USER MANUAL

Hybrid Vehicle Recognition Terminal ---LPRS2000

Version: 1.2 Date: August, 2018

Safety Precautions

◆ Electrical safety

Install the camera , reader and LED screen first, and then connect the data cable and power cable in sequence.

Before connecting an external cable to the device, complete grounding properly and set up surge protection; otherwise, static electricity will damage the mainboard.

Ensure that the signal connected to the device is a weak-current (switch) signal; otherwise, components of the device will be damaged.

Ensure that the standard voltage applicable in your country or region is used. If you are not certain about the applicable standard voltage, please consult your local electric power company. Power mismatch may cause short circuit or device damage.

In the case of power supply damage, return the device to the professional technical personnel or your dealer for handling.

To avoid interference, keep the device far from generators with strong electromagnetic radiation, such as radios, televisions, and electric generators.

◆ Operation safety

Before powering on the device, read this document carefully.

The device hardware may be damaged by transportation and other unpredictable causes. Check whether the device has serious damage before installation. If the device has major defects you cannot solve, contact your dealer as soon as possible.

Do not connect or disconnect cables to/from the device when it is energized.

Dust, moisture, and abrupt temperature changes can affect the device's service life. You are advised not to keep the device under such conditions.

Do not keep the device in a place that vibrates. Handle the device with care. Do not place heavy objects on top of the device.

Do not apply rosin, alcohol, benzene, pesticides, and other volatile substances that can damage the device enclosure. Clean the enclosure with a piece of soft cloth or a small amount of cleaning agent. Nonprofessional personnel are not allowed to open the device cover. If you have any technical questions regarding usage, contact certified or experienced technical personnel.

Note: (1) Complete grounding properly when connecting the power supply. The positive polarity and negative polarity of the DC 12V power supply must be connected correctly. Reverse connection may damage the device. Do not connect the AC 24V power supply to the DC 12V input port. Read the user manual carefully before use, and connect wires in accordance with the positive polarity and negative polarity shown on the device's nameplate. **(2)** The warranty service does not cover accidental damage and damage caused by mis operation.

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1 Overview

Note: The pictures in this manual may not be exactly consistent with those of your product; the actual product's display shall prevail.

1.1 About This Product

Adopted multiple recognition modes based on long-range RFID and license plate recognition. LPRS2000 is a hybrid recognition vehicle management terminal and mainly composed of LPR camera and UHF reader

The LPR camera is an IP camera based on the H.264/H.265 algorithm, integrating HD imaging, image collection, license plate recognition, image decompression, and data storage on an embedded intelligent platform. It automatically identifies the numbers, letters, and characters on license plates, and outputs the identified results

And the UHF reader adopts Impinj R2000 card reader chip, and the card reader part adopts module integrated design. It has stable card reading performance, good card reading performance consistency, long service life, low card reading performance by external influence。

1.2 Features

(1) High-resolution image decompression

The camera supports Main Stream and Sub Stream. The resolution of Main Stream: 1920 x 1080 and 1280 x 720; the resolution of Sub Stream: 704x 576, 640 x 480 and 320x 240.

(2) Comprehensive network monitoring and transfer The camera sets up a network connection using an RJ-45 10M/100M auto-negotiation network port. It supports TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP, and other protocols.

Fixed vehicle capture rate and recognition accuracy are up to 100%

(3) Support vehicle without license plate (or seriously fouled license plate) vehicle

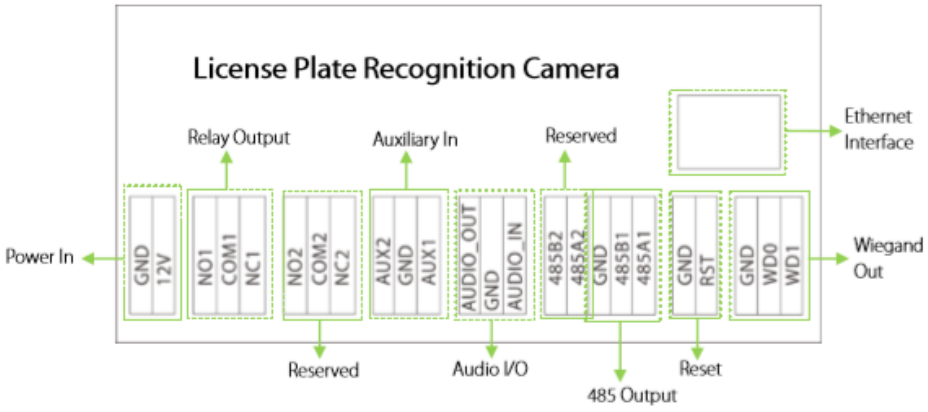
(4) Adapt to complex application environment, such as thick fog weather

1.3 Appearance

1.4 Port definition

1.4.1 LPR Camera

◆ Wiring terminal diagram

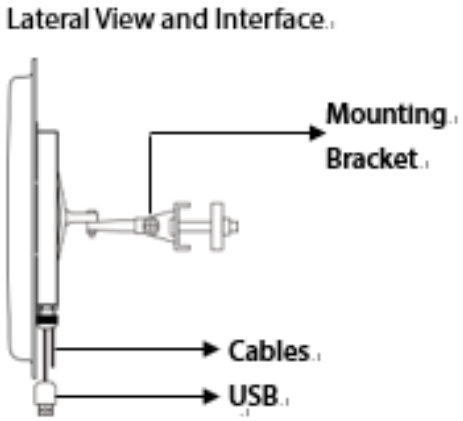


◆ Port description

Pin	Description
GND 12V	12V DC power input. Pay attention to the positive and negative electrodes.
Ethernet Interface	Standard Ethernet RJ45 socket, 10M/100M adaptive
NO1 COM1 NC1	Relay output for connecting to the barrier gate
NO2 COM2 NC2	Relay output, which is a reserved port
AUX2 GND AUX1	Auxiliary input
AUDIO_OUT GND AUDIO_IN	Audio input/output
485B2 485A2	Reserved port for RS485 transparent transmission function
GND 485B1 485A1	RS485 transparent transmission port for connecting to the display screen and voice module of the parking system
GND RST	Reset
GND WD0 WD1	Wiegand out

- **Power In:** The power interface is connected to a power adapter. The voltage of the camera is DC 12V, and the current is 1A. Do not use other power supplies; otherwise, the camera will be damaged.
- **Ethernet Interface:** The network port allows the camera to connect to a network device, such as a switch, router, or hub.

1.4.2 UHF reader



Cable Definition

NO	Color	Function
1	Red	+12V
2	Black	GND
3	Purple	Trigger Point (Active-low)
4	Green	Wiegand D0
5	White	Wiegand D1
6	USB Connector	

NOTE:

(1) In "Trigger Read" work mode, the reader will not read cards before a low level signal to "Trigger Point" is delivered. "Trigger Point" is mainly used for working with the ground sensor of vehicle parking system.

(2) In "Always Read" work mode, once the card in the effective range, the reader will output the card number via Wiegand continually.

1.5 System Requirements

- The PC used to display images and control the camera has the following requirements: CPU: Intel Pentium 4 2.4 GHz or above.
- RAM: 1G or above.
- Network port: 100M Ethernet port.
- Operating system: 32-bit or 64-bit operating system, such as Windows 7 ,Windows 8, Windows 10.
- Internet Explorer: Microsoft Internet explorer 6.0 or later.

2 Connection

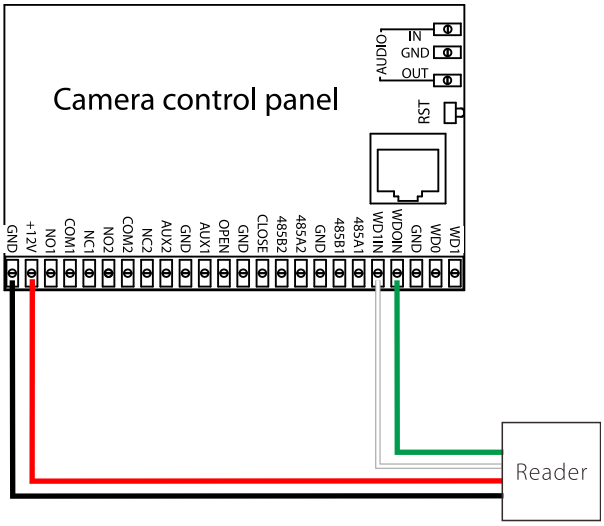
2.1 Connection Setup

The camera is connected to a switch or a PC over the standard Ethernet port.

The reader is connected to the camera by Wiegand.

The camera and reader are connected to a DC 12V 1A power adapter.

If the camera is connected to a central power supply, the power input polarity and the power interface must be connected correctly.



2.2 Network Settings

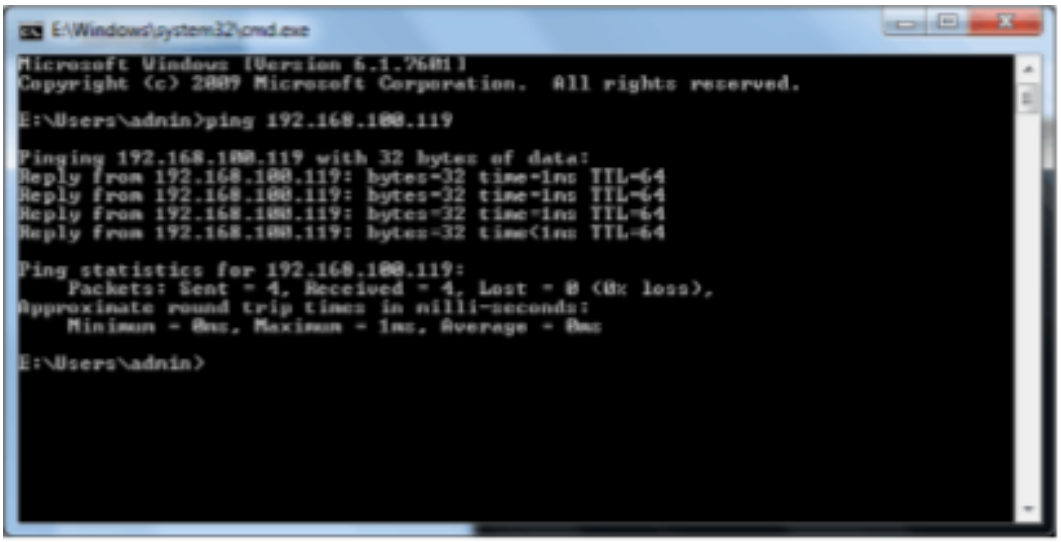
Network and IP Address Configuration Set the IP address of the camera to be in the same network segment as the PC.

Note: IP addresses in the same LAN cannot be the same; otherwise, IP address conflict will cause device malfunction.

Default Parameter Settings Set the **IP address**, **gateway address**, and other information of the camera properly before use. You can modify the default parameter settings according to requirements. IP address: 192.168.1.88(Remarks: The device model is displayed on the label attached to the device enclosure.) **Subnet Mask:** 255.255.255.0 **Gateway:** 192.168.1.1 2.2.2

Connectivity Test After you set the camera IP address, click Start > Run in the lower left corner of the

PC screen, type cmd in the Run dialog box, and type Ping+camera IP address (for example, Ping 192.168.0.18) in the command prompt window, in order to test the connectivity between the PC and the camera.



If the message "Request timed out" or "Destination host unreachable" is returned, the PC and the camera are not connected properly. **Do the following:**

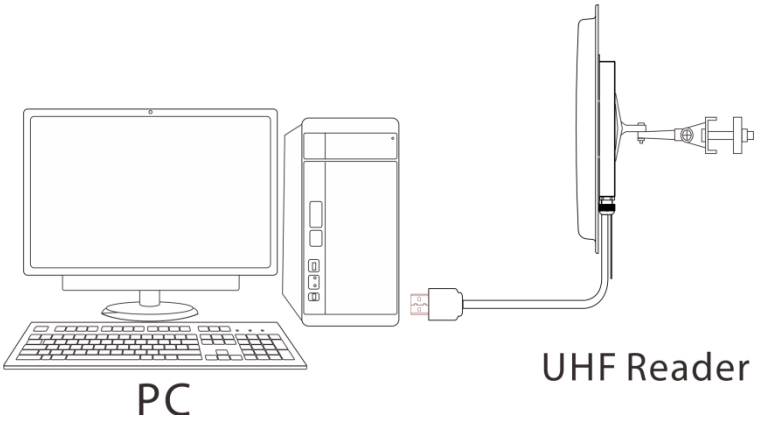
(1) Check whether hardware connection is correct.

(2) Check whether the TCP/IP addresses of the PC and the camera are in the same network segment.

(3) Check whether the ping command is disabled. If you are not certain, contact your network administrator.

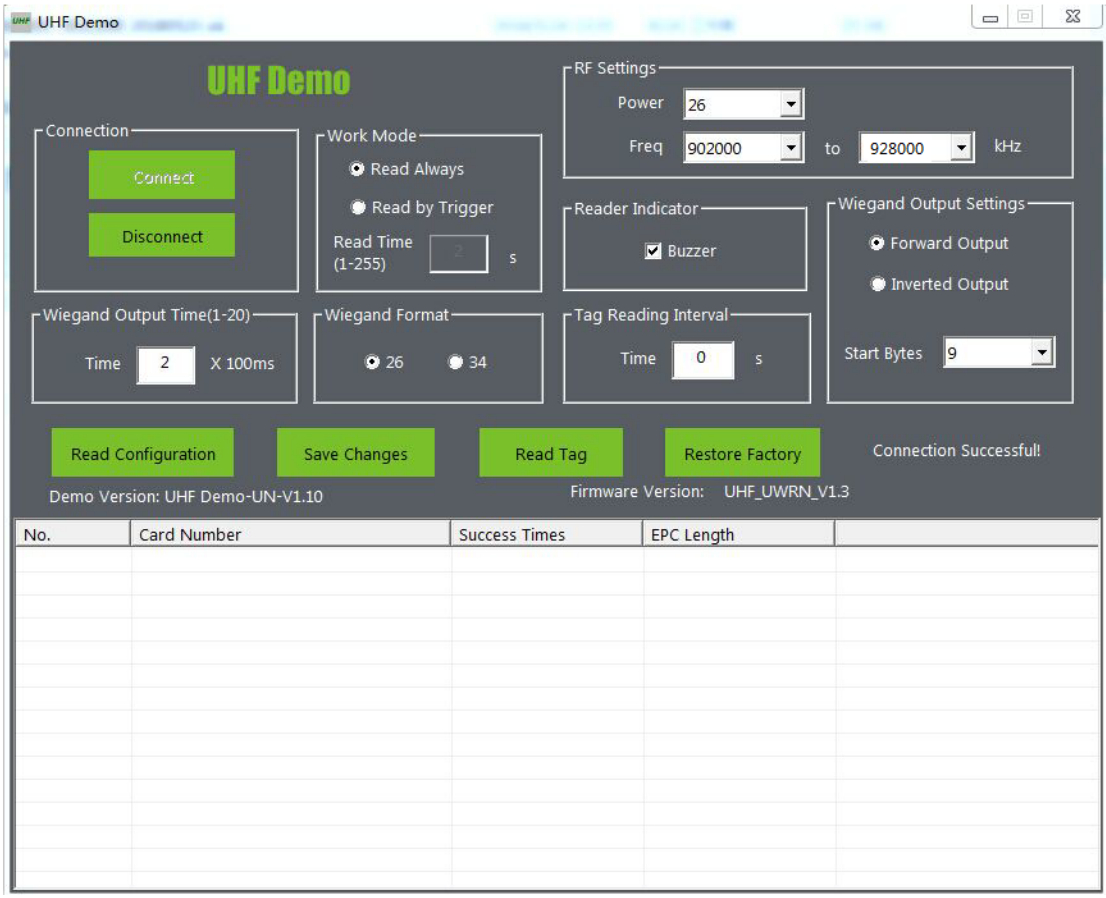
3 Reader modifying setting via demo

3.1 USB Connection



3.2 Software Introduction

Our company provides Demo, used to set the working parameters of the reader. Demo interface as shown below:



The default configuration of the reader is as follows:

Work Mode	Read Always
Communication Interface	Wiegand26
Output Power	33dBm
Working Frequency	UHF 6E Pro: 865MHz ~ 868MHz;

Demo Using Instructions

- Connect the USB port of the reader to the USB port of the computer.
- The power adapter is recommended to use the DC12V/3A specification. Power supply to reader, and the buzzer sounds once.
- In the computer to open Demo, click "Connect", on the right side of the middle will show "Connect Successful", and machine and demo connection success.
- **Wiegand Output Time**: Sets the time interval between adjacent wiegand data.
- **Reader Indicate**: Set whether the buzzer rings when the machine is on the electricity and brush the card.
- **Work Mode**: Set the working mode of the machine, and including always read mode, trigger mode. Under trigger mode, time of reading card can be set when it is triggered once.
- **RF Setting**: Set the RF parameters of the machine, including power, spectrum. Power range is 10~33dBm.
- **Wiegand Format**: Set the machine's wiegand output format.
- **Wiegand Output Settings**: Sets the forward or reverse output of the machine's Wiegand Data, and start output from the first few bytes.

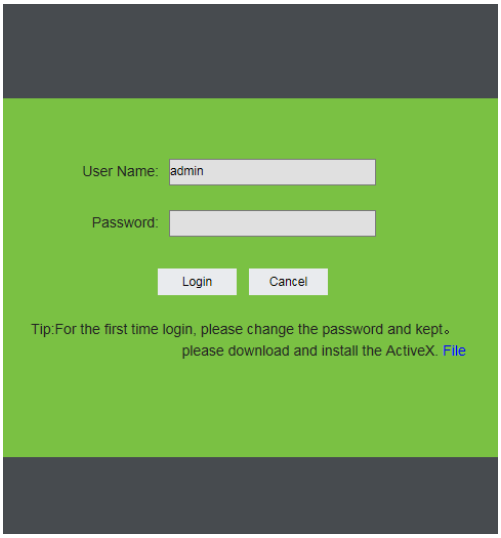
Tag Reading Interval: Set the machine to read the card interval. Read card interval is the time when from the card is read within the scope of the card to the card is left out of the scope of the card to read the second time card.

4 Camera Access over a Web Browser

This chapter describes how to access the camera over a web browser.

4.1 Login

Type the IP address (default: 192.168.0.88) of the camera in the address bar of a web browser. Then input your user name and password (default: admin). The dialog box shown in the following figure is displayed.



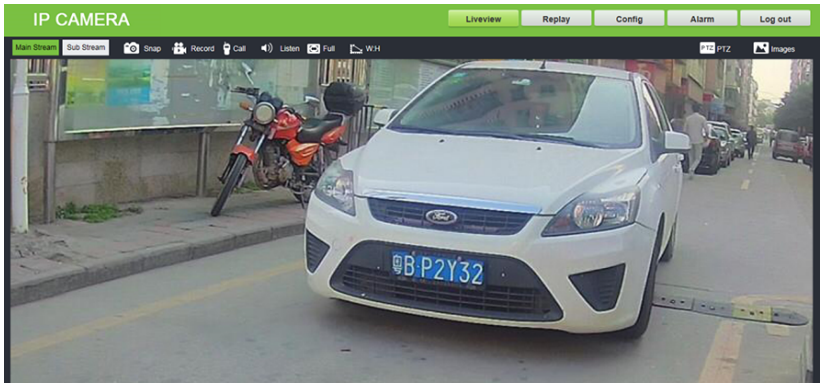
Control installation upon initial login:

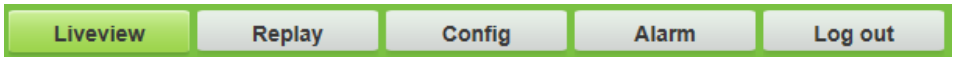
If you access the device for the camera for the first time, you are asked to download a control. Please manually download and install the control. The control name is WebVideoActiveXPlus.exe.

Click [File] to download the WebVideoActiveXPlus.exe control, select the downloading path and click [Download]. After the downloading is completed, access WebVideoActiveXPlus.exe to install it. The security prompt may be displayed during the installation. Click [Yes] to continue the installation.

Note: The WebVideoActiveXPlus.exe control must be installed for viewing videos over a web browser.

After the installation is completed, return to the Web browsing page. Log in to browse the following video, as shown in the following figure.



Menu Bar: 

- Liveview: Click to access video preview, where you can perform simple operations.
- Replay: Click to access the video playback page, where you can search for required videos based on actual conditions for playback.
- Config: Click to access the configuration page, where you can view or modify the camera parameters, including Local Config, Audio Settings, Video Settings, Smart, Network Settings, Storage Settings, Alarm Settings, COM Settings and System.
- Alarm: Click to access the alarm page, where you can search for alarm records.
- Log out: Click to log out.

4.2 Liveview

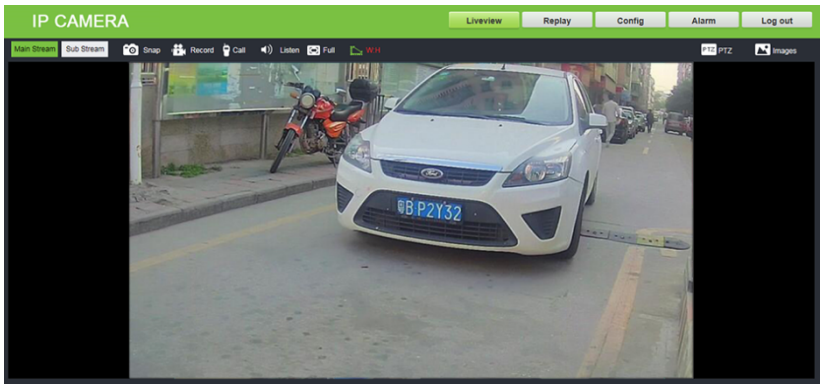
After login, you can access the Liveview page. The Liveview page comprises the shortcut bar and video area.

Shortcut : Including Main Stream, Sub Stream, Snap, Record, Call, Listen, Full, W:H, PTZ and Images.

- Main/Sub Stream: Click to switch the main/sub streams. For specific parameters of the main/sub streams, see 2) video code in Video Settings
- Snap: Click to snapshot. For the storage location, see Local Config. The snapshots are saved to a directory named after the IP address of the device, and time information is used as the file names of the snapshots. For example, the file name of a snapshot is 15_36_05.jpg, and saved in the

directory 192.168.222.88(5000). This indicates that the device IP address is 192.168.222.88 and the snapshot time is 15:36:05.

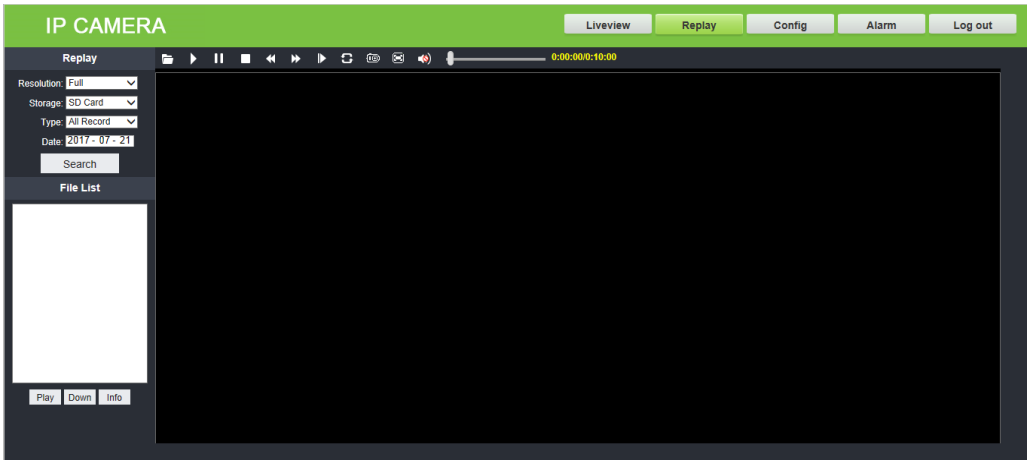
- Record: Click to record videos. For the storage location, see Local Config. The videos are saved to a directory named after the IP address of the device, and time information is used as the file names of the videos. For example, the file name of a video is 15_45_28.264, and saved in the directory 192.168.222.88(5000). This indicates that the IP address of the device is 192.168.222.88, the video recording time is 15:45:28, and .264 indicates the file type.
- Call/Listen: Click to call/listen.
- Full: Click to display a video on the full screen. You can click Esc on the keyboard to exit the full screen.
- W:H : Click to scale down the display screen, and click it again to restore the original size.



- PTZ: This module is only applicable to cameras supporting the PTZ function. It is used for focal length changing, zooming, and preset bit (1~255 bits) setting or calling.
- Images: It is used to adjust the luminance and chrominance of videos, including the brightness, contrast, hue, and saturation. Click [Default] to restore the default values.

4.3 Replay

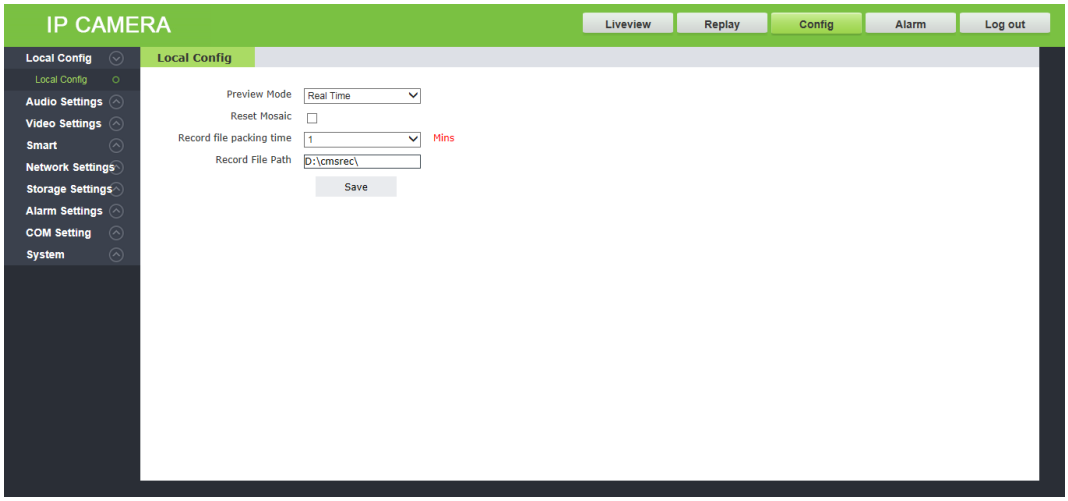
You can set conditions to search for videos based on requirements. The search results are displayed in the File List. You can perform operations such as playing, downloading, and viewing of the downloading information list.



- Resolution: It indicates the resolution of videos. You can choose Full, 4:3, 16:9 or 11:9.
- Storage: It indicates the location for storing videos. You can choose SD Card or PC.
- Type: It indicates the video type. You can choose All Record, Alarm Record, Schedule Record or Picture.
- Date: It indicates the video date. You can modify the date manually.

4.4 Config

You can view or modify camera parameters, including Local Config, Audio Settings, Vedio Settings, Smart, Network Settings, Storage Settings, Alarm Settings, COM Settings and System.



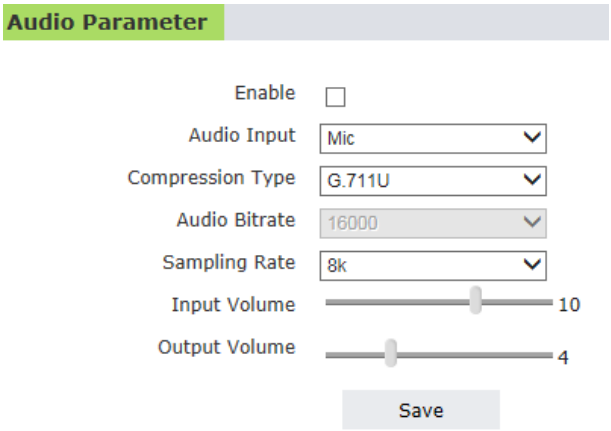
4.4.1 Local Config

It is used to view or set local configurations. You can set it based on actual conditions, and then click [Save].

- Preview Mode: Choose Real Time or Fluency.
- Reset Mosaic: You can select this option to remove it.
- Record file packing time (Minutes): It has eight options: 1, 5, 10, 15, 20, 25, 30 and 60.
- Record File Path: It indicates the storage path of videos or snapshots in the camera, which is D:\cmsrec\ by default. Videos are saved to the manual directory and snapshots are saved to the image directory.

4.4.2 Audio Parameter

It is used to view or set audio attributes. You can set it based on actual conditions, and then click [Save].

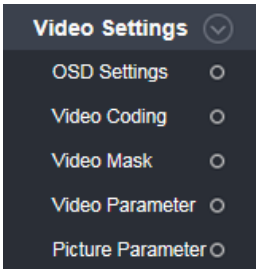


- Enable: It enables audio after being selected and disables audio after being deselected.
- Audio Input: It indicates the audio input mode. You can choose Mic or Line In.
- Compression Type: It indicates the audio compression format. You can choose G.726, G.711A or G.711U.
- Audio Bitrate: Also called bit rate, which indicates the number of bits that are used to present the encoded (compressed) audio data every second. It cannot be set. The higher the bit rate, the clearer the images, the better the effect, and the higher the resource usage.
- Sampling Rate: It indicates the number of times that the recording device samples audio signals in a second.

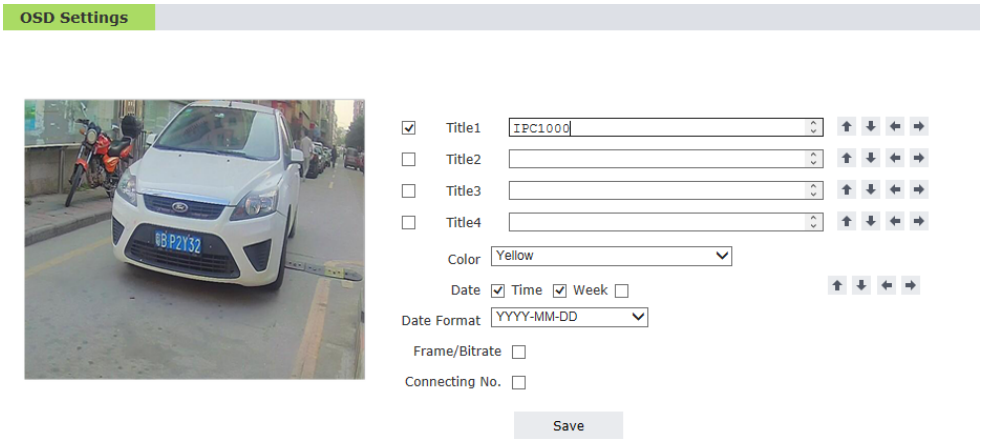
- Input / Output Volume: It indicates the volume of audio input/output. The adjustable range is 0~15.

4.4.3 Video Settings

It is used to view or set the video parameters of the camera, including OSD Settings, Video Coding, Video Mask, Video Parameter and Picture Parameter.

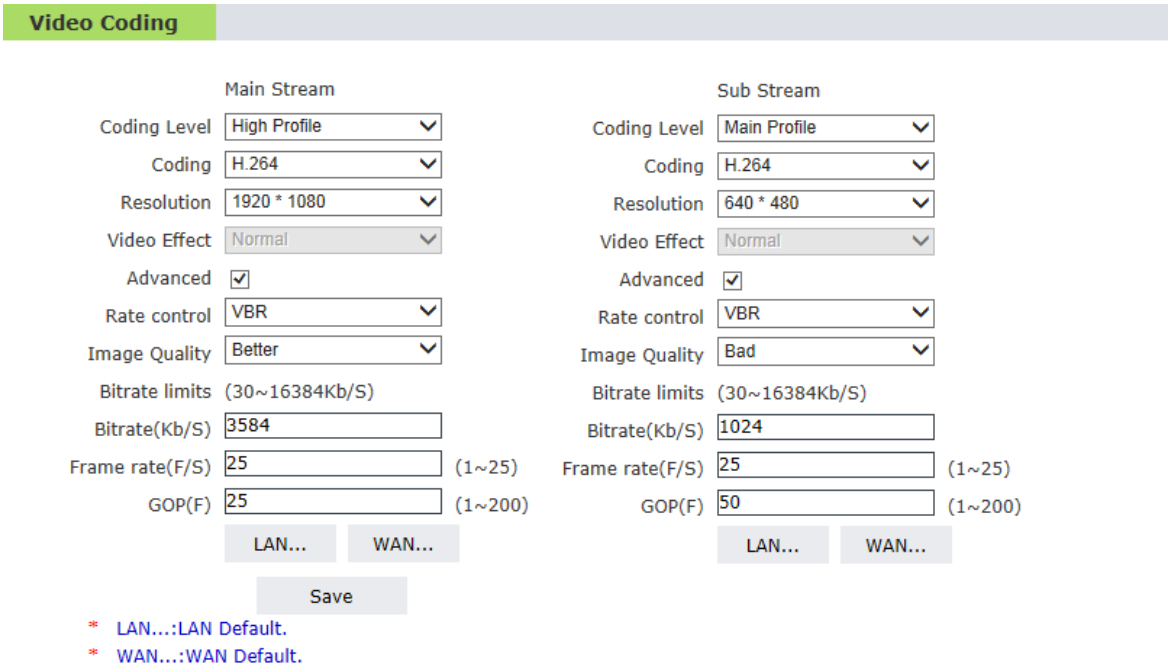


1) OSD Settings: The setting text, date, time and other information can be displayed on the Liveview page. The OSD settings comprise text OSD, date OSD, and time OSD. All items can be displayed only after being selected. You can set the information based on actual conditions, and then click Save. The Liveview settings can be displayed on the left side after being saved.



- Color: It indicates the text color. You can choose White, Black, Yellow, Red or Blue.
- Date Format: You can choose YYYY-MM-DD, MM-DD-YYYY or DD-MM-YYYY.

2) Video Coding: It is used to view or set video code, including the parameters of Main Stream and Sub Stream. You can set this item based on actual conditions, and then click [Save].



- Coding Level: It indicates the level of video coding. You can choose Baseline, Main Profile or High Profile.
- Coding: It indicates the coding format. You can choose H.264, MJPEG or H.265.

Note: The coding level is related to the coding algorithm. When the coding algorithm is H.264, the coding levels comprise Baseline, Main Profile and High Profile. When the coding algorithm is MJPEG or H.265, the coding level cannot be edited.

- Resolution: You can choose 1920 x 1080 or 1280 x 720 for Main Stream; and choose 704 x 576, 640 x 480 or 320x 240 for Sub Stream.
- Video Effect: You can choose Fine, Normal and Basic. When Advanced is selected, the video effect cannot be edited.
- Advanced: You can edit the following items only after selecting this item.

➢ Rate control: Choose VBR or CBR.

VBR: It is used when the image quality is constant and the network bandwidth is sufficient.

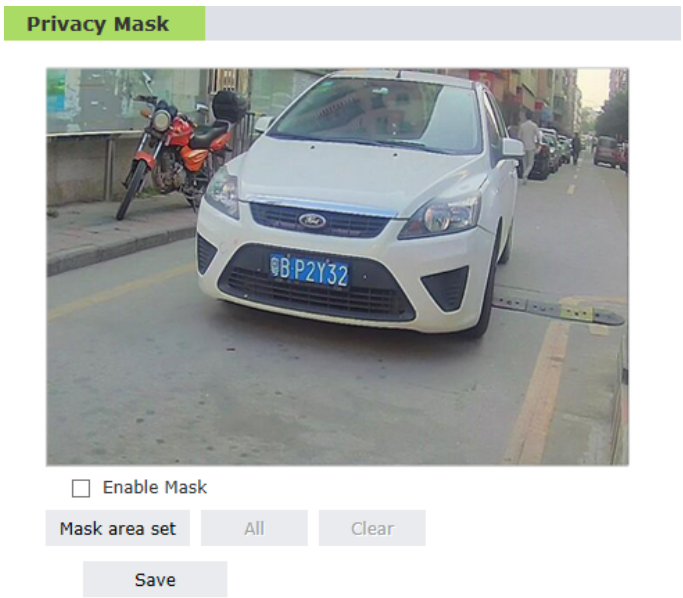
CBR: Images are transmitted over a fixed bandwidth.

➢ Image Quality: You can choose Best, Better, Good, Bad, Worse or Worst. The higher the image quality, the clearer the images, the better the effect, and the higher the bit rate.

- Bitrate limits: The setting range is 30~16384Kb/S.
- Bitrate(Kb/S): It indicates the upper limit of the bit rate, which can be manually input. The higher the bit rate, the higher the resource usage, and the better the image effect.
- Frame rate(F/S): It indicates the number of compressed frames transmitted by the network module every second. The more frames, the more coherent the images, but the lower performance of the CPU in processing other events. The setting range is 1~25.
- GOP(F): An I frame is a complete key frame and may not be used by other frameworks. I frames are important frames in compressed code between frames, and the adjustment of the interval between I frames may affect the GOP length (the number of frames between two I frames), and then affect the speed of GOP reading. If the interval between I frames is too large, B/P frames have to be used where I frames must be used. In this case, the image quality will be reduced. Therefore, a large interval between I frames may not be good. The setting range is 1~200.

✍Note: After selecting Advanced, you can click to select LAN or WAN. Then, certain parameters in Advanced will be changed as well.

3) Privacy Mask: It is used to mask a certain area of the camera.

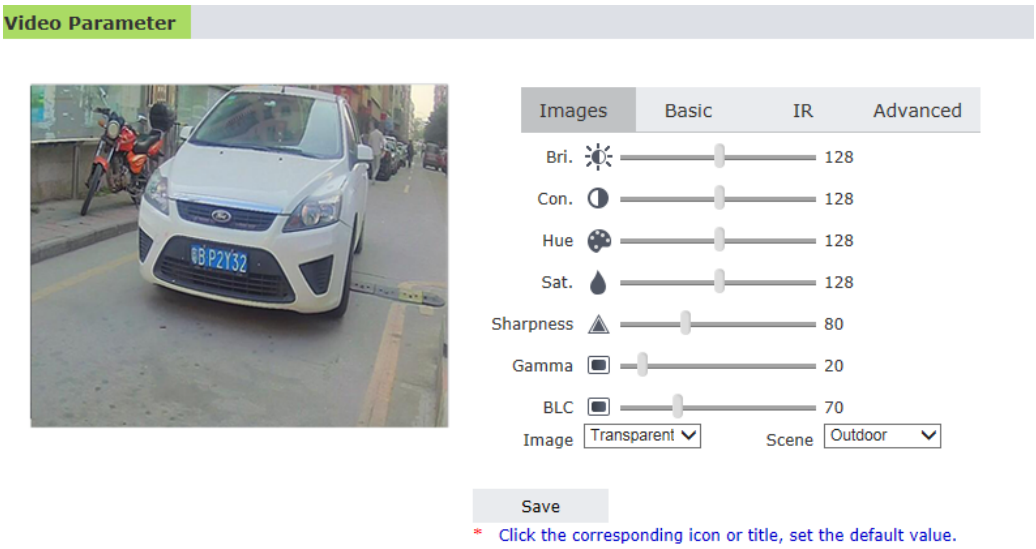


You can use this function only after selecting Enable Mask. At first, click Mask area set, and then drag the area to be marked by using the mouse (you can drag multiple areas). You can also select to

mark all. To clear masking, click Clear. You can set this item based on requirements, and then click [Save].

✍Note: Click Clear to clear all masked areas.

4) Video Parameter: It is used to set video parameters, including Images, Basic, IR and Advanced.



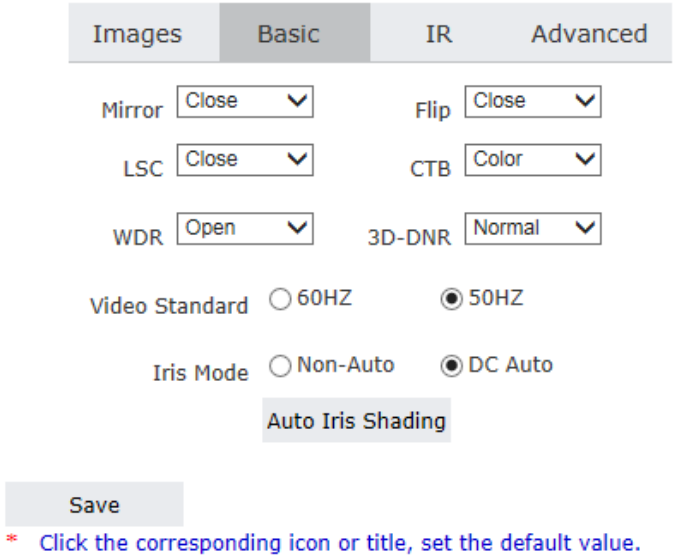
(1) Images: It is used to set the brightness, contrast, hue, saturation, sharpness, and other parameters of the camera images.

- Bri.: It indicates the lighting strength at a unit projecting area. Increasing the brightness helps improve the general image effect; however, high brightness may cause insufficient transparency of images. The setting range is 0~255.
- Con.: It is the key to the visual effect. Generally speaking, the higher the contrast, the clearer the images, and the more distinct the color. A lower contrast makes the entire image dim. The setting range is 0~255.
- Hue: The color is presented by brightness and hue. Hue indicates the color properties excluding the brightness and shows the tone of colors. The setting range is 0~255.
- Sat.: It indicates the brilliance of a color, and is also called the purity of a color. The higher content of coloration, the higher the saturation. The higher content of decoloration, the lower the saturation. The setting range is 0~255.

- Sharpness: It is also called definition and is an indicator showing the plane definition and edge sharpness of images. If the sharpness is increased, the detailed contrast on the image plane is higher, and the images are clearer. However, if the sharpness is too high, black lines may be lined with white lines, and images look distorted and dazzling. The setting range is 0~255.
- Image: You can choose Transparent or True Color.
- Scene: You can choose Outdoor, Indoor1 or Indoor2.

Note: Click the corresponding icon or title, set the default value.

(2) Basic: It is used to set functions such as Mirror, Flip, CTB, WDR and 3D-DNR of the camera.



- Mirror: After you select Open, videos are mirrored left and right.
- Flip: After you select Open, videos are turned up and down.
- LSC: After you select Open, videos are automatically calibrated.
- CTB:
  - ➢ Color / B and W: It is used to fix images to the colored or black and white mode.
  - ➢ Auto: It is used to automatically change images to the colored or black and white mode based on the video light acquired by the camera.
- WDR: It is a technology used to enable the camera to see the features of images under very

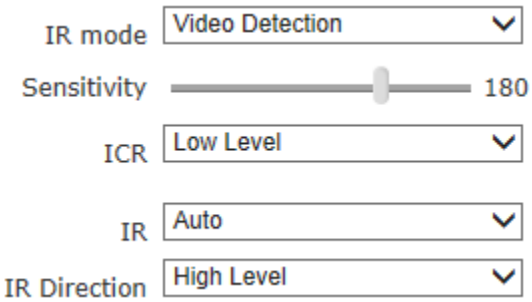
strong contrast.

- 3D-DNR: The higher the 3D-DNR, the less noise points at night, and the lower the definition of images. You can choose Low, Normal, High, or Close.
- Video Standard: It indicates the anti-flash frequency. 50 Hz is commonly used in China, whereas 60 Hz is commonly used in foreign countries.
- Iris Mode: Choose Non-Auto or DC Auto. Auto Iris Shading is available only when you select DC Auto.

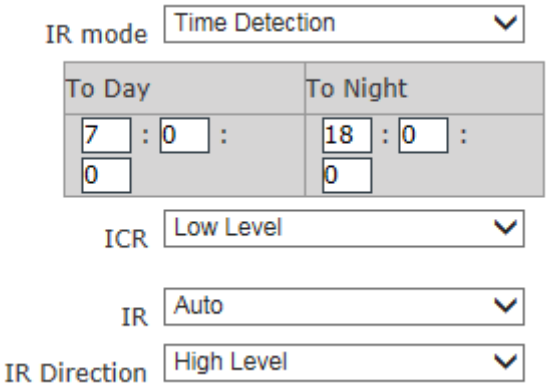
(3) IR: It is used to set the IR Mode, ICR, IR and IR Direction of the camera.

- IR mode: You can choose Video Detection, Time Detection or IR Detection.

➢ Video Detection: If IR mode is set to Video Detection, you can set Sensitivity. The setting range is 0~255.

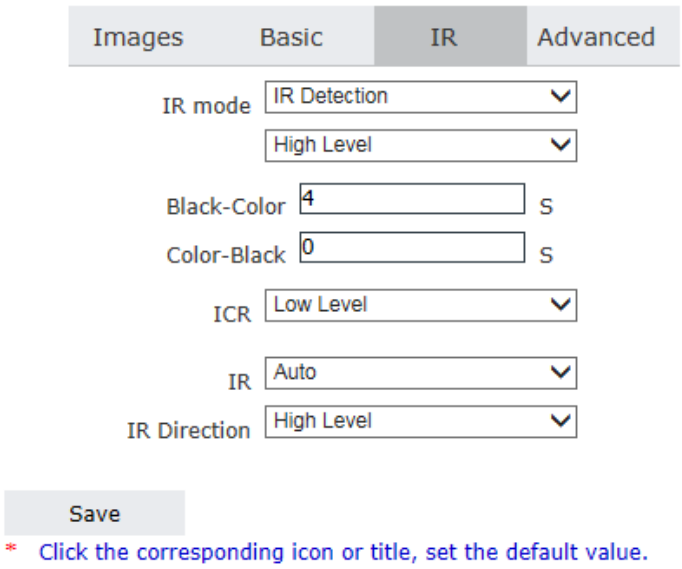


➢ Time Detection: If IR mode is set to Time Detection, you need to set the time of To Day and To Night manually.



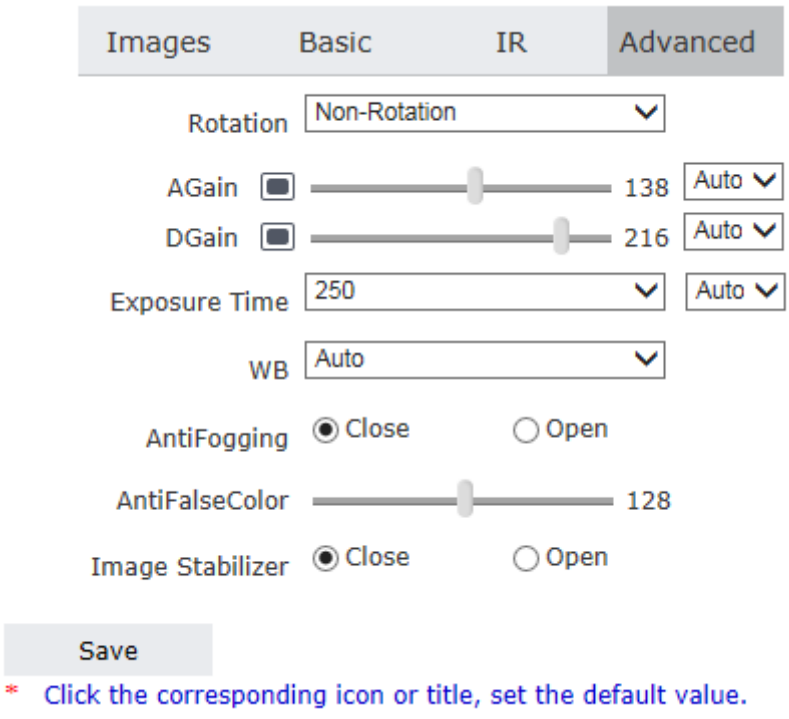
➢ IR Detection: If IR Mode is set to IR Detection, you need to select the detection mode (Low

Level, High Level or Auto Detection) and set the time (in seconds) of Black-Color and Color-Black.



- ICR: Choose Low Level or High Level.
- IR: You can choose Auto, Open or Close.
- IR Detection: Choose Low Level or High Level.

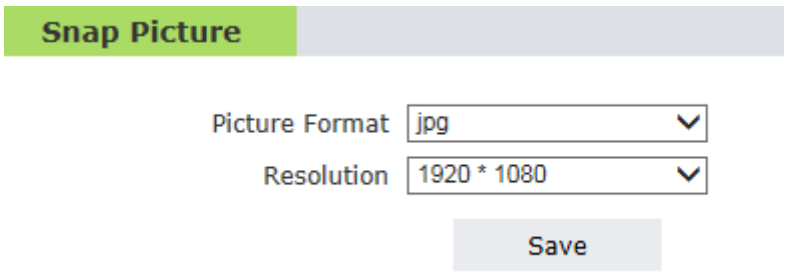
(4) Advanced: It is used to set Rotation, AGain, DGain and WB of the camera.



- Rotation: It is used to control the video rotation. You can choose Non-Rotation, 90 Rotation or 270 Rotation.
- AGain/DGain: It is an automatic adjustment method that ensures the gain of the amplification circuit automatically varies with the signal strength. The higher the gain, the higher the brightness at night. You can adjust the gain based on actual conditions. If the gain is too high, the images may become hazy. The setting range is 0~255.
- Exposure Time: It indicates the exposure time of videos. You can choose 12, 25, 30, 35, 50, 100, 150, 200, 250, 300, 400, 500, 1000, 2000, 4000, 6000 or 8000.
- WB: It indicates the balance of white. It can restore white objects into white under any light source. You can choose .Auto or Manually.
- AntiFogging: In bad weather such as fog or haze, images shot by cameras may have such problems as lower contrast, lower definition, and changed colors. You can solve the preceding problems by enabling the antifogging function.
- AntiFalseColor: It is used to eliminate the color interference among textures.
- Image Stabilizer: It is used for anti-shaking of images after being enabled.

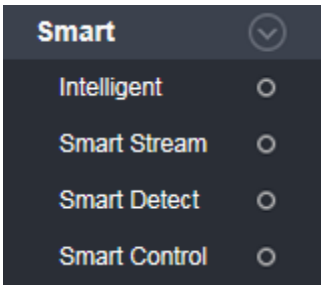
✍Note: Click the corresponding icon or title, set the default value.

5) Snap Picture: It is used to set the parameters of snap pictures, including Picture-Format and Resolution.

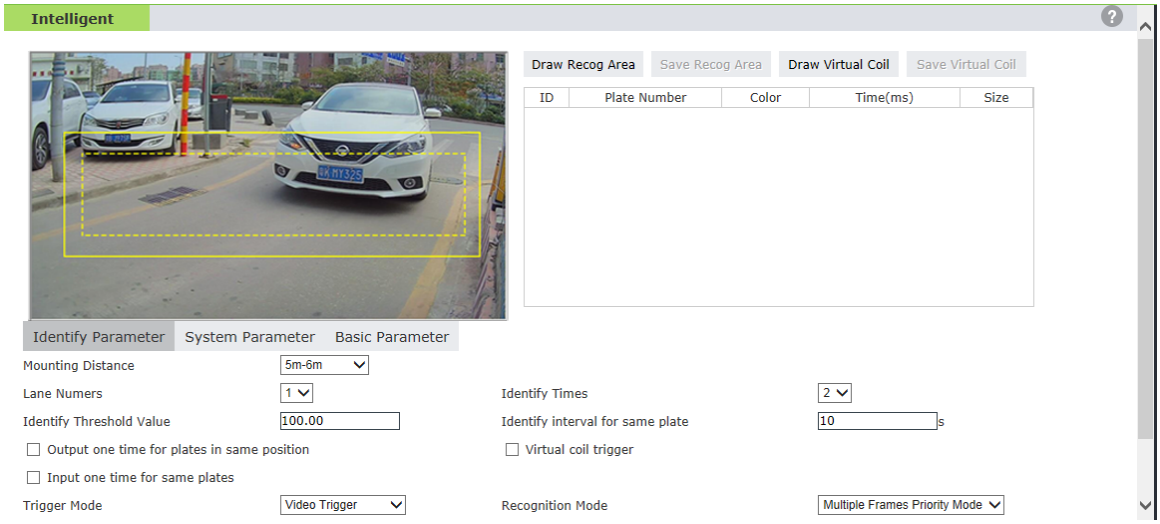


4.4.4 Smart

Smart includes Intelligent, Smart Stream, Smart Detect and Smart Control.



1) Intelligent: This camera can recognize license plate numbers by using an algorithm.



- Draw Recog Area: You can set the recognition area to shield unnecessary interference. Click [Draw Recog Area] to draw a recognition area in the image, and click[Save Recog Area] to save. The area is shown in a solid box.

- Draw Virtual Coil: The virtual coil controls triggering time of recognition results. Click [Draw Virtual Coil] to draw a coil in the image, and click [Save Virtual Coil] to save. The coil is shown in a dotted box. The virtual coil should be drawn inside the recognition area and complex background (such as deceleration strips or handrail) should be prevented inside the virtual coil.

✍Note: A recognition area / virtual coil must be drawn clockwise; otherwise, it is invalid.

- Identify Results: The identified results are displayed in the box on the right of the page, including ID, Plate Number, Color, Time and Size.

- Identify Parameter:

  - Mounting Distance: It indicates the identification distance of a license plate. The default value is 3.5m-4.5m.

- Identify Times: It indicates the times that the results need to be identified before being output. You can choose 2, 3, or 4 times.
- Identify Threshold Value: It indicates the reliability of identification, which needs to be input manually.
- Identify interval for same plate: It indicates the interval for outputting the identification results of the same license plate again, which needs to be input manually. The unit is second.
- Output one time for plates in same position: It ensures that the identification results for license plates in the same position (still) are output only once. You can enable this function by selecting this item.
- Virtual coil trigger: When a vehicle enters the virtual coil, the license plate identification result is output. You can enable this function by selecting this item.
- Input one time for same plates: It ensures that the identification results for the same license plate are output only once. You can enable this function by selecting this item.
- Trigger Mode: It indicates the conditions for triggering license plate recognition. You can choose Video Trigger, Sense Coil Trigger or Mixture Trigger.
- Recognition Mode: Choose Single Frame Mode or Multiple Frame Optimization Mode.
  - Single Frame Mode: It is used to recognize a single picture and then output the result.
  - Multiple Frame Priority Mode: It is used to recognize multiple pictures and then output the results.
- Upload Mode: It indicates the mode for uploading picture data. Only SDK uploading is supported.
- Output Filter: It indicates the output mode for recognition results. You can choose Full Output, Filter vehicle far away or Filter vehicle nearby.

- System Parameter:
  - The brake work mode: It indicates the mode for triggering brake opening. You can choose

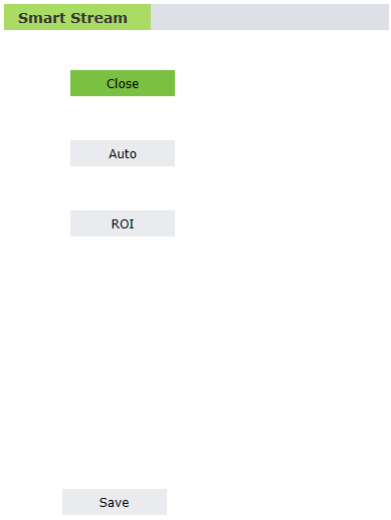
Identify is open, Only the black list is not open, Only white list is open or PC open.

- Brake work delay: It indicates the output duration of brake signals, which needs to be manually input and in the unit of millisecond.
- Whether reversal signal: It indicates whether brake signals need to be reversed. If this item is selected, it indicates brake signals need to be reversed.

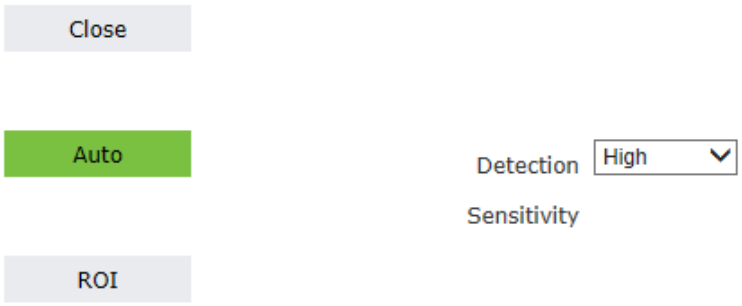
- Basic Parameter:
  - Show Recognition Area/Virtual Coils: You must select this item to display the drawn recognition area or virtual coil on the page.
  - Test: Including Test Voice, Test LED Screen and Test Barrier.

2) Smart Stream: It is Close by default. You can enable Auto or ROI.

- Close:

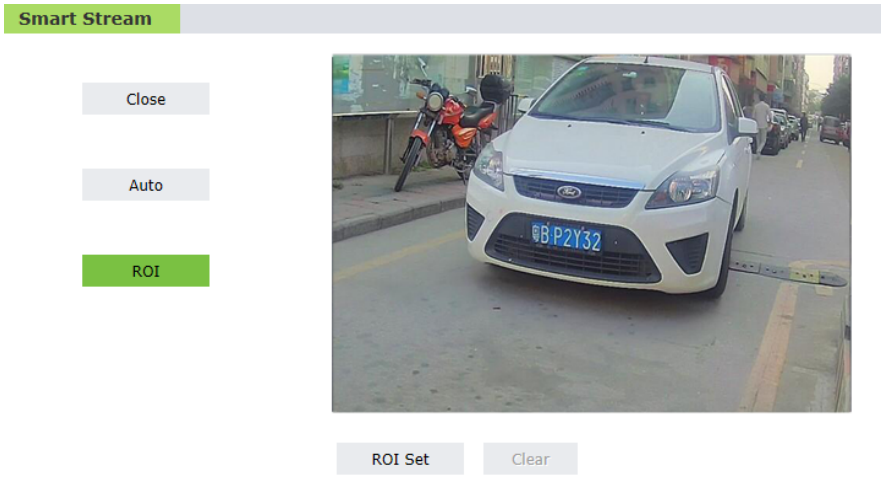


- Auto: After Smart Stream is enabled, the image quality is automatically reduced when videos are still, and the image quality is automatically improved when videos are in motion.

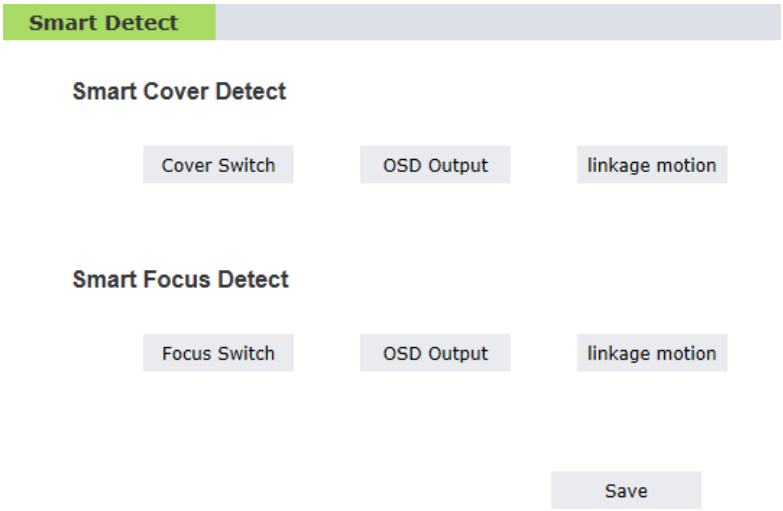


- ROI: After you click to enable ROI, a maximum of four ROI regions are supported to improve the regional image quality. Click ROI Set, and then drag smart regions (up to four regions) in the image by using the mouse. To clear the regions, click Clear. You can set this item based on requirements and then click [Save].

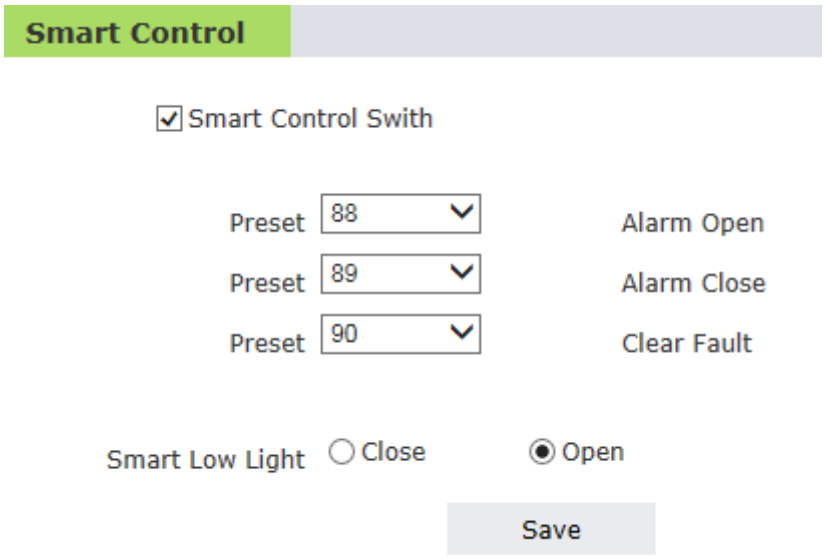
Note: Click Clear to clear all smart regions.



3) Smart Detect: Including Smart Cover Detect and Smart Focus Detect. It is selected after being clicked and canceled after being clicked again.

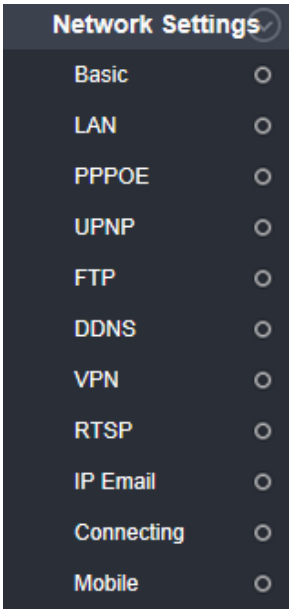


4) Smart Control: Preset information is displayed only after Smart Control Switch is selected. The setting range of Preset is 0~99.

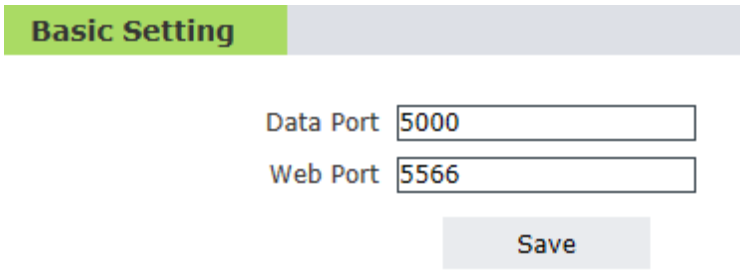


4.4.5 Network Settings

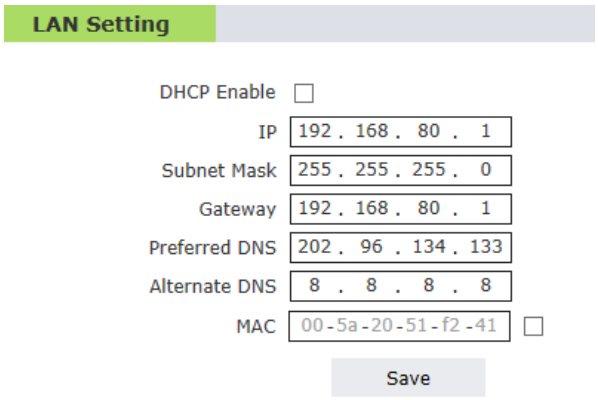
View or set network parameters of the camera, including Basic, LAN, PPPOE, UPNP, FTP, DDNS, VPN, RTSP, IP Email, Connecting and Mobile.



1) Basic: It indicates the port parameters, including Data Port and Web Port.



2) LAN: It indicates the related parameters of a wire network, including IP, Subnet Mask, Gateway, DNS and MAC.

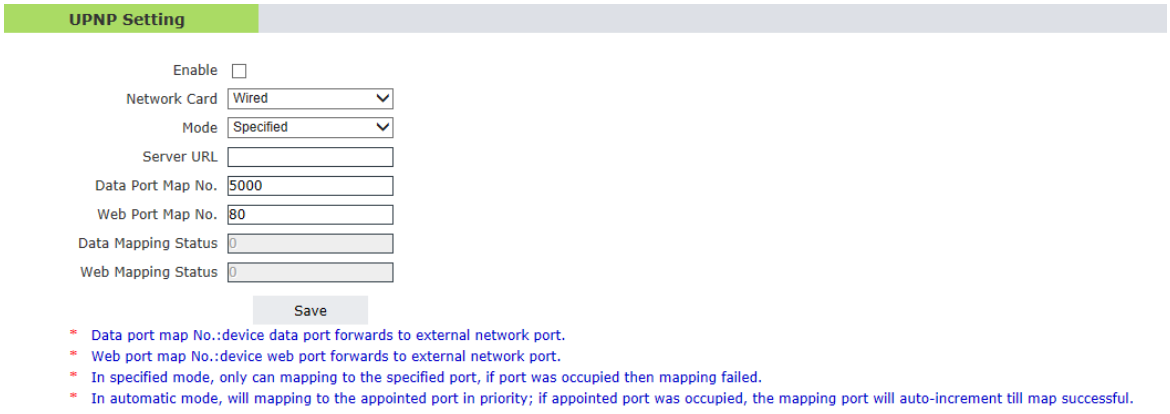


- DHCP: It is Dynamic Host Configuration Protocol, one protocol in the TCP/IP protocol family. It is used to allocate dynamic IP addresses for network clients. After this item is selected, the IP address, subnet mask and gateway of the camera cannot be modified, and is allocated by the host automatically. Otherwise, you need to set network parameters and ensure that the IP

address and the gateway address are in the same network segment.

- MAC: You can edit this item after selecting the ☑ behind this item.

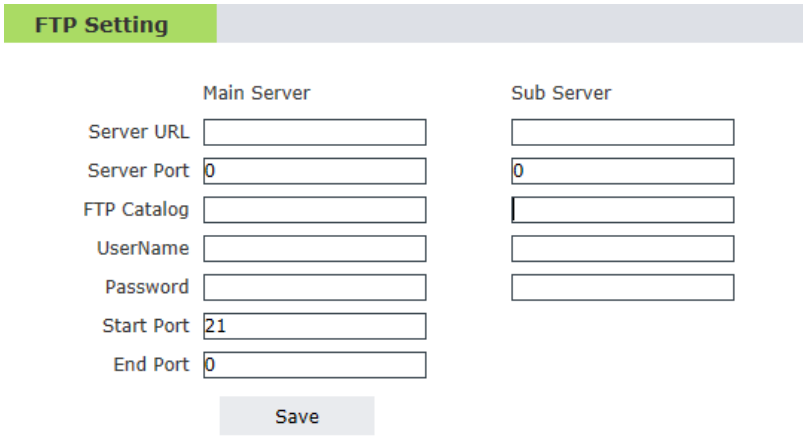
3) UPNP: It is used to set the automatic mapping of the port. This function can be used only after Enable is selected.



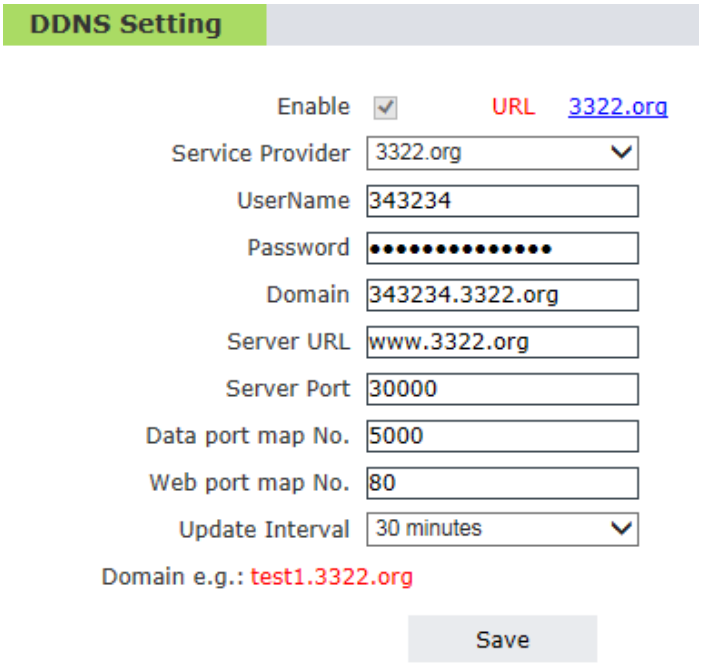
- Network Card: Choose Wired or WiFi.
- Mode: Choose Specified or Auto.
- Data Port Map No.: Device data port forwards to external network port.
- Web Port Map No.: Device web port forwards to external network port.

✍Note: In specified mode, only can mapping to the specified port, if port was occupied then mapping failed. In automatic mode, will mapping to the specified port in priority; if appointed port was occupied, the mapping port will auto-increment till map successful.

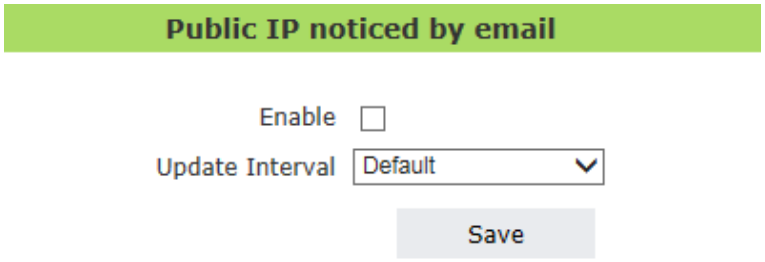
4) FTP: FTP FTP is an application-layer protocol based on the transmission layer. It serves users and is used to transmit files. The device transmits alarm data over FTP, including parameter settings for main server and sub server.



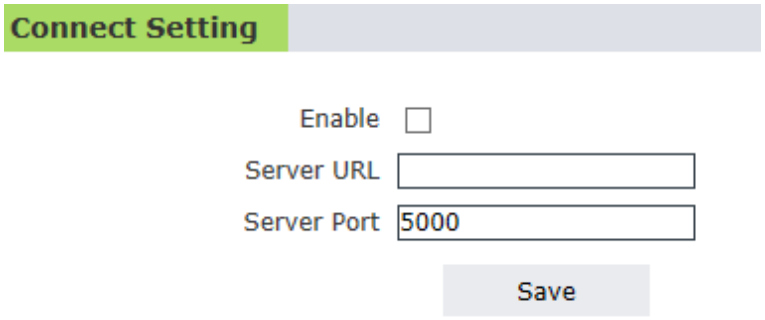
5) DDNS: It is used to map the dynamic IP address of a user to a fixed domain name resolution service. When the user accesses the network, the client program will transmit the dynamic IP address of the host to the server program on the host of the service provider. The server program provides the DNS service and implements dynamic resolution of domain names. In other words, the DDNS captures the user's IP address changed every time, and maps the IP address with the domain names to enable other online users to communicate with each other by using domain names. This function can be used only after Enable is selected.



6) IP Email: It indicates the IP email notifications of the public network (email notifications are sent when the device is started or the public IP address is changed). The update intervals include Default, 1 Hour, 2 Hour, 1 Day, 2 Days and 7 Days. This function can be used only after Enable is selected.

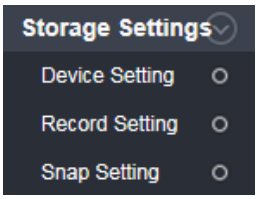


7) Connecting: This function can be used only after Enable is selected. You can set this item based on actual conditions, and then click [Save].

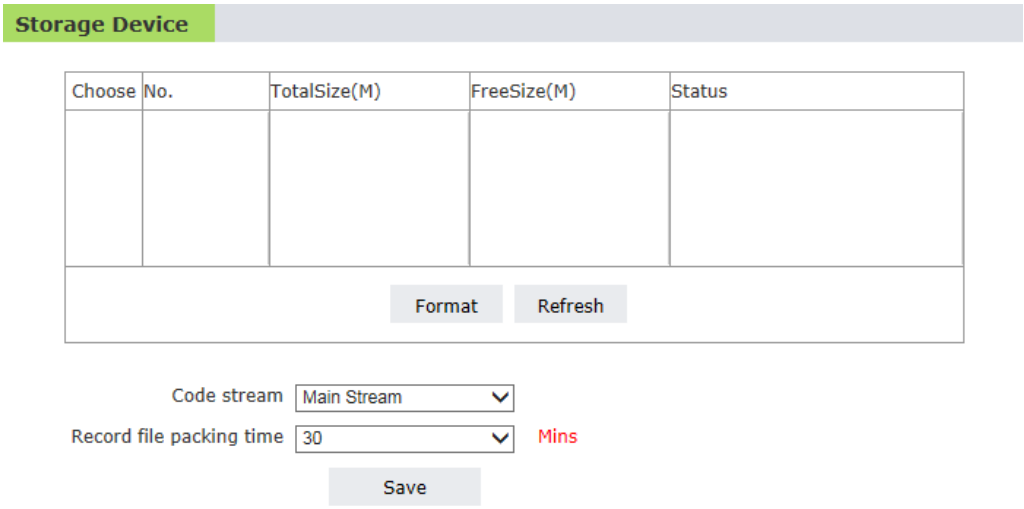


4.4.6 Storage Settings

Including Device Setting, Record Setting and Snap Setting.

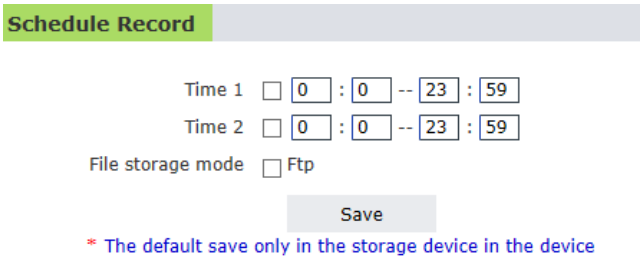


1) Storage Device: It indicates device management and is used to perform Format or Refresh operation on the device.

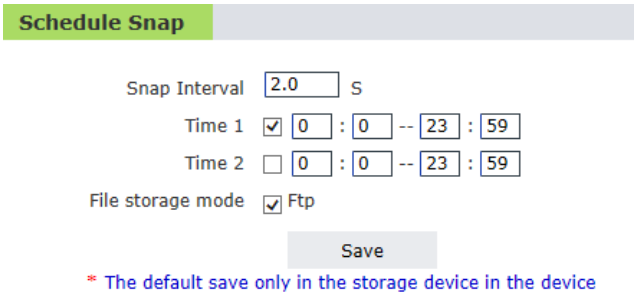


- Code stream: Choose Main Stream or Sub Stream.
- Record file packing time (Minutes): You can choose 5, 10, 15, 20, 25, 30 or 60.

2) Schedule Record: It is used to set scheduled recording. You can set Time and File storage mode based on actual conditions, and then click [Save].

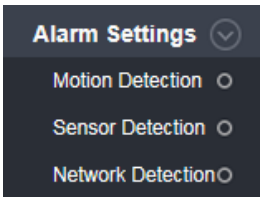


3) Schedule Snap: It is used to set scheduled snapping. You can set Snap Interval, Time and File storage mode based on actual conditions, and then click [Save].



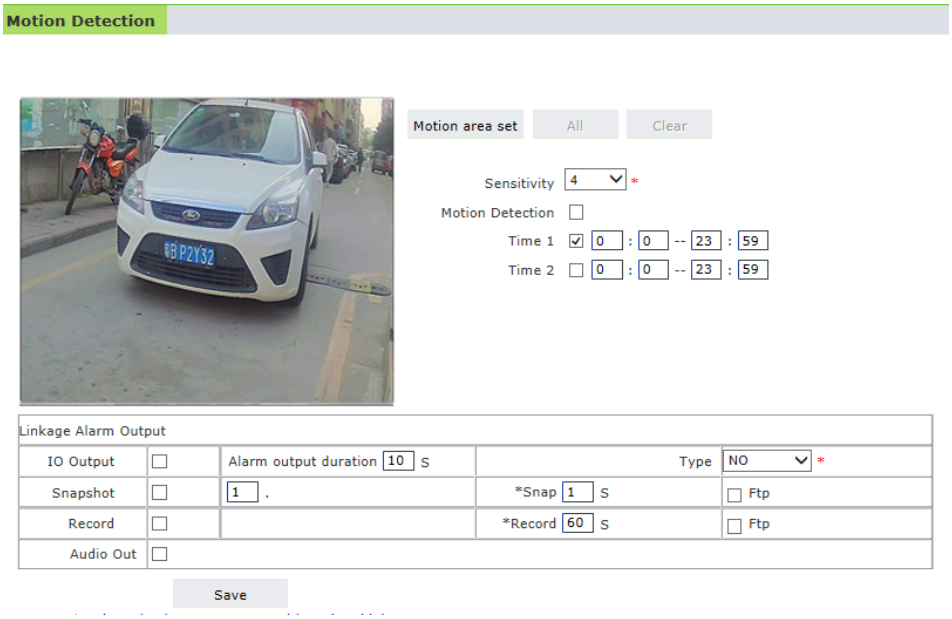
4.4.7 Alarm Settings

Including Motion Detection, Sensor Detection and Network Detection.



1) Motion Detection: It indicates motion detection and is used to set the detection region and alarm linkage. All items can be used only after this item is selected. At first Click Motion area set, and then drag detection regions (multiple regions can be dragged) in the image by using the mouse. To clear the regions, click Clear. You can set this item based on requirements and then click [Save].

✍Note: Click Clear to clear all detection regions.

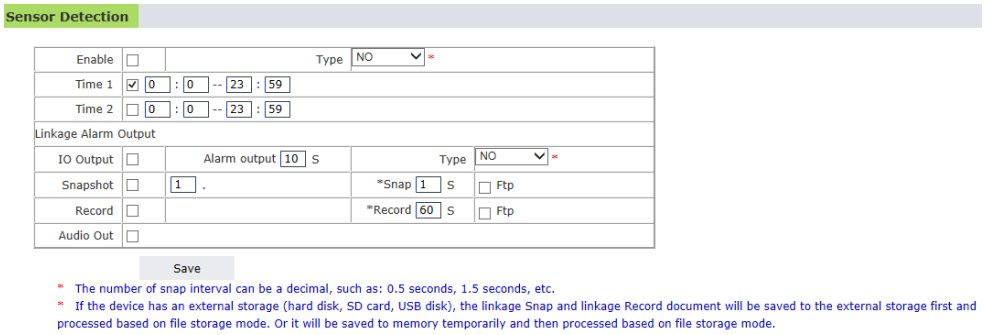


- Sensitivity: The setting range is 1~5. The larger the value, the higher the sensitivity.
- Motion Detection: It is often used for no-attendance monitored video recording and automatic alarming. You can enable it by selecting this item. Motion detection and alarming start 5 seconds later.
- Alarm output duration(s): It indicates the alarm output duration.
- Type: Choose NO or NC.
- Snap(s): The number of snap interval can be a decimal, such as: 0.5 seconds, 1.5 seconds, etc.

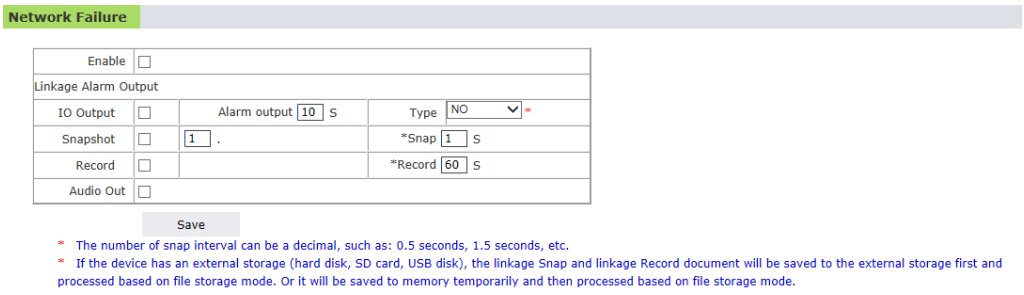
- Record(s): It indicates the recording duration.

✍Note: If the device has an external storage (hard disk, SD card, USB disk), the linkage Snap and linkage Record document will be saved to the external storage first and processed based on file storage mode. Or it will be saved to memory temporarily and then processed based on file storage mode.

2) Sensor Detection: It is used to set the sensor detection. You can use all the items after selecting this item.

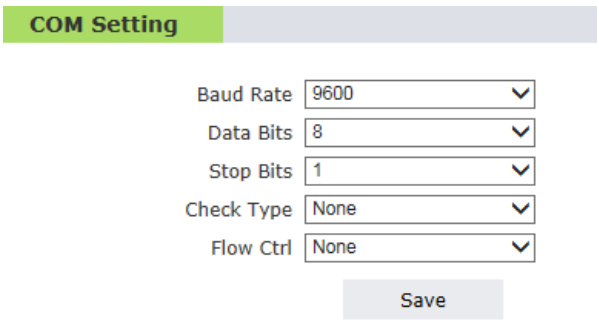


3) Network Failure: It is used to set alarms on network failure. You can use all the items after selecting this item.



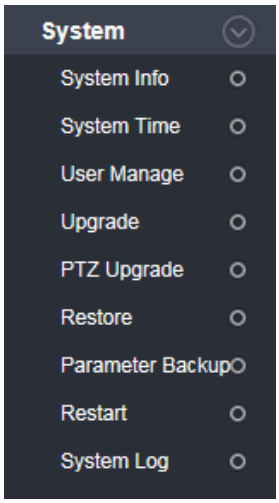
4.4.8 COM Setting

View or set serial port parameters, including Baud Rate, Data Bits, Stop Bits and Check Type.

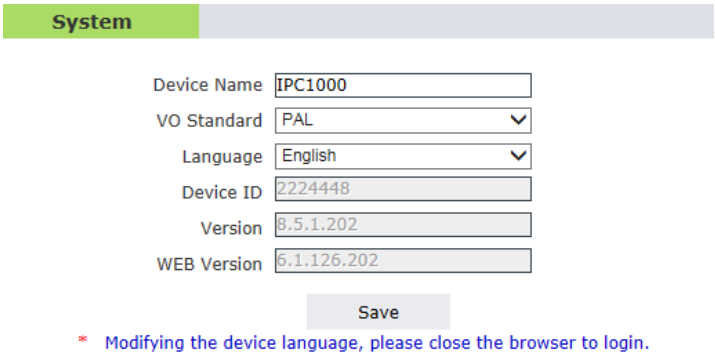


4.4.9 System

View or set system parameters, including System Info, System Time, User Manage, Upgrade, PTZ Upgrade, Restore, Parameter Backup, Restart and System Log.



1) System Info: It indicates basic system parameters, including Device Name, VO Standard, Language, Device ID, Version and WEB Version.



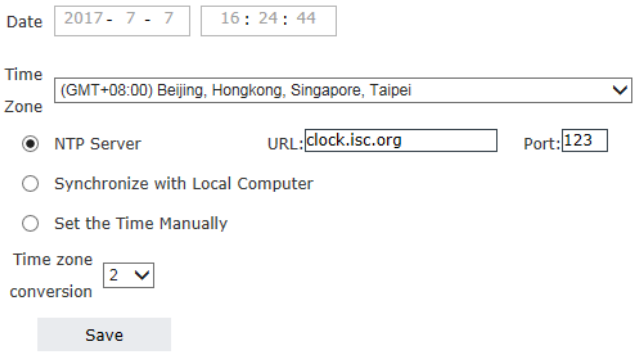
- VO Standard: It indicates the analog output system. You can choose PAL or NTSC.

✍Note: Modifying the device language, please close the browser to login.

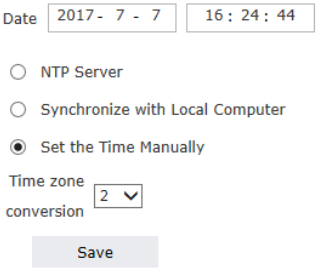
2) System Time: It is used to set the system date and time. You can choose NTP Server, Synchronize with Local Computer or Set the Time Manually. You can use all items after selecting this item. The options of time zone conversion comprise 1 and 2. You can set this item based on requirements, and then click [Save].

- NTP Server: After this item is selected, you need to select the time zone (38 time zones in total). The default time zone is GMT+08:00 Beijing. The server name and port information are displayed

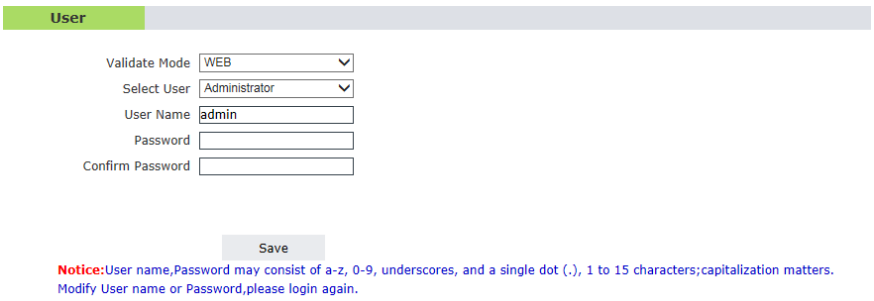
at the same time.



- Synchronize with Local Computer: After this item is selected, the time setting is consistent with that on the local computer.
- Set the Time Manually: After this item is selected, the Date column becomes editable. You can manually input the date and time.



3) User Manage: It is used to switch the operator (Administrator, User 1 and User 2), modify user name and password.



✍Note:

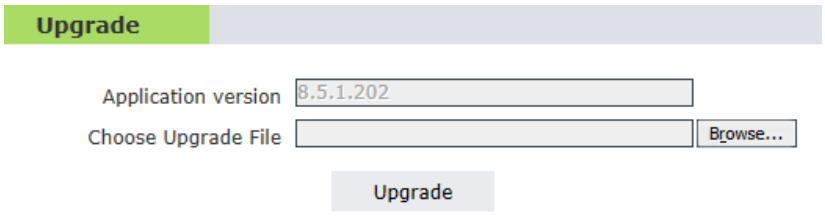
(1) A common user can preview the videos only after login, but cannot view or modify parameters.

(2) User name, Password may consist of a-z, 0-9, underscores, and a single dot (.), 1 to 15 characters;

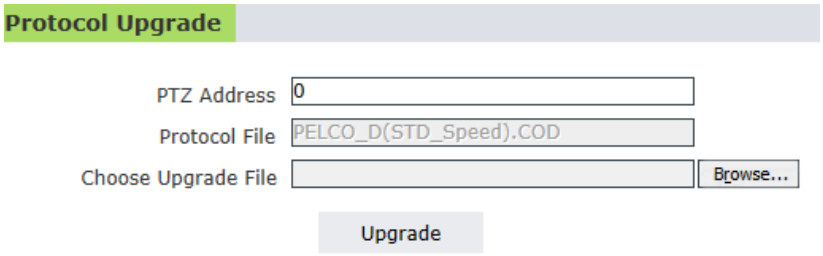
capitalization matters.

(3) Modify User name or Password, please login again.

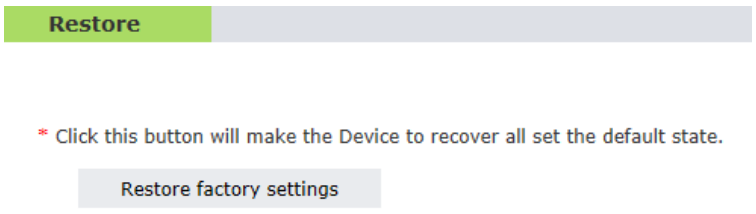
4) Upgrade: It is used to upgrade the network module program. The page displays the current kernel version. Click Browse..., choose upgrade file, and then click Upgrade. After the upgrade is completed, restart the camera.



5) Protocol Upgrade: It is used to upgrade the PTZ protocol.



6) Restore: It is used to restore the parameter settings of the camera. This function can restore all settings of the device to the factory default values. You simply need to click Restore factory settings.

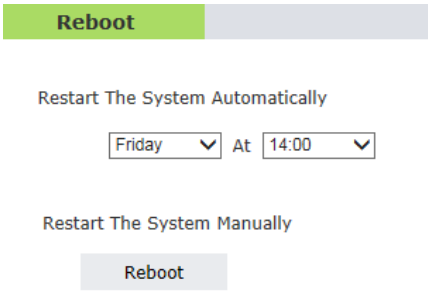


7) Parameter: You can import or export parameters.

(1) Import Parameters: Click Browse... first, select a file to be imported, and then click Import Parameters.

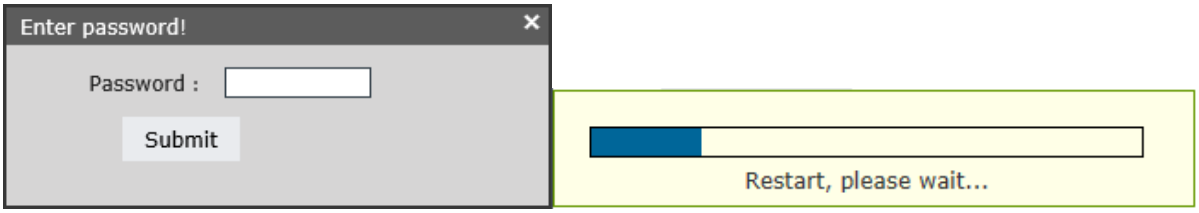
(2) Export Parameters: Click Export Parameters first, set the file name and storage directory in the dialog box displayed, and then click Directly Open or Download.

8) Restart: It is used to restart the system. You can choose Restart The System Automatically or Restart The System Manually.

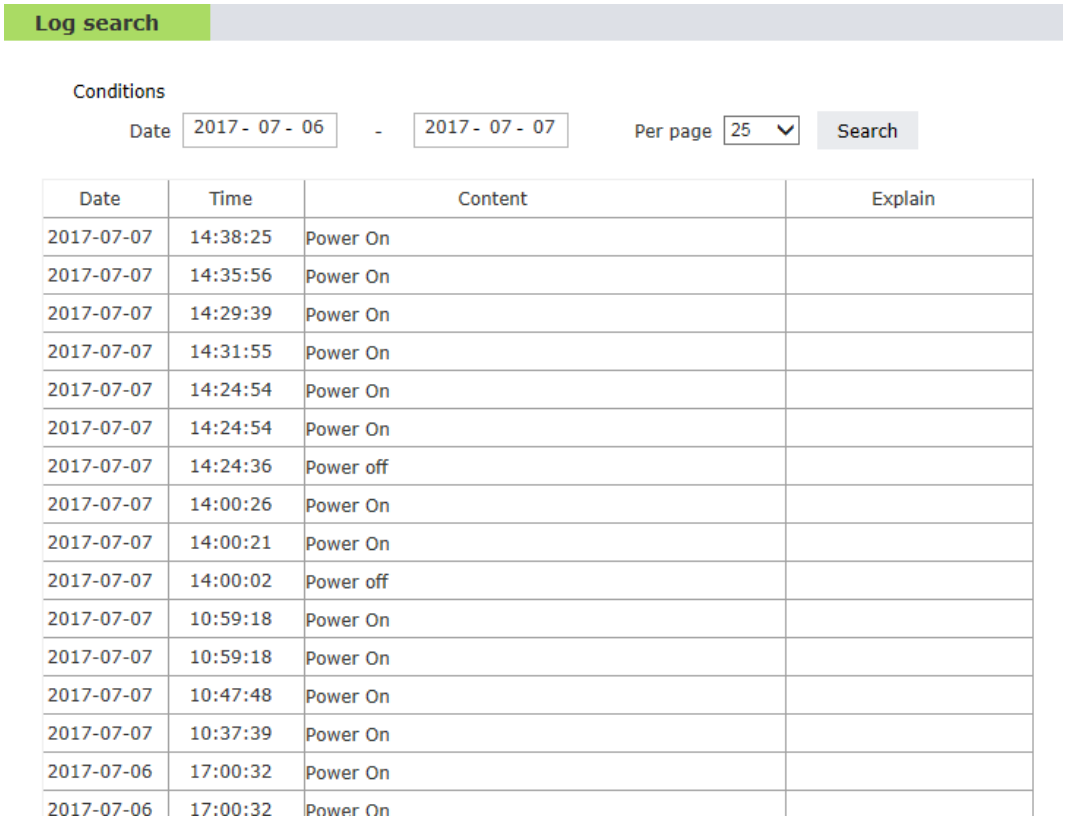


Restart The System Automatically: It is used to set the restart mode and time. The device will restart at the set time. The restart mode is Never by default (the device will not automatically restart). The other options include Daily, Monday, Tuesday, Wednesday, Thursday, Friday, Saturday and Sunday. The time can be set only to the hours (00:00~23:00).

(1) Restart The System Manually: Click Reboot, input the password in the dialog box displayed, and click [Submit] to wait for restart of the device. After the device is restarted, the device automatically returns to the system login page.

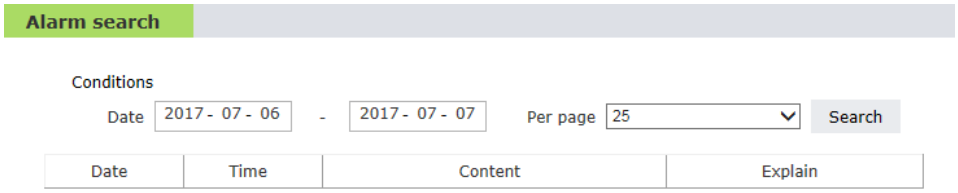


9) System Log: It is used to search the operation records after a user logs in. You can set search conditions (start time, end time, and the number of records displayed on each page) based on actual conditions, and then click Search. The searched records are displayed on the page.



4.5 Alarm

It is used to search alarm records. You can set search conditions (start time, end time, and the number of records displayed on each page) based on actual conditions, and then click Search. The searched alarm records are displayed on the page.



5 FAQs

- **Q: How do I do when the camera cannot be connected.**

A: Check the label on the camera to check whether the internal IP address of the camera has been changed; or check whether the host IP address of the management PC is in the same network segment as the camera and whether IP addresses conflict with each other if they are in the same network segment; or restore the factory settings of the camera.

- **Q: The login page is not properly displayed after a user logs in to the device.**

A: Ensure that Microsoft Internet Explorer is of version 6.0 or later.

- **Q: No video is played after a user logs in to the real-time video page.**

A: No control is installed. The real-time video can be played only after a control is downloaded and installed.

- **Q: Two cameras are installed, a user can access the first camera successfully but cannot access the second one.**

A: The IP address is set to 192.168.1.88 for all cameras to facilitate commissioning. However, their MAC addresses are different. The operating system caches the IP address and MAC address of the previous network camera. As a result, the second network camera with the same IP address may not be accessed.

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