Container No. Recognition Camera

User Manual

About this Manual

The Manual includes instructions for using and managing the Product. Pictures, charts, images and all other information hereinafter are for description and explanation only. The information contained in the Manual is subject to change, without notice, due to firmware updates or other reasons. Please find the latest version of this Manual at the Hikvision website (http://www.hikvision.com).

Please use this Manual with the guidance and assistance of professionals trained in supporting the Product.

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Regulatory Information

FCC Information

Please take attention that changes or modification not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC compliance: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Conditions

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.

2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement

This product and - if applicable - the supplied accessories too are marked with "CE" and comply therefore with the applicable harmonized European standards listed under the EMC Directive 2014/30/EU, the LVD Directive 2014/35/EU, the RoHS Directive 2011/65/EU.

2012/19/EU (WEEE directive): Products marked with this symbol cannot be disposed of as unsorted municipal waste in the European Union. For proper recycling, return this product to your local supplier upon the purchase of equivalent new equipment, or dispose of it at designated collection points. For more information see: www.recyclethis.info

2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

This device meets the CAN ICES-3 (A)/NMB-3(A) standards requirements.

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
NOTE	Provides additional information to emphasize or supplement important points of the main text.
WARNING	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
DANGER	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.

Safety Instructions

Laws and Regulations	Use of the product must be in strict compliance with the local laws and regulations. Please shut down the device in prohibited area.
Power Supply	● Use of the product must be in strict compliance with the local electrical safety regulations. ● Use the power adapter provided by qualified manufacturer. Refer to the product specification for detailed power requirements. ● It is recommended to provide independent power adapter for each device as adapter overload may cause over-heating or a fire hazard. ● Make sure that the power has been disconnected before you wire, install, or disassemble the device. ● DO NOT directly touch exposed contacts and components once the device is powered up to avoid electric shock. ● DO NOT use damaged power supply devices (e.g., cable, power adapter, etc.) to avoid electric shock, fire hazard, and explosion. ● DO NOT directly cut the power supply to shut down the device. Please shut down the device normally and then unplug the power cord to avoid data loss. ● DO NOT block the power supply equipment to plug and unplug conveniently. ● Make sure the power supply has been disconnected if the power adapter is idle. ● Make sure the device is connected to the ground firmly.

Transportation, Use, and Storage	● To avoid heat accumulation, good ventilation is required for a proper operating environment. ● Store the device in dry, well-ventilated, corrosive-gas-free, no direct sunlight, and no heating source environment. ● Avoid fire, water, and explosive environment when using the device. ● Avoid lightning strike for device installation. Install a lightning arrester if necessary. ● Keep the device away from magnetic interference. ● Avoid device installation on vibratory surface or places, and avoid equipment installation on vibratory surface or places subject to shock (ignorance may cause device damage). ● DO NOT touch the heat dissipation component to avoid burns. ● DO NOT expose the device to extremely hot, cold, or humidity environments. For temperature and humidity requirements, see device specification.
Maintenance	● If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center. ● If the device is abnormal, contact the store you purchased it or the nearest service center. DO NOT disassemble or modify the device in any way (For the problems caused by unauthorized modification or maintenance, the company shall not take any responsibility). ● Keep all wrappers after unpacking them for future use. In case of any failure occurred, you need to return the device to the factory with the original wrapper. Transportation without the original wrapper may result in damage to the device and the company shall not take any responsibility.
Network	● Please enforce the protection for the personal information and the data security as the device may be confronted with the network security problems when it is connected to the Internet. Please contact us when the device might exist network security risks. ● Please understand that you have the responsibility to configure all the passwords and other security settings about the device, and keep your user name and password.
Data	DO NOT disconnect the power during formatting, uploading, and downloading. Or files may be damaged.

TABLE OF CONTENTS

Chapter 1 Network Connection

NOTE

- You shall acknowledge that the use of the product with Internet access might be under network security risks. For avoidance of any network attacks and information leakage, please strengthen your own protection. If the product does not work properly, please contact with your dealer or the nearest service center.
- To ensure the network security of the camera, we recommend you to have the camera assessed and maintained termly. You can contact us if you need such service.

Purpose:

To view and configure the camera via a LAN, you need to connect the camera in the same subnet with your computer, and install the SADP to search and change the IP address of the camera.

1.1 Wiring over the LAN

The following figures show the two ways of cable connection of the camera and computer.

Purpose:

- To test the camera, you can directly connect the camera to the computer with a network cable.
- Set camera over the LAN via a switch or a router.

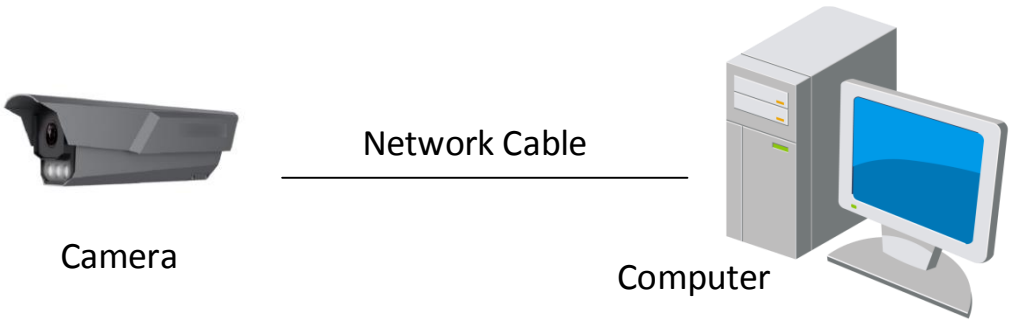


Figure 1-1 Connecting Directly

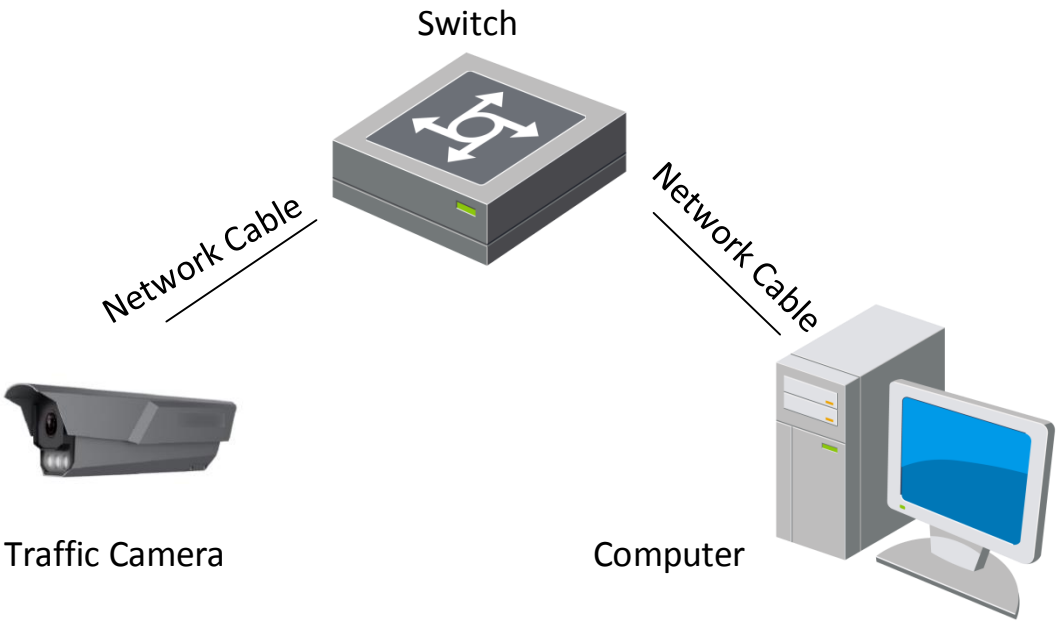


Figure 1-2 Connecting via a Switch or a Router

1.2 Activate the Camera

You are required to activate the camera first by setting a strong password for it before you can use the camera.

Activation via Web Browser and Activation via SADP Software are supported.

1.2.1 Activation via Web Browser

Step 1 Power on the camera, and connect the camera to the network.

Step 2 Input the IP address into the address bar of the web browser, and press Enter to enter the activation interface.

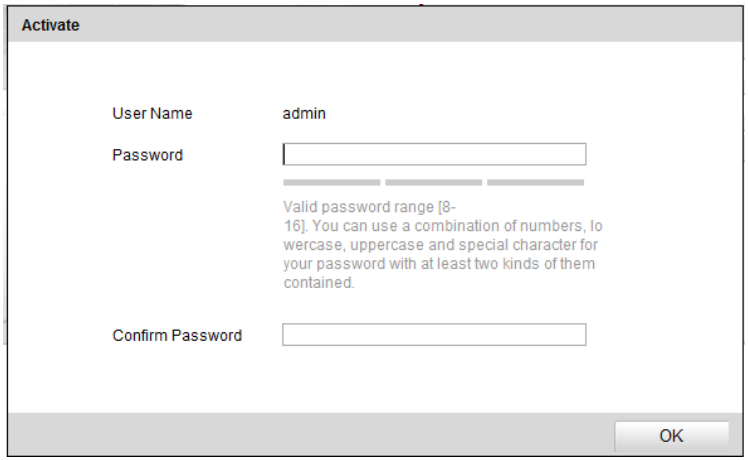


Figure 1-3 Activation Interface (Web)

Step 3 Create a password and input the password into the password field.

WARNING

STRONG PASSWORD RECOMMENDED– We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Step 4 Confirm the password.

Step 5 Click **OK** to save the password and enter the live view interface.

1.2.2 Activation via SADP Software

SADP software is used for detecting the online device, activating the camera, and resetting the password.

Get the SADP software from the official website, and install the SADP according to the prompts.

Step 1 Run the SADP software to search the online devices.

Step 2 Check the device status from the device list, and select the inactive device.

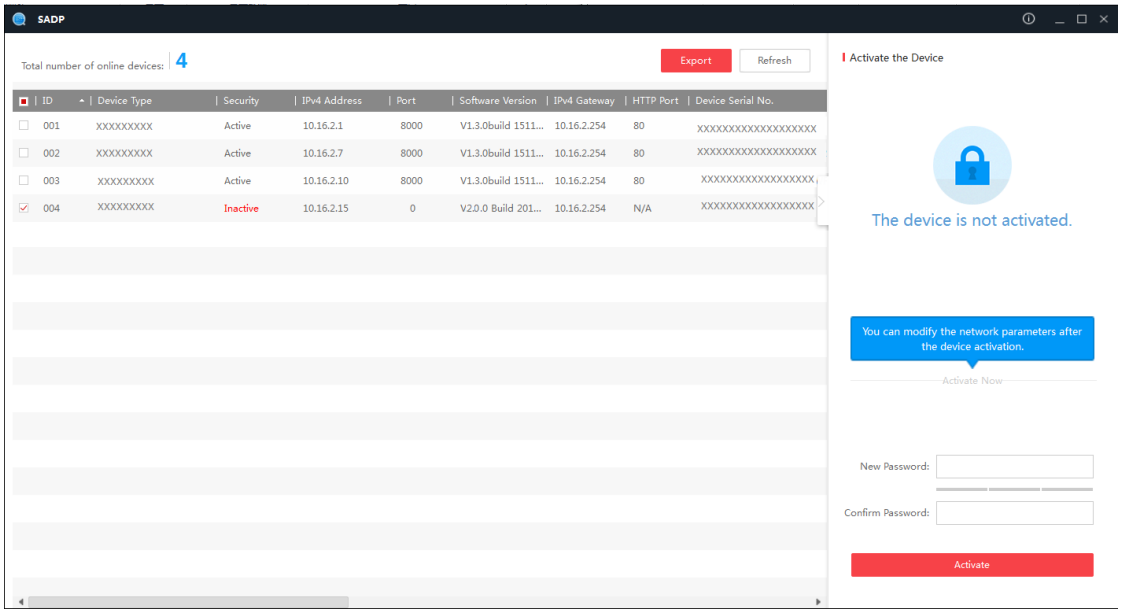


Figure 1-4 SADP Interface

Step 3 Create a password and input the password in the password field, and confirm it.

Step 4 Click **Activate** to activate the device.

WARNING

STRONG PASSWORD RECOMMENDED– We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

Step 5 Change the device IP address to the same subnet with your computer by either modifying the IP address manually.

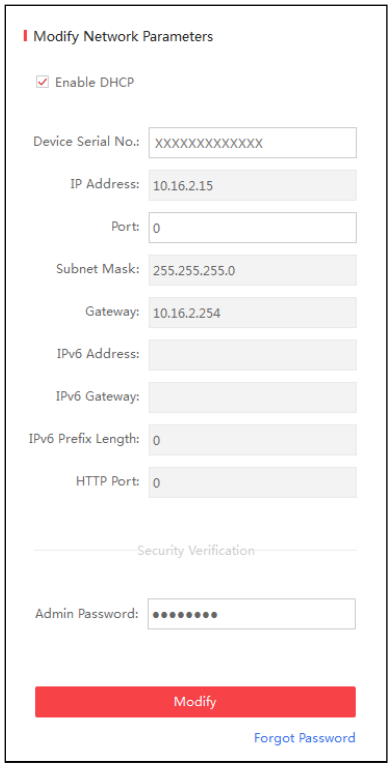


Figure 1-5 Create Password

Step 6 Input the password and click **Modify** to activate your IP address modification.

Chapter 2 Login

Step 1 Open the web browser.

Step 2 In the browser address bar, input the IP address of the camera, and press the **Enter** key to enter the login interface.

Step 3 Input **User Name** and **Password**.

Step 4 Click **Login**.

Figure 2-1 Login

Step 5 Install the plug-in before viewing the live video and operating the camera. Follow the installation prompts to install the plug-in.

NOTE

You may have to close the web browser to install the plug-in. Please reopen the web browser and log in again after installing the plug-in.

Chapter 3 Live View

3.1 Live View Page

Purpose:

The live view page allows you to view the real-time video and capture images.

Log in the camera to enter the live view page, or you can click **Live View** on the menu bar of the main page to enter the live view page.

Figure 3-1 Live View Page

Refer to the following table for the description of the icons on the live view page.

Table 3-1 Descriptions of Live View Icons

Icon	Description
/	Start/Stop live view.
	The window size is 4:3.
	The window size is 16:9.
	The original widow size.
	Self-adaptive window size.
Main Stream	Live view with the main stream. If the network is in good condition, select main stream.
Sub Stream	Live view with the sub stream.
Third Stream	Live view with the third stream.
	Start/Stop audio and adjust the volume.
	Enable regional focus.
	Wiper.
/	Enable/Disable two-way audio.
	Manually capture the picture.
/	Manually start/stop recording.
/	Turn on/off digital zoom function.
Live Traffic Statistics	Enter the Live Traffic Statistics page.

3.2 Start Live View

On the live view page, click “ ” on the toolbar to start the live view of the camera.

3.3 Record and Capture Pictures Manually

On the live view page, click “ ” on the toolbar to capture the live pictures or click “ ” to start recording. The saving paths of the captured pictures and recorded videos can be set on the **Configuration > Local Configuration** page.

NOTE

The captured image will be saved as JPEG file in your computer.

3.4 View Live Traffic Statistics

Click **Live Traffic Statistics** on the upper right of the live view window to enter the live traffic statistics configuration page.

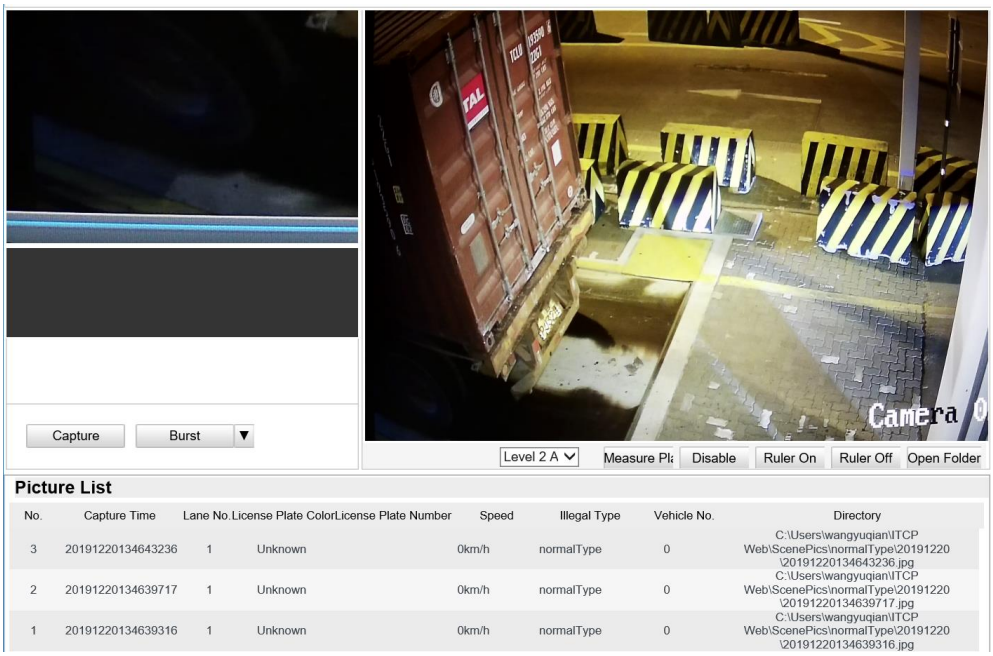


Figure 3-2 Live Traffic Statistics

3.4.1 Scene Shot Area

- Arm the camera.
  - **Level 1 Arming**: The camera is allowed to connect to only one data storage device for image, video and information uploading. It is recommended when you develop products, that is, if you use SDK, level 1 arming is the only option.
  - **Level 2 Arming**: The camera is allowed to connect to three data storage devices for image and information uploading, such as PC, platform and terminal server.
  - **Disarming**: The camera is not allowed to connect to any data storage devices.

NOTE

Level 2 Arming is recommended for debugging. Because when the device is running, Level 1 Arming cannot be activated.

- **Measuring License Plate**: Measure the pixel of the captured license plate. You can click **Closing Measurement** to disable the function.
- **Ruler On**: Enable ruler to measure the length of the captured license plate. You can click **Ruler Off** to disable the function.
- **Open Folder**: Open the folder that saves the captured pictures.

- **Capture**: Click **Capture** to capture the picture, and the captured pictures will be listed in the Picture List.

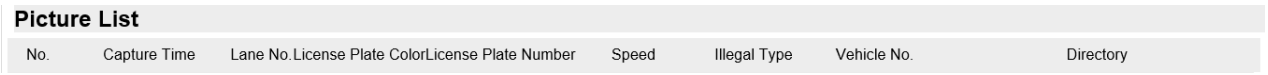


Figure 3-3 Picture List

Table 3-2 Description of Picture List Parameters

Item	Description
No.	Picture No.
Capture Time	The time of capturing the picture with millisecond precision. For example, 20150915111054738 means the picture is captured at 11:10:54:738, on September 15th, in 2015.
Lane No.	The lane where the vehicle is captured.
License Plate Color	The color of license plate.
License Plate Number	The license plate number of the vehicle.
Speed	Speed of passing vehicles.
Illegal Type	Illegal type of captured vehicle.
Vehicle No.	The vechile counting No. ranging from 1 to 65535. It will overwrite if it reachs the max. value.
Directory	The file path of the saved picture.

- **Continuous Capture**: Click **Continuous Capture** to capture pictures continuously, and click "▼" to set continuous capture parameters including **Lane No.**, **Waiting Time**, **Capture Times**, and **Continuous Capture Interval**.

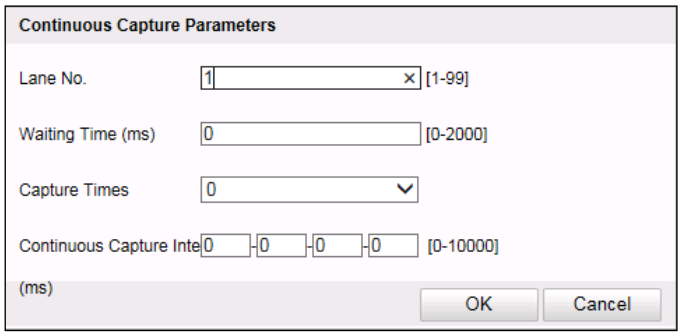


Figure 3-4 Set Continuous Capture Parameters

- **Lane No.**: The lane where the vehicle is captured.

- **Waiting Time**: Delay time from capture order had been delivered to vehicle to vehicle has been actually captured.
- **Capture Times**: Number of captured pictures.
- **Continuous Capture Interval**: The time interval of the continuous pictures is captured

3.4.2 Traffic Statistics

Purpose:

The traffic statistics allows you to view the real-time traffic flow status.

Click **Live Traffic Statistics > Traffic Statistics**, you can view the Start Time, Lane No. and Traffic Flow.

Chapter 4 Operate PTZ Control

Purpose:

In the live view interface, you can use the PTZ control buttons to control panning, tilting and zooming.

NOTE

PTZ functions vary depending on different models.

On the live view page, click  to show the PTZ control panel.

Click the direction buttons to control the pan/tilt movements.

Click the zoom/iris/focus buttons to realize lens control.

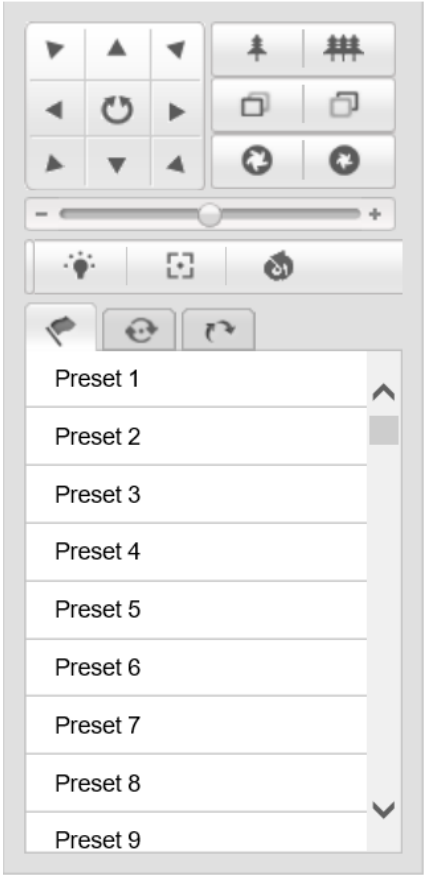


Figure 4-1 PTZ Control Panel

Table 4-1 Descriptions of PTZ Control Panel

Button	Name	Description
	Zoom out/in	Click , the lens zooms in. Click , the lens zooms out.
	Focus near/far	Click , the lens focus far and the items far away gets clear. Click , the lens focus near and the items nearby gets clear.
	Speed Adjustment	Adjust speed of pan/tilt movements.

Chapter 5 Picture Search

Purpose:

The captured picture of all types, including normal, overspeed, wrong-way driving, etc., can be searched from this page. You can also export the pictures to the PC local directory.

Before you start:

Please insert a TF card with up to 128 GB storage in the camera for picture storage. Picture cannot be searched if there is no TF card.

Step 1 Click **Picture** on the menu bar to enter picture searching page.

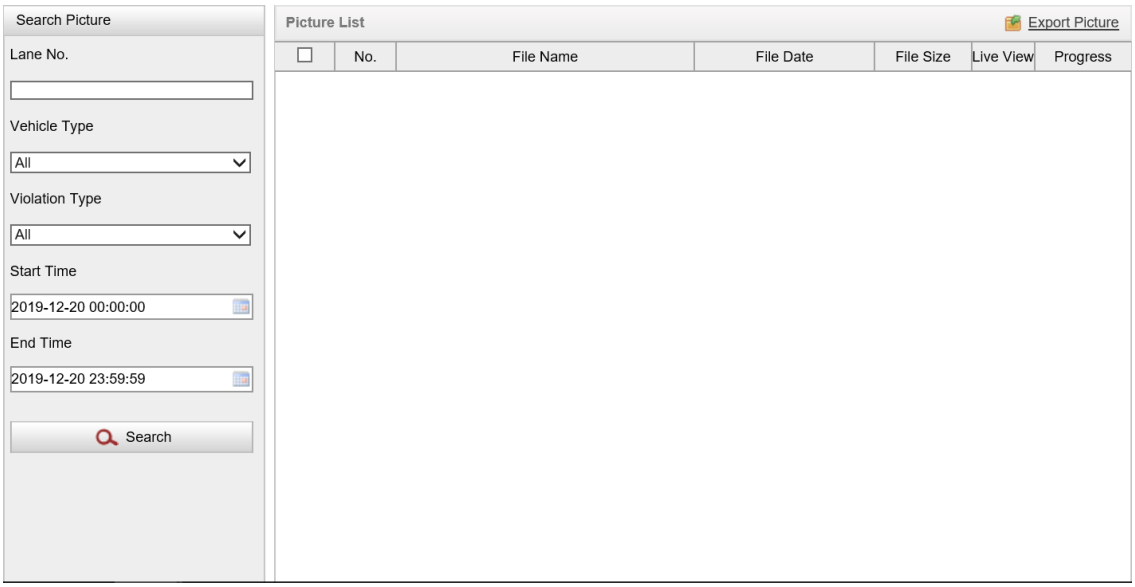


Figure 5-1 Search Picture

Step 2 Set the picture search conditions, including **Lane No.**, **Vehicle Type**, **Violation Type**, **Start Time**, and **End Time**.

Step 3 Click **Search** to search pictures. The matched pictures will be displayed in **Picture List**.

Step 4 Click **Export Picture** to export the pictures to your PC.

Chapter 6 Local Configuration

Purpose:

The local configuration refers to the parameters of the live view, record files and captured pictures. The record files and captured pictures are the ones you record and capture using the web browser and thus the saving paths of them are on the PC running the browser.

Step 1 Go to **Configuration** > **Local Configuration**.

Step 2 Configure the following settings:

- **Live View Parameters:** Set the protocol type and live view performance.
  - **Protocol:** TCP and UDP are selectable.
    - **TCP:** Ensures complete delivery of streaming data and better video quality, yet the real-time transmission will be affected.
    - **UDP:** Provides real-time audio and video streams.
  - **Live View Performance:** Set the live view performance to Least Delay, Balanced, Best Fluency.
  - **Rule Information:** It refers to the rules on your local browser, select enable to display the colored marks when the motion detection, face detection, or intrusion detection is triggered. E.g., enabled as the rules are, and the face detection is enabled as well, when a face is detected, it will be marked with a green rectangle on the live view.
  - **POS Information:** Enable the function, POS information of the detected target is dynamically displayed near the target in the live image.
    - The POS information of different functions is different. For example, ID and waiting time for Queue Management, height for People Counting, etc.

NOTE

Feature Information is only available for certain camera models.

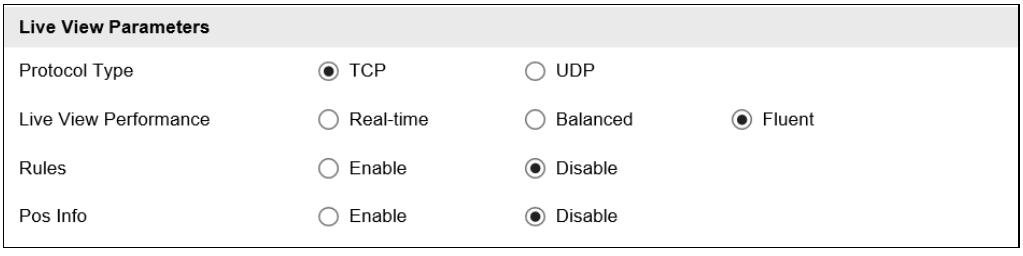


Figure 6-1 Live View Parameters

- **Record File Settings:** Set the saving path of the recorded video files. Valid for the record files you recorded with the web browser.

- **Record File Size:** Select the packed size of the manually recorded and downloaded video files. After the selection, the maximum record file size is the value you selected.
- **Save record files to:** Set the saving path for the manually recorded video files.

- **Picture and Clip Settings:** Set the saving paths of the captured pictures and clipped video files. Valid for the pictures you capture with the web browser.
  - **Save snapshots in live view to:** Set the saving path of the manually captured pictures in live view mode.
  - **Save download pictures to:** Set the saving path of the download pictures.
  - **Save scene picture to:** Set the saving path of the scene pictures.

NOTE

You can click **Browse** to change the directory for saving the clips and pictures.

Step 3 Click **Save** to save the settings.

Chapter 7 System Configuration

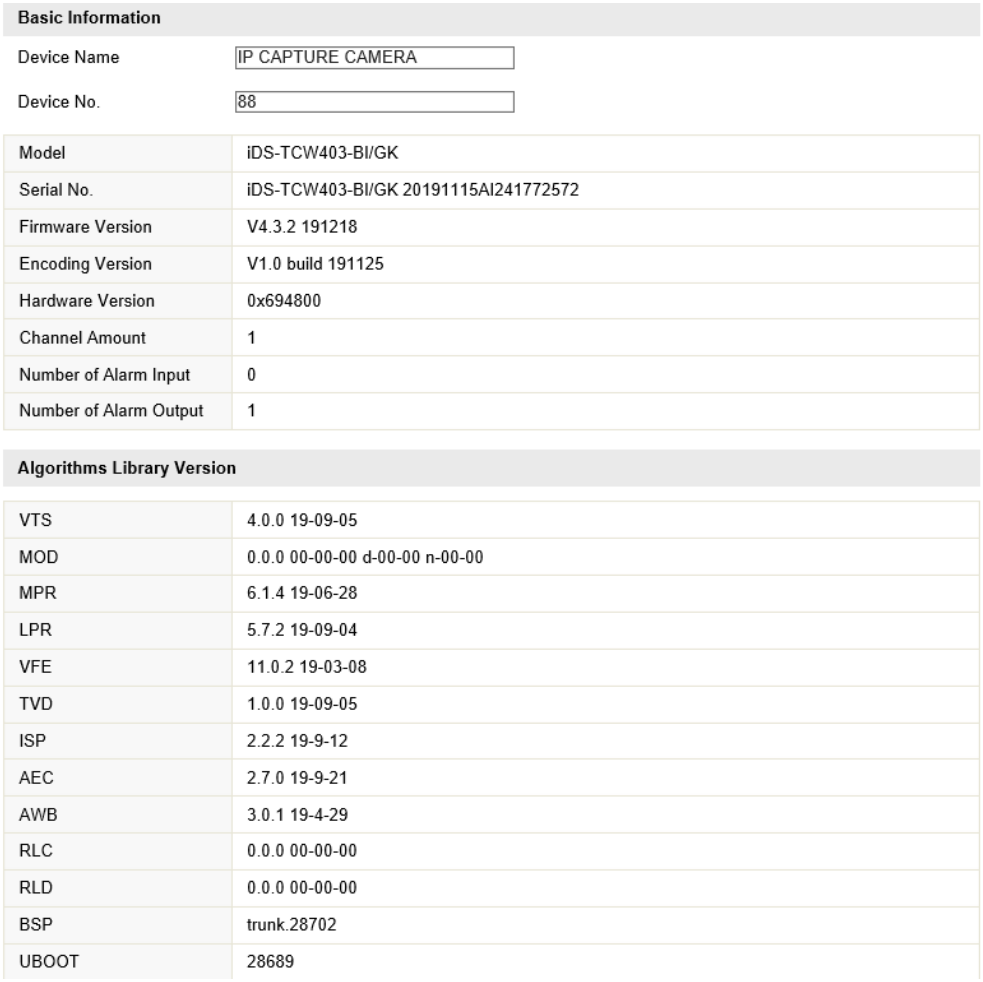
Purpose:

You can configure the parameters on this page, including device information, serial ports, network parameters, time configuration, service, etc.

7.1 View Device Information

Go to **Configuration** > **Device Configuration** > **System Configuration** > **Device Information**.

- Device Name and Device No. can be changed as desired.
- Other information of the camera, such as Model, Serial No., Firmware Version, Encoding Version, Hardware Version, Number of Channels, Number of Alarm Input, Number of Alarm Output, and Smart Module Status are displayed for your reference. And the information cannot be edited in this menu.
- Algorithms Library Version information can be viewed but cannot be edited in this menu.



Basic Information

Device Name	IP CAPTURE CAMERA
Device No.	88

Model	iDS-TCW403-BI/GK
Serial No.	iDS-TCW403-BI/GK 20191115AI241772572
Firmware Version	V4.3.2 191218
Encoding Version	V1.0 build 191125
Hardware Version	0x694800
Channel Amount	1
Number of Alarm Input	0
Number of Alarm Output	1

Algorithms Library Version

VTS	4.0.0 19-09-05
MOD	0.0.0 00-00-00 d-00-00 n-00-00
MPR	6.1.4 19-06-28
LPR	5.7.2 19-09-04
VFE	11.0.2 19-03-08
TVD	1.0.0 19-09-05
ISP	2.2.2 19-9-12
AEC	2.7.0 19-9-21
AWB	3.0.1 19-4-29
RLC	0.0.0 00-00-00
RLD	0.0.0 00-00-00
BSP	trunk.28702
UBOOT	28689

Figure 7-1 Device Information

7.2 Configure Construction Parameters

You can set the construction parameters of the camera.

Step 1 Go to **Configuration > Device Configuration > System Configuration > Construction Parameters**.

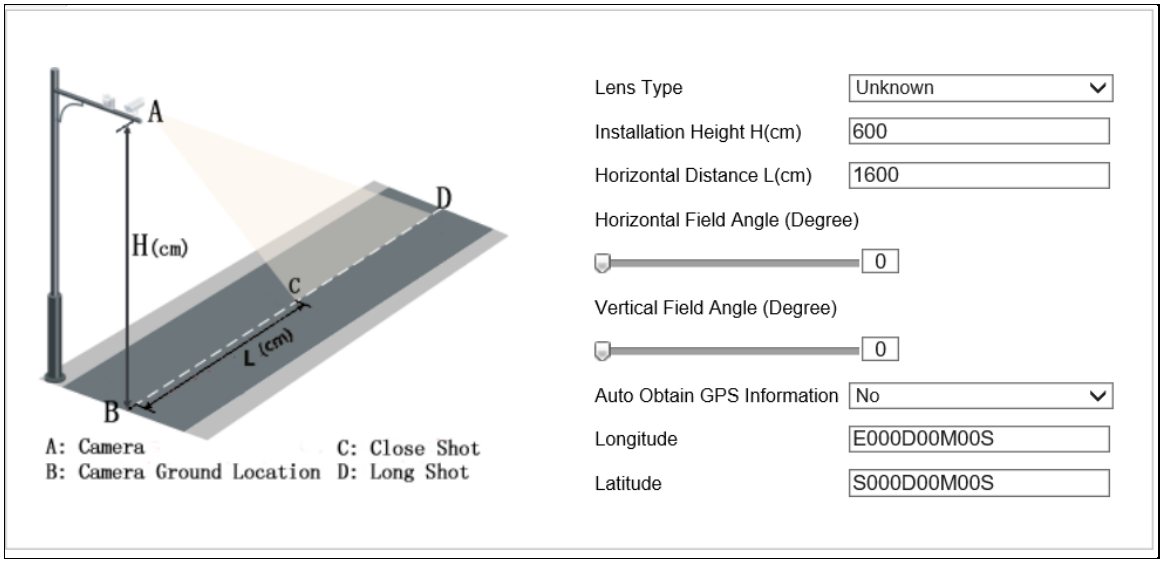


Figure 7-2 Construction Parameters

Step 2 Set the construction parameters according to the actual conditions.

Step 3 Click **Save** to save the settings.

7.3 Configure Serial Ports

Purpose:

Configure the RS-485 parameters and RS-232 parameters in this page.

- The RS-485 ports are used to input signals related to traffic control, such as RS-485 radar and vehicle detector. The number of available RS-485 ports can be different according to different camera models.
- The RS-232 port can be used in two ways:
  - **Parameters Configuration**: Connect a computer to the camera through the serial port. Device parameters can be configured by using software such as HyperTerminal. The serial port parameters must be the same as the serial port parameters of the camera.
  - **Transparent Channel**: Connect a serial device directly to the camera. The serial device will be controlled remotely by the computer through the network.

Step 1 Go to **Configuration > Device Configuration > System Configuration > Serial Ports**.

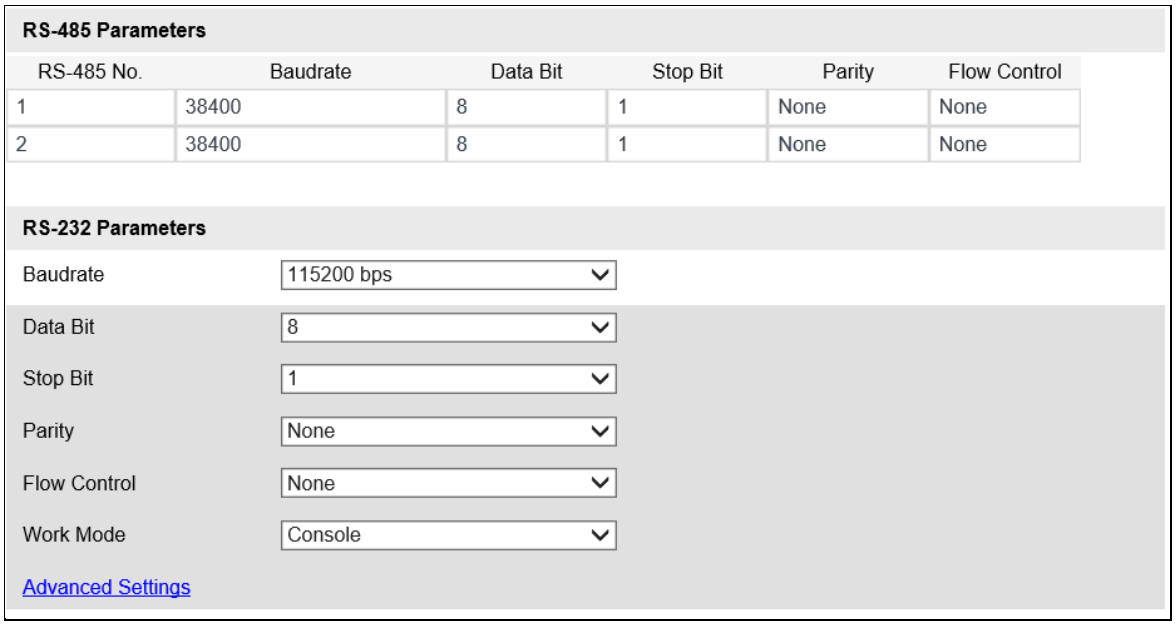


Figure 7-3 Serial Ports Settings

Step 2 Configure the RS-485 and RS-232 parameters.

Step 3 Click **Save** to save the settings.

7.4 Configure Network Parameters

Purpose:

Network parameters settings must be properly configured before you operate the camera over network. The camera supports both the IPv4 and IPv6. Both versions can be configured simultaneously without conflicting to each other, and at least one IP version should be configured.

Step 1 Go to **Configuration > Device Configuration > System Configuration >TCP/IP**.

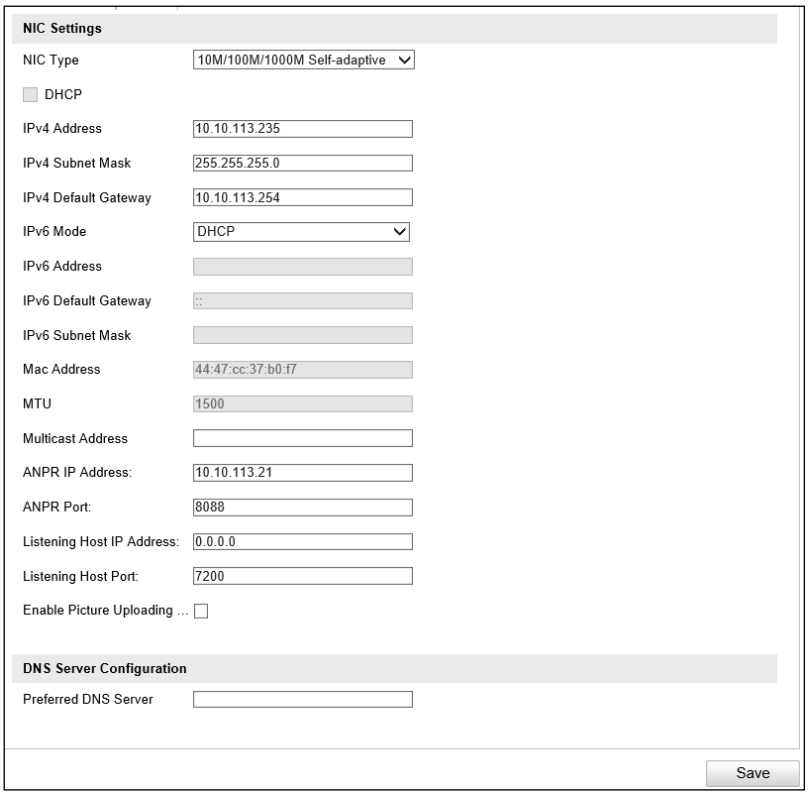


Figure 7-4 TCP/IP Settings

Step 2 Configure the basic network settings, including the NIC Type, IPv4 or IPv6 Address, IPv4 or IPv6 Subnet Mask, IPv4 or IPv6 Default Gateway, IPv6 mode, Mac Address, MTU settings and Multicast Address.

- ANPR IP Address: ANPR listening IP address. Picture can be transferred from camera to server by setting ANPR IP address and ANPR port in ANPR protocol.
- ANPR Port: ANPR listening port. Picture can be transferred from camera to server by setting ANPR IP address and ANPR port in ANPR protocol.
- Listening Host IP Address: Picture can be transferred from camera to server by setting listening host IP address and listening host port.
- Listening Host Port: Picture can be transferred from camera to server by setting listening host IP address and listening host port.

NOTE

- ANPR listening will be prior listening when ANPR listening and listening are both set.
- If you want to set Listening as prior listening, check Picture Uploading Listening, and set ANPR listening and listening.

Step 3 Configure the DNS server. Enter the preferred DNS server.

Step 4 DNS (Domain Name System) is a network system used to translate names into IP address.

Step 5 Click **Save** to save the above settings.

NOTE

- The valid value range of MTU is 1280 to 1500.
- The Multicast sends a stream to the multicast group address and allows multiple clients to acquire the stream at the same time by requesting a copy from the multicast group address. Before utilizing this function, you have to enable the Multicast function of your router.
- A reboot is required for the settings to take effect.

7.5 Configure Port

Purpose:

Configure the HTTP port, RTSP port, SDK port information to connect corresponding client.

Step 1 Go to **Configuration > Device Configuration > System Configuration > Port**.

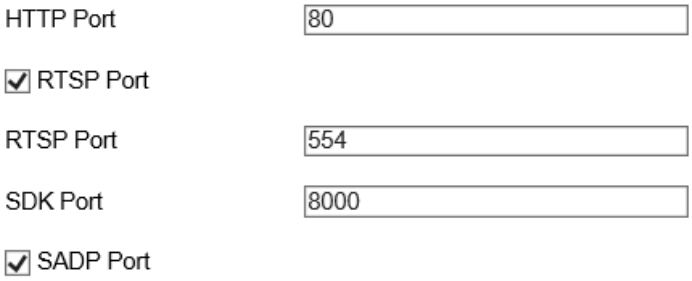


Figure 7-5 Port Configuration

Step 2 Configure the following parameters.

- **HTTP Port**: The default port number is 80, and it can be changed to any port No. ranges from 1 to 65536 which is not occupied, except 21 (FTP port) and 23 (Telnet port).
- **RTSP Port**: The default port number is 554 and it can be changed to any port No. ranges from 1 to 65536 which is not occupied, except 21 (FTP port) and 23 (Telnet port).
- **SDK Port**: The default server port number is 8000, and it can be changed to any port No. ranges from 2000 to 65535 which is not occupied.
- **SADP Port**: You can visit device via SADP by checking SADP port.

Step 3 Click **Save** to save the settings.

7.6 Configure DDNS

Purpose:

If your device access internet via a dynamic IP address, you may set Dynamic DNS (DDNS) to be used for network access.

Before you start:

Prior registration with your DDNS Provider is required before configuring the system to use DDNS.

Step 1 Go to **Configuration > Device Configuration > System Configuration > DDNS**.

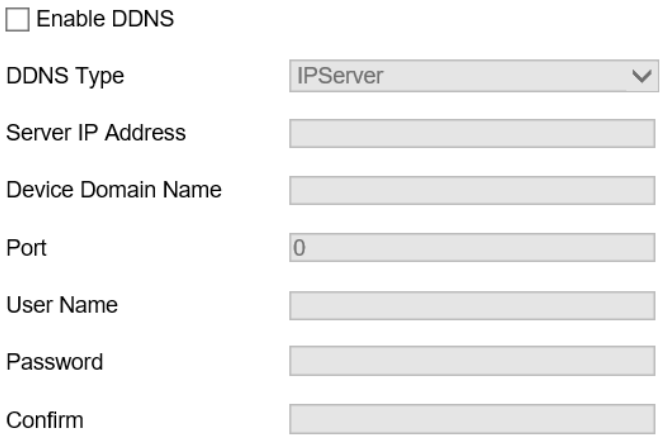


Figure 7-6 DDNS Settings

Step 2 Select Enable DDNS.

Step 3 Select the DDNS Type.

1) Enter **Server IP Address**, **device domain name**, **port** for DynDNS server.
2) Enter **User Name** and **Password** registered in the DynDNS website and **Confirm** the password.

Step 4 Click **Save** to save the settings.

7.7 Configure HTTPS

Purpose:

HTTPS provides authentication of the web site and associated web server that one is communicating with, which protects against Man-in-the-middle attacks. Perform the following steps to set the port number of https.

Example

If you set the port number as 443 and the IP address is 192.168.1.64, you may access the device by inputting *https://192.168.1.64:443* via the web browser.

NOTE

The HTTPS port can be only configured through the web browser.

Step 1 Go to **Configuration > Device Configuration > System Configuration > HTTPS**.

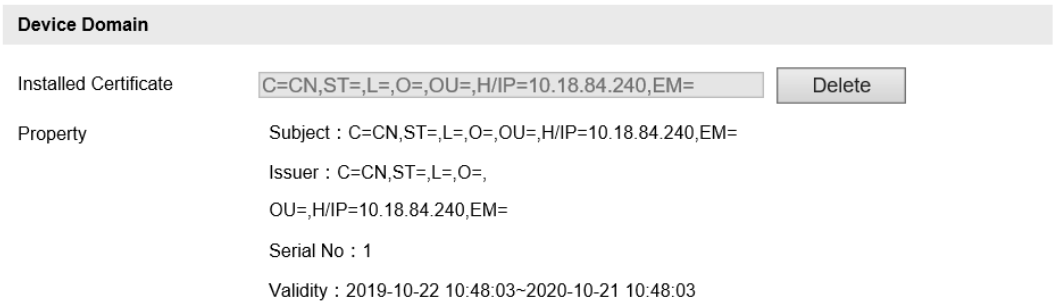


Figure 7-7 HTTPS Configuration

Step 2 Create and install the certificate.

- **OPTION 1**: Create private certificate.
  1) Click Create private certificate.
  2) Click Create and the following message box pops up as below.

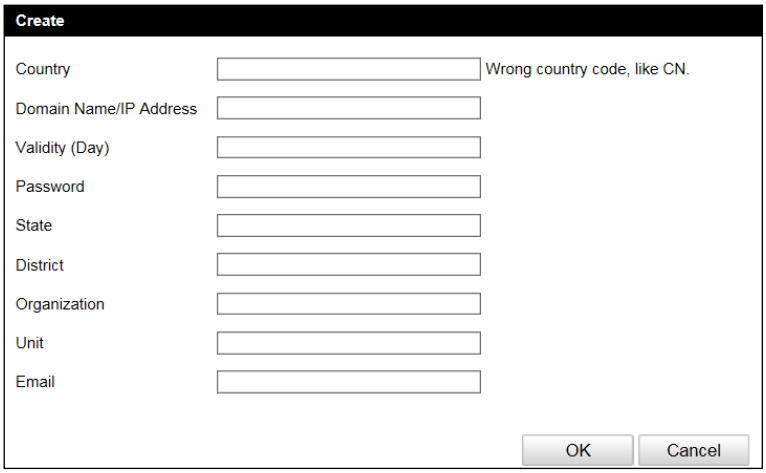


Figure 7-8 Create Private Certificate

  3) Enter the parameters.
  4) Click **OK** to save the settings.
- **OPTION 2**: Signed certificate is available. Start the installation directly.
  1) Click Signed certificate is available. Start the installation directly.
  2) Click View to find the saving path of the certificate.
  3) Click **Install** to install the certificate.
- **OPTION 3**: Create the certificate request first and continue the installation.
  1) Click Create the certificate request first and continue the installation.
  2) Click Create to create the certificate request.
  3) Click Download to download the certificate request and submit it to the trusted certificate authority for signature.

4) After receiving the signed valid certificate, click View to find the saving path of the certificate and click Install to install it.
5) (Optional) Click Delete to delete the certificate.
6) There will be the certificate information after you successfully create and install the certificate.

7.8 Configure Time

Purpose:

You can synchronize the date and time of the device manually or automatically.

Step 1 Go to **Parameters Configuration > System > System Settings > Time Settings**.

Step 2 Select **Time Zone** from the dropdown list.

Step 3 Select required synchronization mode.

Step 4 Click **Save** to save the settings.

7.9 Configure EHome Protocol

Step 1 Go to **Configuration > Device Configuration > System Configuration> EHome Protocol**.

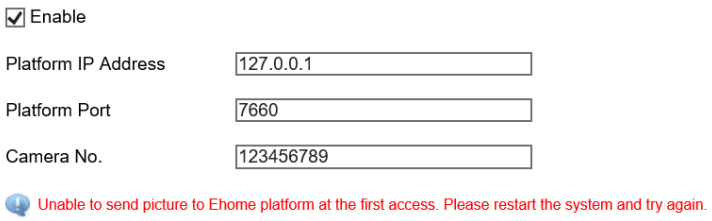


Figure 7-9 EHome Configuration

Step 2 Set EHome platform parameters.

- **Platform IP Address:** IP address of EHome platform.
- **Platform Port:** Port of EHome platform, the default value is 7600.
- **Camera No.**: No. of visited camera.

Step 3 Click **Save** to save the settings.

7.10 Enable User Lock

Step 1 Go to **Configuration > Device Configuration > System Configuration> Service**.

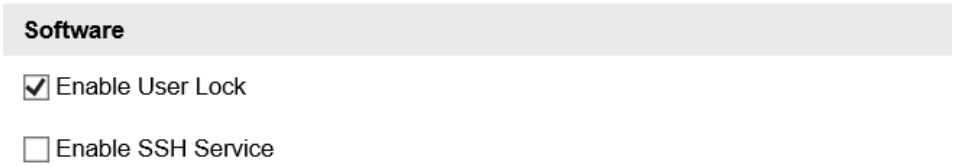


Figure 7-10 Service Configuration

Step 2 Check **Enable User Lock** to enable user lock. If you enter wrong password for 7 times, the account will be locked for half hour.

Step 3 (Optional) Check **Enable SSH service**.

Step 4 Click **Save** to save the settings.

Chapter 8 Encoding and Storage Configuration

Purpose:

You can configure the encoding and storage related parameters from this page, including video encoding, image encoding, ROI, record schedule, redundant storage, FTP, and cloud storage.

8.1 Configure Video Encoding

For certain camera models, you can configure parameters for available video streams, for example, the main stream, the sub-stream, etc. And you can also customize additional video streams for further needs.

- On **Video** page, set-up available video streams.
- On **Custom Video** page, add extra video streams.

Step 1 Go to **Configuration > Device Configuration > Encoding and Storage> Video Encoding**.

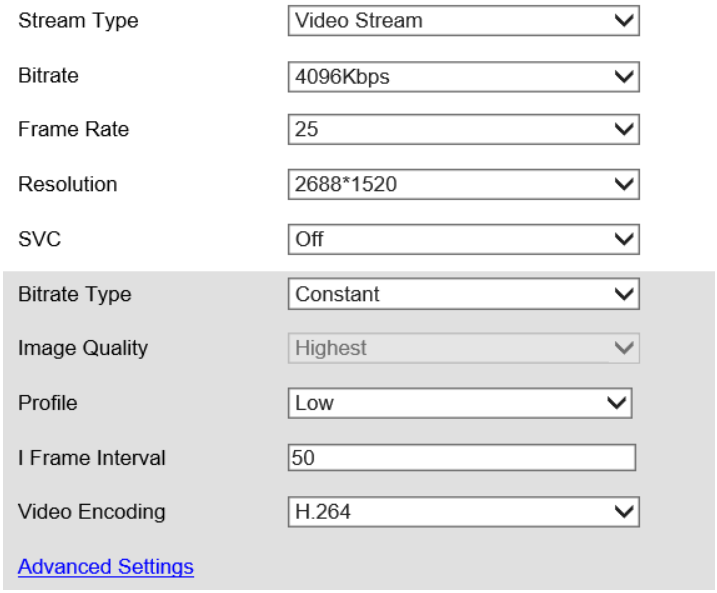


Figure 8-1 Video Settings

Step 2 Select the Stream Type. Supported stream types are listed in the drop-down list.

NOTE

The main stream is usually for recording and live view with good bandwidth, and the sub-stream can be used for live view when the bandwidth is limited.

Step 3 You can customize the following parameters for the selected stream type.

- **Stream Type**: Select the stream type to video stream, or video & audio composite stream. The audio signal will be recorded only when the **Video Type** is **Video Audio**.
- **Bitrate**: Select the bitrate of the video.
- **Frame Rate**: Set the frame rate. The frame rate is to describe the frequency at which the video stream is updated and it is measured by frames per second (fps). A higher frame rate is advantageous when there is movement in the video stream, as it maintains image quality throughout.
- **Resolution**: Select the resolution of the video output.
- **SVC**: Scalable Video Coding is an extension of the H.264/ MJPEG and H.265 standard. Select OFF/ON to disable/enable the SVC function. Select Auto and the device will automatically extract frames from the original video when the network bandwidth is insufficient.
- **Bitrate Type**: Select the bitrate type to constant or variable.
- **Video Quality**: When bitrate type is selected as Variable, 6 levels of video quality are selectable.
- **Max. Bitrate**: Set the max. bitrate from 32 to 16384 Kbps. The higher value corresponds to the higher video quality, but the better bandwidth is required.

NOTE

The maximum limit of the max. bitrate value varies according to different camera platforms. For certain cameras, the maximum limit is 8192 Kbps or 12288 Kbps.

- **Profile:** When you select H.264 or H.265 as video encoding, you can set the profile. Selectable profiles vary according to camera models.
- **I Frame Interval:** Set I Frame Interval as default.
- **Video Encoding:** The camera supports multiple video encodings types, such as H.264, H.265, and MJPEG. Supported encoding type for different stream types may differ. H.265 is a new encoding technology. Compared with H.264, it reduces the transmission bitrate under the same resolution, frame rate and image quality.

NOTE

- Selectable video encoding types may vary according to different camera modes.
- Upgrade your video player to the latest version if live view or playback does not work properly due to compatibility.

Step 4 Click **Save** to save the settings.

NOTE

The video parameters vary according to different camera models. Refer to the actual display page for camera functions.

8.2 Configure Image Encoding

Step 1 Go to **Configuration >Device Configuration > Encoding and Storage > Image Encoding**.

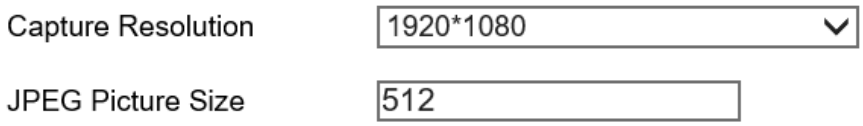


Figure 8-2 Image Encoding

Step 2 Select Capture Resolution.

Step 3 Enter JPEG Picture Size. The captured pictures are saved as JPEG files, and JPEG Picture Size refers to max. size of each captured picture.

Step 4 Click **Save** to save the settings.

8.3 Configure ROI

Purpose:

ROI (Region of Interest) encoding helps to discriminate the ROI and background information in video compression, which means, the technology assigns more encoding resource to the region of interest, thus to increase the quality of the ROI whereas the background information is less focused.

NOTE

ROI function varies according to different camera models.

Figure 8-3 Region of Interest Settings

Step 2 Enter the ROI settings interface: **Configuration > Device Configuration > Encoding and Storage > ROI**.

Step 3 Select the Stream Type for ROI.

Step 4 Check the checkbox of Enable under Fixed Area.

Step 5 Set Fixed Area for ROI.

1) Select the Area Code from the drop-down list.
2) Check the **Enable** checkbox to enable ROI function for the chosen region.
3) Click **Draw Area**. Click and drag the mouse on the view screen to draw a red rectangle as the ROI region. You can click **Clear** to cancel former drawing. Click **Stop Drawing** when you finish.
4) Select the ROI level.
5) Enter a region name for the chosen region.
6) Click **Save** the save the settings of ROI settings for chosen fixed area.
7) Repeat steps (1) to (6) to setup other fixed area.

NOTE

ROI level means the image quality enhancing level. The larger the value is, the better the image quality would be.

8.4 Configure Record Schedule

Purpose:

You can follow the instructions to configure the scheduled recording. By default, the record files of scheduled recording are stored in the TF card.

Steps:

Step 1 Go to **Configuration > Device Configuration > Encoding and Storage > Record Schedule**.

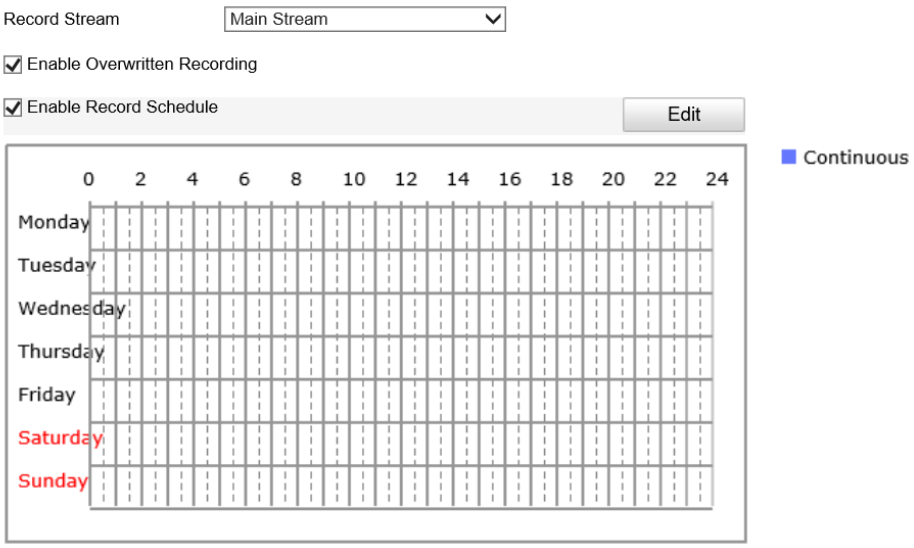


Figure 8-4 Record Schedule Configuration

Step 2 Select Record Stream.

Step 3 (Optional) Check **Enable Overwritten Recording**.

- If you enable the function, when the storage space is full, the former record files will be overwritten.
- If you disable the function, when the storage space is full, the notice that the space is full will be reminded.

Step 4 Check **Enable Record Schedule**.

Step 5 Click **Edit** to edit the record schedule.

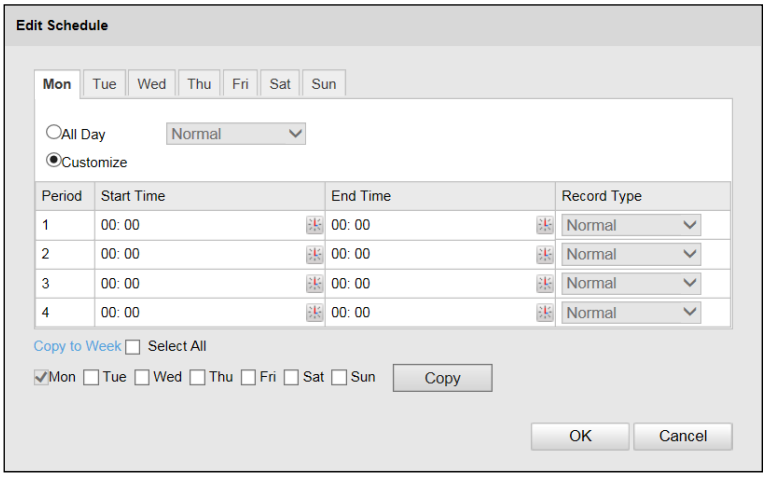


Figure 8-5 Edit Record Schedule

Step 6 Select the day to set the record schedule.

Step 7 Set all-day record or segment record.

- If you want to configure the all-day recording, check the **All Day** checkbox.
- If you want to record in different time sections, check the **Customize** checkbox. Set the **Start Time** and **End Time.**

NOTE

- The time of each segment cannot be overlapped. Up to 4 segments can be configured.
- The default record type is Normal and you cannot edit it.

Step 8 Check **Select All** and click **Copy** to copy settings of this day to the whole week. You can also check any of the checkboxes before the date and click **Copy**.

Step 9 Click **OK** to save the settings and exit from the interface.

Step 10 Click **Save** to save the settings.

8.5 Configure Storage Management

Purpose:

You can manage the storage, view the TF card information, format the TF card, etc.

Step 1 Go to **Configuration > Device Configuration > Encoding and Storage > Backup Storage**.

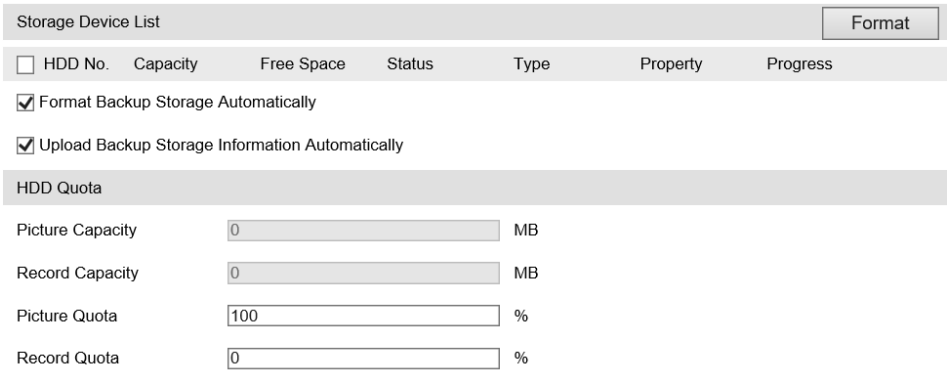


Figure 8-6 Backup Storage Configuration

Step 2 View the HDD information such as Capacity, Free Space, Status, etc.

Step 3 (Optional) Check the HDD and click **Format** to format it.

Step 4 (Optional) Check **Format Backup Storage Automatically**. Then the TF card in the redundant storage can be formatted automatically. The storage is used for store captured pictures, traffic violation video, and log.

Step 5 (Optional) Check **Backup Storage Information Automatically**.

Step 6 Configure the HDD Quota.

1) Enter **Picture Capacity** and **Record Capacity**.
2) Enter the **Picture Quota** and **Record Quota**.

NOTE

The Capture Quota Ratio ranges from 0 to 100%.

The sum of Capture Quota Ratio and Video Quota Ratio should be 100%.

8.6 Configure FTP

Purpose:

You can configure the FTP server related information to enable the uploading of the captured pictures to the FTP server.

NOTE

We have three ways to storage data (priority ranking from prior to less prior): FTP, SDK arming and local memory card storage. If FTP is enabled, the SDK arming and local memory card storage are invalid. If SDK arming is enabled, memory card storage is invalid.

Step 1 Go to Configuration > Device Configuration > Encoding and Storage > FTP.

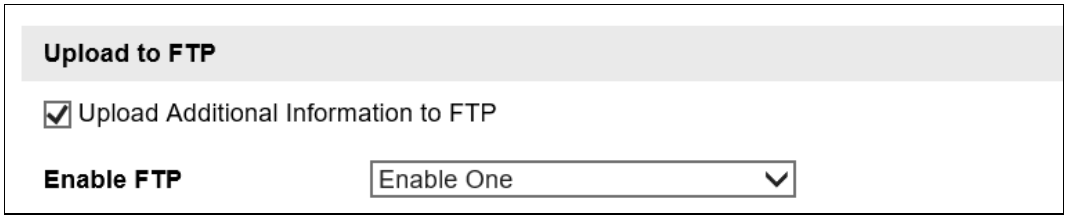


Figure 8-7 FTP Configurations

Step 2 Check **Upload Additional Information to FTP** to enable the uploading function.

If **Upload Additional Information to FTP** is enabled, the additional information of passed vehicle will be uploaded to FTP in binary form. If it is disabled, only captured pictures will be uploaded to FTP.

Step 3 Select the FTP uploading mode.

- **Disable**: No data will be uploaded to FTP.
- **Enable One**: Data can be uploaded to one FTP server.
  1) Select Enable One.

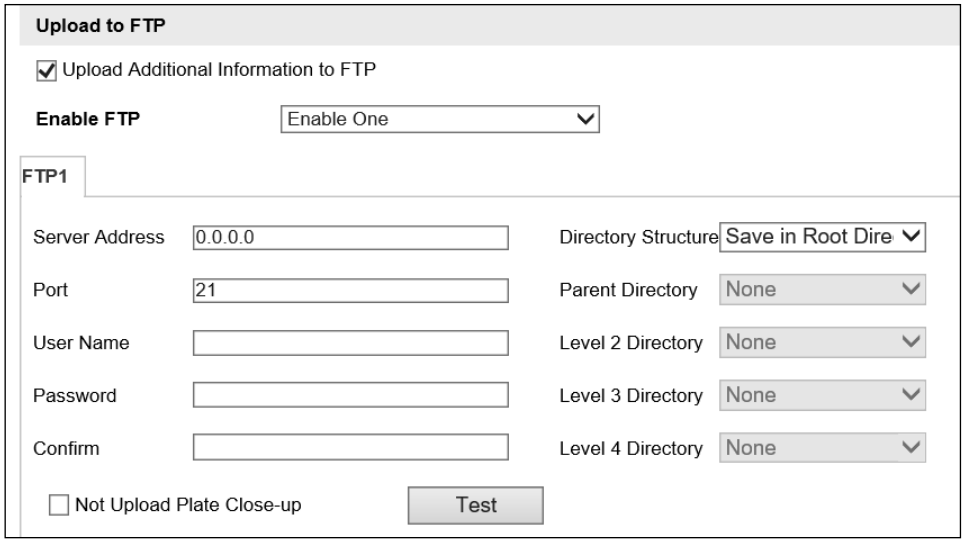


Figure 8-8 Upload to One FTP Server

2) Configure the FTP server parameters, including **Server Address**, **Port**, **User Name**, and **Password**.
3) Select the **Directory Structure** to save the files. **Save in Root Directory**, **Save in Parent Directory**, and **Save in Level 2/3/4 Directory** are selectable.
4) Select the content in different directories. For the **Parent Directory**, you can select **Device Name**, **Device No.**, and **Device IP Address**. For the **Level 2/3/4 Directory**, you can select **Camera Name**, **Camera No.**, **Device IP Address**, etc.
5) (Optional) Check **Not Upload Plate Close-up**, the close-up of the license plate will not be uploaded to the FTP server.

Step 4 Configure the **Name Rule**.

1) Select the **Separator**.
2) Select the **Elements** of each name.

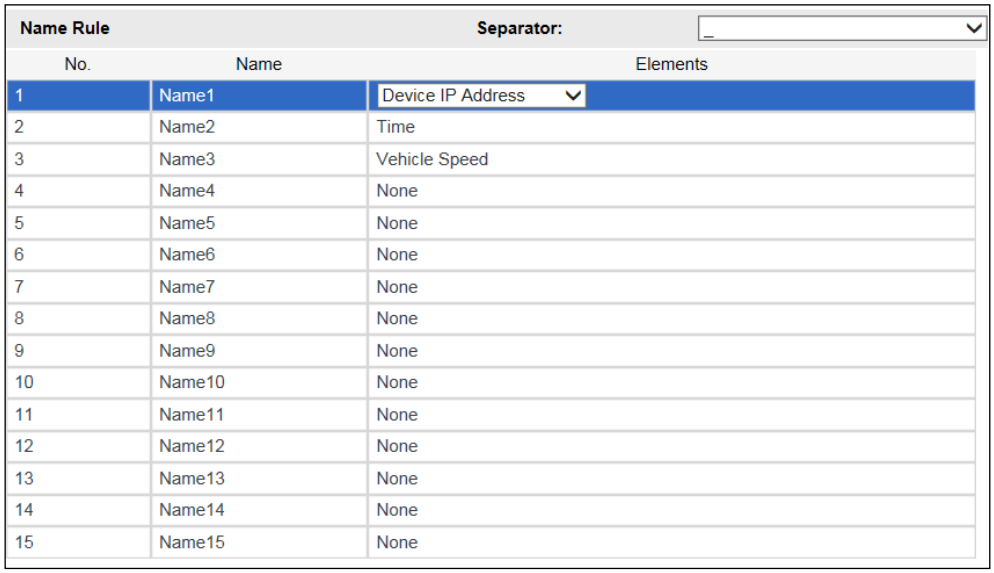


Figure 8-9 Name Rule Configuration

Step 5 Configure the **OSD Information** to set file name as required.

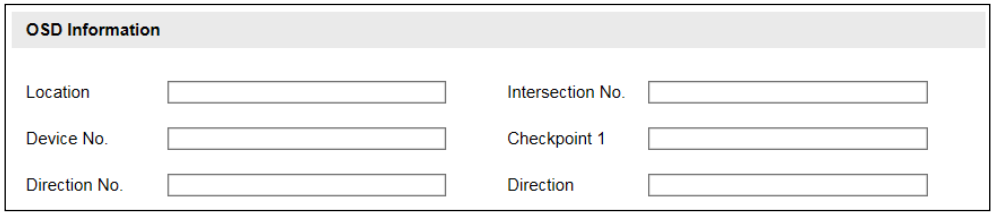


Figure 8-10 OSD Information

Step 6 Click **Save** to save the settings.

Chapter 9 Flash Light Parameters Configuration

Step 1 Go to **Configuration > Device Configuration > Capture Parameters > Flash Light Parameters**.

Step 2 Select a tab corresponded with the flash light control port.

Step 3 Select IO Output Mode.

Step 4 Set flash light parameters according to actual needs.

Step 5 Select Control Constant Light mode.

- **Control Constant Light by Brightness**: Constant light will be controlled by light via setting Brightness Threshold.
- **Control Constant Light by Schedule**: Constant light will be controlled by schedule via setting start time and end time.

Step 6 (Optional) Check the channel No. to copy the same settings to other channels.

Step 7 Click **Save**.

Chapter 10 Text Overlay Configuration

Purpose:

Configure the OSD on the captured pictures and videos.

10.1 Configure Capture Overlay Configuration

Purpose:

You can configure the overlay information on the picture, to form a picture with recognized container No.

Steps:

Step 1 Go to **Configuration > Device Configuration > Text Overlay > Capture Overlay Configuration**.

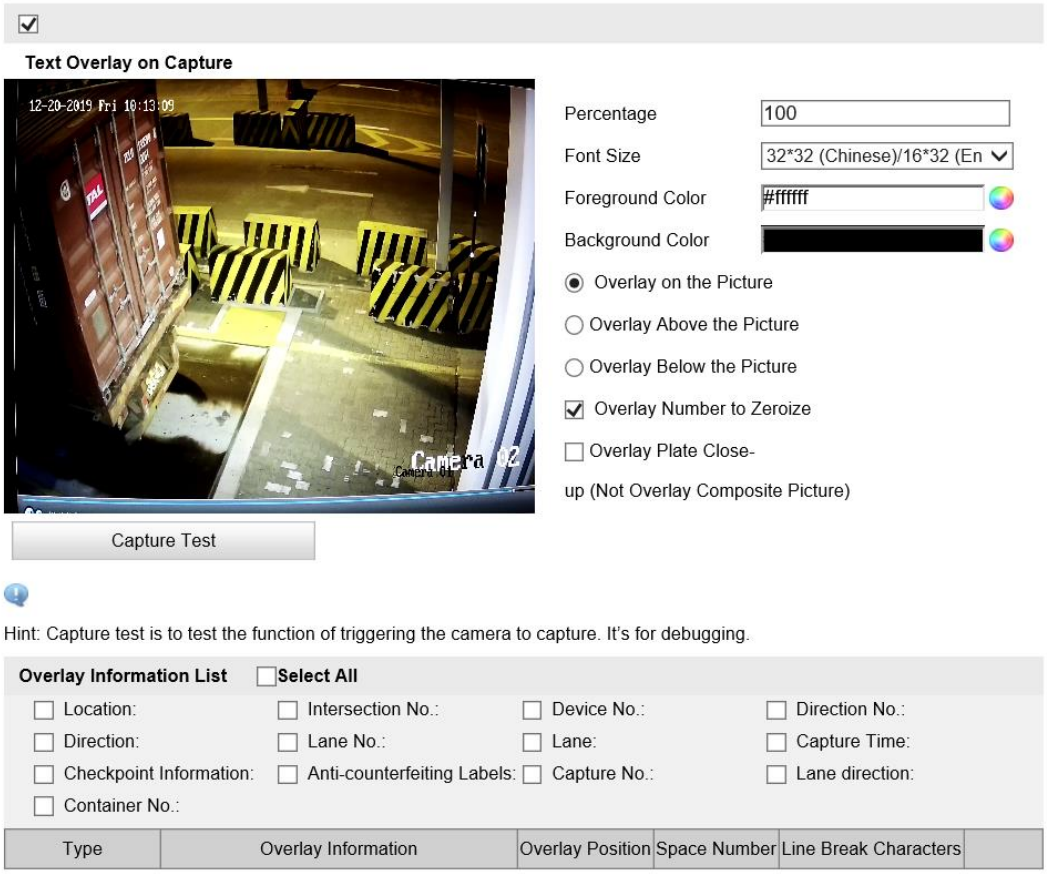


Figure 10-1 Single Picture Overlay

Step 2 Check Text Overlay on Captured Picture.

Step 3 Configure the parameters below.

- **Percentage**: the percentage of the information overlaid on the picture.

- **Font Size**: the font size of the overlay information.
- **Foreground Color**: the foreground color of the overlay information.
- **Background Color**: the background color of the overlay information.

Step 4 Set the overlay text position.

Step 5 (Optional) Check **Overlay Number Zeroing**, to zero out the overlaid information.

Step 6 (Optional) Check **Overlay Plate Close-up** on the captured picture.

Step 7 Configure the overlay information.

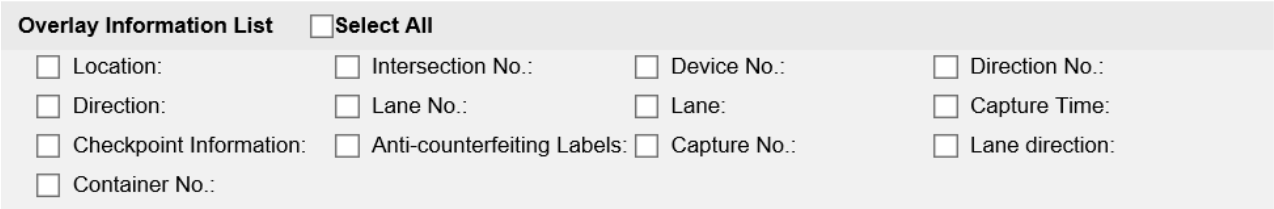


Figure 10-2 Configure Display Information

1) Check the overlay information or check **Select All** to display all the overlay information.
2) Configure the overlay information.

- **Overlay Information**: You can edit the details of the overlay information type.
- **Overlay Position**: For some information you want to display separately, check the checkbox of the desired items. For the other items, they will be displayed together.
- **Space**: It stands for the length of blank space between the last character of the first item and the first character of the next item.
- **Line Break Characters**: When you add Line Break Characters to an item, the item is displayed as a new paragraph, and the number stands for the scale of space above the paragraph.
- / : Click to move the overlay position up. Click to move the overlay position down.

10.2 Configure Video Overlay

Purpose:

You can configure the overlay information of the captured picture.

Step 1 Go to **Configuration > Device Configuration > Text Overlay > Video**.

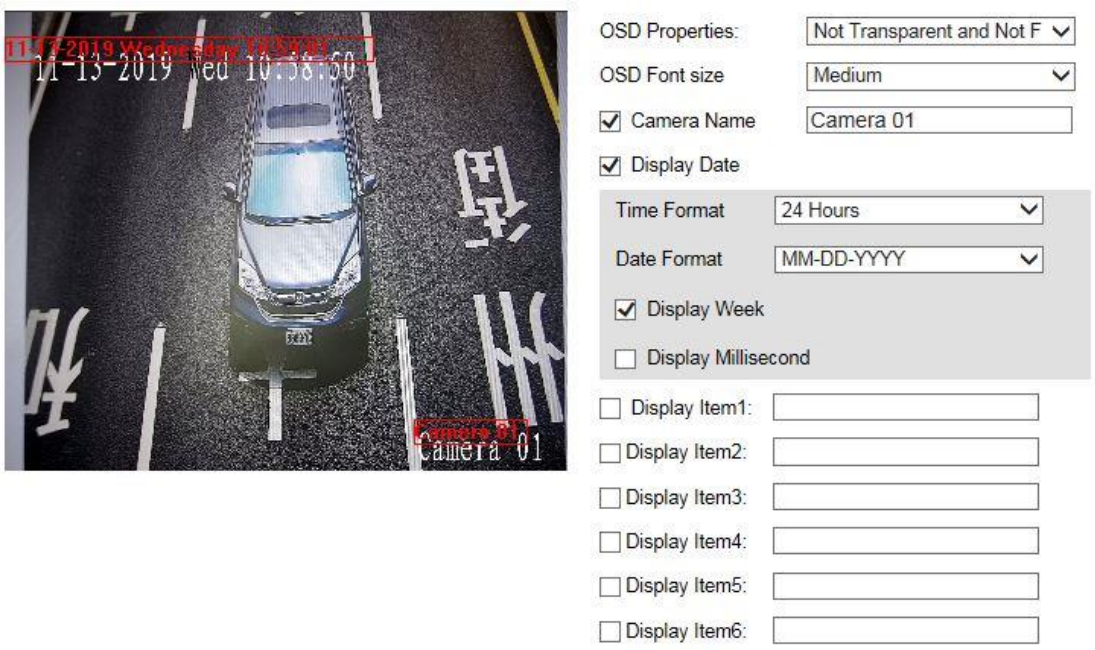


Figure 10-3 Capture Overlay Configuration

Step 2 Configure the parameters below.

- **OSD Properties**: the OSD information properties overlaid on the picture.
- **OSD Font Size**: the font size of the overlay information.
- **Camera Name**: Check it to display camera name on the picture.
- **Display Date**: Check it to display date information on the picture.
- **Time Format**: 24-hour and 12-hour are selectable.
- **Date Format**: The date format overlaid on the picture.
- **Display Week**: Check it to display week information on the picture.
- **Display Millisecond**: Check it to display millisecond information on the picture.
- **Display Item**: You can check display item(s) and enter information as need, to overlay them on the picture.

Step 3 Click **Save** to save the settings.

Chapter 11 Image Parameters Configuration

Purpose:

Configure general parameters, video parameters, picture parameters and ICR on this page.

11.1 Configure General Parameters

Purpose:

You can configure general parameters to improve image quality.

Step 1 Go to **Configuration > Device Configuration > Image Parameters > General Parameter**.

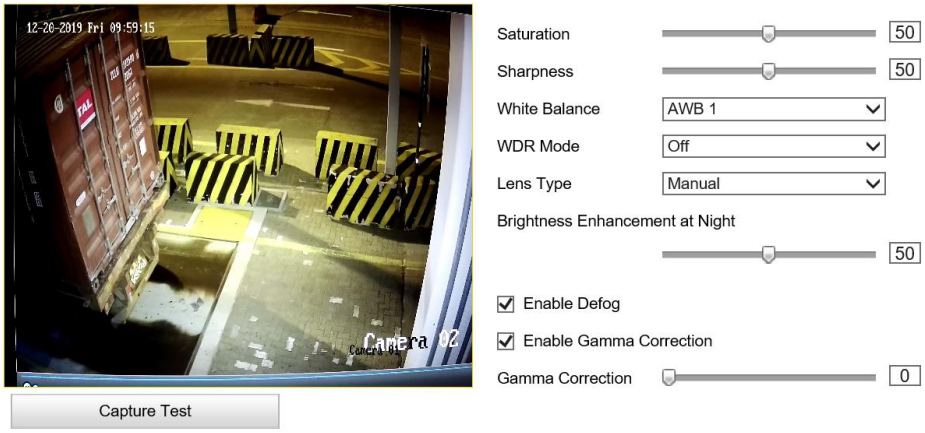


Figure 11-1 General Parameters Configuration

Step 2 Set the image **Saturation**, **Sharpness** and **White balance mode**.

- **Saturation**: The colorfulness of the image color.
- **Sharpness**: The edge contrast of the image.
- **White Balance**: The white rendition function of the camera used to adjust the color temperature according to the environment.

Step 3 Select **WDR Mode**. WDR and Off are selectable. Wide Dynamic Range is used when there is a high contrast of the bright area and the dark area of the scene.

Step 4 Select **WDR Switch**. On, Time and Brightness are selectable.

- **Time**: Activate WDR function on schedule. Set the start time and end time.
- **Brightness**: Active WDR function automatically. Set the brightness threshold.
- **WDR Level**: higher level means stronger effect.

Step 5 Select **Iris Mode.**

Step 6 Adjust **Brightness Enhancement at Night**.

Step 7 (Optional) Check **Enable Defog**. You can enable the defog function when the environment is foggy and the image is misty. It enhances the subtle details so that the image appears clearer.

Step 8 (Optional) Check **Enable Gamma Correction**, and adjust the correction level. Gamma correction can enhance picture contrast, but bring noise at the same time.

Step 9 (Optional) Click **Capture Test** to test the effects after you complete the adjustment.

Step 10 (Optional) Reboot the device if you enable image rotation. For other parameters, they will take effect in real time.

11.2 Configure Video

Purpose:

The camera supports dual-shutter. One shutter for video image and the other one for capture image. You can configure shutter parameters for video image.

Step 1 Go to **Configuration > Device Configuration > Image Parameters > Video**.

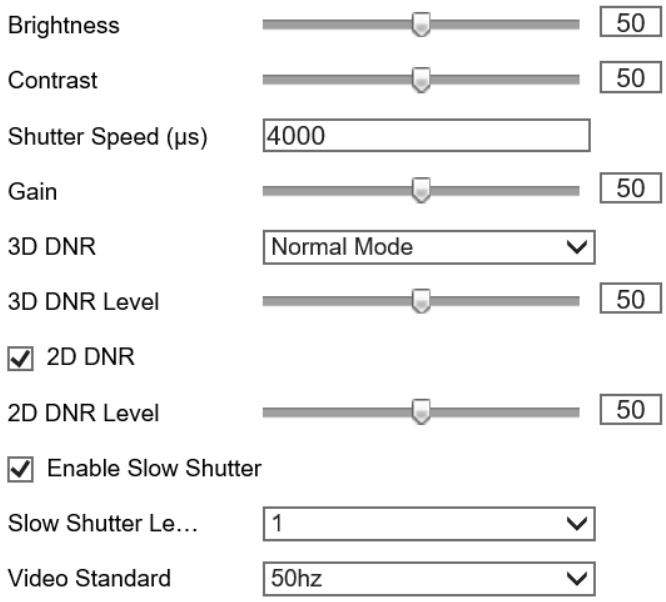


Figure 11-2 Video Image Configuration

Step 2 Adjust **Brightness**.

Step 3 Adjust **Contrast**. It refers to the color contrast between the brightest part and darkest part.

Step 4 Enter **Shutter Speed**. It refers to the length of time that a camera's shutter remains open.

Step 5 Adjust **Gain**. It refers to the ratio the output signal and input signal.

Step 6 Select **Hue Range** to adapt the display.

Step 7 Select **3D DNR**. It refers to the brightness noise reduction, saturation noise reduction and original data reduction in the separation of video signals. Comparing with the general 2D digital noise reduction, the 3D digital noise reduction function processes the noise between two frames besides processing the noise in one frame. The noise will be much less and the video will be clearer.

1) If you select **Normal Mode**, adjust **3D DNR Level**.
2) If you select **Expert Mode**, adjust **Spatial Intensity** and **Time Intensity**.

Step 8 (Optional) Check **2D DNR**, and adjust **2D DNR Level**.

Step 9 (Optional) Check **Slow Shutter** and select slow shutter level.

In slow shutter mode, the shutter speed will automatically decrease in low illumination conditions to maintain clear video images by increasing the exposure time. Higher level means lower shutter speed.

Step 10 (Optional) Click **Capture Test** to test the effects.

11.3 Configure ICR

Purpose:

IR Cut Filter is used to block or reflect infrared wavelengths but pass visible light. This series of cameras support auto switch of ICR to realize the 24-hour security.

NOTE

ICR configuration is not supported by all camera models of this series.

Step 1 Go to **Configuration > Device Configuration > Image Parameters > ICR**.

Step 2 Select **ICR Mode**. Do not Switch, Auto-switch, Manual Switch, and Scheduled Switch are selectable.

- **Do not switch**: The ICR always stays in day mode by default.
- **Auto Switch**: The ICR switches according to the brightness. Adjust **Threshold** from 0 to 100.

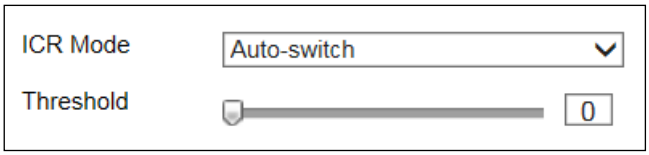


Figure 11-3 Auto-Switch

- **Manual Switch:** If you set the ICR mode as Manual Switch, it offers you an option to select day or night.

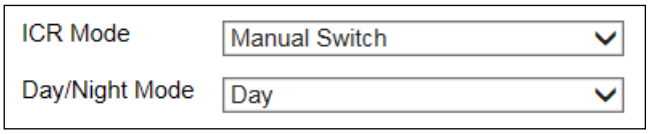


Figure 11-4 Manual Switch

- **Scheduled Switch:** The ICR switches according to the configured time schedule. You can set the Start Time and End Time of Day/Night Mode according to local time.

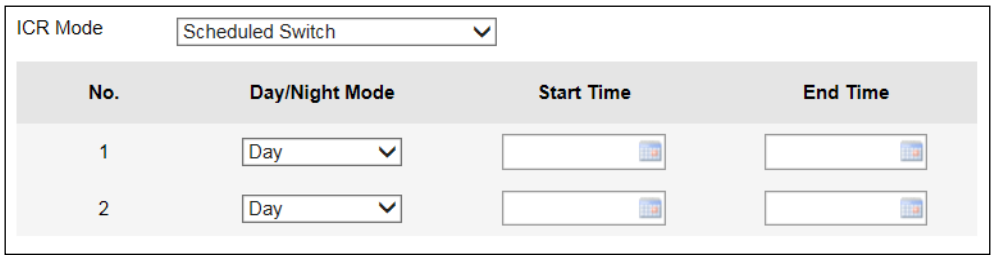


Figure 11-5 Scheduled Switch

Step 3 Click **Save** to save the settings.

Chapter 12 Application Mode Configuration

Purpose:

You can configure Container No. Recognition to detect, capture and recognize the container No.

Step 1 Go to **Configuration > Device Configuration > Application Mode**.

Step 2 Select **Application Mode** as **Container No. Recognition**.

Step 3 Select **Camera Location** as **left**, **right**, **up** or **down** according to actual needs.

Step 4 Set **Port No.** according to actual camera.

Step 5 Draw area.

1) Click **Draw Area**.
2) Click vertex of LPR area box, to adjust the LPR area.
3) Set the best capture location to the place where distortion of container No. is smallest.
4) Click **Redraw LPR** and **Redraw Triggering Line**, to redraw the LRP and triggering line.
5) Click **OK** to finish drawing.

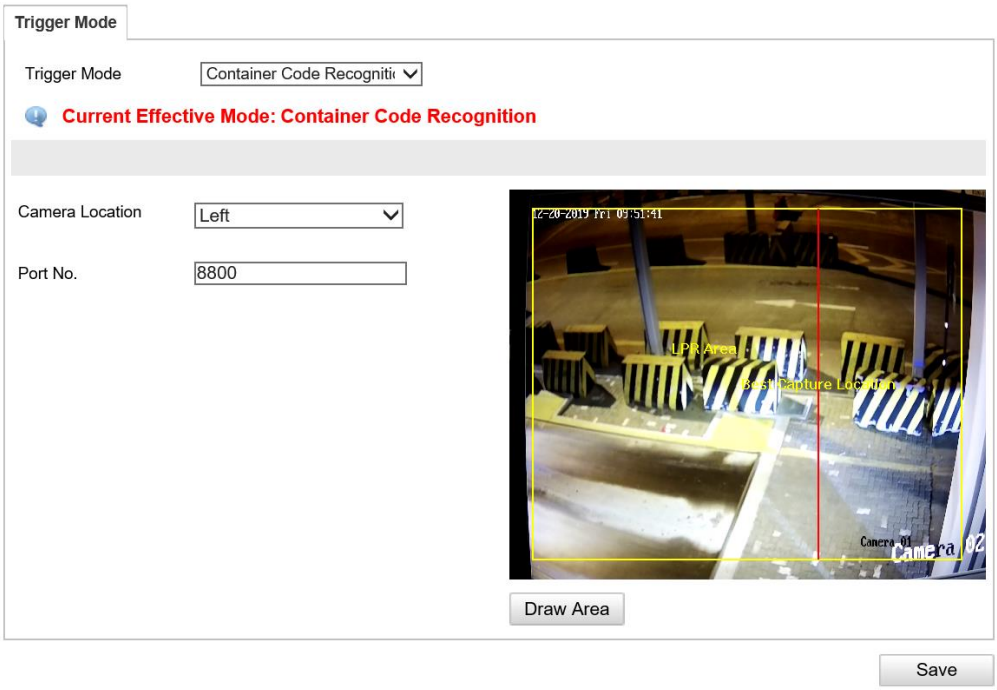


Figure 12-1 Container No. Recognition Configuration

Step 6 Click **Save** to save the settings.

Chapter 13 Exception

Step 1 Go to **Configuration > Device Configuration> Exception**.

Step 2 Select the exception type and the corresponding trigger methods.

Enable	Exception Type	Notify Surveillance Center	Trigger Alarm Output	Alarm Duration (s)
☐	HDD Error			
☐	Network Bridge Disconnected			
☐	IP Address Conflicted			
☐	Vehicle Detector Exception			
☐	Traffic Light Detector Exception			

Figure 13-1 Exception Settings

- **Notify Surveillance Center**: Send an exception or alarm signal to remote management software when an event occurs.
- **Trigger Alarm Output:** Trigger one or more external alarm outputs when an event occurs.
- **Alarm Dwell Time(s):** The waiting time for the alarm triggered. And you can set the alarm dwell time from 0 to 180s.

Step 3 Click **Save** to save the settings.

Chapter 14 Maintenance

14.1 Device Status

Step 1 Go to **Configuration > Device Status**.

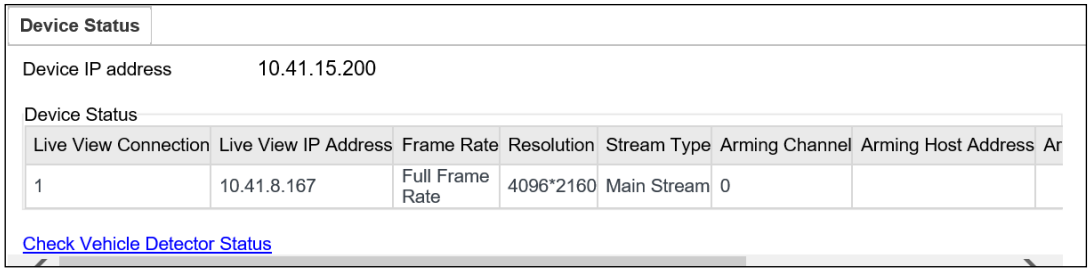


Figure 14-1 Device Status

Step 2 View Device IP Address and Device Status.

- **Device IP Address**: Display the current IP address of the camera.
- **Device Status**: Detailed descriptions are shown in the following table.

Table 14-1 Description of Device Status

Item	Description
Live View Connection	The current number of established live view connection.
Live View IP Address	The IP address of the PC that is viewing the live video.
Arming Channel	The number of channel(s) that armed by arming host(s).
Arming Host Address	The IP address of the host that enables the arming channel.
Arming Level	Arming level 1 and arming level 2 are available. Refer to Section 4.4 for detailed explanation.

14.2 User Management

The admin user should configure the device accounts and user/operator permissions properly, and delete the unnecessary accounts and user/operator permissions.

Go to **Configuration >Device Configuration> User Management.**

Figure 14-2 User Management

14.2.1 Add a User

The *admin* user has all permissions by default and can create/modify/delete other accounts.

The *admin* user cannot be deleted and you can only change the *admin* password.

Step 1 Click **Add** to add a user.

Step 2 Select **User Type**.

Step 3 Enter **User Name** and **Password.**

WARNING

STRONG PASSWORD RECOMMENDED– We highly recommend you create a strong password of your own choosing (using a minimum of 8 characters, including upper case letters, lower case letters, numbers, and special characters) in order to increase the security of your product. And we recommend you reset your password regularly, especially in the high security system, resetting the password monthly or weekly can better protect your product.

NOTE

- Up to 31 user accounts can be created.
- Users of different levels own different permissions. Operator and user are selectable.

Step 4 Confirm the password.

Step 5 In the **Basic Permission** field and **Camera Permission** field, you can check or uncheck the permissions for the new user.

Step 6 Click **OK** to add the user.

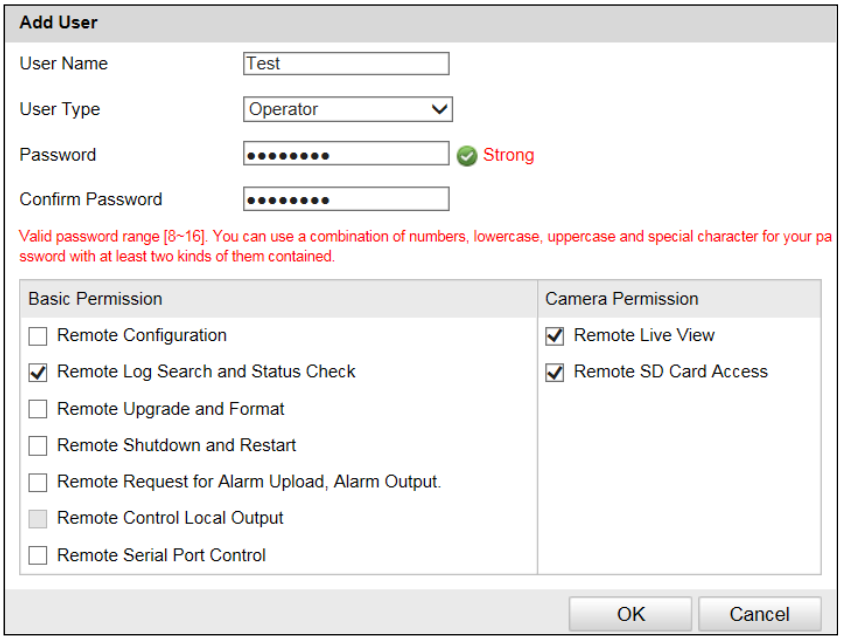


Figure 14-3 Add a User

14.2.2 Modify a User

Step 1 Select a user from the list and click **Edit**.

Step 2 Modify the editable parameters.

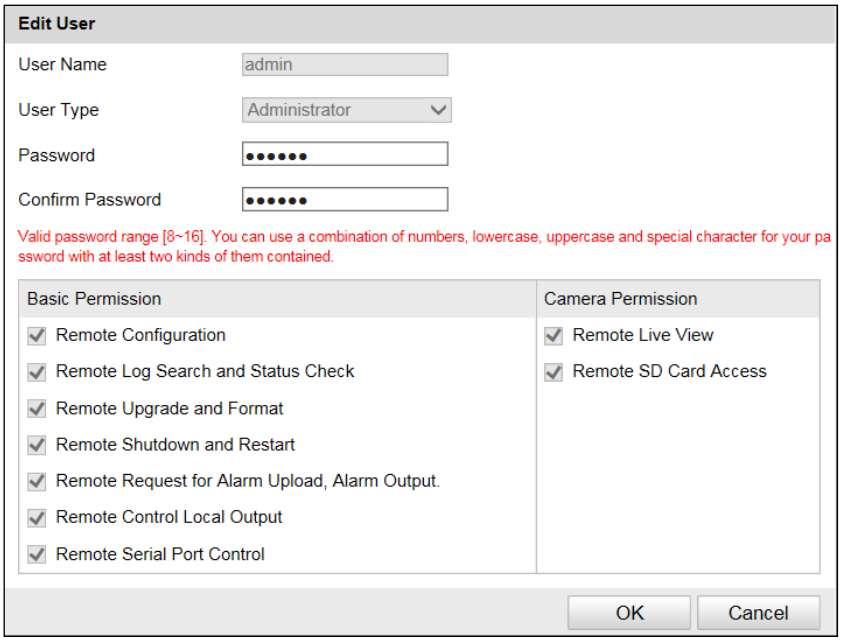


Figure 14-4 Modify Admin

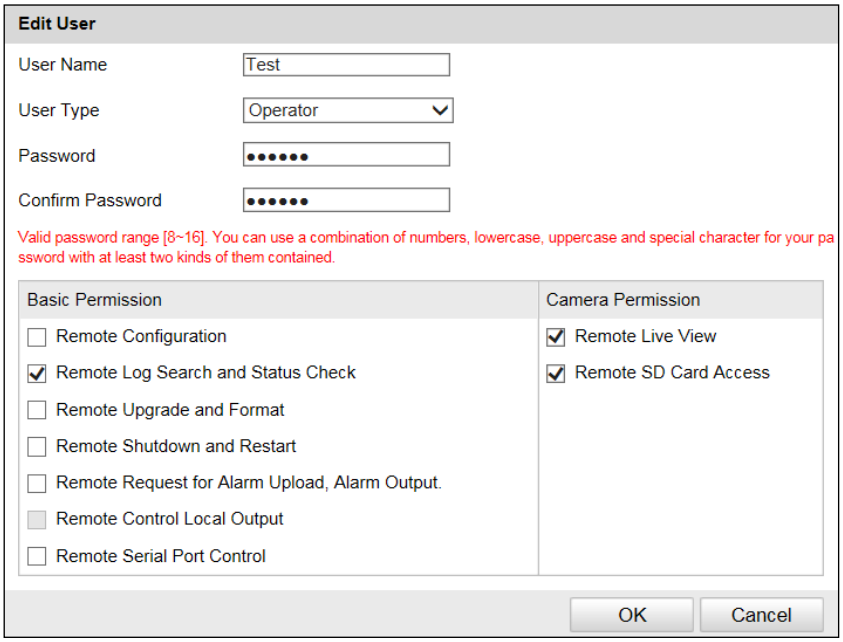


Figure 14-5 Modify Operator/User

Step 3 Click **OK** to save the settings.

14.2.3 Delete a User

Step 1 Select the user you want to delete and click **Delete**.

Step 2 Click **OK** on the pop-up message box to delete the user.

14.3 Log Search

Purpose:

The operation, alarm, exception and information of the camera can be stored in log files. You can also export the log files on your demand.

Before you start:

Please insert a TF card with up to 128 GB storage in the camera for Log storage. Log cannot be searched if there is no TF card.

Step 1 Click **Log** on the menu bar to enter log searching page.

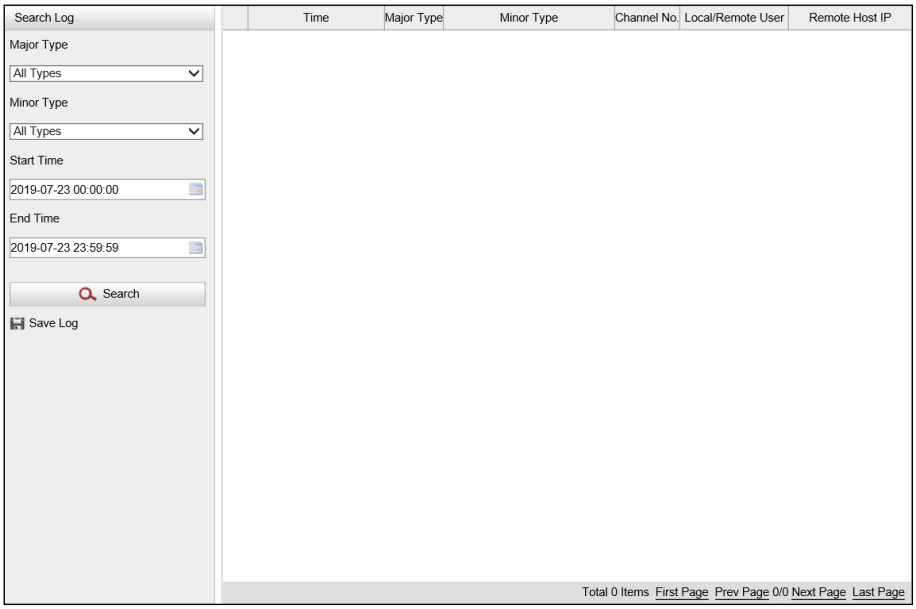


Figure 14-6 Log Searching

Step 2 Set the log search conditions to specify the search, including **Major Type**, **Minor Type**, **Start Time**, and **End Time**.

Step 3 Click **Search** to search log files. The matched log files will be displayed in the list.

Step 4 To export the log files, click **Save Log** to save the log files in your PC.

14.4 Reboot the Camera

Step 1 Go to **Configuration > Device Configuration > System Maintenance > Reboot**.

Step 2 Click **Reboot** to reboot the camera.

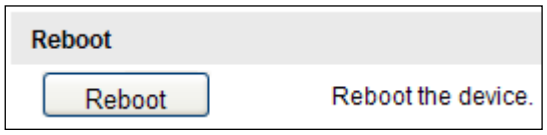


Figure 14-7 Reboot Device

14.5 Restore Default Settings

Step 1 Go to **Configuration > Device Configuration> Maintenance > Default**.

Step 2 Click **Soft Reset** or **Hard Reset** to restore default settings.

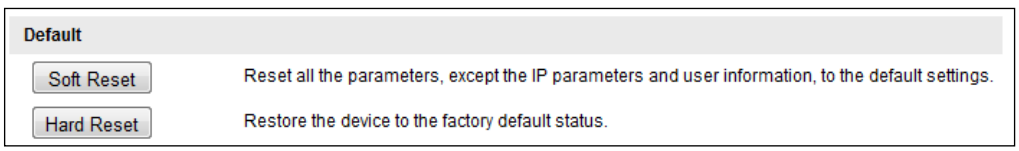


Figure 14-8 Restore Default Settings

NOTE

Use the Hard Reset function with caution.

14.6 Export Debug File

Step 1 Go to **Configuration > Device Configuration> Maintenance > Debug File Export**.

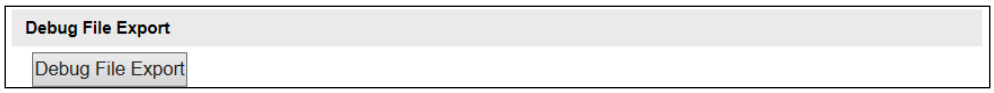


Figure 14-9 Export Debug File

Step 2 Click **Debug File Export** and set the saving path to save the debug file in local storage**.**

14.7 Export Configuration File

Purpose:

If you have configured a camera and want to use the configured parameters as the example for other cameras, you can export the configuration file to your local PC directory.

Step 1 Go to **Configuration > Device Configuration > Maintenance > Export Configuration File**.

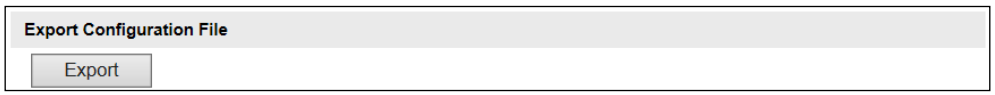


Figure 14-10 Export Configuration File

Step 2 Click **Export** and set the saving path to save the configuration file in local storage**.**

14.8 Import the Configuration File

Purpose:

Configuration file is used for the batch configuration of the camera, which can simplify the configuration steps when there are a lot of cameras needing configuration.

Step 1 Go to **Configuration > Device Configuration > Maintenance > Import Configuration File**.

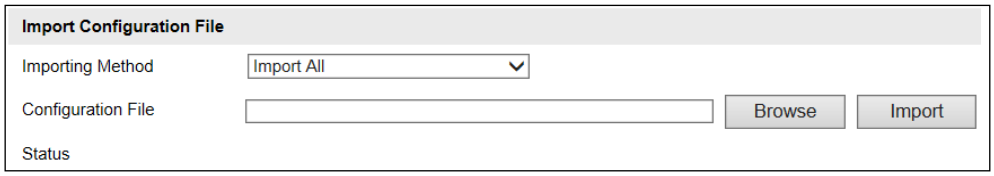


Figure 14-11 Import Configuration File

Step 2 Select Importing Method. Import All and Partial Import are selectable.

Step 3 (Optional) For Partial Import mode, you should select configuration type(s) to import by checking the corresponding checkbox(s).

Step 4 Click Browse to select the saved configuration file.

Step 5 Click Import to start importing the configuration file.

NOTE

You need to reboot the camera after importing configuration file.

14.9 Upgrade the System

Step 1 Go to **Configuration > Device Configuration > System Maintenance > Import Module File**.

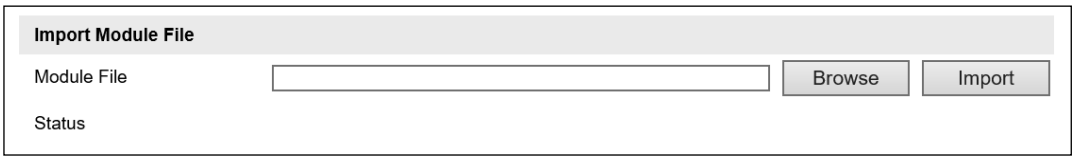


Figure 14-12 Import Module File

Step 2 Click **Browse** to select the module file.

Step 3 Click **Import** to import the module file.

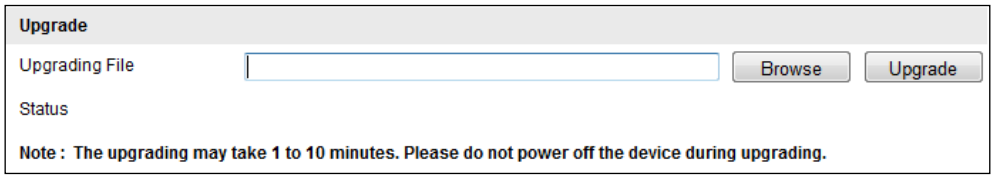


Figure 14-13 Remote Upgrade

Step 4 Go to **Configuration > Device Configuration > System Maintenance > Upgrade**.

Step 5 Click **Browse** to select the local upgrade file.

Step 6 Click **Upgrade** to start remote upgrade.

Step 7 (Optional) Click **Configuration > System Configuration > Device Information**, if upgrading succeed, Smart Module Status will display normal.

NOTE

The upgrading process will take 1 to 10 minutes. Do not disconnect power of the camera or reboot the camera during the process, and the camera reboots automatically after upgrade.


See Far, Go Further