



Network Traffic Camera
(for Checkpoint and Intersection Violation System)

User Manual

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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 (<https://www.hikvision.com/en/>).

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

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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	<ul style="list-style-type: none"> ● 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.

<p>Transportation, Use, and Storage</p>	<ul style="list-style-type: none"> ● 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.
<p>Maintenance</p>	<ul style="list-style-type: none"> ● 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.
<p>Network</p>	<ul style="list-style-type: none"> ● 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 set all the passwords and other security settings about the device, and keep your user name and password.
<p>Data</p>	<p>DO NOT disconnect the power during formatting, uploading, and downloading. Or files may be damaged.</p>

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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 device, we recommend you to have the device assessed and maintained termly. You can contact us if you need such service.

Purpose:

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

1.1 Wiring over the LAN

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

Purpose:

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

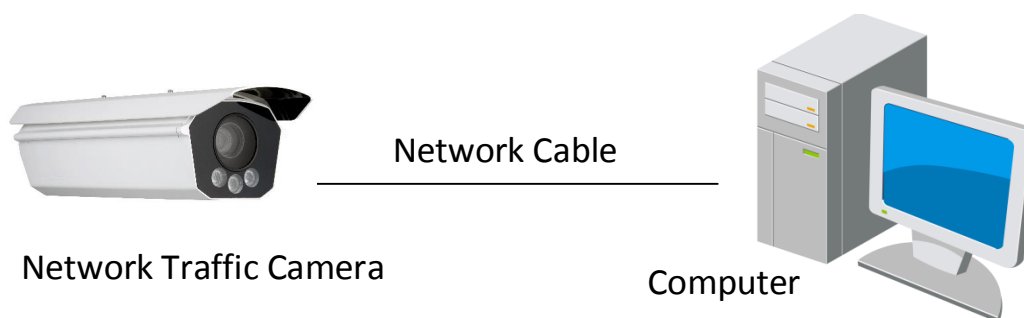


Figure 1-1 Connecting Directly

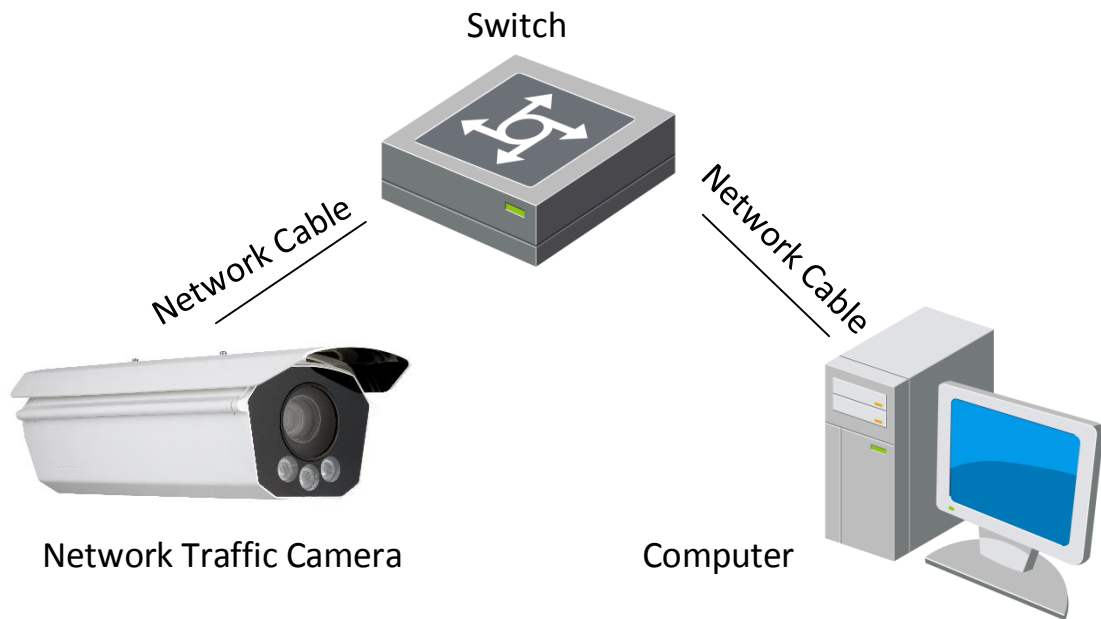


Figure 1-2 Connecting via a Switch or a Router

1.2 Activate the Device

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

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

1.2.1 Activation via Web Browser

Step 1 Power on the device, and connect the device 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.

The screenshot shows a web browser window titled 'Activate'. It contains three input fields: 'User Name' with the value 'admin', 'Password' (empty), and 'Confirm Password' (empty). Below the password fields is a note: 'Valid password range [8-16]. You can use a combination of numbers, lowercase, uppercase and special character for your password with at least two kinds of them contained.' An 'OK' button is located at the bottom right of the form.

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(Search Active Devices Protocol) software is used for detecting the online device, activating the device, 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.

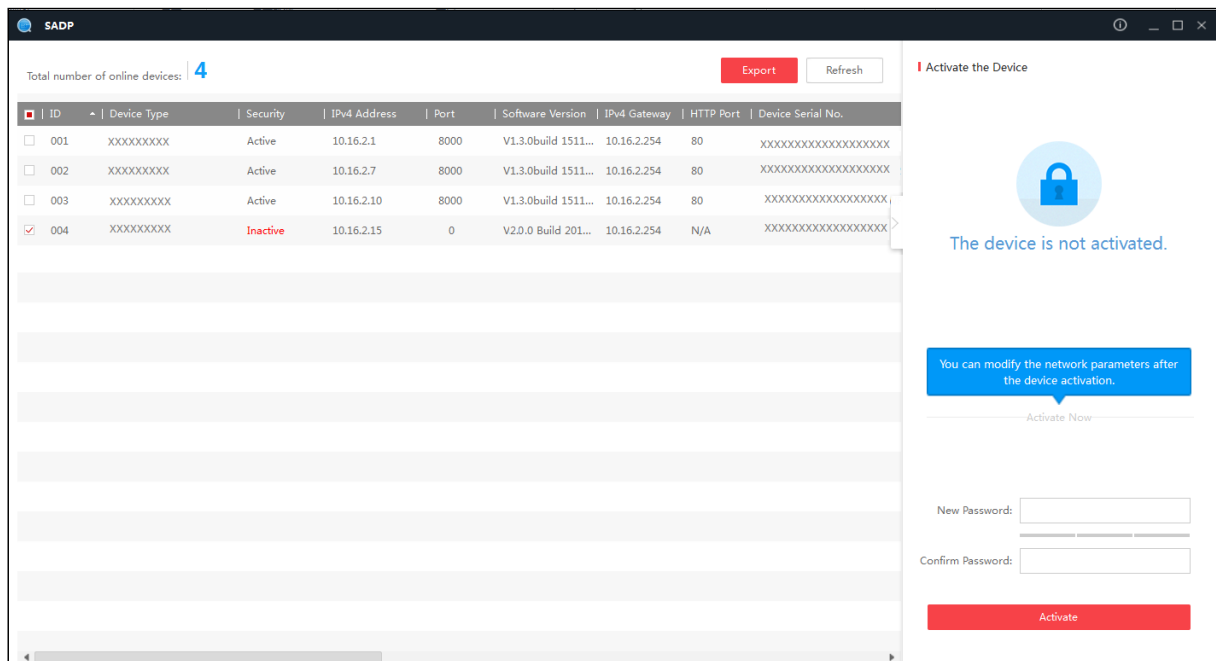


Figure 1-4 SADP Interface

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.

Modify Network Parameters

Enable DHCP

Device Serial No.:

IP Address:

Port:

Subnet Mask:

Gateway:

IPv6 Address:

IPv6 Gateway:

IPv6 Prefix Length:

HTTP Port:

Security Verification

Admin Password:

[Modify](#)

[Forgot Password](#)

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, enter the IP address of the device, and press the **Enter** key to enter the login interface.

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

Step 4 Click **Login**.

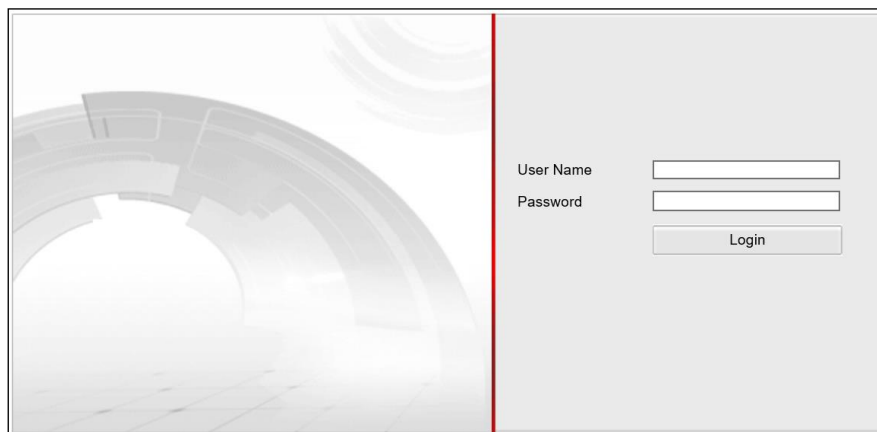


Figure 2-1 Login

Step 5 Install the plug-in before viewing the live video and operating the device. 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 device 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.

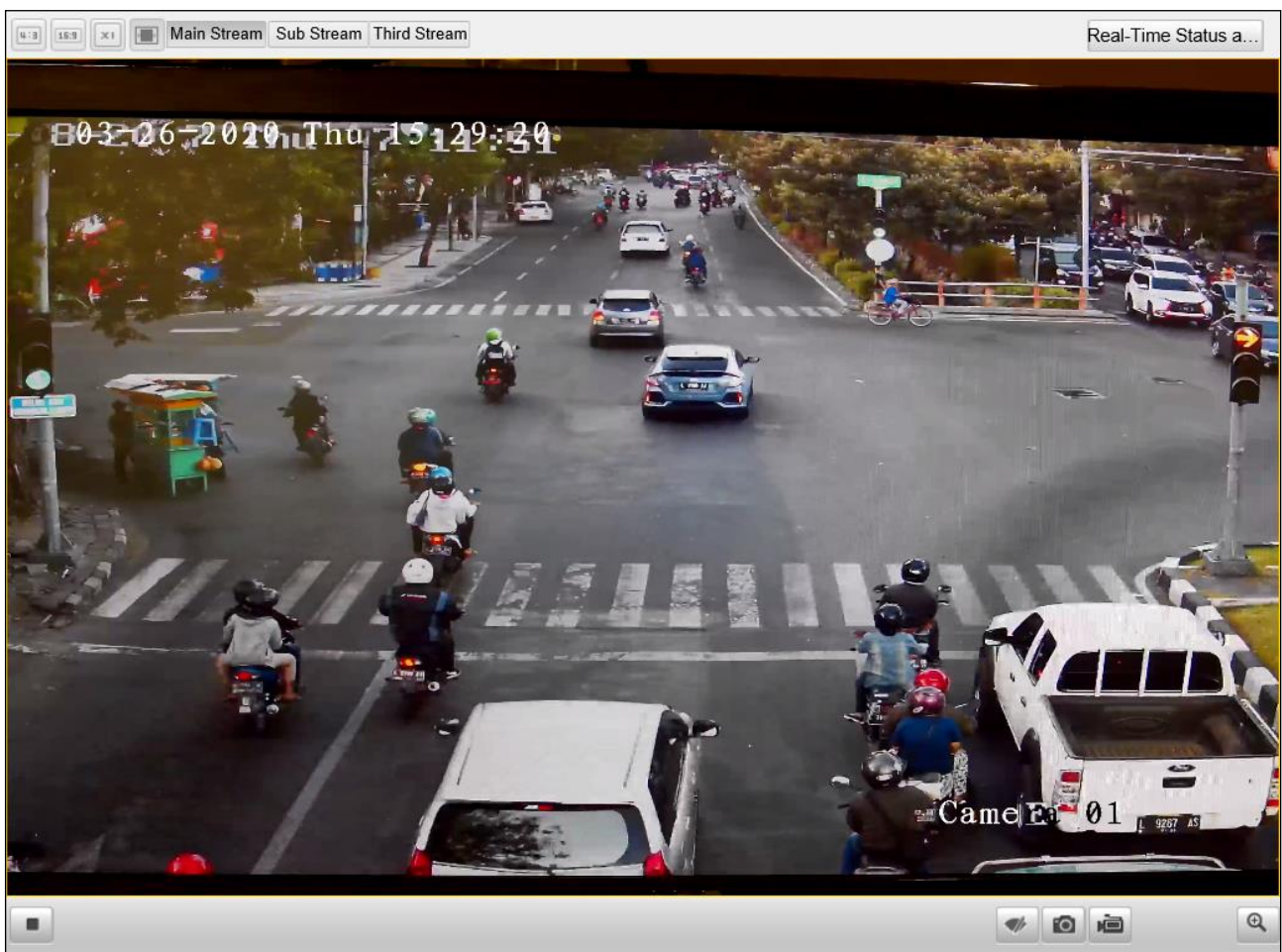





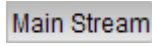
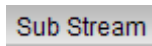





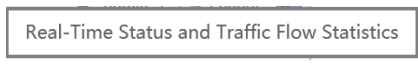



Figure 3-1 Live View Page

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 window size.
	Self-adaptive window size.
	Live view with the main stream. If the network is in good condition, select main stream.
	Live view with the sub stream.
	Start/Stop audio and adjust the volume.
	Enable/Disable two-way audio.
	Manually capture the picture.
	Manually start/stop recording.
	Turn on/off digital zoom function.
	Click to enter the Real-Time Status and Traffic Flow Statistics page.

3.2 Start Live View

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

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 Status and Traffic Statistics

Click **Real-Time Status and Traffic Flow Statistics** on the upper right of the live view window to enter the live status and traffic statistics configuration page.

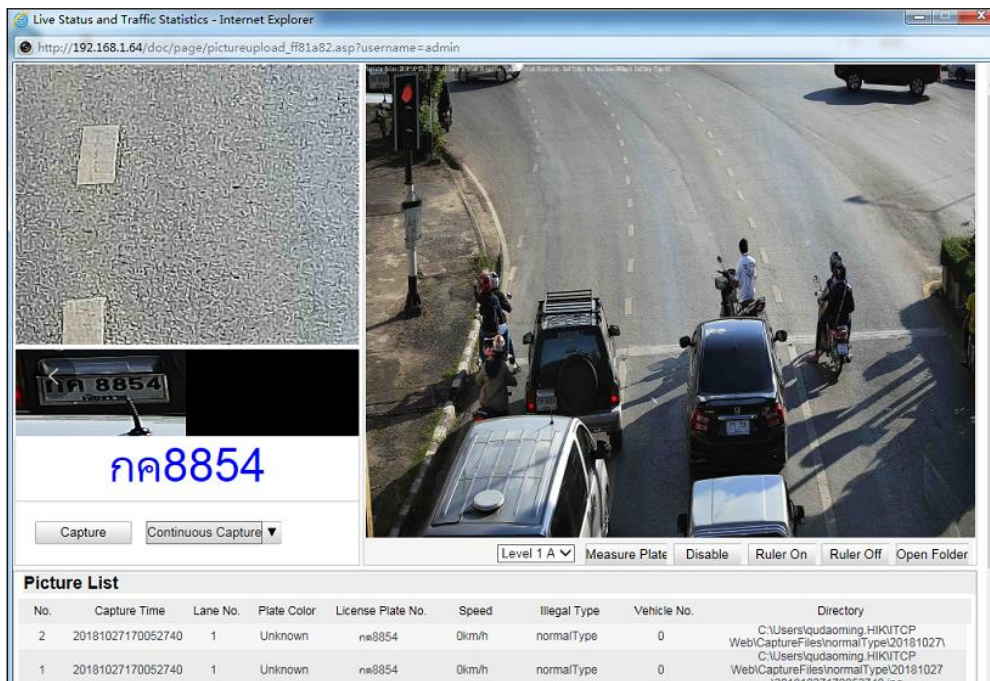


Figure 3-2 Real-Time Status and Traffic Flow Statistics

3.4.1 Scene Shot Area

- Arm the device.
 - **Level 1 Arming:** The device is allowed to connect to only one data storage device for image, video and information uploading. It is recommended that when you develop products, that is, if you use SDK, level 1 arming is the only option.
 - **Level 2 Arming:** The device is allowed to connect to three data storage devices for image and information uploading, such as PC, platform and terminal server.
 - **Disarming:** The device 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.

- **Measure Plate:** Measure the pixel of the captured license plate. You can click **Disable** 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.

Picture List								
No.	Capture Time	Lane No.	License Plate Color	License Plate Number	Speed	Illegal Type	Vehicle No.	Directory

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 15 th , in 2015.
Lane No.	The lane where the vehicle is captured.
License Plate Color	The color of the captured license plate.
License Plate Number	The license plate number of the vehicle.
Speed	The speed of the captured vehicle.
Illegal Type	The captured type, normal, over speed, wrong direction are selectable.
Vehicle No.	The vehicle counting No. ranging from 1 to 65535. It will overwrite if it reaches 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 the vehicle was actually captured.
- **Capture Times:** Number of captured pictures.
- **Continuous Capture Interval:** The time interval of continuous pictures captured.

3.4.2 Traffic Light Status

Traffic Light Status displays the current traffic light status.

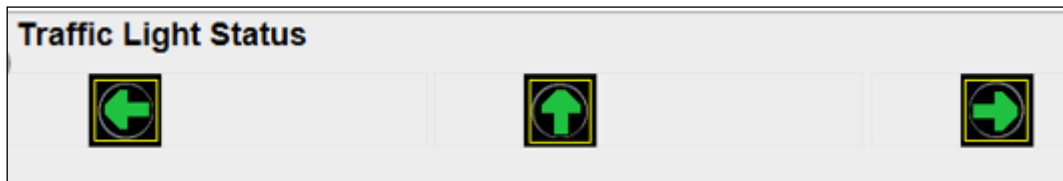


Figure 3-5 Traffic Light Status

NOTE

The Traffic light status can only be applied in Video Analysis E-police mode.

3.4.3 Traffic Statistics

Purpose:

The traffic statistics allows you to view the real-time traffic flow, average lane occupancy, and then analyze the real-time traffic status.

Before you start:

Click **Real-Time Status and Traffic Flow Statistics > Traffic Statistics**, you can view **Start Time, Lane No., Traffic Flow, Average Lane Occupancy, Average Speed** and **Average Time Headway**.

Chapter 4 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 device 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.

No.	File Name	File Date	File Size	Live View	Progress
-----	-----------	-----------	-----------	-----------	----------

Figure 4-1 Search Picture

Step 2 Set picture search conditions, including **Lane No.**, **Vehicle Type**, **Violation Type**, **Car Plate**, **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 5 Local Configuration

Purpose:

The local configuration refers to the parameters of the live view, record files and captured pictures.

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

Step 2 Set 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.
 - **Feature Information:** Enable the function, feature information of the detected target is dynamically displayed near the target in the live image.

The feature information of different functions is different. For example, ID and waiting time for Queue Management, height for People Counting, etc.



Feature information is only available for certain device models.

Live View Parameters			
Protocol	<input checked="" type="radio"/> TCP	<input type="radio"/> UDP	
Live View Performance	<input type="radio"/> Least Delay	<input type="radio"/> Balanced	<input checked="" type="radio"/> Best Fluency
Rule Information	<input type="radio"/> Enable	<input checked="" type="radio"/> Disabled	
Feature Information	<input type="radio"/> Enable	<input checked="" type="radio"/> Disabled	

Figure 5-1 Live View Parameters

- **Record File Settings:** Set the saving path of the recorded video files.
 - **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 6 System Configuration

Purpose:

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

6.1 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 device, such as **Model, Serial No., Firmware Version, Encoding Version, Hardware Version, Number of Channels, Number of Alarm Input, and Number of Alarm Output** 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-2CD9396-BIS
Serial No.	iDS-2CD9396-BIS 20200304AIE19089399
Firmware Version	V4.3.2 200323
Encoding Version	V1.0 build 200320
Hardware Version	0x625400
Number of Channels	1
Number of Alarm Input	1
Number of Alarm Output	7
Algorithms Library Version	
VTS	4.0.2 20-03-17
MOD	2.0.4 19-04-24 d-10-31 n-10-31
MPR	6.1.4 20-03-04
LPR	20.0.6 20-03-19
VFE	11.0.10 20-01-03
TVD	1.0.0 20-03-03
ISP	2.2.2 19-12-11
AEC	2.7.0 19-12-4
AWB	3.0.1 19-4-29
RLC	0.0.0 00-00-00
RLD	0.0.0 00-00-00
BSP	trunk.31113
UBOOT	29514

Figure 6-1 Device Information

6.2 Set Serial Ports

Purpose:

Set 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 device models.
- The RS-232 port can be used in two ways:
 - **Parameters Configuration:** Connect a computer to the device through the serial port. Device parameters can be set by using software such as HyperTerminal. The serial port parameters must be the same as the serial port parameters of the device.
 - **Transparent Channel:** Connect a serial device directly to the device. The serial device

will be controlled remotely by the computer through the network.

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

RS-485 Parameters					
RS-485 No.	Baud Rate	Data Bit	Stop Bit	Parity	Flow Ctrl
1	38400	8	1	None	None
2	38400	8	1	None	None
3	9600	8	1	None	None

RS-232 Parameters	
Baud Rate	115200 bps
Data Bit	8
Stop Bit	1
Parity	None
Flow Ctrl	None
GPS Working Mode	Console

[Advanced Settings](#)

Figure 6-2 Serial Ports Settings

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

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

6.3 Set Network Parameters

Purpose:

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

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

Step 2 Select Dual-NIC Mode.

- **Dual-Network Backup:** When one network fails, the other network can take over the interrupted work in real time to ensure the normal operation of the system.
- **Multi-Network Isolation:** If network ports are in different segments, select **Multi-Network Isolation**.

Step 3 Set corresponding parameters.

- **Route Advertisement:** The device can have multiple IPv6 addresses, but the device interface only shows the most suitable IPv6 address.

- **MTU:** Maximum Transmission Unit, which refers to the size of the largest data packet transmitted in the TCP / UDP protocol network transmission.
- **Multicast Address:** The address of the multicast server is an IPv4 address (class D address), which can be viewed by joining a multicast group.
- **Preferred DNS server:** DNS server address (IPv4 address).
- **ANPR IP Address:** ANPR listening IP address. Picture can be transferred from device to server by setting ANPR IP address and ANPR port in ANPR protocol.
- **ANPR Port:** ANPR listening port. Picture can be transferred from device to server by setting ANPR IP address and ANPR port in ANPR protocol.
- **Listening Host IP Address:** Picture can be transferred from device to server by setting listening host IP address and listening host port.
- **Listening Host Port:** Picture can be transferred from device 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.
- 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.

Step 4 Click **Save**.

6.4 Set Port

Purpose:

Set HTTP port, RTSP port, SDK port information to connect corresponding client.

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

HTTP Port	<input type="text" value="80"/>
<input checked="" type="checkbox"/> RTSP Port	<input type="text" value="554"/>
SDK Port	<input type="text" value="8000"/>
<input checked="" type="checkbox"/> SADP Port	

Figure 6-3 Port Settings

Step 2 Set 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:** Enable the function, and devices can be searched via SADP. It is enabled by default.

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

6.5 Set DDNS

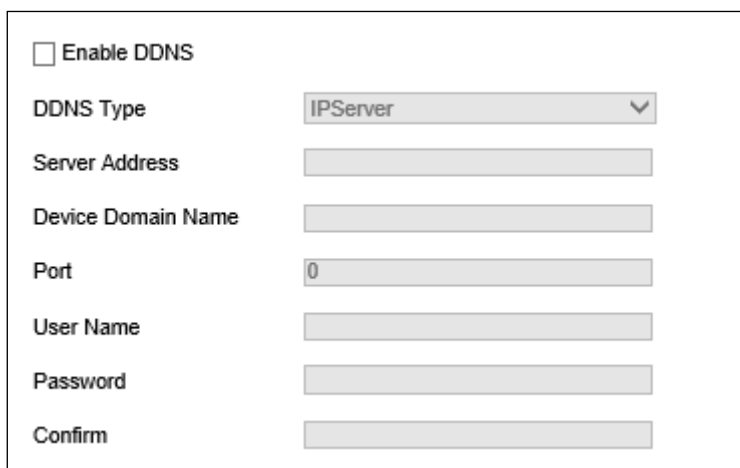
Purpose:

When the external network of the device is a dynamic IP address, you can use DDNS domain name for remote access.

Before you start:

- Register the relevant domain name.
- LAN IP address, subnet mask, gateway, and DNS server have been set.

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



<input type="checkbox"/> Enable DDNS	
DDNS Type	IPServer
Server Address	
Device Domain Name	
Port	0
User Name	
Password	
Confirm	

Figure 6-4 DDNS Settings

Step 2 Check **Enable DDNS**.

Step 3 Select **DDNS Type**.

Step 4 Enter **Server Address** (the server address of the registered domain name) and **Device Domain Name**.

 **NOTE**

When setting the **Server Address**, you need to cooperate with IPServer software and IVMS client software. For how to use it, refer to relevant IPServer and IVMS client software documentation.

Step 5 Click **Save**.

6.6 Set EHome

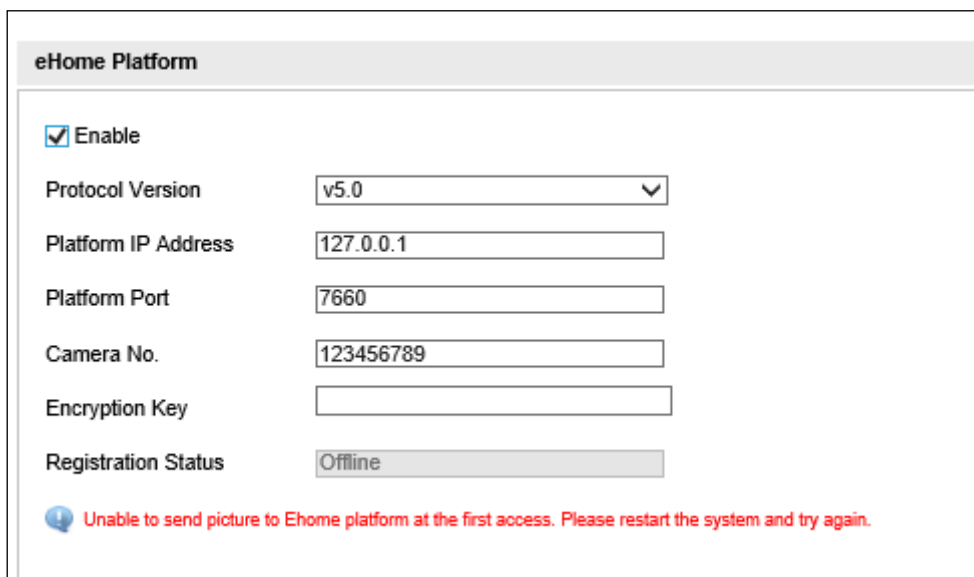
Purpose:

The device can remotely access the platform through the EHome protocol, and control the device through the platform to realize operations such as picture uploading.

Before you start:

The device is properly connected to the platform.

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




eHome Platform	
<input checked="" type="checkbox"/> Enable	
Protocol Version	v5.0
Platform IP Address	127.0.0.1
Platform Port	7660
Camera No.	123456789
Encryption Key	
Registration Status	Offline
 Unable to send picture to Ehome platform at the first access. Please restart the system and try again.	

Figure 6-5 EHome Settings

Step 2 Check **Enable**.

Step 3 Enter corresponding parameters.

- **Encryption Key:** The encryption key need to be entered when you access to platform according to the encryption key set here.
- **Registration Status:** You can check if you have accessed to EHome platform.

Step 4 Click **Save**.

6.7 Set 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 set through the web browser.

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

Device Domain	
Installed Certificate	<input type="text" value="C=CN,ST=L,O=,OU=,H/IP=0.0.0.0,EM="/> <input type="button" value="Delete"/>
Property	Issued to: C=CN,ST=L,O=,OU=,H/IP=0.0.0.0,EM= Issued by: C=CN,ST=L,O=, OU=,H/IP=0.0.0.0,EM= Serial No.: 1 Validity Period: 2020-03-24 10:57:27~2021-03-24 10:57:27

Figure 6-6 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.

Create

Country Wrong country code, like CN.

Domain Name/IP Address

Validity (Day)

Password

State

District

Organization

Unit

Email

Figure 6-7 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.

6.8 Set Time

6.8.1 Time Settings

You can follow the instructions in this section to set the time synchronization and DST settings.

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

Step 2 Select the time zone of your region.

Step 3 You can adjust time manually. Or you can enable NTP (National Time Protocol) to synchronize time of your device to the set NTP server.

- **Manual Synchronization**

Step 1 Select Synchronization Mode as Manual Synchronization.

Step 2 Check Device Time. The grayed out device time shows the current device time.

Step 3 Click  to set the system time from the pop-up calendar.


Time Settings	
Time Zone	(GMT+00:00) Dublin, Edinburgh, London ▼
Synchronization Mode	Manual Synchronization ▼
Device Time	2020-03-26T15:32:24
Set Time	2020-03-26T15:32:06  <input type="checkbox"/> Sync. with computer time

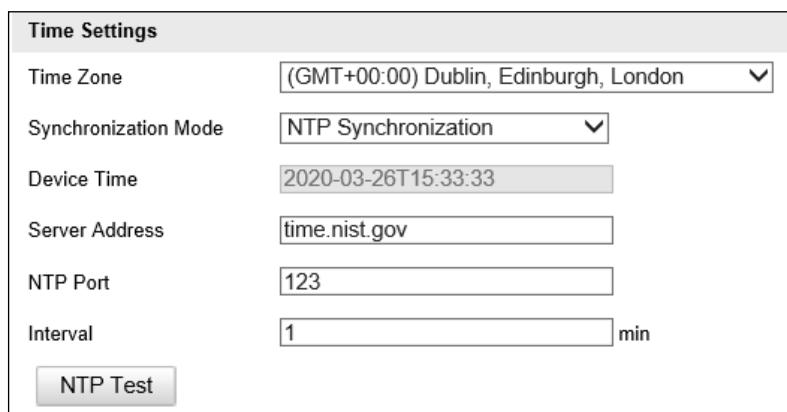
Figure 6-8 Manual Synchronization

Step 4 (Optional) you can also check **Synchronize with PC**. The device time is synchronized with the time of your computer.

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

● NTP Synchronization

Step 1 Select Synchronization Mode as NTP Synchronization.



The screenshot shows a configuration window titled "Time Settings". It contains the following fields and values:

Field	Value
Time Zone	(GMT+00:00) Dublin, Edinburgh, London
Synchronization Mode	NTP Synchronization
Device Time	2020-03-26T15:33:33
Server Address	time.nist.gov
NTP Port	123
Interval	1 min

At the bottom of the window is a button labeled "NTP Test".

Figure 6-9 NTP Synchronization

Step 2 Set the following settings:

- **Server Address:** IP address of NTP server.
- **NTP Port:** Port of NTP server.
- **Interval:** The time interval between the two synchronizing actions with NTP server.

NOTE

If the device is connected to a public network, you should use a NTP server that has a time synchronization function, such as the server at the National Time Center (IP Address: 210.72.145.44). If the device is set in a customized network, NTP software can be used to establish a NTP server for time synchronization.

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

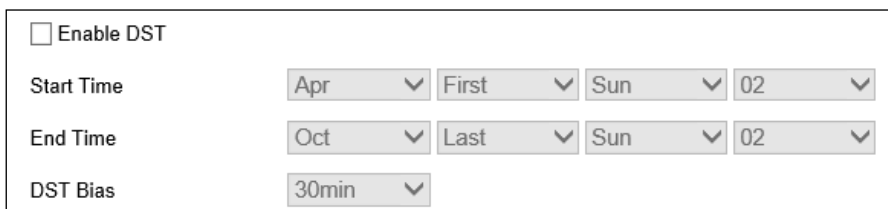
6.8.2 Configuring DST (Daylight Saving Time)

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

Step 2 Check **Enable DST**.

Step 3 Set Start Time, End Time, and DST Bias.

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

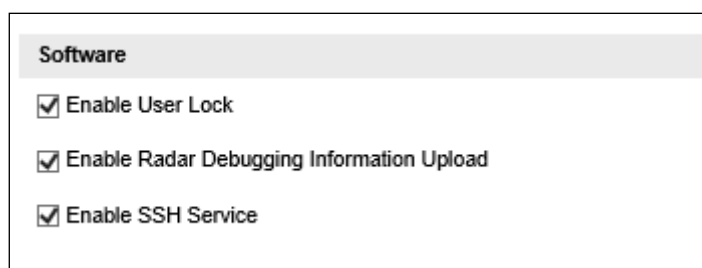


The screenshot shows a configuration panel for Daylight Saving Time (DST). At the top, there is a checkbox labeled "Enable DST" which is currently unchecked. Below this, there are three rows of settings, each with a label and a series of dropdown menus. The "Start Time" row has dropdowns for "Apr", "First", "Sun", and "02". The "End Time" row has dropdowns for "Oct", "Last", "Sun", and "02". The "DST Bias" row has a dropdown menu set to "30min".

Figure 6-10 DST Settings

6.9 Enable User Lock

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



The screenshot shows a configuration panel titled "Software". It contains three checked checkboxes: "Enable User Lock", "Enable Radar Debugging Information Upload", and "Enable SSH Service".

Figure 6-11 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 Check **Enable Radar Debugging Information Upload** and **Enable SSH Service** according to actual demands .

Step 4 (Optional) Check **Enable System Log Service**, and enter IP Address and Port No. to upload the system log to log server.

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

Chapter 7 Encoding and Storage Configuration

Purpose:

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

7.1 Set Video Encoding

For certain device models, you can set 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**.

Main Stream Parameters	
Stream Type	Video Stream
Bitrate	Customize 6144 Kbps
Frame Rate	25
Resolution	2064*1544
SVC	OFF
Bitrate Type	Constant
Video Quality	Highest
Profile	Low
I Frame Interval	50
Video Encoding	H.264
Advanced Settings	
Sub Stream Parameters	
Stream Type	Video Stream
Bitrate	4096Kbps
Frame Rate	25
Resolution	1280*720P
SVC	OFF
Advanced Settings	
<input type="button" value="Save"/>	

Figure 7-1 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 sub-stream is usually 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 device platforms. For certain devices, 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 device models.
- **I Frame Interval:** Set I Frame Interval as default.
- **Video Encoding:** The device 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 device modes.
- Upgrade your video player to the latest version if live view or playback does not work properly due to compatibility.

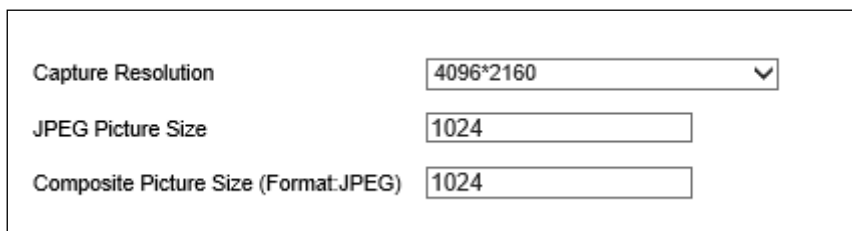
Step 4 Click **Save** to save the settings.

 **NOTE**

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

7.2 Set Image Encoding

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



Capture Resolution	4096*2160
JPEG Picture Size	1024
Composite Picture Size (Format:JPEG)	1024

Figure 7-2 Image Encoding

Step 2 Select Capture Resolution.

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

Step 4 Click **Save**.

7.3 Set 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 device models.

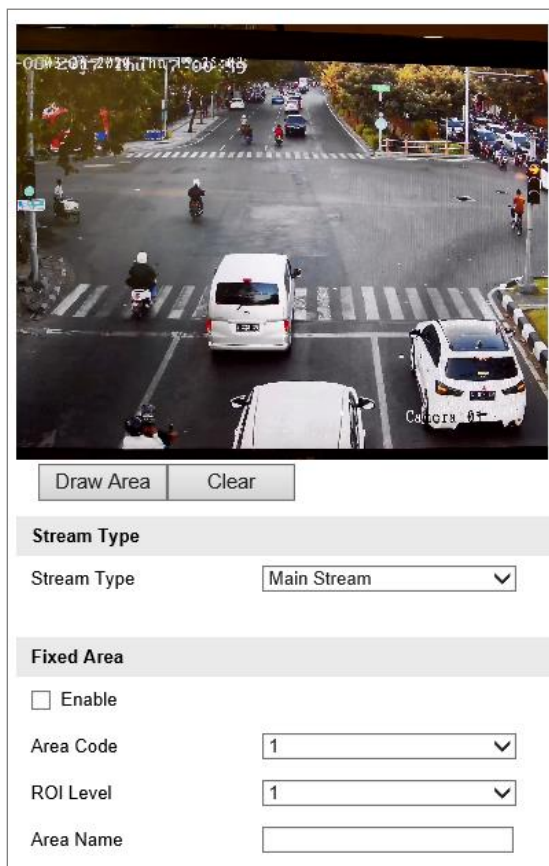


Figure 7-3 Region of Interest Settings

Step 2 Go to **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** to 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.

7.4 Set Record Schedule

Purpose:

You can follow the instructions to set 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**.

Record Stream: Main Stream

Enable Recording Overwriting

Enable Record Schedule Edit

	0	2	4	6	8	10	12	14	16	18	20	22	24
Mon													
Tue													
Wed													
Thu													
Fri													
Sat													
Sun													

■ Normal

Figure 7-4 Record Schedule Configuration

Step 2 Select Record Stream.

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

- 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.

Edit Schedule

Mon Tue Wed Thu Fri Sat Sun

All Day Customize

Normal

Period	Start Time	End Time	Record Type
1	00:00	00:00	Normal
2	00:00	00:00	Normal
3	00:00	00:00	Normal
4	00:00	00:00	Normal

Copy to Week Select All

Mon Tue Wed Thu Fri Sat Sun

Copy OK Cancel

Figure 7-5 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 set 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 set.
- 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.

7.5 Set Storage Management

Purpose:

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

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

HDD Device List							Format
<input type="checkbox"/>	HDD No.	Capacity	Free space	Status	Type	Property	Progress
<input checked="" type="checkbox"/> Auto-Initialize Redundant Storage							
<input checked="" type="checkbox"/> Auto-Upload Data in Redundant Storage							
HDD Quota							
Picture Capability	0				MB		
Video Capability	0				MB		
Capture Quota Ratio	100				%		
Video Quota Ratio	0				%		

Figure 7-6 Redundant 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 **Auto-Initialize Redundant Storage**. 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 **Auto-Upload Data in Redundant Storage**.

Step 6 Set the HDD Quota.

- 1) Enter the Capture Quota Ratio.
- 2) Enter the Video Quota Ratio.

NOTE

- The Capture Quota Ratio ranges from 0 to 100%.
- The sum of Capture Quota Ratio and Video Quota Ratio should be 100%.

7.6 Set FTP

Purpose:

You can set FTP server 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 7-7 FTP Configurations

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

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 7-8 Upload to One FTP Server

- 2) Set 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.

- **Enable Two:** Data can be uploaded to two FTP servers.

1) Select Enable Two.

Figure 7-9 Upload to Two FTP Servers

- 2) Select the data type for uploading to FTP 1.
- 3) Select the data type for uploading to FTP 2.

 **NOTE**

For the data type, **Checkpoint Data** and **Violation Data** are selectable. If you select **Checkpoint Data** for FTP 1, FTP 2 will receive the **Violation Data** by default.

- 4) Set the FTP server parameters, including **Server Address**, **Port**, **User Name**, and **Password**.
- 5) 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.
- 6) 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.
- 7) (Optional) Check **Not Upload Plate Close-up**, the close-up of the license plate will not be uploaded to the FTP server.

Step 4 Set the Name Rule.

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

Name Rule		Separator:
No.	Name	Elements
1	Name1	Device IP Address
2	Name2	Time
3	Name3	Vehicle Speed
4	Name4	None
5	Name5	None
6	Name6	None
7	Name7	None
8	Name8	None
9	Name9	None
10	Name10	None
11	Name11	None
12	Name12	None
13	Name13	None
14	Name14	None
15	Name15	None

Figure 7-10 Name Rule Configuration

Step 5 Set the **OSD Information** to set file name according to actual need.

OSD Information		
Location	<input type="text"/>	Intersection No. <input type="text"/>
Device No.	<input type="text"/>	Checkpoint 1 <input type="text"/>
Direction No.	<input type="text"/>	Direction <input type="text"/>

Figure 7-11 OSD Information

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

7.7 Set Cloud Storage

Purpose:

When device storage is constrained by storage space, you can enable Cloud Storage to store captured pictures of vehicles and license plates to the cloud.

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

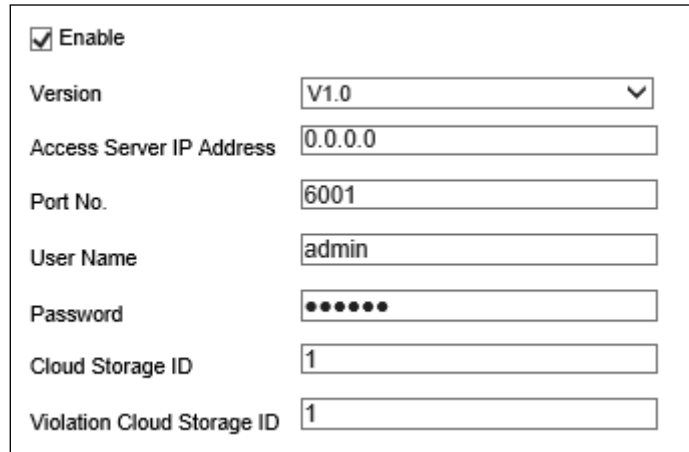


Figure 7-12 Cloud Storage

Step 2 Check **Enable** to enable cloud storage.

Step 3 Set the corresponding parameters.

- **Access Server IP Address** and **Port No.:** Enter the IP address and port No. of the cloud storage server.
- **User Name** and **Password:** The user name and password for logging in to the cloud storage server.
- **Cloud Storage ID** and **Violation Cloud Storage ID:** Storage area No. of pictures uploaded by the storage device on the cloud storage server side.

Step 4 Click **Save**.

7.8 Set Upload Protocol

Purpose:

The device supports multiple upload protocols.

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

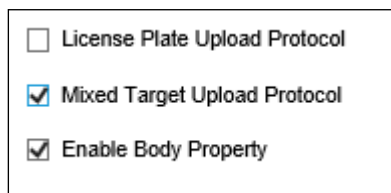


Figure 7-13 Upload Protocol

Step 2 Check the upload content according to actual demands.

- **License Plate Upload Protocol:** Uploads license plate information.
- **Mixed Target Upload Protocol:** Uploads the mixed target information.

- **Enable Body Property:** After checking **Mixed Target Upload Protocol**, you can enable body property.

Step 3 Click **Save**.



Upload protocol function may vary with different models. Please refer to actual device.

Chapter 8 Text Overlay Configuration

Purpose:

Set the OSD on the captured pictures and videos.

8.1 Set Capture Picture Overlay

Purpose:

You can set the overlay information of the captured picture.

Steps:

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



Figure 8-1 Single Picture Overlay

Step 2 Check **Capture Picture Overlay**.

Step 3 Set the parameters.

- **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.

- **Overlay on Picture:** Display the information on the picture.



Figure 8-2 Overlay on Picture

- **Overlay Above the Picture:** Display the information on the top.



Figure 8-3 Overlay Above the Picture

- **Overlay Below the Picture:** Display the information on the bottom.



Figure 8-4 Overlay Below the Picture

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 Set the overlay information.

Overlay Information List Select All





Location: Intersection No: Device No: Direction No:
 Direction: Lane No: Lane: Capture Time:
 Plate No.: Vehicle Color: Vehicle Type: Vehicle Speed:
 Speed Limit: Checkpoint Information: Violation Type: Overspeed Ratio:
 Red Light On: Red Light Off: Red Light On Duration: Anti-counterfeiting Code:
 Capture No.: Belt Up or Not: Sun Visor: Lane Driving Direction:
 Window Hangings: On the Phone:

Type	Overlay Information	Overlay Position	Space	Line Break Characters	
Location:	<input type="text"/>	<input checked="" type="checkbox"/>	0	0	<input type="button" value="↑"/> <input type="button" value="↓"/>
Intersection No:	<input type="text"/>	<input type="checkbox"/>	0	0	
Device No:	<input type="text"/>	<input type="checkbox"/>	0	0	
Direction No:	<input type="text"/>	<input type="checkbox"/>	0	0	
Direction:	<input type="text"/>	<input type="checkbox"/>	0	0	
Lane No:	<input type="text"/>	<input type="checkbox"/>	0	0	
Lane:	<input type="text"/>	<input type="checkbox"/>	0	0	
Plate No:	<input type="text"/>	<input type="checkbox"/>	0	0	

Figure 8-5 Set Display Information

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

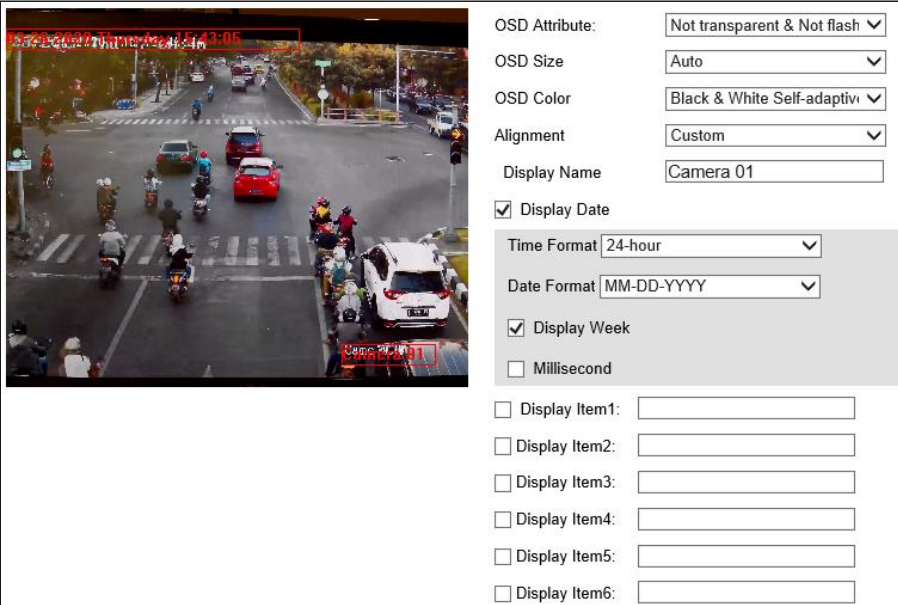
- **Space:** It stands for the length of blank space between the last character of the first item and the first character of the next item.
- **Line Break Characters:** When you add Line Break Characters to an item, the item is displayed as a new paragraph, and the number stands for the scale of space above the paragraph.
- /: Click  to move the overlay position up. Click  to move the overlay position down.

8.2 Set OSD Settings

Purpose:

You can set the overlay information of the captured picture.

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



OSD Attribute:	Not transparent & Not flash
OSD Size	Auto
OSD Color	Black & White Self-adaptiv
Alignment	Custom
Display Name	Camera 01
<input checked="" type="checkbox"/> Display Date	
Time Format	24-hour
Date Format	MM-DD-YYYY
<input checked="" type="checkbox"/> Display Week	
<input type="checkbox"/> Millisecond	
<input type="checkbox"/> Display Item1:	<input type="text"/>
<input type="checkbox"/> Display Item2:	<input type="text"/>
<input type="checkbox"/> Display Item3:	<input type="text"/>
<input type="checkbox"/> Display Item4:	<input type="text"/>
<input type="checkbox"/> Display Item5:	<input type="text"/>
<input type="checkbox"/> Display Item6:	<input type="text"/>

Figure 8-6 Capture Overlay Configuration

Step 2 Set the parameters below.

- **OSD Attribute:** the OSD information attribute overlaid on the picture.
- **OSD Size:** the font size of the overlay information.
- **Alignment:** the OSD alignment mode, you can select Align Left, Align Right, International Mode or Custom.
- **Min. Boundary:** the min. boundary value measured by character.
- **Display Name:** Device name.
- **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 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.

8.3 Set Composite Picture Overlay

Purpose:

A group of composed pictures can better offer evidence for the illegal driving. And you can overlay the OSD on the composed picture as well.

Before you start:

Enable the image composition, and set the composition parameters before you set the OSD on composed image.

Step 1 Go to **Configuration > Device Configuration > Text Overlay > Composite Picture Overlay Configuration**.

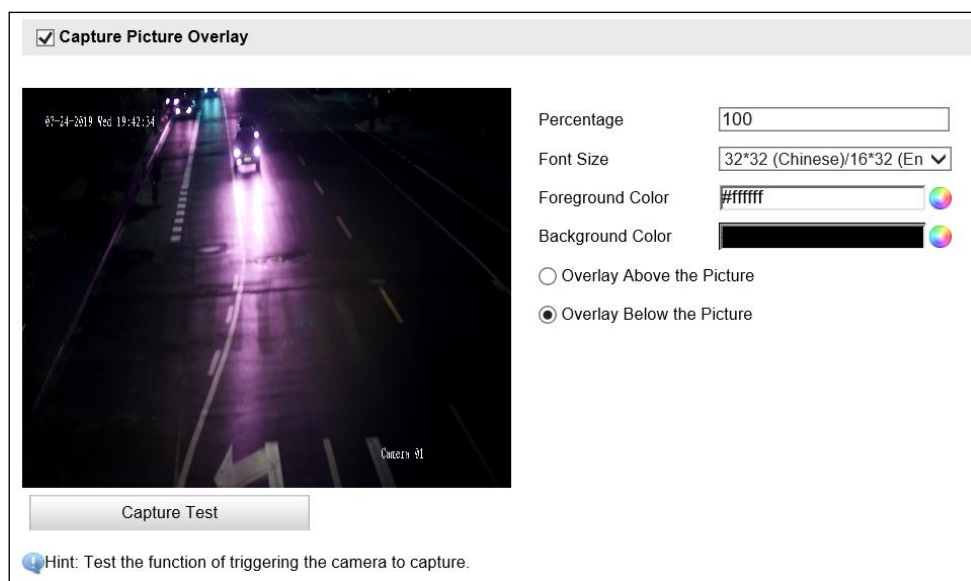


Figure 8-7 Composite Picture Overlay

Step 2 Set Percentage, Font Size, Foreground Color, and Background Color. Refer to *Capture Picture Overlay* for details.

Step 3 Select the overlay position. Refer to *Capture Picture Overlay* for details.

Step 4 Set the overlay information. Refer to *Capture Picture Overlay* for details.

Chapter 9 Capture Parameters Configuration

Purpose:

You can set capture parameters before capturing, and edit capture parameters when the default capture parameters cannot meet actual needs.

9.1 Set License Plate Parameters

Step 1 Go to **Configuration > Device Configuration > Capture Parameters > License Parameters**.

The screenshot shows a configuration window titled "License Parameters". It contains two main sections. The first section is "License Plate Recognition", which has two radio buttons: "Front Plate" (which is selected) and "Back Plate". The second section is "Country/Region", which is a dropdown menu currently displaying "Indonesia".

Figure 9-1 License Parameters Configuration

Step 2 Select License Plate Recognition as Front Plate or Back Plate. You should select **Front Plate** when you want to capture license plate number in vehicle head direction, and select **Back Plate** when you want to capture license plate number in vehicle tail direction.

9.2 Set Flash Light Parameters

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

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

The screenshot shows a configuration window titled "Flash Light Parameters". At the top, there are seven tabs labeled "IO:1" through "IO:7", with "IO:2" selected. Below the tabs, there are several configuration options:

- IO Output Mode:** A dropdown menu set to "Strobe Light Mode".
- Effective Status:** A dropdown menu set to "Low".
- Default Status:** A dropdown menu set to "High".
- Output in Advance:** A text input field containing "0" followed by a "μs" unit.
- Output Dwell Time:** A text input field containing "1600" followed by a "μs" unit.
- Light Compensation Mode:** Two checked checkboxes: "Checkpoint" and "Violation Action".
- Two unchecked checkboxes: "Control Flash Light according to Brightness Condition" and "Control Flash Light according to Time Schedule".
- Copy to I/O:** A row of seven unchecked checkboxes labeled "IO2", "IO3", "IO4", "IO5", "IO6", and "IO7".

Figure 9-2 Flash Light Parameters Configuration

Step 3 Select IO Output Mode. **Strobe Light Mode** and **Polarize Mode** are selectable.

- Strobe Light Mode
 - 1) Select **Effective Status**. **Pulse**, **High**, and **Low** are selectable.
 - **High Level/Low Level**: The effective status should stay different with the default status for I/O to take effect. And the default status changes according to the selection of the effective status. If you set the effective status as high level, the default level goes to low level. The selection of high/low level is applicable to burst light.
 - **Pulse**: If you set the effective status as pulse, you can select the default status as high level or low level. The selection of pulse is applicable to strobe light.

 NOTE

- When you select **Capture Mode** as **Strobe** in Application mode, you should select **Effective Status** as **Pulse**, and select **Default Status** as **Low**.
- When you select **Capture Mode** as **Burst** in Application mode, you should select **Effective Status** as **High**, and select **Default Status** as **Low**.
 - 2) Enter **Output in Advance**. It refers to the preact time [0 to 1000 μ s] of the flash light, to ensure that the flash light is on when triggered.

 NOTE

When **IO Output Mode** is selected as **Strobe Light Mode**, **Effective status** is selected as **Low/High**, and **Capture Mode** is selected as **Burst**, the function will take effect.

- 3) Enter **Output Dwell Time**. It refers to the dwell time [0 to 10000 μ s] after the flash light responds. The actual flash light supplement time is the dwell time minus advanced time.

 NOTE

When **IO Output Mode** is selected as **Strobe Light Mode**, **Effective status** is selected as **Low/High**, and **Capture Mode** is selected as **Burst**, the function will take effect.

- 4) Enter **Fluency Coefficient**. It refers to the frequency multiplication of 25, to keep the flash light in constant bright. You can set it as default value.
- 5) Enter **Duty Ratio**. It refers to the time occupation in a certain period. The higher the duty ratio, the brighter the flash light is. High duty ratio will cut life span of flash light, and duty ratio under 25 is recommended.

 NOTE

Options for Fluency Coefficient and Duty Ratio are available only when you set the effective status as **Pulse**.

- 6) Select **Light Compensation Mode**. Check the checkbox of each item to enable the light compensation of **Checkpoint** or **Violation Action**.
 - **Checkpoint**: The light compensation works on every single vehicle.
 - **Violation Action**: The light compensation works when there are violation driving actions.
 - **Video**: The light compensation always stays on working mode.

 **NOTE**

Light compensation for video is only available when you set the effective status as **Pulse**.

- 7) Check the checkbox to enable flash light, and select flash light plan according to the actual environment.
 - **Control Flash Light according to Brightness Condition**: Set the brightness threshold from 0 to 100, and the flash light takes into effect when the brightness comes to the threshold.
 - **Control Flash Light according to Time Schedule**: Set start time and end time. The flash light takes into effect according to the time schedule you set.
 - **Control Flash Light according to Brightness of the License Plate**: The flash light takes into effect according to the brightness of the license plate instead of the whole environment. The smaller the value is, the darker the brightness is. The flash light is easier to be enabled in a dark environment.

 **NOTE**

- Control Flash Light according to Brightness of the License Plate is only available when you set the effective status as Pulse.
- **Control Flash Light according to Time Schedule** is recommended.
- Polarize Mode
 - 1) Enable polarizer according to the actual environment.
 - **Enable Polarizer by Brightness**: Set the brightness threshold from 0 to 100, and the polarizer takes into effect when the brightness comes to the threshold.
 - **Enable Polarizer by Schedule**: Set the start time and end time. The polarizer takes into effect according to the time schedule you set.

Step 4 (Optional) Check the channel No. to copy the same settings to other channels.

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

 **NOTE**

IO:3 is built-in flash light.

9.3 Set Traffic Light Synchronization

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

<input checked="" type="checkbox"/> Enable Traffic Light Synchronization	
Phase Position	<input type="text" value="0"/> [0-360]
Signal Frequency	<input type="text" value="50"/> Hz

Figure 9-3 Set Traffic Light Synchronization

Step 2 Check **Enable Traffic Light Synchronization**, to adjust the device phase position in sync. with that of flash light.

Step 3 Enter **Phase Position** to adjust flash light brightness. It ranges from 0 to 360.

Step 4 Select **Signal Frequency** according to actual power supply frequency.

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

9.4 Set Image Composition

A group of composed images can give direct evidence to the illegal driving actions. Set the image composition on this page.

Step 1 Go to **Configuration > Device Configuration > Capture Parameters > Image Composition**.

<input checked="" type="checkbox"/> Enable Composition	
One Picture	<input type="text" value="N/A(noUse)"/>
Two Pictures	<input type="text" value="201(201)"/>
Three Pictures	<input type="text" value="301(301)"/>
Close-up Zooming Ratio	<input type="range" value="2"/>
Close-up Picture No.	<input type="text" value="1"/>
Plate Close-up Offset	<input type="text" value="0"/> Pixels

Figure 9-4 Image Composition

Step 2 Check **Enable Composition**.

Step 3 Select the composition method. Click the Option box, and select the composition method from the pop-up dialog box.

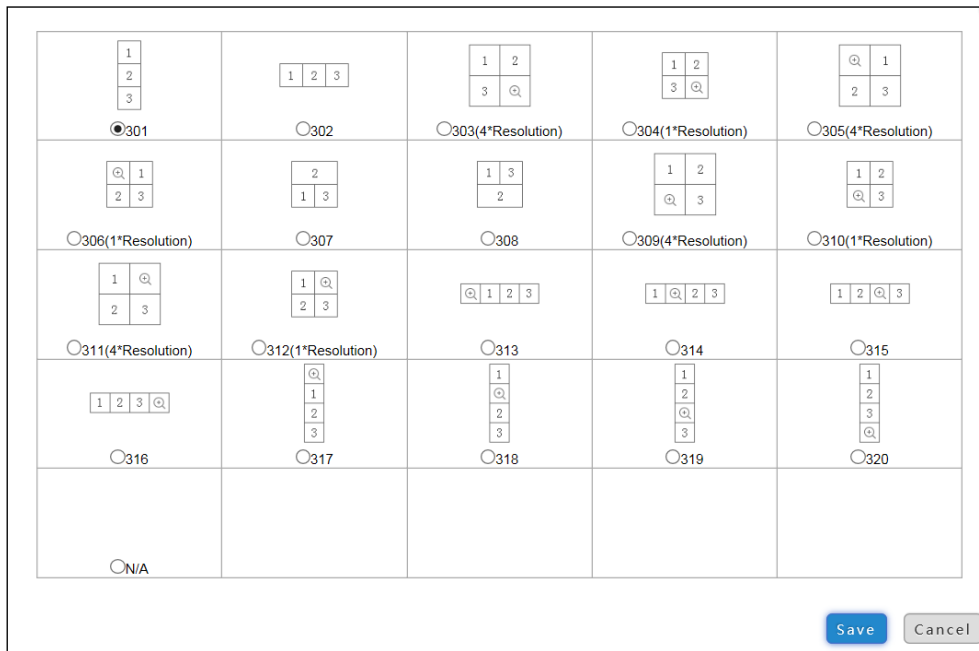


Figure 9-5 Image Composition

NOTE

Please refer to the figure below to see the difference between 303 and 304, or 305 and 306, or 309 and 310, or 311 and 312. And we will take 303 and 304 as an example. Type 303 image composition is with four times resolution, and type 304 image compositions is with original resolution.

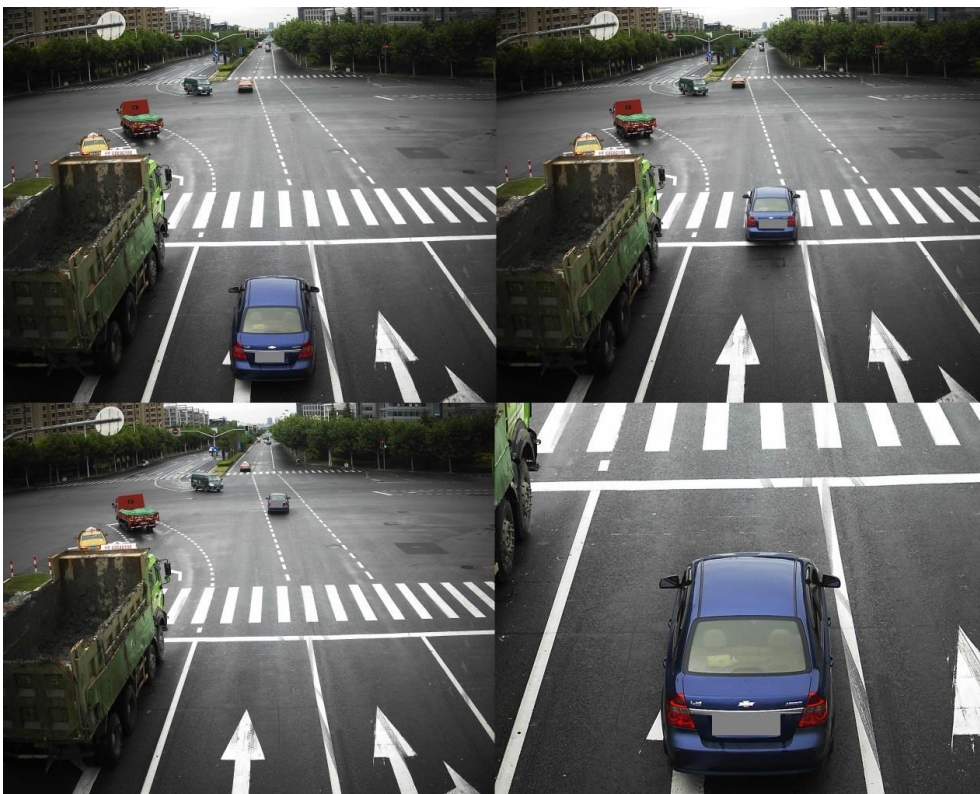


Figure 9-6 Type 303 Image Composition

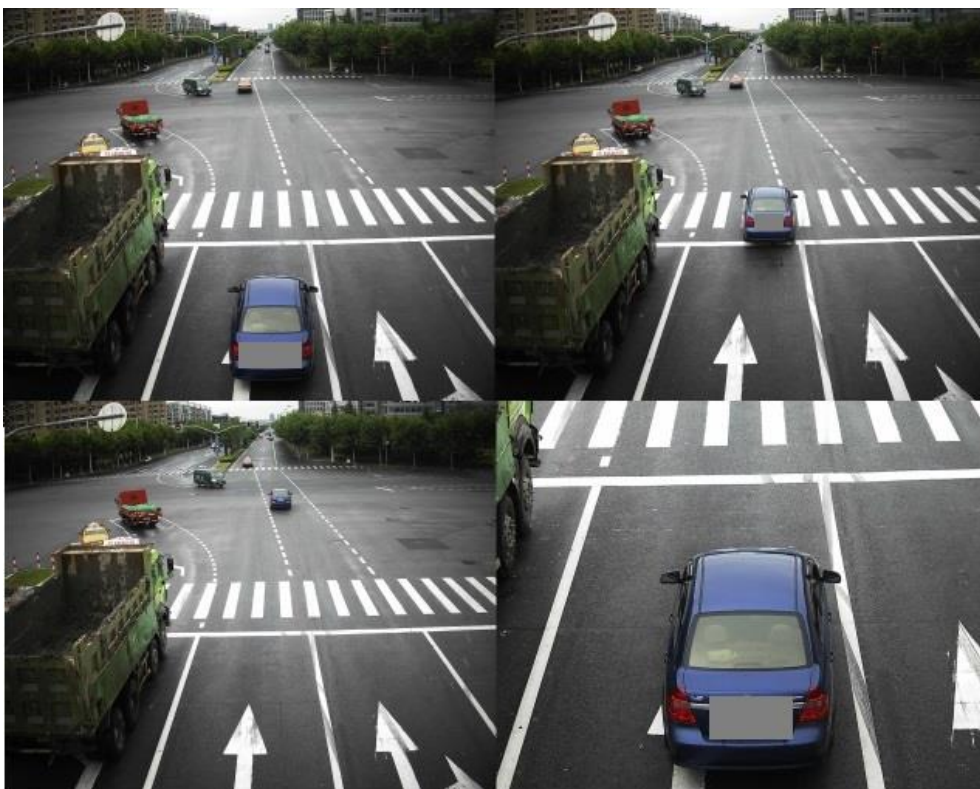


Figure 9-7 Type 304 Image Composition

Step 4 Set picture **Close-up Zooming Ratio**. You can select **Close-up Zooming Ratio** from 1 to 8. The higher the value is, the larger the close-up is.

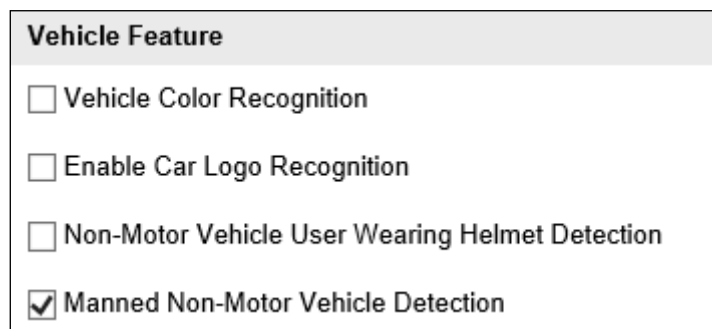
Step 5 Select **Close-up Picture No.** from the drop-down list. It refers to the picture where the close-up comes from.

Step 6 Set **Plate Close-up Offset**. It refers to the pixel number from license plate to bottom line of captured picture.

Step 7 Click **Save** to save the settings.

9.5 Set Vehicle Feature

Step 1 Go to **Configuration > Device Configuration > Capture Parameters > Vehicle Feature**.



Vehicle Feature	
<input type="checkbox"/>	Vehicle Color Recognition
<input type="checkbox"/>	Enable Car Logo Recognition
<input type="checkbox"/>	Non-Motor Vehicle User Wearing Helmet Detection
<input checked="" type="checkbox"/>	Manned Non-Motor Vehicle Detection

Figure 9-8 Vehicle Feature Configuration

Step 2 Check **Vehicle Features** types.

- 1) Check **Enable Vehicle Color Recognition, Enable Car Logo Recognition, etc.** to enable the functions.
- 2) Set corresponding sensitivity according to detection situations.

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

Chapter 10 Image Parameters Configuration

Purpose:

Set double shutter parameters, general parameters, video parameters, and ICR on this page.

10.1 Set Dual-Shutter Parameters

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



Figure 10-1 Dual-Shutter Parameters Configuration

Step 2 Check **Enable Dual-Shutter**, to guarantee preview quality and algorithm analysis.

Step 3 Select **Encoding Type**. **Video Stream** and **Recording Stream** are selectable.

- **Video Stream:** Video Stream is transferred for video previewing.
- **Recording Stream:** Recording Stream is transferred for video recording.

NOTE

If you select recording stream, set record parameters. Go to **Configuration > Device Configuration > Image Parameters > Record**, set **Brightness**, **Contrast**, **Shutter Speed** and **Gain**.

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

10.2 Set General Parameters

Purpose:

General parameters refer to the image parameters applying to both video image and capture image, such as saturation, sensitivity, lens type, sharpness, white balance, gamma correction, and brightness enhancement.

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



Figure 10-2 General Parameters Configuration

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

- **Saturation** describes the colorfulness of the image color, which ranges from 0 to 100.
- **Sharpness** describes the edge contrast of the image, which ranges from 1 to 100.
- **White Balance** is the white rendition function of the device used to adjust the color temperature according to the environment.

Step 3 Select **Iris Mode**. **Auto** and **Manual** are selectable.

Step 4 Adjust **Brightness Enhancement at Night**. It ranges from 0 to 100.

Step 5 (Optional) Check **Image Rotation** and select **Rotation Angle** according to actual installation.

Step 6 (Optional) Check **Light Compensation on License Plate**. Adjust the sensitivity from 0 to 100 if you enable the function.

Step 7 (Optional) Check **Enable Gamma Correction**, and adjust the correction level from 0 to 100. Gamma correction can enhance picture contrast, but bring noise at the same time.

Step 8 (Optional) Check **Enable Light Compensation Correction** to adjust the license plate brightness automatically if the license plate or scene brightness cannot be adjusted via supplement light. And adjust Correction Level from 0 to 100.

Step 9 (Optional) Check **Enable Black and White Mode at Night**. When ICR is in night mode, you can check **Enable Black and White Mode at Night** to keep the video in black and white mode.

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

Step 11 (Optional) Reboot the device if you enable image rotation. For other parameters, they will take effect in real time.

10.3 Set Video Image

Purpose:

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

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



Figure 10-3 Video Image Configuration

Step 2 Adjust **Brightness** [0 to 100].

Step 3 Adjust **Contrast** [0 to 100]. It refers to the color contrast between the brightest part and darkest part.

Step 4 Enter **Shutter Speed** [120 to 40000 μ s]. It refers to the length of time that a device's shutter remains open.

Step 5 Adjust **Gain** [0 to 100]. It refers to the ratio of the output signal to 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** from 0 to 100.
- 2) If you select **Expert Mode**, adjust **Spatial Intensity** and **Time Intensity** from 0 to 100.

Step 8 (Optional) Check **2D DNR**, and adjust **2D DNR Level** from 0 to 100.

Step 9 (Optional) Click **Capture Test** to test the effects.

10.4 Set Record

Purpose:

The device supports dual-shutter. One shutter for video previewing and the other one for video recording. You can set shutter parameters for captured image.

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



Figure 10-4 Record Configuration

Step 2 Captured Image Configuration

- 1) Adjust **Brightness** [0 to 100]. Default value is recommended.
- 2) Adjust **Contrast** [0 to 100]. It refers to the color contrast between the brightest part and darkest part. Default value is recommended.
- 3) Enter **Shutter Speed** [120 to 40000 μ s]. It refers to the length of time that a device's shutter remains open. Shutter speed as 2000 is recommended.
- 4) Adjust **Gain** [0 to 100]. It refers to the ratio of output signal to input signal. Default value is recommended.

Step 3 (Optional) Click **Capture Test** to test the effects.

10.5 Set ICR

Purpose:

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

 **NOTE**

ICR configuration is not supported by all device 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. The smaller the value is, the easier the ICR switches to night mode.

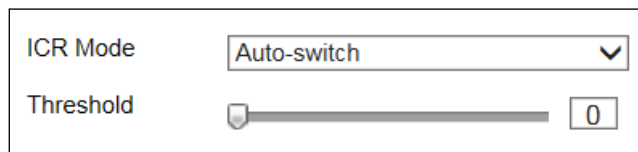


Figure 10-5 Auto-Switch

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

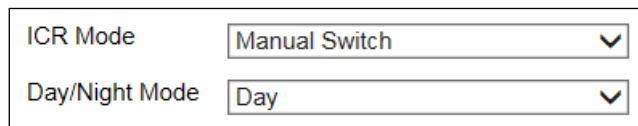
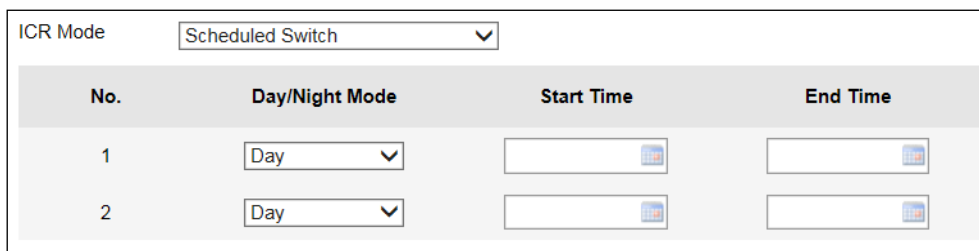


Figure 10-6 Manual Switch

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



No.	Day/Night Mode	Start Time	End Time
1	Day		
2	Day		

Figure 10-7 Scheduled Switch

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

10.6 Set Light Calibration

Purpose:

Red Traffic light may look yellow under the sun, and you can set light calibration to red for running the red light enforcement

 **NOTE**

Light Calibration can only apply in Video Analysis E-police mode.

Step 1 Go to **Configuration > Device Configuration > Image Parameters > Light Calibration**.

Step 2 Select **Traffic Light Enhancement**. Close, Traffic Light Enhancement, and Smart Traffic Enhancement are selectable.



Figure 10-8 Light Calibration

Step 3 Set corresponding light calibration parameters.

Step 4 Click **Zoom In** to zoom in the red light area.

Step 5 Select **Detection Area**, click **Add Traffic Light** to overlay region frame on the traffic light, select **Signal Light Type** and set **Yellow Light Delay Time**.

Step 6 Repeat the settings to other detection areas.

 **NOTE**

- If the light is not on when setting, you can click **Refresh Scene Picture** until the light is on.
- Detection Area should be set from left to right, and from top to bottom.

Step 7 Click **Save** to save the setting.

Chapter 11 Application Mode Configuration

Purpose:

This chapter introduces the parameters configuration under different trigger mode. The supported trigger modes vary according to the device models.



Supported application mode may vary with different models. Please refer to actual device.

11.1 Mixed-traffic Lane

Mixed-traffic lane captures the vehicles via video detection. And it supports speed detection via radar if external radar is connected.

Step 1 Go to **Configuration > Device Configuration > Application Mode**, and select **Application Mode** as **Mixed-traffic Lane**.

Step 2 Set corresponding video analysis capture parameters.

- 1) Select **Capture Interval** as time or distance.
- 2) Enter **Intervals** in the text field.
- 3) Check the capture types, and select the picture number from the drop-down list.



The supported capture types may vary according to the device models.

Application Mode			
Application Mode	Mixed-traffic Lane	Work Mode: Mixed-traffic Lane	
Video Analysis Capture Type			
Capture Interval	Time	Intervals	50 - 50 ms
<input checked="" type="checkbox"/> Checkpoint	1	<input type="checkbox"/> Reverse Driving	2
<input type="checkbox"/> Overspeed	2	<input type="checkbox"/> Low Speed	2
<input type="checkbox"/> Over Lane	2	<input type="checkbox"/> Driving Forbidden	2
Advanced Settings			
Capture Type	All Targets		
Capture Mode	Burst	Speed Detect Mode	N/A

Figure 11-1 Video Analysis Capture Configuration

- 4) Select **Capture Type** of advanced settings.

- **Motor vehicle, Non-motor vehicle, and Pedestrian:** It captures motor vehicle, and non-motor vehicle, and pedestrian.
- **Motor Vehicle:** Only motor vehicle will be captured.
 - 5) Select **Capture Mode**. The capture mode is associated with the connected type of flash light. **Strobe** and **Burst** are selectable.
- **Strobe:** It adopts the frame extracting, and the captured pictures share the same exposure parameters with the video image.
- **Burst:** It adopts the separate exposure.

 **NOTE**

- A reboot is required when two modes switch.
- If you set the capture mode as Burst, the capture image shares the same parameters with the video image.
- The *Section 12.5 Configuring Picture* is not supported when you select Strobe as the capture mode.
 - 6) Select **Speed Detect Mode**. **N/A**, **Radar**, and **Video** are selectable. N/A refers to disable the speed detection.

Step 3 Set corresponding mixed-traffic lane parameters.



Figure 11-2 Mixed-Traffic Lane Configuration

- 1) Select **Total Lanes** from the drop-down list. Up to 2 lanes can be selected.
- 2) Click the lane tab to select the lane to set.
- 3) Select **Lane Direction**.
- 4) Set the linkage lane by entering **Linked Lane No.**, e.g.: if you select lane 1, the system will give the speed of lane 1 detected by radar.

- 5) Select **Lane Type**. **Normal Lane**, **Bus Lane**, **Truck Forbidden Lane**, and **Highway Emergency Lane** are selectable.
- 6) Select **Lane Property**. **High Way**, **City Express Way**, and **Other** are selectable.
- 7) Select **Direction**. **From Top to Bottom** and **From Bottom to Top** are selectable. If you set the direction as From Top to Bottom, then the vehicle will be judged as wrong-way driving if it drives from Bottom to Top.

Step 4 Draw license plate recognition (LPR) area.

- 1) Click **Draw Rules** to enter the area configuration interface.

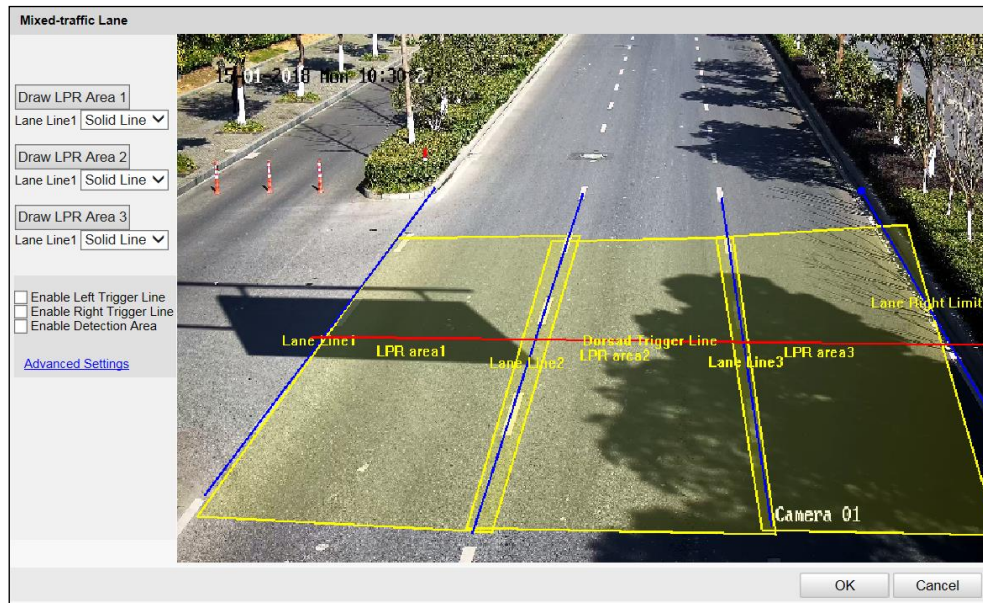


Figure 11-3 Set LPR Area

- 2) Select **Solid Line** or **Dot Line** for the lane line.
- 3) Click **Draw LPR Area x** to start drawing.
- 4) Click on the live view window to point a corner of the LRP area, and right click the mouse to finish drawing.

NOTE

- Polygon with 3 to 20 sides is supported.
 - Click **Draw LPR Area x** again to delete the previous area and re-draw the LRP area.
- 5) Click **Advanced Settings** to set the left/right trigger line and video detection area.
 - Check **Enable Left/Right Trigger Line** to detect the vehicles driven across from the left border or right border.

NOTE

You can adjust the line position by dragging the line on the screen and adjust the line length by dragging an end of the line.

- Check **Enable Detection Area** to enable the vehicle capture triggered by video analysis. It is recommended to draw the video detection area according to the actual environment to avoid the false trigger.
- 6) Click **OK** to save the drawing and exit the drawing interface.
- 7) (Optional) Check **Display All Areas** to display all the LPR areas.

Step 5 Select the linkage flash light output.



NOTE

Usually one lane is linked to one flash light. If you link more than 1 flash light, you need to select **Flashlight Mode**. Simultaneous flash and sequential flash are selectable.

Step 6 (Optional) If you select **Speed Detect Mode** as **Radar**, set the radar settings.

Step 7 (Optional) Copy the configuration of current lane to other lanes.

Step 8 Click **Save** to save the settings.



NOTE

You can click the **Default** button to restore the parameters to default values.

11.2 Video Analysis E-Police

Step 1 Go to **Configuration > Device Configuration > Application Mode**, and select **Application Mode** as **Video Analysis E-police**.

Step 2 Set corresponding video analysis capture parameters.

Application Mode: Video Analysis E-police **Work Mode: Mixed-traffic Lane**

Video Analysis Capture Type

Vehicle Driving Direction: Forward Backward

Capture Interval: Time IntervalsTime: 100 ms

Checkpoint: 1

Driving Against Dir. Guidance

Wrong-Way Driving: 2

Driving on the Lane...: 2

Sensitivity: 30

Illegal U-Turn

Illegal Lane Change: 2

Red Light Running

Prior Capture Event: None

Analysis Rule: By Direction

Offset for Second Ca...: 80

Offset for Third Captu...: 1000

[Advanced Parameter](#)

Not Yield to Pedestrian

No Displacement Capture of Pedestrian

Pedestrian Direction Linkage

Figure 11-4 Video Analysis Capture Configuration

Step 3 Select **Capture Interval** as **Time** or **Distance**.

- If you select **Time**, enter **Intervals Time**.
- If you select **Distance**, enter **Intervals Distance**.

Step 4 Check **Checkpoint**, and select the picture number from the drop-down list.

- 1) If you select **Vehicle Driving Direction** as **Forward**, you can check **Checkpoint** capture, and set captured picture amount of checkpoint.
- 2) If you select **Vehicle Driving Direction** as **Backward**, you can check **Checkpoint**, **Driving Against Direction Guidance**, **Illegal U-Turn**, etc.

- If you check **Driving on the Lane line**, you can set **Sensitivity** according to triggered situations.
- If you check **Red Light Running**, you can click **Advanced Parameter** for more settings.
 - **Prior Capture Event:** If you select **Prior Capture Event** as **Red Light Running**, **Red Light Running** will be captured as prior capture event when other events are also detected.
 - **Analysis Rule:** You can select **Analysis rule** as **By Direction** or **By Lane**, and draw corresponding trigger line.
 - **Offset for Second Capture:** It refers to the offset pixel of the second captured picture of the vehicle running the red light to the stop line. The value ranges from 0 to 300.
 - **Offset for Third Capture:** It refers to the min. offset pixel of the third captured picture of

the vehicle running the red light to the second captured picture. It is recommended to remain the default value.

- If you check Vehicle on Non-Motor Vehicle Lane, set the time threshold for capture.
- Check Not Yield to Pedestrian, to detect the vehicle that not yields to pedestrian.
- If you set **Illegal Parking**, set Congestion Threshold and Parking Time.
- Check **Parking Over Stop Line** to detect the violation of parking over stop line.

NOTE

Not Yield to Pedestrian function may vary with different models. Please refer to actual product.

Step 5 Set corresponding lane parameters and trigger rules parameters.

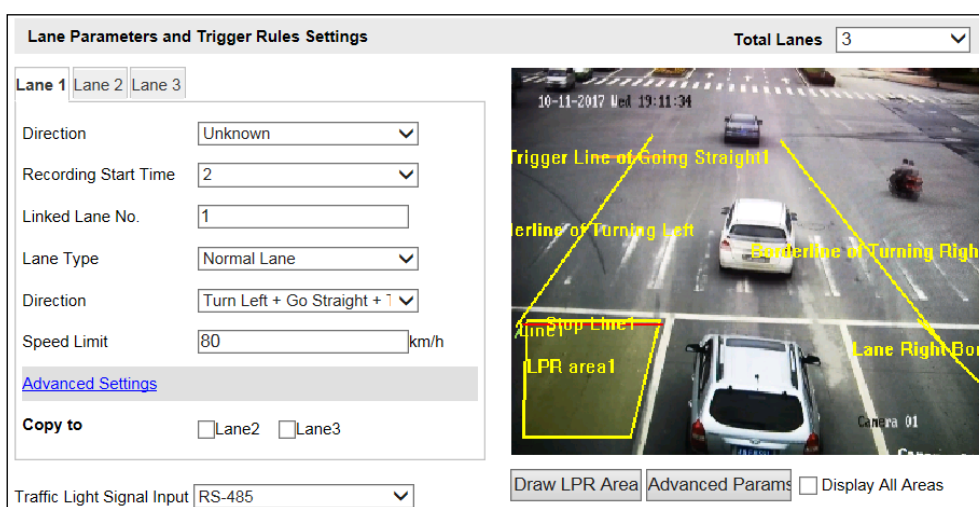


Figure 11-5 Lane Parameters and Trigger Rules Configuration

Step 6 Select a lane to set.

Step 7 Select **Direction.**, **Lane Type**, driving **Direction** , and enter **Linked Lane No.**

NOTE

If you select **Opposite Lane**, the lane direction will be opposite.

Step 8 Draw LPR area.

- 1) Click **Draw LPR Area** to enter the page below.

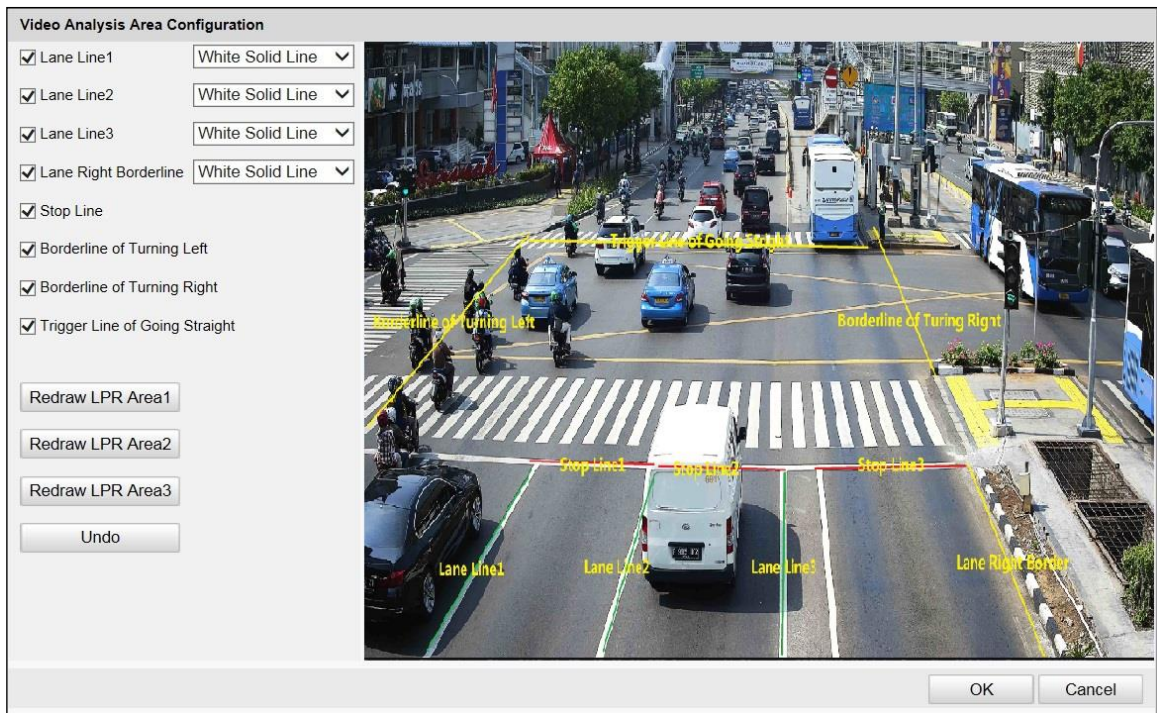


Figure 11-6 Draw LPR Area

- 2) Check Lane Line, Lane Right Borderline, Stop Line, Borderline of Turning Left/Right, or Trigger Line of Going Straight, and the lines will be generated on the live view image.
- 3) Select the lane type from the drop-down list of Lane Line and Lane Right Borderline.
- 4) Drag the lines on the image to adjust the position according to the actual condition.
- 5) Click OK to save the settings.

Step 9 (Optional) Click **Advanced Parameters** to set position box.

- 1) Check **Enable Position Box**.
- 2) Select **Size** of the position box.
- 3) Click OK to save the settings.



Figure 11-7 Position Box Settings

Step 10 (Optional) Click **Advanced Settings** to set **Circuit Sensitivity** and **Violation Recording**. If you check **Violation Recording**, you should select **Recording Start Time**. For example, if

you select **Recording Start Time** as 2, record will start after the second picture are captured.

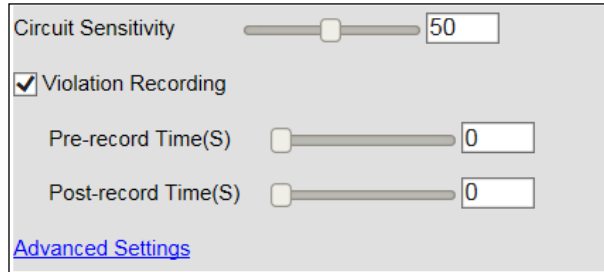


Figure 11-8 Advanced Settings

Step 11 (Optional) Copy the configuration of current lane to other lanes.

Step 12 Select **Traffic Light Signal Input** according to the actual conditions. **RS-485**, **External Input**, **Video Analysis Interface** and **Network Mode** are selectable.

Step 13 Set the parameters under different traffic light signal input.

- External Input

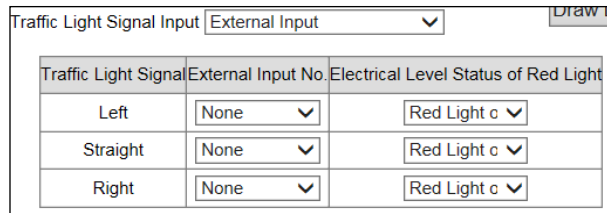


Figure 11-9 External Input Configuration

- 1) Select External Input No.
- 2) Select Electrical Level Status of Red Light according to the actual conditions. Red Light on Low Level and Red Light on High Level are selectable.

- RS-485

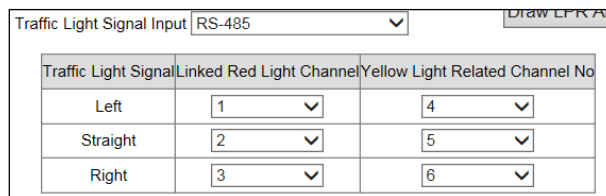


Figure 11-10 RS-485 Configuration

- 1) Select **Linked Red Light Channel** according to the actual connection of detector.
- 2) Select **Yellow Light Related Channel No.** according to the actual connection of detector.

- Video Analysis Interface

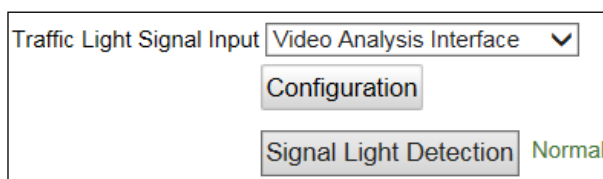


Figure 1-1 Video Analysis Interface Configuration

1) Click **Configuration** to enter the page below.

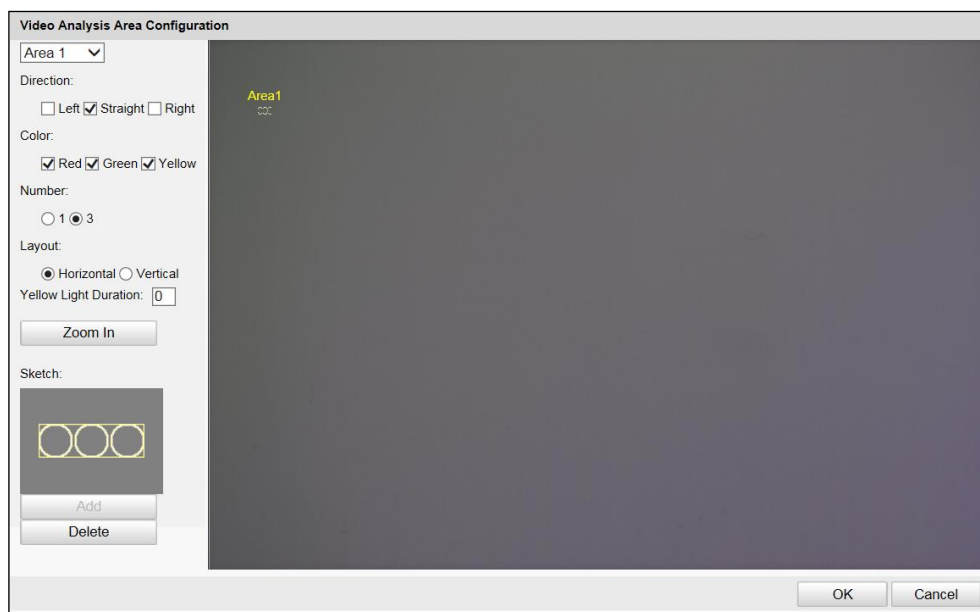


Figure 11-11 Video Analysis

2) Select **Region**.

3) Set the parameters according to the actual conditions.

- **Signal Lamp Guidance:** It refers to the driving direction represented by the signal lights in the detection area.
- **Signal Lamp Color:** You can select signal lamp color.
- **Signal Lamp Number:** You can select one or three light(s).
- **Light Direction:** You can select horizontal or vertical light direction.
- **Zoom In:** Click it and a red frame will appear on the right area. Click the red frame to zoom in.
- **Yellow Light Duration:** You can select yellow light duration.
- **Add Traffic Light:** After setting signal light guidance, signal lamp color number of lights and light direction, you can click **Add Traffic Light** to add it in the area.
- **Delete Current Traffic Light:** Click it to delete the traffic light.

4) Click **OK** to save the settings.

● Network Mode

Traffic Light Signal Input: Network Mode

Traffic Light Signal	Linked Red Light Channel	Yellow Light Related Channel No.
Left	1	4
Straight	2	5
Right	3	6

Figure 11-12 Network Mode Configuration

- 1) Select **Linked Red Light Channel** according to the actual connection of detector.
- 2) Select **Yellow Light Related Channel No.** according to the actual connection of detector.

11.3 External Input

If the device gets triggered by the external induction coils, you can select the trigger mode as External Input. Once a vehicle passes by, a signal will be sent to the device.

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

Step 2 Select Application Mode as External Input.

Figure 11-13 External Input Configuration

Step 3 (Optional) Check **Violation Detection Configuration** types, and when there is seat belt unbuckled or phone call detection, capture will be triggered.

Step 4 Check **External Input** among T1 to T4. Up to 4 external inputs can be selected at one time.

Step 5 Draw license plate recognition (LPR) area.

- 1) Click **Draw LRP Area** to enter the area configuration interface.
- 2) Click **Draw LPR Area (IO x)** to start drawing.

NOTE

Each **Draw LPR Area** button corresponds with an external input channel.

- 3) Click on the live view window to point out a corner of the LRP area, and right click the mouse to finish drawing.

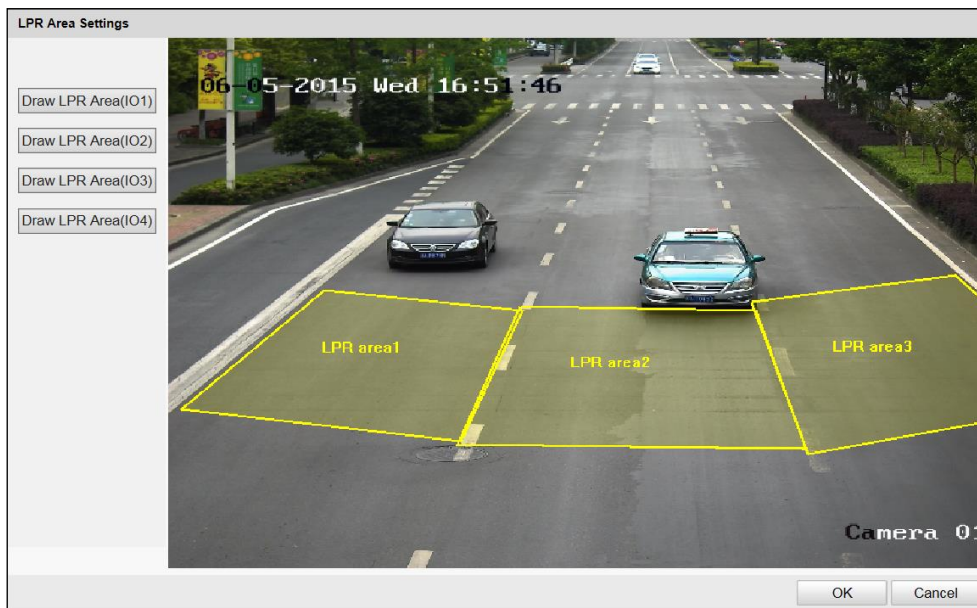


Figure 11-14 Draw LPR Area

i NOTE

- Polygon with 3 to 20 sides is supported.
- Click **Draw LPR Area (IO x)** again to delete the previous drawn area and re-draw the LRP area.
 - 4) Click **OK** to save the areas and exit the LPR area settings page.
 - 5) (Optional) Check **Display All Areas** to display all the LPR areas, or only the LPR area of the external input that is under configuration will be displayed.

Step 6 Select the external input tab to set its parameters.

- 1) (Optional) If the lane is emergency lane, check **Occupy Emergency Lane Capture**, and when there is vehicle passing on emergency lane, capture will be triggered.
- 2) Set the linkage lane by entering **Lane No.**, and it should be the lane No. connected to the external induction coils.
- 3) Select **Lane Type**. You can select **Normal Lane** and **Highway Emergency Lane** according to actual lane.
- 4) Select **Level Status**. You can select **Low-going Edge**, **Rising Edge**, and **Rising Edge and Low-going Edge** as actual demand.
- 5) Select **Capture Pictures**. Up to 5 can be selected. 0 refers to capture no picture.
- 6) Select **Capture Interval** type as **Time**, and set the interval time.
- 7) Select the linkage flash light output.



NOTE

Usually one lane links to one flash light. If you link more than 1 flash light, you need to select **Flashlight Mode**. You can select simultaneous flash and sequential flash as requested.

Step 7 (Optional) Copy the configuration of current external input to other external inputs by checking the corresponding checkboxes among T1 to T4.

Step 8 Click **Save** to save the settings.



NOTE

You can click **Default** to restore the parameters to default values.

11.4 Checkpoint Vehicle Detector

If the device gets triggered by the vehicle detector, you can select the trigger mode as Checkpoint Vehicle Detector. Once a vehicle passes by, a signal will be sent to the device.

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

Step 2 Select Application Mode as **Checkpoint Vehicle Detector**.

Application Mode

Application Mode: Checkpoint Vehicle Detector Work Mode: **Mixed-traffic Lane**

Backup Mode: N/A

Triggered by Vehicle Detector

Violation Detection Configuration

Seat Belt Unbuckled

Phone Call

Lane Parameters and LPR Area Settings Total Lanes: 3

Tolerance Time [0~255]: 5 min

Lane 1 | Lane 2 | Lane 3

Linked Lane No.: 1

Lane Direction: Unknown

Lane No.: 1

Lane Type: Normal Lane

Lane Property: N/A

Capture Pictures: 1

Occupy Emergency Lane Capture

Overspeed Capture

Enable Low Speed Capture

Capture Interval: Time

Intervals: 0 -0 -0 -0 ms

Speed Limit: 80 km/h

Speed Limit Sign: 70 km/h

Speed Limit for Truck: 80 km/h

Speed Limit Sign: 70 km/h

Min. Speed Allowed: 30 km/h


Min. Speed for Truck: 20 km/h

Linkage Output: F1 F2
 F3 F4
 F5 F6

Flashlight Mode: Simultaneous

[Advanced Settings](#)

Copy to: Lane 1 Lane 2 Lane 3



Draw LPR Area Display All Areas

Overspeed: 180 km/h

Low Speed: 0 km/h

Truck Overspeed: 140 km/h

Truck Low speed: 0 km/h

Default Save

Figure 11-15 Checkpoint Vehicle Detector

Step 3 (Optional) Select **Backup Mode** and **Tolerance Time**. You can select **Mixed-traffic Lane**, and when the vehicle detector exception time exceeds the set **Tolerance Time**, the mode

will change to mixed-traffic lane automatically. When the device can receive the signal from the vehicle detector normally, the mode will change to vehicle detector mode again.

Step 4 (Optional) Check **Violation Detection Configuration** types, and when there is seat belt unbuckled or phone call detection, capture will be triggered.

Step 5 Select **Total Lanes** from the drop-down list.

 **NOTE**

- Up to 4 lanes can be supported. Supported total lanes may vary from different models.
- **Speed Limit** Value should be larger than **Speed Limit Sign** value.

Step 6 Click the lane tab to select the lane to set.

Step 7 Draw license plate recognition (LPR) area.

- 1) Click **Draw LRP Area** to enter the area configuration page.
- 2) Click **Draw LRP Area (Lane x)** to start drawing.
- 3) Click on the live view window to point out a corner of the LRP area, and right click the mouse to finish drawing.

 **NOTE**

- Polygon with 3 to 20 sides is supported.
- Click **Draw LRP Area (Lane x)** again to delete the previous area and re-draw the LRP area.
 - 1) Click **OK** to save the areas and exit the LRP area settings page.
 - 2) (Optional) Check **Display All Areas** to display all the LRP areas.

Step 8 Set the linkage lane by entering **Linked Lane No.**, and it should be the lane No. connected to the vehicle detector.

Step 9 Select **Lane Direction**.

Step 10 Enter **Lane No.** in the given field. The Lane No. is used as the OSD content.

Step 11 Select **Lane Type**. You can select **Normal Lane** and **Highway Emergency Lane** according to actual lane.

Step 12 Set the capture parameters.

- 1) Select **Capture Pictures**. Up to 5 can be selected. 0 refers to capture no vehicle.
- 2) (Optional) If the lane is emergency lane, check **Occupy Emergency Lane Capture**, and when there is vehicle passing on the lane, capture will be triggered.
- 3) (Optional) Set **Speed Limit** value according to the actual limit speed. And check **Overspeed Capture** (capture one more picture) to capture an extra overspeed picture.
- 4) (Optional) Set **Min. Speed Allowed** value. And check **Enable Low Speed Capture**. When the vehicle speed exceeds the set min. speed, capture will be triggered.

- 5) Select **Capture Interval** type between time and distance, and set the interval time or interval distance.
- 6) Set **Speed Limit Sign** according to actual speed value on speed restriction board, and it will be overlaid on captured picture.
- 7) Set **Speed Limit for Truck**. When the truck speed exceeds the set speed limit, capture will be triggered.
- 8) Set **Min. Speed for Truck**. When the truck speed exceeds the set min. speed, capture will be triggered.
- 9) Select the linkage flash light output.

 **NOTE**

Usually one lane is linked to one flash light. If you link more than one flash light, you need to select **Flash light Mode**. Simultaneous flash and sequential flash are selectable.

Step 13 (Optional) Copy the configuration of current lane to other lanes.

Step 14 Click **Save** to save the settings.

 **NOTE**

You can click the **Default** to restore the parameters to default values.

11.5 RS-485 Radar

If high accuracy speed detection is required, you can select the trigger mode as RS-485 Radar.

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

Step 2 Select Application Mode as **RS-485 Radar**.

Application Mode: RS-485 Radar Work Mode: RS-485 Radar

Violation Detection Configuration

Seat Belt Unbuckled

Phone Call

Lane Parameters and LPR Area Settings Total Lanes: 3

Lane 1 | Lane 2 | Lane 3

Lane No.:

Lane Direction: Unknown

Lane Type: Normal Lane

Coil Distance: cm

Trigger Delay Time: ms

Trigger Delay Distance: dm

Lane Property: High Way

Capture Pictures:

Occupy Emergency Lane Capture

Overspeed Capture

Enable Low Speed Capture

Capture Interval: Time

Intervals: ms

Speed Limit: km/h

Speed Limit Sign: km/h

Speed Limit for Truck: km/h

Speed Limit Sign: km/h

Min. Speed Allowed: km/h

Min. Speed for Truck: km/h

Linkage Output: F1 F2 F3 F4 F5 F6

Flashlight Mode: Simultaneous

Radar Parameters

Radar Type: Multi-Lane Radar

Linkage 485 No.: 485 Port 1


Sensitivity:

Angle:

Linearity Correction: [0.001-2]

Constant Correction:

Copy to: Lane 1 Lane 2 Lane 3



Display All Areas

Overspeed: km/h

Low Speed: km/h

Truck Overspeed: km/h

Truck Low speed: km/h

Figure 11-16 RS-485 Radar

Step 3 (Optional) Check **Violation Detection Configuration** types, and when there is seat belt unbuckled or phone call detection, capture will be triggered.

Step 4 Select **Total Lanes** from the drop-down list.

 **NOTE**

Up to 3 lanes can be supported. Supported total lanes may vary from different models.

Step 5 Click the lane tab to select the lane to set.

Step 6 Draw license plate recognition (LPR) area.

- 1) Click **Draw LRP Area** to enter the area configuration interface.
- 2) Click **Draw LRP Area (Lane x)** to start drawing.
- 3) Click on the live view window to point out a corner of the LRP area, and right click the mouse to finish drawing.

 **NOTE**

- Polygon with 3 to 20 sides is supported.
 - Click **Draw LRP Area (Lane x)** again to delete the previous area and re-draw the LRP area.
- 4) Click **Save** to save the areas and exit the LPR area settings interface.
 - 5) (Optional) Check **Display All Areas** to display all the LPR areas.

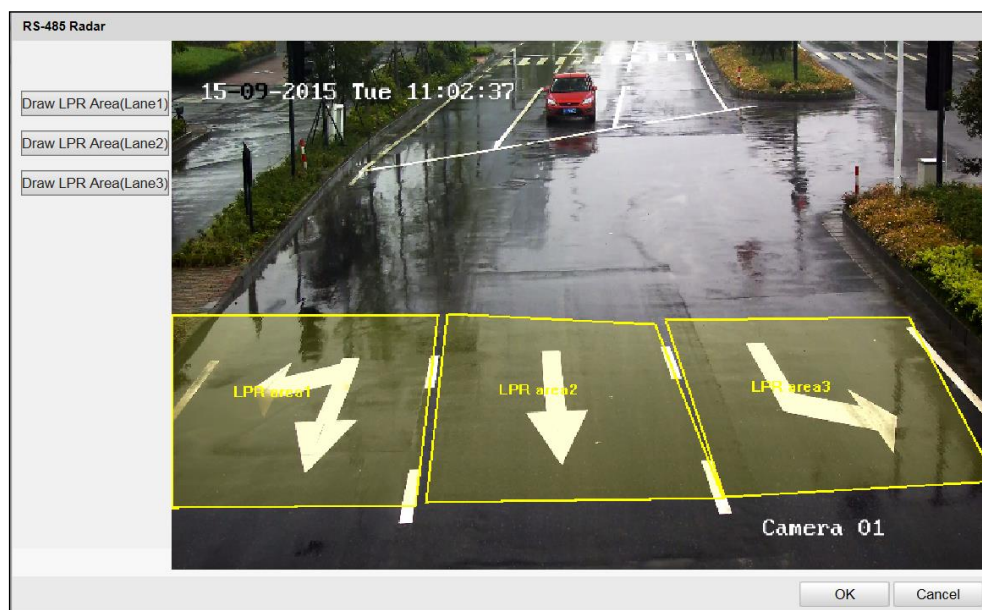


Figure 11-17 Draw LPR Area

Step 7 Set the linkage lane by entering **Lane No.**

Step 8 Select **Lane Direction.**

Step 9 Select **Lane Type.** You can select **Normal Lane** and **Highway Emergency** according to actual lanes. If you select highway emergency lane, set the detection periods.

Step 10 Enter **Coil Distance.**

Step 11 Enter **Trigger Delay Time** and **Trigger Delay Distance.**

- **Trigger Delay Time:** The time between two vehicles being captured.
- **Trigger Delay Distance:** The distance between two vehicles being captured.

Step 12 Set the capture parameters.

- 1) Select **Capture Pictures**. Up to 5 can be selected. 0 refers to capture no vehicle.
- 2) (Optional) If the lane is emergency lane, check **Occupy Emergency Lane Capture**, and when there is vehicle passing on the lane, capture will be triggered.
- 3) (Optional) Set **Speed Limit** value according to the actual limit speed. And check **Overspeed Capture** (capture one more picture) to capture an extra overspeed picture.
- 4) (Optional) Set **Min. Speed Allowed** value. And check **Enable Low Speed Capture**. When the vehicle speed exceeds the set min. speed, capture will be triggered.
- 5) Select **Capture Interval** type between time and distance, and set the interval time or interval distance.

Example: If you want to capture 3 pictures at one time and the capture interval is 20 ms, you should select 3 in **Capture Pictures** drop-down list and enter 20 in the first two blanks of Intervals.

NOTE

If you set the interval as 0, then the pictures will be captured without interval.

- 6) Set **Speed Limit Sign** according to actual speed value on speed restriction board, and it will be overlaid on captured picture.
- 7) Set **Speed Limit for Truck**. When the truck speed exceeds the set speed limit, capture will be triggered.
- 8) Set **Min. Speed for Truck**. When the truck speed exceeds the set min. speed, capture will be triggered.
- 9) Select the linkage flash light output.

NOTE

- Usually one lane is linked to one flash light. If you link more than one flash light, you need to select **Flashlight Mode**. Simultaneous flash and sequential flash are selectable.
- **Speed Limit** Value should be larger than **Speed Limit Sign** value.

Step 13 Set Radar Parameters.

- **Radar Type:** Multi-Lane Radar, Andoray (No Radar Controller), Olvia, Transmicrowave, Sensortech are selectable.
 - If you use CSR-IN(P) radar, select TransMicrowave.
 - If you use CSR-IM radar, select Multi-lane radar
 - If you use STJ-XXX, select Sensor.
 - If you use other radars, select Custom.

- **Linkage 485 No.:** Select the communication interface of radar.
- **Sensitivity:** Enter the sensitivity.
- **Angle:** Enter the angle of the radar and the horizontal direction according to the actual application.
- **Linearity Correction:** You may need to adjust the radar output result according to the actual speed.
- **Constant Correction:** In order to improve the accuracy of the detection speed, there is a constant correction, which is the extra added/ minus speed value.

 **NOTE**

The final speed is the calculated according to the radar output speed, the linearity correction, and constant correction together.

Example: The speed detected is 80km/h, and you set the linearity correction coefficient as 1.2, and the constant correction as 5, then the final speed is $80\text{km/h} \times 1.2 + 5 = 101\text{km/h}$. And if you do not want to make any change to the detected speed, you can set the linearity correction coefficient as 1, and the constant correction as 0.

Step 14 (Optional) Copy the configuration of current lane to other lanes.

Step 15 Click **Save** to save the settings.

 **NOTE**

You can click the **Default** button to restore the parameters to default values.

Chapter 12 Exception

Purpose:

The exception type can be HDD error, network disconnected, IP address conflicted, and vehicle detector 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 Dwell Time(s)
<input checked="" type="checkbox"/>	HDD Error	<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/>	Network Disconnected			
<input checked="" type="checkbox"/>	IP Address Conflicted			
<input checked="" type="checkbox"/>	Vehicle Detector Exception	<input checked="" type="checkbox"/>		

Save

Figure 12-1 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 13 Maintenance

13.1 Device Status

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

Device Status							
Device IP address		10.41.15.200					
Device Status							
Live View Connection	Live View IP Address	Frame Rate	Resolution	Stream Type	Arming Channel	Arming Host Address	Arming Level
1	10.41.8.167	Full Frame Rate	4096*2160	Main Stream	0		
Check Vehicle Detector Status							

Figure 13-1 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 13-1 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.

13.2 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**.

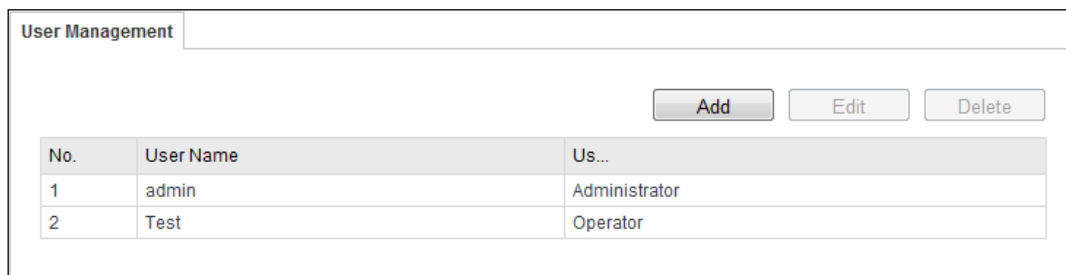


Figure 13-2 User Management

13.2.1 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.

Add User

User Name:

User Type:

Password: ✔ Strong

Confirm Password:

Valid password range [8~16]. You can use a combination of numbers, lowercase, uppercase and special character for your password with at least two kinds of them contained.

Basic Permission	Camera Permission
<input type="checkbox"/> Remote Configuration	<input checked="" type="checkbox"/> Remote Live View
<input checked="" type="checkbox"/> Remote Log Search and Status Check	<input checked="" type="checkbox"/> Remote SD Card Access
<input type="checkbox"/> Remote Upgrade and Format	
<input type="checkbox"/> Remote Shutdown and Restart	
<input type="checkbox"/> Remote Request for Alarm Upload, Alarm Output.	
<input type="checkbox"/> Remote Control Local Output	
<input type="checkbox"/> Remote Serial Port Control	

OK Cancel

Figure 13-3 Add a User

13.2.2 Modify a User

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

Step 2 Modify the editable parameters.

Edit User

User Name:

User Type:

Password:

Confirm Password:

Valid password range [8~16]. You can use a combination of numbers, lowercase, uppercase and special character for your password with at least two kinds of them contained.

Basic Permission	Camera Permission
<input checked="" type="checkbox"/> Remote Configuration	<input checked="" type="checkbox"/> Remote Live View
<input checked="" type="checkbox"/> Remote Log Search and Status Check	<input checked="" type="checkbox"/> Remote SD Card Access
<input checked="" type="checkbox"/> Remote Upgrade and Format	
<input checked="" type="checkbox"/> Remote Shutdown and Restart	
<input checked="" type="checkbox"/> Remote Request for Alarm Upload, Alarm Output.	
<input checked="" type="checkbox"/> Remote Control Local Output	
<input checked="" type="checkbox"/> Remote Serial Port Control	

OK Cancel

Figure 13-4 Modify Admin

Edit User

User Name

User Type

Password

Confirm Password

Valid password range [8-16]. You can use a combination of numbers, lowercase, uppercase and special character for your password with at least two kinds of them contained.

Basic Permission	Camera Permission
<input type="checkbox"/> Remote Configuration	<input checked="" type="checkbox"/> Remote Live View
<input checked="" type="checkbox"/> Remote Log Search and Status Check	<input checked="" type="checkbox"/> Remote SD Card Access
<input type="checkbox"/> Remote Upgrade and Format	
<input type="checkbox"/> Remote Shutdown and Restart	
<input type="checkbox"/> Remote Request for Alarm Upload, Alarm Output.	
<input type="checkbox"/> Remote Control Local Output	
<input type="checkbox"/> Remote Serial Port Control	

OK Cancel

Figure 13-5 Modify Operator/User

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

13.2.3 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.

13.3 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 according to actual needs.

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.

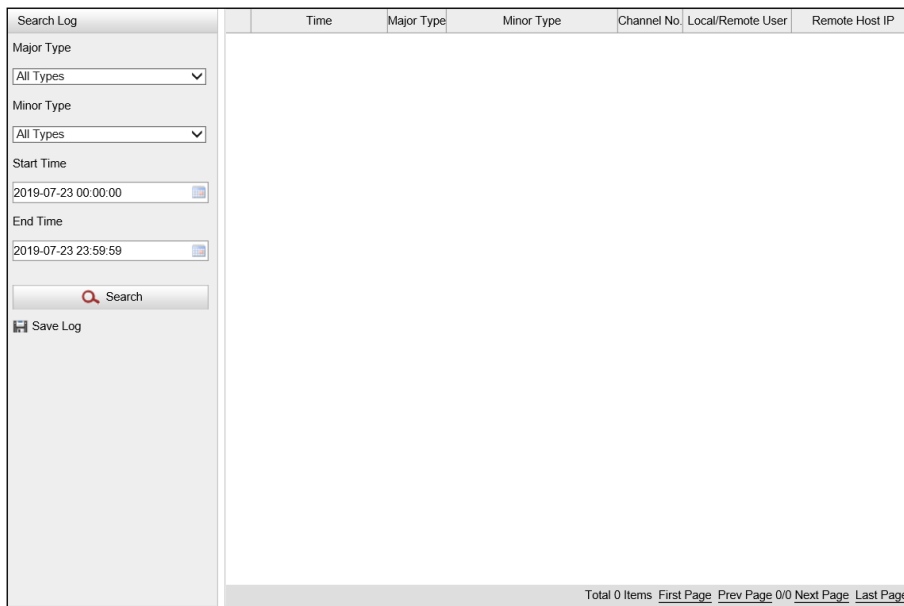


Figure 13-6 Log Searching

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.

13.4 Reboot the Camera

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

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



Figure 13-7 Reboot Device

13.5 Restore Default Settings

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

Step 2 Click **Restore Factory Settings**.

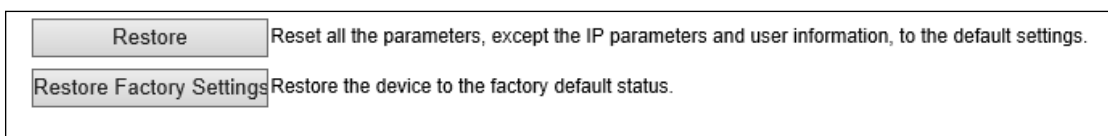


Figure 13-8 Restore Default Settings

 **NOTE**

Use the Hard Reset function with caution.

13.6 Export Debug File

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



Figure 13-9 Export Debug File

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

13.7 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**.

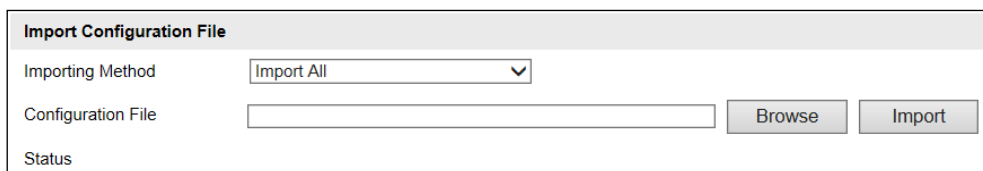


Figure 13-10 Import Configuration File

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.

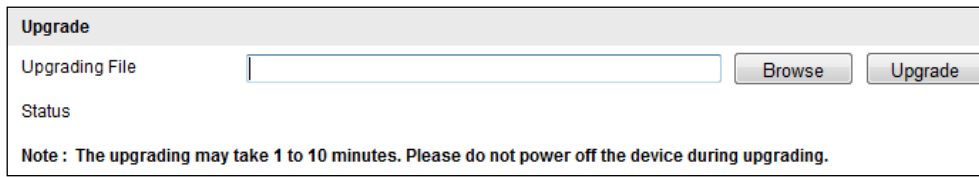
Step 5 Click Import to start importing the configuration file.

 **NOTE**

You need to reboot the camera after importing configuration file.

13.8 Upgrade the System

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



Upgrade

Upgrading File

Status

Note : The upgrading may take 1 to 10 minutes. Please do not power off the device during upgrading.

Figure 13-11 Remote Upgrade

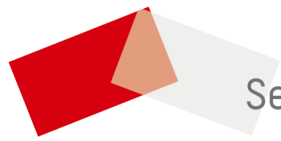
Step 2 Click **Browse** to select the local upgrade file.

Step 3 Click **Upgrade** to start remote upgrade.

Step 4 (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