

# 2MP H.265 IP LPR Camera with 7-22mm Motorised Lens with 50m IR

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WIPX2LBVLPR



User Manual

Please read these instructions carefully before operating the unit  
and keep for further reference.

- This product is intended to be supplied by a Listed Power Unit, marked with 'Limited Power Source', 'LPS' on unit, output rated minimum 12V/2 A or POE 48V/ 350mA or AC24V (depending on models), no more than 2000m altitude of operation and Tma=60 Deg.C.
- As for the modes with PoE function, the function of the ITE being investigated to IEC 60950-1 standard is considered not likely to require connection to an Ethernet network with outside plant routing, including campus environment and the ITE is to be connected only to PoE networks without routing to the outside plant.
- Do not attempt to disassemble the camera; in order to prevent electric shock, do not remove screws or covers.
- There are no user-serviceable parts inside. Please contact the nearest service center as soon as possible if there is any failure.
- Avoid from incorrect operation, shock vibration, heavy pressing which can cause damage to product.
- Do not use corrosive detergent to clean main body of the camera. If necessary, please use soft dry cloth to wipe dirt; for hard contamination, use neutral detergent. Any cleanser for high grade furniture is applicable.
- Avoid aiming the camera directly towards extremely bright objects, such as, sun, as this may damage the image sensor.
- Please follow the instructions to install the camera. Do not reverse the camera, or the reversing image will be received.
- Do not operate it in case temperature, humidity and power supply are beyond the limited stipulations.
- Keep away from heat sources such as radiators, heat registers, stove, etc.
- Do not expose the product to the direct airflow from an air conditioner.
- This manual is for using and managing the product. We may reserve the rights of amending the typographical errors, inconsistencies with the latest version, software upgrades and product improvements, interpretation and modification. These changes will be published in the latest version without special notification.
- All pictures, charts, images in this manual are only for description and explanation of our products. The ownerships of trademarks, logos and other intellectual properties related to Microsoft, Apple and Google belong to the above-mentioned companies.
- This manual is suitable for ANPR network cameras.

# Disclaimer

- With regard to the product with internet access, the use of product shall be wholly at your own risks. Our company shall be irresponsible for abnormal operation, privacy leakage or other damages resulting from cyber attack, hacker attack, virus inspection, or other internet security risks; however, Our company will provide timely technical support if necessary.
- Surveillance laws vary from country to country. Check all laws in your local region before using this product for surveillance purposes. We shall not take the responsibility for any consequences resulting from illegal operations.

# Regulatory Information

## FCC Marking



The products have been tested and found in compliance with the council FCC rules and regulations part 15 subpart B. Operation of this product is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## CE Marking



The products have been manufactured to comply with the following directives.  
EMC Directive 2014/30/EU

## RoHS

The products have been designed and manufactured in accordance with Directive EU RoHS Directive 2011/65/EU and its amendment Directive EU 2015/863 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

# Table of Contents

<b>1</b>	<b>Introduction .....</b>	<b>1</b>
<b>2</b>	<b>Network Connection.....</b>	<b>2</b>
2.1	LAN.....	2
2.1.1	Access through IP-Tool .....	2
2.1.2	Directly Access through IE.....	4
2.2	WAN.....	5
<b>3</b>	<b>Live View .....</b>	<b>8</b>
<b>4</b>	<b>Network Camera Configuration.....</b>	<b>10</b>
4.1	System Configuration.....	10
4.1.1	Basic Information .....	10
4.1.2	Date and Time .....	10
4.1.3	Local Config.....	11
4.1.4	Storage.....	11
4.2	Image Configuration .....	14
4.2.1	Display Configuration .....	14
4.2.2	Video / Audio Configuration .....	16
4.2.3	OSD Configuration.....	17
4.2.4	Video Mask .....	18
4.2.5	ROI Configuration.....	19
4.2.6	Lens Control.....	20
4.3	PTZ Configuration .....	20
4.4	Alarm Configuration .....	21
4.4.1	Motion Detection.....	21
4.4.2	Other Alarms .....	22
4.4.3	Alarm In .....	24
4.4.4	Alarm Out.....	25
4.4.5	Alarm Server .....	26
4.5	Event Configuration .....	26
4.5.1	Exception Settings .....	27
4.5.2	ANPR Settings .....	28
4.6	Network Configuration .....	33
4.6.1	TCP/IP.....	33
4.6.2	Port.....	35
4.6.3	Server Configuration .....	35
4.6.4	DDNS.....	35
4.6.5	SNMP.....	37
4.6.6	802.1x.....	38
4.6.7	RTSP .....	38
4.6.8	UPNP .....	39
4.6.9	Email .....	39

4.6.10	FTP .....	40
4.6.11	HTTPS.....	41
4.6.12	P2P (Optional) .....	42
4.6.13	QoS.....	43
4.7	Security Configuration .....	43
4.7.1	User Configuration .....	43
4.7.2	Online User .....	45
4.7.3	Block and Allow Lists .....	45
4.7.4	Security Management .....	45
4.8	Maintenance Configuration .....	46
4.8.1	Backup and Restore .....	46
4.8.2	Reboot .....	47
4.8.3	Upgrade .....	47
4.8.4	Operation Log.....	47
<b>5</b>	<b>Search .....</b>	<b>49</b>
5.1	Image Search.....	49
5.2	Video Search.....	51
5.2.1	Local Video Search.....	51
5.2.2	SD Card Video Search .....	52
<b>Appendix.....</b>		<b>54</b>
<b>Appendix 1 Troubleshooting .....</b>		<b>54</b>
<b>Appendix 2 Specifications .....</b>		<b>56</b>

# 1 Introduction

## Main Features

- ICR auto switch, true day/night
- 3D DNR, WDR
- BLC, Defog, Anti-flicker, smart IR, corridor mode
- ROI coding
- Abnormal video signal detection (scene change, video blur detection, video color cast detection), license plate recognition
- Support mobile surveillance by smart phones with iOS and Android OS

## Surveillance Application



## 2 Network Connection

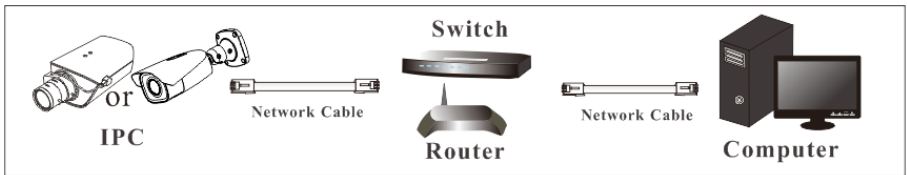
Connect IP-Cam via LAN or WAN. Here only take IE browser for example. The details are as follows:

### 2.1 LAN

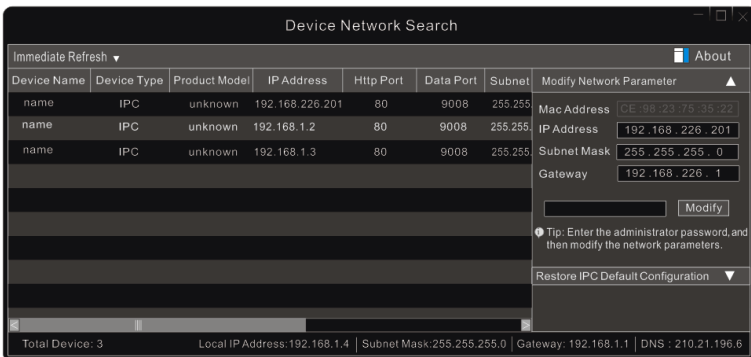
In LAN, there are two ways to access IP-Cam: 1. access through IP-Tool; 2. directly access through IE browser.

#### 2.1.1 Access through IP-Tool

Network connection:



- ① Make sure the PC and IP-Cam are connected to the LAN and the IP-Tool is installed in the PC from the CD.
- ② Double click the IP-Tool icon on the desktop to run this software as shown below:



- ③ Modify the IP address. The default IP address of this camera is 192.168.226.201. Click the information of the camera listed in the above table to show the network information on the right hand. Modify the IP address and gateway of the camera and make sure its network address is in the same local network segment as the computer's. Please modify the IP address of your device according to the practical situation.

For example, the IP address of your computer is 192.168.1.4. So the IP address of the camera shall be changed to 192.168.1.X. After modification, please enter the password of the administrator and click the “Modify” button to modify the setting.



The default password of the administrator is “**123456**”.

④ Double click the IP address and then the system will pop up the IE browser to connect IP-CAM. Follow directions to download, install and run the Active X control.

Enter the username and password in the login window to log in.



The default username is “**admin**”; the default password is “**123456**”.



The system will pop up the above-mentioned textbox to ask you to change the default password. It is strongly recommended to change the default password for account security. If “Do not show again” is checked, the textbox will not appear next time.

## 2.1.2 Directly Access through IE

The default network settings are as shown below:

IP address: **192.168.226.201**

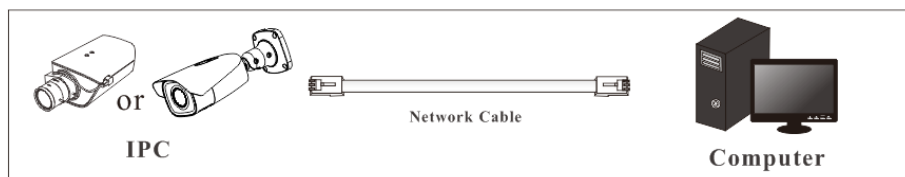
Subnet Mask: **255.255.255.0**

Gateway: **192.168.226.1**

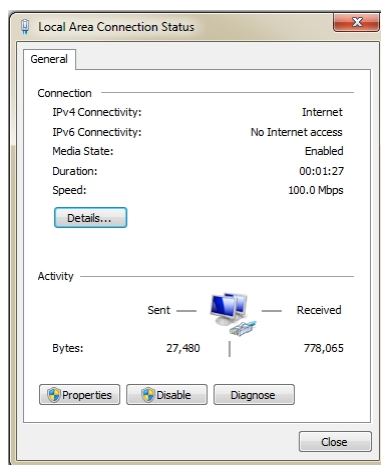
HTTP: **80**

Data port: **9008**

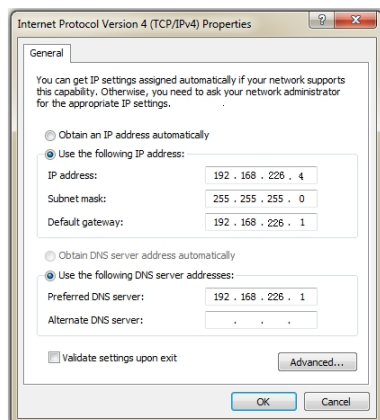
Use the above default settings when logging in the camera for the first time. Directly connect the camera to the computer through network cable.



① Manually set the IP address of the PC and the network segment should be as the same as the default settings of the IP camera. Open the network and share center. Click “Local Area Connection” to pop up the following window.



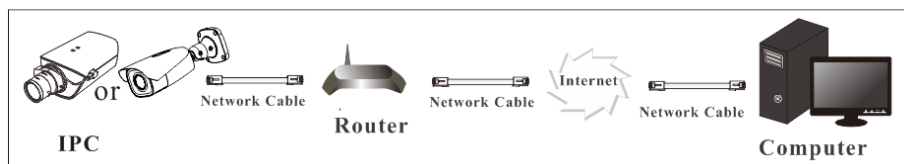
Select “Properties” and then select internet protocol according to the actual situation (for example: IPv4). Next, click the “Properties” button to set the network of the PC.



- ② Open the IE browser and enter the default address of IP-CAM and confirm.
- ③ Follow directions to download and install the Active X control.
- ④ Enter the default username and password in the login window and then enter to view.

## 2.2 WAN

### ➤ Access through the router or virtual server



- ① Make sure the camera is connected to the local network and then log in the camera via LAN and go to Config→Network→Port menu to set the port number.

HTTP Port	80
HTTPS Port	443
Data Port	9008
RTSP Port	554

**Port Setup**

- ② Go to Config →Network→TCP/IP menu to modify the IP address.

IPv4	IPv6	PPPoE Config	IP Change Notification Config
<input type="radio"/> Obtain an IP address automatically			
<input checked="" type="radio"/> Use the following IP address			
IP Address	192.168.226.201		Test
Subnet Mask	255.255.255.0		
Gateway	192.168.226.1		
Preferred DNS Server	210.21.196.6		
Alternate DNS Server	8.8.8.8		

IP Setup

- ③ Go to the router's management interface through IE browser to forward the IP address and port of the camera in the "Virtual Server".

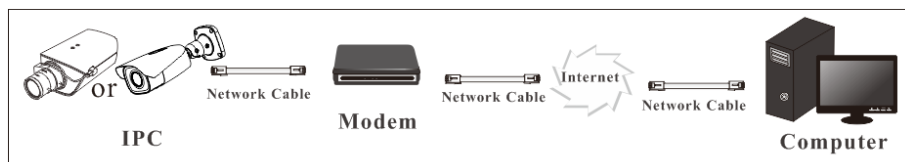
Port Range					
Application	Start	End	Protocol	IP Address	Enable
1	9007	to 9008	Both	192.168.1.201	<input checked="" type="checkbox"/>
2	80	to 81	Both	192.168.1.201	<input checked="" type="checkbox"/>
3	10000	to 10001	Both	192.168.1.166	<input type="checkbox"/>
4	21000	to 21001	Both	192.168.1.166	<input type="checkbox"/>

Router Setup

- ④ Open the IE browser and enter its WAN IP and http port to access. (For example, if the http port is changed to 81, please enter "192.198.1.201:81" in the address bar of web browser to access).

### ➤ Access through PPPoE dial-up

Network connection



Access the camera through PPPoE auto dial-up. The setup steps are as follow:

- ① Go to Config→Network→Port menu to set the port number.

② Go to Config →Network→TCP/IP→PPPoE Config menu. Enable PPPoE and then enter the user name and password from your internet service provider.

IPv4	IPv6	PPPoE Config	IP Change Notification Config
<input checked="" type="checkbox"/> Enable			
User Name		<input type="text" value="xxxxxxx"/>	
Password		<input type="password" value="•••••"/>	
<input type="button" value="Save"/>			

③ Go to Config →Network→DDNS menu. Before configuring the DDNS, please apply for a domain name first. Please refer to DDNS configuration for detail information.

④ Open the IE browser and enter the domain name and http port to access.

### ➤ Access through static IP

Network connection

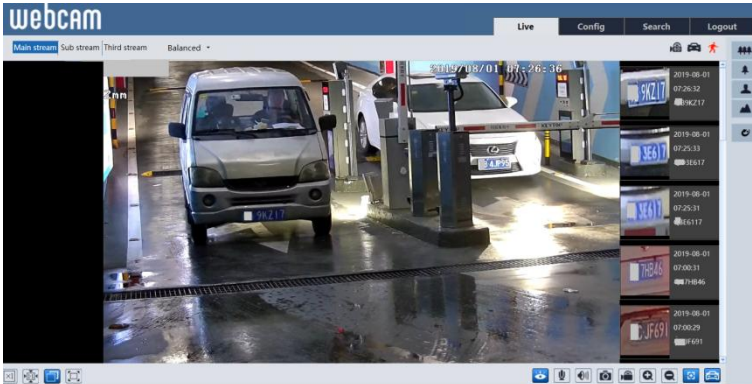


The setup steps are as follow:




















- ① Go to Config→Network→Port menu to set the port number.
- ② Go to Config →Network→TCP/IP menu to set the IP address. Check “Use the following IP address” and then enter the static IP address and other parameters.
- ③ Open the IE browser and enter its WAN IP and http port to access.

## 3 Live View

After logging in, the following window will be shown.








The following table is the instructions of the icons on the live view interface.

Icon	Description	Icon	Description
	Original size		Zoom out
	Fit correct scale		Zoom/Focus control
	Auto (fill the window)		SD card recording indicator
	Full screen		Sensor alarm indicator
	Start/stop live view		Motion alarm indicator
	Start/stop two-way audio (only available for the model with audio input connector)		Color abnormal indicator
	Enable/disable audio		Abnormal clarity indicator
	Snapshot		Scene change indicator
	Start/stop local recording		License plate detection
	Zoom in		

Those smart alarm indicators will flash only when the camera supports those functions and the corresponding events are enabled.

In full screen mode, double click on the mouse to exit or press the ESC key on the keyboard. Click AZ control button to show AZ control panel. The descriptions of the control panel are as

follows:

Icon	Description	Icon	Description
	Zoom -		Zoom +
	Focus -		Focus +
	One key focus (used when image is out of focus after manual adjustment)		

## 4 Network Camera Configuration

In the Webcam client, choose “Config” to go to the configuration interface.

**Note:** Wherever applicable, click the “Save” button to save the settings.

### 4.1 System Configuration

#### 4.1.1 Basic Information

In the “Basic Information” interface, the system information of the device is listed.

Device Name	IPC
Product Model	IPC
Brand	Customer
Software Version	5.0.1.0(2925)
Software Build Date	2019-08-30
Kernel Version	20190829
Hardware Version	1.4-1422322
Onvif Version	18.12
structuredVersion	1.1.5
OCX Version	2.0.7.1
MAC	00:18:ae:00:80:07

Some versions may support device ID and QR code. If P2P is enabled (see Network Configuration-[P2P](#)), the network camera can be quickly added to mobile surveillance client, by scanning the QR code or entering device ID.

#### 4.1.2 Date and Time

Go to Config→System→Date and Time. Please refer to the following interface.

Zone	Date and Time				
Time Zone:	GMT+08 (Beijing, Hong Kong, Shanghai, Taipei) ▼				
<input type="checkbox"/> DST					
<input checked="" type="radio"/> Auto DST					
<input type="radio"/> Manual DST					
Start Time	May ▼	First ▼	Tuesday ▼	15 ▼	Hour
End Time	August ▼	First ▼	Tuesday ▼	15 ▼	Hour
Time Offset	30 Minutes ▼				

Select the time zone and DST as required.  
Click the “Date and Time” tab to set the time mode.

Zone: **Date and Time**

Time Mode:

☐ Synchronize with NTP server

NTP server:  Update period:  Minutes

☐ Synchronize with computer time

Date  Time

☒ Set manually

Date  Time

### 4.1.3 Local Config

Go to Config→System→Local Config to set up the storage path of captured pictures and recorded videos on the local PC. There is also an option to enable or disable the bitrate display in the recorded files.

Save snapshots to

Save recording files to

Audio Recording ☐ Open ☒ Close

Bitrate Overlay ☐ Open ☒ Close

Local Smart Snapshot Storage ☐ Open ☒ Close

Additionally, “Local smart snapshot storage” can be enabled or disabled here. If enabled, the captured pictures triggered by smart events (like line crossing detection, region intrusion, etc.) will be saved to the local PC.

### 4.1.4 Storage

Go to Config→System→Storage to go to the interface as shown below.

**Management** Record Snapshot

Total picture capacity

Picture remaining space

Total recording capacity

Record remaining space

State

Snapshot Quota  %

Video Quota  %

Changes in the quota ratio need to be formatted before they become effective.



## ● SD Card Management

Click the “Format” button to format the SD card. All data will be cleared by clicking this button.

Click the “Eject” button to stop writing data to SD card. Then the SD card can be ejected safely.

**Snapshot Quota:** Set the capacity proportion of captured pictures on the SD card.

**Video Quota:** Set the capacity proportion of record files on the SD card.

## ● Schedule Recording Settings

1. Go to Config→System→Storage→Record to go to the interface as shown below.

2. Set record stream, pre-record time, cycle writing.

**Pre Record Time:** Set the time to record before the actual recording begins.

3. Set schedule recording. Check “Enable Schedule Record” and set the schedule.

### Weekly schedule

Set the alarm time from Monday to Sunday for a single week. Each day is divided in one hour increments. Green means scheduled. Blank means unscheduled.

“Add”: Add the schedule for a special day. Drag the mouse to set the time on the timeline.

“Erase”: Delete the schedule. Drag the mouse to erase the time on the timeline.

Manual Input: Click it for a specific day to enter specific start and end times. This adds more granularities (minutes).

### Day schedule

Set the alarm time for alarm a special day, such as a holiday.

**Note: Holiday schedule takes priority over weekly schedule.**

### ● Snapshot Settings

Go to Config→System→Storage→Snapshot to go to the interface as shown below.

Management		Record		Snapshot	
<b>Snapshot Parameters</b>					
Image Format	JPEG				
Resolution	704x576				
Image Quality	Low				
<b>Event Trigger</b>					
Snapshot Interval	1	Second			
Snapshot Quantity	5				
<b>Timing</b>					
<input checked="" type="checkbox"/>	Enable Timing Snapshot				
Snapshot Interval	5	Second			

Set the format, resolution and quality of the image saved on the SD card and the snapshot interval and quantity and the timing snapshot here.

**Snapshot Quantity:** The number you set here is the maximum quantity of snapshots. The actual quantity of snapshots may be less than this number. Supposing the occurrence time of an alarm event is less than the time of capturing pictures, the actual quantity of snapshots is less than the set quantity of snapshots.

**Timing Snapshot:** Enable timing snapshot first and then set the snapshot interval and schedule. The setup steps of schedule are the same as the schedule recording (See [Schedule Recording](#)).

## 4.2 Image Configuration


Image Configuration includes Display, Video/Audio, OSD, Video Mask and ROI Config.

### 4.2.1 Display Configuration

Go to Image→Display interface as shown below. The image's brightness, contrast, hue and saturation and so on for common, day and night mode can be set up separately. The image effect can be quickly seen by switching the configuration file.

Camera Parameters

Schedule



Config File

Common

Brightness

25

Contrast

50

Hue

50

Saturation

50

Sharpness

50

Noise Reduction

30

Defog

50

Auto Iris

☒

(disable without auto iris lens)

BLC

Off

HFR

Off

Antiflicker

Off

Smart IR

Off

White Balance

Auto

Frequency

50HZ

Day/Night Mode

Auto

Sensitivity

Mid

Delay Time(Second)

2

Infra-red Mode

Auto

Exposure Mode

Auto

Gain Limit

50

Corridor Pattern

0

Image Mirror

☐ Open

☒ Close

Image Flip

☐ Open

☒ Close

**Brightness:** Set the brightness level of the camera's image.

**Contrast:** Set the color difference between the brightest and darkest parts.

**Hue:** Set the total color degree of the image.

**Saturation:** Set the degree of color purity. The purer the color, the brighter the image is.

**Sharpness:** Set the resolution level of the image plane and the sharpness level of the image edge.

**Noise Reduction:** Decrease the noise and make the image more thorough. Increasing the value will make the noise reduction effect better but it will reduce the image resolution.

**Defog:** Activating this function and setting an appropriate value as needed in foggy, dusty, smoggy or rainy environment to get clear images.

**Backlight Compensation (BLC):**

- Off: disables the backlight compensation function. It is the default mode.
- HWDR: WDR can adjust the camera to provide a better image when there are both very bright and very dark areas simultaneously in the field of the view by lowering the brightness of the bright area and increasing the brightness of the dark area.

Recording will be stopped for a few seconds while the mode is changing from non-WDR to WDR mode.

- HLC: lowers the brightness of the entire image by suppressing the brightness of the image's bright area and reducing the size of the halo area.
- BLC: If enabled, the auto exposure will activate according to the scene so that the object of the image in the darkest area will be seen clearly.

**HFR:** High Frame Rate. If "ON" is selected, the system will restart and then the maximum value of the frame rate of the main stream can be set to 60 fps /50fps.

**Antiflicker:**

- Off: disables the anti-flicker function. This is used mostly in outdoor installations.
- 50Hz: reduces flicker in 50Hz lighting conditions.
- 60Hz: reduces flicker in 60Hz lighting conditions.

**Smart IR:** Choose "ON" or "OFF". This function can effectively avoid image overexposure and underexposure by controlling the brightness of the IR lights according to the actual conditions to make the image more realistic. Please enable it as needed.

**White Balance:** Adjust the color temperature according to the environment automatically.

**Frequency:** 50Hz and 60Hz can be optional.

**Day/Night Mode:** Choose "Auto", "Day", "Night" or "Timing".

**Infra-red Mode:** Choose "Auto", "ON" or "OFF".

**Exposure Mode:** Choose "Auto" or "Manual". If manual is chosen, the digital shutter speed can be adjusted.

**Corridor Pattern:** Corridor viewing modes can be used for situations such as long hallways. 0, 90, 180 and 270 are available. The default value is 0. The video resolution should be 1080P or below if this function is used.

**Image Mirror:** Turn the current video image horizontally.

**Image Flip:** Turn the current video image vertically.

Schedule Settings of Image Parameters:

Click the "Schedule" tab as shown below.

Camera Parameters	Schedule
Schedule	Full Time ▼
Config File	Common ▼

Set full time schedule for common, day, night mode and specified time schedule for day and night. Choose "Schedule" in the drop-down box of schedule as shown below.

Drag “ ” icons to set the time of day and night. Blue means day time and blank means night time. If the current mode of camera parameters is set to schedule, the image configuration mode will automatically switch between day and night according to the schedule.

### 4.2.2 Video / Audio Configuration

Go to Image→Video / Audio interface as shown below. In this interface, set the resolution, frame rate, bitrate type, video quality and so on subject to the actual network condition.

Index	Stream	Resolution	Frame	Bitrate Type	Bitrate(Kbps)	Video	I Frame	Video	Profile
1	Main stream	1920x1080	25	CBR	2048	Highest	100	H264	High Profile
2	Sub stream	704x576	25	CBR	768	Highest	100	H264	High Profile
3	Third stream	352x288	25	CBR	512	Higher	100	H264	High Profile

Send Snapshot: ☐ Size: (704x576)

☐ Video encode slice split

☐ Watermark ( H264 , H265 )      Watermark content:

Click the “Audio” tab to go to the interface as shown below.

Three video streams can be adjustable.

**Resolution:** The size of image.

**Frame rate:** The higher the frame rate, the video is smoother.

**Bitrate type:** CBR and VBR are optional. Bitrate is related to image quality. CBR means that no matter how much change is seen in the video scene, the compression bitrate will be kept constant. VBR means that the compression bitrate will be adjusted according to scene changes. For example, for scenes that do not have much movement, the bitrate will be kept at a lower value. This can help optimize the network bandwidth usage.

**Bitrate:** it can be adjusted when the mode is set to CBR. The higher the bitrate, the better the image quality will be.

**Video Quality:** It can be adjusted when the mode is set to VBR. The higher the image quality, the more bitrate will be required.

**I Frame interval:** It determines how many frames are allowed between a “group of pictures”. When a new scene begins in a video, until that scene ends, the entire group of frames (or pictures) can be considered as a group of pictures. If there is not much movement in the scene, setting the value higher than the frame rate is fine, potentially resulting in less bandwidth usage. However, if the value is set too high, and there is a high frequency of movement in the video, there is a risk of frame skipping.

**Video Compression:** MJPEG, H264+, H264, H264S (Smart H.264), H265, H265+ or H265S (Smart H.265) can be optional. MJPEG is not available for main stream. If H.265/H.265+/H.265S is chosen, make sure the client system is able to decode H.265/H.265+/H.265S.

Compared to H.265+/H.265, smart H.265 can spontaneously adjust the bitrate distribution according to the requirements of the actual scene. For example, when there is no human or vehicle detected, the bitrate will be automatically reduced with no effect on image quality by using H.265S. Compared to H.265, H.265+ saves more storage space with the same maximum bitrate in most scenes. Compared to H.264, H.265 reduces the transmission bitrate under the same resolution, frame rate and image quality.

**Profile:** For H.264. Baseline, main and high profiles are selectable.

**Send Snapshot:** How many snapshots to generate for an event.

**Video encode slice split:** If this function is enabled, smooth image can be gotten even though using the low-performance PC.

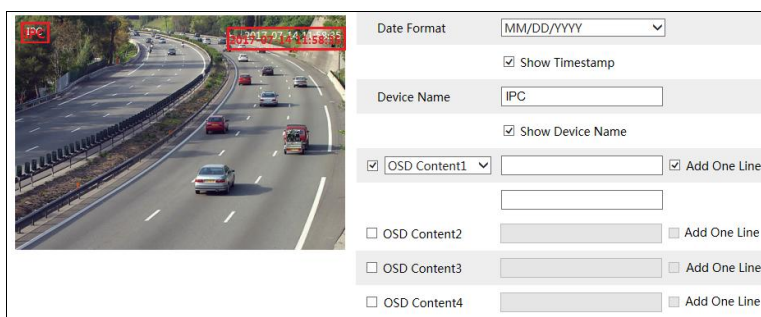
**Watermark:** When playing back the local recorded video in the search interface, the watermark can be displayed. To enable it, check the watermark box and enter the watermark text.

**Audio Encoding:** G711A and G711U are selectable.

**Audio Type:** LIN or MIC optional. MIC type is available for the model with built-in MIC interface.

### 4.2.3 OSD Configuration

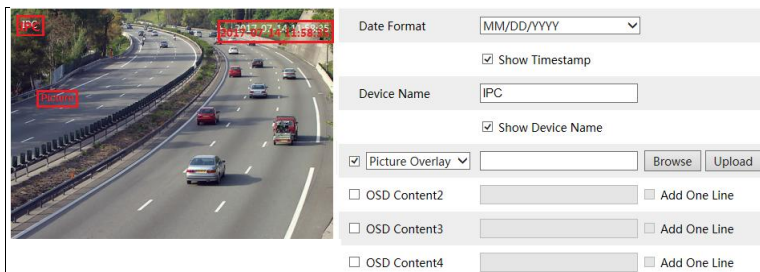
Go to Image→OSD interface as shown below.



Date Format	MM/DD/YYYY	
<input checked="" type="checkbox"/> Show Timestamp		
Device Name	IPC	
<input checked="" type="checkbox"/> Show Device Name		
<input checked="" type="checkbox"/> OSD Content1		<input checked="" type="checkbox"/> Add One Line
<input type="checkbox"/> OSD Content2		<input type="checkbox"/> Add One Line
<input type="checkbox"/> OSD Content3		<input type="checkbox"/> Add One Line
<input type="checkbox"/> OSD Content4		<input type="checkbox"/> Add One Line

Set time stamp, device name, OSD content and picture overlap here. After enabling the corresponding display and entering the content, drag them to change their position. Then click

the “Save” button to save the settings.

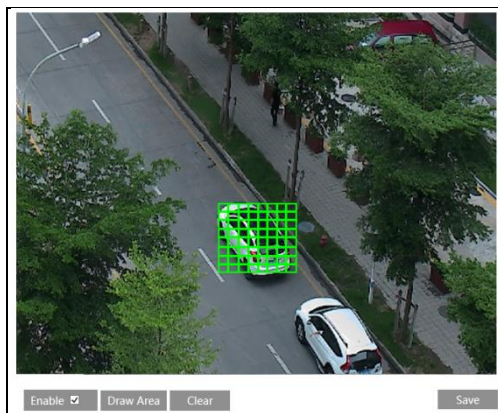


#### Picture Overlay Settings:

Check “OSD Content1”, choose “Picture Overlay” and click “Browse” to select the overlap picture. Then click “Upload” to upload the overlap picture. The pixel of the image shall not exceed 200\*200, or it cannot be uploaded.

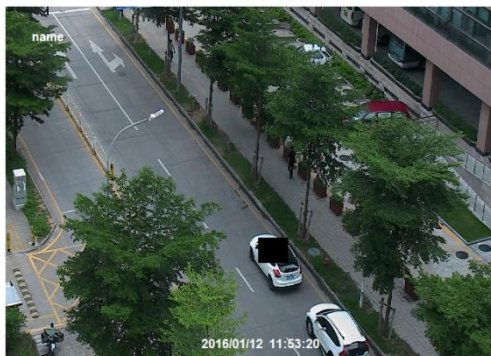
### 4.2.4 Video Mask

Go to Image→Video Mask interface as shown below. A maximum of 4 zones can be set up.



To set up video mask:

1. Enable video mask.
2. Click the “Draw Area” button and then drag the mouse to draw the video mask area.
3. Click the “Save” button to save the settings.
4. Return to the live to verify that the area have been drawn as shown as blocked out in the image.

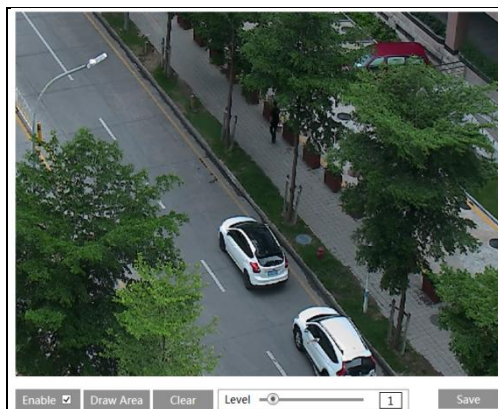


To clear the video mask:

Click the “Clear” button to delete the current video mask area.

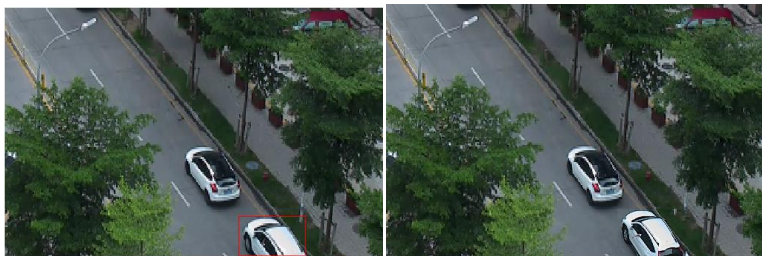
### 4.2.5 ROI Configuration

Go to Image→ROI Config interface as shown below. An area in the image can be set as a region of interest. This area will have a higher bitrate than the rest of the image, resulting in better image quality for the identified area.



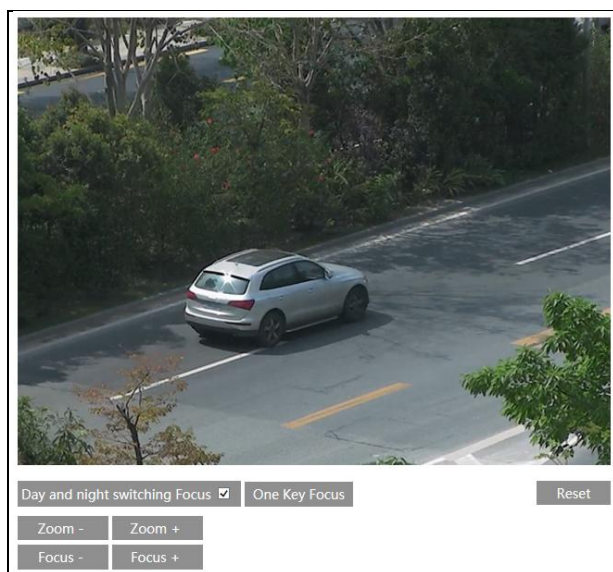
1. Check “Enable” and then click the “Draw Area” button.
2. Drag the mouse to set the ROI area.
3. Set the level.
4. Click the “Save” button to save the settings.





## 4.2.6 Lens Control

**This function is only available for the model with motorized zoom lens.** Within this section, zoom and focus can be controlled. If the image is out of focus after a manual adjustment, one key focus can be used to set the focus automatically. Go to Config→Image→Zoom/Focus interface to set.



## 4.3 PTZ Configuration

This function is only available for the model with RS485 interface. It can be used with a compatible external PTZ enclosure. Go to PTZ→Protocol interface as shown below.

Protocol	PELCOD ▼
Address	1
Baud-Rate	2400 ▼
Save	

## 4.4 Alarm Configuration

### 4.4.1 Motion Detection

Go to Alarm→Motion Detection to set motion detection alarm.

Alarm Config	Area and Sensitivity	Schedule
<input checked="" type="checkbox"/> Enable		
Alarm Holding Time	5 Seconds ▼	
Trigger Alarm Out		
<input type="checkbox"/> Alarm Out		
<input type="checkbox"/> Trigger Snap		
<input type="checkbox"/> Trigger SD Recording		
<input type="checkbox"/> Trigger Email		
<input type="checkbox"/> Trigger FTP		
Save		

1. Check “Enable” check box to activate motion based alarms. If unchecked, the camera will not send out any signals to trigger motion-based recording to the NVR or CMS, even if there is motion in the video.

**Alarm Out:** If selected, this would trigger an external relay output that is connected to the camera on detecting a motion based alarm. (For the models with two alarm output interfaces, two alarm output can be selected.)

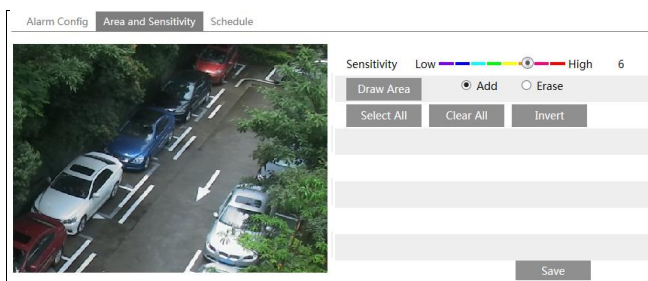
**Trigger Snap:** If selected, the system will capture images on motion detection and save the images on an SD card.

**Trigger SD Recording:** If selected, video will be recorded on an SD card on motion detection.

**Trigger Email:** If “Trigger Email” and “Attach Picture” are checked (email address must be set first in the Email configuration interface), the captured pictures and triggered event will be sent into those addresses.

**Trigger FTP:** If “Trigger FTP” and “Attach Picture” are checked, the captured pictures will be sent into FTP server address. Please refer to FTP configuration chapter for more details.

2. Set motion detection area and sensitivity. Click the “Area and Sensitivity” tab to go to the interface as shown below.



Move the “Sensitivity” scroll bar to set the sensitivity. Higher sensitivity value means that motion will be triggered more easily.

Select “Add” and click “Draw”. Drag the mouse to draw the motion detection area; Select “Erase” and drag the mouse to clear motion detection area.

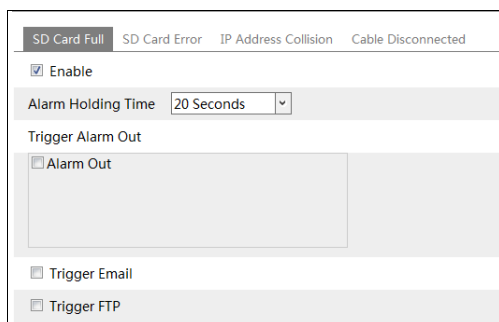
After that, click the “Save” to save the settings.

3. Set the schedule for motion detection. The schedule setup steps of the motion detection are the same as the schedule recording setup (See [Schedule Recording](#)).

## 4.4.2 Other Alarms

### ● SD Card Full

1. Go to Config→Alarm→Anomaly→SD Card Full.



2. Click “Enable” and set the alarm holding time.

3. Set alarm trigger options. The setup steps are the same as motion detection. Please refer to motion detection chapter for details.

### ● SD Card Error

When there are some errors in writing SD card, the corresponding alarms will be triggered.

1. Go to Config→Alarm→Anomaly→SD Card Error as shown below.

SD Card Full	SD Card Error	IP Address Collision	Cable Disconnected
<input checked="" type="checkbox"/> Enable			
Alarm Holding Time <input type="text" value="20 Seconds"/>			
Trigger Alarm Out			
<input type="checkbox"/> Alarm Out			
<input type="checkbox"/> Trigger Email			
<input type="checkbox"/> Trigger FTP			

2. Click “Enable” and set the alarm holding time.
3. Set alarm trigger options. Trigger alarm out, Email and FTP. The setup steps are the same as motion detection. Please refer to [motion detection](#) chapter for details.

### ● IP Address Conflict

1. Go to Config→Alarm→Anomaly→IP Address Collision as shown below.

SD Card Full	SD Card Error	IP Address Collision	Cable Disconnected
<input checked="" type="checkbox"/> Enable			
Alarm Holding Time <input type="text" value="20 Seconds"/>			
Trigger Alarm Out			
<input type="checkbox"/> Alarm Out			

2. Click “Enable alarm” and set the alarm holding time.
3. Trigger alarm out. When the IP address of the camera is in conflict with the IP address of other devices, the system will trigger the alarm out.

### ● Cable Disconnection

1. Go to Config→Alarm→Anomaly→Cable Disconnected as shown below.

SD Card Full	SD Card Error	IP Address Collision	Cable Disconnected
<input checked="" type="checkbox"/> Enable			
Alarm Holding Time <input type="text" value="20 Seconds"/>			
Trigger Alarm Out			
<input type="checkbox"/> Alarm Out			

2. Click “Enable” and set the alarm holding time.
3. Trigger alarm out. When the camera is disconnected, the system will trigger the alarm out.

### 4.4.3 Alarm In

To set sensor alarm (alarm in):

Go to Config→Alarm→Alarm In interface as shown below.

1. Click “Enable” and set the alarm type, alarm holding time and sensor name.
2. Set alarm trigger options. The setup steps are the same as motion detection. Please refer to [motion detection](#) chapter for details.
3. Click “Save” button to save the settings.
4. Set the schedule of the sensor alarm. The setup steps of the schedule are the same as the schedule recording setup. (See [Schedule Recording](#)).

For the model with two alarm input interfaces, you shall select the sensor ID first. Then set the relevant trigger items. Click “Apply settings to” to quickly apply the settings to the other alarm input.

Alarm Config
Schedule

Sensor ID
Alarm In1
Apply settings to
Alarm In2

☒ Enable

Alarm Type
NO

Alarm Holding Time
20 Seconds

Sensor Name

Trigger Alarm Out

☐ Alarm Out 0
☐ Alarm Out 1

☐ Trigger Snap

☐ Trigger SD Recording

☐ Trigger Email

☐ Trigger FTP

Save

#### 4.4.4 Alarm Out

This function is only available for some models. Go to Config→Alarm→Alarm Out.

Alarm Out ID
Alarm Out0

Alarm Out Mode
Alarm Linkage

Alarm Out Name
alarmOut1

Alarm Holding Time
20 Seconds

Alarm Type
NC

Save

Alarm Out Mode
Alarm Linkage

Alarm Out Name
alarmOut1

Alarm Holding Time
20 Seconds

Alarm Type
NC

Save

**Alarm Out ID:** For the model with two alarm output interfaces, please select the alarm out ID first as shown in the above left picture.

**Alarm Out Mode:** Alarm linkage, manual operation, day/night switch linkage and timing are optional.

**Alarm Linkage:** Having selected this mode, select alarm out name, alarm holding time at the “Alarm Holding Time” pull down list box and alarm type.

**Manual Operation:** Having selected this mode, select the alarm type and click “Open” to trigger the alarm out immediately; click “Close” to stop alarm.

Alarm Out Mode
Manual Operation

Alarm Type
NC

Manual Operation
Open
Close

Save

**Day/Night Switch Linkage:** Having selected this mode, select the alarm type and then choose to open or close alarm out when the camera switches to day mode or night mode.

Alarm Out Mode	Day/night switch linkage ▼
Alarm Type	NC ▼
Day	Close ▼
Night	Close ▼

**Timing:** Select the alarm type. Then click “Add” and drag the mouse on the timeline to set the schedule of alarm out; click “Erase” and drag the mouse on the timeline to erase the set time schedule. After this schedule is saved, the alarm out will be triggered in the specified time.

Alarm Out Mode	Timing ▼
Alarm Type	NC ▼
Time Range	<div> <input type="radio"/> Erase           <input checked="" type="radio"/> Add         </div> <div> </div> <div> Manual Input </div> <div> Save </div>

#### 4.4.5 Alarm Server

Go to Alarm→Alarm Server interface as shown below.

Set the server address, port, heartbeat and heartbeat interval. When an alarm occurs, the camera will transfer the alarm event to the alarm server. If an alarm server is not needed, there is no need to configure this section.

Server Address	<input type="text"/>
Port	<input type="text" value="0"/>
Heartbeat	Disable ▼
Heartbeat interval	<input type="text" value="30"/> Second

### 4.5 Event Configuration

For more accuracy, here are some recommendations for installation.

- Cameras should be installed on stable surfaces, as vibrations can affect the accuracy of detection.
- Avoid pointing the camera at the reflective surfaces (like shiny floors, mirrors, glass, lake surfaces and so on).
- Do not aim the camera at the sun, road lamp or headlights of the car.
- Avoid places that have too much shadowing.

- At any time of day or night, please make sure the image of the camera is clear and with adequate and even light, avoiding overexposure or too much darkness on both sides.

### 4.5.1 Exception Settings

This function can detect changes in the surveillance environment affected by the external factors.

To set exception detection:

Go to Config→Event→Exception interface as shown below.

The screenshot shows the 'Exception Settings' window. The 'Detection Config' tab is active. It contains the following elements:

- ☐ Scene change detection
- ☐ Video blur detection
- ☐ Enable video color cast detection
- Alarm Holding Time: 20 Seconds (dropdown menu)
- Trigger Alarm Out: ☐
- Alarm Out: ☐
- Trigger Snap: ☐
- Trigger SD Recording: ☐
- Trigger Email: ☐
- Trigger FTP: ☐
- Save button

1. Enable the applicable detection that's desired.

**Scene Change Detection:** Alarms will be triggered if the scene of the monitor video has changed.

**Video Blur Detection:** Alarms will be triggered if the video becomes blurry.

**Enable Video Color Cast Detection:** Alarms will be triggered if the video becomes obscured.

2. Set the alarm holding time and alarm trigger options. The setup steps are the same as motion detection. Please refer to motion detection chapter for details.
3. Click “Save” button to save the settings.
4. Set the sensitivity of the exception detection. Click “Sensitivity” tab to go to the interface as shown below.



Drag the slider to set the sensitivity value or directly enter the sensitivity value in the textbox. Click “Save” button to save the settings.

**The sensitivity value of Scene Change Detection:** The higher the value is, the more sensitive the system responds to the amplitude of the scene change.

**The sensitivity value of Video Blur Detection:** The higher the value is, the more sensitive the system responds to the blurriness of the image.

**The sensitivity value of Video Color Cast Detection:** The higher the value is, the more sensitive the system responds to the obscuring of the image.

#### ※ The requirements of camera and surrounding area

1. Auto-focusing function should not been enabled for exception detection.
2. Try not to enable exception detection when light changes greatly in the scene.
3. Please contact us for more detailed application scenarios.

## 4.5.2 ANPR Settings

ANPR function is to detect and compare license plate numbers. Alarms will be triggered when a license plate is detected.

Vehicle license plate detection and comparison settings:

1. Go to Config→Event→ANPR as shown below.

2. Enable ANPR.

3. Set alarm holding time and alarm trigger options. The alarm trigger setup steps are the same as motion detection setup. Please refer to [motion detection](#) chapter for details.

4. Set the alarm detection area and the blocked area.

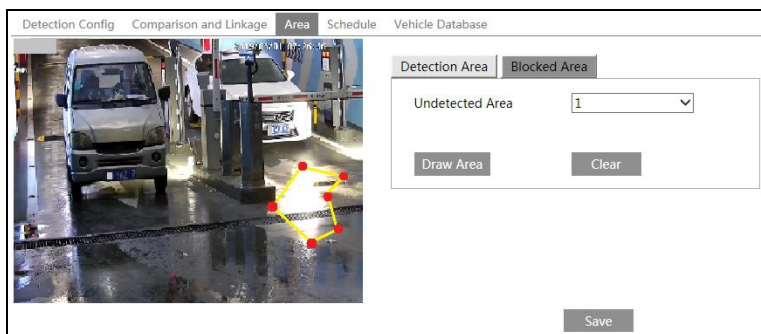


To set the detection area:

Click “Draw Area” and drag the border lines of the rectangle to modify its size. Click “Stop Draw” to stop drawing the area. Click “Clear” to clear the area. Then set the detectable size by defining the maximum value and the minimum value (The default size range of a single number plate image occupies from 5% to 50% of the entire image).

To set the blocked area

Select the number of the undetected area. Then click “Draw Area” to draw a closed area. Up to 4 areas can be set up. After you set the blocked area, this area will not be detected.



5. Set the schedule of the ANPR. The setup steps of the schedule are the same as schedule recording setup (See [Schedule Recording](#)).

6. Add vehicles to the vehicle Database. Click the vehicle database tab to go to the following interface.

Detection Config Comparison and Linkage Area Schedule **Vehicle Database**

**Add** **Bulk Entry**

**Add**

License plate number:  List Type:

Start Time:  End Time:

Owner:  License plate type:

**Save**

License plate number:  List Type:  **Search** **Delete**

Index	License plate	Owner	License plate	List Type	Start Time	End Time	Operate
1	AB123	xxx		Unknown ve...	2019-10-08...	2019-10-08...	<b>Delete</b> <b>Modify</b>

## ● Add vehicles

Click “Add” to show a vehicle adding box as shown in the above figure. Enter the license plate number, select list type, start and end time, enter owner and license plate type. Then click “Save” to save the vehicle.

List type: unknown vehicle, allow list and block list can be selected.

Click “Bulk Entry” to add multiple vehicles at one time as shown below.

Detection Config Comparison and Linkage Area Schedule **Vehicle Database**

**Add** **Bulk Entry**

**Bulk Entry**

Path:  **Browse** **Upload**

1. License plate number is compulsory, a maximum of 12 characters supported.  
 2. Owner name is optional, a maximum of 12 characters supported.  
 3. The effective start time is optional; format: YYYY/MM/dd hh:mm:ss; time range is from 1970 to 2037.  
 4. The effective end time is optional; format: YYYY/MM/dd hh:mm:ss; time range is from 1970 to 2037.  
 5. Vehicle type is optional, a maximum of 12 characters supported.  
 6. List Type is compulsory. 1 stands for block list; 2 stands for allow list; 3 stands for unknown vehicle  
 Example: [Download](#)

License plate number:  List Type:  **Search** **Delete**

Index	License plate	Owner	License plate	List Type	Start Time	End Time	Operate
-------	---------------	-------	---------------	-----------	------------	----------	---------

Please edit the vehicle information according to the requirements shown on the above interface. If you don’t know how to edit the file, please click “Download” to download an example file and then follow the example to edit. After that, click “Browse” to choose the vehicle information file and click “Upload” to import all vehicle information.

## ● Search vehicles

After the vehicles are added, you can search them in the vehicle list. Enter the license plate number and list type and then click “Search” to search the added vehicle information. Click “Modify” to modify its information. Click “Delete” to delete this vehicle information.

7. Set the license plate comparison and alarm linkage. Click the “Comparison and linkage” tab to go to the following interface.


Detection Config	Comparison and Linkage	Area	Schedule	Vehicle Database
Allow fault character(s) of the plate number	<input type="text" value="0"/>			
Alarm List	<input type="text" value="Allow list"/>			
Trigger Alarm Out				
<input type="checkbox"/> Alarm Out				
<input type="button" value="Save"/>				

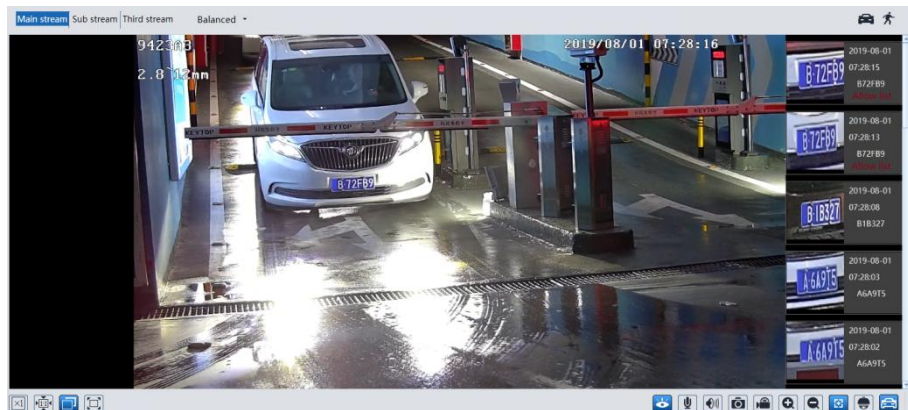
Set the fault tolerance, alarm list and check “alarm out”. Finally, click “Save” to save all the settings.

Allow fault character(s) of the plate number: up to 2 characters are allowed. For example, if “2” is selected, the captured license plate will be matched successfully and trigger the corresponding alarm even if there are 2 characters (or less) of the captured license plate not matched with the license plate of the alarm list.

Alarm list: Select a list as the comparison list. Allow list, block list or unknown vehicle can be optional.

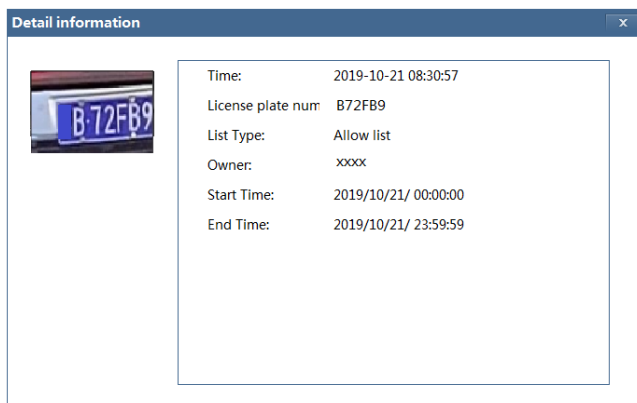
Alarm out: if enabled, the system will trigger alarm output when the captured license plate is matched successfully.

After all above information are set, go to the live interface and click  to see the captured pictures as shown below.



When the captured license plate is matched with the license plate of the comparison list, the list type will be displayed under the license plate number. Click the matched license plate

picture, the matched details will pop up as shown below.

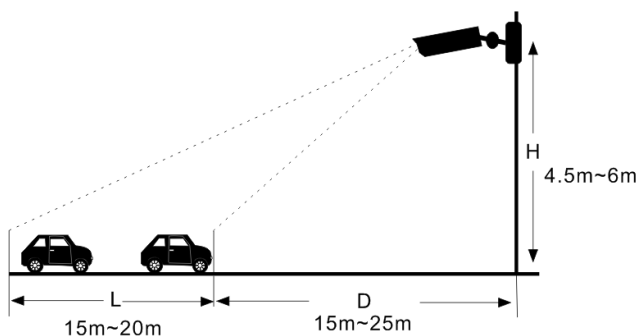


### ※ Configuration requirements of camera and surrounding area

- The monitoring image shall try to cover the lane, entering/exiting vehicles and these vehicles' plate number shall be always seen in the video.
- Try to avoid the objects that will block the camera, such as pillars, obstacles, doors, etc.
- Avoid the scenes with many trees or other moving objects (like humans, non-motor vehicles).
- The monitoring road shall be straight within 50 meters in front of/behind the location of the camera installation and make sure the camera points at the front or rear of the vehicle.

### ✚ Crossroad monitoring:

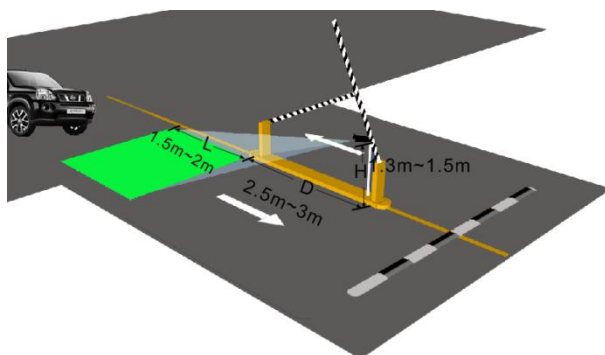
- The installation height (H) shall range from 4.5 m to 6m.
- The distance D (between the location of the camera installation and the captured area) shall range from 15m to 25m. This distance (D) depends on the installation height, usually 3 or 4 times as far as the installation height (H).
- The distance of the captured area (L) shall be from 15m to 20m.



- The depression angle of the camera shall range from  $10^{\circ}$  to  $15^{\circ}$ .
- If the camera is installed on the side of the road, the pan angle of the camera shall range from  $0^{\circ}$  to  $20^{\circ}$ .
- If the camera is installed right above the middle of the road, the pan angle of the camera shall range from  $-10^{\circ}$  to  $10^{\circ}$ .

### Entrance & Exit Monitoring

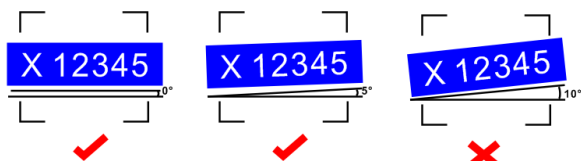
- The installation height (H) shall range from 1.3 m to 1.5m.
- The distance D (between the location of the camera installation and the captured area) shall range 2.5m to 3m.
- The distance of the captured area (L) shall be from 1.5m to 2m.



- The depression angle of the camera shall range from  $0^{\circ}$  to  $5^{\circ}$ .
- The pan angle of the camera shall range from  $5^{\circ}$  to  $20^{\circ}$ .

The tilt angle of the license plate

After the camera is installed, you can log in the web client and view whether the license plate tilts in the video. The tilt angle shall range from  $-5^{\circ}$  to  $5^{\circ}$ .



If the captured license plate doesn't meet the above requirement, you can adjust the pan angle of the camera to correct it.

## 4.6 Network Configuration

### 4.6.1 TCP/IP

Go to Config→Network→TCP/IP interface as shown below. There are two ways for network

connection.

**Use IP address (take IPv4 for example)**-There are two options for IP setup: obtain an IP address automatically by DHCP and use the following IP address. Please choose one of the options as needed.

**Test:** Test the effectiveness of the IP address by clicking this button.

**Use PPPoE**-Click the “PPPoE Config” tab to go to the interface as shown below. Enable PPPoE and then enter the user name and password from your ISP.

Either method of network connection can be used. If PPPoE is used to connect internet, the camera will get a dynamic WAN IP address. This IP address will change frequently. To be notified, the IP change notification function can be used.

Click “IP Change Notification Config” to go to the interface as shown below.

**Trigger Email:** when the IP address of the device is changed, the new IP address will be sent to the email address that has been set up.

**Trigger FTP:** when the IP address of the device is changed, the new IP address will be sent to FTP server that has been set up.

## 4.6.2 Port

Go to Config→Network→Port interface as shown below. HTTP port, Data port and RTSP port can be set.

HTTP Port	<input type="text" value="80"/>
HTTPS Port	<input type="text" value="443"/>
Data Port	<input type="text" value="9008"/>
RTSP Port	<input type="text" value="554"/>

**HTTP Port:** The default HTTP port is 80. It can be changed to any port which is not occupied.

**HTTPS Port:** The default HTTPS port is 443. It can be changed to any port which is not occupied.

**Data Port:** The default data port is 9008. Please change it as necessary.

**RTSP Port:** The default port is 554. Please change it as necessary.

## 4.6.3 Server Configuration

This function is mainly used for connecting network video management system.

<input checked="" type="checkbox"/> Enable
Server Port <input type="text" value="2009"/>
Server Address <input type="text"/>
Device ID <input type="text" value="1"/>
<input type="button" value="Save"/>

1. Check "Enable".
2. Check the IP address and port of the transfer media server in the ECMS/NVMS. Then enable the auto report in the ECMS/NVMS when adding a new device. Next, enter the remaining information of the device in the ECMS/NVMS. After that, the system will automatically allot a device ID. Please check it in the ECMS/NVMS.
3. Enter the above-mentioned server address, server port and device ID in the corresponding boxes. Click the "Save" button to save the settings.

## 4.6.4 DDNS

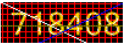
If the camera is set up with a DHCP connection, DDNS should be set for the internet.

1. Go to Config→Network→ DDNS.



Port	Server	<b>DDNS</b>	SNMP	802.1X	RTSP	UPnP	Email	FTP	HTTPS	QoS
<input type="checkbox"/> Enable										
Server Type		www.dyndns.com								
User Name										
Password										
Domain										
Save										

2. Apply for a domain name. Take www.dvrdyndns.com for example.  
Enter www.dvrdyndns.com in the IE address bar to visit its website. Then Click the “Registration” button.

NEW USER REGISTRATION	
USER NAME	XXXX
PASSWORD	•••••
PASSWORD CONFIRM	•••••
FIRST NAME	XXX
LAST NAME	XXX
SECURITY QUESTION.	My first phone number.
ANSWER	XXXXXXXX
CONFIRM YOU'RE HUMAN	 New Captcha <input type="text"/> Enter the text you see above
<input type="button" value="Submit"/> <input type="button" value="Reset"/>	

Create domain name.

<i>You must create a domain name to continue.</i>	
Domain name must start with (a-z, 0-9). Cannot end or start, but may contain a hyphen and is not case-sensitive.	
<input type="text"/>	<input type="button" value="Request Domain"/>

After the domain name is successfully applied for, the domain name will be listed as below.

Search by Domain		Search	
<i>Click a name to edit your domain settings.</i>			
NAME	STATUS	DOMAIN	
654321ABC	✓	654321abc.dvrdyndns.com	
Last Update: <i>Not yet updated</i> IP Address: 210.21.229.138			
<a href="#">Create additional domain names</a>			

3. Enter the username, password, domain you apply for in the DDNS configuration interface.

4. Click the “Save” button to save the settings.

### 4.6.5 SNMP

To get camera status, parameters and alarm information and remotely manage the camera, the SNMP function can be used. Before using SNMP, please install an SNMP management tool and set the parameters of the SNMP, such as SNMP port, trap address.

1. Go to Config→Network→SNMP.

SNMP v1/v2	
<input type="checkbox"/> Enable SNMPv1	
<input type="checkbox"/> Enable SNMPv2	
Read SNMP Community	<input type="text"/>
Write SNMP Community	<input type="text"/>
Trap Address	<input type="text"/>
Trap Port	<input type="text" value="0"/>
Trap community	<input type="text"/>
SNMP v3	
<input type="checkbox"/> Enable SNMPv3	
Read User Name	<input type="text"/>
Security Level	<input type="text" value="auth, priv"/>
Authentication Algorithm	<input checked="" type="radio"/> MD5 <input type="radio"/> SHA
Authentication Password	<input type="text"/>
Private-key Algorithm	<input checked="" type="radio"/> DES <input type="radio"/> AES
Private-key Algorithm	<input type="text"/>
Write User Name	<input type="text"/>
Security Level	<input type="text" value="auth, priv"/>
Authentication Algorithm	<input checked="" type="radio"/> MD5 <input type="radio"/> SHA
Authentication Password	<input type="text"/>
Private-key Algorithm	<input checked="" type="radio"/> DES <input type="radio"/> AES
Private-key Algorithm	<input type="text"/>
Other Settings	
SNMP Port	<input type="text" value="0"/>

2. Check the corresponding version checkbox (Enable SNMPv1, Enable SNMPv2, Enable SNMPv3) according to the version of the SNMP software that will be used.
3. Set the values for “Read SNMP Community”, “Write SNMP Community”, “Trap Address”, “Trap Port” and so on. Please make sure the settings are the same as that of the SNMP software.

**Note:** Please use the different version in accordance with the security level you required. The higher the version is, the higher the level of the security is.

#### 4.6.6 802.1x

If it is enabled, the camera's data can be protected. When the camera is connected to the network protected by the IEEE802.1x, user authentication is needed.

<input checked="" type="checkbox"/> Enable	
Protocol Type	EAP_MD5
EAPOL Version	1
User Name	test
Password	•••••
Confirm Password	•••••

To use this function, the camera shall be connected to a switch supporting 802.1x protocol. The switch can be reckoned as an authentication system to identify the device in a local network. If the camera connected to the network interface of the switch has passed the authentication of the switch, it can be accessed via the local network.

Protocol type and EAPOL version: Please use the default settings.

User name and password: The user name and password must be the same with the user name and password applied for and registered in the authentication server.

#### 4.6.7 RTSP

Go to Config→Network→RTSP.

<input checked="" type="checkbox"/> Enable	
Port	554
Address	rtsp://IP or domain name:port/profile1
	rtsp://IP or domain name:port/profile2
	rtsp://IP or domain name:port/profile3
Multicast address	
Main stream	239.0.0.0 50554 <input type="checkbox"/> Automatic start
Sub stream	239.0.0.1 51554 <input type="checkbox"/> Automatic start
Third stream	239.0.0.2 52554 <input type="checkbox"/> Automatic start
Audio	239.0.0.3 53554 <input type="checkbox"/> Automatic start
<input type="checkbox"/> Allow anonymous login (No username or password required)	
Save	

Select "Enable" to enable the RTSP function.

**Port:** Access port of the streaming media. The default number is 554.

**RTSP Address:** The RTSP address (unicast) format that can be used to play the stream in a media player.

## Multicast Address

**Main stream:** The address format is

“rtsp://IP address: rtsp port/profile1?transportmode=mcast”.

**Sub stream:** The address format is

“rtsp://IP address: rtsp port/profile2?transportmode=mcast”.

**Third stream:** The address format is

“rtsp://IP address: rtsp port/profile3?transportmode=mcast”.

**Audio:** Having entered the main/sub stream in a VLC player, the video and audio will play automatically.

If “Allow anonymous login...” is checked, there is no need to enter the username and password to view the video.

If “auto start” is enabled, the multicast received data should be added into a VLC player to play the video.

**Note:**1. This camera support local play through a VLC player. Enter the RTSP address (unicast or multicast, eg. rtsp://192.168.226.201:554/profile1?transportmode=mcast) in a VLC player to realize the simultaneous play with the web client.

2. The IP address mentioned above cannot be the address of IPv6.

3. Avoid the use of the same multicast address in the same local network.

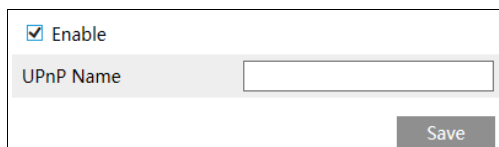
4. When playing the video through the multicast streams in a VLC player, please pay attention to the mode of the VLC player. If it is set to TCP mode, the video cannot be played.

5. If the coding format of the video of the main stream is MJPEG, the video may be disordered at some resolutions.

### 4.6.8 UPNP

If this function is enabled, the camera can be quickly accessed through the LAN.

Go to Config→Network→UPnP. Enable UPNP and then enter UPnP name.



### 4.6.9 Email

If you need to trigger Email when an alarm happens or IP address is changed, please set the Email here first.

Go to Config→Network →Email.

Sender	
Sender Address	<input type="text" value="XXX@126.com"/>
User Name	<input type="text" value="XXX@126.com"/>
Password	<input type="password" value="•••••"/>
Server Address	<input type="text" value="smtp.126.com"/>
Secure Connection	<input type="text" value="Unnecessary"/>
SMTP Port	<input type="text" value="25"/> <input type="button" value="Default"/>
<input type="checkbox"/> Send Interval(S)	<input type="text" value="0"/> (0-3600)
<input type="button" value="Clear"/> <input type="button" value="Test"/>	
Recipient	
<input type="text" value="XXXX@126.com"/>	
<input type="text"/>	
Recipient Address	<input type="text"/>
<input type="button" value="Add"/> <input type="button" value="Delete"/>	
<input type="button" value="Save"/>	

**Sender Address:** sender's e-mail address.

**User name and password:** sender's user name and password.

**Server Address:** The SMTP IP address or host name.

Select the secure connection type at the "Secure Connection" pull-down list according to what's required.

**SMTP Port:** The SMTP port.

**Send Interval(S):** The time interval of sending email. For example, if it is set to 60 seconds and multiple motion detection alarms are triggered within 60 seconds, they will be considered as only one alarm event and only one email will be sent. If one motion alarm event is triggered and then another motion detection alarm event is triggered after 60 seconds, two emails will be sent. When different alarms are triggered at the same time, multiple emails will be sent separately.

Click the "Test" button to test the connection of the account.

**Recipient Address:** receiver's e-mail address.

#### 4.6.10 FTP

After an FTP server is set up, captured pictures from events will be uploaded to the FTP server.

Go to Config→Network→FTP.

Port Server DDNS SNMP RTSP UPnP Email **FTP**

Server Name	Server Address	Port	User Name	Upload Path
<div> <div>Add FTP</div> <div> <div>Server Name</div> <div>Server Address</div> <div>Upload Path</div> <div>Port</div> <div>User Name</div> <div>Password</div> </div> <div>Example/Dir/folder</div> <div>21</div> <div> <input type="checkbox"/> Anonymous         </div> <div> <div>OK</div> <div>Cancel</div> </div> </div>				

Add Modify Delete Test Save

**Server Name:** The name of the FTP server.

**Server Address:** The IP address or domain name of the FTP.

**Upload Path:** The directory where files will be uploaded to.

**Port:** The port of the FTP server.

**User Name and Password:** The username and password that are used to login to the FTP server.

#### 4.6.11 HTTPS

HTTPS provides authentication of the web site and protects user privacy.

Go to Config → Network → HTTPS as shown below.

☒ Enable

Certificate installed		Delete
C=CN, ST=GD, L=SZ, O=embeddedsoftware	Issued to: C=CN, ST=GD, L=SZ, O=embeddedsoftware, OU=IPC, H=localhost, E=com.cn, Issuer: C=CN, ST=GD, L=SZ, O=embeddedsoftware, OU=IPC, H=localhost, E=com.cn, Validity date: 2017-07-26 01:02:07 ~ 2022-07-26 01:02:07	

Save

There is a certificate installed by default as shown above. Enable this function and save it. Then the camera can be accessed by entering https://IP: https port via the web browser (eg. https://192.168.226.201:443).

A private certificate can be created if users don't want to use the default one. Click "Delete" to cancel the default certificate. Then the following interface will be displayed.

☒ Enable

Installation type

- ☒ Have signed certificate, install directly
- ☐ Create a private certificate
- ☐ Create a certificate request

Install certificate

\* If there is a signed certificate, click “Browse” to select it and then click “Install” to install it.

\* Click “Create a private certificate” to enter the following creation interface.

☒ Enable

Installation type

- ☐ Have signed certificate, install directly
- ☒ Create a private certificate
- ☐ Create a certificate request

Create a private certificate

Click the “Create” button to create a private certificate. Enter the country (only two letters available), domain (camera’s IP address/domain), validity date, password, province/state, region and so on. Then click “OK” to save the settings.

\* Click “Create a certificate request” to enter the following interface.

☒ Enable

Installation type

- ☐ Have signed certificate, install directly
- ☐ Create a private certificate
- ☒ Create a certificate request

Create a certificate request

Click “Create” to create the certificate request. Then download the certificate request and submit it to the trusted certificate authority for signature. After receiving the signed certificate, import the certificate to the device.

#### 4.6.12 P2P (Optional)

If this function is enabled, the network camera can be quickly accessed by adding the device ID in mobile surveillance client or CMS/NVMS client via WAN. Enable this function by going to Config→Network→P2P interface.

☒ P2P

### 4.6.13 QoS

QoS (Quality of Service) function is used to provide different quality of services for different network applications. With the deficient bandwidth, the router or switch will sort the data streams and transfer them according to their priority to solve the network delay and network congestion by using this function.

Go to Config→Network→QoS.

Video/Audio DSCP	<input type="text" value="13"/>
Alarm DSCP	<input type="text" value="35"/>
Manager DSCP	<input type="text" value="53"/>

Video/Audio DSCP: The range is from 0 to 63.

Alarm DSCP: The range is from 0 to 63.

Manager DSCP: The range is from 0 to 63.

Generally speaking, the larger the number is, the higher the priority is.

## 4.7 Security Configuration

### 4.7.1 User Configuration

Go to Config→Security→User interface as shown below.

<div>Add</div> <div>Modify</div> <div>Delete</div>			
Index	User Name	User Type	Binding MAC
1	admin	Administrator	

#### Add user:

1. Click the “Add” button to pop up the following textbox.

Add User

×

User Name

Password

Level

9~15 characters, including at least two of the following categories: numbers, special characters, upper case letters, lower case letters.

Confirm Password

User Type

Administrator

▼

Bind MAC

☐

OK

Cancel



2. Enter user name in the “User Name” textbox.
3. Enter the password in the “Password” and “Confirm Password” textbox. Please set the password according to the requirement of the password security level (Go to Config→Security→Security Management→Password Security interface to set the security level).
4. Choose the user type. Administrator has all permissions. Normal user can only view the live video. Advanced user has the same permissions as an Administrator except for; user, backup settings, factory reset, and upgrading the firmware.
5. Enter the MAC address of the PC in the “Bind MAC” textbox.  
If this option is enabled, only the PC with the specified MAC address can access the camera for that user.
6. Click the “OK” button and then the newly added user will be displayed in the user list.

### Modify user:

1. Select a user to modify password and MAC address if necessary in the user configuration list box.
2. The “Edit user” dialog box pops up by clicking the “Modify” button.

3. Enter the old password of the user in the “Old Password” text box.
4. Enter the new password in the “New password” and “Confirm Password” text box.
5. Enter computer’s MAC address as necessary.
6. Click the “OK” button to save the settings.

**Note:** To change the access level of a user, the user must be deleted and added again with the new access level.

### Delete user:

1. Select the user to be deleted in the user configuration list box.
2. Click the “Delete” button to delete the user.

**Note:** The default administrator account cannot be deleted.

## 4.7.2 Online User

Go to Config→Security→Online User to view the user who is viewing the live video.

Index	Client Address	Port	User Name	User Type	
1	192.168.17.232	55760	admin	Administrator	Kick Out

An administrator user can kick out all the other users (including other administrators).

## 4.7.3 Block and Allow Lists

Go to Config→Security→Block and Allow Lists as shown below.

The setup steps are as follows:

Check the “Enable address filtering” check box.

Select “Block/Allow the following address”, IPv4/IPv6/MAC and then enter IP address or MAC address in the address box and click the “Add” button.

## 4.7.4 Security Management

Go to Config→Security→Security Management as shown below.

In order to prevent against malicious password unlocking, “locking once illegal login” function can be enabled here. If this function is enabled, login failure after trying six times will make the login interface locked. The camera can be logged in again after a half hour or after the camera reboots.

For some specified versions, anonymous login with a private protocol can be enabled here. If this function is enabled, enter `http://host:port/Anonymous/1[2/3]` (eg.

`http://192.168.226.201:80/Anonymous/1`) via web browser to access the camera. 1 indicates main stream; 2 indicates sub stream; 3 indicates third stream. Only video can be viewed by this means and no other operations can be done. If no such function, please skip the instruction.

## ● Password Security

Security Service	Password Security
Password Level	Weak ▼
Expiration Time	Never ▼

Please set the password level and expiration time as needed.

Password Level: Weak, Medium or Strong.

Weak level: Numbers, special characters, upper or lower case letters can be used. You can choose one of them or any combination of them when setting the password.

Medium Level: 9~15 characters, including at least two of the following categories: numbers, special characters, upper case letters and lower case letters.

Strong Level: 9~15 characters. Numbers, special characters, upper case letters and lower case letters must be included.

For your account security, it is recommended to set a strong password and change your password regularly.

## 4.8 Maintenance Configuration

### 4.8.1 Backup and Restore

Go to Config→Maintenance→Backup & Restore.

Import Setting	
Path	<input type="text"/> Browse
<input type="button" value="Import Setting"/>	
Export Settings	
<input type="button" value="Export Settings"/>	
Default Settings	
Keep	<input type="checkbox"/> Network Config <input type="checkbox"/> Security Configuration <input type="checkbox"/> Image Configuration
<input type="button" value="Load Default"/>	

### ● Import & Export Settings

Configuration settings of the camera can be exported from a camera into another camera.

1. Click “Browse” to select the save path for import or export information on the PC.
2. Click the “Import Setting” or “Export Setting” button.

### ● Default Settings

Click the “Load Default” button to restore all system settings to the default factory settings except those you want to keep.

## 4.8.2 Reboot

Go to Config→Maintenance→Reboot.

Click the “Reboot” button to reboot the device.

### Timed Reboot Setting:

If necessary, the camera can be set up to reboot on a time interval. Enable “Time Settings”, set the date and time and then click the “Save” button to save the settings.

## 4.8.3 Upgrade

Go to Config→Maintenance→Upgrade. In this interface, the camera firmware can be updated.

Local upgrade	
Path	<input type="text"/> <input type="button" value="Browse"/> <input type="button" value="Upgrade"/>

1. Click the “Browse” button to select the save path of the upgrade file
2. Click the “Upgrade” button to start upgrading the firmware.
3. The device will restart automatically

**Caution!** Do not close the browser or disconnect the camera from the network during the upgrade.

## 4.8.4 Operation Log

To query and export log:

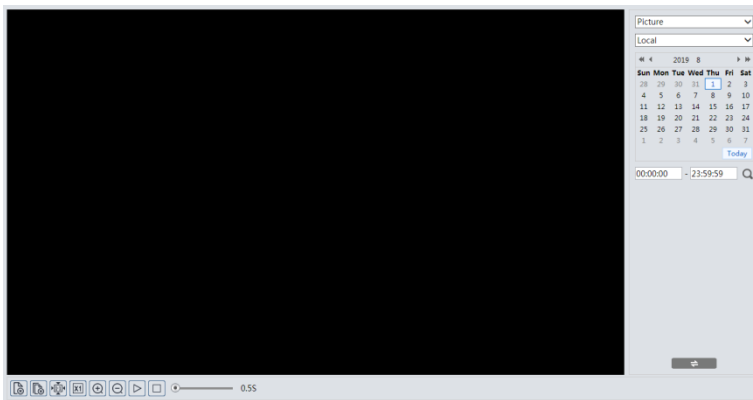
1. Go to Config→Maintenance→Operation Log.

Main Type:	All log	Sub Type:	All log		
Start Time:	2015-07-14 00:00:00	End Time:	2015-07-14 23:59:59	Search	Export
Index	Time	Main Type	Sub Type	User Name	Login IP
1	2015-07-14 11:15:18	Operation	Log in	admin	192.168.12.53
2	2015-07-14 11:12:02	Exception	Disconnected		192.168.12.53
3	2015-07-14 19:12:17	Exception	Disconnected		192.168.12.52


2. Select the main type, sub type, start and end time.
3. Click “Search” to view the operation log.
4. Click “Export” to export the operation log.

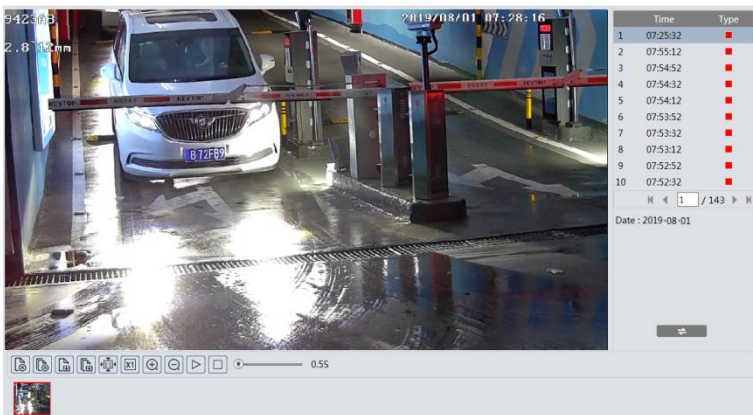
## 5.1 Image Search


Click Search to go to the interface as shown below. Images that are saved on the SD card can be found here.



### ● Local Image Search

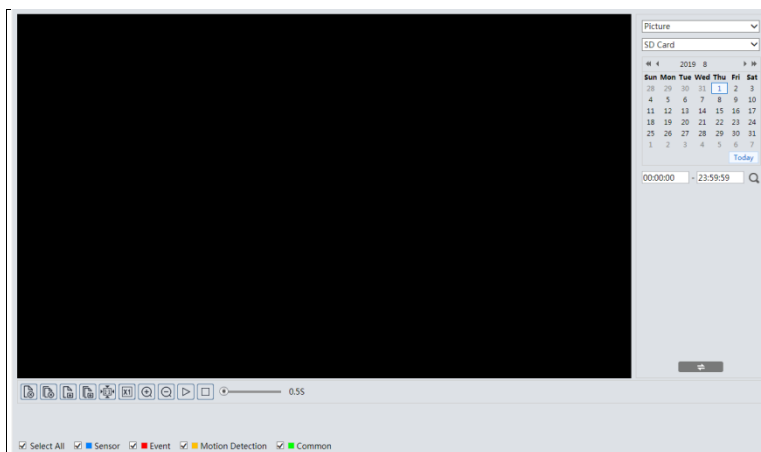
1. Choose “Picture”—“Local”.
2. Set time: Select date and choose the start and end time.
3. Click  to search the images.
4. Double click a file name in the list to view the captured photos as shown below.





Click  to return to the previous interface.












## ● SD Card Image Search

1. Choose “Picture”—“SD Card”.



2. Set time: Select date and choose the start and end time.
  3. Choose the alarm events at the bottom of the interface.
  4. Click  to search the images.
  5. Double click a file name in the list to view the captured photos.
- Click  to return to the previous interface.

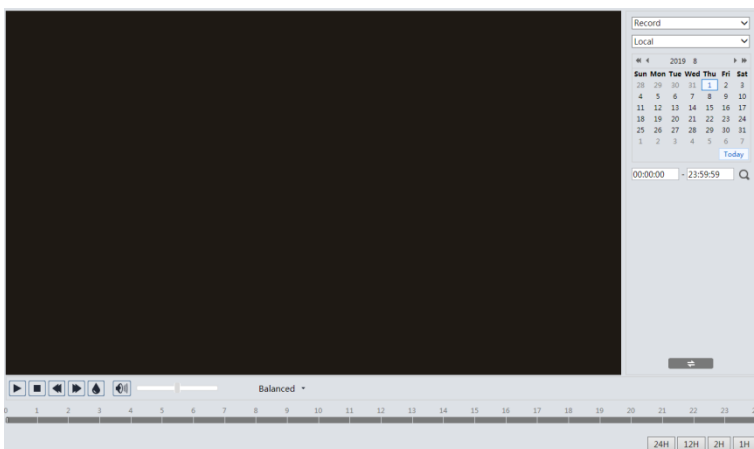
The descriptions of the buttons are shown as follows.


Icon	Description	Icon	Description
	Close: Select an image and click this button to close the image.		Close all: Click this button to close all images.
	Save: Click this button to select the path for saving the image on the PC.		Save all: Click this button to select the path for saving all pictures on the PC.
	Fit size: Click to fit the image on the screen.		Actual size: Click this button to display the actual size of the image.
	Zoom in: Click this button to digitally zoom in.		Zoom out: Click this button to digitally zoom out.
	Slide show play: Click this button to start the slide show mode.		Stop: Click this button to stop the slide show.
	Play speed: Play speed of the slide show.		

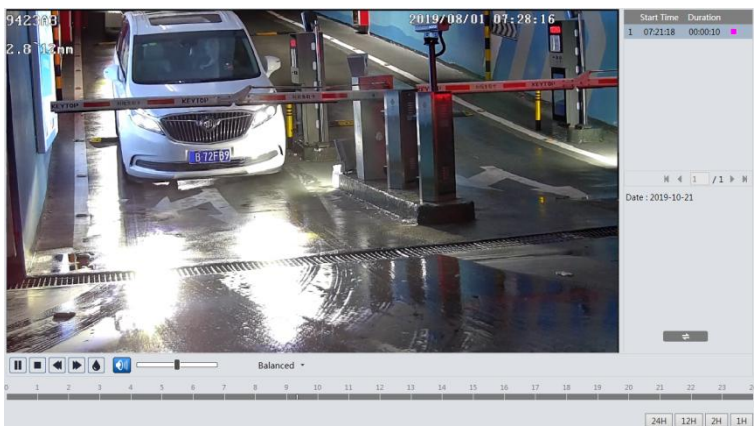
## 5.2 Video Search

### 5.2.1 Local Video Search








Click Search to go to the interface as shown below. Videos were recorded locally to the PC can be played in this interface.



1. Choose “Record”—“Local”.
2. Set search time: Select the date and choose the start and end time.
3. Click  to search the images.
4. Double click on a file name in the list to start playback.




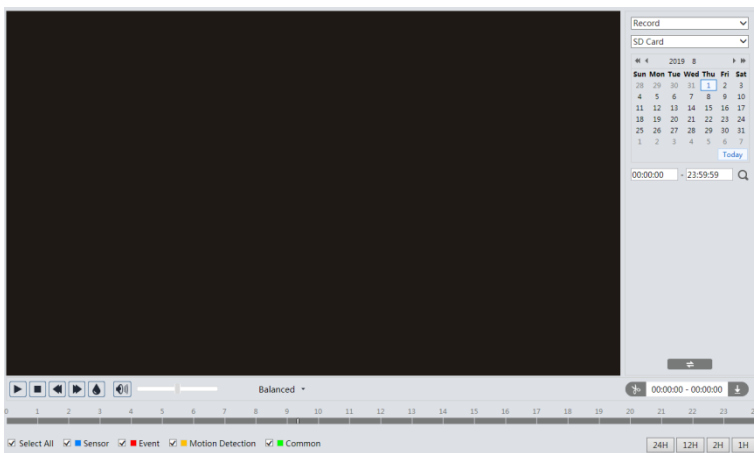


Icon	Description	Icon	Description
	Play button. After pausing the video, click this button to continue playing.		Pause button
	Stop button		Speed down
	Speed up		Watermark display
	Enable / disable audio; drag the slider to adjust the volume after enabling audio.		

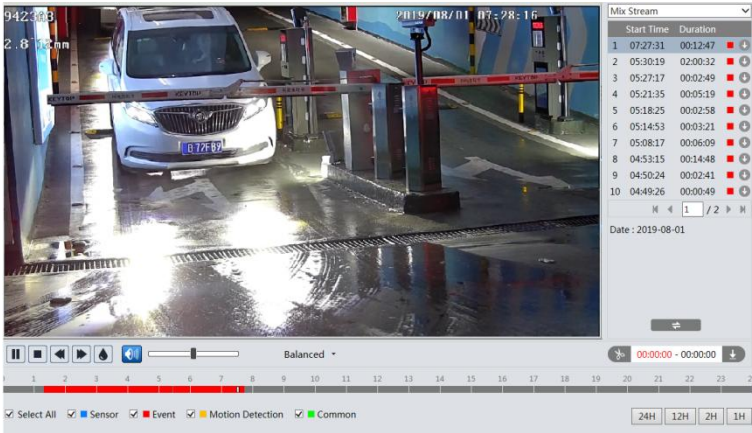
## 5.2.2 SD Card Video Search

Click Search to go to the interface as shown below. Videos that were recorded on the SD card can be played in this interface.

1. Choose “Record”—“SD Card”.
2. Set search time: Select the date and choose the start and end time.
3. Click  to search the images.







4. Select the alarm events at the bottom of the interface.
5. Select mix stream (video and audio stream) or video stream as needed.
6. Double click on a file name in the list to start playback.



The time table can be shown in 24H/12H/2H/1H format by clicking the corresponding buttons.

Video clip and downloading

1. Search the video files according to the above mentioned steps.
2. Select the start time by clicking on the time table.
3. Click  to set the start time and then this button turns blue (  ).
4. Select the end time by clicking on the time table. Then click  to set the end time.
5. Click  to download the video file in the PC.

Index	Process	Record	Start Time	End Time	Path	Operate
1	100%	Cut	2019-08-01 01:1...	2019-08-01 01:1...	<a href="#">Favorites</a>	<a href="#">Open</a>

Set up

D:\Favorites

Clear List

Close

Click “Set up” to set the storage directory of the video files.

Click “Open” to play the video.

Click “Clear List” to clear the downloading list.

Click “Close” to close the downloading window.

## Appendix 1 Troubleshooting

### How to find the password?

A: Reset the device to the default factory settings.

Default IP: 192.168.226.201; User name: admin; Password: 123456

### Fail to connect devices through IE browser.

A: Network is not well connected. Check the connection and make sure it is connected well.

B: IP address is not available. Reset the IP address.

C: Web port number has been changed: contact administrator to get the correct port number.

D: Exclude the above reasons. Restore to default setting by IP-Tool.

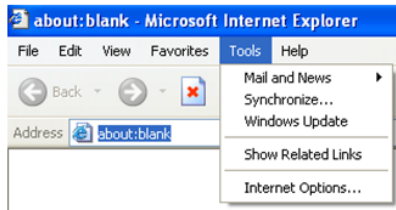
### IP tool cannot search devices.

It may be caused by the anti-virus software in your computer. Please exit it and try to search device again.

### IE cannot download ActiveX control.

A. IE browser may be set up to block ActiveX. Follow the steps below.

① Open IE browser and then click Tools-----Internet Options.

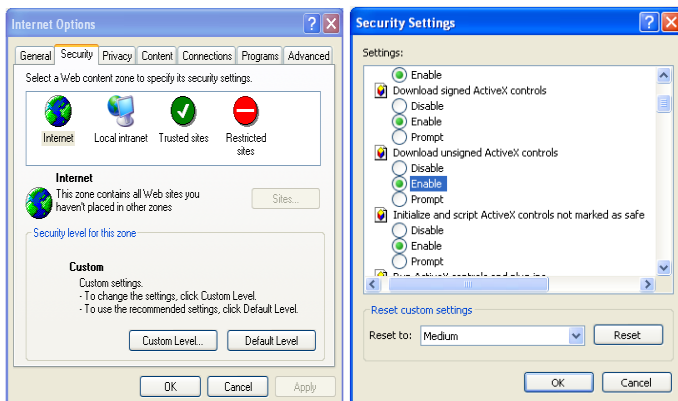


② Select Security-----Custom Level....

③ Enable all the options under “ActiveX controls and plug-ins”.

④ Click OK to finish setup.

B. Other plug-ins or anti-virus blocks ActiveX. Please uninstall or close them.





### No sound can be heard.

A: Audio input device is not connected. Please connect and try again.

B: Audio function is not enabled at the corresponding channel. Please enable this function.

## Appendix 2 Specifications

Specification /Model		 <b>2MP ANPR Box Network Camera</b>
Camera	Image Sensor	1/2.8 " CMOS
	Image Size	1920×1080
	Electronic Shutter	1/25s~1/100000s
	Iris Type	DC Iris
	Min. Illumination	Color: 0.0026 lux@F1.2, AGC ON
	Lens Mount	CS
	Day&Night	ICR
	WDR	120dB
Image	Digital NR	3D DNR
	Video Compression	H.265S/H.265+/H.265/H.264S/H.264+/H.264/MJPEG
	H.264 Type	Baseline profile/main profile/high profile
	Video Bit Rate	64Kbps~6Mbps
	Resolution	1080P (1920×1080), 720P(1280×720), D1, CIF, 480×240
	Main Stream	60Hz: 1080P/720P(1~30fps); 50Hz: 1080P/720P (1~25fps) HFR mode: 1080P/720P(1~60fps); 50Hz: 1080P/720P (1~50fps)
	Sub Stream	60Hz: 720P/D1/CIF/480×240 (1~30fps); 50Hz: 720P/D1/CIF/480×240 (1~25fps)
	Third Stream	60Hz: CIF/ D1/480×240 (1~30fps); 50Hz: CIF/D1/ 480×240 (1~25fps)
	Image Settings	BLC, HLC, Defog, Saturation, Brightness, Chroma, Contrast, Smart IR,Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser
Interfaces	ROI	Support
	Network	RJ45
	Auido	1CH audio input; 1CH audio output; 1CH MIC IN
	Reset	Yes
	RS485	Yes
	Storage	Built-in micro SD card storage slot, up to 128 GB
	Alarm	2CH Alarm input; 2CH Alarm Ouput
	USB	Yes
Fuction	ABF	Yes
	Remote Monitoring	Web browser, CMS remote control
	Online Connection	Support simultaneous monitoring for up to 10 users and multi-stream transmission
	Network Protocol	IPv4, IPv6, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP, SNMP, HTTP, HTTPS, 802.1x, QoS
	Interface Protocol	ONVIF
	Storage	Network remote storage, micro SD card storage
	Smart Alarm	Motion detection, Sensor detection, SD card Full, SD card error, IP address conflict, cable disconnection, scene change detection, video blur detection, video color cast detection, ANPR
	Power	AC24V/DC12V/PoE
	Power Consumption	< 6.5W
	Operating Environment	Temperature: -30℃~60℃; Relative Humidity: less than 95% (non-condensing)
	Dimension (mm)	146.9×79×64
	Weight ( net )	Approx. 0.65KG
	Installation	Wall mounting; ceiling mounting

Specification /Model		 2MP ANPR Bullet Network Camera
Camera	Image Sensor	1/2.8 " CMOS
	Image Size	1920×1080
	Electronic Shutter	1/25s~1/100000s
	Iris Type	DC Iris
	Min. Illumination	0.0026lux@F1.2, AGC ON; 0 lux with IR; 0.005 lux@F1.4, AGC ON; 0 lux with IR
	Lens	2.8~12mm@F1.4, (motorized), horizontal field of view:103.4 °~32.4 ° 7~22mm@F1.4, (motorized), horizontal field of view:44 °~17.6 °
	Lens Mount	Ø14
	Day&Night	ICR
	WDR	120dB
	Digital NR	3D DNR
	Angle Adjustment	Pan: 0 °~360 °; Tilt 0 °~90 °; Rotation:0 °~360 °
Image	Video Compression	H.265S/H.265+/H.265/H.264S/H.264+/H.264/MJPEG
	H.264 Type	Baseline profile/main profile/high profile
	Video Bit Rate	64Kbps~6Mbps
	Resolution	1080P (1920×1080), 720P(1280×720), D1, CIF, 480×240
	Main Stream	60Hz: 1080P/720P(1~30fps); 50Hz: 1080P/720P (1~25fps) HFR mode: 1080P/720P(1~60fps); 50Hz: 1080P/720P (1~50fps)
	Sub Stream	60Hz: 720P/D1/CIF/480×240 (1~30fps); 50Hz: 720P/D1/CIF/480×240 (1~25fps)
	Third Stream	60Hz: CIF/ D1/480×240 (1~30fps); 50Hz: CIF/D1/ 480×240 (1~25fps)
	Image Settings	BLC, HLC, Defog, Saturation, Brightness, Chroma, Contrast, Wide Dynamic, Sharpen, NR, etc. adjustable through client or web browser
Interfaces	ROI	Support
	Network	RJ45
	Audio	1CH audio input; 1CH audio output
	Reset	Yes
	Storage	Built-in micro SD card storage slot, up to 128 GB
Fuction	Alarm	1CH Alarm input; 1CH Alarm Ouput
	Remote Monitoring	Web browser, CMS remote control
	Online Connection	Support simultaneous monitoring for up to 10 users and multi-stream transmission
	Network Protocol	IPv4, IPv6, UDP, DHCP, NTP, RTSP, PPPoE, DDNS, SMTP, FTP, SNMP, HTTP, HTTPS, 802.1x, QoS
	Interface Protocol	ONVIF
	Storage	Network remote storage, micro SD card storage
Others	Smart Alarm	Motion detection, Sensor detection, SD card Full, SD card error, IP address conflict, cable disconnection, scene change detection, video blur detection, video color cast detection, ANPR
	IR Distance	50~70 m or 70~100m optional
	Protection Grade	IP67
	Power	DC12V/PoE
	Power Consumption	< 11W
	Operating Environment	Temperature: -30 °C~60 °C; Relative Humidity: less than 95% (non-condensing)
	Dimension (mm)	279.5×100.3×88.9
	Weight ( net )	Approx. 1.1KG
	Installation	Wall mounting; ceiling mounting

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