

KEDACOM

User Manual for HD IP Camera of IPC121-Ei7N-X120 Series

Version 02

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Target Audience

Administrators and Operators of Video Surveillance Products

Document Version

Version 02


Applicable Models

IPC121-Ei7N-X120 series

Related Document

Quick Start Guide

Convention

Icon	Convention
	Notices
<i>italic</i>	Book or document name; Filling content
>	Connector between menus of different level
BOLD	Menu; Button; Option

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1. Product Brief

IPC121-Ei7N series (hereinafter referred to as Camera) are 2MP intelligent feature-recognitive cameras based on IP network technology. It supports max resolution of 1920x1080, snapshot of moving targets, snapshots of people/vehicle/object, and snapshot abstraction by color, size and speed. It realizes HD video encoding and transferring of moving targets via public or exclusive network and can be used in the network surveillance system.

Some features of the camera:

Live View

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

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

Dual-stream to fit different network bandwidth;

Configurable text overlay on video image;

Intelligent Analysis

Track moving targets;

Support settings of guard area, shield area and calibration to realize more accurate tracking and intelligent analysis;

Track and capture moving targets and perform intelligent analysis on them;

Alarm

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

Motion detection and alarm linkage, make video surveillance intelligent;

Support alarm linkage edit: Alarm Text Overlay, Device Output, Live View Display and etc.

Networking

Static address, DHCP or PPPoE;

NAT traversal, DNS and multicast technology

Storage

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

Support local snapshot, default format is .JPG;

Support local recording, user can query and playback recording on PC.

2. Appearance



Picture 2-1 IPC121-Ei7N series

3. Start Up

Please refer to the Quick Start Guide in the packing for device installation and wiring.

3.1 Client Installation Conditions

Requirements of PC for installing the client:

- ✚ Operating System: Windows XP or newer versions
- ✚ Browser: IE7.0 and above versions, Firefox, Google Chrome (41 and below)
- ✚ Processor: 3.3 GHz CORE®i3 series or other equivalent processors
- ✚ RAM Memory: 4GB or above
- ✚ DirectX: 9.0c

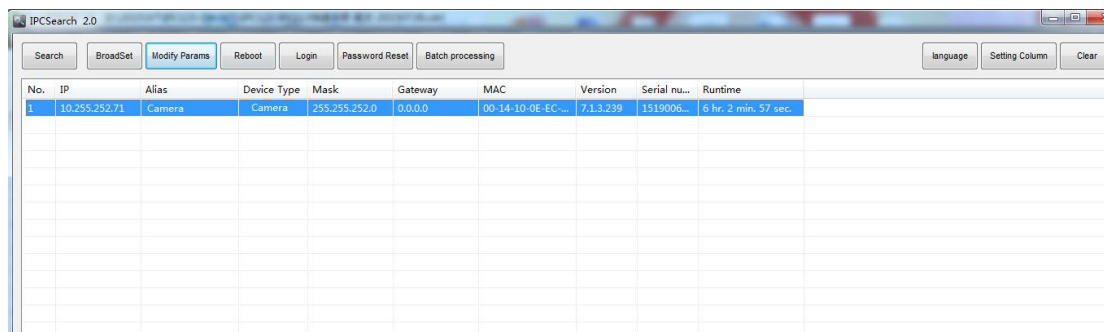
We will take IE7.0 as an example.

3.2 Initial Configuration

After installation and wiring, electrify the camera.

3.2.1 Modify Parameter

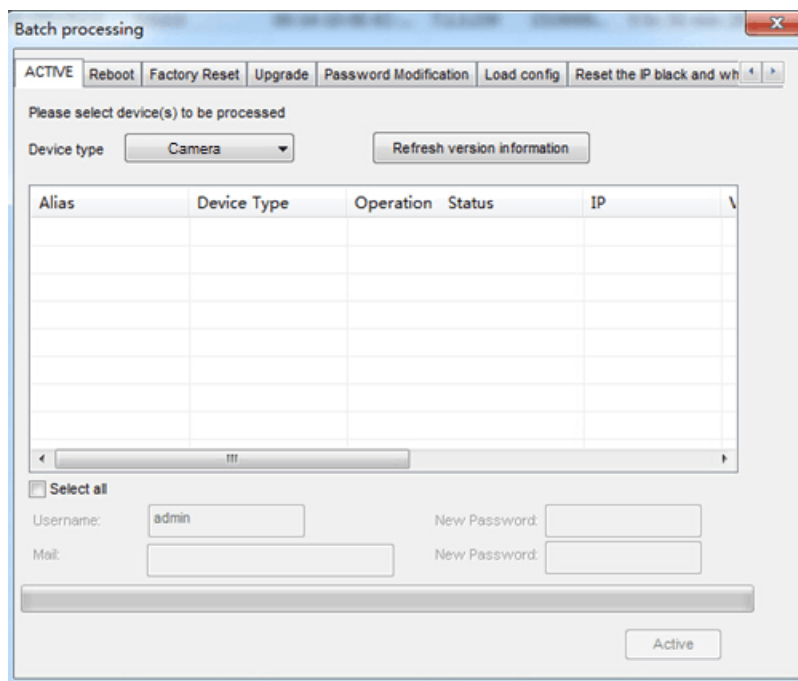
- 1) Get IPCSearch from the attached CD.



Picture 3-1 IPCSearch

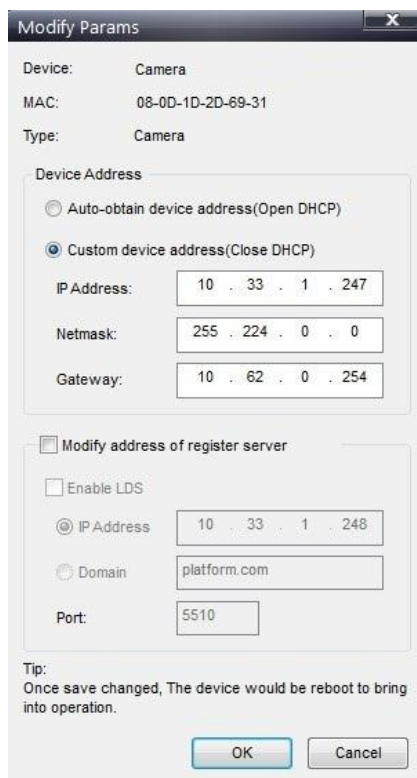
i Notice: IPCSearch is green software free from installation. Camera name is subject to the search result.

- 2) Run IPCSearch: it will search devices in LAN automatically and display the list as shown in Picture 3-1.
- 3) Select the device and click “Batch processing” . In the popup interface, set admin user’ s password and the email address to find back the password. Click “Active” and wait for rebooting.



Picture 3-2 Batch processing

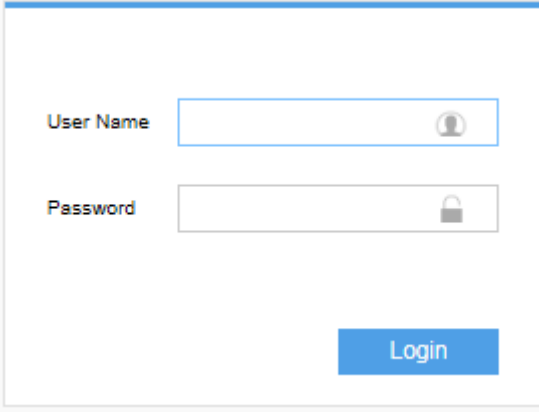
- 4) Select a camera to be configured, click “**Modify Params**” or right click the mouse. Interface is shown in Picture 3-3. During the modification, the user name (admin) and the password set before activation should be entered.



Picture3-3 Modify Parameter

3.2.2 Login Web Client

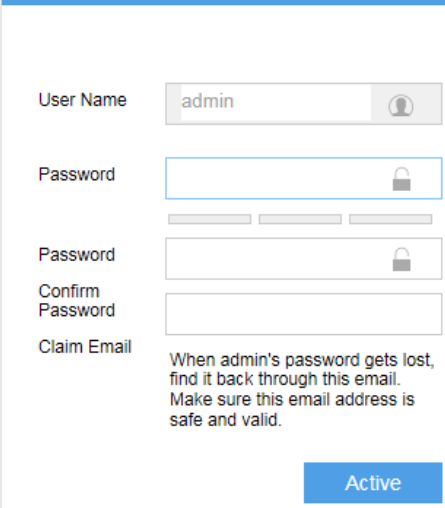
- 1) After modification, camera will reboot automatically. Please wait patiently. After reboot, the button will be enabled again. Please select this device again and click “Login” or double click device name to enter web client. Interface is shown in Picture 3-4.



Picture 3-4 Web Client Login Interface

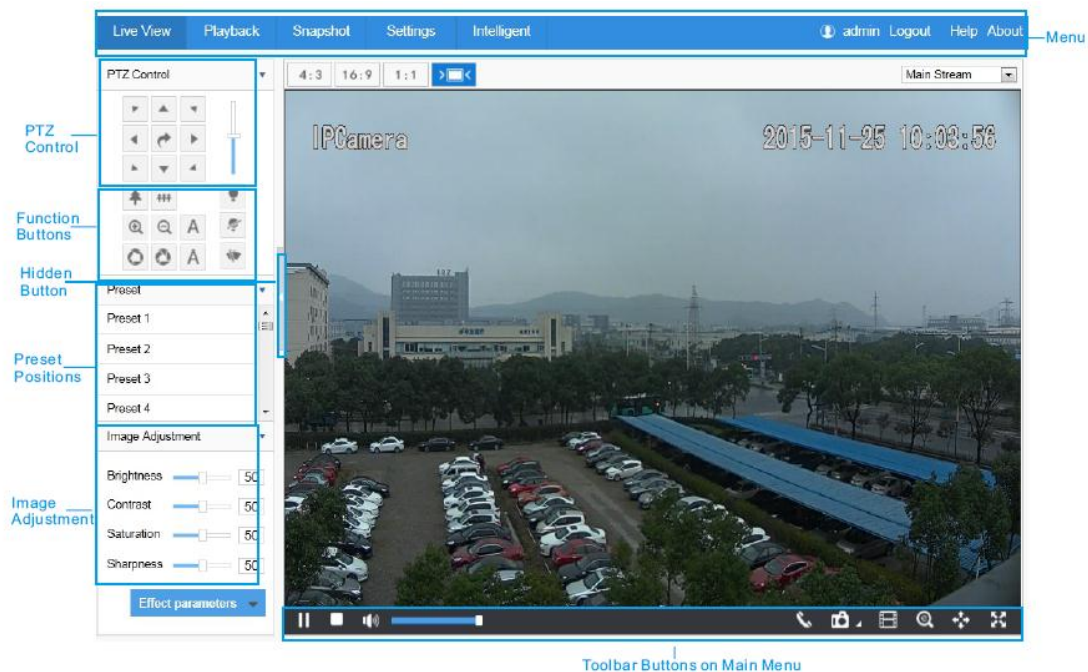


Notice: If log in the non-activated device through web client for the first time, user can set admin password and activate the device in the login interface, as shown below. Complicated password is recommended, e.g. combination of letters and digits above 8 bits.



Picture 3-5 First login through web client

- 2) Enter user name and password: when log in successfully for the first time, download and install the plug-in. Close browser when installing and re-login afterwards. Interface after login is shown in Picture 3-6.






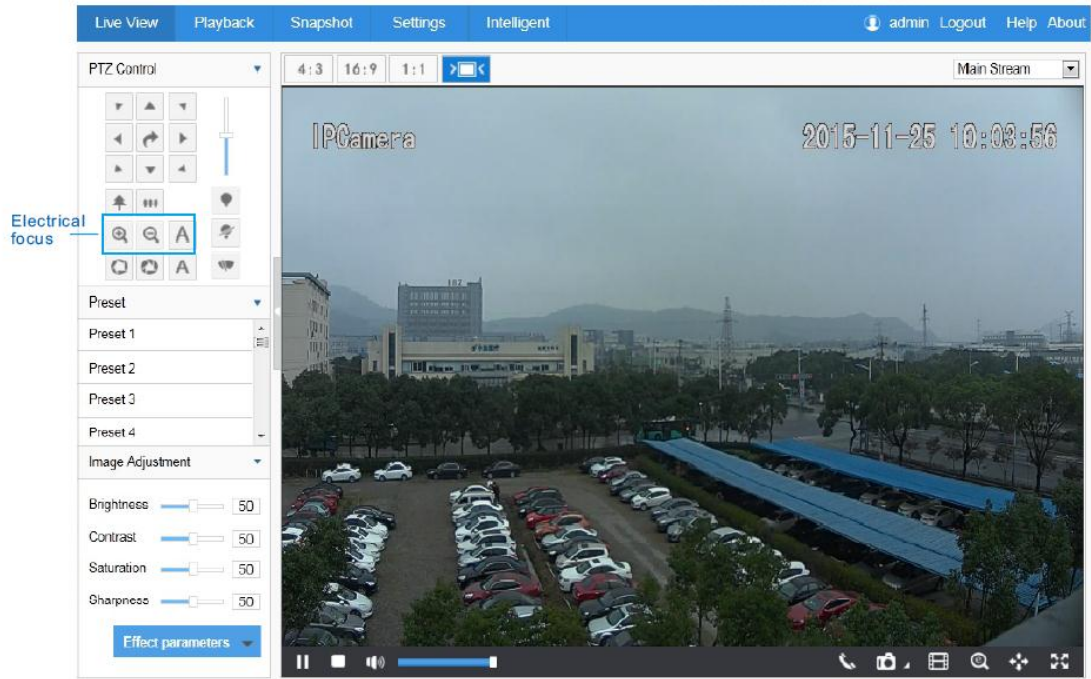
Picture 3-6 Web Client Interface

3.2.3 Focus

It is the process of imaging the target object clearly. Please focus according to the lens type of camera:

Mechanical Focus: View live video on web client and adjust the focus knob on the lens till the image is clear enough.

Electrical Focus: Click  in function buttons area of the web client, as the picture shows. Or click  or  for near or far focus. View live video on web client and adjust focus till the image is clear.



Picture 3-7 Focus

4. Product Functions

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

i Notice: Disabled button in Web Client means the model doesn't support the function. Functions with "*" mean only some models support.

4.1 Live View

The default interface after user login is live video view, or user can click Live View to enter the interface.

4.1.1 Toolbar Buttons



Picture4-1 Toolbar Buttons

Play/Pause

Click this button to play or pause a viewing.

Stop

Click this button to stop live view.

Call

Click this button to call camera, and click again to stop calling.

Snapshot

Click this button to capture an image.

Snapshot includes Camera Snapshot and Local Snapshot . User can set in **Settings>Local**.

Recording

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

 Notice:

- 1) 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.
- 2) Local Snapshot: Client snapshots an image and save it locally. The image quality is ordinary, but there isn't any time delay.

Local Setting

Play

Protocol TCP UDP

Performance Real-time Balanced Smooth

Enable Image Noise Reduction

Noise Reduction Level 1

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

Display Status Info

Recording

Packet size 256M 512M 1G

Local Recording Save Path

Clipping Save Path

Download Save Path

Snapshot

Local Snapshot Save Path

Camera Snapshot Save Path

Snapshot Save Path

Download Plug-in

Download Plug-in

Picture 4-2 Snapshot Setting

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.

Full Screen 

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

4.1.2 Image Adjustment

4.1.2.1 Brightness

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

Increase Image Brightness

Go to **Settings>Camera>Image>Image Adjustment**, drag Brightness slide bar to adjust image brightness.

Slower Shutter Speed


Camera shutter speed means the cycle of the sensor calculating light input amount. Therefore, the slower the speed is, the brighter the image will be.

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

Go to **Settings>Camera>Image>Exposure**, user can set shutter mode as auto or manual, and set Shutter Lower Limit.

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 worse the image will be. User is advised to select Auto for default values, or select Auto and set Gain

Upper Limit in **Settings>Camera>Image**. If user selects “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**, enable WDR in the drop-down list of **Dynamic Adjustment** and drag the **WDR Sensitivity** slide bar to adjust.

4.1.2.2 White Balance Adjustment

The basic conception of White Balance is “to make all colors white regardless of the color temperature of the light source”. It can compensate color rendition in pictures taken in specific light source.

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

If select “**Manual**”, drag the slide bar of White Balance R Gain (Red Gain) and White Balance B Gain (Blue Gain) to adjust image color.

4.1.2.3 Night Cut

Day (Night) Mode is to switch image to color (B/W) by controlling the light filter, 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 mode and the image is colored.

Night

Select Night mode and the image is black and white.

Auto (Gain Triggered)

Select Auto mode and configure sensitivity and switch time, then the system will switch Day/Night modes automatically.

Scheduled Day/Night

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

When select “**Scheduled Day/Night**” modes, click **Edit Time**, and check **Start Time** and **End Time** in the popup interface.

Alarm Triggered Cut

In this mode, night cut is triggered by alarm input.

4.1.2.4 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 3D Noise Reduction. When user selects “Disable”, the function will be disabled. When select “Enable”, user can drag the slide bar to adjust 3D noise reduction level.

4.2 Intelligent Display

Click “Intelligent” on the menu bar to enter the live view interface of intelligent display, as shown below:





Picture 4-3 Live view interface of intelligent display

4.2.1 Select Target Filtering Conditions

Click the buttons on the top of interface to filter targets. Options include object moving speed, size, type, moving direction, color and etc.

The default is selecting all conditions. If you want to remove any condition, just click the


button and the selecting all button  will be disabled  meantime. You can also select multiple filtering conditions.

4.2.2 Toolbar buttons

The toolbar buttons on the intelligent display interface are explained below:



Picture 4-4 Toolbar buttons on intelligent display interface

 Notice: Some buttons are the same as those in the live view interface on main menu, so we will not explain again. Please refer to 4.1.1 for detailed explanation.

Stop 

Click this button to stop live view.

Listen  

Click this button to listen to the IPC and click again to stop listening. This function is available when the camera supports and meanwhile the local PC should be installed with audio output device.

Call 

Click this button to call IPC. This function is available when the camera supports and meanwhile the local PC should be installed with audio input device.

Delete Snapshot 

Click this button to delete snapshot.

Display Tracking Box  

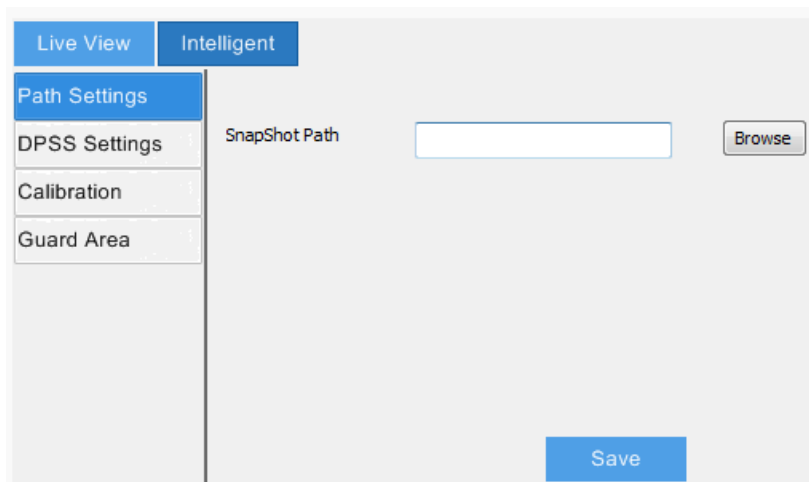
Click this button to display the tracking boxes in the live view window of Intelligent display and click again to stop displaying.

Display Optimal Snapshots  

Click this button to display optimal snapshots on the right of the live view window of Intelligent display and click again to stop displaying.

Open Snapshot In 

Click this button to open snapshots from the saving path. Alternatively, go to **Intelligent> Intelligent> Path Settings** and set the save path.



Picture 4-5 Path settings

4.3 Intelligent Settings

To ensure that the recognitive camera could capture people’s head and body, we need to login to the web client and configure some parameters.

4.3.1 Calibration Setting

Go to **Intelligent> Intelligent> Calibration**, the calibration setting interface is shown below:



Picture 4-6 Calibration setting

Calibration setting steps:

- 1) Check **“Enable”**.
- 2) Snapshot pedestrians. Viewing the live view area, click **“Snapshot”** several times when there are unshielded and distinct pedestrians. Save the snapshots of standing pedestrians and right-click the snapshot list to delete other snapshots.



[Notice]:

1. Choose adults of the same or similar height(s);
 2. Pedestrians' positions should be as scattered as possible such as at the top, the bottom, the left, the right or the middle of the image;
 3. When the pedestrians' heads or feet are shielded in rainy days, user should estimate the positions of their heads or feet.
- 3) Draw line segments. Select a snapshot image and click "**Add**". Move mouse to the overhead midpoint of pedestrian in the live view area and precise positioning can be done with help of the magnifier at top left corner. The position of mouse is shown in the shape of a red cross under the magnifier. After fixing the overhead midpoint, left click the mouse and drag it to the center of gravity between the pedestrian's feet. Release the mouse and a calibration line segment is finished. Click "**OK**" and the line segment will display on the live view window.
- 4) Repeat step 2) to 3) to draw other calibration line segments.



[Notice]: The calibration line segments should be scattered, otherwise, calibration will fail.



Picture 4-7 Good calibration



Picture 4-8 Improper calibration

- 5) If you want to delete a calibration line segment, select the line segment and click **“Delete”**.
- 6) Set **“Reference Height”** (cm) as required. For example, if it is set 170, the reference height of targets is 170cm. If the precise value is unavailable, just leave it blank.
- 7) Draw at least 5 calibration line segments and click **“Save”**. If you draw less than 5, it will prompt when you click **“Save”**.

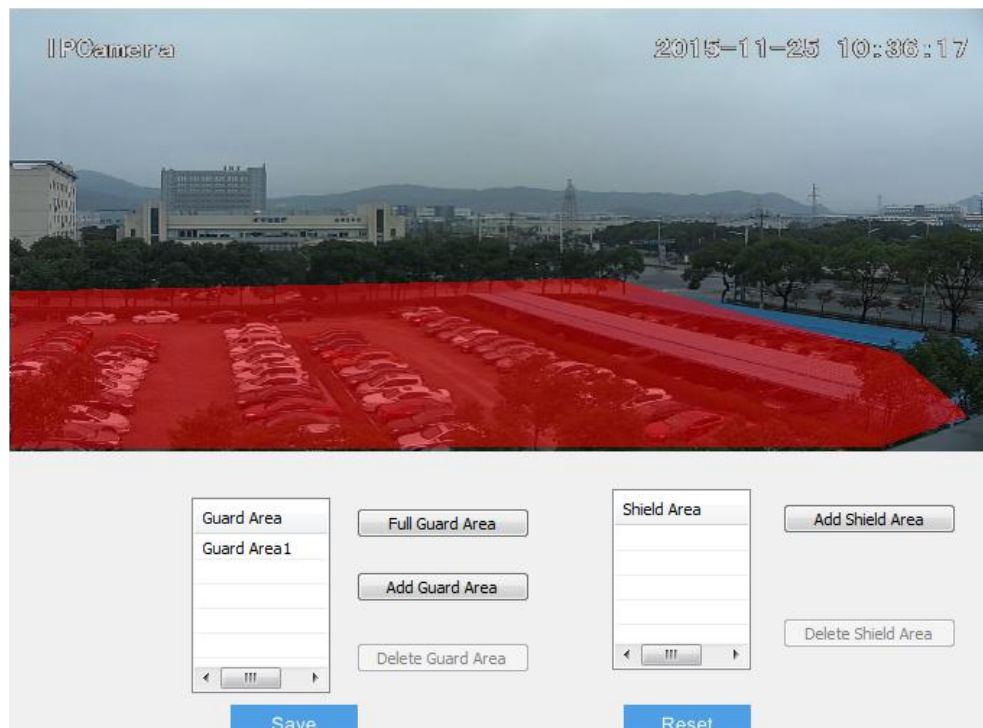
4.3.2 Guard Area Setting

Guard area is one or more polygon areas set in the surveillance image. Any moving objects entering it will be targeted automatically. Its function is to exclude uninterested moving objects by stopping them outside the guard areas. The default setting is **“Full Guard Area”**.

Go to **Intelligent> Intelligent > Guard Area**.

Guard area setting:

- 1) Select a guard area and click **“Delete Guard Area”** to delete Full Area Guard;
- 2) Click **“Add Guard Area”** to draw guard areas in the image as required;
- 3) After finishing drawing, click **“Save”**.



Picture 4-9 Guard area setting



[Notice]:

1. Guard areas can overlap with each other. The neighboring guard areas are better overlapped to enable seamless surveillance and ensure continuous tracking;
2. The set guard area should be larger than the actual guard area to avoid target missing;

4.3.3 Shield Area Setting

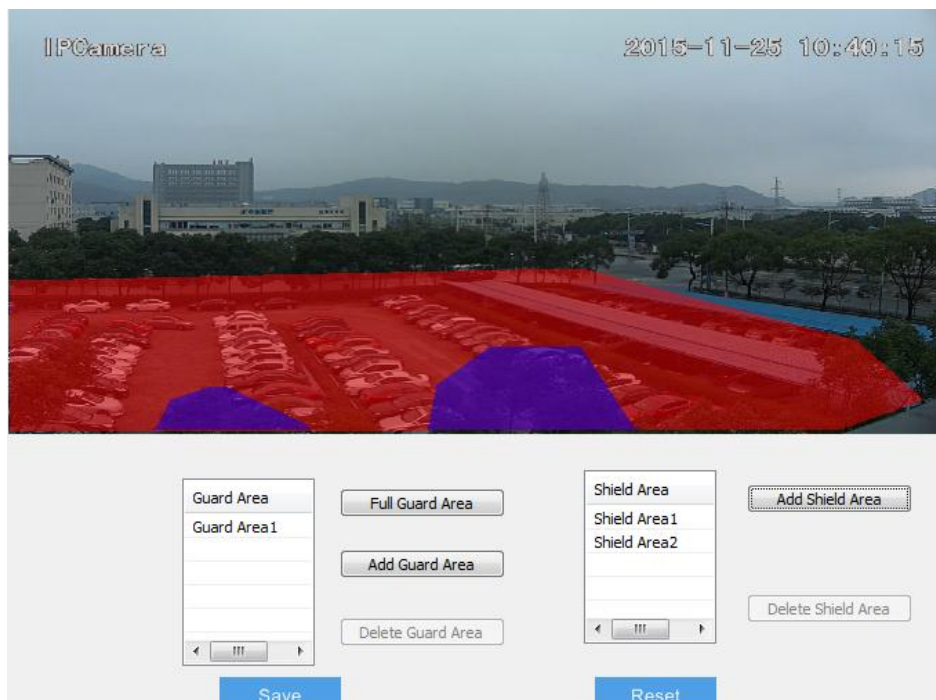
Shield area is one or more polygon areas set in the surveillance image to mark areas where uninterested objects are in. In some surveillance scenes, there are uninterested moving objects inside of or on the edge of the guard areas such as trees and fountain. These interferences can be removed by shield area setting.

As shown in the picture, there are some trees blowing in the guard area which are our uninterested moving objects. In this case, we can set shield area to remove them.

Go to **Intelligent> Intelligent> Guard Area**.

Shield area setting:

- 1) Click **“Add Shield Area”** and draw shield area in the image as required;
- 2) After finishing drawing, click **“Save”**.



Picture 4-10 Shield area setting

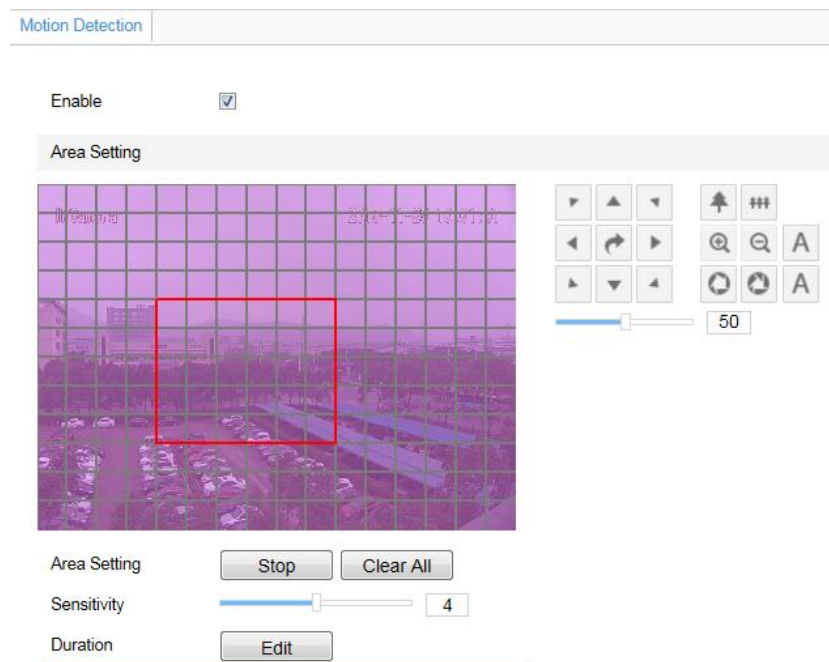


[Notice]:

1. When there are lots of uninterested moving objects in the guard areas, you can add shield areas inside the guard areas and the shield area could be larger than the uninterested area;
2. The shield area cannot shield all targets and it only detects and reports in a stricter way. Therefore, you cannot rely on it to exclude any area, but you should set guard areas to exclude;

4.4 Motion Detection

Detect movements in the defined area. Once the movement exceeds the defined sensitivity, an alarm will be triggered by Web Client.



Picture 4-11 Motion Detection

4.4.1 Set Area

Motion detection supports full area detection and maximum 4 user-defined areas.

- 1) Go to **Settings>Event>Video Analysis>Motion Detection**, check “Enable”.
- 2) Click “Edit” and the image will be divided into 16 columns and 12 rows of squares. Click a square and drag an area from it, then the area will turn purple and is the motion detection area. A camera can support maximum 4 areas.
- 3) Drag the slide bar to adjust Sensitivity.
- 4) Click “Edit”. On the popup page, check durations and set start time and end time.
- 5) Click “Copy” to copy the defined motion detection time to a certain day or the whole week.
- 6) Select “Linkage Type”. It is the alarm output method when an alarm is detected in the defined area.

4.4.2 Clear Area

Start from an undefined square and draw an area that contains the defined area, or click the defined squares one by one to clear setting, or click “Clear” to clear setting. Save to make settings effective.

4.4.3 Disable Function

To disable this function, uncheck the checkbox Enable.

4.5 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 Motion Detection (details in 4.4 Motion Detection) or Alarm Input Device (such as smoke detector) in the surveillance area.

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

Report to Management System: when alarm is triggered, report to the central surveillance system.

Text Overlay: when alarm is triggered, display alarm text on screen.

Acoustic Alarm: when alarm is triggered, make a warning sound.

Recording Linkage: when alarm is triggered, start to record video automatically.

Snapshot: when alarm is triggered, take a snapshot of the alarm event.

Alarm Output: when alarm is triggered, link to the alarm output device.

4.5.1 Motion Detection Alarm Linkage

- 1) Enable Motion Detection, and set the detection area and sensitivity. Please refer to 4.4 Motion Detection for details.
- 2) Check the Linkage Type for motion detection. For example, if user checks Snapshot, when alarm is triggered, the system will take a snapshot. In **Settings>Storage>Snapshot** interface, user can set picture format, resolution, interval and quantity.

4.5.2 Tempering Alarm Linkage

- 1) Enable Tempering Alarm, and set the area and sensitivity. The method is the same as that of Motion Detection.
- 2) Check Linkage Type.
- 3) Click "Save" to finish setting.

4.5.3 Alarm Input Linkage

The camera supports on/off alarming device.

Alarm Input

Enable

Alarm Input ID

Alarm Name

Alarm Type

Duration

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

Linkage Method(Common Linkage)

Report to Management System

Text Overlay

Acoustic Alarm

Recording Linkage

Snapshot

Email Notification

Linkage Method(Other Linkage)

Alarm Output Alarm Output1

Picture 4-12 Alarm Input

- 1) Make sure the alarm input device is always enabled or disabled, and that it is rightly connected to the alarm input port of camera.
- 2) Go to **Settings>Event>Alarm Input**, and select an alarm input ID from the dropdown list (in accordance with the alarm input port).
- 3) Input alarm name, and select “Always Enabled” or “Always Disabled” from the dropdown list of alarm type.
- 4) Click “Edit” and set durations at the popup interface. Check durations and set “Start Time” and “End Time”. Check the week day(s) to copy the setting to the day(s).
- 5) Check “Linkage Method”.
- 6) Click “Save” to finish setting.

4.5.4 Abnormality Linkage

It is triggered when something abnormal happens. Abnormality includes Disk Full, Disk Error and Internet Disconnected.

Abnormality Linkage

Enable

Abnormality Type Disk Full

Linkage Method(Common Linkage)

Report to Management System

Text Overlay

Acoustic Alarm

Email Notification

Linkage Method(Other Linkage)

Alarm Output Alarm Output1

Save

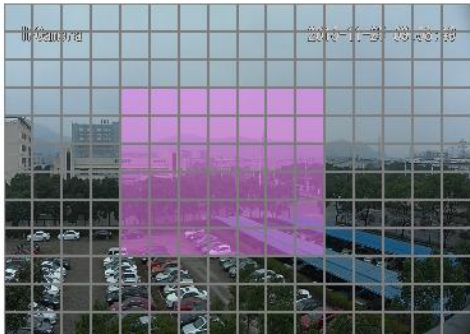
Picture 4-13 Abnormality Linkage

- 1) Check "Enable".
- 2) Select Abnormality Type from the dropdown list.
- 3) Check "Linkage Method".
- 4) Click "Save".

4.6 Privacy Mask

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

Encoding Format
Privacy Mask
Video Info Overlay



Enable

Area Stop Clear

Mask Color Black

Save

Picture 4-14 Privacy Mask

4.6.1 Set Area

The image is divided into 16 columns and 12 rows of small squares. The maximum number of Privacy Mask area is 4.

- 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 from this square, then this area is the privacy mask area, which is in purple red.
- 3) Select Mask Color from the drop-down list.
- 4) Click “Save” to make settings effective.

4.6.2 Clear Area

- 5) Start from an undefined square and draw an area that contains the defined area, or click the defined squares one by one to clear setting, or click “Clear” directly. Click “Save” to make settings effective.

4.6.3 Disable Function

To disable this function, uncheck Enable.


4.7 Snapshot

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



Notice: If the Snapshot interface is disabled, please confirm the SD card is inserted and then login client again.

Operation Steps

- 1) Search snapshots: search snapshots in accordance with the duration and format from the SD card.
- 2) On the snapshot list, select searched picture and click  to download

4.8 Playback

Click “**Playback**” to enter recording management interface. User can playback, clip and download recordings in SD card. (A SD card must be inserted in the camera.)



Notice: If the Playback interface is disabled, please confirm the SD card is inserted and then login client again.



Notice: User can set recording durations in **Settings>Storage>Recording**. Check “Enable” and click “Edit” to set durations.

Recording

Recording Configuration

Recording Type Main Stream ▼

Code Stream Format ES (VSIP/Onvif) ▼ Effective after reboot.

Prerecord 30 s ▼

Recording Delay 5 s ▼

Scheduled Recording

Enable

Time Table

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

Picture 4-15 Recording

4.8.1 Playback

- 1) Select recording duration from the calendar.
- 2) If there is background color on a date, it means there is recording on that day. Select duration of the date and the video will be displayed directly in the right window.

4.8.2 Download

Select recording duration from calendar and download recording to local PC. Download path can be configured in **Settings>Local Setting>Local Setting**.

4.9 Upgrade

4.9.1 Firmware Upgrade

Contact dealer for upgrade file.

Method 1

- 1) Go to **Settings>System>System Maintenance>Upgrade**, as shown in Picture 4-16.

System Maintenance

Reboot

Reboot

Auto Maintenance

Enable

Maintenance Cycle

Maintenance Time

Upgrade

Upgrade

Configuration Management

Partial Restoration All parameters restore to factory default except camera IP address and protocols.

Complete Restoration Restore to factory default

Configuration Export Export all settings to a file.


Import Parameter All parameters are imported from the file except the network, device name and OSD setting.

Advanced Configuration

Advanced Configuration

Picture 4-16 Firmware Upgrade

- 2) Select local upgrade file (<*.pkg> format).
- 3) During upgrading, please do nothing but waiting.
- 4) After upgrading, please download plug-in control again. After finishing it, reboot browser.


 Notice: Please click “Upgrade” when upgrading, and the upgrade file is usually in <*.pkg> format.

Method 2

- 1) Run IPCSearch.
- 2) Click “**Upgrade**” to upgrade firmware of cameras of the same model simultaneously.

4.9.2 Web Client Upgrade

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

 Notice: For detailed operation instructions of Web Client, please refer to the [help document](#).

5. Settings

5.1 Network Access

5.1.1 Ethernet

Go to **Settings>Network>IP and Port>IP Address**, as shown in Picture 5-1 to configure IP address, subnet mask and default gateway.

The screenshot displays the 'IP and Port' configuration page for the Ethernet interface. At the top, there are two tabs: 'LAN' (selected) and 'Port'. Below the tabs, the configuration fields are as follows:

IP Version	IPV4
Mode	Static
IP Address	10.61.1.81
Subnet Mask	255.224.0.0
Default Gateway	10.62.0.254
Multicast Address	0.0.0.0
MAC Address	00-14-10-0F-41-09
MTU	1500

Below these fields is a section titled 'DNS Server Setting' containing:

- Automatically Obtain DNS:
- Preferred DNS Server:
- Alternate DNS Server:

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

Picture 5-1 Ethernet Parameter

5.1.2 PPPoE

Go to **Settings>Network>Other Protocols>PPPoE**, as shown in Picture 5-2 to enter user name and password, and save.

DDNS	PPPoE	K-SNMP	802.1X	QoS	UPnP	SMTP
Enable	<input checked="" type="checkbox"/>					
DHCP		0.0.0.0				
User Name		root				
Password		•••••				
<input type="button" value="Save"/>						

Picture 5-2 PPPoE Setting

5.2 Register to DPSS

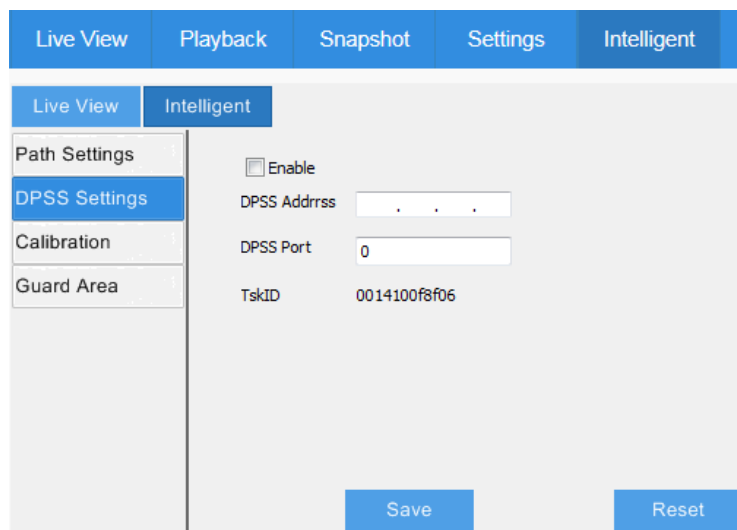
DPSS is used to store images and analyze intelligent data. It is an onvif-supported server for storing and getting intelligent data. Currently, DPSS can be used to manage the storage camera snapshots and intelligent analysis data. The networking diagram is shown below:



Picture 5-3 System topology

If there is DPSS server in the system, set the following parameter in camera:

- 1) Login to the web client and go to **Intelligent> Intelligent> DPSS Settings**.



Picture 5-4 DPSS settings

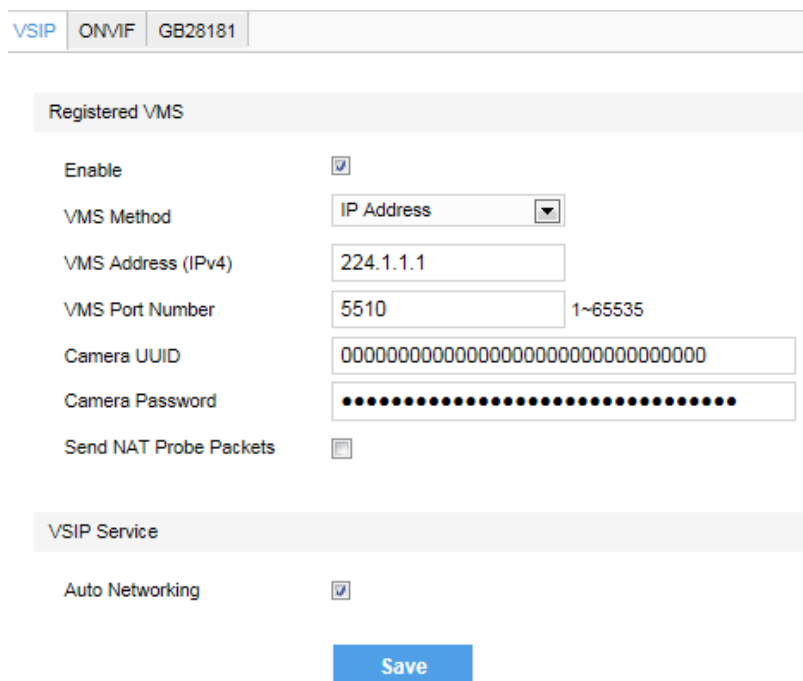
- 2) Check **“Enable”** and input DPSS address and port. Click **“Save”**.

i Notice: DPSS setting is necessary only when there is EZVIEW VMS in the whole system.

It's unnecessary for other VMS.

5.3 Register to VMS

Go to **Settings>Network>Access Protocol>VSIP**, as shown in Picture 5-5 to enter VMS address and port. Save settings and reboot device.



Picture 5-5 Register to VMS

5.4 User Security

5.4.1 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, and assign operation rights to newly added user from the Authorization List. After setting, click “Confirm”.

Delete:

Select user IP and click “Delete” to delete the user.

Modify:

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

5.4.2 IP Filter

By setting IP address filtering, user can manage access limitation to the camera.

White List includes IP addresses able to access to the camera, while Black List includes IP addresses unable to access to the camera.

Enable IP Filter:

Select filter method from the dropdown list according to request, or select “Disable” to disable IP filter.

Add Black/White List:

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

Modify Black/White List:

Select the IP address from the list and click “Modify” to modify the IP address in the popup interface, and click “Confirm”.

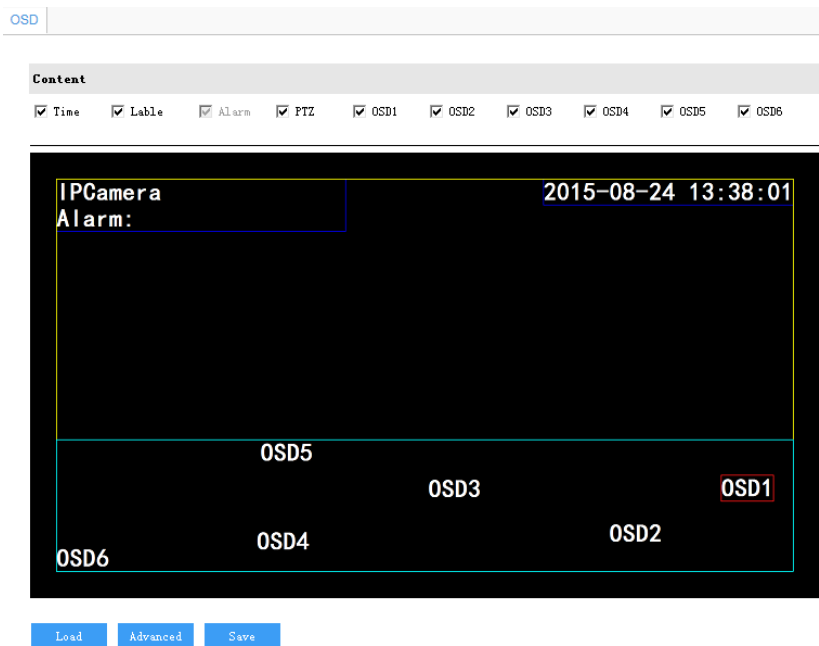
Delete Black/White List:

Select the IP address from the list and click “Delete” to delete the IP address. Click “Delete All” to clear all the IP addresses.

5.5 Text Overlay

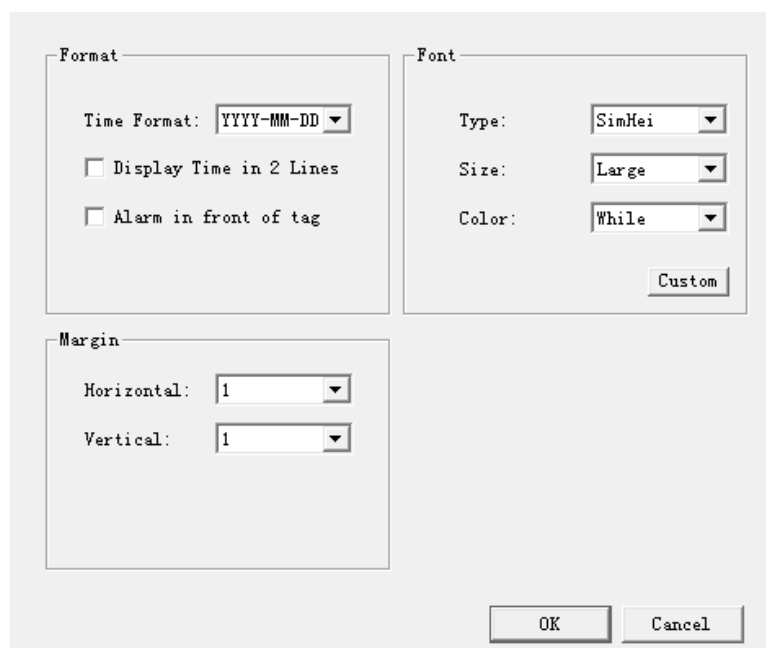
Display preset text on the surveillance window, configuration steps as follows:

- 1) Go to **Settings>Camera>OSD**, as shown in Picture 5-6.



Picture 5-6 OSD

- 2) Check the options and preview the result in the window. For example, if user checks “Time”, time will be displayed in the window.
- 3) Edit positions: drag the items in the window with mouse to change their positions.
- 4) Edit OSD texts: for example, if user checks OSD1, double click OSD1 textbox and input characters in the popup interface. Click “OK”.
- 5) Click “Save” to save OSD setting.
- 6) Click “Load” to load default font or China GB font.
- 7) Click “Advanced” to set “Format”, “Font” and “Margin”.



Picture 5-7 Advanced Setting of OSD

5.6 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.

Operation steps:

- 1) Go to **Settings>System>System Maintenance**; click “Configuration” under “Advanced Configuration”, and input password;
- 2) Select working mode from the dropdown list;
- 3) Click “Save” and reboot camera to make setting take effect. After reboot, re-login;
- 4) Go to **Settings>Camera>Video>Encoding Format**, as shown in Picture 5-8. In Multi-stream option, select Single Stream, Dual-stream or Triple-stream from the dropdown list, and the selection takes effect after reboot. After enable, user can set parameters below the option accordingly.

Encoding Format
Privacy Mask
Video Info Overlay

Encoding Format

Multi-Stream	Dual-Stream	Effective after reboot
Stream Type	Main Stream	
Resolution	1920*1080	
Bit Rate Type	CBR	
Image Quality	Middle	
Frame Rate	25	1~25 Upper Limit
Bit Rate Upper Limit	4096	32~16384 (Kbps)
Encoding Format	H.264	
Encoding Complexity	Low	
Max Key Frame Interval	75	1~250

Save

Picture 5-8 Stream Type

6. Appendix: Glossary of Terms

Term	Explanation
1080P	Resolution of 1920*1080 pixels
720P	Resolution of 1280*720 pixels
HD	High definition
NAT	Network Address Translation
DDNS	Dynamic Domain Name Server
DHCP	Dynamic Host Configuration Protocol
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 (4:3) pixels
UXGA	Resolution of 1600*1200 (4:3) pixels
PC	Personal Computer
PPPoE	Point to Point Protocol over Ethernet