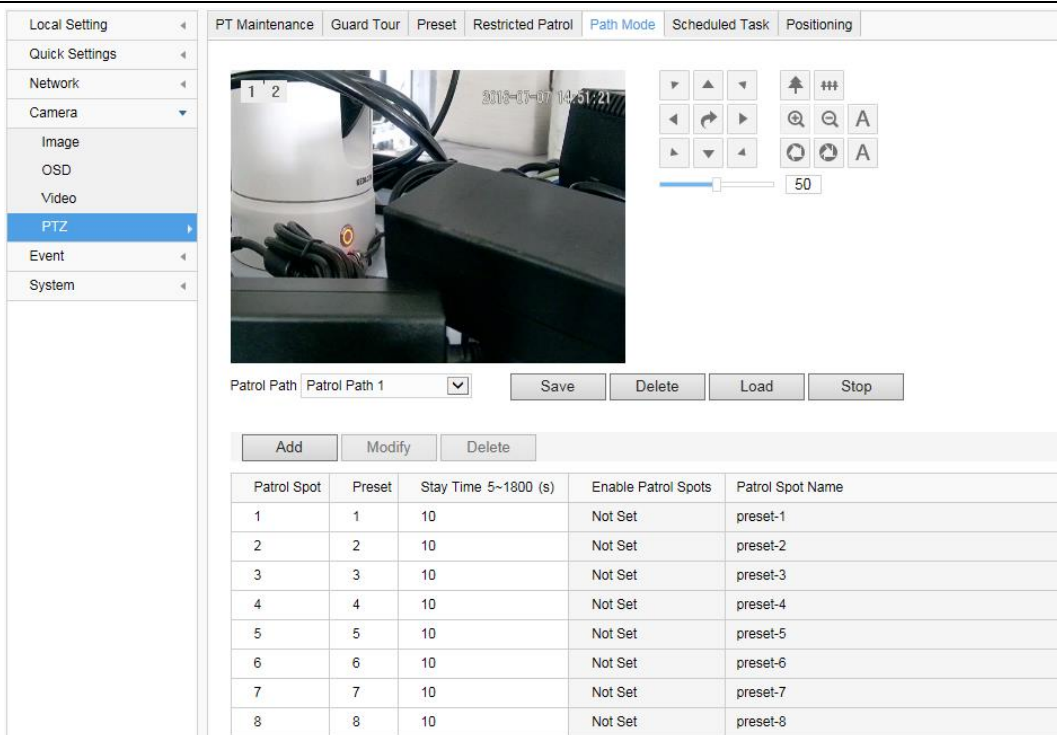
Picture 4-8 Path Mode

Setting steps:

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

2)   Select path from the dropdown list of **Patrol Path.**

3)   Click "**Add**". Set Patrol Spots and Stay Time in the popup interface. The max allowed number of patrol spots on each path is 256.

4)   Click "**Save**".

5)   Click "Delete", "Load" or "Stop" to perform respective operations.

4.2.6 Scheduled Task

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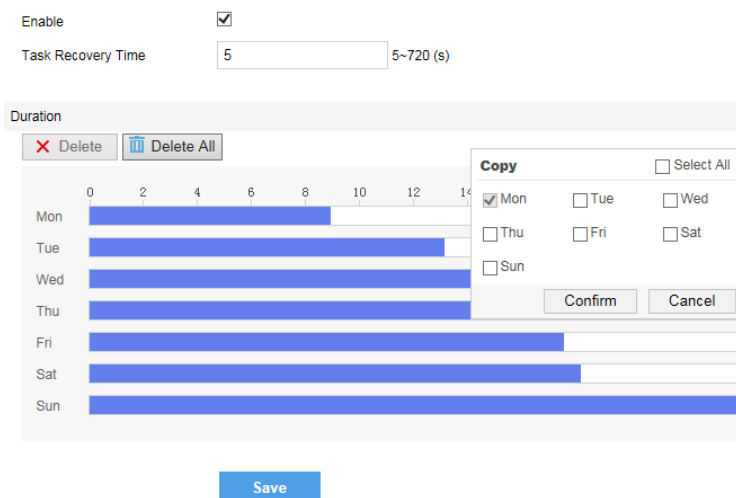

Picture 4-9 Scheduled Task

Setting steps:

1)   Go to **Settings > Camera > PTZ > Scheduled Task**. Check "**Enable**".

2)   Input "Task Recovery Time" (5~720s). Take 5s as example. If user performs other PTZ operations during the task, camera will recover the scheduled task in 5 seconds.

3)   Set scheduled task and arming duration: the default task duration is 24 hours displaying in blue, or user can define durations up to request.

- Click any free point on the timeline and drag mouse rightward to make a blue bar as task duration for that day. Different durations cannot overlap. Click on the duration and a window like Picture 4-10 will pop up. Configure scheduled task on the window.

- As shown in Picture 4-10, select a task and configure duration. Set the start time and end time, and click "Save" to finish scheduled task setting.

- Click the icon [icon] behind the timeline and the Copy window will pop up. Check several weekdays or "**Select All**" and click "**Copy**" to copy task durations to the weekdays, as shown in Picture 4-11. Click "Delete" in Picture 4-10 or X Delete to cancel scheduled task. Click [icon] Delete All to cancel all the scheduled tasks in one week.
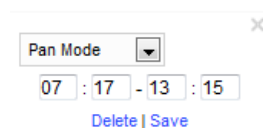

Picture 4-10 Edit duration
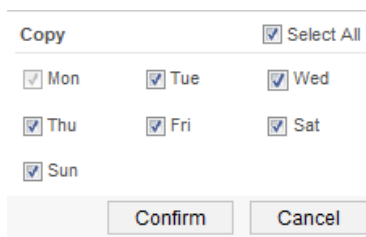
Picture 4-11 Copy

4.2.7 Positioning

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

➢ **Zero Correction**

When the PTZ position fails to synchronize with the positioning or user wants it to return to the zero position, zero correction can be performed. After zero correction, camera will return to the mechanical zero position automatically. Click "**Pan/Tilt Zero Correction**" to perform.
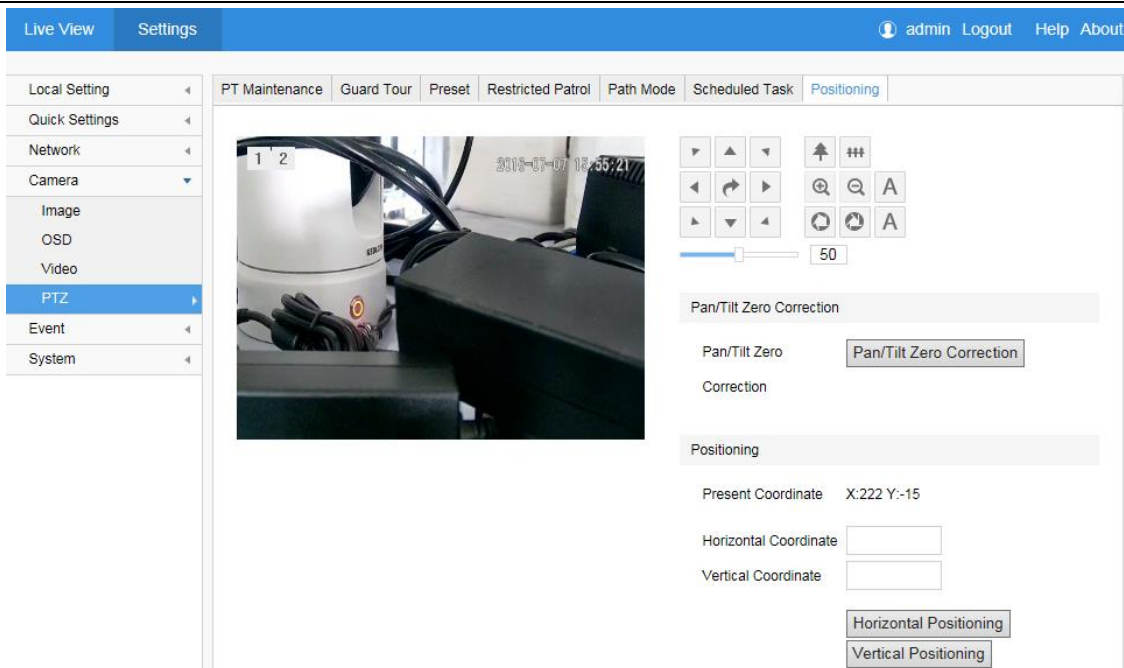
Picture 4-12 Positioning

> **Positioning**

Present Coordinates: show the coordinates of current PTZ position.

Horizontal Positioning: fill the target Horizontal Coordinate and click "Horizontal Positioning", then the PTZ will rotate to the target pan position.

Vertical Positioning: fill the target Vertical Coordinate and click "Vertical Positioning", then the PTZ will rotate to the target tilt position.

4.3 Alarm Linkage

Alarm linkage is the system reaction after an alarm signal is received. It is to raise watch man's attention to handle the event. The alarm signal comes from the alarms triggered in the set surveillance areas such as motion detection and tampering or alarm input devices such as smoke detector.

Alarm linkage reaction includes Alarm Text Overlay, Snapshot or triggering alarm output device (such as alarm bell). Explanations are as follows:

> **Acoustic Alarm:** when an alarm is triggered, generate sound alarming (it requires the IP camera to connect with an audio output device).

> **Report to Management System**: when an alarm is triggered, report it to the VMS (it requires the VMS to support this function).

> **Recording Linkage:** when an alarm is triggered, start video recording automatically. Need to install a storage card.

> **Text Overlay:** when an alarm is triggered, display alarm text on the screen.

> **Snapshot:** when an alarm is triggered, capture the image automatically. Need to install a storage card.

> **Alarm Output**: it means linking to an alarm output device. It requires the camera to support alarm output function and has connected with an alarm output device.

> **Email Notice:** when an alarm is triggered, send an e-mail to the e-mail address automatically.

Notice: Go to **Settings > Network > Other Protocols > SMTP** to set the e-mail address. SMTP (Simple Mail Transfer Protocol) is a group of rules for sending email from source address to target address and it determines the transition method of email.

DDNS	FTP	PPPoE	K-SNMP	802.1X	QoS	UPnP	SMTP

SMTP Server		
Port	25	1~65535
Sender	E-mail address for sending alarm email	
Sender Address		
Server Authentication	☑	
User Name	User name and password of SMTP server	
Password	••••	
Topic	IPCMail	
Attachment	☐	
File Format	Pic ▼	
Receiver	E-mail address for receiving alarm email	+
		-

Save

Picture 4-13 SMTP

4.3.1 Motion Detection

Detect movement features in the defined area. Once the movement exceeds the defined sensitivity, an alarm will be triggered.
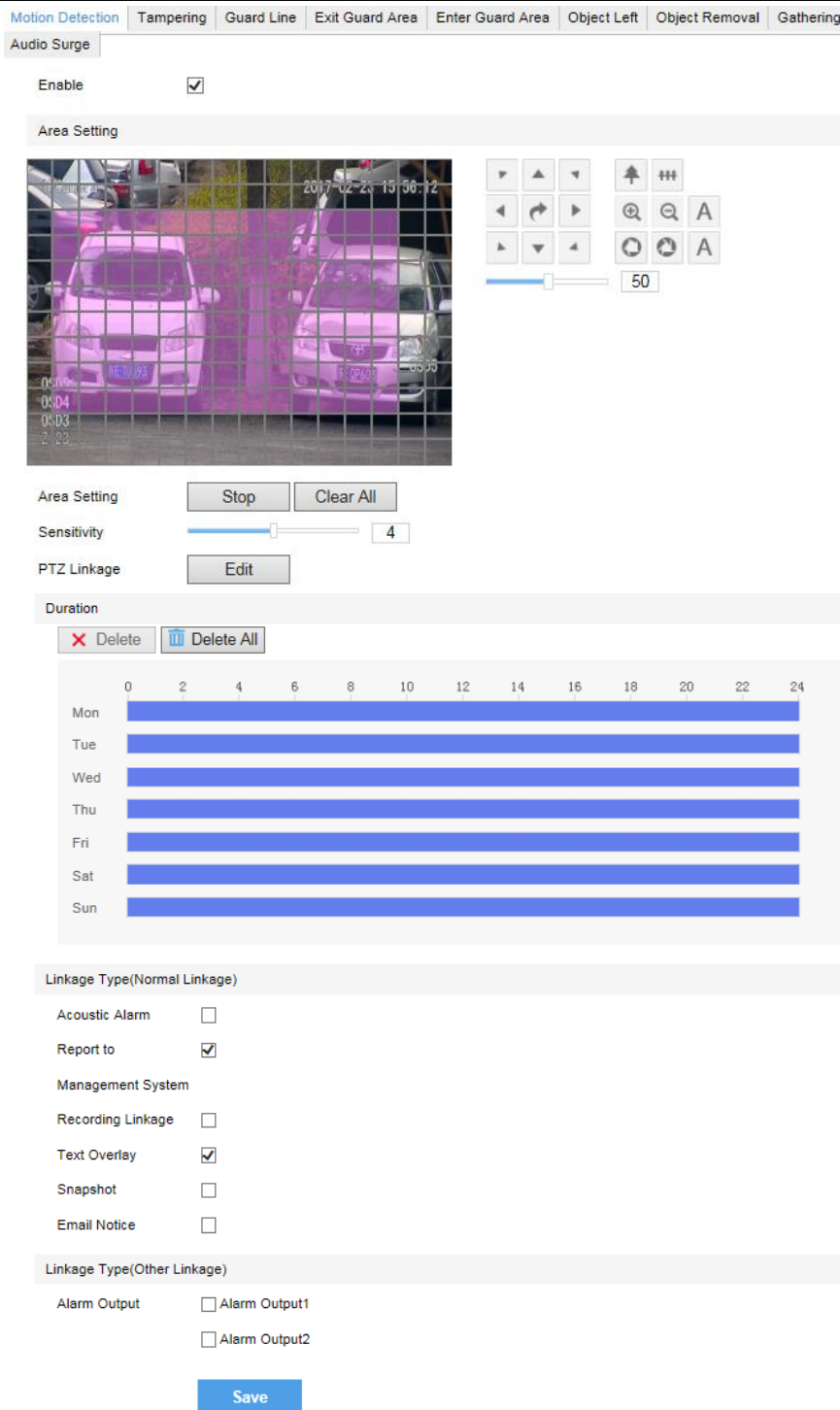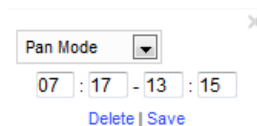
Picture 4-14 Motion Detection

Motion detection supports full area detection and max 4 user-defined areas. The default is full area detection.

1)   Go to **Settings > Event > Intelligent Function > Motion Detection**, and check "**Enable**".

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

3)   Drag the slide bar to adjust **Sensitivity**. The higher the value is, the more sensitive it is to the small moving objects in the specific active area.

4)   Set arming duration: the default duration is 24 hours displaying in blue, or user can define durations up to request.

- Click any free point on the timeline and drag mouse rightward to make a blue bar as task duration for that day. Different durations cannot overlap. Click on the duration and a window will pop up. Configure scheduled task on the window.

- As shown in Picture 4-15, select a task and configure duration. Set the start time and end time, and click "Save" to finish scheduled task setting.

- Click the icon [📋] behind the timeline and the Copy window will pop up. Check several weekdays or "**Select All**" and click "**Copy**" to copy durations to the weekdays. Click "Delete" button or icon [✕ Delete] to cancel scheduled task. Click [🗑 Delete All] to cancel all the scheduled tasks in one week.


Picture 4-15 Edit duration

5)   Check "Linkage Type". It is the alarm output method when motion detection triggers an alarm. If checking snapshot, when motion detection triggers an alarm, the system will capture an image. Go to **Settings > Storage > Snapshot** to set image format, resolution and quality, and enable "Event Snapshot" and set Time Interval and Number of Snapshots.

6)   Click "**Save**".

4.3.2 Tampering

In the surveillance scene, if the camera's field of view is blocked by something, it will be unable to monitor normally. At this time, the tampering detection algorithm can detect that the camera lens has been blocked and will trigger an alarm. It supports max 1 detection area.

Go to **Settings > Event > Intelligent Function > Tampering** and configure. Please refer to **Motion Detection** part for setting steps.
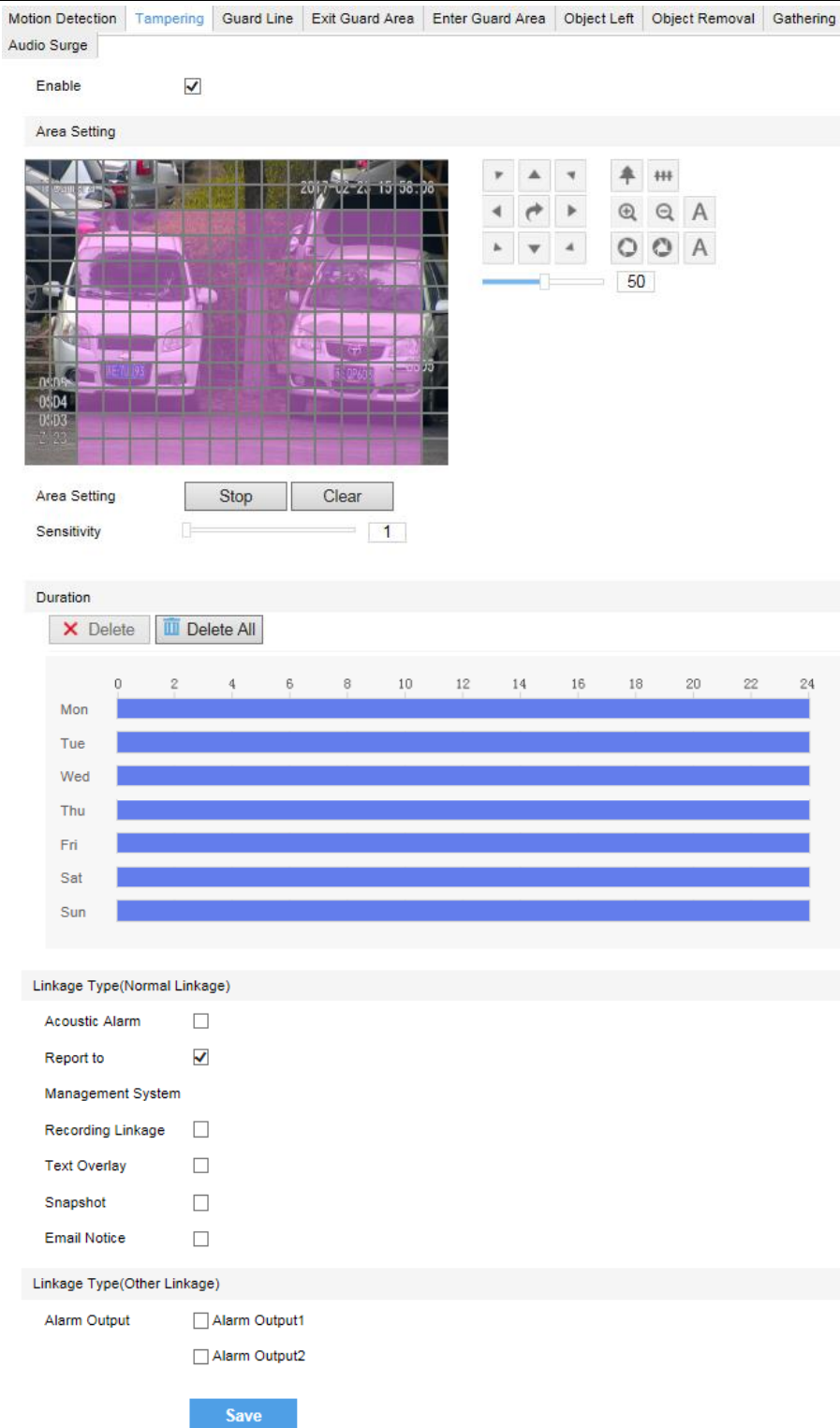
Picture 4-16 Tampering

4.3.3 Guard Line

Enable this function in the interface to detect specific area at real time. Once any object enters the guard line, an alarm will be triggered.

Go to **Settings > Event > Intelligent Function > Guard Line** and configure.

Picture 4-17 Guard Line

Setting steps:

1)   Check "**Enable**";

2)   If the intelligent function has linked to a preset, it displays "Already Set" behind "**Enable Presets**". On this interface, user can edit or delete the set linkage;

3)   Behind "**Programme**", there are 32 numbers for selection. Select the saved set number and select a number from the dropdown list of "**Associated preset bits**" to link to the preset;

4)   Select a direction from the dropdown list of **Guard Line Direction,** "A→", "B→" or "A→&&B→". Take "A→" as an example, when selecting this direction, only when objects move from A to B the system will detect it and trigger an alarm;

5)   **Target Filter**: to set target area. Click "**Edit**" and drag the mouse in the scene to draw a rectangle. Click "**Stop**" after finishing and drag the slide bar of "**Max and Min Target Ratio**" (1% by default). Moving objects exceeding max and less than 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 point or end point to adjust its length and angle, and drag the slide bar of "**Sensitivity**" to set the guard line's sensitivity to moving objects;

7)   **Duration**: user can set multiple durations and set different start time and end time for each duration. Please refer to Step 4) in Motion Detection part;

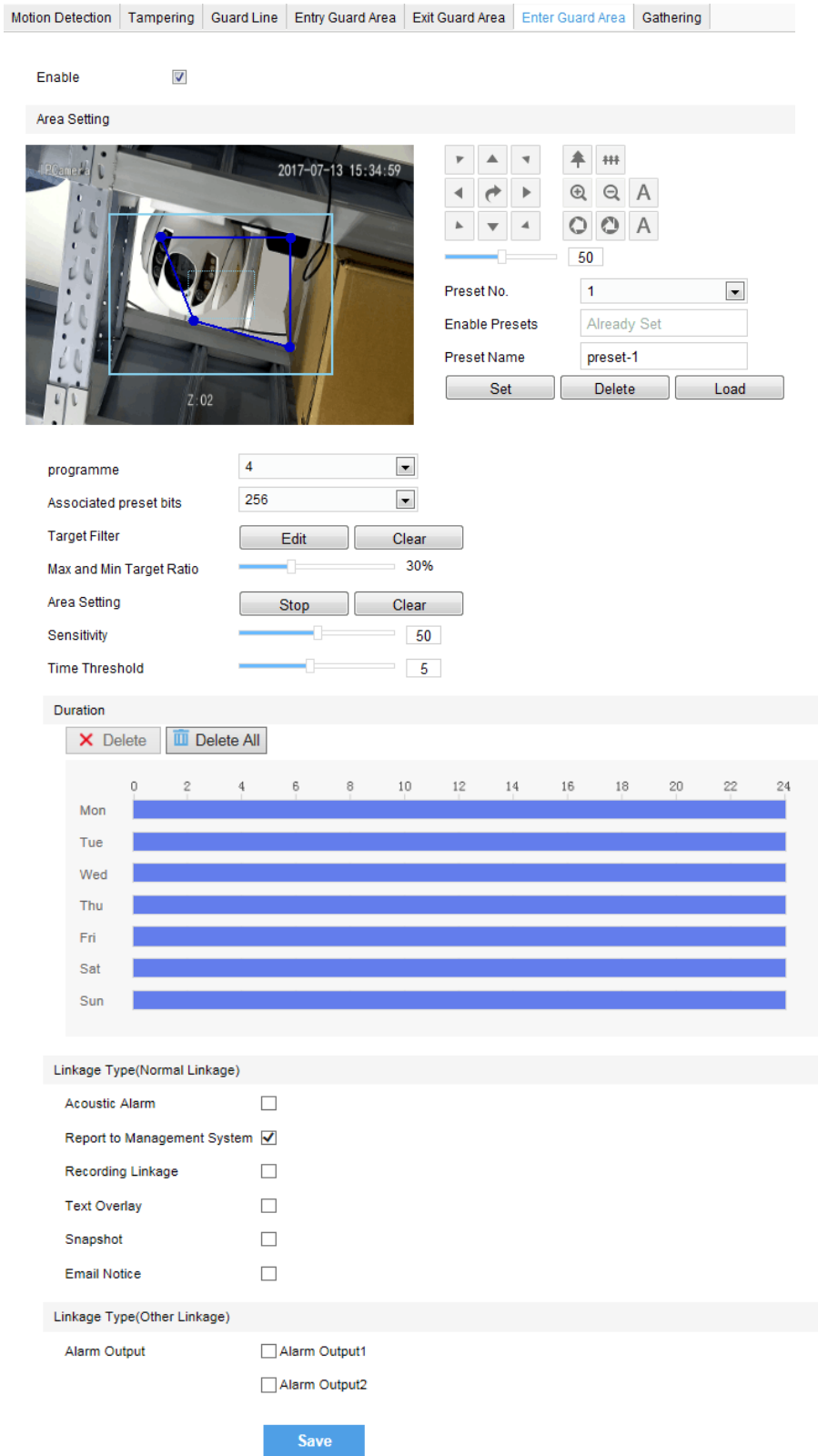8)   Check **"Linkage Type"** and **"Save"** to make settings take effect.

4.3.4 Enter Guard Area

Enable this function in the interface to detect specific area at real time. Once any moving object enters the guard area, an alarm will be triggered.

Go to **Settings > Event > Intelligent Function > Enter Guard Area** and configure.

Setting steps:

1)   Check "**Enable**";

2)   If the intelligent function has linked to a preset, it displays "Already Set" behind "**Enable Presets**". On this interface, user can edit or delete the set linkage;

3)   Behind "**Programme**", there are 32 numbers for selection. Select the saved set number and select a number from the dropdown list of "**Associated preset bits**" to link to the preset;

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 exceeding max and less than 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 point or end point to close the area;

6)   Drag the slide bar of "**Sensitivity**" to set the sensitivity of the guard area to moving objects. The higher the value is, the more sensitive it is to the moving objects;

7)   **Time Threshold**: The system will trigger an alarm after the target entering the guard area for a certain period of time, for example 5s. Time threshold can be configured and the default is 5s;

8)   **Duration**: user can set multiple durations and set different start time and end time for each duration. Please refer to Step 4) in Motion Detection part;

9)   Check **"Linkage Type"** and **"Save"** to make settings take effect.

Picture 4-18 Enter guard area

4.3.5 Exit Guard Area

Enable this function in the interface to detect specific area at real time. Once any moving object leaves the area, an alarm will be triggered.

Go to **Settings > Event > Intelligent Function > Exit Guard Area** and configure. Setting steps can be referred to in **Enter Guard Area**.

4.3.6 Object Left

Enable this function in the interface to detect specific area at real time. When any object is left in the area, an alarm will be triggered.

Go to **Settings > Event > Intelligent Function > Object Left** and configure. Setting steps can be referred to in **Enter Guard Area.**

4.3.7 Object Removal

Enable this function in the interface to detect specific area at real time. When any object is taken from the area, an alarm will be triggered.

Go to **Settings > Event > Intelligent Function > Object Removal** and configure. Setting steps can be referred to in **Enter Guard Area.**

4.3.8 Gathering

Enable this function in the interface to detect specific area at real time. When moving objects exceed the sensitivity, an alarm will be triggered. After setting the area and the sensitivity is set 50%, when 50% or more of the area is covered by moving objects, an alarm will be triggered.

Go to **Settings > Event > Intelligent Function > Gathering** and configure. Setting steps can be referred to in **Enter Guard Area.**

4.3.9 Audio Surge

After enabling this function, when there is audio surge, an alarm is triggered. The higher the Voice Intensity Threshold is, the more sensitive it is to voice mutation.

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

Setting steps:

1) Check "**Enable**";

2) 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;

3) **Duration**: user can set multiple durations and set different start time and end time for each duration. Please refer to Step 4) in Motion Detection part;

4) Check **Linkage Type** and click "**Save**".

4.3.10 Alarm Input

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

Setting steps:

1) Confirm that the alarm input device is always enabled or always disabled and has been rightly connected with the alarm input port of camera.

2) Go to **Settings > Event > Alarm Input**, and select a number from the dropdown list of Alarm Input ID (corresponding to the connected input ID).

3) Enter alarm name. If the alarm input device is always disabled, which means the circuit is usually open, user must select "**Always Disabled**" from the dropdown list of Alarm Type. If the alarm input device is always enabled, which means the circuit is usually loop, user must select "**Always Enabled**" from the dropdown list of Alarm Type. The default setting is "Always Disabled".

4) Duration: user can set multiple durations and set different start time and end time for each duration. Please refer to Step 4) in Motion Detection part;

5) Check "**Linkage Method"**.

6) Click "**Save**".
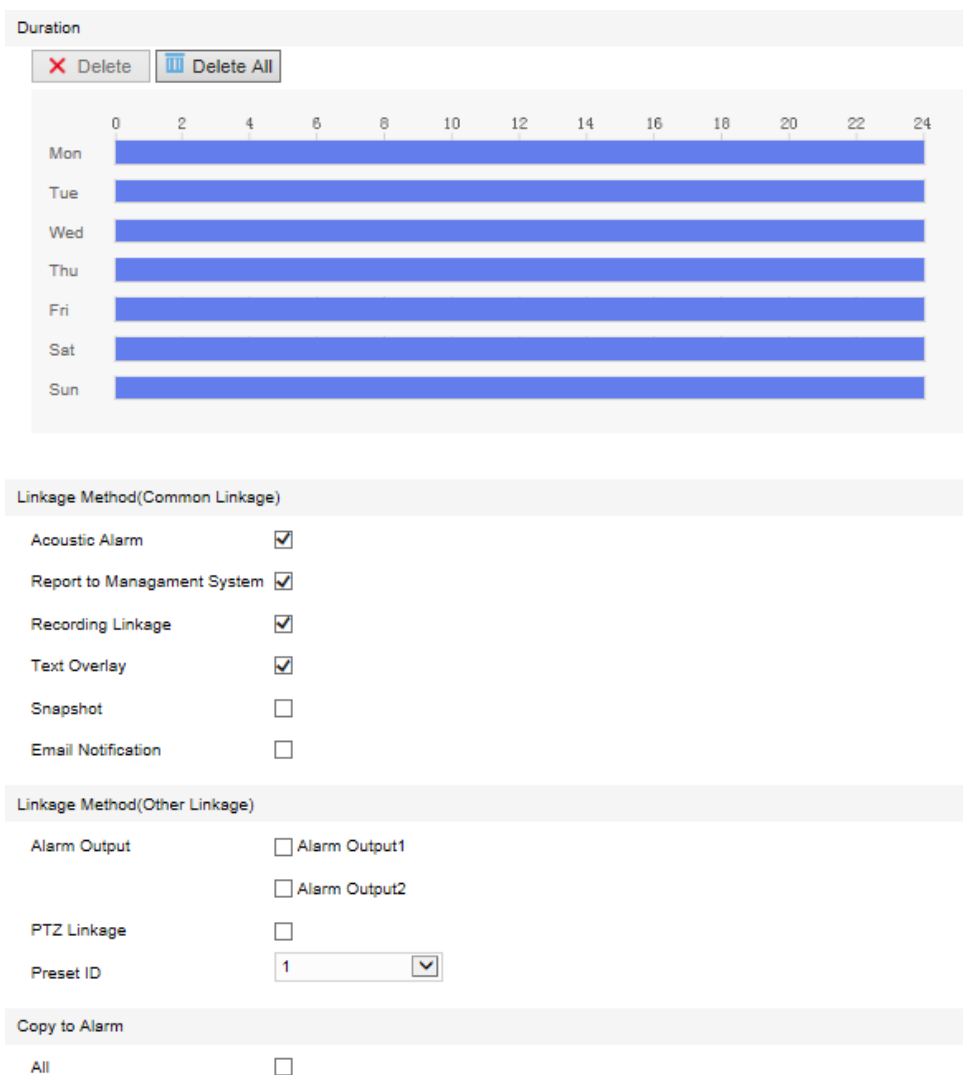
Picture 4-19 Alarm input

4.3.11 Abnormality Linkage

Abnormality linkage means the linkage triggered when abnormality occurs. Abnormality type includes Disk Full, Disk Error and Internet Disconnected.

Setting steps:

1) Go to **Settings > Event > Abnormality Linkage**, and check "**Enable**".

2) Select type from the dropdown list of Abnormality Type.

3) Check **Linkage Type**.

4) Click "**Save**".

Picture 4-20 Abnormality linkage

Notice: Abnormalities of disk full and disk error are prompted in live view window in the format of icons, which display in the same line of system time

## 4.4 Video Parameters

4.4.1 Video Encoding

Camera supports multiple streams encoding and decoding. Multi-stream means the same video source is encoded into different streams of videos with different resolutions. User can select proper resolution to view or record according to the network bandwidth.

Go to **Settings > Camera > Video > Encoding Format**, as shown in the following picture. In the dropdown list of "Multi-Stream", select Single Stream or Dual-Stream, and the setting takes effect after rebooting.

Picture 4-21 Main Stream Encoding

4.4.2 ROI

Only encode specific area to ensure normal surveillance and constant resolution of the specific area under poor network.
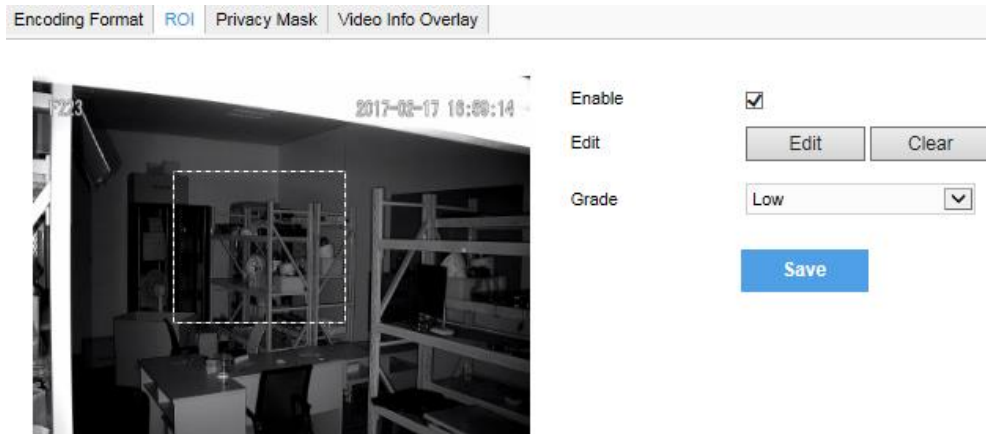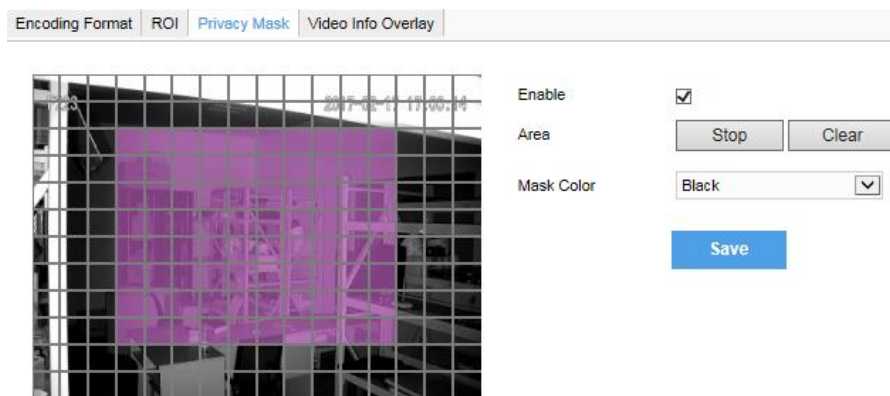

Picture 4-22 ROI

Setting steps for ROI:

1) Go to **Settings > Camera > Video > ROI**, and check "**Enable**".

2) Click "**Edit**", and drag a rectangle area with mouse as the specific area. Click "Clear" to cancel setting and reset.

3) Select encoding "**Grade**" from the dropdown list.

4) Click "**Save**".

Notice: When ROI is enabled, if user modifies image resolution or aspect ratio (standard screen/widescreen), the device will quit ROI automatically.

4.4.3 Privacy Mask

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

Picture 4-23 Privacy Mask

The image is divided into 16 columns and 12 rows of small squares. The max supported number of Privacy Mask area is 4. Setting steps for privacy mask areas:

1) Go to **Settings > Camera > Video > Privacy Mask**, and check "**Enable**".

2) Click "**Edit**", and the image is divided into 16 columns and 12 rows of small squares. Click any square and drag an area toward lower right, then this area is the privacy mask detection area, which turns purple red. Start from an undefined square and 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**" directly.

3) User can select "**Mask Color"** from the drop-down list.

4) Click "**Save**".

4.4.4 Video Info Overlay

Go to **Settings > Camera > Video > Video Info Overlay** and configure OSD info on video.

➢ **GPS**

Check **GPS** and camera coordinates will be displayed.

➢ **Lens Direction**

Check **Lens Direction** and the lens direction will be displayed.

➢ **Basic Intelligent Feature**

After configuring basic intelligent info (e.g. In the interface of **Settings > Event > Intelligent Function > Guard Line**, check and configure guard line function) and checking "**Basic Intelligent Feature**" and check **Rule Information Display** in Settings > Local Setting, the intelligent area will be displayed in live view video.

➢ **Digital Watermarking**

Check **Digital Watermarking**, digital watermarking will be displayed. Click "**Save**".
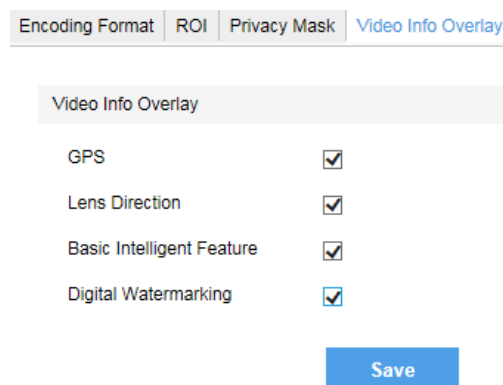
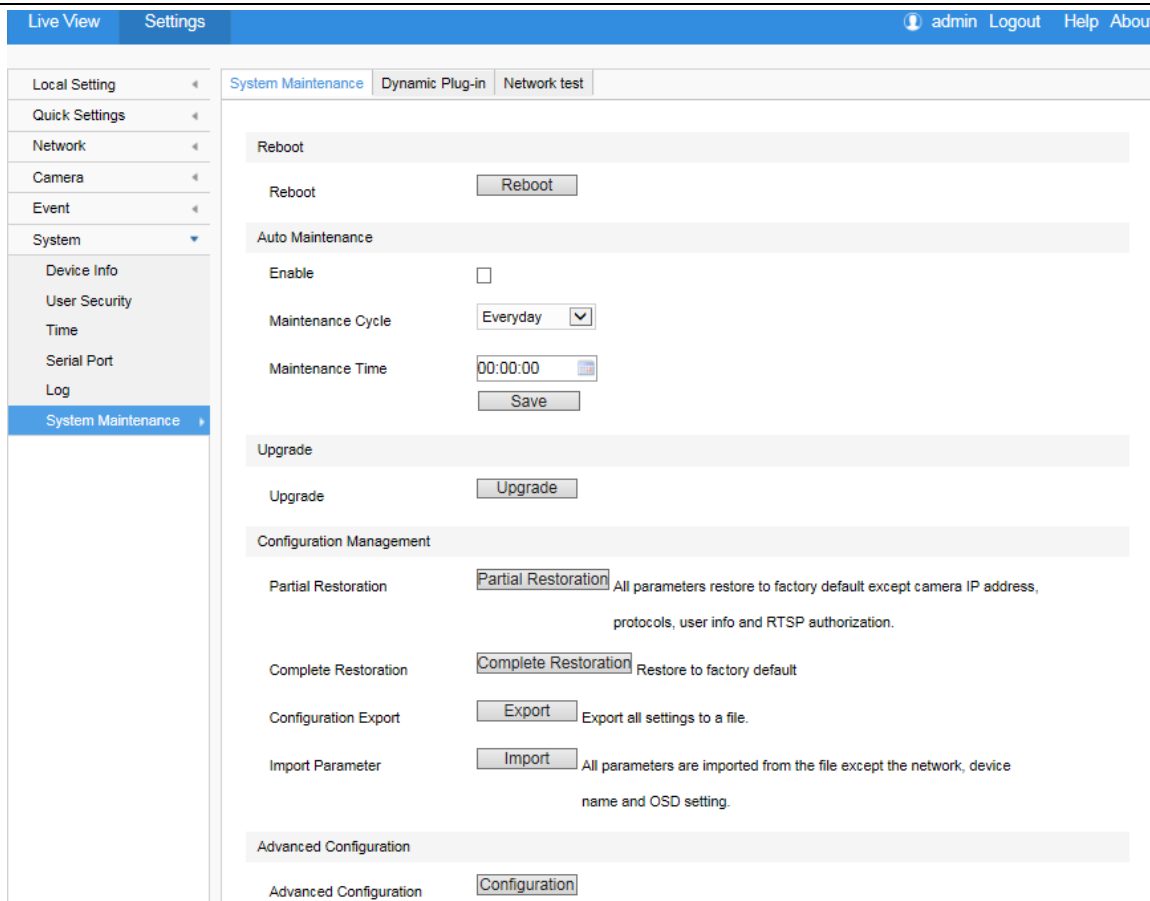**Picture 4-24 Video info overlay**

4.5 Upgrade

4.5.1 Firmware Upgrade

Contact dealer for upgrade file.

Method 1

1) Go to **Settings > System > System Maintenance > Upgrade**, as shown in the picture.

Picture 4-25 Firmware Upgrade

2) Click "**Upgrade**" and open local upgrade file (<*.pkg> format).

3) During upgrading, please do nothing but waiting.

4) After upgrading, if it is necessary to upgrade the web client, the system will prompt to download the plug-in. Please refer to the **Web Client Upgrade** for details.

Method 2

1) Run IPCSearch.

2) Click "**Upgrade**" to upgrade firmware of cameras of the same model simultaneously.

4.5.2 Web Client Upgrade

Method 1

Go to **Settings > Local Setting > Local Setting > Download Plug-in.** Click "**Download Plug-in**" and follow the prompts to finish upgrade.

Picture 4-26 Download Plug-in

Method 2

After firmware upgrade, please login web client again. The page will prompt to download a new plug-in control. After downloading it, web client upgrade will be completed. Login again to enter the latest web client.

ⓘ Notice: For detailed operations on the web client, please refer to the "*Help*" document.

5. Settings

Some models may not support some of the functions stated below. User operation is subject to the actual models and clients.

5.1 Network Access

Initial Configuration part has introduced how to modify parameters via IPCSearch to make camera access to network. Camera accepts multiple methods (via Ethernet and PPPoE) to access to network. The following will introduce how to configure camera network parameters through the web client.

5.1.1 Ethernet

Go to **Settings > Network > IP and Port > LAN,** as shown in the picture to configure IP Address, Subnet Mask and Default Gateway.
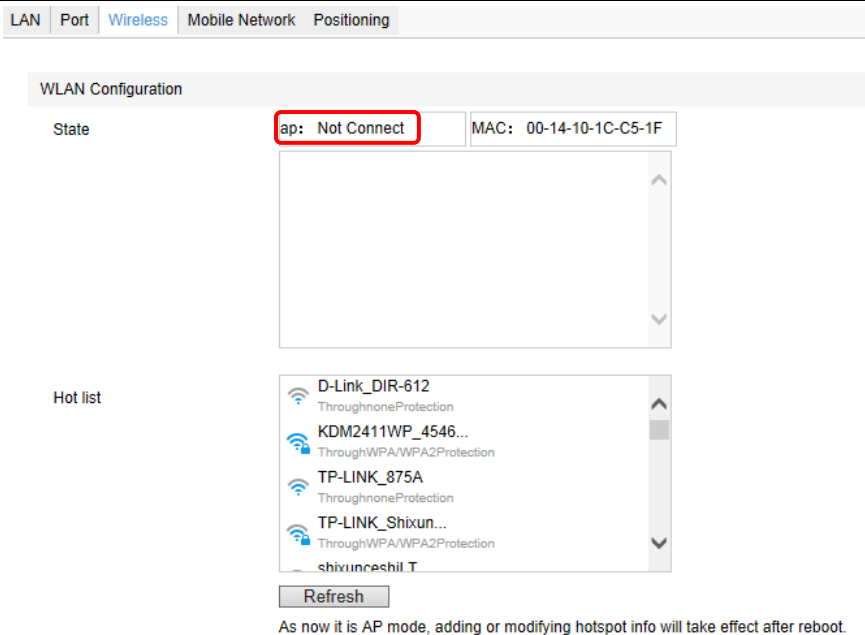

Picture 5-1 LAN

5.1.2 Wireless

Go to **Settings > Network > IP and Port > Wireless**. There are 2 working modes of the camera: AP Mode and STA Mode.

> **AP Mode**

  After electrifying the camera, the default is AP mode and the wireless terminal can connect to the wireless signal sending out from the camera. After connecting successfully, user can login to the camera through its IP address.
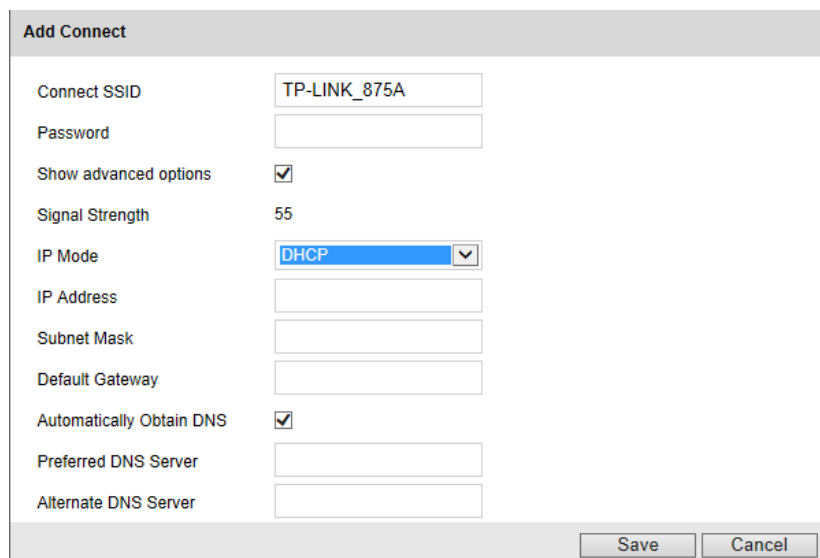
Picture 5-2 AP Mode

1) Search the wireless signal sending out from the camera. The default SSID is "IPCamera+ XXXXXXXXXXXX (wireless MAC address)" such as IPCamera001410111e63. After editing device name, the system will replace the IPCamera in SSID with the new name.

2) Open browser and input the IP address (default is 192.200.1.200) to go to the login interface. Input user name and password (admin/ admin123) to login.

ⓘ Notice: If logging in to a non-activated device for the first time under AP mode, you need to activate the device on the web client first.

➢ **STA Mode**

1) Select the wireless router to connect to. Click the ➕ button on the right of the router name and enter the window of "**Add Connect**", as shown below.


Picture 5-3 Add connect

2) Input "Password" and check "**Show advanced options**". The default IP Mode is "DHCP". If selecting "Static", enter IP Address, Subnet Mask, Default Gateway and etc. Click "**Save**".

ⓘ Notice: If switching from AP mode to STA mode, wait a moment and go to the wireless connection interface. The status becomes WiFi reminder when the mode is STA. Refresh till it shows that the router has been connected to, which means the WiFi is available.

3) Go back to the **Wireless Configuration** interface. The **Hot List** displays all available networks, as shown below. The wireless network connects to the last one on the list automatically. After connection, it displays "**Connect**" under the network.
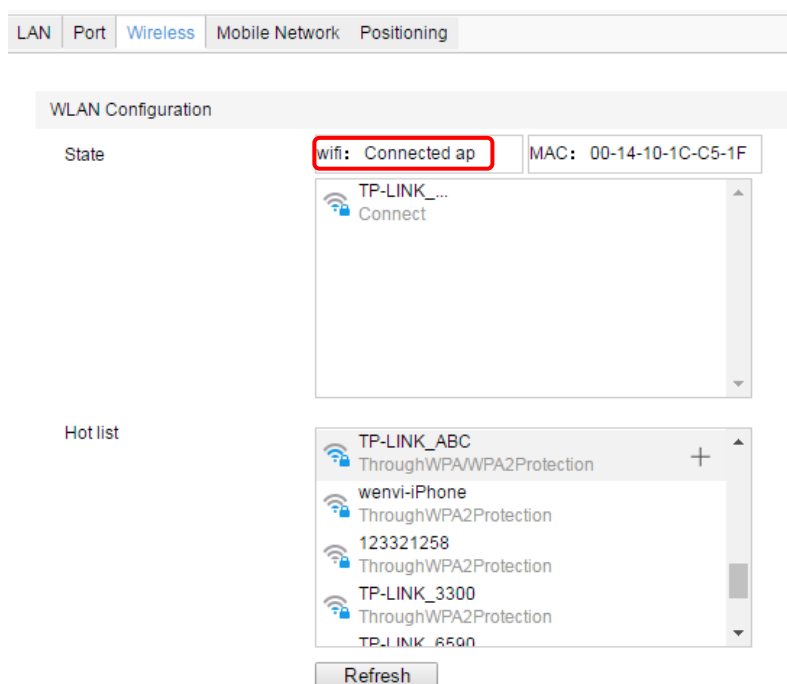
**Picture 5-4 Wireless router connected**

ⓘ Notice:

1) If the password is wrong, the system will keep on prompting Wi-Fi connecting after "Refresh". Please check the password and re-enter.

2) If the password is right but the system keeps on displaying Wi-Fi disconnected or connecting after "Refresh", the WiFi must be abnormal. Please make sure the WiFi is normal and available.

5.1.3 Mobile Network

Go **to Settings > Network > IP and Port > Mobile Network** to configure mobile network.

1) Check "**Enable Mobile Network**" and "**Enable Default APN**" and select "Verification Protocol". If it accesses to VPDN private network or foreign COM, you need to configure dial-up parameters manually. Please consult local COM for detailed parameters, as shown in the following picture.

2) Check dial-up status and click "**Save**". You can connect to surveillance platform via mobile network and meanwhile send front-end data to the platform.

3) After configuration, view current status of dial-up. If it shows **Connected**, it means dial-up is done. Otherwise, move to another place with stronger signal to try again.
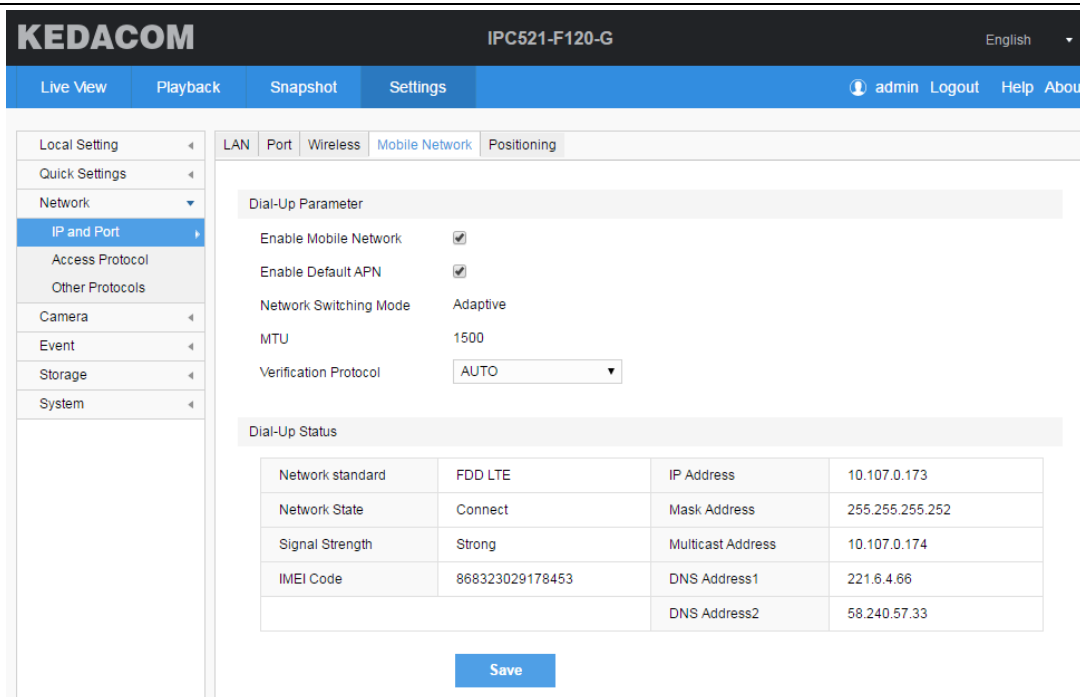
Picture 5-5 Dial-Up done
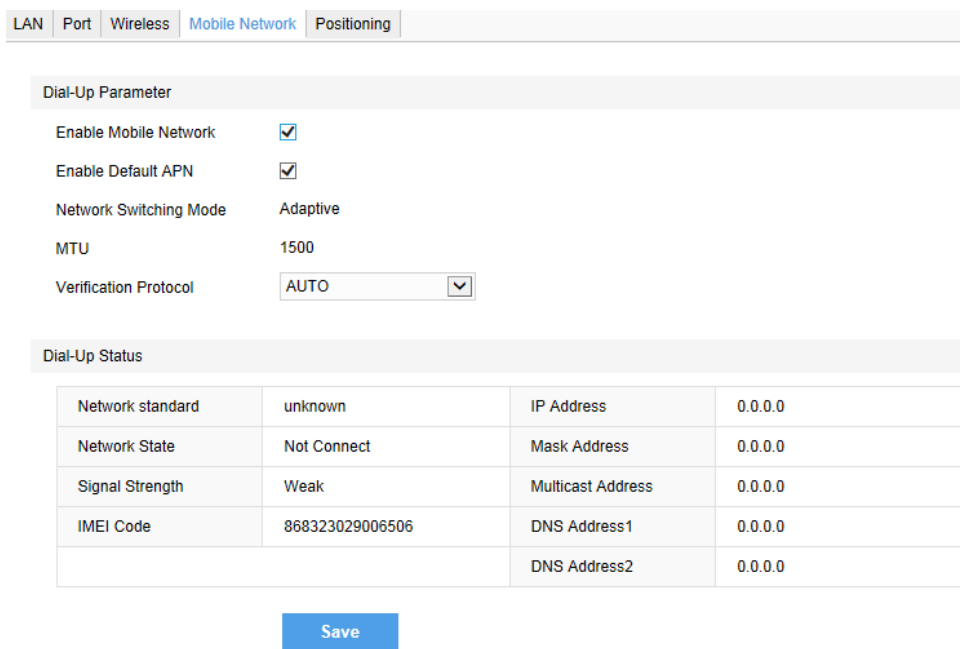
Picture 5-6 Dial-Up failed

Notice: Currently, it supports these network types: 3G, 4G, TDDLTE and FDDLTE.

5.1.4 Positioning

Go to **Settings > Network > IP and Port > Positioning** to configure positioning function. Check "**Enable**".

Mode: Mixed mode of BDS/ GPS

Report-to-center Interval: Interval of sending data to the platform

Speed unit: Configure vehicle speed unit, options including km/ h and mile/ h

Current speed: Speed of current vehicle

Picture 5-7 Positioning

5.2 Access Protocol

5.2.1 VSIP

Go to **Settings > Network > Access Protocol > VSIP**, as shown in the picture. Enter "VMS Address" and "VMS Port Number". Click "Save" and reboot device.

Picture 5-8 Register to VMS

5.2.2 ONVIF

ONVIF protocol is enabled by default. Search and add devices by ONVIF on VMS and the camera will be added to the VMS automatically. User does not need to configure at the web client.

5.2.3 Access Public Network by 4G

The steps for the camera to access public network when using 4G signal:

1) Insert a SIM card in the camera and power it on. Open the web client and go to **Settings > Network > IP and Port > Mobile Network**. Check "**Enable Mobile Network**" and click "**Save**".

Picture 5-9 Enable mobile network

2) On the interface of **Settings > Network > IP and Port > LAN**, set gateway as 0.0.0.0.

3) Open the PMC interface of VMS in public network and click **Manage Device > Add**.

Picture 5-10 Input parameters

➢ If the inserted SIM card is for private network:

IP Address: Input the DHCP IP address after 4G dial-up succeeds

Located in the Same Subnet: Uncheck

Write Data: Check

➢ If the inserted SIM card is for public network:

IP Address: Input a random IP address. If it conflicts with other IP address, switch to another one.

Located in the Same Subnet: Check both "**Camera is Out of NAT**" and "**Device Sending NAT Detection Packet**".

Write Data: Uncheck

ⓘ Notice: Method to obtain the IP address after 4G dial-up: 17230 port show4ginfo command, or login to device 23 port ifconfig to view usb0 interface.

4)   Click "**OK**" and the camera will be added to the device list automatically.

5)   Go to camera web client, **Settings > Network > Access Protocol > VSIP**, and input the UUID. If the IP address is in a private network, check "Send NAT Probe Packets" (uncheck when the IP is in public network). Click "**Save**" and the device will be online at the VMS in 2 minutes.
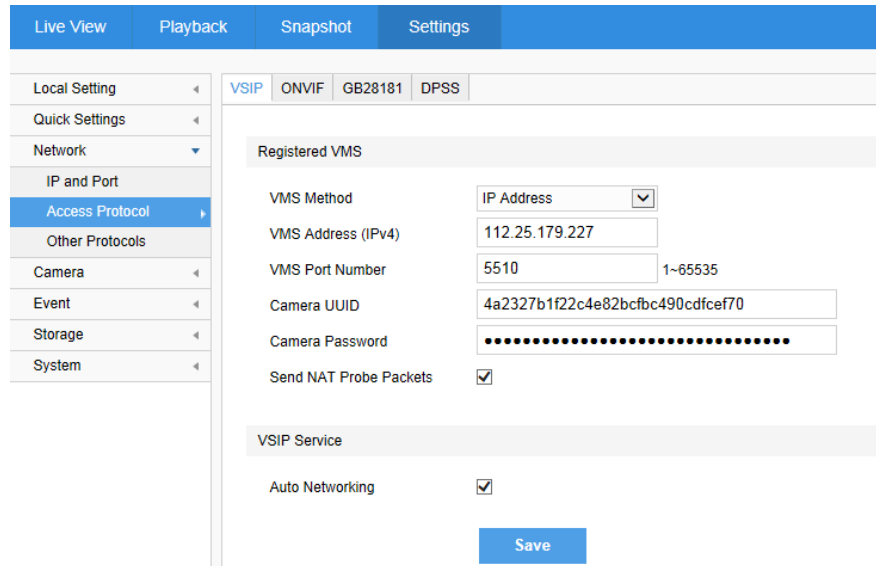
Picture 5-11 VSIP Protocol

6)   Login to the CU client to view camera image.

ⓘ Notice: If the camera is online at VMS but you cannot see the image, please login to the PMC client and enable 7000 port. Try again after the VMS is rebooted.
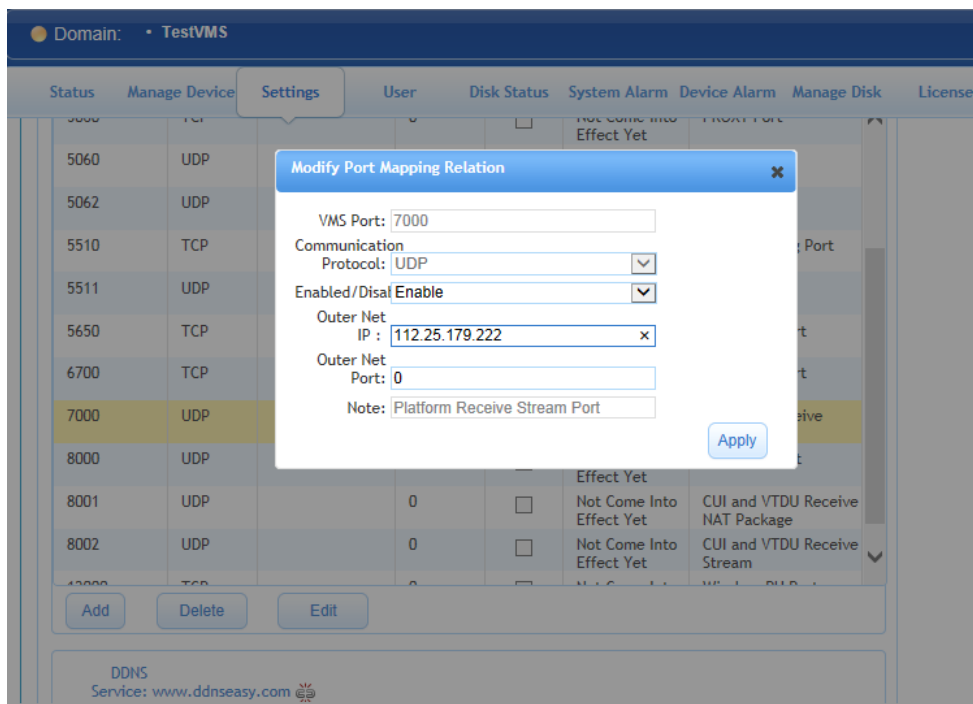

Picture 5-12 PMC setting

5.2.4 Access Private Network by 4G

1) Insert a SIM card in the camera and power it on. Open the web client and go to **Settings > Network > IP and Port > Mobile Network**. Check "**Enable Mobile Network**" and uncheck "**Enable Default APN**".
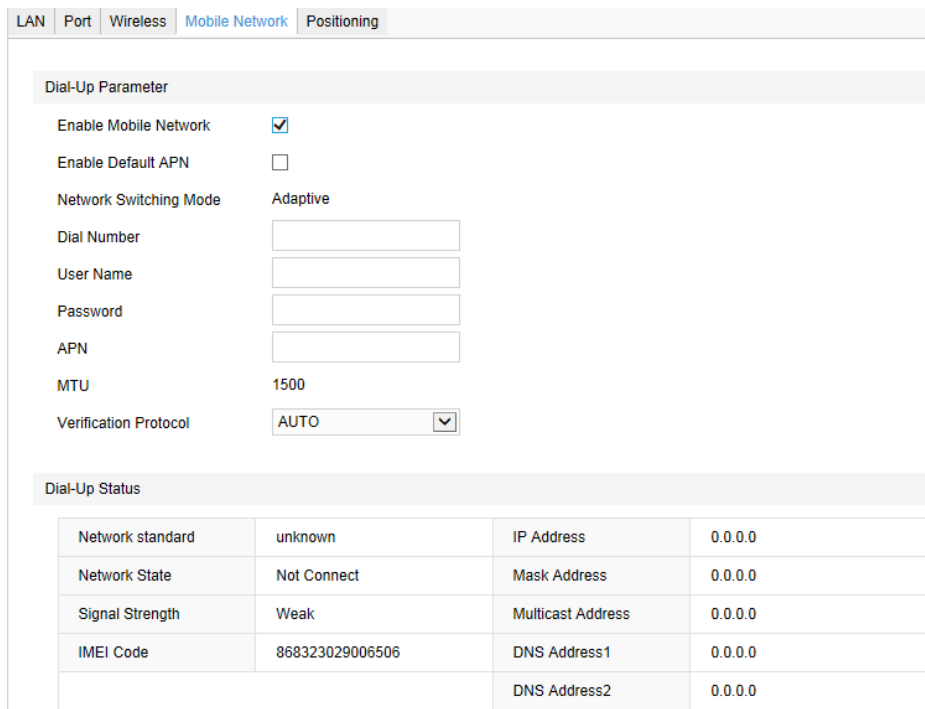

Picture 5-13 Enable mobile network

2) Input APN for private network, user name and password, and click "Save". Then view dial-up result.

3) On the interface of **Settings > Network > IP and Port > LAN**, set gateway as 0.0.0.0.

4) Open the PMC interface of VMS in public network and click **Manage Device > Add.**
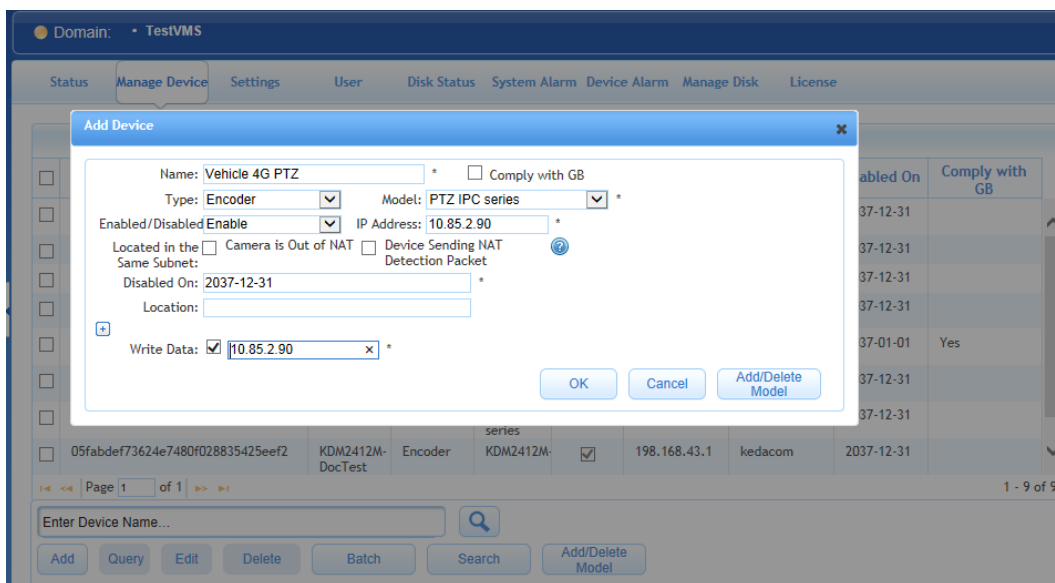
Picture 5-14 Add camera

5) Go to camera web client, **Settings > Network > Access Protocol > VSIP**, and confirm the camera has been added to the VMS automatically. User needs not to operate but the VMS address (IPv4), camera UUID and camera password have all been filled.
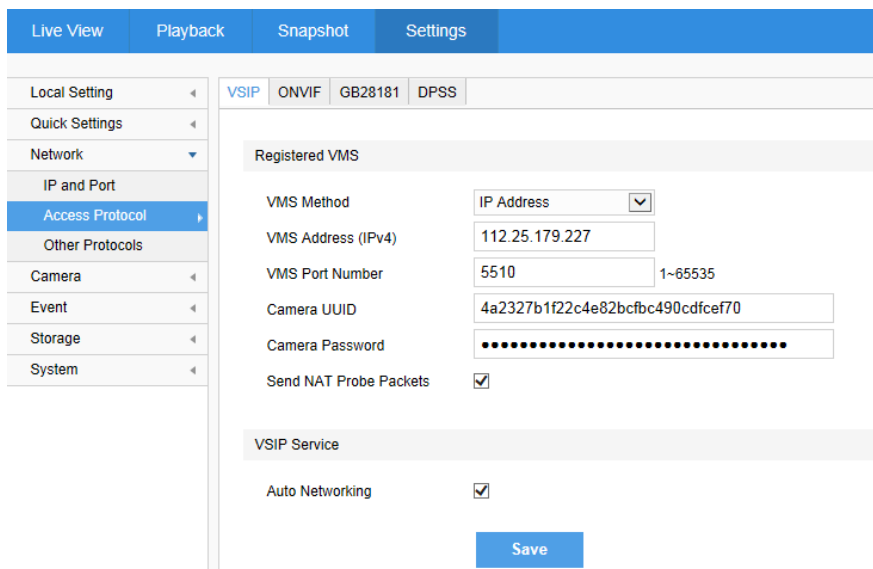
Picture 5-15 VSIP protocol

6) Login to the CU client and confirm if the camera has been added to the VMS. If it is added successfully, user can view camera video through CU client.
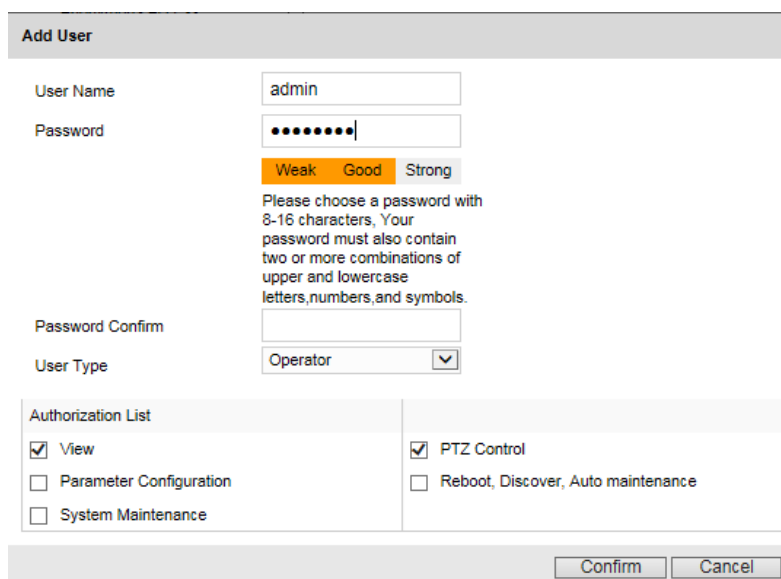
5.3 User Security

5.3.1 User Management

Go to **Settings > System > User Security > User**.

➢ **Add:**

Click "Add", and enter "User Name" and "Password" in the popup interface. Select user type from the dropdown list of "User Type", and assign operation authority to newly added user from the "Authorization List". Click "**Confirm**".

Picture 5-16 Add user

ⓘNotice:

1) To ensure the safety of device on internet, it is strongly recommended that you set a strong password which is composed of at least 2 kinds of the following, digits, case-sensitive letters or specific symbols, and whose length ranges from 8 to 16 bits.

2) Please modify the password periodically and once every 3 months is recommended. If the device is used in highly risky environment, suggest modifying the password monthly or weekly.

3) Please keep your user name and password safe.

➢ **Delete:**

Select user IP and click "Delete" to delete the user.

➢ **Modify:**

Select user IP and click "Modify" to modify in the popup interface.

5.3.2 IP Filter

By setting IP address filtering, user can manage access authentication to the web client.

White List means the IP addresses able to access to the client while Black List means the IP addresses unable to access to the client.

➢ **Enable:**

Select filter method from the dropdown list, Black List, White List, or "**Disable**".

➢ **Add:**

After select filter method, click "**Add**" and input IP address in the popup interface, and click "**Confirm**".

➢ **Modify:**

Select the IP address from the list and click "**Modify**" to modify the IP address, and click "**Confirm**".
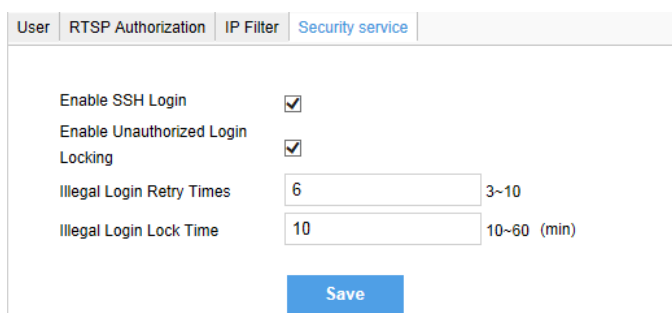
➢ **Delete:**

Select the IP address from the list and click "**Delete**". Click "**Delete All**" to clear all the IP addresses.

5.3.3 Security Service

To improve network security, go to **Settings > System > User Security > Security Service**, and enable HTTPS login, SSH login or unauthorized login.

Check "Enable Unauthorized Login". Configure Illegal Login Retry Times and Illegal Login Lock Time. Click "**Save**". When user logs in and input wrong user name or password for the configured times, the user IP will be locked up for a certain period of time, during which the user cannot log in.
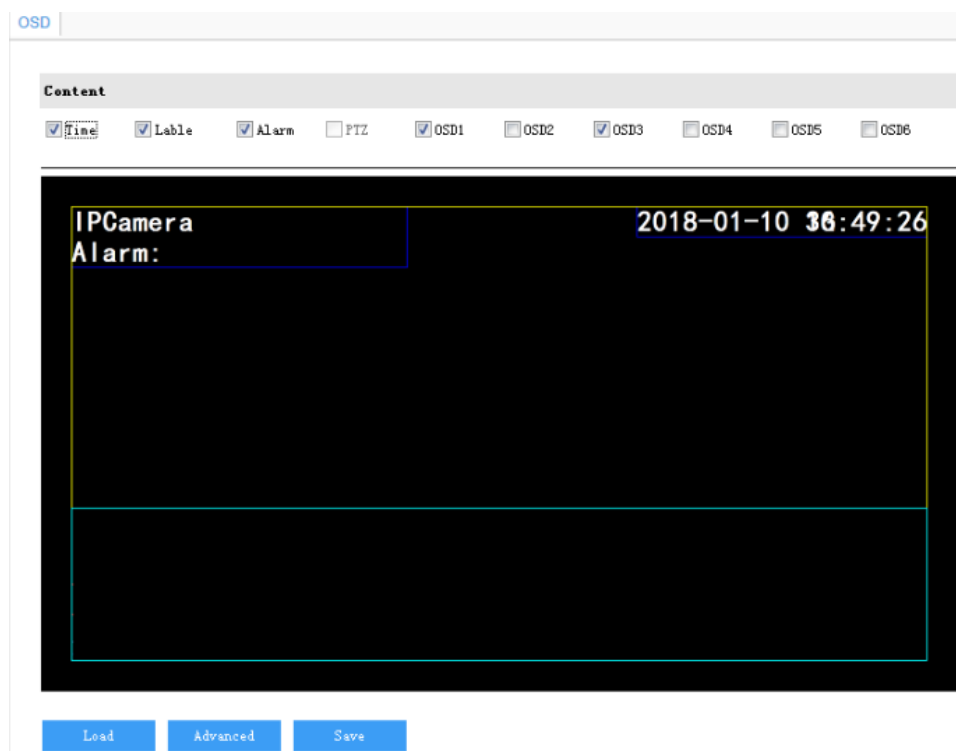

Picture 5-17 Security service

5.4 Text Overlay

Display preset text on the surveillance window, configuration steps as follows:

1) Go to **Settings > Camera > OSD**, as shown in the picture.

Picture 5-18 OSD

2) Check the options in "**Content**" and preview the result in the window below. For example, if user checks "**Time**", time will be displayed in the window.

ⓘ Notice:

1) Go to **Settings > System > System Maintenance > Dynamic Plug-in**. Select "Vehicle OSD" and check "Enable". Click "Save".

2) Go to **Settings > Camera > OSD** and check OSD1, OSD2 and OSD3 to display battery, longitude/latitude and REC…, as shown below.
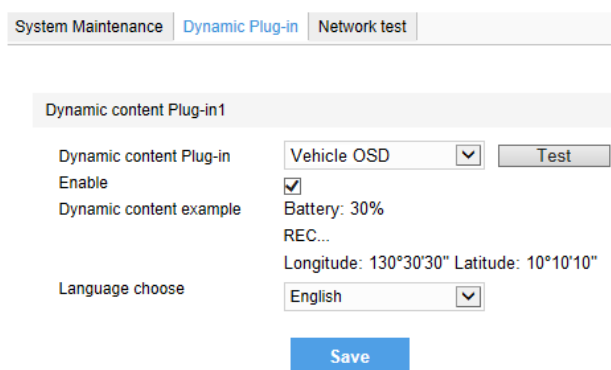

Picture 5-19 Dynamic OSD

3) Double-click on OSD1, OSD2 and OSD3 and a window will pop up. The default content type is "Dynamic" and the text is not editable, as shown below.
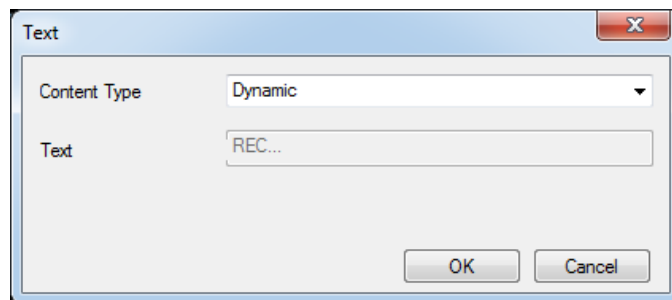
Picture 5-20 Dynamic content

3) Load font: Click "**Load**" to load "Default Font" or other fonts. Then edit content and position according to the above steps.

4) Edit text positions: drag the items in the window with mouse to change their positions.

5) Edit OSD texts: for example, if user checks OSD2, double click OSD2 textbox and input characters in the popup interface. Click "**OK**".

6) Advanced setting: Click "**Advanced**" to set "Format", "Font" and "Margin".
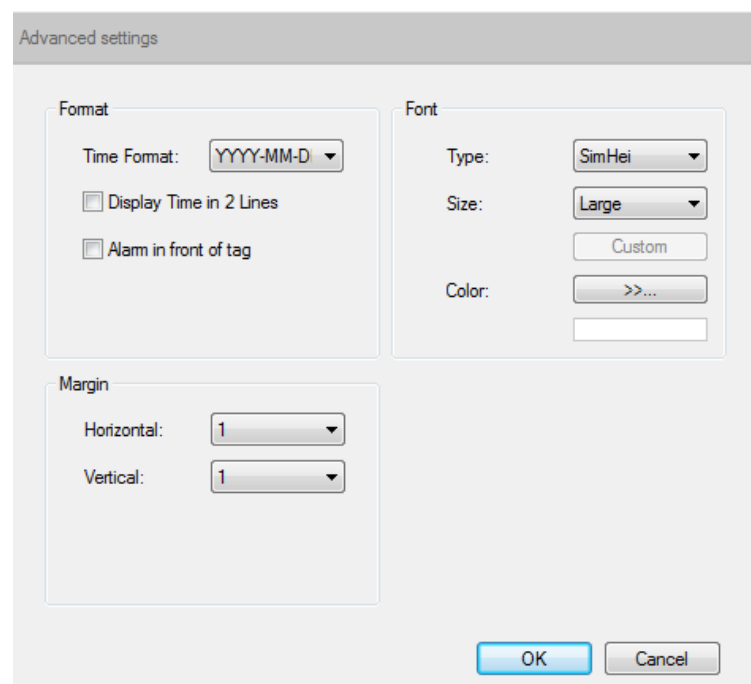

Picture 5-21 Advanced setting

7) Click "**Save**" to save OSD setting.

5.5 Multi-stream

Camera supports multiple streams encoding and decoding. Multi-stream means the same video source is encoded into different streams of videos with different resolutions. User can select proper resolution to view or record according to the network bandwidth.

Go to **Settings > Camera > Video > Encoding Format**, as shown in the following picture. In the dropdown list of "Multi-Stream", select Single Stream, Dual-Stream or Triple-Stream, and the setting takes effect after reboot.

For example, selecting Triple-Stream, in the dropdown list of "Stream Type", select Main Stream, Secondary Stream or Third Stream and configure respective parameters.
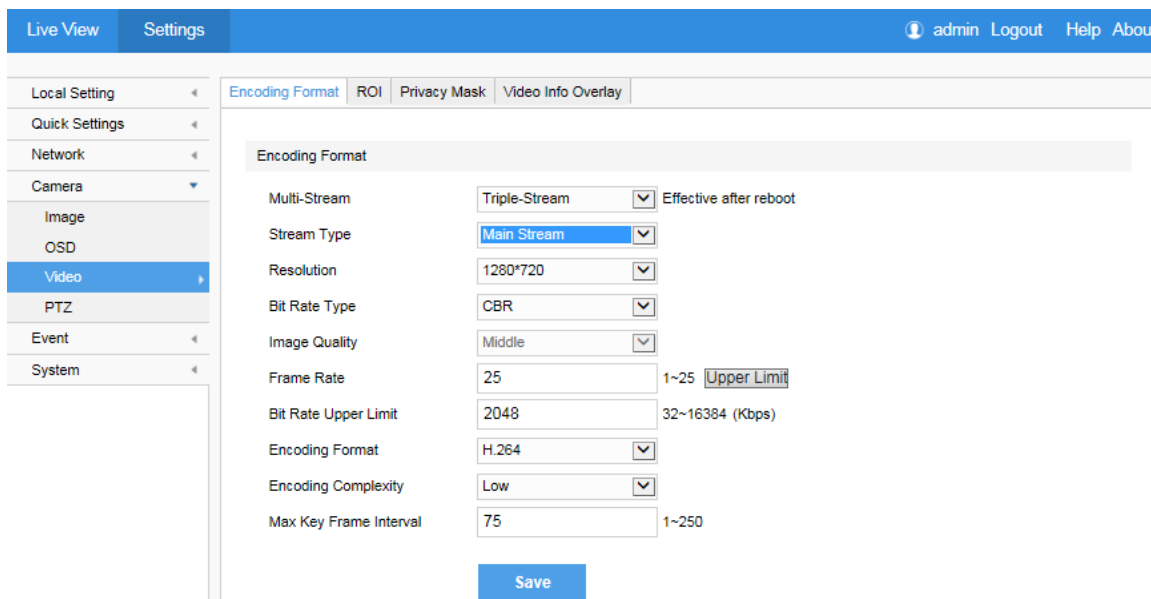
Picture 5-22 Main Stream Encoding

6. Appendix: Glossary of Terms

1080p	Resolution of 1920*1080 pixels (16:9)
720p	Resolution of 1280*720 pixels (16:9)
HD	High-definition
NAT	Network Address Translation
DHCP	Dynamic Host Configuration Protocol
DDNS	Dynamic Domain Name Server
IP	Internet Protocol
MPEG4	Moving Pictures Experts Group
CIF	Resolution of 352*288 pixels
QCIF	Resolution of 176*144 pixels
QXGA	Resolution of 2048*1536 pixels (4:3)
UXGA	Resolution of 1600*1200 pixels (4:3）
PC	Personal Computer
PPPoE	Point to Point Protocol over Ethernet