

USER MANUAL

License Plate Recognition Camera

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Safety Precautions

• Electrical safety

- Install the lens first, and then connect the data cable and power cable in sequence.
- Before connecting an external cable to the device, complete the 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:

- ✓ Complete the 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.

- ✓ The warranty service does not cover accidental damage and damage caused by mis operation.

1. Overview

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

1.1 About the Product

The license plate recognition 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. Administrators can identify vehicle details (such as colors) from photos taken by the camera. The camera is applicable to parking lot management, tolling by weight, entry/exit management, and traffic checkpoint management.

1.2 Features

- **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: 704 x 576, 640 x 480 and 320 x 240.

- **Comprehensive network monitoring and transfer**

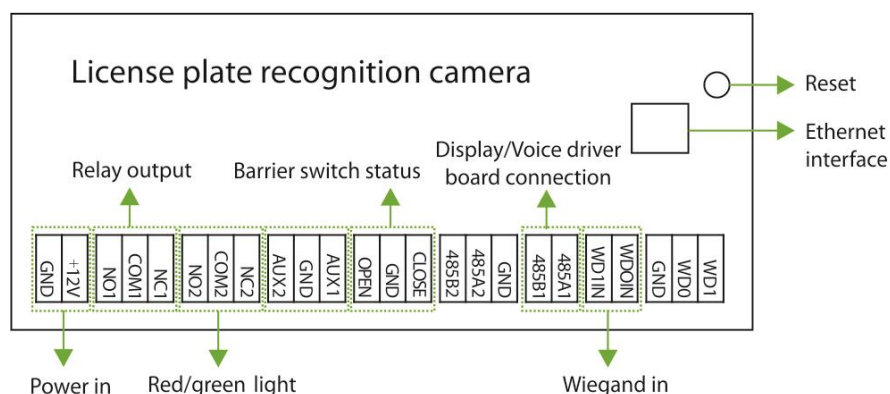
The camera sets up a network connection using an RJ-45 10M/100M auto-negotiation network port. It supports TCP/IP, UDP, RTP, RTSP, RTCP, HTTP, DNS, DDNS, DHCP, FTP, NTP, PPPOE, SMTP, UPNP, and other protocols. The bitstream rate and high frame rate of the network module can be adjusted to adapt to the strict application requirements of monitoring systems. The device transmits alarm data through E-mail, FTP and so on. At the same time, you can set the system date and time, OSD information, and photo save path on the camera.

1.3 Appearance



1.4 Port Definition

- **Wiring terminal diagram:**



- Port description:

Pin	Description
Reset	Reboots the device under the constant power supply.
Ethernet Interface	Standard Ethernet RJ45 socket, 10M/100M adaptive
+12V GND	12V DC Power input. Pay attention to the positive and negative electrodes.
NC1 COM1 NO1	Relay output for connecting to the barrier gate.
NC2 COM2 NO2	Connection indicator light (Red and Green).
AUX1 GND AUX2	Auxiliary input
CLOSE GND OPEN	Barrier Switch status
GND 485A2 485B2	Reserved port for RS485 transparent transmission function
485A1 485B1	Display / Voice driver board connection
WD0IN WD1IN	Wiegand in

WD1 WD0 GND	Wiegand out
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- **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.

1.5 System Requirements

The PC which will be used to display images and control the camera should meet the following requirements:

- **CPU:** Intel Pentium 4 with processor speed of 2.4 GHz or above.
- **RAM:** 1GB 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 must be connected to a switch or a PC over the standard Ethernet port.

The camera must be 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 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 environment cannot be same; otherwise, IP address conflict will cause device malfunction.

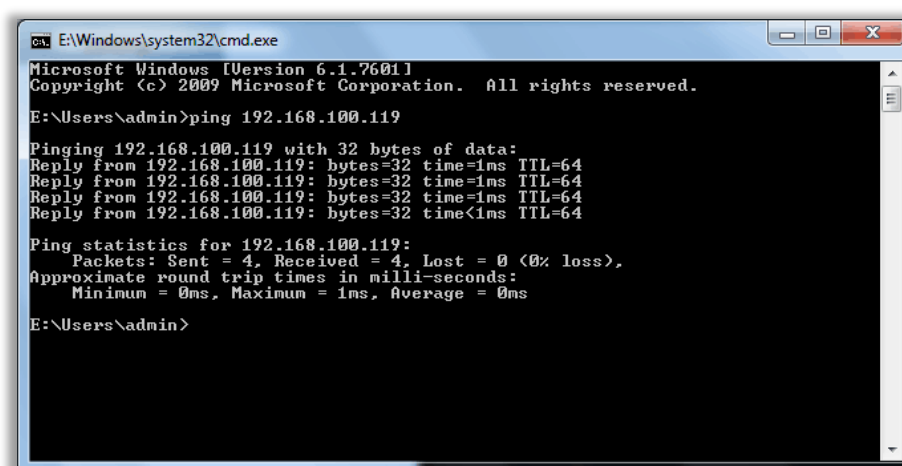
2.2.1 Default Parameter Settings

Before using the camera, set the IP address, gateway address, and other information of the camera properly. 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

Once the camera IP address is set, open **Start menu** in the PC and type **cmd** in the search dialog box. Type **Ping** and the 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 is "Request timed out" or "Destination host unreachable", then it means the PC and the camera are not connected properly. Perform the following steps:

- Check whether hardware connection is correct.

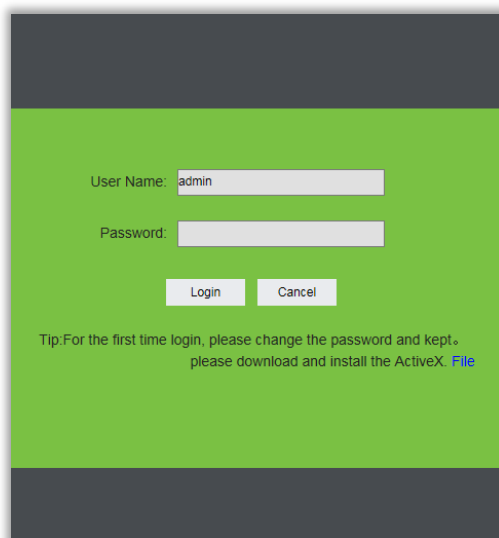
- Check whether the TCP/IP addresses of the PC and the camera are in the same network segment.
- Check whether the ping command is disabled. If you are not certain, contact your network administrator.

3. Camera Access over a Web Browser

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

3.1 Login

Type the IP address (default: **192.168.1.88**) 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.



Installation of control upon initial login:

If you are accessing the device 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 completes, 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.





- **Liveview:** Click to access video preview. In this view, 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. On this page view, 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. Here you can search for alarm records.
- **Log out:** Click to log out.

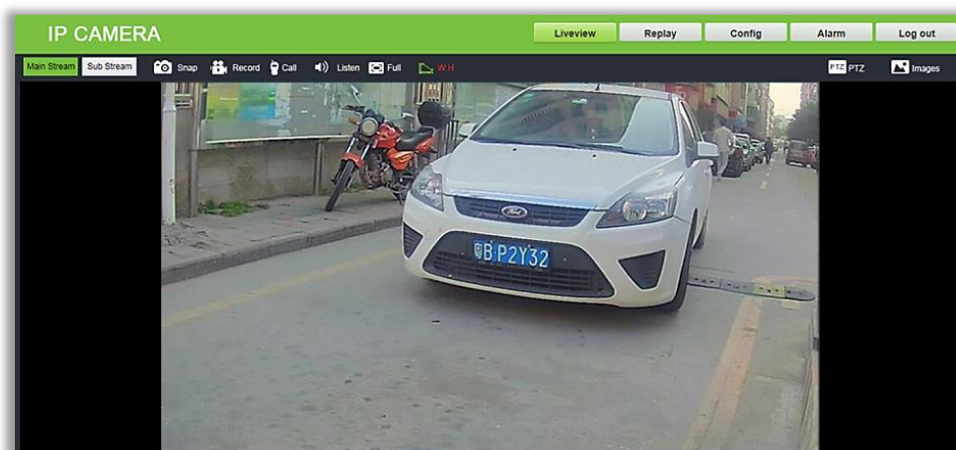
3.2 Liveview

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**, **Full**, **W:H**, **PTZ** and **Images**.



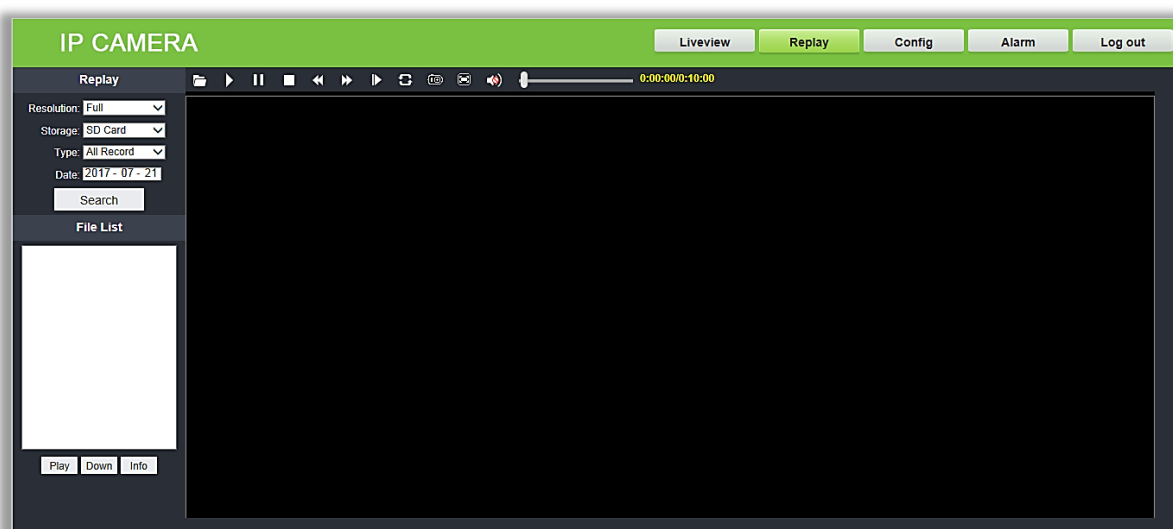
- **Main/Sub Stream:** Click to switch to the main/sub streams. For specific parameters of the main/sub streams, see 2) video code in [3.4.3 Video Settings](#).
- **Snap:** Click to snapshot. For the storage location, see [3.4.1 Local Config](#). The snapshots are saved to a directory named after the 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 [3.4.1 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.
- **Full:** Click to change to full screen mode. 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 option is only applicable to cameras supporting the PTZ function. It is used to modify focal length, 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.

3.3 Replay

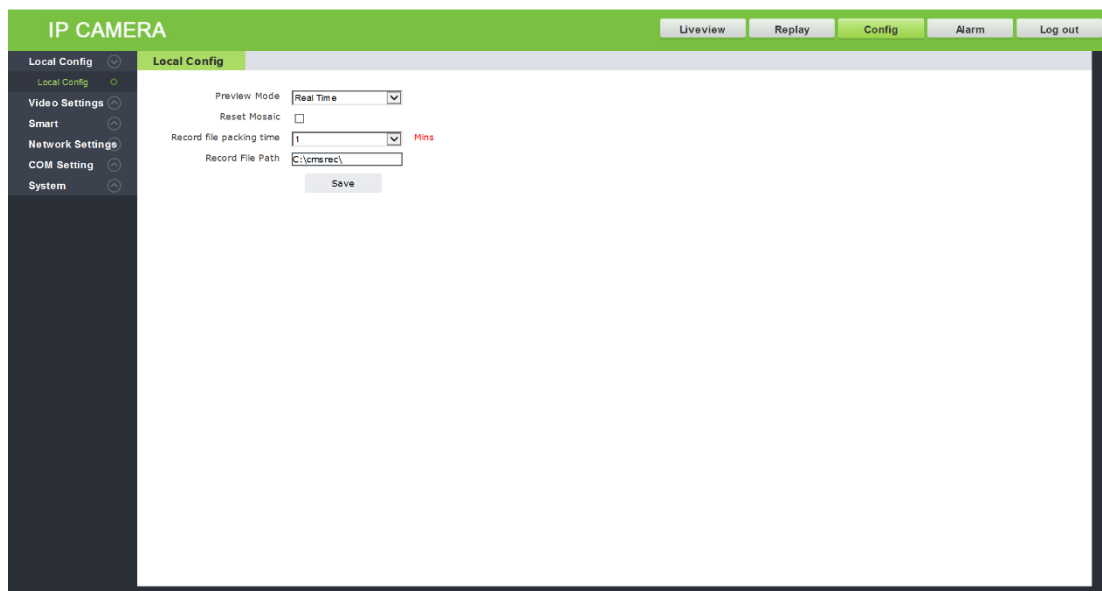
You can set searching conditions for videos based on requirements. The search results are displayed in the "File List". You can use function "Play" for playing the video, "Down" to move down in the file list, "Info" to view the download information list.



- **Resolution:** It indicates the resolution of videos. You can choose **Full**, **4:3**, **16:9** or **11:9**.
- **Storage:** It indicates the location for saving the 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.

3.4 Config

You can view or modify camera parameters, including **Local Config**, **Video Settings**, **Smart**, **Network Settings**, **COM Settings** and **System**.



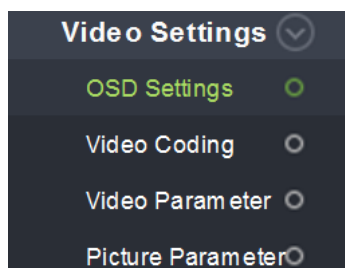
3.4.1 Local Config

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.

3.4.2 Video Settings

It is used to view or set the video parameters of the camera. It includes following functions; **OSD Settings**, **Video Coding**, **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. It includes parameters of **Main Stream** and **Sub Stream**. You can set this item based on actual conditions, and then click [Save].

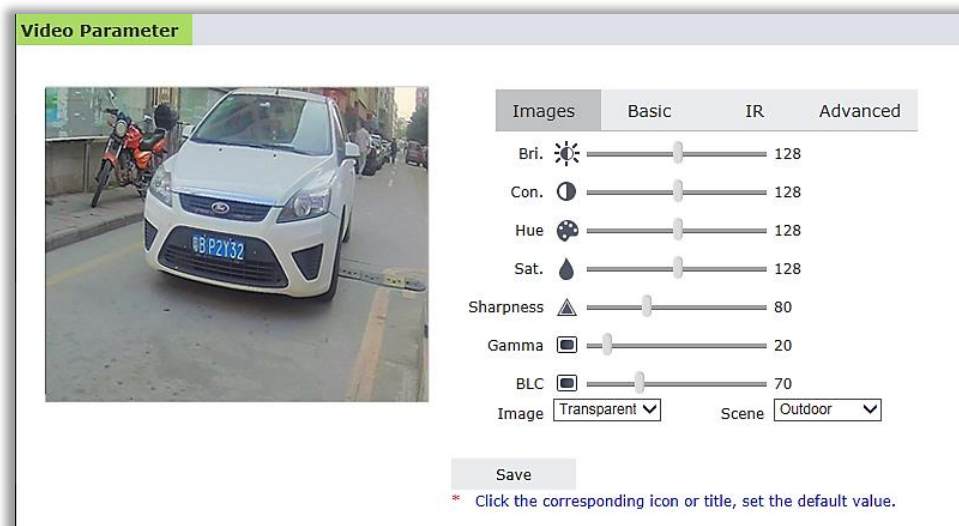
- **Coding Level:** It indicates the level of video coding. You can choose **Baseline**, **Main Profile** or **High Profile**.
- **Coding:** It indicates the coding format. You can choose **H.264**, **MJPEG** or **H.265**.

✎ **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:** If you tick the box, you can edit the following options;
 - **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**. When the image quality is set high, the images are clearer with better effect, and higher bit rate.
 - **Bitrate limits:** The setting range is **30 Kb/s ~16384 Kb/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 it lowers 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) Video Parameter: It is used to set video parameters, including **Images**, **Basic**, **IR** and **Advanced**.



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

- **Bri.:** It indicates the lighting intensity at a unit projecting area. Increasing the brightness helps in improving the general image effect; however, high brightness may cause insufficient transparency of images. The setting range is **0~255**.
- **Con.:** It is the key factor to the visual effect. In general, 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 discoloration, 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 the images looks 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.

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

The screenshot shows the 'Basic' tab of the camera settings interface. It contains the following controls:

- Mirror:** A dropdown menu currently set to 'Close'.
- Flip:** A dropdown menu currently set to 'Close'.
- LSC:** A dropdown menu currently set to 'Close'.
- CTB:** A dropdown menu currently set to 'Color'.
- WDR:** A dropdown menu currently set to 'Open'.
- 3D-DNR:** A dropdown menu currently set to 'Normal'.
- Video Standard:** Radio buttons for '60HZ' and '50HZ'. '50HZ' is selected.
- Iris Mode:** Radio buttons for 'Non-Auto' and 'DC Auto'. 'DC Auto' is selected.
- Auto Iris Shading:** A button that is active (highlighted) when 'DC Auto' is selected.
- Save:** A button at the bottom left.
- Note:** A red asterisk followed by the text: '* Click the corresponding icon or title, set the default value.'

- **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 function which aids the camera in seeing 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.

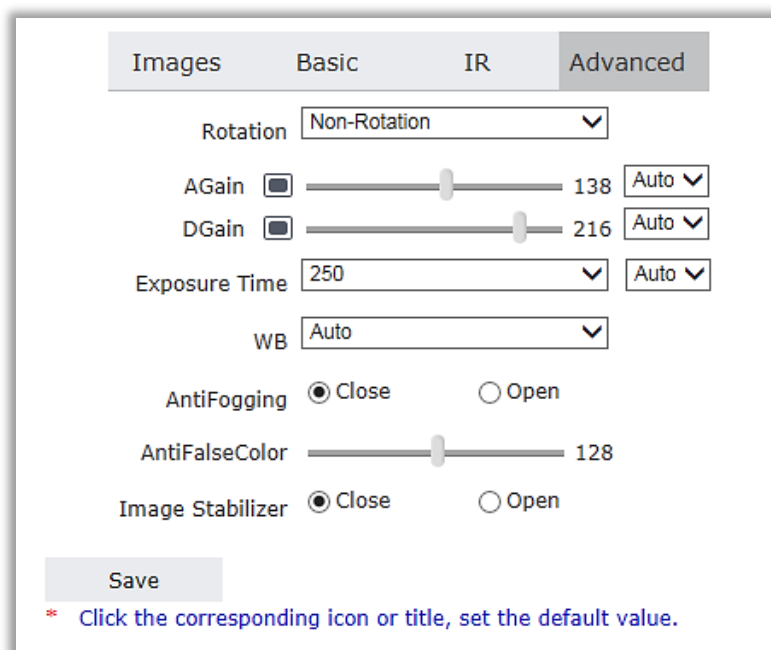
C. IR: It is used to set the **IR Mode**, **ICR**, **IR** and **IR Direction** of the camera.

- **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**.
- D. 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 is used to set the balance of white. It can restore white objects into white under any light source. You can choose either **Auto** or **Manually**.
- **Anti-Fogging:** On some bad weather day such as fog or haze, images shot by camera(s) may have problems such as lower contrast, lower definition, and modified 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 to prevent shakiness in image(s).

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

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

Snap Picture

Picture Format

jpg

Resolution

1920 * 1080

Save

3.4.3 Smart

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

The screenshot shows the 'IP CAMERA' configuration interface. On the left is a sidebar with navigation options: Local Config, Video Settings, Smart, Network Settings, COM Setting, and System. The 'Smart' section is selected. The main area is divided into a top section with 'Liveview', 'Replay', 'Config', 'Alarm', and 'Log out' buttons, and a bottom section for configuration. The 'Config' section has tabs for 'Identify Parameter', 'System Parameter', 'Basic Parameter', and 'SD Management'. The 'Identify Parameter' tab is active, showing settings for 'Mounting Distance' (5m-6m), 'Lane Numbers' (1), 'Identify Threshold Value' (100.00), 'Identify Times' (2), 'Identify interval for same plate' (10s), 'Output one time for plates in same position' (checked), 'Output one time for same plates' (checked), 'Steady Recognition Output' (unchecked), 'Trigger Mode' (Video Trigger), 'Upload Mode' (Upload by SDK), 'Recognition Mode' (Multiple Frames Priority Mode), and 'Output Filter' (Filter vehicle far away). A 'Save' button is at the bottom. On the right, there is a table for 'Identify Results' with columns: ID, Plate Number, Color, and Size. The table is currently empty.

- **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 Lines:** The virtual dotted line triggers the recognition. Click [**Draw Virtual Lines**] to draw a line in the image and click [**Save Virtual Lines**] to save. The line is shown as a dotted inside box. The virtual line should be drawn inside the recognition area and complex background (such as deceleration strips or handrail) should be avoided inside the virtual line.

Note: A recognition area / virtual line 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 difference between the time periods for identifying the same license plate again. It should be entered 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 shown only once. You can enable this function by selecting this item.
- **Virtual lines trigger:** When a vehicle enters the virtual line, the license plate identification result is shown. 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 shown 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 line 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:

- **Brake work delay:** It indicates the output duration of brake signals, which needs to be manually input and in the unit of millisecond (ms).
- **Manual Open:** If it is clicked, it will manually open the gates.
- **Restore Parameters:** You can reset the system parameters to default. It has following options; Identify Parameters, Network Parameters and All parameters.

● Basic Parameter:

- **ISP Switch:** It can be set as either of the two following options;
 - ✧ **Photo Sensitive:** You can select the photo sensitivity level Find sensitive photosensitive thresholds (50-500) according to the site environment. Use the latest external board.
 - ✧ **Day Period:** Set the start time and end time of daytime period.
- **Fill the light:** Select the sensitivity of the fill light between 5 to 50.

● **SD Management:**

Total Capacity(MB)	Used Capacity(MB)	Remaining Capacity(MB)
7371	0	7371

If a SD card is installed in camera, then this interface shows the storage details of the SD card. You can perform Mounting, Unmounting (uninstalling the card), Formatting operations as required.

3.4.4 Network Settings

View or set network parameters of the camera, including **Basic**, LAN, UPNP, FTP, DDNS.

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

Basic Setting

Data Port

Web Port

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

LAN Setting

DHCP Enable ☐

IP

Subnet Mask

Gateway

Preferred DNS

Alternate DNS

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.

UPNP Setting

Enable ☐

Network Card

Mode

Server URL

Data Port Map No.

Web Port Map No.

Data Mapping Status

Web Mapping Status

* Data port map No.:device data port forwards to external network port.
 * Web port map No.:device web port forwards to external network port.
 * In specified mode, only can mapping to the specified port, if port was occupied then mapping failed.
 * In automatic mode, will mapping to the appointed port in priority; if appointed port was occupied, the mapping port will auto-increment till map successful.

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 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.

3.4.5 COM Setting

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

The COM Setting dialog box has a title bar with a green tab labeled "COM Setting". Inside, there are five dropdown menus: "Baud Rate" (9600), "Data Bits" (8), "Stop Bits" (1), "Check Type" (None), and "Flow Ctrl" (None). A "Save" button is located at the bottom right.

3.4.6 System

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

The System menu is a dark-themed sidebar with a "System" header and a dropdown arrow. It contains eight items, each with a circular icon: "System Info" (grey), "System Time" (green), "User Manage" (grey), "Upgrade" (grey), "Restore" (grey), "Parameter Backup" (grey), "Restart" (grey), and "System Log" (grey).

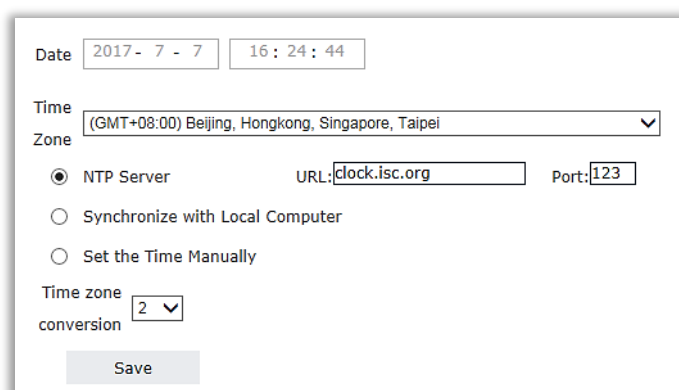
- 1) **System Info:** It indicates basic system parameters, including **Device Name**, **VO Standard**, **Language**, **Device ID**, **Version** and **WEB Version**.

The System dialog box has a title bar with a green tab labeled "System". Inside, there are six text input fields: "Device Name" (IPC1000), "VO Standard" (PAL), "Language" (English), "Device ID" (2224448), "Version" (8.5.1.202), and "WEB Version" (6.1.126.202). A "Save" button is at the bottom. Below the button, there is a red asterisk followed by the text: "Modifying the device language, please close the browser to login."

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

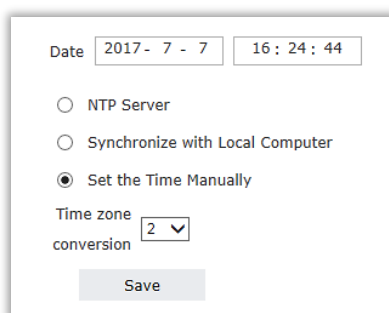
 **Note:** Modifying the device language, please close the browser to login.

- 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.



The screenshot shows the 'System Time' configuration window. At the top, there are two input fields for 'Date' (2017 - 7 - 7) and 'Time' (16 : 24 : 44). Below these, a 'Time Zone' dropdown menu is set to '(GMT+08:00) Beijing, Hongkong, Singapore, Taipei'. Three radio buttons are present: 'NTP Server' (selected), 'Synchronize with Local Computer', and 'Set the Time Manually'. To the right of the 'NTP Server' radio button, there are input fields for 'URL' (clock.isc.org) and 'Port' (123). Below the radio buttons, there is a 'Time zone conversion' dropdown menu set to '2'. At the bottom, there is a 'Save' button.

- **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.



The screenshot shows the 'System Time' configuration window with 'Set the Time Manually' selected. The 'Date' and 'Time' fields at the top are still visible. The 'Time Zone' dropdown menu is still set to '(GMT+08:00) Beijing, Hongkong, Singapore, Taipei'. The 'NTP Server' radio button is now unselected, and 'Set the Time Manually' is selected. The 'URL' and 'Port' fields are no longer visible. The 'Time zone conversion' dropdown menu is still set to '2'. At the bottom, there is a 'Save' button.

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

Note:

- ✓ A common user can preview the videos only after login but cannot view or modify parameters.
- ✓ User name, Password may consist of a-z, 0-9, underscores, and a single dot (.), 1 to 15 characters; capitalization matters.
- ✓ 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) **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**.

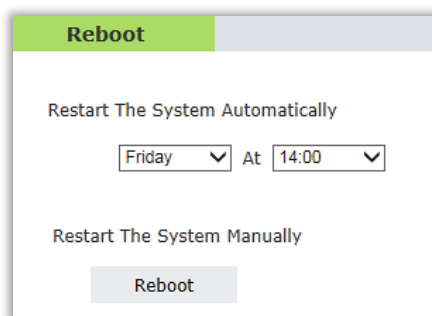
- 6) **Parameter:** You can import or export parameters.

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

Import Parameters

b) **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.

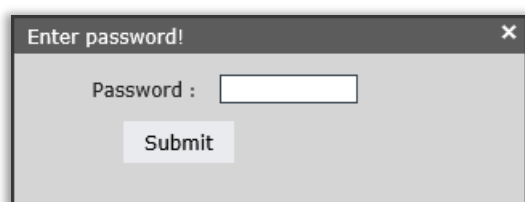
7) **Restart:** It is used to restart the system. You can choose **Restart The System Automatically** or **Restart The System Manually**.



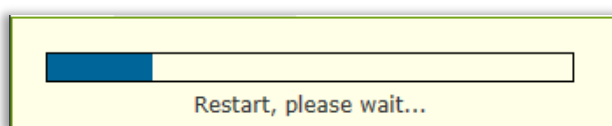
The 'Reboot' dialog box has a green header with the title 'Reboot'. It contains two sections: 'Restart The System Automatically' with a dropdown menu set to 'Friday' and a time dropdown set to '14:00', and 'Restart The System Manually' with a 'Reboot' button.

a) **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).

b) **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.



The 'Enter password!' dialog box has a title bar with a close button. It contains a 'Password :' label, a text input field, and a 'Submit' button.



A yellow progress bar with a blue segment on the left. Below the bar is the text 'Restart, please wait...'.

8) **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.

Log search			
Conditions			
Date	2017 - 07 - 06	-	2017 - 07 - 07
	Per page	25	Search
Date	Time	Content	Explain
2017-07-07	14:38:25	Power On	
2017-07-07	14:35:56	Power On	
2017-07-07	14:29:39	Power On	
2017-07-07	14:31:55	Power On	
2017-07-07	14:24:54	Power On	
2017-07-07	14:24:54	Power On	
2017-07-07	14:24:36	Power off	
2017-07-07	14:00:26	Power On	
2017-07-07	14:00:21	Power On	
2017-07-07	14:00:02	Power off	
2017-07-07	10:59:18	Power On	
2017-07-07	10:59:18	Power On	
2017-07-07	10:47:48	Power On	
2017-07-07	10:37:39	Power On	
2017-07-06	17:00:32	Power On	
2017-07-06	17:00:32	Power On	

3.5 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.

Alarm search			
Conditions			
Date	2017 - 07 - 06	-	2017 - 07 - 07
	Per page	25	Search
Date	Time	Content	Explain

FAQs

Q: What should be done when the camera is not getting 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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