License Plate Recognition Camera

User Manual

Issue: **V1.0**

Date: **2024-01-24**

Precautions

Precautions

Fully understand this document before using this device, and strictly observe rules in this document when using this device. If you install this device in public places, provide the tip "You have entered the area of electronic surveillance" in an eye-catching place. Failure to correctly use electrical products may cause fire and severe injuries. To prevent accidents, carefully read the following context:

Symbols

This document may contain the following symbols whose meanings are described accordingly.

Symbol	Description
DANGER	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.
TIP	Provides methods to help you solve a problem or save you time.
NOTE	Provides additional information to emphasize or supplement important points of the main text.

DANGER

- To prevent electric shocks or other dangers, keep power plugs dry and clean.

WARNING

- Strictly observe installation requirements when installing the device. The manufacturer shall not be held responsible for device damage caused by users' non-conformance to these requirements.
- To prevent electric shocks or other dangers, keep power plugs dry and clean.

- Strictly conform to local electrical safety standards and use power adapters that are marked with the LPS standard when installing and using this device. Otherwise, this device may be damaged.
- Use accessories delivered with this device. The voltage must meet input voltage requirements for this device.
- If this device is installed in places with unsteady voltage, ground this device to discharge high energy such as electrical surges in order to prevent the power supply from burning out.
- When this device is in use, ensure that no water or any liquid flows into the device. If water or liquid unexpectedly flows into the device, immediately power off the device and disconnect all cables (such as power cables and network cables) from this device.
- Do not focus strong light (such as lighted bulbs or sunlight) on this device. Otherwise, the service life of the image sensor may be shortened.
- If this device is installed in places where thunder and lightning frequently occur, ground the device nearby to discharge high energy such as thunder strikes in order to prevent device damage.

CAUTION

- Avoid heavy loads, intensive shakes, and soaking to prevent damages during transportation and storage. The warranty does not cover any device damage that is caused during secondary packaging and transportation after the original packaging is taken apart.
- Protect this device from fall-down and intensive strikes, keep the device away from magnetic field interference, and do not install the device in places with shaking surfaces or under shocks.
- Clean the device with a soft dry cloth. For stubborn dirt, dip the cloth into slight neutral cleanser, gently wipe the dirt with the cloth, and then dry the device.
- Do not jam the ventilation opening. Follow the installation instructions provided in this document when installing the device.
- Keep the device away from heat sources such as radiators, electric heaters, or other heat equipment.
- Keep the device away from moist, dusty, extremely hot or cold places, or places with strong electric radiation.
- If the device is installed outdoors, take insect- and moisture-proof measures to avoid circuit board corrosion that can affect monitoring.
- Remove the power plug if the device is idle for a long time.
- Before unpacking, check whether the fragile sticker is damaged. If the fragile sticker is damaged, contact customer services or sales personnel. The manufacturer shall not be held responsible for any artificial damage of the fragile sticker.

Special Announcement

All complete products sold by the manufacturer are delivered along with nameplates, operation instructions, and accessories after strict inspection. The manufacturer shall not be held responsible for counterfeit products.

This manual may contain misprints, technology information that is not accurate enough, or product function and operation description that is slightly inconsistent with the actual product. The manufacturer will update this manual according to product function enhancement or changes and regularly update the software and hardware described in this manual. Update information will be added to new versions of this manual without prior notice.

This manual is only for reference and does not ensure that the information is totally consistent with the actual product. For consistency, see the actual product.

Contents

1 Device Installation

1.1 Scene Requirements

1.1.1 Scene

- License plate must be readable and well light.
- License plate image dimensions (Pixel) must be at least:

1. For Russia, Kazakhstan, Armenia, Uzbekistan, Serbia: 150 pixels for rectangular plates and 100 pixels for two row plates

2. For all other supported countries: 130 pixels for rectangular plates and 70 pixels for two row plates.

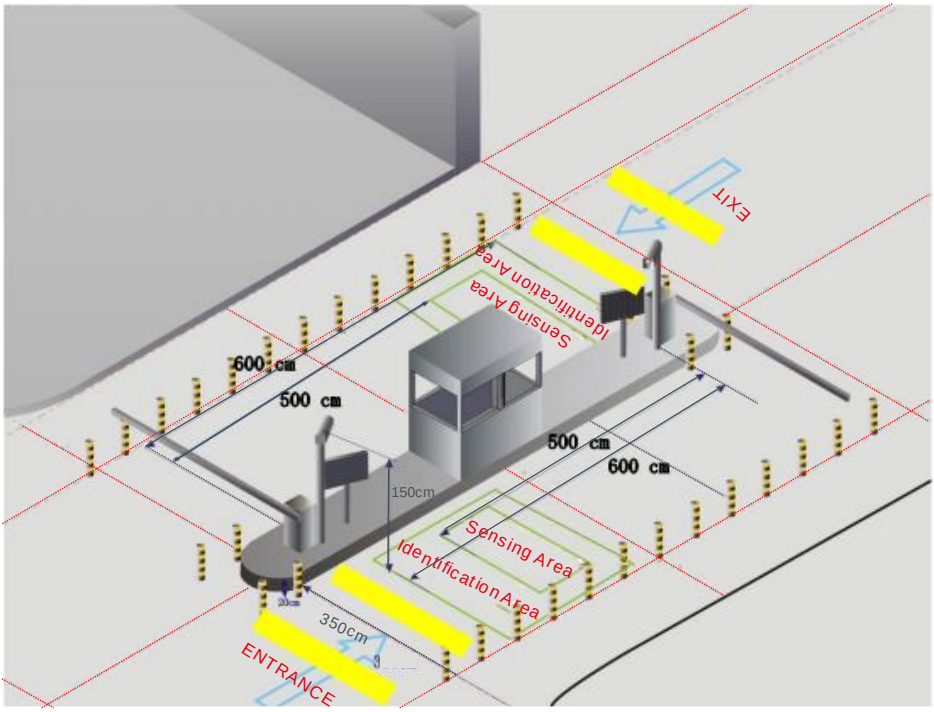
- Allowed tilt - 5 degrees (clockwise and counterclockwise), as shown in Figure 1-1.

Figure 1-1 Allowed tilt sample

In the case of vehicle detection, the horizontal pixels of the scene's licence plate size is recommended to be between 90-170 pixels.

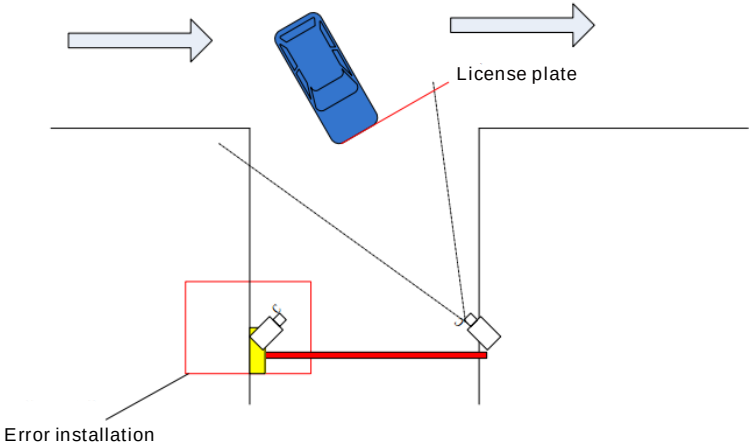
- Generally, the height of the camera erection needs to consider the application scenario. In the entrance and exit scene, about 1.5 meters, the installation height of the road monitoring scene is recommended to be 5-6 meters, the pitch angle is not more than 15 degrees, and the license plate recognition distance is about 5 meters.
- The height of the entrance and exit camera column needs to exceed 1.5 meters. The configuration can adjust the moving bracket up and down to facilitate debugging equipment, as shown in Figure 1-2.

Figure 1-2 Allowed tilt



The camera erection position must meet the angle of view to detect most vehicles entering, as shown in Figure 1-3.

Figure 1-3 The best installation



There are three modes of installation：

Figure 1-4 Scene 1

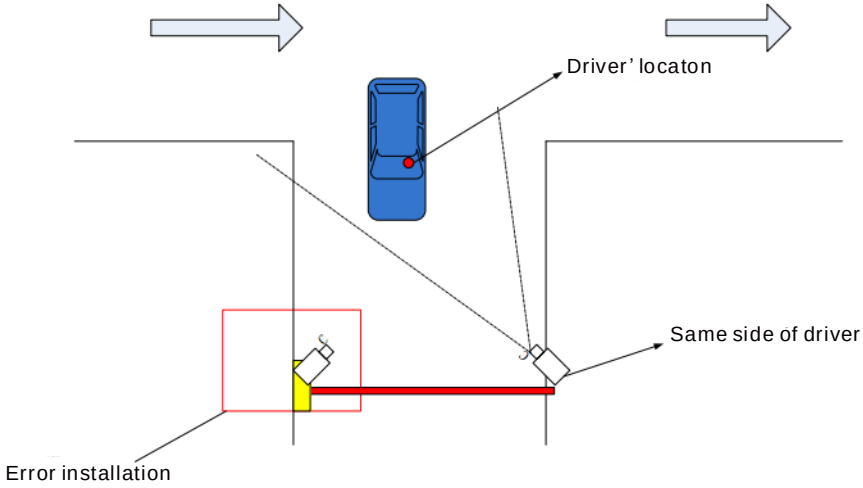


Figure 1-5 Scene 2

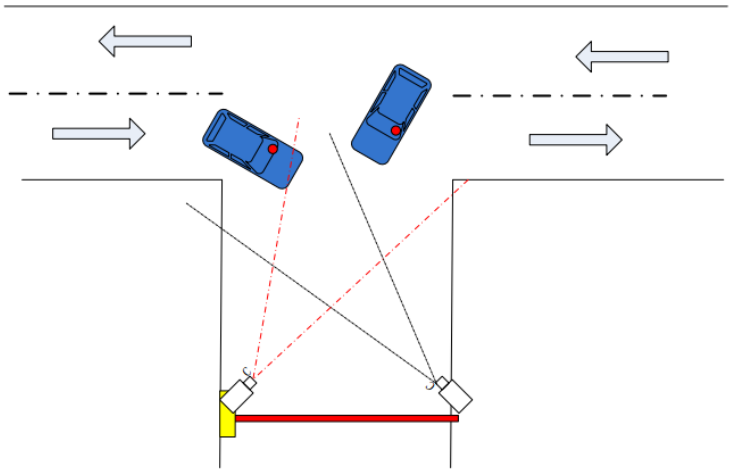


Figure 1-6 Scene 3

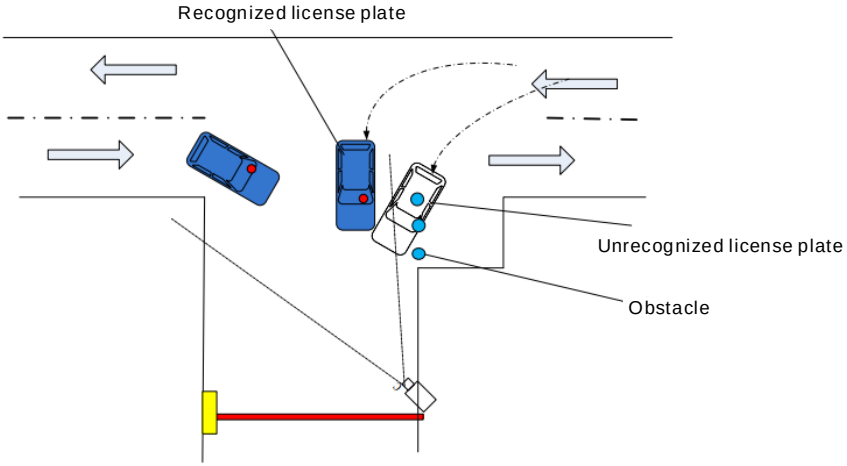
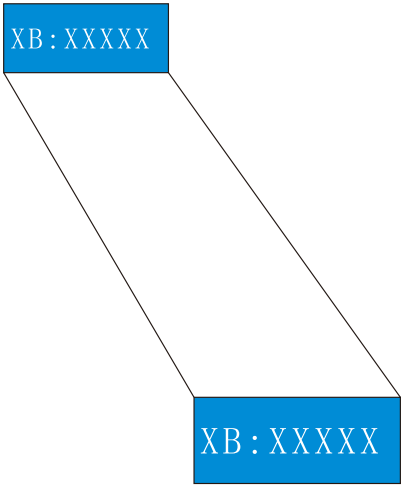
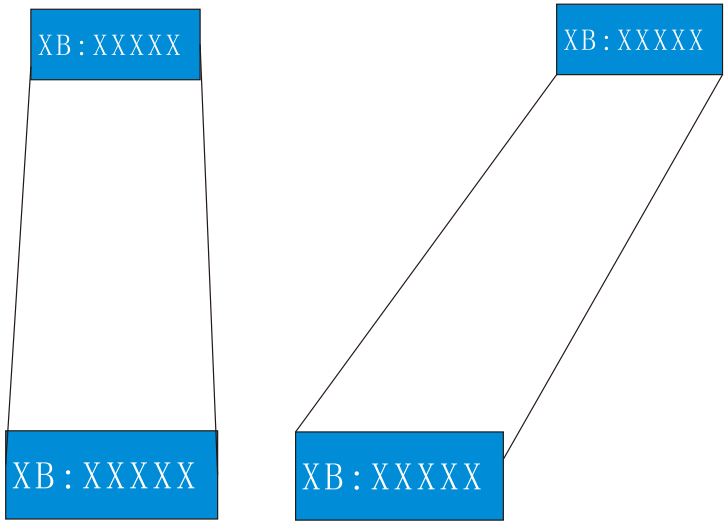


Figure 1-7 Motion track





1.1.2 License Plate Recognition and Debugging

Table 1-1 Recognition distance and image size

No.	Recognition distance (meters)	Corresponding algorithm image size
1	More than 6 m	1080P(1920*1080)
2	5-6 m	900P(1600*900)
3	4.5-5 m	700P(1280*720)
4	3.5-4.5 m	540P(960*540)
5	Less than 3.5 m	D1(704*396)

1.1.3 Camera Installation Tips

Erection height: camera installation height of about 1.5 meters, which is to avoid the headlights at night directly illuminating the camera lens. If the camera is installed at a low height, as people squatting on the side of the road, when the headlights irradiation, the human eye cannot see the licence plate, licence plate recognition camera can not identify the licence plate.

The position of the license plate on the camera screen is as horizontal as shown in the red box in Figure 1-8. Adjust the camera position so that most of the license plate appears in the position of the screen and the bottom edge level.

Figure 1-8 Installation tip

1.1.4 Others

Network transmission selection:

It is recommended to use Gigabit Ethernet switch through network transmission to ensure image fluency and corresponding time. The network cable is preferably more than Cat 5, and the transmission rate will be much higher.

Nighttime fill light debugging:

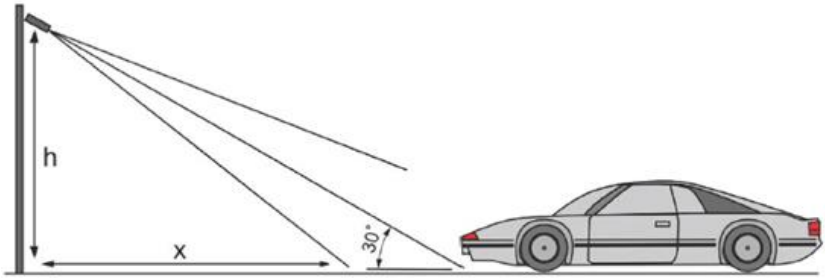
Nighttime fill light debugging needs to ensure that the completed fill light can clearly and accurately display the license plate, to ensure that the license plate is not overexposed. The brightness adjustment of the fill light is based on the vehicle license plate as the reference object. When adjusting the height, the license plate picture is captured to check the license plate image quality. If the license plate is clear and not exposed, the brightness of the fill light is adjusted. Under normal circumstances, the recognition distance is about 5 meters, the fill light brightness is 6 Lux.

1.2 Angles of Mounting

1.2.1 Vertical Angle

Vertical angle should not exceed 30 degrees, as shown in Figure 1-9.

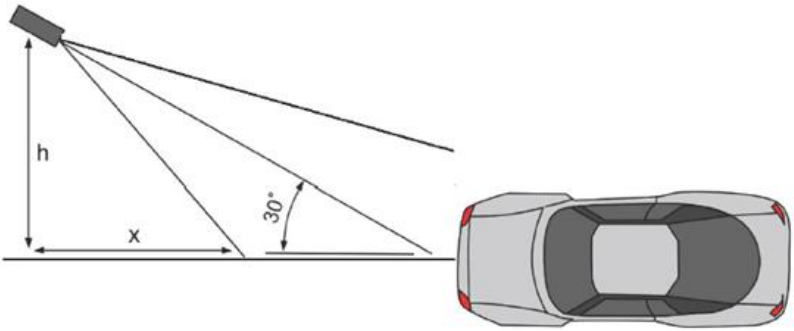
Figure 1-9 Vertical angle



1.2.2 Horizontal Angle

Horizontal angle should not exceed 30 degrees, as shown in Figure 1-10.

Figure 1-10 Horizontal angle



1.2.3 Minimal Distance

The initial formula is x =h *1.7

First of all, you measure the vertical angle. Then measure the horizontal angle. You need to take the bigger of them.

For example, if you mounting the camera on a 2 meters pole, 3 meters from the road.

Correct vertical angle will be reached from 2*1.7=3.4 m and farther.

However correct horizontal angle will be reached from 3*1.7=5.1 m and farther.

To fulfill both requirements, we take the bigger x=5.1 m.

Correspondence between installation height and distance as shown in Table 1-2.

Table 1-2 Correspondence between installation height and distance

h (meters)	Minimal x (meters)
1	1.7
1.5	2.6
2	3.4
2.5	4.3
3	5.1
3.5	6
4	6.8

1.2.4 Road Monitoring

Road monitoring is used for video detection methods to detect pedestrians, motor vehicles, and non-motor vehicles, provide fast and comprehensive monitoring.

1.2.5 Basic Requirements for Camera Installation

1. When installing the camera, try to install it in a fixed place. The camera's anti-shake function and the algorithm itself can compensate for camera shake to a certain extent, but excessive shaking will still affect the accuracy of detection.

2. If wide dynamic range function is not enabled, try to avoid backlit scenes such as the sky in the camera field of view.

3. In order to make the target more stable and accurate, it is recommended that the target size in the actual scene is less than 50% of the scene size and the height is more than 10% of the scene height.

4. Try to avoid reflective scenes such as glass, floor tiles, and water.

5. Try to avoid narrow or over-shielded surveillance sites.

6. In the daytime environment, the camera should have clear image and good contrast. If there is insufficient light at night, you need to fill the scene to ensure the brightness of the detection area.

1.3 Requirements of Computer

CPU Core（TM）i5 7500 @ 3.4GHz or above

Graphics card: discrete graphics, memory 1G or above

Network: Gigabit (network card and switch)

Memory: 4G and above

Hard disk: 500G or more

Display resolution: 1920*1080 or more

Operating system recommendations: win 7 32 bit or more

2 Quick Configuration

2.1 Login and Logout

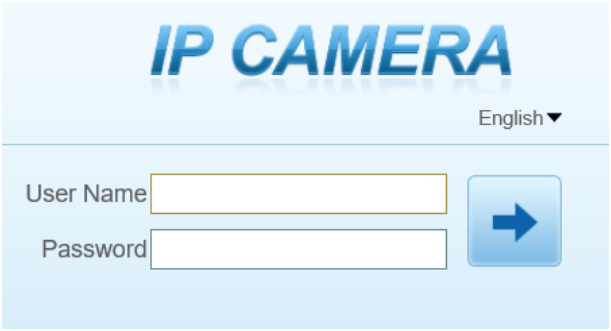
CAUTION

To access the web interface through Chrome, Microsoft Edge, or Firefox browser; This document uses Chrome browser as an explanation. If there are some differences between different browsers, please refer to actual product!

Login system

Step 1 Open the Chrome, enter the IP address of IP camera (default value: 192.168.0.120) in the address box, and press Enter. The login page is displayed, as shown in Figure 2-1.

Figure 2-1 Login page



Step 2 Input the User Name and Password.

NOTE

- The default name and password both are **admin.** Modify the password when you login the system for the first time to ensure system security. After modifying password, you need to wait at least three minutes then power off to make sure modifying successfully . Or login the Web again to check the new password.
- User can change the system display language on the login page.

Step 3 Click  to enter main interface.

Logout

Click  in the top right to back to Web Login.

----End

2.1.2 Browsing Video

To browse real-time videos, click **Live Video**. The **Live Video** page is displayed, as shown in Figure 2-2.

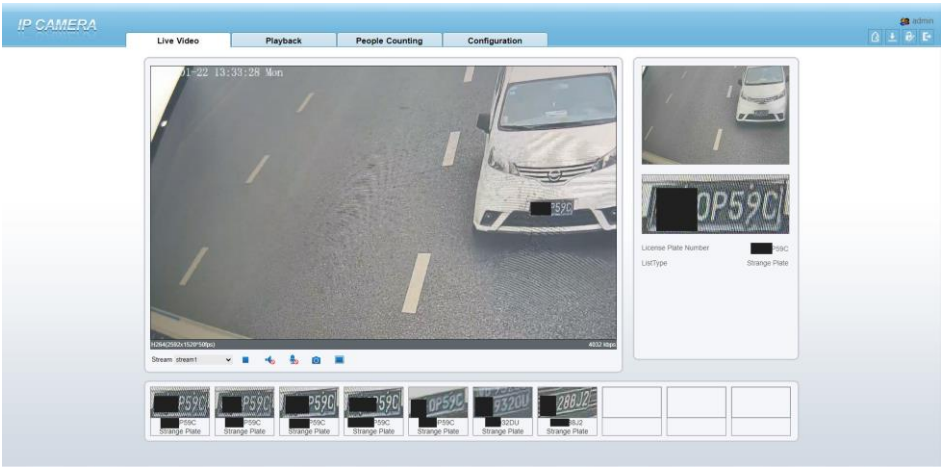
Figure 2-2 Live video

Table 2-1 Interface description

No	Item	Description
1	Live Video	View the real-time video.
2	Playback	You can query the playback videos in this area if you plug in SD card and open the recording.

No	Item	Description
3	People Counting	Set the query condition to query the people counting, the statistical can be shown in different types, such as line chart, histogram, and list. At "Configuration > Intelligent Analysis > People Counting", users can enable people counting.
4	Configuration	You can choose a menu to set device parameters, including the device information, image settings, audio and video streams, thermal parameter, AI functions, alarm setting, privacy mask function.
5		Download the latest plugin IPC Local Server, you can choose the plugin to play H.265 video smoothly.
6		Status of download recording.
7	Change Password	You can click  to change the password.
8	Sign Out	You can click  to return to the login page.
9	PTZ keyboard	For zoom or PTZ cameras, adjust the lens.
10	PTZ menu	Only used for PTZ cameras.
11	Switch to No Plugin Play	When users download the IPC Local Server, you can switch to plugin or no-plugin play live video.
12	-	Stream: There are three streams can be chosen. You can set details at configuration base stream interface.  : Play/pause  : Audio  : Two-way audio  : Snapshot; The plugin play mode, the file will be saved to the Local Config path. The no-plugin play mode, the file will be saved to the default download path of browser.  : Record video to local storage.  : Click the icon to switch to license plate recognition.

Figure 2-3 License plate recognition video

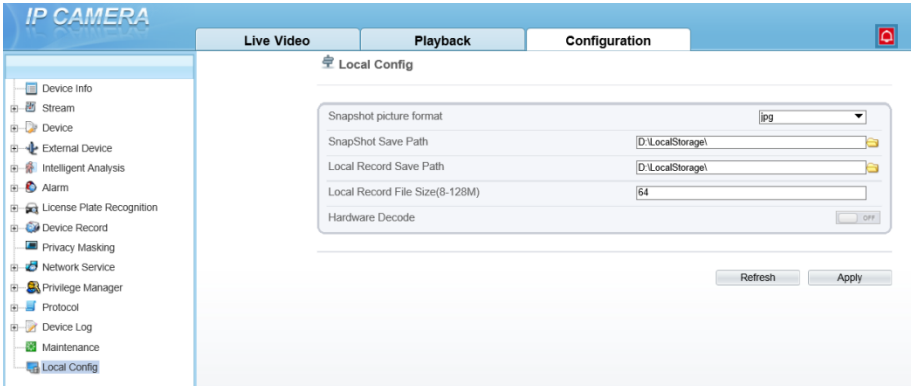


The license plate snapshots will show at the bottom interface. The full snapshot shows on the right up corner.

NOTE

At plugin play mode, the snapshots folder can be set at **Configuration > Local Config**, as shown in Figure 2-4.

Figure 2-4 Local config

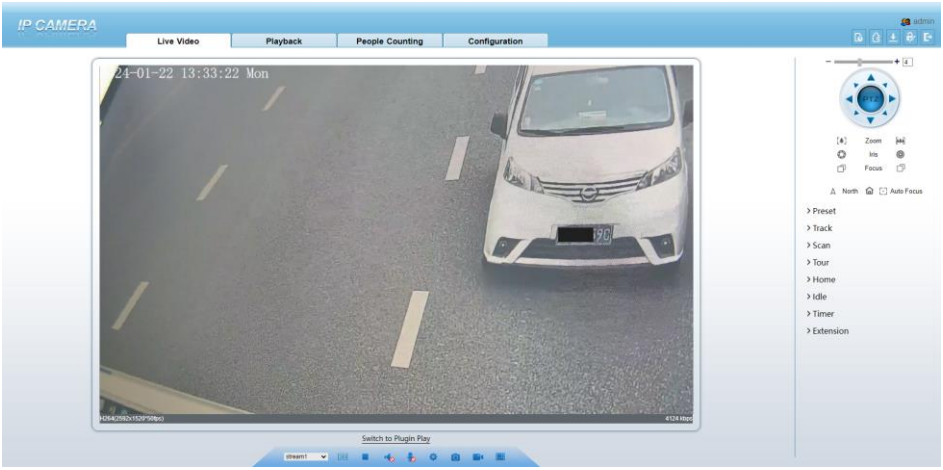


2.2 Download Local Server

Procedure

If you want to play H.265 video format smoothly, you should download the latest IPC Local Server, as shown in Figure 2-5, when you login to the web management system for the first time.

Figure 2-5 The Plugin download page

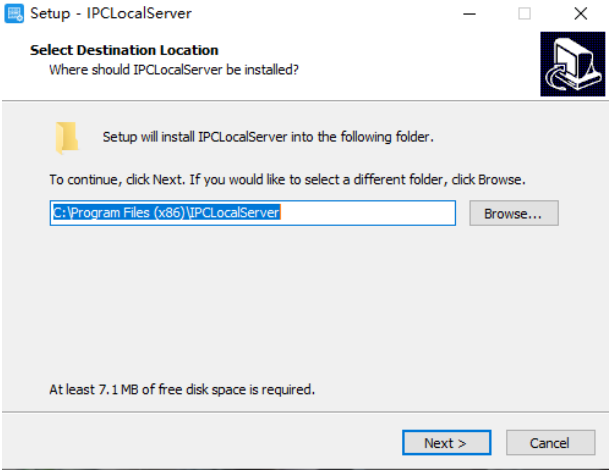


Step 1 Click  to download the IPC Local Server plugin.

Step 2 Open the download file, double-click to install the file.

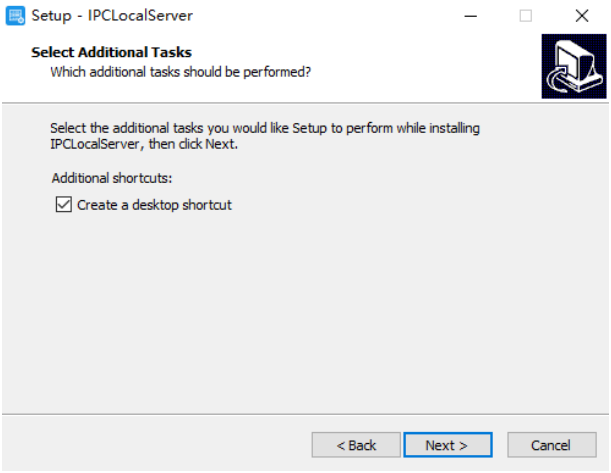
Step 3 Click “Run”, select select installation path as shown in Figure 2-6.

Figure 2-6 Select destination location



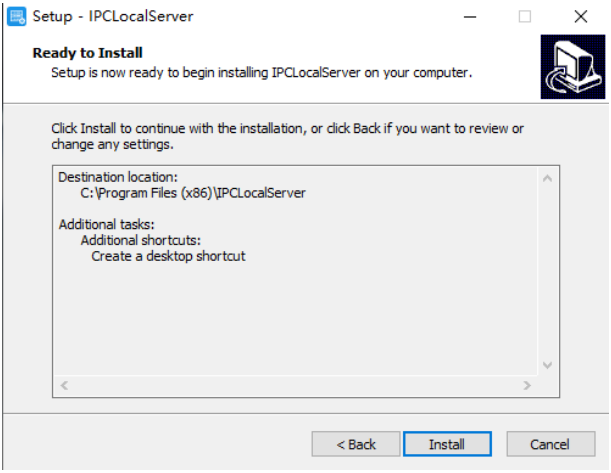
Step 4 Click “Next”, ready to install the plugin, as shown in Figure 2-7.

Figure 2-7 Select additional tasks



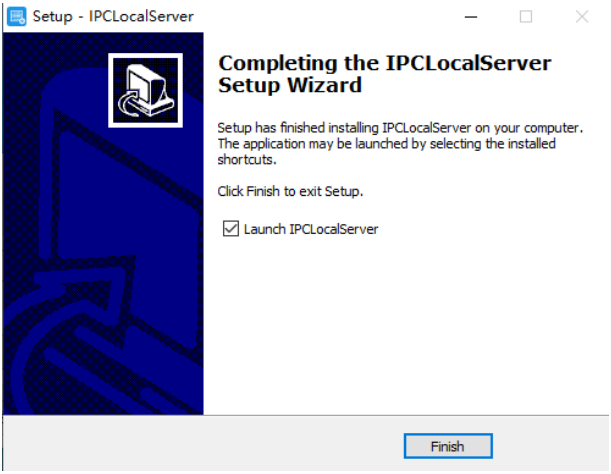
Step 5 Tick “Create a desktop shortcut”, Click “Next” to install the plugin, as shown in Figure 2-8.

Figure 2-8 Installing



Step 6 Click “Finish” , complete plugin installation, as shown in Figure 2-9.

Figure 2-9 Complete to install the plugin



Step 7 Reopen the browser after installing.

NOTE

- If the repair tips displayed when installing the control, please ignore the prompt, and continue the installation.
- During installing the plugin, the browser should be closed.

----End

2.3 Setting Local Network Parameters

Description

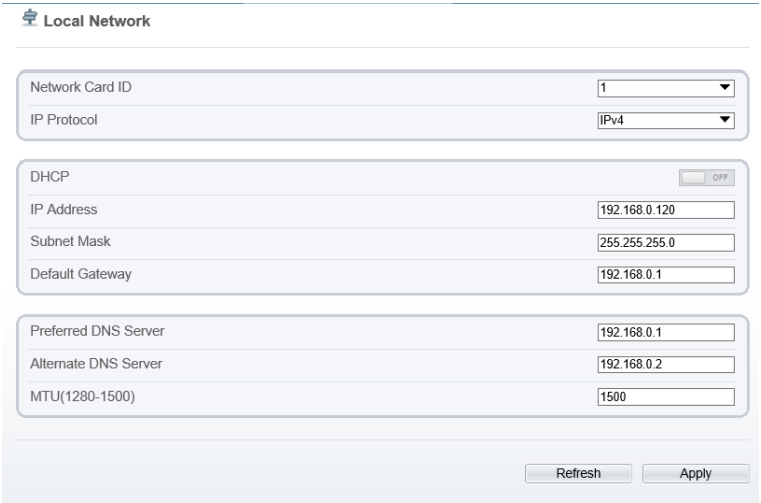
Local network parameters include:

- IP protocol
- IP address
- Subnet mask
- Default gateway
- Dynamic Host Configuration Protocol (DHCP)
- Preferred Domain Name System (DNS) server
- Alternate DNS server
- MTU

Procedure

Step 1 Choose Configuration >Device > Local network, the Local network page is displayed as shown in Figure 2-10

Figure 2-10 Local network



Step 2 Set the parameters according to Table 2-2.

Table 2-2 Local network parameters

Parameter	Description	Setting
IP Protocol	IPv4 is the IP protocol that uses an address length of 32 bits. IPv6 is the IP protocol that uses an address length of 64 bits.	[Setting method] Select a value from the drop-down list box. [Default value] **IPv4**
DHCP	Enable the DHCP, camera can obtain automatically the IP address from the DHCP server.	[Setting method] Click the button on to enable. NOTE To query the current IP address of the device, you must query it on the platform based on the device name.
DHCP IP	IP address that the DHCP server assigned to the device.	N/A

Parameter	Description	Setting
IP Address	Device IP address that can be set as required.	[Setting method] Manual when DHCP is disabled. [Default value] **192.168.0.120**
Subnet Mask	Subnet mask is used to distinguish the subnet part of the IP address.	[Setting method] Enter a value manually. [Default value] 255.255.255.0
Default Gateway	This parameter must be set if the client accesses the device through a gateway.	[Setting method] Enter a value manually. [Default value] **192.168.0.1**
Preferred DNS Server	IP address of a DNS server.	[Setting method] Enter a value manually. [Default value] **192.168.0.1**
Alternate DNS Server	IP address of a domain server. If the preferred DNS server is faulty, the device uses the alternate DNS server to resolve domain names.	[Setting method] Enter a value manually. [Default value] **192.168.0.2**
MTU	Set the maximum value of network transmission data packets.	[Setting method] Enter a value manually. Note The MTU value is range from 1280 to 1500, the default value is 1380, please do not change it arbitrarily.

Step 3 Click Apply.

- If the message "Apply succeed" is displayed, the system will save the settings. The message "Set network parameter success, Please login system again" is displayed. Use the new IP address to log in to the web management system.
- If the message "Invalid IP Address", "Invalid Subnet Mask", "Invalid default gateway", "Invalid primary DNS", or "Invalid space DNS" is displayed, set the parameters correctly.

NOTE

If you set only the **Subnet Mask**, **Default Gateway**, **Preferred DNS Server**, and **Alternate DNS Server** parameters, you do not need to login to the system again.

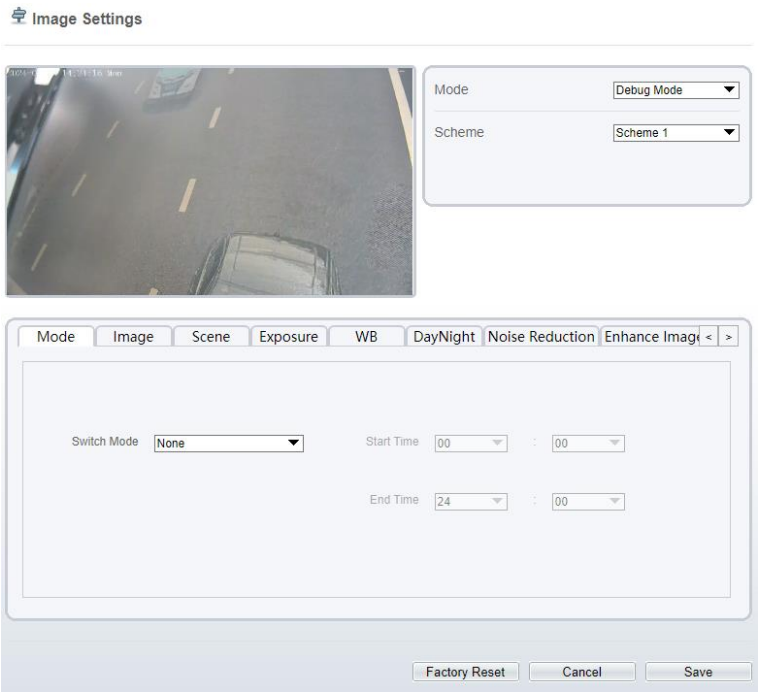
3 Image Settings

3.1 Accessing Image Settings Interface

Procedure

Step 1 On the web, choose “Configuration > Image Settings” interface to set, as shown in Figure 3-1.

Figure 3-1 Image settings



Step 2 Choose mode to Debug Mode to set the parameters.

Step 3 Choose the scheme from drop-down list, there are four schemes can be setting.

NOTE

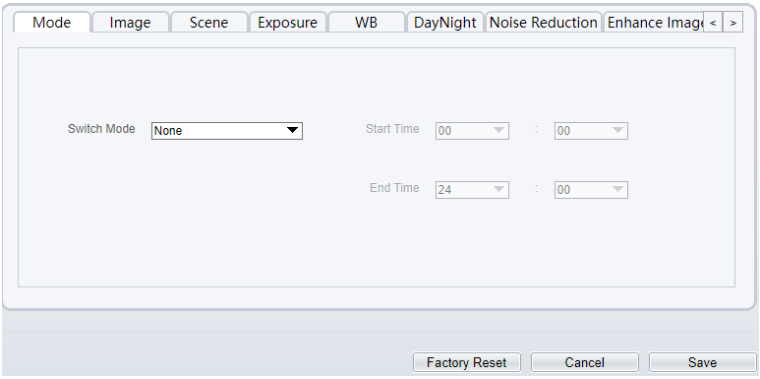
- All image settings can be modified at debug mode. Click Standard on interface and choose **Debug Mode.**
- Factory Reset: All parameters will be restored to the factory settings.
- Cancel: The parameters will be restored to the previous settings.

----End

3.2 Mode

Step 1 Click Standard mode on Image Settings interface, and choose Debug Mode. As shown in Figure 3-2.

Figure 3-2 Mode



Step 2 Choose the switch mode from the drop-down list. Time mode: Set the Start Time, set the End Time.

Step 3 Click **Save**, the message "Save succeed" is displayed, the system saves the settings.

----End

3.3 Image

Figure 3-3 shows the Image tab page.

Figure 3-3 Image

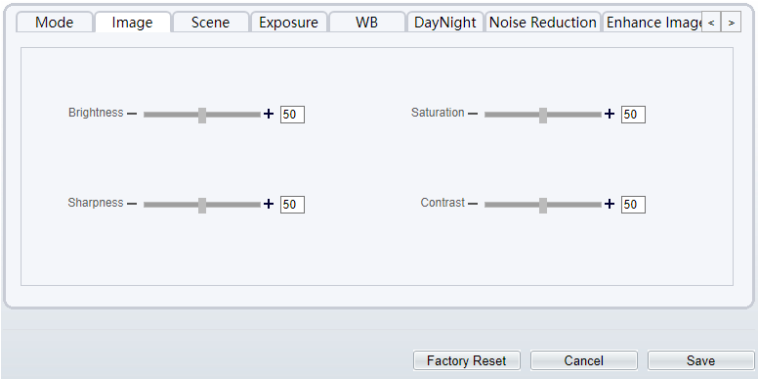


Table 3-1 describes the parameters on **Image** tab page.

Table 3-1 Parameters of image

Parameter	Description	Configuration Method
Brightness	It indicates the total brightness of an image. As the value increases, the image becomes brighter.	[Setting method] Drag the slider. [Default value] 50
Sharpness	It indicates the border sharpness of an image. As the value increases, the borders become clearer, and the number of noise points increases.	[Setting method] Drag the slider. [Default value] 50
Saturation	It indicates the color saturation of an image. As the value increases, the image becomes more colorful.	[Setting method] Drag the slider. [Default value] 50
Contrast	It indicates the measurement of different brightness levels between the brightest white and darkest black in an image. The larger the difference range is, the greater the contrast; the smaller the difference range is, the smaller the contrast	[Setting method] Drag the slider. [Default value] 50

----End

3.4 Scene

Figure 3-4 shows the Scene tab page.

Figure 3-4 Scene

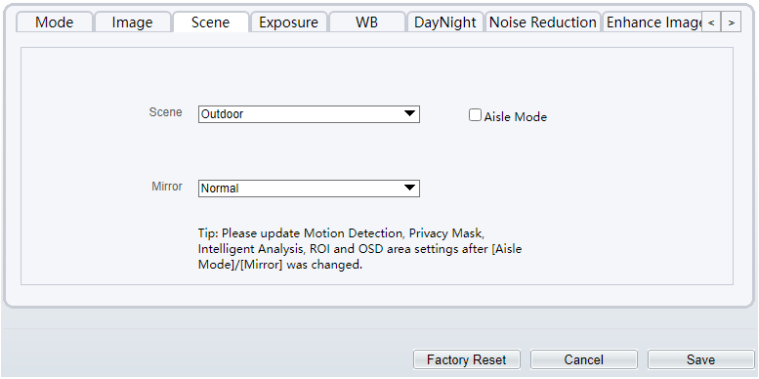


Table 3-2 describes the parameters on **Scene** tab page.

Table 3-2 Parameters of scene

Parameter	Description	Configuration Method
Scene	Indoor or outdoor.	[Setting method] Select a value from the drop-down list. [Default value] **Indoor**
Mirror	It is used to select the pixel location of an image. • Normal: The image does not flip. • Horizontal: The image flips to the left and right. • Vertical: The image flips up and down. • Horizontal+ Vertical: The image rotates at 180 degrees.	[Setting method] Select a value from the drop-down list. [Default value] **Normal**

NOTE

- Please update Motion Detection, Privacy Mask, Intelligent Analysis, ROI and OSD area settings after Aisle Mode / Mirror was changed

----End

3.5 Exposure

Figure 3-5 shows the Exposure tab page.

Figure 3-5 Exposure

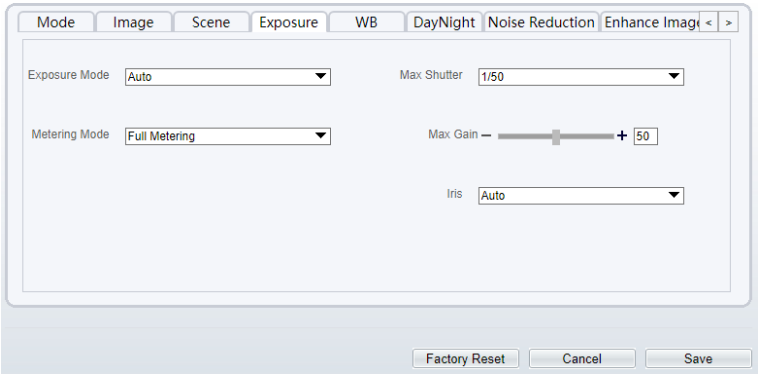


Table 3-3 describes the parameters on the Exposure setting tab page.

Table 3-3 Parameters of exposure setting

Parameter	Description	Configuration Method
Exposure Mode	The exposure modes include: • Auto: The system performs auto exposure based on the monitoring environment. • Manual: You can set Shutter Setting to fixed values manually. • Shutter Priority: You can set Shutter Setting to fixed values. The shutter and gain are automatically adjusted by the system.	[Setting method] Select a value from the drop-down list. [Default value] **Auto**
Metering Mode	Choose the mode to meter, there are full metering, spot metering and partial metering.	[Setting method] Select a value from the drop-down list. [Default value] **Full Metering**
Max Shutter	It is valid in Iris Priority mode. You can select a maximum shutter speed. As the value increases, the image becomes brighter.	[Setting method] Select a value from the drop-down list. [Default value] **1/50**

Max gain	It indicates the maximum gain. The device automatically adjusts the gain based on the external light, and the gain is less than or equal to the value of this parameter.	[Setting method] Drag the slider. [Default value] **50**
Iris	It indicates opening iris, there are auto and open fully.	[Setting method] Select a value from the drop-down list. [Default value] **Auto**

----End

3.6 WB

Figure 3-6 shows the WB tab page.

Figure 3-6 WB

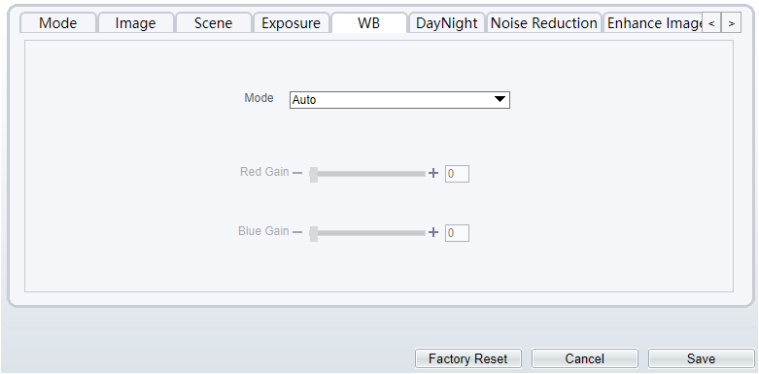


Table 3-4 describes the parameters on the WB tab page.

Table 3-4 Parameters of WB

Parameter	Description	Configuration Method
Mode	It is used to display the real color of a monitoring scenario when the color temperature changes. • Auto: camera adjusts automatically. • Tungsten: at tungsten lamp Environment. • Fluorescent: fluorescent environment. • Daylight: at daylight environment. • Shadow: at low light environment. • Manual: adjust red and blue gain manually.	[Setting method] Select a value from the drop-down list. [Default value] **Auto**

----End

3.7 DayNight

Figure 3-7 shows the Day-Night tab page.

Figure 3-7 Day/Night

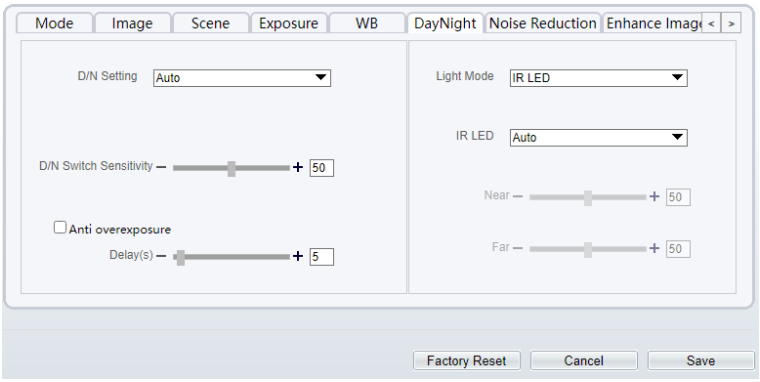


Table 3-5 describes the parameters on the Day/Night tab page.

Table 3-5 Parameters of Day/Night

Parameter	Description	Configuration Method
D/N Setting	It can be set to Auto, Day Mode, Night Mode and Timing. • Auto mode The image color is adjusted based on the day/night mode. In auto mode, the image switches between the colored state and the black and white state based on the brightness. In day mode, the image is colored. In night mode, the image is black and white. Set the D/N Switch Sensitivity and Delay (s) manually • Day mode The image is colored, and the filter is in the day state, preventing infrared light from entering the sensor. • Night mode The image is black and white, and the filter is in the night state, allowing all types of light to enter the sensor. • Timing Select time from the drop-down list by the "Day To Night Time" and "Night To Day Time".	[Setting method] Select a value from the drop-down list. [Default value] **Auto**
Anti Overexposure	Tick to enable anti overexposure, the software will control the image to overexposure.	[Setting method] Tick
D/N Switch Sensitivity	The sensitivity is higher, the brightness is lower and it will switch.	[Setting method] Drag the slider. [Default value] **50**
Delay	N/A	[Setting method] Drag the slider. [Default value] **5**

Light Mode	There are different modes can be chosen, for IR cameras IR LED and none are in list. For dual-lights IR LED, white light, none, and dual. So please refer to actual product.	
IR LED	Tick to enable the IR LED, there are two modes can be chosen, auto and manual. At manual mode drag slider to adjust the value.	[Setting method] Select a value from the drop-down list. [Default value] **Auto**

----End

3.8 Noise Reduction

Figure 2-4 shows the Noise Reduction tab page.

Figure 3-8 Noise reduction

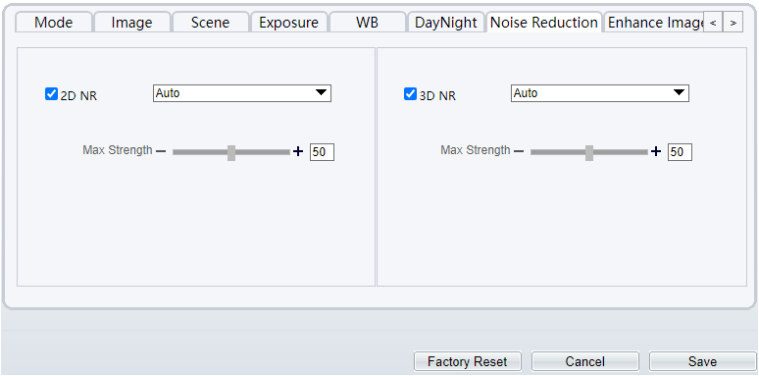


Table 3-6 describes the parameters on the Noise Reduction tab page.

Table 3-6 Parameters of noise reduction

Parameter	Description	Configuration Method
2D NR	Auto /manual, default value is auto. By comparing and screening the images of the two frames before and after, the noise point position is found out and gain control is carried out on them.	[Setting method] Drag the slider strength. [Default value] **Auto / 50**

3D NR	Auto /manual, default value is auto. The 3D digital noise reduction function can reduce the noise interference of the weak signal image.	[Setting method] Drag the slider of strength. [Default value] **Auto / 50**

----End

3.9 Enhance Image

Figure 3-9 shows the Enhance Image tab page.

Figure 3-9 Enhance image

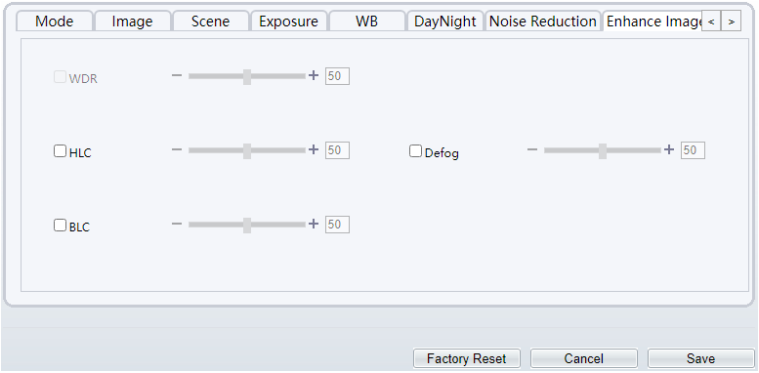


Table 3-7 describes the parameters on the Enhance Image tab page.

Table 3-7 Parameters of enhance image

Parameter	Description	Configuration Method
WDR	It is intended to provide clear image performance in strong backlight areas such as exterior light coming through a window or glass door. High contract light conditions are no longer a problem when you need to capture detailed images.	[Setting method] Drag the slider. [Default value] **50**
HLC	It indicates reverse bright points in the picture to black. As an effective approach to recognize vehicle plate number at night, HLC function can detect any spotlight diffused by object-vehicle and compensate it for obtaining clearer image.	[Setting method] Drag the slider. [Default value] **50**

BLC	It indicates Back Light Compensation (BLC) automatically brings more detail to darker areas of an image when bright light shining from behind obscures it and provides perfect exposure for an object in front of very strong back light. The electronic shutter of the camera basically adjusts its exposure to try to allow for more light to be allowed in the darker areas. NOTE This parameter applies only to visible light.	[Setting method] Drag the slider. [Default value] **50**
Defog	It provides a clearer view of an image in the fogged environment when Defog is enabled. As the value increases, the image becomes clearer.	[Setting method] drag the slider. [Default value] **50**

----End

3.10 Zoom Focus

Figure 3-10 Zoom focus

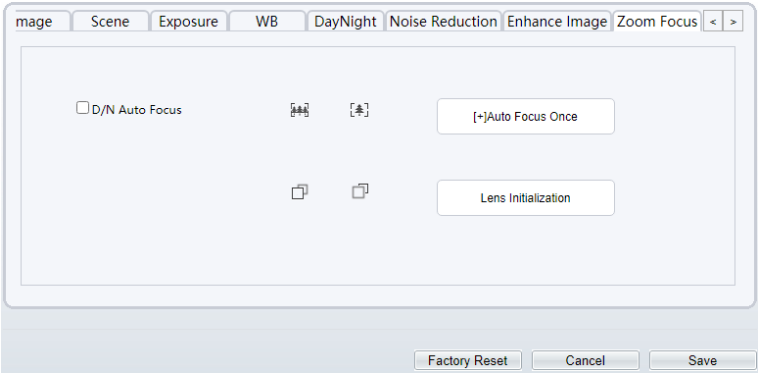
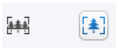
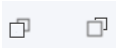


Table 3-8 Zoom focus

Parameter	Meaning	Configuration Method
D/N Auto Focus	It is used to trigger auto focus when day to night or night to day.	[Setting method] Tick the Auto focus.
	Zoom out/ zoom in	[Setting method] Tick or long-press

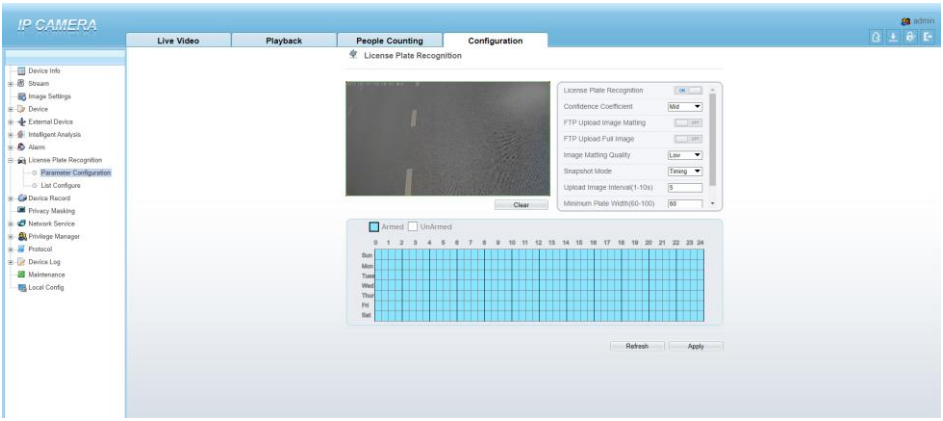
Parameter	Meaning	Configuration Method
	Iris +/ iris -	[Setting method] Tick or long-press
Auto Focus Once	Click to trigger once auto focus.	[Setting method] Click the button.
Lens Initialization	The lens of camera returns to the initial position.	[Setting method] Click the button.

4 License Plate Recognition

4.1 Parameters Configure

Click **Configuration,** choose **License Plate Recognition** at left list , as shown in Figure 4-1

Figure 4-1 License plate recognition



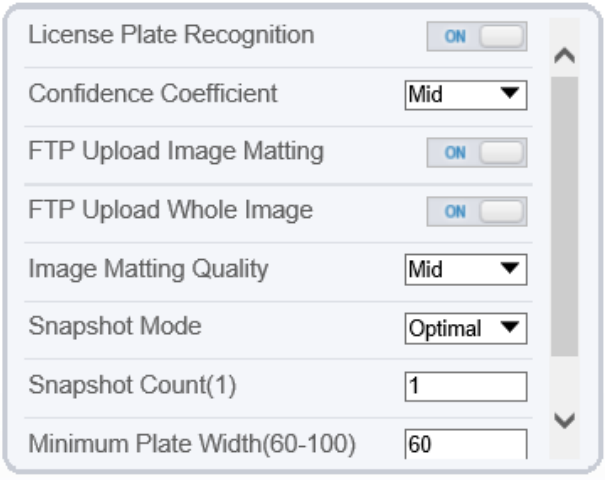


Table 4-1 Operation description

Function	Procedure	Description
Licence plate recognition	The camera will capture the licence plate when car appears in live video.	Enable
Confidence coefficient	The range of snapshot image, there are three type, such as high, mid and low. The higher the confidence, the better the snap quality and the fewer snapshots.	Choose from drop-down list.
FTP upload image matting	**Configuration > Network Service > FTP**, set FTP related parameters, the captured picture will be sent to the set FTP location	Enable
FTP upload whole image	Capture a picture and send a whole image.	Enable
Image matting quality	The quality of snapshot image, There are three mode can be chosen, such as low, mid and high.	Choose from drop-down list.
Snapshot mode	There are three mode can be chosen, such as timing, and optimal.	Choose from drop-down list.
Upload image interval(1-10 s)	At timing mode, set the interval of upload image.	Input a value ranges 1 to 10
Snapshot count（1）	At optimal mode, set the number of snapshot image	Input 1
Minimum plate width (60-100 Pixel)	60-100 pixels, the smaller the pixel be set, the more plate will be captured, but it may be mistaken.	Input a value ranges 60 to 100

4.2 List Configure

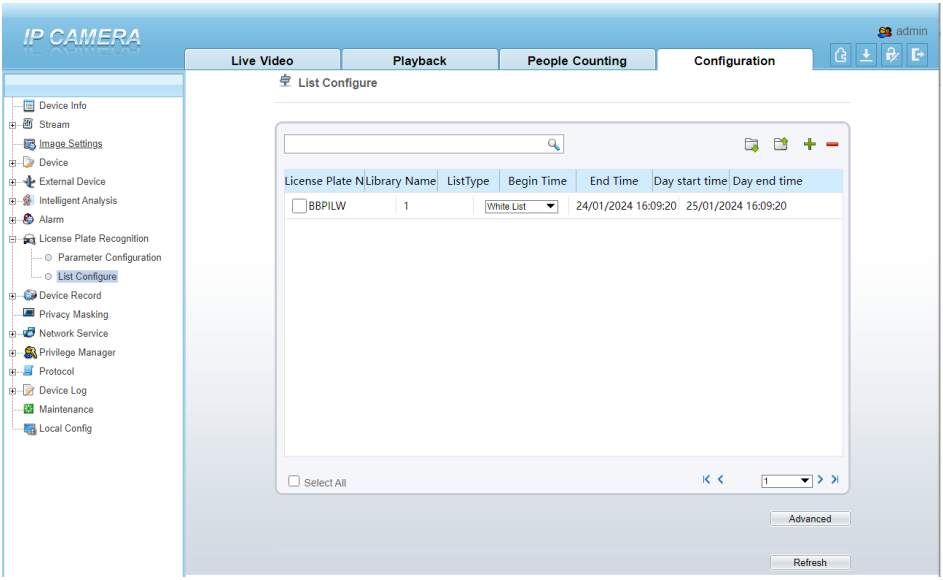
List configure refers to adding license plate number with same linkage action in the same list. The list contains black list and white list.

Procedure

Step 1 Choose Configuration > License Plate Recognition > List Configure.

The List Configure page is displayed, as shown in Figure 4-2.

Figure 4-2 List configure



Step 2 Table 4-2 describes the operations.

Table 4-2 Operation description

Function	Procedure	Description
Export	(1) Click , the open or save list file prompt page is displayed. (2) Open or save list file according to the prompt.	Export the list file.
Import	(1) Enter license plate number information, which take the export file as example. (2) Save the document to a path. (3) Click to import the license plate number in the black list or white list.	Import the list file.
Add	(1) Click , an input box is displayed. (2) Enter the license plate number and click the left mouse button in blank area.	Add the license plate number in black (white) list.

Function	Procedure	Description
Delete	(1) Check the license plate number in black (white) list. (2) Click  to delete the license plate number in black (white) list.	Delete the license plate number in black (white) list.
Search	(1) Enter the license plate number in black (white) list. (2) Click  to search the license plate number.	Search the license plate number in black (white) list.
License Plate Name	The input plate name.	Input
Library Name	Input the library name	Input
List Type	Choose from drop-down list, white list or black list.	Default white list
Begin Time	(1) click the time , calendar is displayed, set the begin time of white and black . (2) choose  to save the settings, choose to  abandon the settings	Default Current time
End Time	(1) click the time , calendar is displayed , set the end time of white and black (2) choose  to save the settings, choose to  abandon the settings	Default The next day of current time.

Function	Procedure	Description
Day Begin time	The working begin time, it is customized feature.	Default Current time
Day End time	The working end time, it is customized feature.	Default The next day of current time.

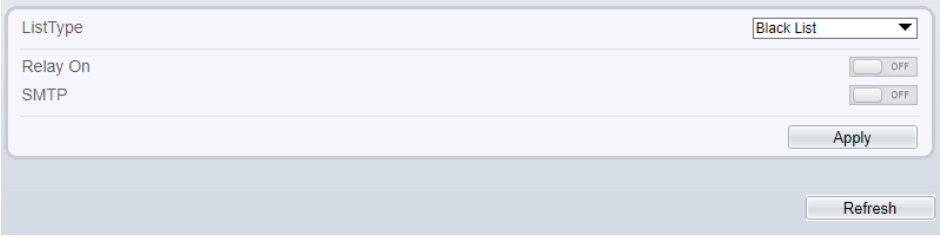
NOTE

- Choose license plate number in black list and click, the license plate number will be added in white list.
- Choose license plate number in white list and click, the license plate number will be added in black list.

Step 3 Configure the Advanced setting.

1. **Advanced setting** contains: list type, relay on and SMTP (send information to email), As shown in Figure 4-3

Figure 4-3 Advanced setting



2. Choose Black List: The relay on signal / SMTP will be performed automatically when the license plate in black list recognized by camera.

3. Choose White List: The relay on signal / SMTP will be performed automatically when the license plate in white list recognized by camera.

4. Choose Not in List: The relay on signal / SMTP will be performed automatically when the license plate neither in black list nor in white list recognized by camera.

5. Choose ALL: The relay on signal / SMTP will be performed automatically when the camera detects the license plate.

Step 4 Click Apply, the message "Apply success" is displayed.

5 Troubleshooting

Table 5-1 lists the troubleshooting of the camera.

Table 5-1 Troubleshooting of the camera

Problems	countermeasure	Photo
Focus	Adjust the focus on the lens.	 
Too much light	Adjust the shutter speed, or dim the IR-Led (for the night).	 
Too small License plate width	Adjust the Minimum Width of license plate.	
Insufficient light	Adjust the shutter speed or provide some extra light.	 

101-090-0174-01