



**2MP STARLIGHT LICENSE PLATE RECOGNITION  
INTEGRATED MACHINE**

**User Manual**

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**Version History**

<b>version</b>	<b>date</b>	<b>information</b>
v1.00	2019.08.15	Initial version

## 1 Product introduction

### 1.1 Overview

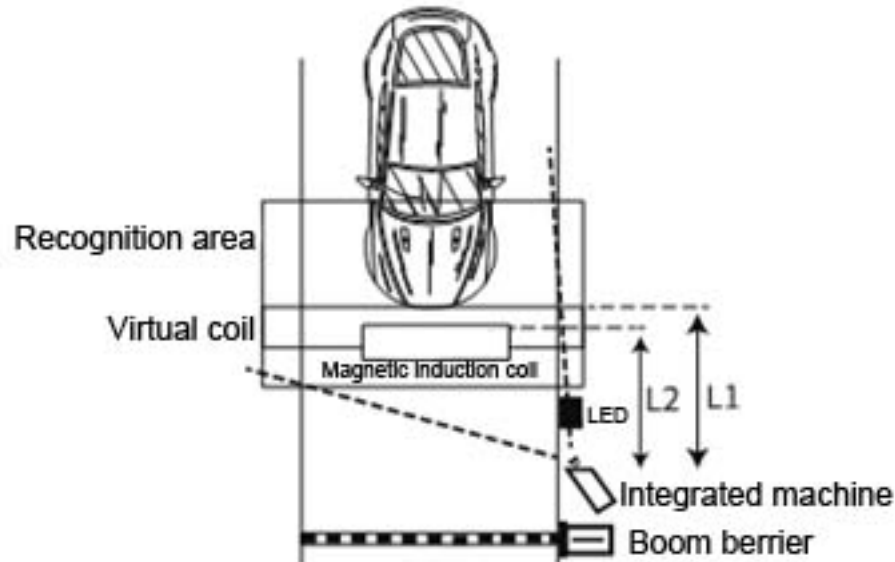
The continuous increase of urban traffic flow puts forward higher requirements for urban traffic management. In order to ensure the safety and convenience of people's travel, the urban traffic system urgently needs to provide structured and accurate data collection support for people's travel trend prediction, intelligent parking, traffic situation awareness and other intelligent traffic services through the large-scale deployment of intelligent data terminals.

The intelligent traffic camera obtains the edge computing ability through the deployment of advanced algorithms such as intelligent ISP, vehicle and personnel attribute detection, and faces the analysis conclusion and simple and efficient target characteristics of the structured transmission algorithm of the central cloud big data system, so as to assist the cloud big data system to carry out the intelligent traffic business such as road super, intelligent parking and intelligent travel more efficiently and accurately through the system linkage . intelligent camera of technology covers all kinds of scene platforms combined with intelligent transportation, which can realize intelligent perception, real-time recognition of vehicle license plate, vehicle logo, body color, vehicle type and other vehicle identity information, and provide accurate and effective data guarantee for urban traffic integrated management.

The license plate recognition integrated machine is an intelligent imaging device specially designed for high-end parking lot license plate recognition, etc auxiliary license plate recognition camera, highway toll station, urban road bayonet and other scenes. In order to meet the needs of "unattended" and "senseless payment" in the scene, The ANPR camera provides 2MP star level ultra-high definition imaging, over 2100 vehicle types recognition, monitoring video, intelligent light compensation, front-end storage and other features, and also supports the triggering of unlicensed vehicles, license plate anti-counterfeiting, 4G non wiring networking, cloud remote operation and maintenance, offline self networking, cloud voice intercom and other features to ensure unattended The business operates continuously for 7 \* 24 hours, and greatly reduces the after-sales maintenance cost.

## 2 Equipment installation

### 2.1 Installation location and height



2-1 Installation diagram of all-in-one machine

1. Firstly, according to the example of Fig. 2 / 1, the location of the reference license plate in the field is located, and the imaging pixels of the license plate in the real-time video picture are between the 160PX-220PX. Then according to the position of the reference license plate to determine the installation position of the integrated machine column.

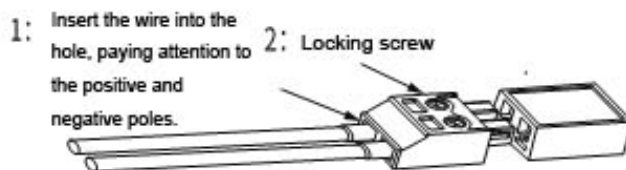
2. In the process of installation of the integrated machine, the lens should try to face the license plate as far as possible.

Installation requirements		Height	
1、 Install on the front of the road gate 2、 About 3-6 meters from the virtual coil L1. 3、 About 3-4 meters from the trigger sense		4、 In the scene dominated by small cars, the height of the integrated machine is about 1.4 m above the ground. 5、 In the scene dominated by large trucks, the integrated machine is about 1.6 m above the ground. 6、 The angle of the integrated machine is recommended to be between 15 °and 40 °as far as possible.	
Serial No	Effective identification distance D (m)	Recommended installation height H (m)	Corresponding angle C (degree)
1	3	1.4	About 20
2	4	1.5	About 20
3	5	1.6	About 20
4	6	1.7	About 20

list 1 Installation requirements



2.2 Equipment connection



2-2 Schematic diagram of camera terminal



2-3 Schematic diagram of camera wiring interface.

- 1.As shown in figure 2 / 2, insert the male head of the power cord into the corresponding mother head on the interface board.
- 2.Connect the bare wire at the other end of the power cord with the 12V power adapter. During the connection, pay attention to the relationship between the power adapter and the positive and negative poles of the power cord.

Function	Remark	Instruction
Power	DV12V; GND	Support $9 \leq 15V$ DC, standard 12V/2A
network interface	RJ45/LAN	Support 10/100Mbps Ethernet transmission
Serial port (RS485)	A1/B1	Connect the upper computer and output the identification results
Audio (AUDIO)	AIN\AOUT\GND	Audio input / output.
IO output (ALARM OUT)	OUT1/OUT2	can be used for the operation of a road gate lifting rod and the like
IO input(ALARM IN)	IN1/2/3/4 /GND	Ground-sensing coil for external signal-triggered grab
lamp interface	LED+/LED-	Used for power supply and control of lamp.
USB interface	USB	USB2.0interface
SD card slot	TF-CARD	SD, maximum 128G
Reset	RESET	Press for 5 to 10 seconds for a long time, and the equipment will fully restore the factory configuration.
Indicator light	SYS (green)	Flashing means the system is working properly Keep on or off means starting or abnormal

list 2 Interface description of integrated machine

## 2.3 Web side login

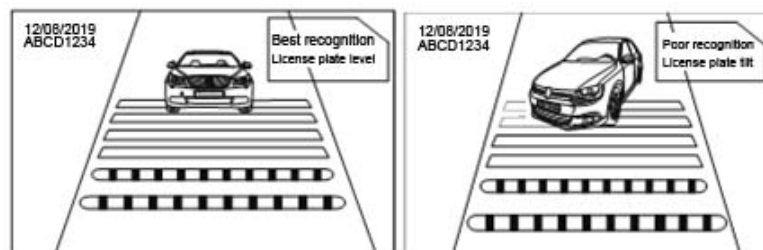
- 1.Factory default configuration of all-in-one machine: IP: 192.168.1.100, username: admin, password: admin
- 2.For the first time, it is necessary to use IE browser to log in the web configuration page of the all-in-one machine, and other browsers do not need to install controls.



## 2-4 Control installation prompt box

### 2.4 imaging and debugging

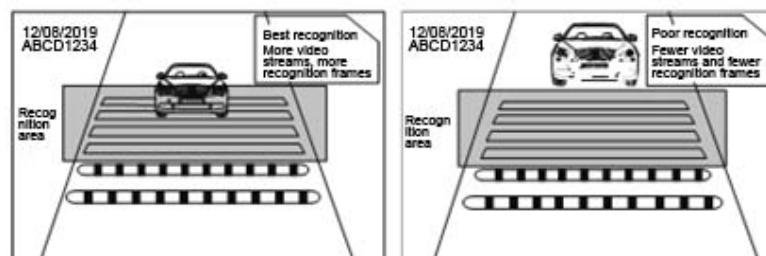
- 1.When debugging the real-time imaging level of the all-in-one machine, ensure that the reference license plate in the real-time video screen is kept level (it is recommended to install a three-dimensional universal joint to adjust the level of the all-in-one machine). The reference effect is as follows:
- 2.In order to ensure the best license plate recognition effect, please ensure that the horizontal side angle of the all-in-one machine is less than 30 degrees, and keep parallel with the lane.



## 2-5The reference diagram with the best and second best identification effect

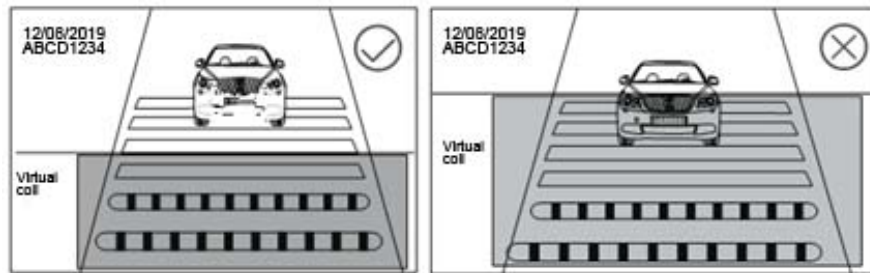
3.Log in the web configuration page of the all-in-one machine, and view the recognition area and virtual coil set by default in the real-time video screen. The range of recognition area and the position of virtual coil can be adjusted according to the scene.

- 1) Recognition area: drag the four corners of the recognition area to change the shape of the recognition area. Double click the recognition area border to increase the operation node.



## 2-6Identify the status of correct and incorrect installation of the area

- 2) Virtual coil: the position of the virtual coil shall be adjusted to one-third to one-half of the video area to ensure that the characters of the license plate are clearly displayed.



2-7 Status of correct and incorrect installation of virtual coil

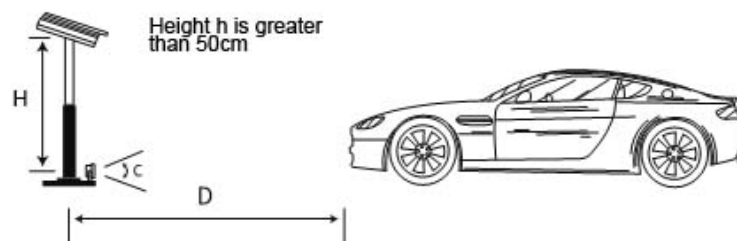
## 2.5 Install external replenishment lamp

1. All license plate recognition sites are recommended to be equipped with a light-sensitive external light-supplementing lamp.

Hardware requirements: special LED just light for parking lot, power: 20w-30w, angle (angle c):  $15^{\circ}$ - $45^{\circ}$ .

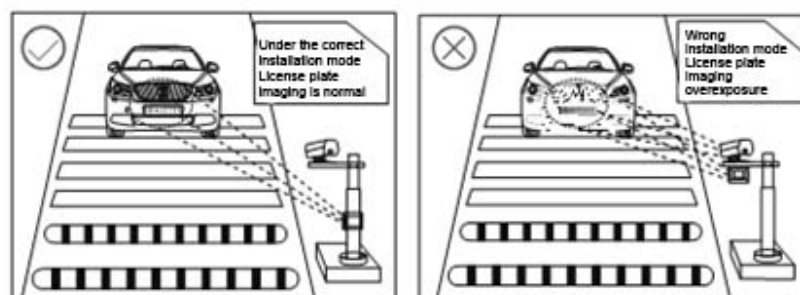
Installation requirements: fixed on the column of the integrated machine, keeping a vertical distance of 0.5m-0.7m with the integrated machine.

Angle requirements: in the recognition area, the external fill light illuminates the license plate, and the license plate is not exposed. It is recommended that the distance  $d$  between the fill light and the license plate is more than 2m and



less than 6m.

2-8 Installation of LED

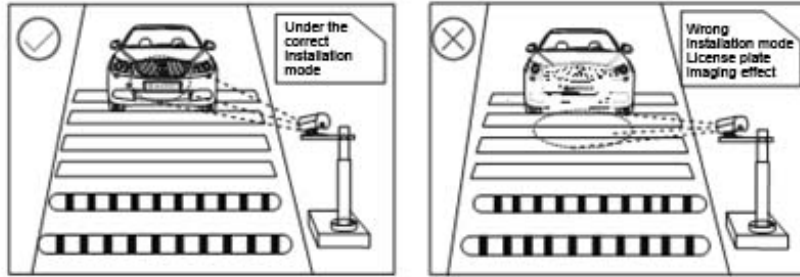


2-9 Imaging effect of the correct and wrong installation of LED

## 2.6 Adjust the internal light-supplementing lamp

1. On real-time video pages, the brightness of LED lights can be adjusted

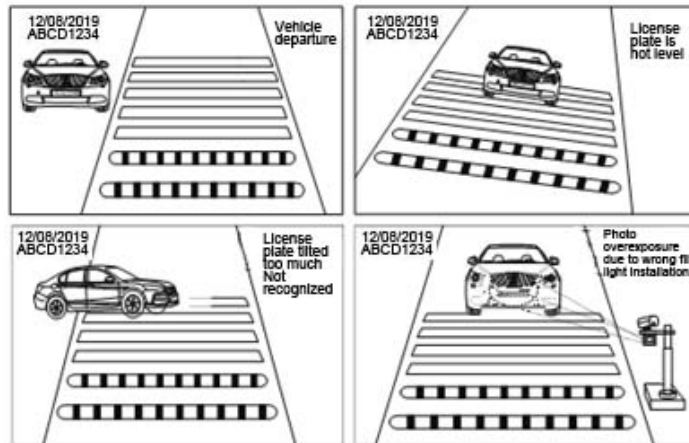
2. According to the recognition distance, the built-in fill light is divided into four levels: 2m, 4m, 6m and 8m. By default, it is set to 4m between pm6:00 - am9:00. The brightness level of LED can be adjusted according to the actual scene.



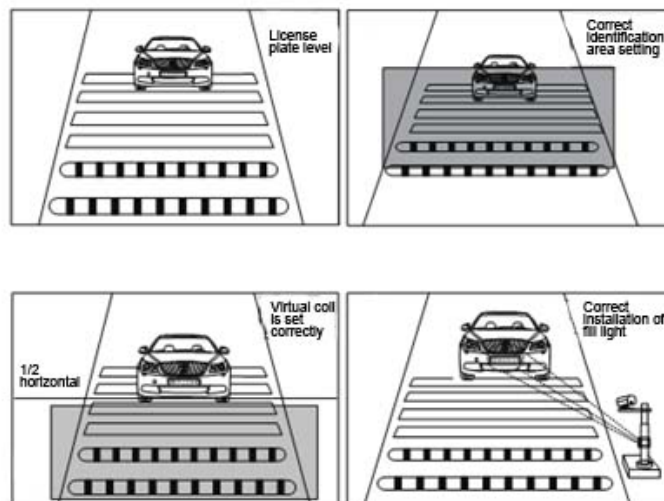
**2-10 Correct and wrong brightness of LED light**

3. When the external fill light is installed, the brightness of the internal fill light can be properly reduced to avoid overexposure of the license plate.

**2.7 Installation scenario verification**



**2-11 Camera error installation scenario demonstration**

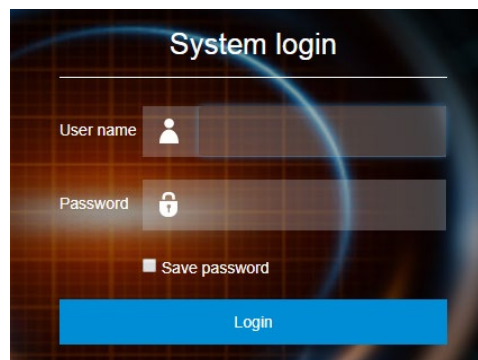


**2-12 Camera correct installation scene demonstration**

### 3 Preview Image

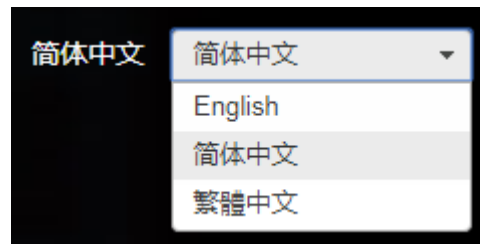
#### 3.1 Camera connection

1. The factory default IP address of the license plate recognition all-in-one machine is 192.168.1.100. Before connecting to the camera, confirm whether the IP address of the current computer and the camera IP address are in the same network segment. After powering up the camera, open the browser (it is recommended to use non IE core browsers such as Google, Firefox, etc., which can be used without installing controls) and input the IP address `http://192.168.1.100 /`. When using IE browser (including IE kernel browser), it is recommended to use Internet Explorer version 8.0 or above for compatibility. The login interface is as follows:



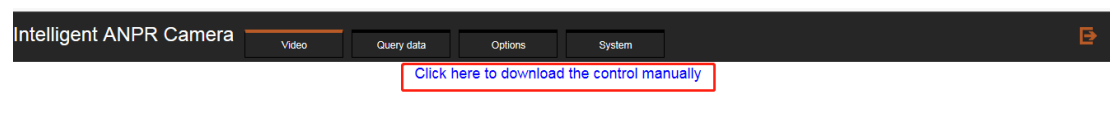
3-1Login Page

2. At the top right of the interface, you can switch the client language. At present, you can switch between simplified Chinese, traditional Chinese and English.



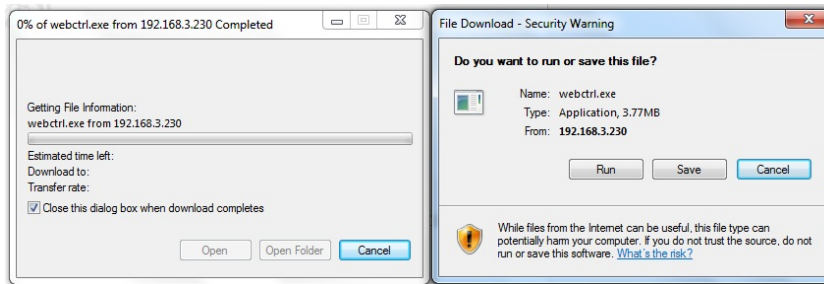
3-2 Language switching menu

3. Enter the default user name: admin, the default password admin, and click the login button to log in.
4. If you open the camera for the first time using IE browser (including browser using IE kernel, Google and other browsers can skip 3-6 steps), the browser will prompt you to install the plug-in. As shown in the figure below:



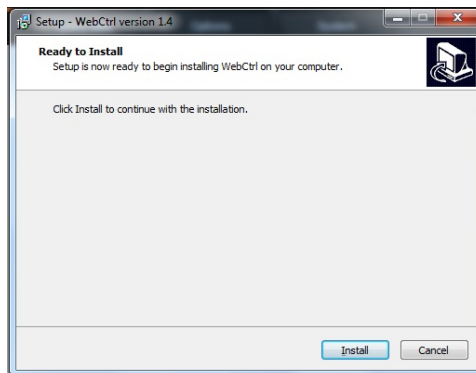
3-3 Installation plug-in Tips

- Click OK, Download webctrl.exe and run it. If the following interface pops up, click Run.



### 3-4 Plug-in security prompt

- After running webctrl.exe, the following interface will pop up. Click Install to install the plug-in.



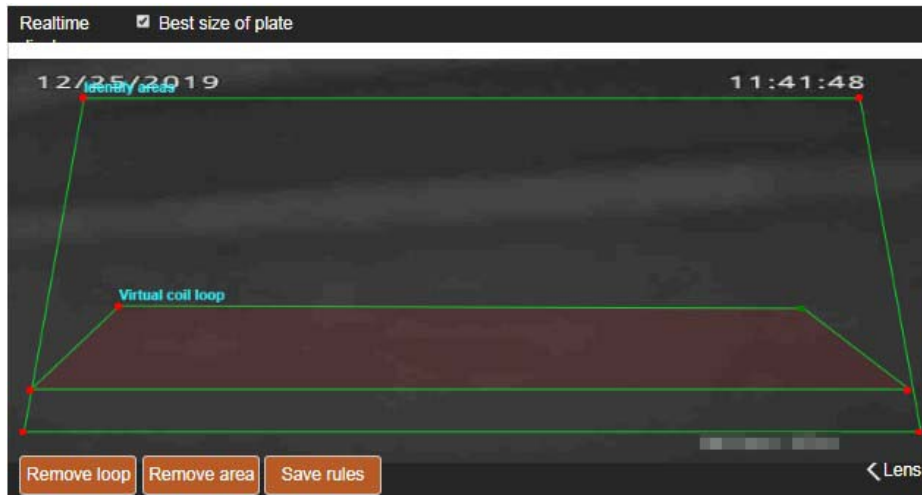
### 3-5 Plug in installation interface

- After installation, click the finish button to finish the installation.
- After refreshing the webpage, you can see the output screen and auxiliary wireframe of the camera on the following interface. When the license plate appears in the screen, the license plate number information recognized by the system will be displayed on the right side of the screen, and the capture history will be displayed below. At the same time, the system provides basic settings at the bottom right of the main interface to complete common settings. Click the button at the top right corner of the interface to exit System to login interface

Time	Plate	Width	Trigger	Car info	Car color
2019-12-30 10:49:19	01DB5858	281Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:49:32	01DB5858	281Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:49:32	01DB5858	281Pixel	Virtual ground coil	Unknown	Unknown

### 3-6 Browse main page details

- Click the best license plate size option to display the virtual license plate for auxiliary equipment installation / adjustment, and click again when not needed to cancel the display of the virtual license plate.



3-7 Best size license plate auxiliary display

10. Double click the video real-time display interface to display the video image in full screen.

### 3.2 Virtual coil and recognition area adjustment

In the real-time display interface, the recognition area and virtual coil are marked by default. You can use the mouse to drag the vertex on the wire frame (indicated by the red arrow in the figure on the next page) to adjust the recognition area / virtual coil, or double-click the mouse on the recognition area wire frame to create a new mark point for adjustment. When the wire frame state is adjusted, you can click the save Rule button at the bottom left to adjust the wire frame state Preservation. At the same time, there are virtual coil and recognition area delete / create buttons on the lower left side of the real-time display interface, which can delete the virtual coil / recognition area in the real-time screen, or create the corresponding wire frame when there is no virtual coil / recognition area in the real-time screen (default state).



3-8 Virtual coil and recognition area

### 3.3 Manual capture trigger

Click the manual trigger button (in the red box) on the right side of the homepage to manually capture a test image. The captured image will automatically display the close-up of the car head and license plate as well as the identification license plate number on the right side, as shown in the picture on the following page.



3-9 Manual capture test

### 3.4 Capture event record

Under the real-time display interface, there is a snapshot history, as shown in the picture on the following page:

Time	Plate	Width	Trigger	Car info	Car color
2019-12-30 10:49:19	05MY1518	281Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:49:32	05MY1518	291Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:49:32	05MY1518	287Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:51:27	01DB5858	483Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:51:54	01DB5858	600Pixel	Virtual ground coil	Unknown	Unknown
2019-12-30 10:52:43	01DB5858	534Pixel	Virtual ground coil	Unknown	Unknown











### 3-10 Capture history

The capture history includes: recognition time, license plate number, license plate type, license plate color, license plate width, trigger type information.

### 3.5 Basic settings of main interface

There is a basic setting interface at the bottom of the real-time display interface, as shown in the picture on the following page



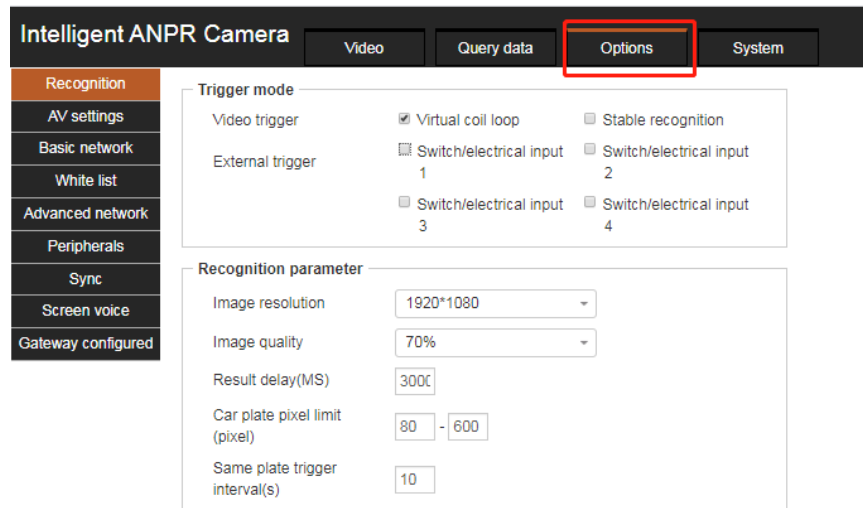
Name	IVS 	IP	192.168.3.229 
Time	2019-12-25 13:39:38	mode	NTP 
Gateway	Entrance 	Direction	Both 
LED	Manual LED 		
LED param	4m 	09:00 	18:00 
	Close 		
	00:00 4:00 8:00 12:00 16:00 20:00 24:00		

### 3-11 Basic setting interface

- Equipment name. Click the Edit button to change the equipment name.
- IP address, which can be configured accordingly.
- In the timing mode, click the Edit button to jump to the time configuration page.
- Set the installation position of the current camera at the entrance and exit.
- Direction: set the traffic direction of equipment installation lane.
- Light supplement mode, set the working state of light supplement lamp of the equipment.
- Preset provinces and set license plate identification marks that are mainly recognized by equipment to improve recognition efficiency.
- Light compensation parameters, set the time period when the equipment starts light compensation.

## 4 Advanced setting

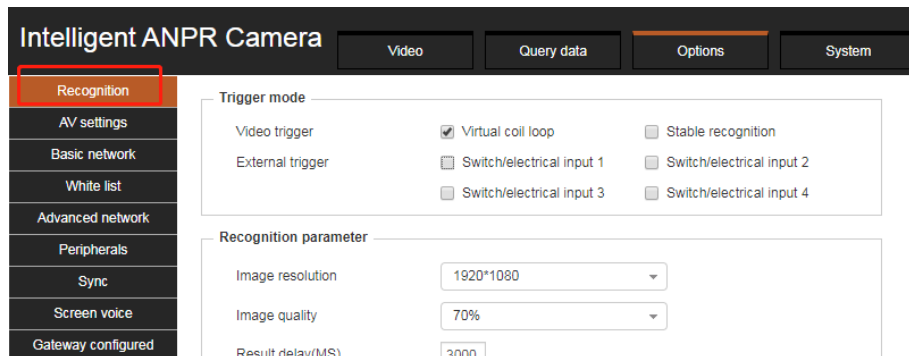
Click the advanced setting button at the top of the interface to enter the advanced setting menu interface, as shown in the following figure:



### 4-1 Advanced settings menu interface

#### 4.1 Identification settings

Click the identification setting in Figure 4-1 to enter the identification setting interface, as shown in Figure 4-2 below.



### 4-2 Identification setting guide

The recognition setting interface is shown in the picture on the following page:

— Trigger mode —

Video trigger	<input checked="" type="checkbox"/> Virtual coil loop	<input type="checkbox"/> Stable recognition
External trigger	<input checked="" type="checkbox"/> Switch/electrical input 1	<input type="checkbox"/> Switch/electrical input 2
	<input type="checkbox"/> Switch/electrical input 3	<input type="checkbox"/> Switch/electrical input 4

— Recognition parameter —

Image resolution	1920*1080
Image quality	70%
Result delay(MS)	3000
Car plate pixel limit (pixel)	80 - 600
Same plate trigger interval(s)	10

#### 4-3 Identification setting interface

- Trigger mode, which can check the type of trigger identification.
- Recognition parameters can be used for image quality, image resolution, trigger interval of the same license plate, traffic direction, license plate width limit, trigger interval of the same license plate, trigger of unlicensed vehicle and anti-counterfeiting of license plate (anti-counterfeiting matching degree can be set according to demand). Note that too high matching degree may increase recognition time and false alarm probability), output vehicle information for setting, and assist the system to accurately identify vehicle information.
- To recognize the license plate, the license plate type that needs to be recognized can be checked.

## 4.2 Audio and video

Click the audio and video in Figure 4-1 to enter the audio and video interface, as shown in the figure below.

**Intelligent ANPR Camera** Video Query data Options System

Recognition

AV settings

Basic network

White list

Advanced network

Peripherals

Sync

Screen voice

Gateway configured

Trigger mode

Video trigger	<input checked="" type="checkbox"/> Virtual coil loop	<input type="checkbox"/> Stable recognition
External trigger	<input checked="" type="checkbox"/> Switch/electrical input 1	<input type="checkbox"/> Switch/electrical input 2
	<input type="checkbox"/> Switch/electrical input 3	<input type="checkbox"/> Switch/electrical input 4

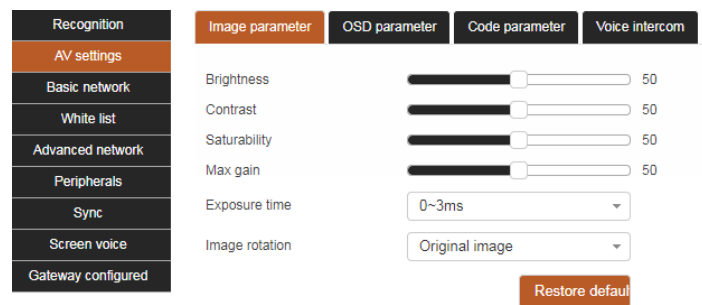
Recognition parameter

Image resolution	1920*1080
Image quality	70%
Result delay(MS)	3000

#### 4-4 Audio and video setting guide

### 4.2.1 Image parameters

Click the image parameters tab to enter the image parameters page.

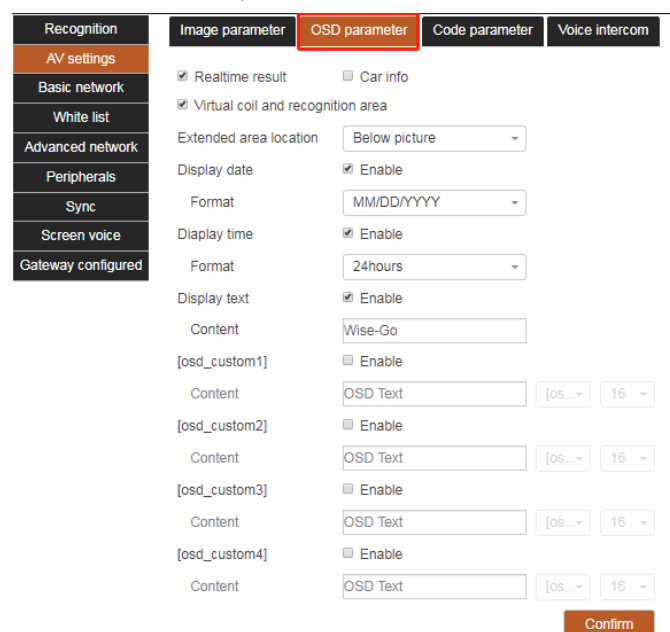


#### 4-5 Image parameter interface

- The video parameter setting can be displayed in real time on the right side of the setting interface, which is convenient for adjustment and comparison.
- Brightness: drag the brightness progress bar to configure the brightness of the image.
- Contrast. Drag the contrast progress bar to configure the contrast of the image.
- Saturation. Drag the saturation progress bar to configure the color saturation of the image. When the value is set to 0, the image is configured as a black-and-white image.
- Maximum gain, drag the maximum gain progress bar to configure the maximum gain value that the camera automatically adjusts the exposure parameter. The user determines the maximum gain value according to the actual application scenario.
- The exposure time, in MS, is the opening time of the electronic shutter of the CMOS image sensor. Different exposure time can be configured according to different application scenarios. The time set here is the maximum exposure time. The camera will automatically adjust the exposure time according to the brightness of the scene.
- Image flipping, users can choose the flipping angle of the image according to the actual installation direction of the camera.
- Click the restore button to set all image parameters as default parameters.

#### 4.2.2 OSD parameter

Click the OSD parameter tab to enter the OSD parameter interface.



#### 4-6 OSD parameter interface

- The real-time results show the real-time license plate recognition results in the form of words on the top left of the real-time screen.
- Vehicle information: display the real-time identified vehicle logo and other information on the top left of the real-time screen.
- Virtual coil and identification area, turn on / off virtual coil and identification area.
- Expand the location of the area. When enabled, you can choose to display the capture information at the corresponding location.
- Display the date. After enabling, you can configure the date format. In the real-time screen, you can drag the text to change the position.
- Display time. After enabling, the time format can be configured, and the text can be dragged to change the position in the real-time screen.
- Display the text. After enabling, you can configure the text content, support the configuration of multiple custom text, and drag the text to change the position in the real-time screen.

#### 4.2.3 Coding parameter

Click the coding parameter tab to enter the coding parameter page.

Recognition	Image parameter	OSD parameter	Code parameter	Voice intercom
AV settings				
Basic network	Code rate		Primary code rate	
White list	Resolution		1280*720	
Advanced network	Frame rate		25	
Peripherals	Code scheme		H264	
Sync	Stream config		VBR	
Screen voice	Picture quality		Most clear	
Gateway configured	Stream limit		1024 kbps	
				Confirm

#### 4-7 Coding parameter interface

- Bitstream: the camera can output two bitstreams. This option is used to switch whether the configuration of the following configuration items is the main bitstream or the sub bitstream.
- Resolution, configure the video stream resolution.
- Frame rate, configure the frame rate of video stream, 1-25 frames per second can be configured.
- Encoding mode, video stream encoding mode, optional H.264, h.265 (mobile terminal supports MJPEG).
- Stream control, switching rate control mode of video stream, constant stream is static rate control (CBR), variable stream is dynamic rate control (VBR).
- Image quality, configure the image quality of the video stream, the clearer the video stream consumes more network bandwidth.
- Upper limit of code stream, upper limit of dynamic code stream. Range 1-5000kbps.

#### 4.2.4 Voice intercom

Click the voice intercom tab to enter the voice intercom interface.

Recognition	Image parameter	OSD parameter	Code parameter	Voice intercom
AV settings				
Basic network				
White list				
Advanced network				
Peripherals				
Sync				
Screen voice				
Gateway configured				

**Intercom set**

Inbound IO

- Without
- Switch/electrical input 1
- Switch/electrical input 2
- Switch/electrical input 3
- Switch/electrical input 4

---

**Audio set**

Audio input Line in ▾

Output volume ██████████ 90

Input volume ██████████ 40

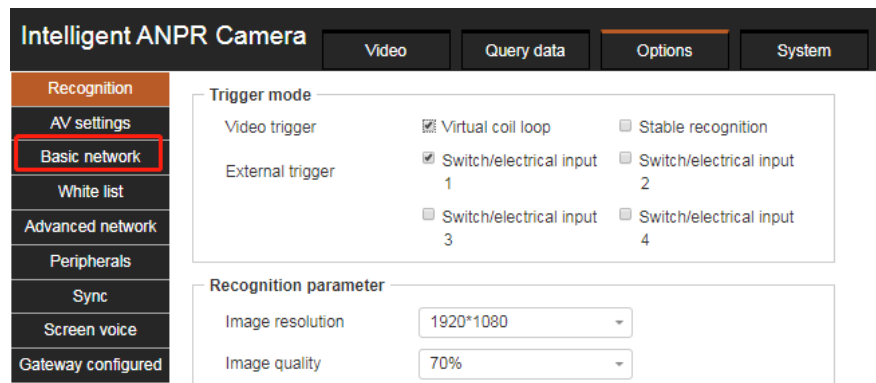
Noise filtering Close ▾

#### 4-8 Voice intercom interface

- Intercom setting: set intercom IO access / no access system, if access, select access port.
- Audio input, set the audio input source.
- Output volume, set the audio volume output by the device.
- Input volume to set the audio volume of the input device.
- The noise filter can be turned on to reduce the noise of the pickup of the equipment.

### 4.3 Basic network

Click the basic network in Figure 4-1 to enter the white list setting interface, as shown in the figure below.



4-9 Basic network Guide

#### 4.3.1 Basic setting

Click the basic settings tab to enter the basic settings page.

Recognition	Basic setting	4G config	DDNS	UPNP	Network diagnosis
AV settings	IP				
Basic network	Netmask				
White list	Gateway				
Advanced network	DNS server				
Peripherals	DNS server 2				
Sync	HTTP port				
Screen voice	RTSP port				
Gateway configured					

**Confirm**

4-10 Basic setting interface

- IP address, configure the network IP address.
- Subnet mask, configure the subnet mask of the network.
- Default gateway. Configure the network default gateway. It should be in the same network segment as the IP address
- DNS server, configure the DNS server of the network. After configuring the network parameters, click OK to take effect.
- DNS server 2, configure the standby DNS server, and automatically switch to the default DNS server when the connection error occurs.
- HTTP port. Configure the port number of HTTP protocol. The default is 80. Click OK to take effect.
- RTSP port. Configure the port number of RTSP video stream. The default is 8557. Click OK to take effect.

### 4.3.2 4G configuration (4G module is required)

Click the 4G configuration tab to enter the 4G configuration page.

#### 4-11 Basic setting interface

- Network card is preferred, and the preferred networking mode is selected.
- Server address, set the server address of 4G connection.
- Status information, view the current 4G working status, and conduct network troubleshooting through prompts.

### 4.3.3 DDNS

DDNS (dynamic domain name) maps the user's dynamic IP address to a fixed domain name resolution service. Each time the user connects to the network, the client program will transmit the dynamic IP address of the host computer to the server program located on the server's host computer through information transmission. The server program is responsible for providing DNS service and realizing dynamic domain name resolution. In this way, you can directly access the device through the domain name without recording the IP address that will change. Click the dynamic domain name tab to configure parameters related to the dynamic domain name, as shown in the following figure:

#### 4-12 DDNS page

- Enable automatic domain name registration. Check this box to start DDNS function.
- DDNS provider, the name of the DDNS server provider.
- Domain name, the domain name registered by the user with the DDNS service provider.
- User name, the user name when the user registers with the DDNS service provider.
- Password, the password when the user registers with the DDNS service provider. After configuration, click OK to take effect.



#### 4.3.4 UPNP

UPNP (universal plug and play) protocol can establish port mapping relationship between router intranet and external network, so that external network users can directly access the devices in the intranet through the IP address of external network. Select the UPNP port tab to configure the UPNP function, as shown in the picture on the following page

Basic setting 4G config DDNS **UPNP** Network diagnosis

UPNP port mapping  Enable

HTTP port mapping

RTSP port mapping

Connection status Disconnected

Confirm

#### 4-13 UPNP interface

- Enable UPNP port mapping. Check this box to enable the UPNP port mapping function.
- The HTTP mapping port is configured with the external port number of the HTTP protocol.
- RTSP mapping port, configure the external port number of RTSP protocol video streaming. After modification, click OK to take effect.

#### 4.3.5 Network diagnosis

Click the network diagnosis tab to enter the network diagnosis page.

Basic setting 4G config DDNS UPNP **Network diagnosis**

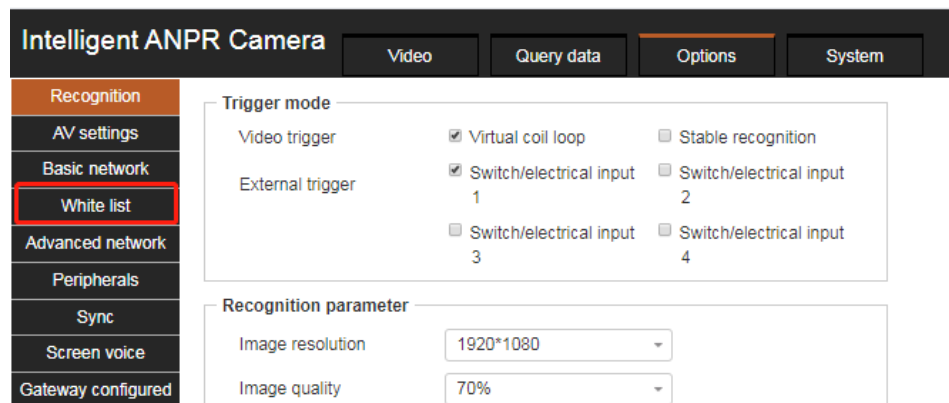
Order  ? Confirm Stop

#### 4-14 Network diagnosis interface

In the input box, you can input the corresponding network test command. Click OK to start the execution. The execution status will be displayed in the blank area below. Click stop to terminate the execution of the current command.

#### 4.4 White list

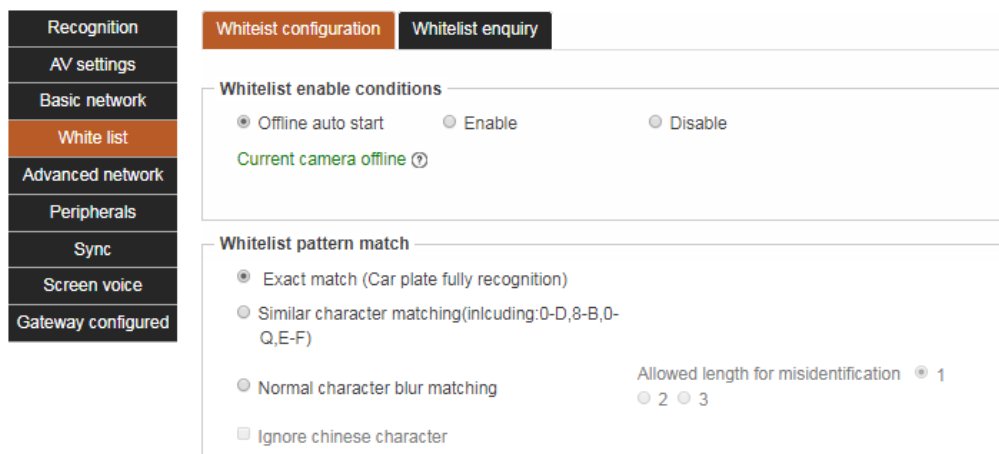
Click the white list setting in Figure 4-1 to enter the white list setting interface, as shown in the following figure.



4-15 White list setting guide

##### 4.4.1 White list configuration

Click the white list configuration tab to enter the white list configuration page.



4-16 White list configuration interface

- Enabling conditions of white list, enabling status / triggering conditions of white list can be set.
- White list fuzzy matching can set the query method of white list fuzzy matching. The user can select the appropriate fuzzy query method according to the actual scene demand and the corresponding allowable error recognition length according to the scene fault tolerance rate.

##### 4.4.2 White list query

Click the white list query tab to enter the white list query page.

Whiteist configuration   Whitelist enquiry

Plate  Search

SN	Plate	Enable	Start date	Expiration date	Effective time	Blacklist	Remark
----	-------	--------	------------	-----------------	----------------	-----------	--------

Total 0 << < 0/0 > >>

#### 4-17 White list query interface

You can query the details of the license plate in the white list by entering the license plate number.

## 4.5 Advanced network

Click the advanced network in Figure 4-1 to enter the advanced network interface, as shown in the figure below.

The screenshot shows the 'Intelligent ANPR Camera' configuration page. The 'Options' tab is selected. On the left sidebar, 'Advanced network' is highlighted with a red box. The main content area is divided into two sections: 'Trigger mode' and 'Recognition parameter'. In the 'Trigger mode' section, 'Virtual coil loop' is checked, and 'Stable recognition' is unchecked. Under 'External trigger', 'Switch/electrical input 1' and 'Switch/electrical input 2' are checked, while 'Switch/electrical input 3' and 'Switch/electrical input 4' are unchecked. In the 'Recognition parameter' section, 'Image resolution' is set to '1920\*1080' and 'Image quality' is set to '70%'.

4-18 Advanced network Guide

### 4.5.1 HTTP push

Click the HTTP push tab to enter the HTTP push configuration page. Push configuration is used to configure the back end to receive the image data captured by the license plate.

The screenshot shows the 'HTTP push' configuration page. The 'HTTP push' tab is selected. The left sidebar shows 'Advanced network' selected. The main content area is divided into 'Basic setting' and 'Push config' sections. In the 'Basic setting' section, 'Master server has priority' is checked. 'Server address' is '192.168.1.72', 'Alternate server' is empty, and 'Port' is '80'. 'SSL connection' is checked, and 'Verification mode' is set to 'Anonymity'. 'SSL port' is '443' and 'Time out (s)' is '30'. In the 'Push config' section, 'Equipment registration' is set to 'Comet poll'. 'Address' is '/api-cms/cms/plate/heart'. 'Push plate recognition result' is checked, and 'Disconnect retransmission' is unchecked. 'Address' is '/api-cms/cms/plate/plateResult'. 'Content detail level' is 'All'. 'Send picture' is checked for both 'Send big picture' and 'Send small picture'. 'Push port trigger message' is unchecked, with 'Address' as '/api-cms/cms/plate/msg'. 'Push serial port data' is unchecked, with 'Address' as '/api-cms/cms/plate/msg'. 'HTTP offline check' is checked. 'Retransmission times' is 'Disable'. A 'Confirm' button is at the bottom right.

4-19 HTTP Push configuration interface

- The primary server takes priority. When enabled, the primary server can be pushed first.
- Server address, configure the main server address to receive the uploaded image.
- Alternative server: configure the alternative server address to receive the uploaded image, which can be multiple

addresses separated by ','.

- Port, the port number uploaded by HTTP / HTTPS, 80 by default.
- SSL connection, check this box to enable SSL during data transmission.
- Authentication mode, SSL authentication mode
- Anonymous, using anonymous SSL authentication.
- CA certificate, use CA certificate for SSL verification, check this option, and the following interface will pop up to upload CA certificate:

SSL connection  Enable

Verification mode  Anonymity  CA certificate

Certificate upload

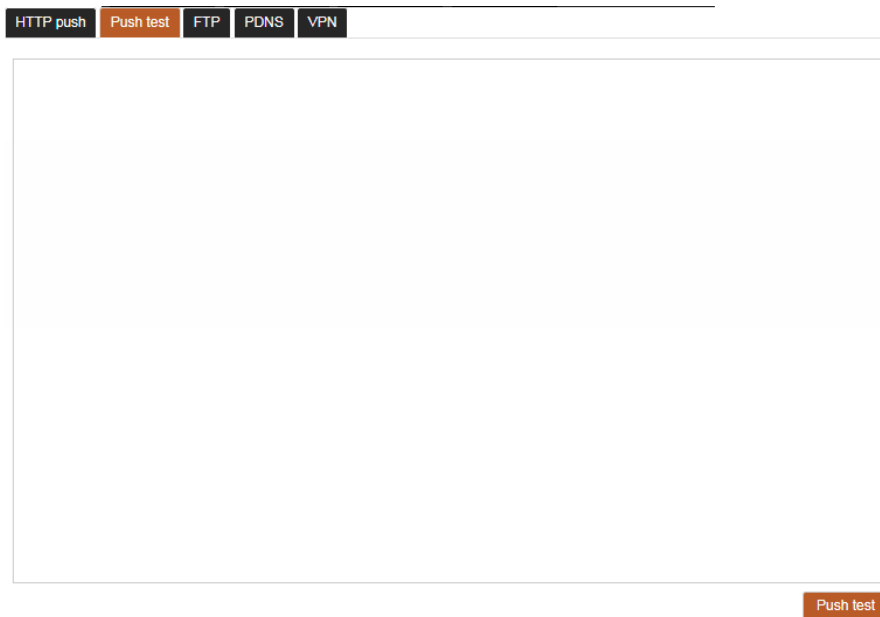
Certificate is not uploaded

#### 4-20 SSL certificate upload interface

- SSL port, configure the port number of SSL authentication.
- Timeout, configure the connection timeout of data push.
- Device registration, how to determine the connection between the device and the server.
- Cancel the heartbeat, do not judge the connection, and send the data directly.
- Normal heartbeat: the client sends heartbeat messages to the server every other period of time, and judges the connection between the device and the server by whether the server returns messages within the specified time.
- Comet polling is based on HTTP long connection. The client sends an inquiry request to the server. When there is no data, the server does not respond immediately, but waits for the data. When new data is generated, it responds to the browser and an HTTP connection ends.
- The primary server is preferred. If this option is checked, the primary server is preferred.
- Push license plate recognition results, check this box, and push face capture results through HTTP protocol.
- Address, the push URL address of the face capture result. Utf8 is encoded before Base64.
- Content level of detail, select the content pushed by the result of face capture.
- Push port trigger information, check this box to enable port trigger push content.
- Address, the push URL address triggered by the port. Utf8 is encoded before Base64.
- Push serial data. Check this box to enable serial data push.
- Address, push URL address triggered by serial port, and Base64 encoding after utf8 encoding.
- HTTP offline check, whether to enable HTTP offline check.
- The number of retransmissions. Configure the number of HTTP push retransmissions.
- Click OK to save the changes.

#### 4.5.2 Push test

Click the push test tab to enter the push test page.



**4-21 Push test interface**

Click the push test button in the lower right corner to conduct push test, and the test details will be displayed in the blank area of the interface.

#### 4.5.3 FTP

Click the FTP tab to enter the FTP configuration page.

**4-22 FTP Configuration interface**

- Enable FTP upload, check this option to enable FTP upload function.
- Address, configure the FTP server address to upload.
- Port, configure the port number of FTP upload service.
- User name, configure the user name used to log in to the FTP server.
- Password, configure the password used to log in to the FTP server.
- Upload path: configure the data path of the FTP server.

#### 4.5.4 PDNS

Click the PDNS tab to enter the PDNS configuration page.

#### 4-23 PDNS configuration interface

- Start the PDNS connection. Check this box to start the PDNS connection function.
- Server address, PDNS address can be configured.
- Port, configure the port number of PDNS service.
- Click the confirm button to save the configuration.

#### 4.5.5 VPN

VPN is a virtual transmission channel, which can provide a safe and reliable network transmission channel for remote access of equipment. Click VPN configuration tab to configure VPN function.

#### 4-24 VPN configuration interface

- Open VPN connection, check this box to start the open VPN function.
- VPN server address. You can configure VPN server address.
- Port, configure the port number of VPN service.
- Select local certificate, open VPN Security certificate, and click upload. Click OK after all configurations are completed to take effect.

## 4.6 Peripherals management

Click peripheral management in Figure 4-1 to enter the peripheral management interface, as shown in the figure below.

4-25 Peripheral management guidelines

### 4.6.1 Output configuration

Click the output configuration tab to enter the output configuration page.

Trigger input	Whitelist verification	Output port			
		Switch output 1	Switch output 2	RS485-1	Audio
Car plate recognition trigger	Pass	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Default
	No pass	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Default
	No plate car	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Default
	Blacklist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Default
	Special license	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	默认
Switch/electrical input 1	Without	<input type="checkbox"/>	<input type="checkbox"/>		Default
Switch/electrical input 2	Without	<input type="checkbox"/>	<input type="checkbox"/>		Default
Switch/electrical input 3	Without	<input type="checkbox"/>	<input type="checkbox"/>		Default
Switch/electrical input 4	Without	<input type="checkbox"/>	<input type="checkbox"/>		Default

4-26 Output configuration interface

- Anti fake license plate. When the opening function is enabled, the fake license plate will not trigger the output linkage control.
- When the license plate recognition is triggered, the user can configure the system to output signals at various ports according to the white list verification.
- Users can configure the system to trigger multiple (only partial output ports) output port signals when obtaining input port signals.

### 4.6.2 Serial port configuration

Click the serial port configuration tab to enter the serial port configuration page.



Output config	Serial config	Open barrier gate via GPIO	Special license	Supplement light config	Peripheral detection
<p><b>Serial port 1</b></p> <p>Baud rate: <input type="text" value="9600"/></p> <p>Parity bit: <input type="text" value="No check"/></p> <p>Stop bit: <input type="text" value="1"/></p> <p>Data bit: <input type="text" value="8"/></p> <p><input type="button" value="Confirm"/></p>					
<p><a href="#">Jump to screen display config</a></p>					

#### 4-27 Serial port configuration interface

- Baud rate, configure serial port baud rate.
- Check bit, configure serial port check bit.
- Stop bit, configure the serial port stop bit.
- Data bit, configure serial data bit.

#### 4.6.3 GPIO gate opening

Click the GPIO opening tab to enter the GPIO opening page.

Output config	Serial config	Open barrier gate via GPIO	Special license	Supplement light config	Peripheral detection
<p>GPIO barrier gate open time: <input type="text" value="500"/> MS</p> <p>Secondary open barrier gate: <input type="checkbox"/> Enable</p> <p>Barrier gate opening interval: <input type="text" value="1000"/> MS</p> <p>Extend output time: <input type="text" value="0"/> MS</p> <p>Coil loop input port:           <input checked="" type="radio"/> Switch/electrical input 1           <input type="radio"/> Switch/electrical input 2           <input type="radio"/> Switch/electrical input 3           <input type="radio"/> Switch/electrical input 4         </p> <p>Coil loop output port:           <input checked="" type="radio"/> Switch output 1           <input type="radio"/> Switch output 2         </p> <p>Wait opening: <input checked="" type="checkbox"/> Enable</p> <p>Wait input port:           <input type="radio"/> Switch/electrical input 1           <input type="radio"/> Switch/electrical input 2           <input type="radio"/> Switch/electrical input 3           <input checked="" type="radio"/> Switch/electrical input 4         </p> <p>Wait timeout: <input type="text" value="0"/> MS</p> <p>Delayed opening time: <input type="text" value="2000"/> MS</p> <p><input type="button" value="Confirm"/></p>					

#### 4-28 GPIO opening interface

- By default, the opening time of GPIO is set, and the duration of single gate opening is set.
- Enable the secondary opening. After enabling, the vehicle unrecognized by the camera can be triggered to open through the ground induction coil.
- Gate interval time: set the minimum interval time of opening the gate twice. Only when the front car passes and the gate falls, the gate can be opened for the rear car after the interval time.
- Extend the output time, and set the extension time of the ground induction coil to the output signal after the vehicle induction disappears.
- The ground induction input port is provided with an interface for receiving the ground induction coil signal.
- The ground induction output port is provided with a signal interface for outputting the ground induction coil.

#### 4.6.4 Special license plate

Click the special license plate tab to enter the special license plate page.

Special license

Unknown car plate     Blue car plate     Black car plate     Single row yellow plate  
 Double row yellow plate     Police plate     Armed police plate     Personalized license  
 Single line military vehicle     Double line military vehicle     Diplomatic plate     Hongkong mainland suitable plate  
 Agricultural plate     Coach plate     Macao mainland suitable plate     Double line armed police plate  
 PAP corps plate     Double line PAP corps plate     Civil aviation car plate     Electric car plate  
 Emergency     Consulate

Special attention: after setting the license plate as special license plate, the result of white list will be special license plate, and the output linkage will be processed according to the process of special license plate.

Confirm

#### 4-29 Special license plate interface

The user can set the license plate type as a special license plate for corresponding special processing, and click the confirm button to save the settings.

#### 4.6.5 LED configuration

Click the LED configuration tab to enter the fill light configuration page.

LED

Manual LED

Supplement period	Start time	End time	Supplement distance
Time frame 1	00 : 00	09 : 00	4m
Time frame 2	09 : 00	18 : 00	Close
Time frame 3	18 : 00	00 : 00	4m

Confirm

#### 4-30 LED configuration interface

- Fill light mode, select the working state of fill light.
- You can set the fill light configuration in different time periods by distinguishing time periods.

#### 4.6.6 Peripheral detection

Click the peripheral detection tab to enter the peripheral detection page.

IO	Status	Operation
Switch/electrical input 1	1	<input type="button" value="Get"/>
Switch/electrical input 2	1	<input type="button" value="Get"/>
Switch/electrical input 3	1	<input type="button" value="Get"/>
Switch/electrical input 4	1	<input type="button" value="Get"/>
Switch output 1	0	<input type="text" value="0"/>
Switch output 2	0	<input type="text" value="0"/>

#### 4-31 Peripheral detection interface

- In the input port line, click the get button to get the current port connectivity status.
- In the output port line, select the path / open option to set the current port status to on / off.

## 4.7 Screen speech

Click the screen voice in Figure 4-1 to enter the screen voice configuration interface, as shown in the figure below.

The screenshot shows the 'Intelligent ANPR Camera' configuration interface. The 'Options' tab is selected. On the left sidebar, 'Screen voice' is highlighted with a red box. The main configuration area is divided into two sections:

- Trigger mode:**
  - Video trigger:  Virtual coil loop,  Stable recognition
  - External trigger:  Switch/electrical input 1,  Switch/electrical input 2
  - Switch/electrical input 3,  Switch/electrical input 4
- Recognition parameter:**
  - Image resolution: 1920\*1080
  - Image quality: 70%
  - Result delay(MS): 3000

4-32 Voice Configuration Guide

### 4.7.1 Screen display protocol

Click the screen protocol tab to enter the screen protocol configuration page.

The screenshot shows the 'Screen display agreement' configuration page. The 'Screen display agreement' tab is selected. The page is divided into three main sections:

- Screen display agreement:** A dropdown menu set to 'A'. Radio buttons for 'Simple config', 'Common config', and 'Fully config' are present.
- Table of field names and formats:**

Choice	Field name	Format	Explain
<input checked="" type="checkbox"/>	Car plate exist / not	1 Byte	0xAA:recognized , 0xBB:unrecognized
<input checked="" type="checkbox"/>	Color	1 Byte	00:blue 01:yellow 02:black 03:white 04:spared
<input checked="" type="checkbox"/>	Plate	7 Byte	Chinese character is referred to specification document, normal characters are ASCII
<input checked="" type="checkbox"/>	Reliability	1 Byte	Reliability full score 100
<input checked="" type="checkbox"/>	Whitelist verification results	1 Byte	01:verified 03:no plate 04:blacklist other situation
<input checked="" type="checkbox"/>	Direction	1 Byte	0:NG 1:left 2:right 3:up 4:down
<input type="checkbox"/>	License	1 Byte	0:unknown car plate 1:blue car plate viehcle 2:black car plate viehcle refer to specification
<input type="checkbox"/>	Car plate area	8 Byte	Include Upper left corner coordinate, length and width, 4 2-bytes integer
<input type="checkbox"/>	Trigger	1 Byte	1:auto,2:external,4:software,8:virtual coil loop
<input type="checkbox"/>	Car color	1 Byte	00:blue 01:yellow 02:black 03:white 04:others
<input type="checkbox"/>	Time	4 byte(timestamp)	Recognition time
<input type="checkbox"/>	Whitelist expire time	4 byte(timestamp)	Whitelist expire time
<input type="checkbox"/>	Output IO	1 Byte	00:OUT1 01:OUT2 02:OUT3 03:OUT4
<input type="checkbox"/>	SN	8 Byte	xxxx-xxxx
<input type="checkbox"/>	Ciphertext	16 Byte	Intercept first 16 bytes of ciphertext , insufficient bytes add 0
<input type="checkbox"/>	Recognition id	4 Byte	Recognition record
- General configuration:**
  - Mark head: BB88
  - Mark tail: [input field]
  - Check start bit: Car plate exist / ...
  - Check end bit: Direction
  - Parity bit: Xor
  - Little big endian: Little endian
  - Plate encryption: No encryption
  - Chinese character encoding: UTF-8
  - Plate model: Normal mode
- Voice config:**
  - Enable voice:  Broadcast
  - Status: Whitelist valid
  - Voice head: [input field]
  - Voice tail: [input field]

Buttons for 'Up', 'Down', and 'Confirm' are located at the bottom right.

4-33 Screen protocol configuration interface

- According to the screen display agreement, select the corresponding agreement (see LED screen test help for the corresponding relationship).
- Quick configuration, you can quickly configure the screen output by selecting the corresponding configuration options.
- You can select the fields displayed on the output screen, and attach the output format and description. At the same time, you can view the field output examples on a regular basis at the bottom of the table.
- General configuration, which can be used for integrity verification and encryption of output field information. In addition to normal mode, new energy compatibility mode can also be selected in license plate mode.

- Voice configuration can enable / disable voice or license plate broadcasting. After enabling voice, different voice head / tail can be set by identifying the inclusion status of license plate in the white list.
- Adjust the field position, select the field and click the move up / move down button to adjust the field position.
- Click the confirm button to save the configuration.

#### 4.7.2 Voice broadcast

Click on the Voice broadcast tab to enter the Voice broadcast configuration page.

Screen display agreement Voice broadcast

Entrance External enabled

Type	Voice
Greetings	Hollo
Conclusion	Bon voyage

Sound select  Male voice  Female voice

Speech speed config  Slow  Normal  Fast

Special time period

Whisper mode 07:00 Sonority mode 20:00 Whisper

00:00 4:00 8:00 12:00 16:00 20:00 24:00

Sample vehicle type Rent a car

Corresponding voice Rent a car

Example

Listen example

Confirm

#### 4-34 Voice broadcast configuration interface

- Entry, select the voice broadcast mode of the current entry device, and set greetings and concluding remarks.
- Sound selection, according to the needs of the scene to select the appropriate gender characteristics of the voice.
- Language speed configuration, according to the requirements of the scene to select the appropriate language speed configuration.
- In special period, reasonable loud mode opening time is selected by dragging time bar to reduce noise pollution in special period.
- Sample vehicle type, select vehicle type to view the voice content and listen to the corresponding voice.
- Click the confirm button to save the voice configuration.

## 4.8 Entrance and exit configuration

Click on the entrance and exit configuration in figure 4-1, you can enter the entrance and exit configuration interface, as shown in the following figure.

The screenshot shows the 'Intelligent ANPR Camera' configuration interface. The 'Options' tab is selected. The left sidebar contains a menu with 'Gateway configured' highlighted in red. The main content area is divided into two sections: 'Trigger mode' and 'Recognition parameter'.

**Trigger mode:**

- Video trigger:  Virtual coil loop,  Stable recognition
- External trigger:  Switch/electrical input 1,  Switch/electrical input 2,  Switch/electrical input 3,  Switch/electrical input 4

**Recognition parameter:**

- Image resolution: 1920\*1080
- Image quality: 70%
- Result delay(MS): 3000
- Car plate pixel limit (pixel): 80 - 600
- Same plate trigger interval(s): 10

4-35 Guidelines for the configuration of entrances and exits

### 4.8.1 Parking lot configuration

Click on the parking lot configuration tab to enter the parking lot configuration page.

The screenshot shows the 'Parking lot configuration' interface. The 'Parking lot config' tab is selected. The left sidebar contains a menu with 'Gateway configured' highlighted in orange. The main content area shows the configuration for 'Garage48'.

**Garage48 Configuration:**

- Device IP: 192.168.3.229
- Entry exit location: Entrance Assistance camera 192.168.3.230
- Buttons: New garage, Save to network device, Delete
- Entrance section: Assist40, 192.168.3.229, 192.168.3.230
- Exit section: Empty
- Buttons: Add (Entrance), Add (Exit)

4-36 Parking lot configuration interface

A new garage (click on the garage name can be modified), at the same time for the garage exit / entrance according to IP to add one or more camera equipment, after the addition is completed, click to save to the networking device to complete the configuration.

### 4.8.2 Phase auxiliary camera

Click on the camera tab to enter the camera configuration page.

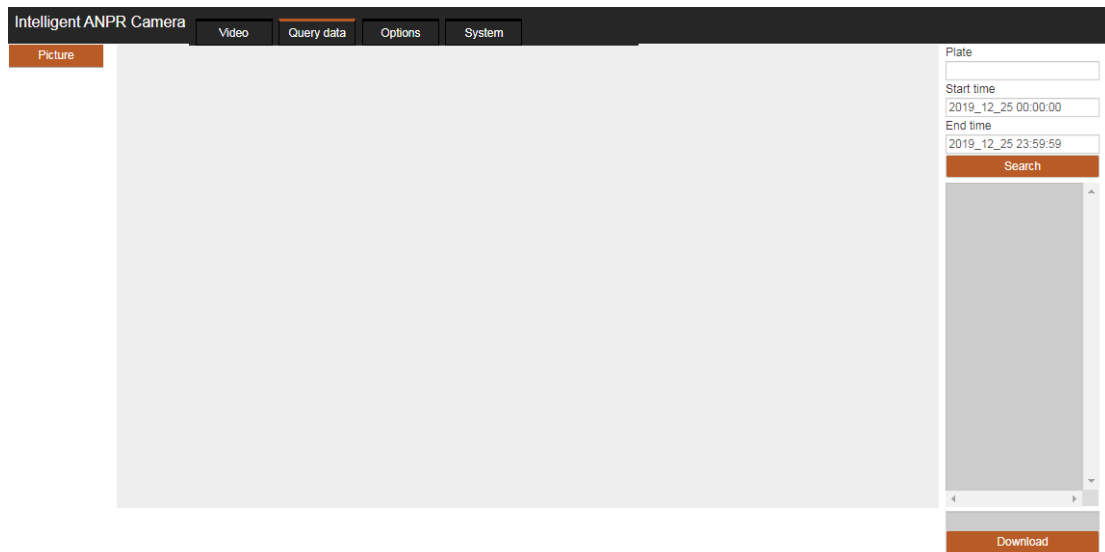
Parking lot config	Assistance camera	
Device IP	<input type="text" value="192.168.3.229"/>	Entry exit location <input type="text" value="Entrance"/> Assistance camera <input type="text" value="Not configured"/>
Network mode	<input type="text" value="Open"/>	
Output result	<input type="text" value="Single result"/>	
Delay for	<input type="text" value="2000"/>	<input type="text" value="MS"/>
Matching rule	<input type="radio"/> Similar character matching(including:0-D,8-B,0-Q,E-F) <input checked="" type="radio"/> Exact match	
Assist camera IO	<input type="checkbox"/> Switch/electrical input 1	<input type="checkbox"/> Switch/electrical input 2
	<input type="checkbox"/> Switch/electrical input 3	<input type="checkbox"/> Switch/electrical input 4
	<input type="checkbox"/> Switch output 1	<input type="checkbox"/> Switch output 2
<input type="button" value="Confirm"/>		

#### 4-37 Auxiliary camera configuration interface

- Networking mode, you can choose to turn on / off the phase unit network.
- Output result: you can choose to output multiple / single results. If you select single result, only the optimal result will be output. If you select multiple results, all the results will be output.
- Delay waiting, set the maximum time for the first output result to wait for the second output result, when the waiting time exceeds this time, the first result will be output automatically.
- Matching rules, select appropriate recognition matching rules according to the use scenario
- Set IO port for sharing information between cameras.
- Click the OK button to save the changes.

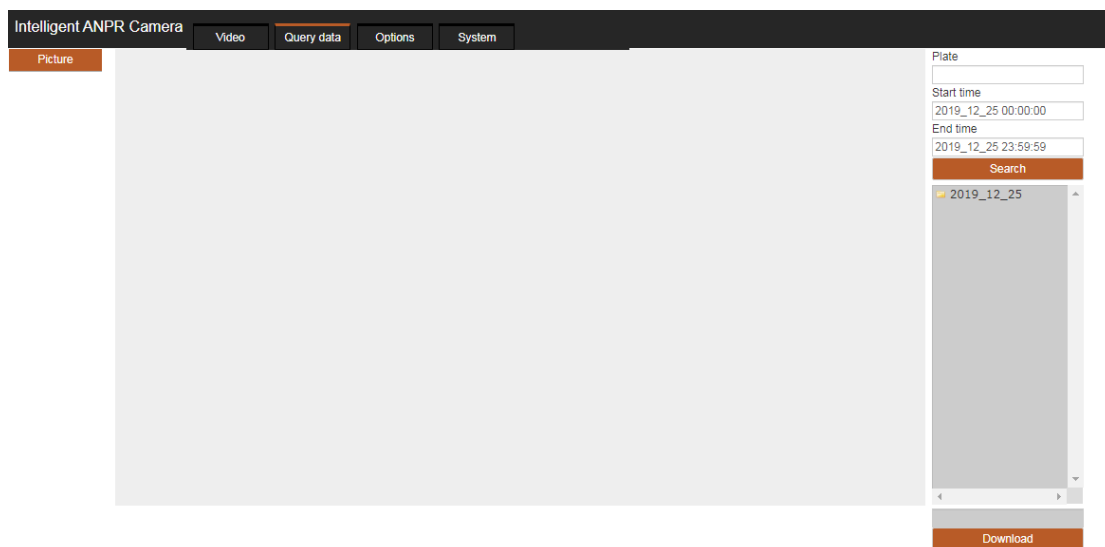
## 5 Data query

Click the data query button at the top of the interface to enter the data query interface (currently only image data query is supported), as shown in the following figure.



5-1 Picture preview interface

### 5.1 Image query



5-2 Picture sorting interface

You can enter the license plate number / time period in the upper right of the interface and click the query button. The photos that meet the query conditions will be displayed in the query results column in days (classified as folders).



## 5.2 Picture preview / download

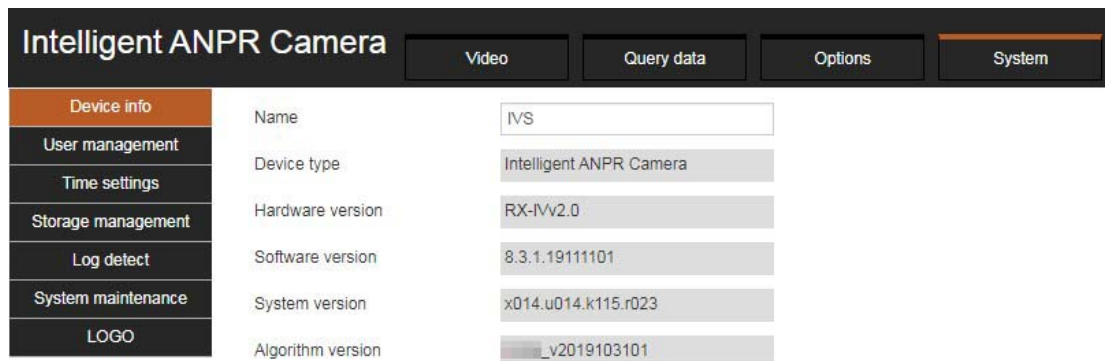


### 5-3 Picture preview / Download Interface

- Select the picture on the right side of the interface to preview the picture.
- Click the download button in the lower right corner of the interface to compress and download the current preview picture.

## 6 Equipment maintenance

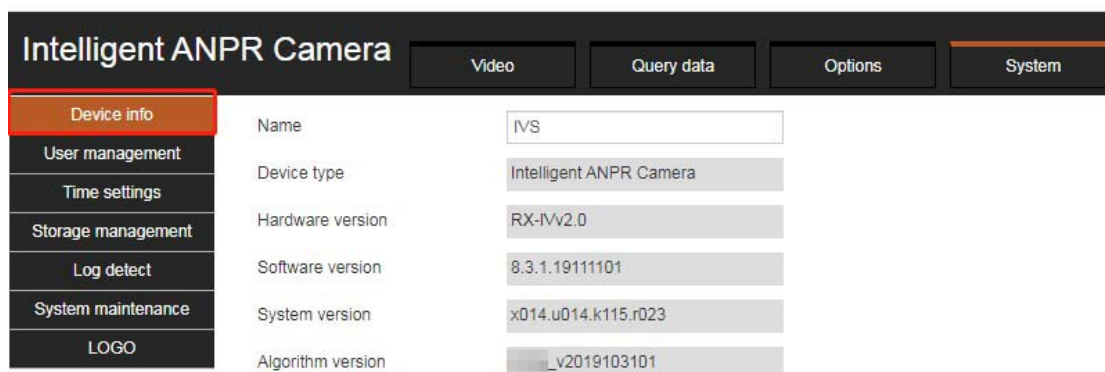
Click the device maintenance button at the top of the interface to enter the device maintenance menu interface, as shown in the following figure.



6-1 Equipment maintenance menu interface

### 6.1 Device information

Select the equipment information in Figure 6-1 to enter the equipment information interface, as shown in the figure below.



6-2 Equipment information guide

The picture on the next page is the display interface of device information.

Device info	Name	IVS
User management	Device type	Intelligent ANPR Camera
Time settings	Hardware version	RX-IVv2.0
Storage management	Software version	8.3.1.19111101
Log detect	System version	x014.u014.k115.r023
System maintenance	Algorithm version	_v2019103101
LOGO	MAC address	
	SN	74e



6-3Equipment information interface

## 6.2 User management

Select figure 6-1 user management to enter the user management interface, as shown in the figure below.

Intelligent ANPR Camera			Video	Query data	Options	System
Device info	Name	IVS				
User management	Device type	Intelligent ANPR Camera				
Time settings	Hardware version	RX-IVv2.0				
Storage management	Software version	8.3.1.19111101				
Log detect	System version	x014.u014.k115.r023				
System maintenance	Algorithm version	_v2019103101				
LOGO						

### 6-4User management guide

The user management interface is shown in the figure below.

Device info	User management	Time settings	Storage management	Log detect	System maintenance	LOGO
User management						
User name			Type		Operation	
admin			Administrator		Edit	
					Add	
Login timeout						
Timeout			15		Minute	
					Confirm	

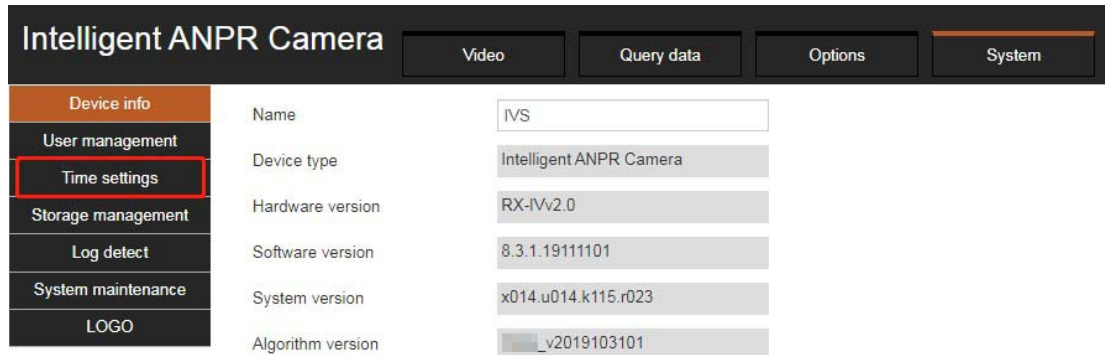
### 6-5User management interface

- Add user, input user name, password, confirm password, select type (permission setting), click confirm button to add user.
- Click Edit in the list of specified user name, enter the password, confirm the password and click OK to modify the user password.

- Login timeout, no operation can be set, and the time of automatic exit from the system can be set.

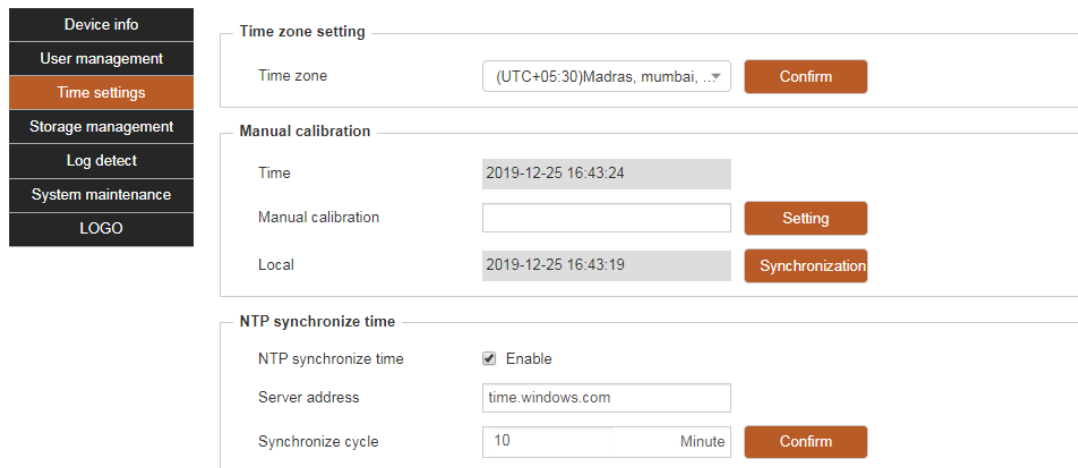
### 6.3 Time setting

Click the time setting in Figure 6-1 to enter the time setting interface, as shown in the figure below.



#### 6-6 Time setting guide

The time setting interface is shown in the picture on the following page:



#### 6-7 Time setting interface

- Time zone settings to configure the time zone where the current device is located.
- Manual calibration time
  - Device time, this text box shows the current date and time.
  - Manual time, you can enter the current date and time directly.
  - Local time, choose to obtain local time to synchronize the device.
- NTP correction time
  - Enable, check the check box to enable the NTP time synchronization service.
  - Server address, configure the address of the NTP server.
  - Synchronization cycle, configure the frequency of synchronization time from NTP server.

### 6.4 Storage management

Click storage management in Figure 6-1 to enter the storage management interface, as shown in the figure below.

The screenshot displays the 'Intelligent ANPR Camera' management interface. At the top, there are four tabs: 'Video', 'Query data', 'Options', and 'System'. Below these is a vertical sidebar menu with the following items: 'Device info', 'User management', 'Time settings', 'Storage management' (highlighted with a red border), 'Log detect', 'System maintenance', and 'LOGO'. The main content area shows a list of device information:

Field	Value
Name	IVS
Device type	Intelligent ANPR Camera
Hardware version	RX-IVv2.0
Software version	8.3.1.19111101
System version	x014.u014.k115.r023
Algorithm version	_v2019103101

### 6-8 Storage management guidelines

The storage management interface is shown in the picture on the following page:

Device info	<b>Equipment</b>	<b>Status</b>	<b>Used/Total</b>	
User management	FLASH partition	Working normally		Clear pictures
Time settings	SD card	Working normally	0.00G/3.78G	[format]
<b>Storage management</b>	SD card	Working normally	0.00G/3.86G	[format]
Log detect				
System maintenance				
LOGO				

If the SD card has only one partition or one partition is not working properly, please format the SD card first

**6-9 Storage device interface**

- If there are storage devices, the status and capacity information of each storage device will be displayed in the figure above.
- Click the format button on the right to format the SD card.
- After unplugging the SD card, click the clear flash picture button on the right to clear the saved flash picture in the device.

**6.5 Log detection**

Click log detection in Figure 6-1 to enter the log detection interface, as shown in the figure below.

Intelligent ANPR Camera

Video Query data Options **System**

Device info Name IVS

User management Device type Intelligent ANPR Camera

Time settings Hardware version RX-IVv2.0

Storage management Software version 8.3.1.19111101

**Log detect** System version x014.u014.k115.r023

System maintenance Algorithm version \_v2019103101

LOGO

**6-10 Log detection guidelines**

The log detection page is as follows,

Device info  Business log  Operation log  System log  Error log

User management Start time 2019-12-25 00:00:00 End time 2019-12-25 23:59:59 DESC Search Export log

Time settings

Storage management

**Log detect**

System maintenance

LOGO

Log time	Log type	Log content

Total 0 << < 0/0 > >>

### 6-11 Log detection interface

- Turn on the log and check the corresponding log type to turn on the corresponding log service.
- Log query and export, enter the start and end time of the log to be queried, carry on the log query, and export the log content of the query at the same time.

## 6.6 System maintenance

Select the system maintenance in figure 6 / 1 and enter the system maintenance interface, as shown in the following figure.

Intelligent ANPR Camera	
Device info	Name: IVS
User management	Device type: Intelligent ANPR Camera
Time settings	Hardware version: RX-IVv2.0
Storage management	Software version: 8.3.1.19111101
Log detect	System version: x014.u014.k115.r023
<b>System maintenance</b>	Algorithm version: _v2019103101
LOGO	

### 6-12 System maintenance guide

The system maintenance interface is as follows:

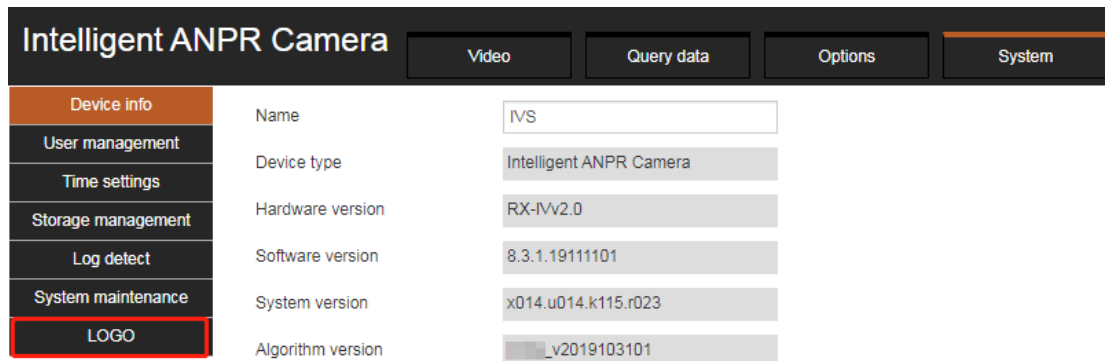
System Maintenance	
Restart device	Restart device (all functions will be temporarily interrupted) <b>Restart</b>
Auto restart	<input checked="" type="checkbox"/> Enable
Week	<input type="checkbox"/> Mo <input type="checkbox"/> Tu <input type="checkbox"/> We <input type="checkbox"/> Th <input type="checkbox"/> Fr <input type="checkbox"/> Sa <input type="checkbox"/> Su
Time	00 : 00 Time 11:15:49(Mo) <b>Confirm</b>
Restore factory mode	Fully restore factory mode (restore all configuration, including IP address, will temporarily disconnect) <b>Confirm</b>
	Partial restore factory mode (will keep network, username, password, device name) <b>Confirm</b>
Update device	Software version: 8.3.1.19122703
	System version: x014.u014.k119.r023
	Algorithm version: _v2019103101
Select upgrade file	<input type="text"/> <b>Browse...</b> <b>Upgrade</b>

### 6-13 System maintenance interface

- Restart the device, the immediate restart button can restart the device immediately, or automatic restart can be enabled to restart the device at a specific time.
- Restore factory settings
  - Fully restore the factory settings, restore all settings, and click OK to restore.
  - Part of the factory settings will be restored. Except the settings in the prompt are not restored, all other settings will be restored. Click OK to restore.
- To upgrade the device, select the upgrade file (. Bin) and click upgrade to update the device system remotely.

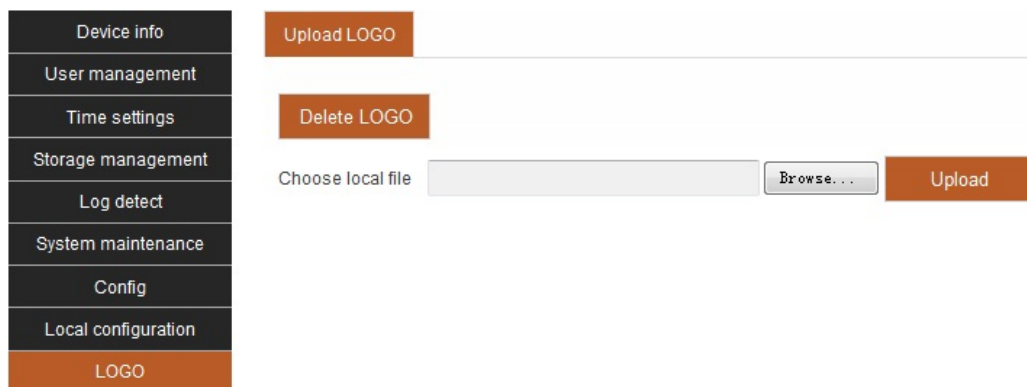
## 6.7 LOGO management

Select the logo in Figure 6-1 to enter the logo management interface, as shown in the figure below.



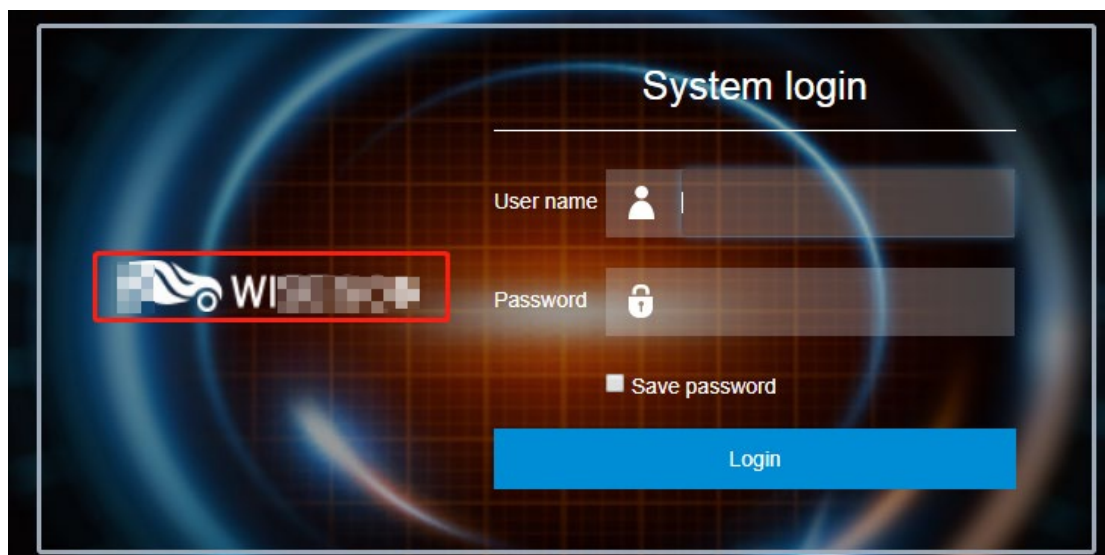
**6-14 Logo management guide**

The logo management interface is as follows:



**6-15 Logo management interface**

Upload logo. After selecting and uploading the logo in the corresponding image format locally, you can add the corresponding logo in the login interface, as shown in the figure below.



**6-16 Logo demonstration interface**

To delete the logo, click the delete button to clear the logo display on the login page.