Smart Monitoring Camera

User Manual

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Symbol Conventions

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

Symbol	Description
Danger	Indicates a hazardous situation which, if not avoided, will or could result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
Note	Provides additional information to emphasize or supplement important points of the main text.

Contents

Chapter 1 Activation and Login

1.1 Activation

For the first-time access, you need to activate the device by setting an admin password. No operation is allowed before activation. The device supports multiple activation methods, such as activation via HiTools Delivery, web browser, and iVMS-4200 Client.

Note

Refer to the user manual of iVMS-4200 Client for the activation via client software.

1.1.1 Default Information

The device default information is shown as below.

- Default IP address: 192.168.1.64
- Default user name: admin

1.1.2 Activate via HiTools Delivery

HiTools Delivery aims to streamline and enhance the activation, networking, and batch configuration for various devices. You can use the software to detect, activate, and modify the IP addresses of multiple devices over the LAN.

Before You Start

- Set the device and the computer that runs the software to the same network segment.
- Access the official website (***https://www.hikvision.com/en***) and enter **Support → Download → Software → HiTools → HiTools Delivery** to download HiTools Delivery and install it according to the prompts.

Steps

1. Run the software.
2. Click **Home Page → Search → Current Subnet** . Click **Refresh**, and the list will display all the online devices in the same network segment.
3. Select the inactive device(s) in the list. Set a new password according to the popup requirements and confirm the password.
4. Click **Activation**. The device activation status will change to **Activated** after successful activation.

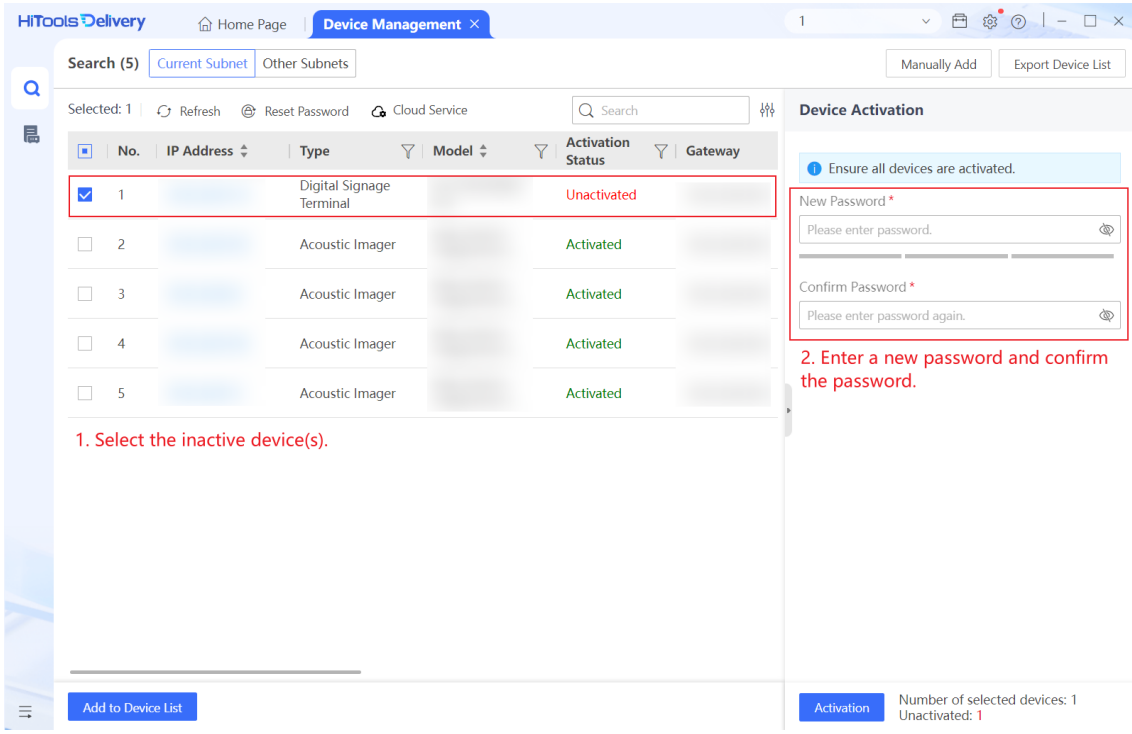

Figure 1-1 Activation

5. **Optional:** Change the IP address of the device.
   1) On **Current Subnet** interface, select multiple devices that need to change the IP addresses.
   2) On the right **Network Parameter** window, set the start IP address, port No., IPv4 subnet mask, IPv4 gateway, etc., and the selected devices will be automatically assigned to increasing IP addresses. Or check **Enable DHCP** to assign dynamic IP addresses.
   3) Enter the admin password and click **OK**.

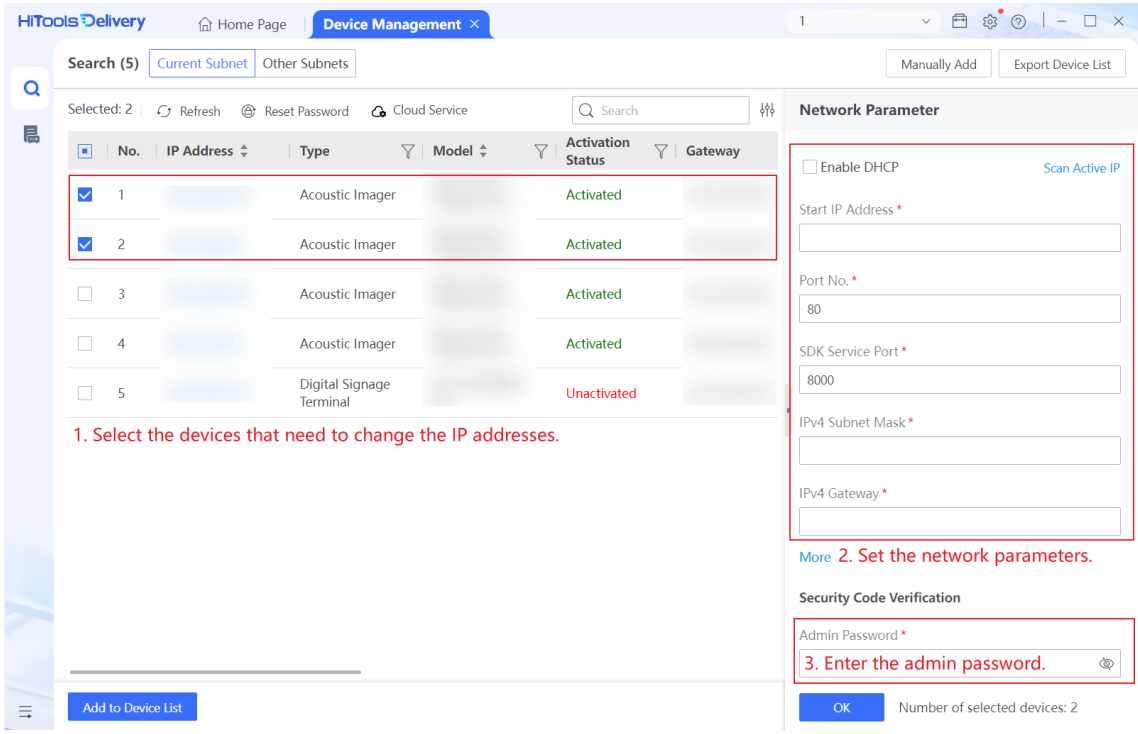

Figure 1-2 Modify Network Parameters

Note

- Set the device IP address to the same network segment with that of your computer.
- You can click **Scan Active IP** to detect and view the available IP addresses. Refer to the help of HiTools Delivery for details.
- You can also click **Home Page → Maintenance → Change IP** to change the IP addresses in batch by exporting and importing the template. Refer to the help of HiTools Delivery for details.

1.1.3 Activate via Web Browser

Use web browser to activate the device. For the device with the DHCP enabled by default, use SADP software or client software to activate the device.

Before You Start

Ensure the device and the computer are in the LAN with the same network segment.

Steps

1. Change the IP address of your computer to the same network segment as the device.
2. Open the web browser, and enter the default IP address of the device to enter the activation interface.
3. Create and confirm the admin password.

Caution

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.

4. Click **OK** to complete activation.
5. Go to the network settings interface to modify IP address of the device.

1.2 Login

You can log in to the device via web browser for further operations such as live view and local configuration.

Before You Start

Connect the device to the network directly, or via a switch or a router.

Steps

1. Open the web browser, and enter the IP address of the device to enter the login interface.
2. **Optional:** Select the language.
3. Enter **User Name** and **Password**.
4. Click **Login**.

Note

- If live view failed, click on the upper right corner of the interface to download the plug-in and install it.
- Close the web browser to install the plug-in, or the installation may fail. If you still cannot realize live view after installing the plug-in, try to uninstall the plug-in and reinstall.

5. Reopen the web browser after the installation of the plug-in and repeat steps 1 to 4 to login.
6. **Optional:** Click on the upper right corner of the interface to log out of the device.

1.3 Download Plug-in

No plug-in mode is enabled by default. In no plug-in mode, the resolution of the live view image will be decreased and the live view may not be smooth. You can download and install plug-in to improve the live view condition.

In no-plug in mode, "No Plug-in Mode" prompt will appear on the upper right corner of the interface. You can click to download the plug-in. Close the browser to install the plug-in to the computer. Then access to the IP address of the device again, and the "No Plug-in Mode" prompt will disappear from the upper right corner of the interface.

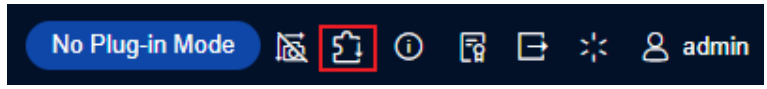

Figure 1-3 Download Plug-in

Chapter 2 Quick Configuration

Click **Quick Configuration** and follow the instructions to complete the basis configuration of the device.

Table 2-1 Quick Configuration

Configuration Sequence	Details
Application Mode	Select **Trigger Mode** and set the corresponding parameters. Refer to ***Application Mode Configuration*** for details.
Basic Parameters	• **Device Information**: Refer to ***View Device Information*** for details. • **License Parameters**: Refer to ***Set License Plate Recognition Parameters*** for details. • **Time Settings**: Refer to ***Synchronize Time*** and ***Set DST*** for details. • **Network Parameters**: Refer to ***Set IP Address*** for details.
Supplement Light Parameters	Refer to ***Set Supplement Light Parameters*** for details.
OSD Configuration	• **Text Overlay on Video**: Refer to ***Set OSD*** for details. • **Capture Overlay**: Refer to ***Set Information Overlay*** for details.
Picture Configuration	Refer to ***Set Picture Composition*** for details.
Upload Picture	• **ISAPI Listening**: Refer to ***Set ISAPI Listening*** for details. • **Arm Upload**: Refer to ***Set Arming Host*** for details. • **SDK Listening**: Refer to ***Set SDK Listening*** for details. • **FTP**: Refer to ***Set FTP*** for details. • **ISUP**: Refer to ***Connect to ISUP Platform*** for details. • **OTAP**: Refer to ***Connect to OTAP*** for details. • **Hik-Connect Platform**: Refer to ***Connect to Hik-Connect*** for details. • **Integration Protocol**: Refer to ***Set Integration Protocol*** for details.

Chapter 3 Network Configuration

3.1 Set IP Address

IP address must be properly configured before you operate the device over network. IPv4 and IPv6 are both supported. Both versions can be configured simultaneously without conflicting to each other.

Steps

Note

The supported parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Network → Network Parameters → Network Interface** .

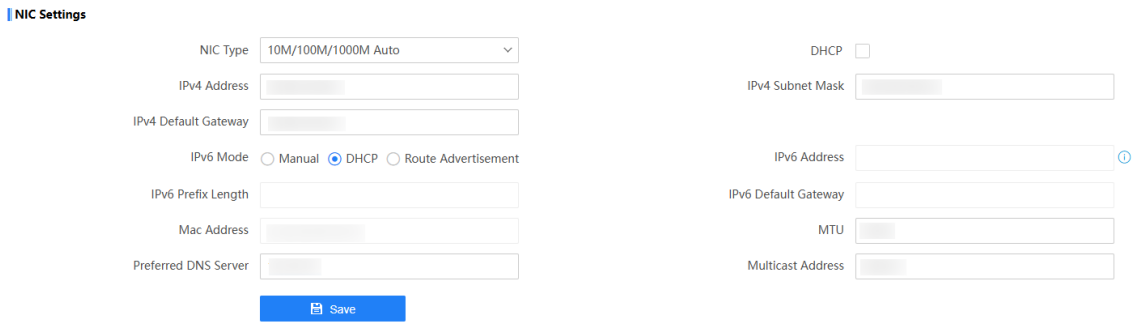

Figure 3-1 Set IP Address

2. Set network parameters.

NIC Type

Select a NIC (Network Interface Card) type according to your network condition.

IPv4

Two modes are available.

DHCP

The device automatically gets the IP parameters from the network if you check **DHCP**. The device IP address is changed after enabling the function. You can use SADP to get the device IP address.

Note

The network that the device is connected to should support DHCP (Dynamic Host Configuration Protocol).

Manual

You can set the device IP parameters manually. Enter **IPv4 Address**, **IPv4 Subnet Mask**, and **IPv4 Default Gateway**.

IPv6

Three IPv6 modes are available.

Route Advertisement

The IPv6 address is generated by combining the route advertisement and the device Mac address.

Note

Route advertisement mode requires the support from the router that the device is connected to.

DHCP

The IPv6 address is assigned by the server, router, or gateway.

Manual

Enter **IPv6 Address**, **IPv6 Prefix Length**, and **IPv6 Default Gateway**. Consult the network administrator for required information.

MTU

It stands for maximum transmission unit. It is the size of the largest protocol data unit that can be communicated in a single network layer transaction.

The valid value range of MTU is 1280 to 1500.

Multicast Address

Multicast is group communication where data transmission is addressed to a group of destination devices simultaneously. After setting the IP address of the multicast host, you can send the source data efficiently to multiple receivers.

DNS

It stands for domain name server. It is required if you need to visit the device with domain name. And it is also required for some applications (e.g., sending email). Set **Preferred DNS Address** properly if needed.

3. Click **Save**.

3.2 Set Port

The device port can be modified when the device cannot access the network due to port conflicts.

Go to **Configuration → Network → Network Parameters → Port** for port settings.

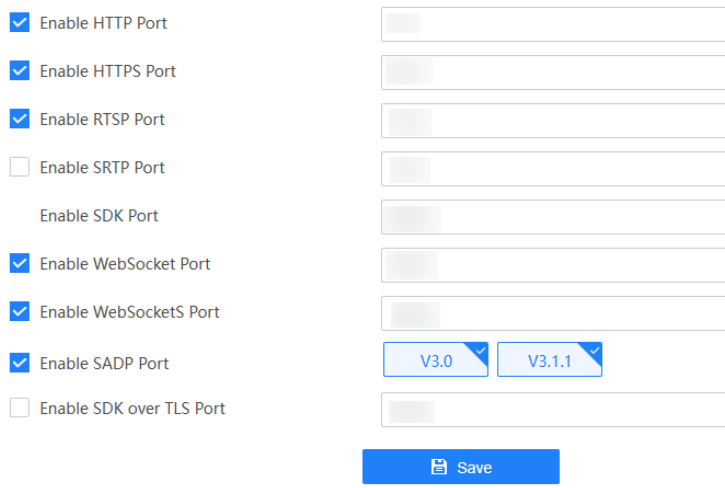

Figure 3-2 Set Port

Enable HTTP Port

It refers to the port through which the browser accesses the device. For example, when the HTTP port is modified to 81, you need to enter ***http://192.168.1.64:81*** in the browser address bar for login.

Enable HTTPS Port

It refers to the port through which the browser accesses the device, but certificate verification is needed.

Enable RTSP Port

RTSP (Real-Time Streaming Protocol) is a communication protocol used to control servers that stream media content over the Internet. It helps in setting up and managing connections between devices for streaming audio or video. RTSP ensures that media players and servers can communicate smoothly, allowing users to play, pause, adjust volume, and perform other actions while streaming content.

Enable SRTP Port

SRTP (Secure Real-Time Transport Protocol) is an extension to RTP (Real-Time Transport Protocol) that incorporates enhanced security features.

Enable SDK Port

It refers to the port through which the client adds the device.

Enable WebSocket Port

It refers to the full-duplex communication protocol port based on TCP. Enable the port for live view without plug-in.

Enable WebSocketS Port

It refers to the full-duplex communication protocol port based on TCP. Enable the port for live view without plug-in. It can only be accessed via certificate verification with high security.

Enable SADP Port

It refers to the port through which the SADP software searches the device. Select the SADP version.

Enable SDK over TLS Port

It refers to the port that adopts TLS protocol over the SDK service, to provide safer data transmission.

Note

- After editing the port, access to the device via the new port.
- Reboot the device to bring the new settings into effect.
- The supported ports vary with different models. The actual device prevails.

3.3 Set IEEE 802.1X

IEEE 802.1X is a port-based network access control. It enhances the security level of the LAN/WLAN. When devices connect to the network with IEEE 802.1X standard, the authentication is needed.

Steps

1. Go to **Configuration → Network → Network Parameters → 802.1X** .
2. Enable 802.1X.

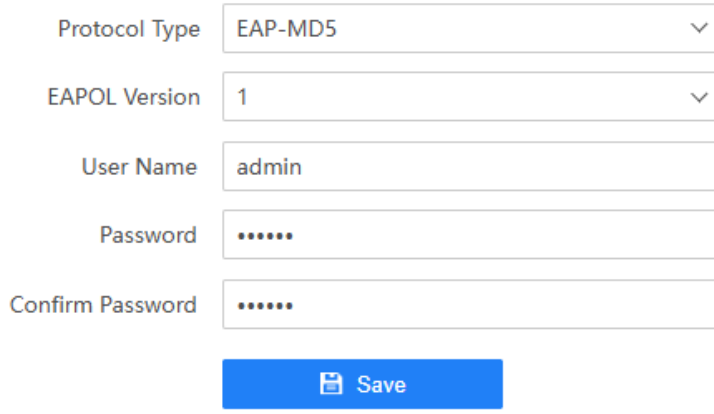

Figure 3-3 Set IEEE 802.1X

3. Select **Protocol Type** and **EAPOL Version**.

Protocol Type

The authentication server must be configured. Register a user name and password for 802.1X in the server in advance. Enter the user name and password for authentication.

EAPOL Version

The EAPOL version must be identical with that of the router or the switch.

4. Enter **User Name** and **Password** registered in the server.
5. Confirm the password.
6. Click **Save**.

3.4 Set DDNS

You can use the Dynamic DNS (DDNS) for network access. The dynamic IP address of the device can be mapped to a domain name resolution server to realize the network access via domain name.

Before You Start

- Register the domain name on the DDNS server.
- Set the LAN IP address, subnet mask, gateway, and DNS server parameters. Refer to ***Set IP Address*** for details.
- Complete port mapping. The default ports are 80, 8000, and 554.

Steps

1. Go to **Configuration → Network → Network Parameters → DDNS** .
2. Enable DDNS.

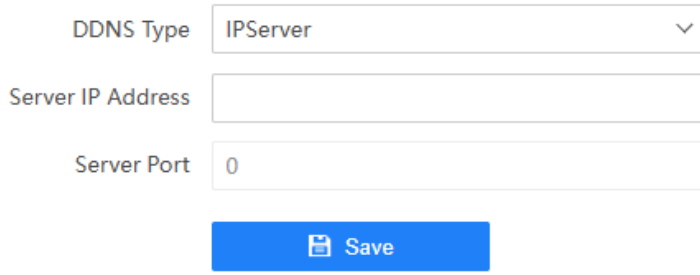

Figure 3-4 Set DDNS

3. Enter the server address and other information.

Note

You can select **IPServer**, **DynDNS**, and **NO-IP** for the DDNS type.

4. Click **Save**.
5. Access the device.

By Browsers	Enter the domain name in the browser address bar to access the device.
By Client Software	Add domain name to the client software. Refer to the client software manual for specific adding methods.

3.5 Set SNMP

You can set the SNMP network management protocol to get the alarm event and exception messages in network transmission.

Before You Start

Download the SNMP software and manage to receive the device information via SNMP port.

Steps

1. Go to **Configuration → Network → Network Parameters → SNMP** .

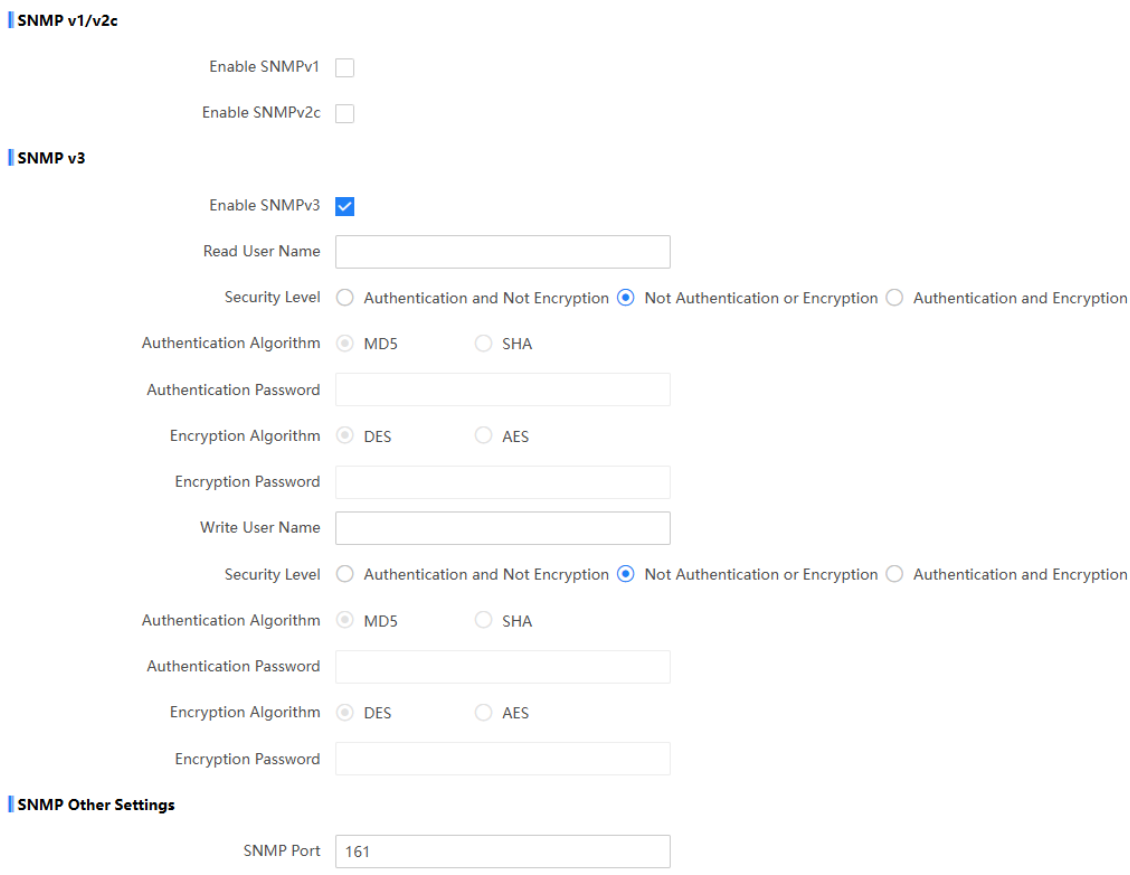

Figure 3-5 Set SNMP

2. Check **Enable SNMPv1/Enable SNMP v2c/Enable SNMPv3**.

Note

- The SNMP version you select should be the same as that of the SNMP software.
- Use different versions according to the security levels required. There exists information leakage using SNMP v1 or v2. You're recommended to use SNMP v3, which provides encryption and is safer. If you use v3, HTTPS protocol must be enabled.

3. Set the SNMP parameters.

Note

For SNMP v3, you need to set **Authentication Algorithm** and **Authentication Password**, and **Encryption Algorithm** and **Encryption Password**.

4. Click **Save**.

3.6 Set QoS

QoS (Quality of Service) can help improve the network delay and network congestion by setting the priority of data sending.

Note

QoS needs support from network devices such as routers and switches.

Steps

1. Go to **Configuration → Network → Network Parameters → QoS** .
2. Enable DSCP according to the actual needs and set the value.

Note

Network can identify the priority of data transmission. The bigger the DSCP value is, the higher the priority is. Same settings need to be set in the router for configuration.

3. Click **Save**.

3.7 Set Multicast

Multicast is group communication where data transmission is addressed to a group of destination devices simultaneously.

Steps

1. Go to **Configuration → Network → Network Parameters → Multicast** .

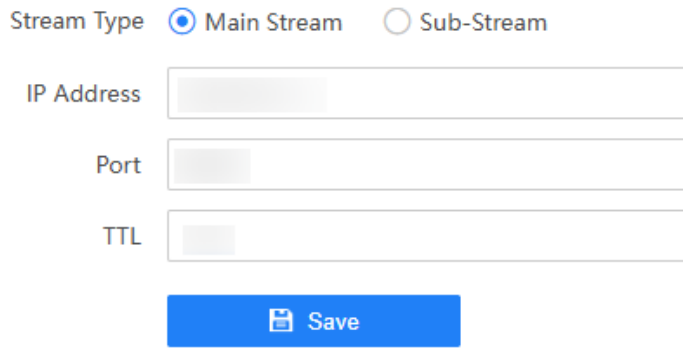

Figure 3-6 Set Multicast

2. Set the parameters.

Stream Type

The stream type as the multicast source.

IP Address

It stands for the address of multicast host.

Port

The port of the selected stream.

TTL

TTL (Time to Live) is a crucial setting in networking and computing that determines how long data packets remain valid and available within a network before being discarded by a router. It is used in various contexts, including DNS, IP headers, and caching mechanisms.

3. Click **Save**.

3.8 Set RTMP

RTMP (Real-Time Messaging Protocol) is designed for transmitting audio and video over the Internet. It is used to stream multimedia content on demand and supports live streaming.

Steps

1. Go to **Configuration → Network → Network Parameters → RTMP** .

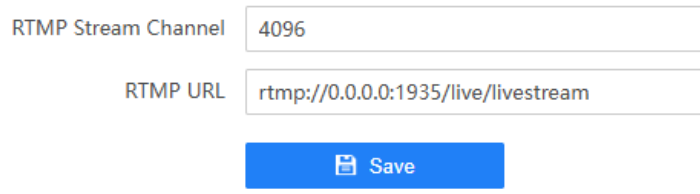

Figure 3-7 Set RTMP

2. Set the parameters.

RTMP Stream Channel

The size of the RTMP stream channel. It is 4096 by default.

RTMP URL

The RTMP streaming URL. It is ***rtmp://192.168.1.64:1935/live/livestream*** by default.

3. Click **Save**.

3.9 Data Connection

3.9.1 Set ISAPI Listening

ISAPI listening and SDK listening are mutually exclusive protocols. If you enable the picture uploading listening, the device will transmit images via the SDK listening. If not, the device will upload images via ISAPI protocol after the ISAPI parameters are set.

Before You Start

The listening service has been enabled for the ISAPI host, and the network communication with the device is normal.

Steps

1. Go to **Configuration → Network → Data Connection → ISAPI Listening** .
2. Enable **ISAPI1** or **ISAPI2**.

Note

For some application modes, only one ISAPI is supported. The actual interface prevails.

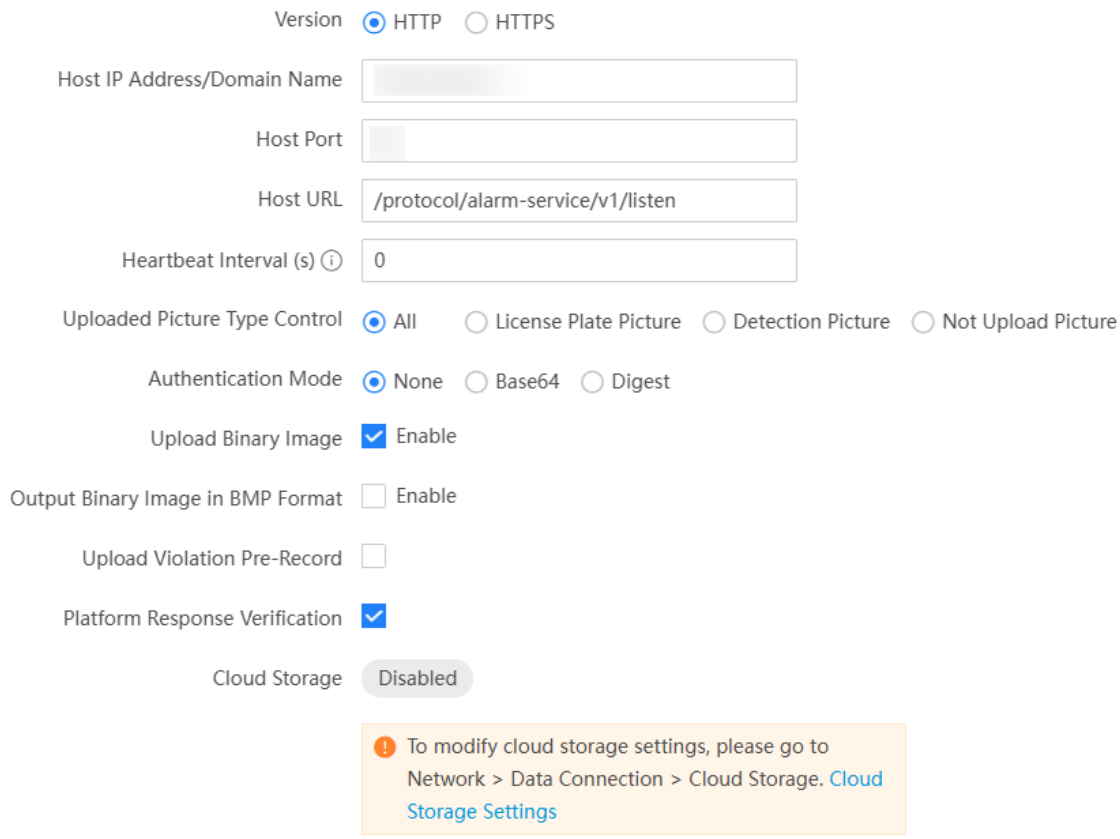

Figure 3-8 Set ISAPI Listening

3. Select **Version**.
4. Set **Host IP Address/Domain Name**, **Host Port**, and **Host URL**.
5. Set the parameters.

   Heartbeat Interval

   If you set it as 0, the heartbeat is disabled.

   Uploaded Picture Type Control

   You can upload license plate pictures and detection pictures (the capture scene pictures), or do not upload pictures.

   Authentication Mode

   Only the authorized users can access the device. If you select **None**, the device will not verify the authentication condition of the access users. It is recommended to select an authentication mode to guarantee the device information security.

   Upload Binary Image

   Enable the function to upload images which are full of black or white pixel points.

   Output Binary Image in BMP Format

   Enable the function to output images in BMP format. Disable the function to output images in JPEG format by default.

   Upload Violation Pre-Record

   Enable the function to upload the pre-recorded videos of violations to the host.

   Platform Response Verification

   Enable the function, and the device will get the platform response result.
6. **Optional:** If you want to save the alarm information and pictures to the cloud storage, go to **Configuration → Network → Data Connection → Cloud Storage** to set the parameters. Refer to ***Set Cloud Storage*** for details.
7. Click **Save**.

3.9.2 Set Arming Host

The device can upload the captured pictures via the arming host.

Steps

1. Go to **Configuration → Network → Data Connection → Arm Upload** .

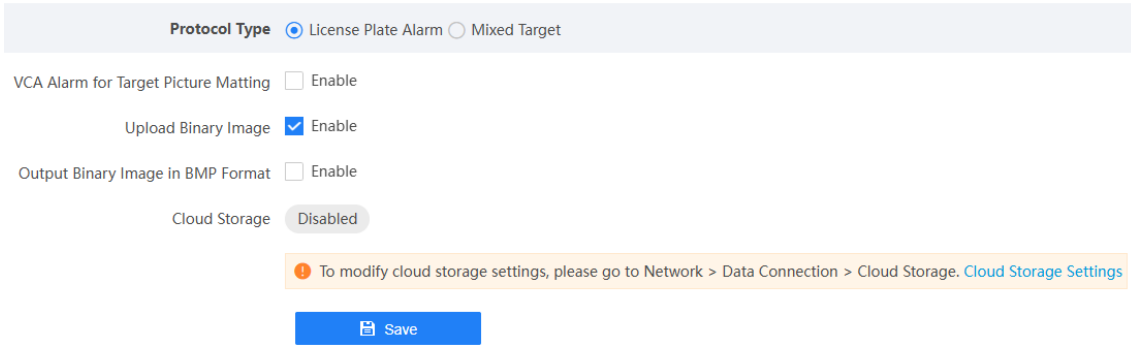

Figure 3-9 Set Arming Host

2. Select **Protocol Type**.

Note

Supported functions vary with different models. The actual device prevails.

License Plate Alarm

Uploads arming alarm images of the license plate. You can enable the functions below.

VCA Alarm for Target Picture Matting

If you have enabled motor vehicle/non-motor vehicle/pedestrian capture and target picture matting, you can enable the function to upload a scene picture, a license plate picture, and a target matting picture for the captured target.

Upload Binary Image

Enable the function to upload binary images full of black or white pixel points.

Output Binary Image in BMP Format

Enable the function to output images in BMP format. Disable the function to output images in JPEG format by default.

Mixed Target

Uploads images of multiple targets such as humans and vehicles. You can enable the body property to recognize clothes, bags, and other properties.

3. **Optional:** If you want to save the alarm information and pictures to the cloud storage, go to **Configuration → Network → Data Connection → Cloud Storage** to set the parameters. Refer to ***Set Cloud Storage*** for details.
4. Click **Save**.

3.9.3 Set SDK Listening

The SDK listening can be used to receive the uploaded information and pictures of the device arming alarm.

Before You Start

The listening service has been enabled for the SDK listening, and the network communication with the device is normal.

Steps

1. Go to **Configuration → Network → Data Connection → SDK Listening** .
2. Enable SDK listening.

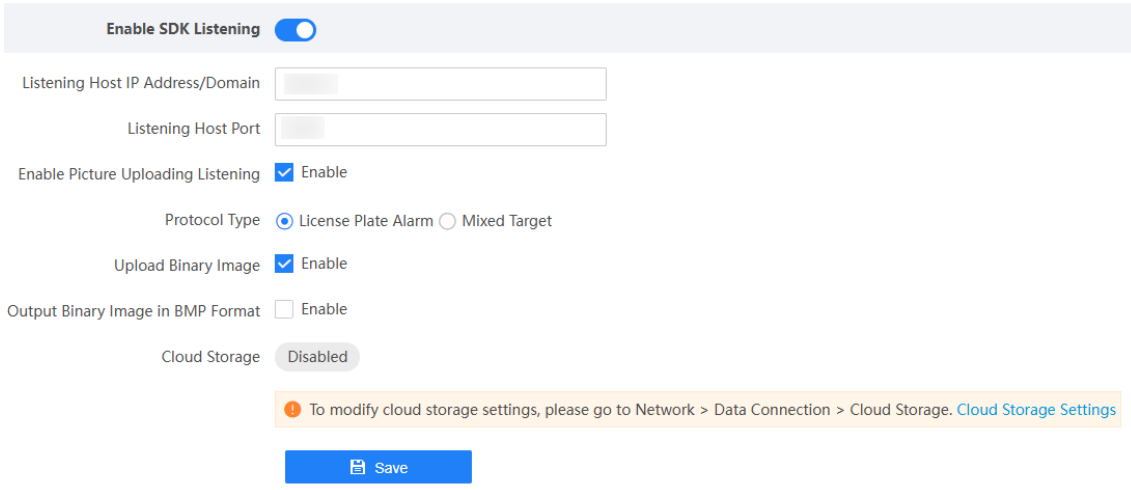

Figure 3-10 Set SDK Listening

3. Set **Listening Host IP Address/Domain** and **Listening Host Port** if you need to upload the alarm information and pictures.
4. **Optional:** The device will transmit images via the SDK listening if you enable picture uploading listening.
5. Select **Protocol Type**.

Note

Supported functions vary with different models. The actual device prevails.

License Plate Alarm

Uploads arming alarm images of the license plate. You can enable the functions below.

Upload Binary Image

Enable the function to upload binary images full of black or white pixel points.

Output Binary Image in BMP Format

Enable the function to output images in BMP format. Disable the function to output images in JPEG format by default.

Mixed Target

Uploads images of multiple targets such as humans and vehicles. You can enable the body property to recognize clothes, bags, and other properties.

6. **Optional:** If you want to save the alarm information and pictures to the cloud storage, go to **Configuration → Network → Data Connection → Cloud Storage** to set the parameters. Refer to ***Set Cloud Storage*** for details.
7. Click **Save**.

3.9.4 Set FTP

Set FTP parameters if you want to upload the captured pictures to the FTP server.

Before You Start

Set the FTP server, and ensure the device can communicate normally with the server.

Steps

1. Go to **Configuration → Network → Data Connection → FTP** .
2. Enable the FTP server.

Note

- You can only enable one FTP if the device does not support the violation capture. If more than one FTP is enabled, you should set **Uploaded Data Type** for each FTP according to your needs.
- Enable **FTP1** if you want to upload to only one FTP server.

3. Set FTP parameters.

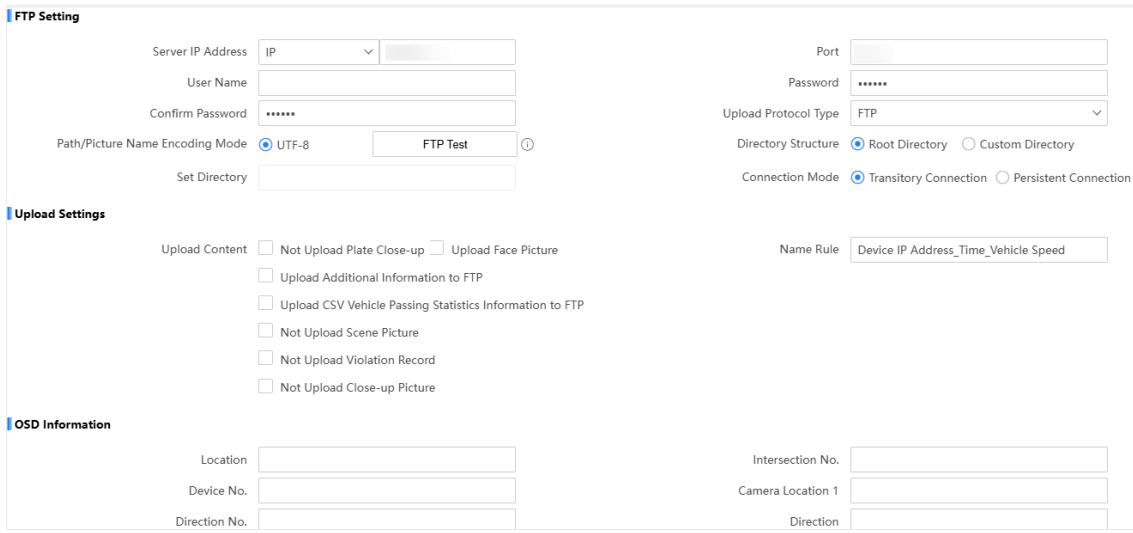

Figure 3-11 Set FTP

1) Select **Sever IP Address** type and enter corresponding information.
2) Enter **Port**.
3) Enter **User Name** and **Password**, and confirm the password.
4) Select **Upload Protocol Type**.

SFTP

SFTP (SSH File Transfer Protocol) is a network protocol that provides file transfer and manipulation functionality over any reliable data stream. SFTP service is typically used with the SSH-2 protocol (TCP port 22) to provide secure file transfer, but is intended to be usable with other protocols as well.

FTPS

FTPS (File Transfer Protocol Secure) is used to provide a number of ways that FTP software can perform secure file transfers. Each way involves the use of a SSL/TLS layer below the standard FTP protocol to encrypt the control and/or data channels. It requires a certificate, and needs the additional configuration of a supported FTP server.

5) Select **Directory Structure**.

Note

You can customize the directory structure according to your needs.

6) Select **Path/Picture Name Encoding Mode**.

UTF-8

UNICODE encoding.

7) Select **Connection Mode**.

Transitory Connection

The connection is temporarily made for one data transmission task. After this task, the connection will be broken.

Persistent Connection

The connection is made for long-term data transmission, which will be broken only when the device is disconnected from the FTP server.

4. **Optional:** Enable upload functions.

Note

Supported functions vary with different models. The actual device prevails.

Not Upload Plate Close-up

The close-up pictures of a license plate will not be uploaded.

Upload Face Picture

Upload face close-up pictures to the FTP server.

Upload Target Picture

Upload the pictures of the target detection area to the FTP server.

Upload Additional Information to FTP

Add related information when uploading data to the FTP server.

Upload CSV Vehicle Passing Statistics Information to FTP

Upload the CSV vehicle passing statistics information to the FTP server.

Not Upload Scene Picture

The captured scene pictures will not be uploaded.

Not Upload Violation Record

The recorded violation videos will not be uploaded.

Not Upload Close-up Picture

The scene close-up pictures will not be uploaded.

5. **Optional:** Click **FTP Test** to check the FTP server.
6. Click the text filed of **Name Rule** to set the directory and separator for the file storage.

Note

For the European version, select **Custom** and enter ***adr*** or ***ADR*** in the text field, and the ADR (Autorisation Dangerous Road) vehicle plate number will be added in the corresponding vehicle picture name.

7. **Optional:** Edit **OSD Information** which can be uploaded to the FTP server with the pictures to make it convenient to view and distinguish the data.
8. Click **Save**.

3.9.5 Connect to ISUP Platform

ISUP is a platform access protocol. The device can be remotely accessed via this platform.

Before You Start

- Create the device ID on ISUP platform.
- Ensure the device can communicate with the platform normally.

Steps

1. Go to **Configuration → Network → Data Connection → ISUP** .
2. Enable ISUP Platform Index1 or 2.

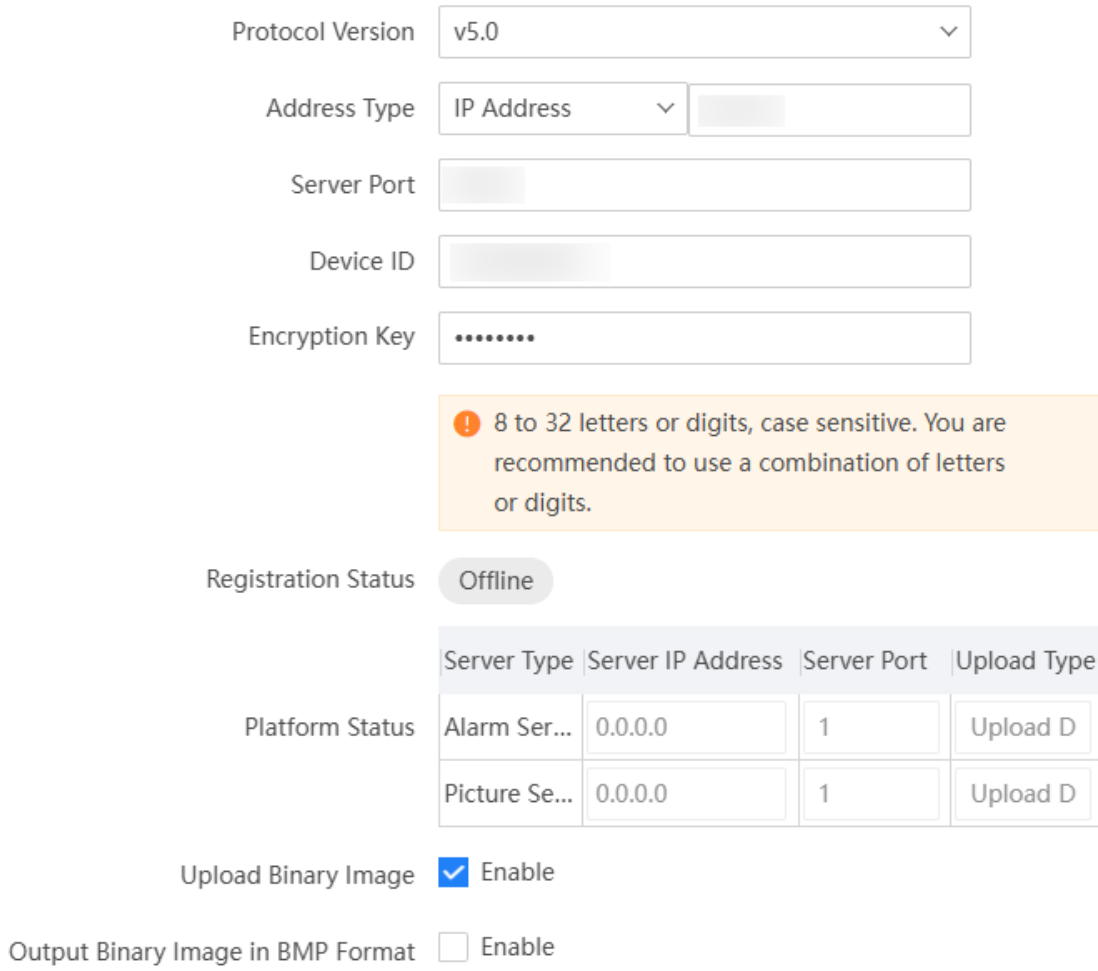

Figure 3-12 Connect to ISUP Platform

3. Select **Protocol Version**.
4. Select **Address Type** and enter IP address or domain name of the platform.
5. Enter **Server Port**, **Device ID**, and **Encryption Key**.

Note

The device ID should be the same with the added one on the platform.

6. **Optional:** You can enable **Upload Binary Image** if you need to upload images which are full of black or white pixel points.

Note

- The function varies with different models. The actual device prevails.
- Enable **Output Binary Image in BMP Format** if you want to output images in BMP format.

7. Click **Save**.

What to do next

When the registration status is online, you can manage the device via the platform or server.

3.9.6 Connect to OTAP

The device can be accessed to the platform via OTAP protocol to realize live view, view incident information, manage the devices, etc. via the platform.

Before You Start

- Set the network parameters including device IP address, gateway, DNS, etc. to get access to the network.
- Disable the other platform accesses conflicting with OTAP.

Steps

1. Go to **Configuration → Network → Data Connection → OTAP** .
2. Select **Platform Access Mode** as **Private Deployment**.
3. Enable **OTAP Server**.

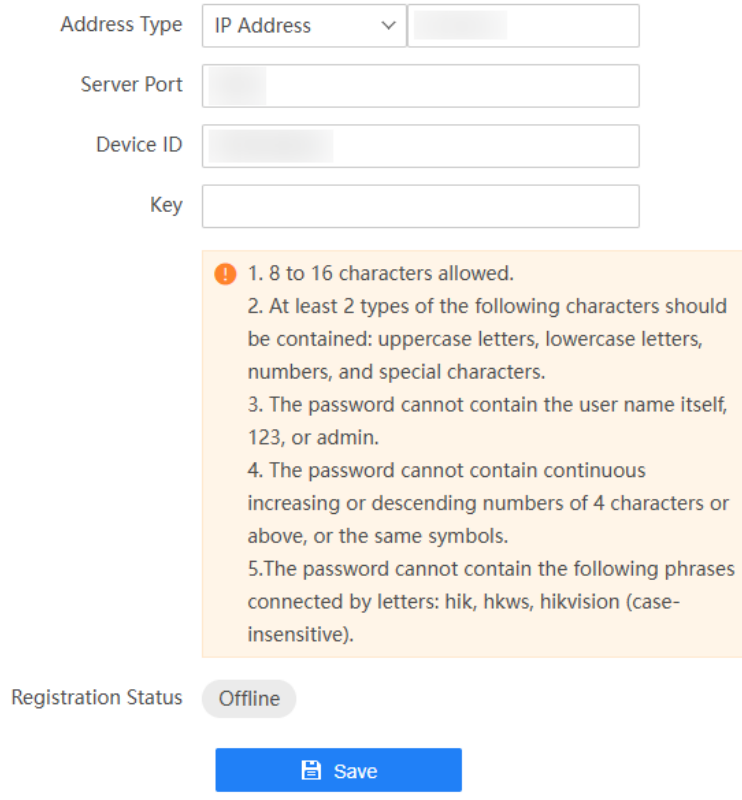

Figure 3-13 Connect to OTAP

4. Set corresponding parameters.

   Address Type

Select the address type of the connected platform or server, and enter the IP address or domain name.

Server Port

The port of the connected platform or server.

Device ID

The device ID should be the same with the added one on the OTAP platform.

Key

Set a custom key to encrypt the data connection between the device and the platform or server.

5. Click **Save**.

What to do next

When the registration status is online, you can manage the device via the platform or server.

3.9.7 Connect to Hik-Connect

The device can be remotely accessed via Hik-Connect.

Before You Start

- Set the network parameters including device IP address, gateway, DNS, etc. to get access to the network.
- OTAP connection is disabled.

Steps

Note

This function varies with different models. The actual device prevails.

1. Enable Hik-Connect in two ways.
   - Get access to Hik-Connect V2.0. Go to **Configuration → Network → Data Connection → OTAP** , and select **Platform Access Mode** as **Hik-Connect**. Enable the function.

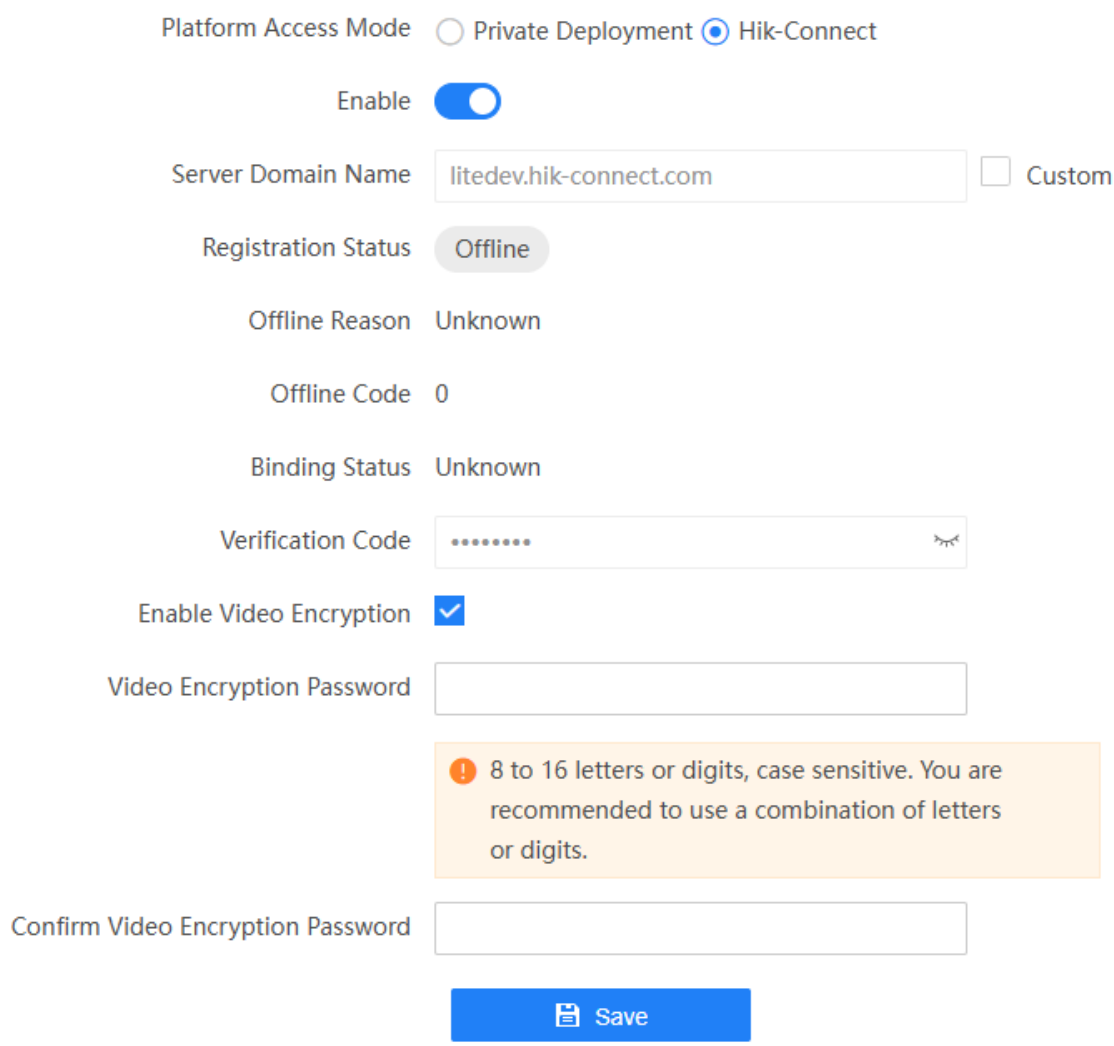

Figure 3-14 Connect to Hik-Connect (V2.0)

- Get access to Hik-Connect V3.0. Go to **Configuration → Network → Data Connection → Hik-Connect Platform** . Enable **Hik-Connect Platform**.

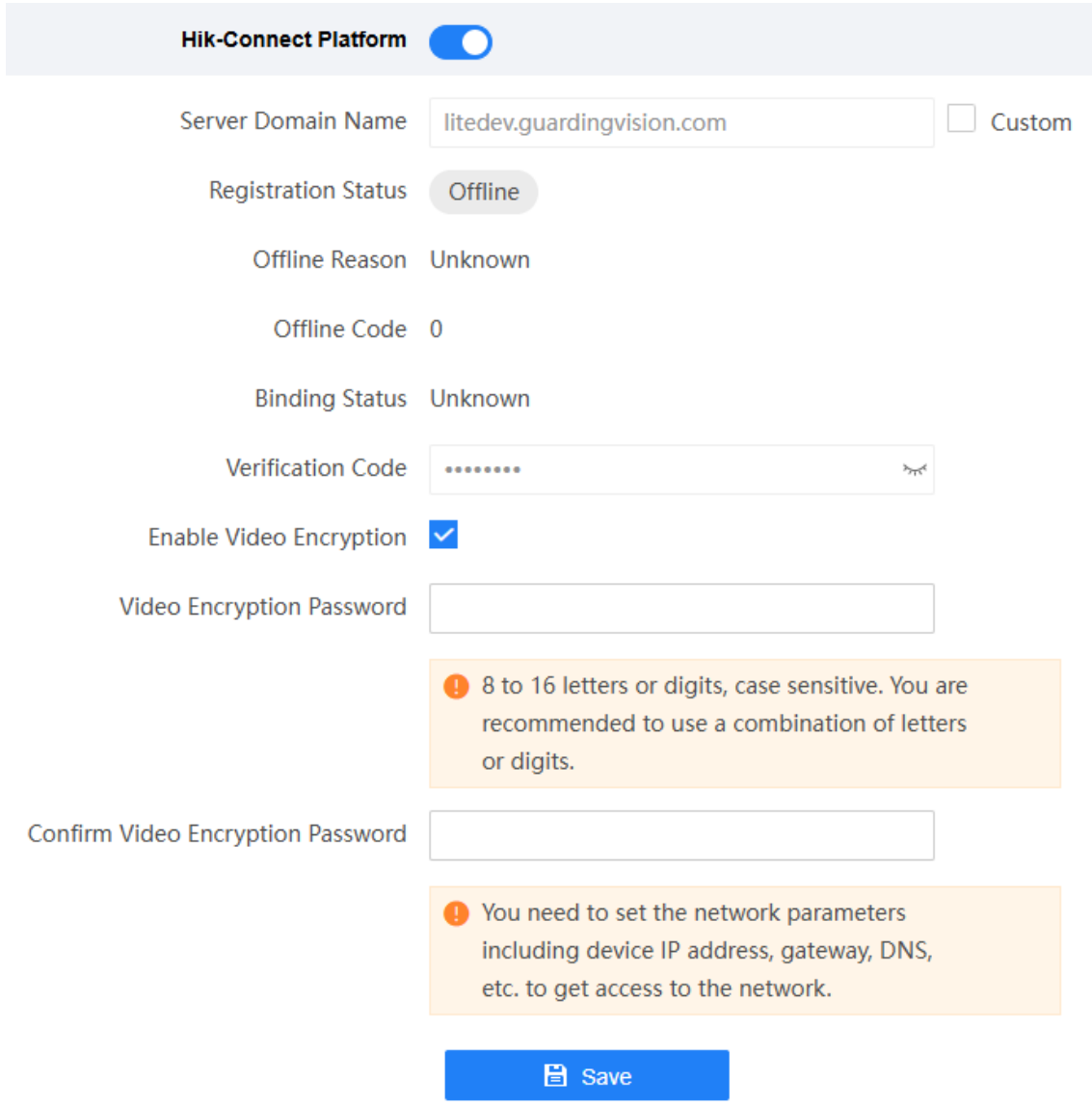

Figure 3-15 Connect to Hik-Connect (V3.0)

2. **Optional:** If you have allocated a custom server, check **Custom** and enter the custom **Server Domain Name**.
3. Enter a custom **Verification Code** used to add the device via **Hik-Connect**.

Caution

The verification code should be 6 letters or digits, case sensitive. You are recommended to use a combination of letters or digits.

4. **Optional:** Check **Enable Video Encryption** and set **Video Encryption Password** to encrypt the videos transmission. Confirm the password.
5. Click **Save**.

6. Add the device to Hik-Connect.
   1) Get and install Hik-Connect application by the following ways.
      - Visit ***https://appstore.hikvision.com*** to download the application according to your mobile phone system.
      - Visit the official site of our company. Then go to **Support → Tools → Installation & Maintenance Tools → Hikvision APP Store** .
      - Scan the QR code below to download the application.

Figure 3-16 Hik-Connect

Note

If errors like "Unknown app" occur during the installation, solve the problem in two ways.

- Visit ***https://appstore.hikvision.com/static/help/index.html*** to refer to the troubleshooting.
- Visit ***https://appstore.hikvision.com/*** , and click **Installation Help** at the upper right corner of the interface to refer to the troubleshooting.

   2) Start the application and register a user account to log in.
   3) Add device by the serial No. on the device body and the verification code.

Note

Refer to the user manual of Hik-Connect application for details.

3.9.8 Set Integration Protocol

You can connect the device via ONVIF protocol.

Steps

1. Go to **Configuration → Network → Data Connection → Integration Protocol** .
2. Enable **ONVIF**.
3. Select **Authentication Mode**, and click **Save**.
4. Add a user.
   1) Click **Add**.
   2) Set user name, password, and user type, and confirm the password.
   3) Click **OK**.
   4) **Optional:** You can select the added user and click ✎ to edit the user information, or click 🗑 to delete the user.

Result

Only the added users can access the device via ONVIF protocol.

3.9.9 Set Cloud Storage

Cloud storage is a kind of network storage. It can be used as the extended storage to save the captured pictures.

Before You Start

- Arrange the cloud storage server.
- You have enabled listening or arming.

Steps

1. Go to **Configuration → Network → Data Connection → Cloud Storage** .
2. Enable **Cloud Storage**.

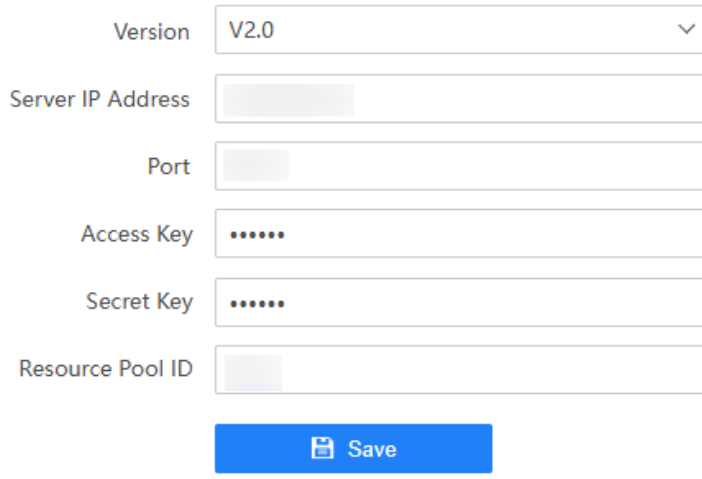

Figure 3-17 Set Cloud Storage

3. Select **Version**.

V1.0
a. Enter **Server IP Address** and **Port**
b. Enter **User Name** and **Password**.
c. Enter **Cloud Storage ID** and **Violation Cloud Storage ID** according to the server storage area No.

V2.0
a. Enter **Server IP Address** and **Port**
b. Enter **Access Key** and **Secret Key**.
c. Enter **Resource Pool ID** according to the server storage area No. of uploading pictures.

4. Click **Save**.

Chapter 4 Application Mode Configuration

Note

- The supported application modes vary with different models. The actual device prevails.
- When you draw lane lines or detection areas on **Application Mode** interface, you can refer to the drawing guide displayed below the live view window. You can click ⓘ to hide the guide, or click ⓘ to display the guide.

Caution

You can click **Default** on **Application Mode** interface to restore all the set parameters to the default settings. Please operate with care.

4.1 Set Smart Monitoring Capture

The smart monitoring mode supports capturing motor vehicles, non-motor vehicles, and pedestrians via video triggering.

Steps

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **Smart Mode**.
3. Set the parameters according to the instructions below, and click **Save**.

4.1.1 Set Scene and Mode

Steps

1. Go to **Basic Settings → Scene and Mode Configuration** .

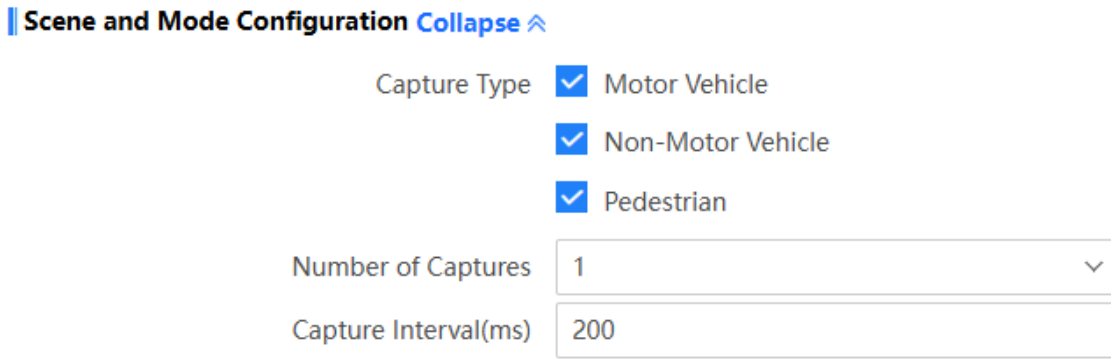

Figure 4-1 Set Scene and Mode (Smart Mode)

2. Set the parameters below.

Capture Type

Select the targets to be recognized and captured in the scene.

Number of Captures

The number of captured picture(s).

Capture Interval

The time between the adjacent captures.

3. Click **Save**.

4.1.2 Set Linked Lane Parameters

You can set the properties and parameters of the linked lanes.

Steps

1. Go to **Basic Settings → Lane Configuration** .
2. Select **Total Lanes**.
3. Select a lane No. to set the lane parameters.

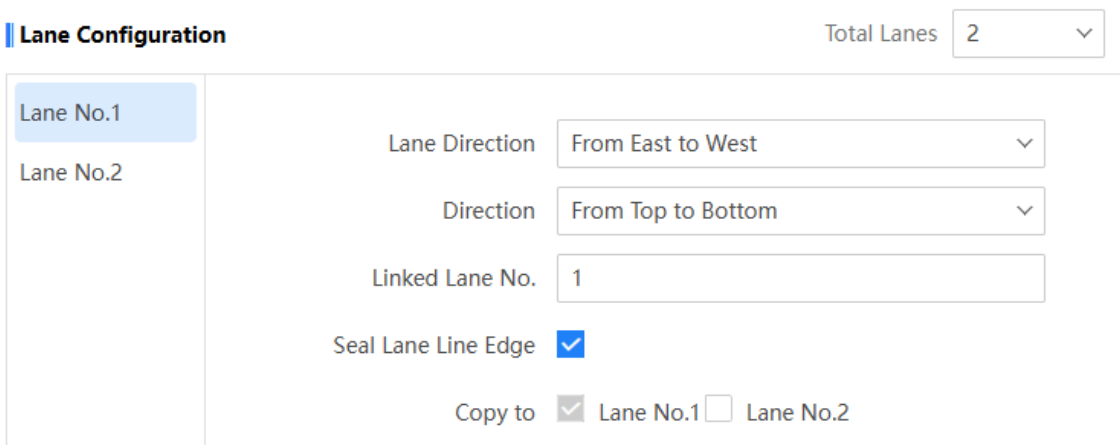

Figure 4-2 Lane Configuration of Smart Mode

Lane Direction

The guidance direction of the lane.

Direction

If you select **From Top to Bottom**, the targets from the approaching direction towards the device will be captured. If you select **From Bottom to Top**, the targets from the leaving direction away from the device will be captured. If you set the direction as **From Top to Bottom**, then the vehicle will be judged as wrong-way driving if it comes from bottom to top, and vice versa.

Linked Lane No.

The device will number the lane in ascending order from left to right automatically. The lane No. will be marked in the capture pictures and alarm information.

Seal Lane Line Edge

Enable the function to seal the lane line upper and lower edges on the live view image to form a closed area.

4. **Optional:** Check the other lane(s) to copy the same settings.
5. Draw lane lines.
   1) Refer to the drawing guide below the live view image on the interface.
   2) Select the default lane lines, right border line, and trigger line, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
   3) Draw lane lines.
      - Select a lane line, and click to delete it.

      Note

      The borderlines and trigger lines cannot be deleted.

      - Click **Clear** to clear all the lane lines.
      - Click **Add Lane Line** to add a new lane line.
      - Click to hide the lane lines, and click to display the lane lines.
   4) Other operations.
      - Click to hide the drawing guide, and click to display the drawing guide.
      - Click to enable digital zoom. Place the cursor on the live view image position which needs to be zoomed in. Drag the mouse rightwards and downwards to draw an area. The area will be zoomed in. Click to disable digital zoom.
      - Double click the live view image to draw in the full screen.

Figure 4-3 Draw Lane Lines

6. Click **Save**.

4.1.3 Set Violation Detection

Click **Event Settings**. Check the violation types and set the corresponding parameters.

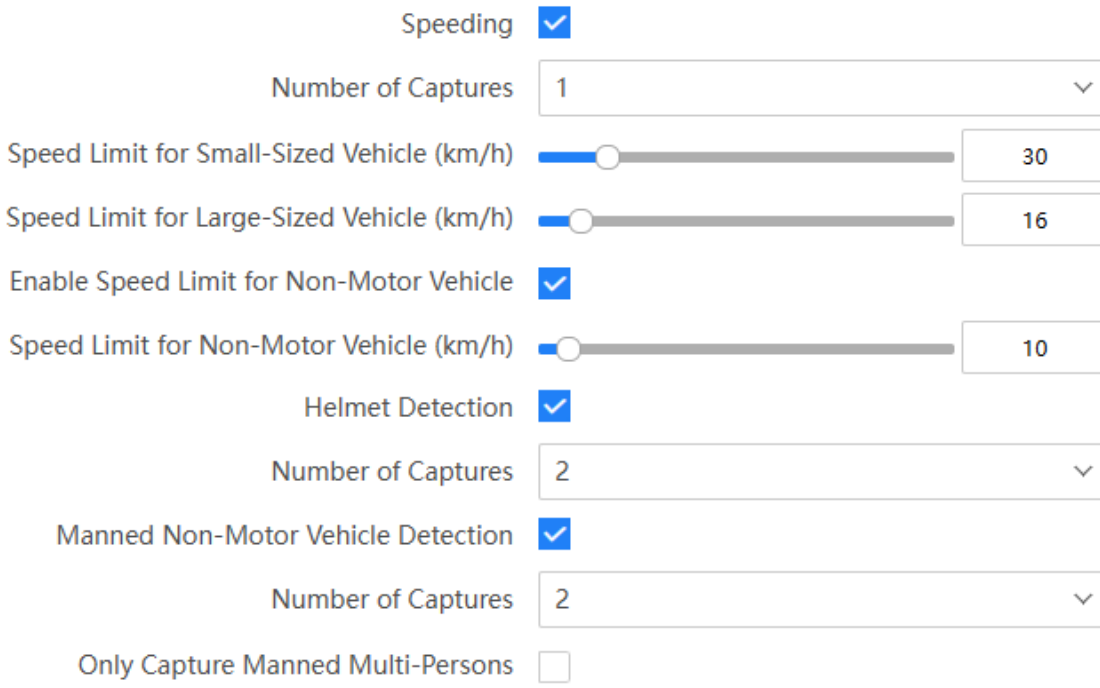

Figure 4-4 Set Violation Detection

Table 4-1 Violation Type Description

Violation Type	Parameters Description
Speeding	The motor or non-motor vehicle is driven in the speed larger than the max. speed limit of the lane. Check it and select the number of captured picture(s). Set the parameters below. • **Speed Limit for Small/Large-Sized Vehicle**: The actual speed limit for the vehicles. When the vehicle speed exceeds the value, speeding capture will be triggered. **Note** The speed limit of large-sized vehicles should be smaller than that of the small-sized vehicles. • **Enable Speed Limit for Non-Motor Vehicle**: Enable the function to capture speeding of non-motor vehicles. Set **Speed Limit for Non-Motor Vehicle**.
Helmet Detection	To detect if the driver of a non-motor vehicle wears the helmet. Check it and select the number of captured picture(s).
Manned Non-Motor Vehicle	The non-motor vehicle carries a person illegally. Check it and select the number of captured picture(s). You can also enable **Only Capture**

Violation Type	Parameters Description
	Manned Multi-Persons to capture the violation that the non-motor vehicle carries 2 persons or more.

4.2 Set Incident Detection

The device supports to capture various traffic incidents.

Steps

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **Incident Detection**.
3. Click **Incident Detection**.
4. Set the parameters according to the instructions below, and click **Save**.

4.2.1 Set Linked Lane Parameters

You can set the properties and parameters of the linked lanes.

Steps

1. Click **Lane Configuration**.
2. Select **Total Lanes**.
3. Select a lane No. to set the lane parameters.

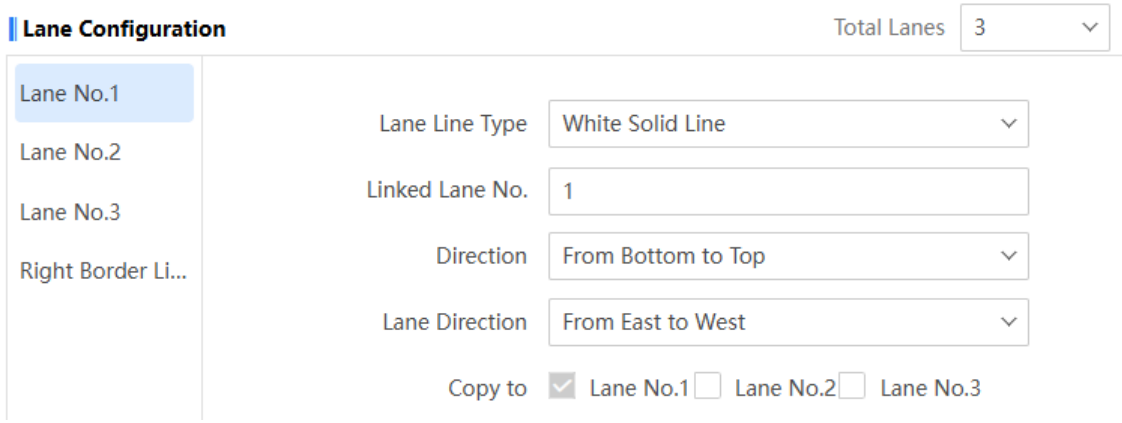

Figure 4-5 Lane Configuration of Incident Detection

Lane Line Type

Select the lane line type according to the actual scene.

Linked Lane No.

The device will number the lane in ascending order from left to right automatically. The lane No. will be marked in the capture pictures and alarm information.

Direction

If you select **From Top to Bottom**, the targets from the approaching direction towards the device will be captured. If you select **From Bottom to Top**, the targets from the leaving direction away from the device will be captured.

Lane Direction

The guidance direction of the lane.

4. **Optional:** Check the other lane(s) to copy the same settings.
5. Click **Save**.

4.2.2 Set Violation Incident

The device can capture pictures of the targets passing the checkpoint in the linked lanes according to the set rules.

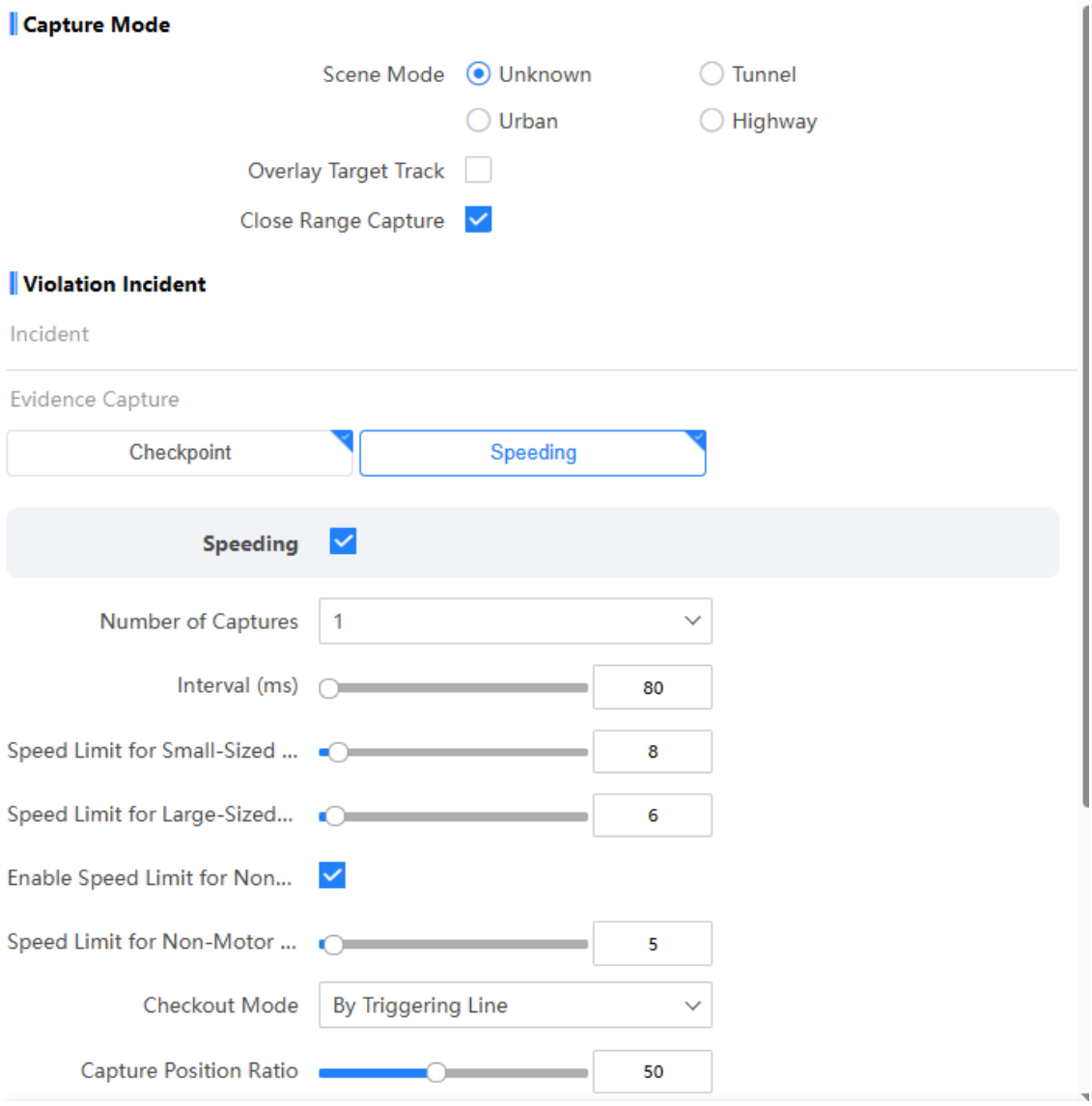

Figure 4-6 Set Violation Incident

Capture Mode

Go to **Event Settings → Capture Mode** . Set the parameters, and click **Save**.

Scene Mode

Select the scene according to the actual device installation environment.

Overlay Target Track

When the radar is connected, enable it to generate and overlay the target tracks.

Note

The function is only available for the device supporting radar.

Close Range Capture

The device will track the target until one more picture is captured in close distance.

Violation Incident

Go to **Event Settings → Violation Incident** . Click the corresponding incident type to detect. Enable the functions and set the corresponding parameters.

Note

The supported incident types vary with different models. The actual device prevails.

Table 4-2 Incident Type Description

Incident Type	Parameters Description
Checkpoint	Check it and select the number of captured picture(s). Select **Capture Type**.
Speeding	The motor or non-motor vehicle is driven in the speed larger than the max. speed limit of the lane. Check it and select the number of captured picture(s). Set the parameters. • **Interval**: The interval between two captures. • **Speed Limit for Small/Large-Sized Vehicle**: The max. speeds for the small-sized and large-sized vehicles respectively. When the vehicle speed exceeds the value, speeding capture will be triggered. • **Enable Speed Limit for Non-Motor Vehicle**: Check it to enable the speeding capture for the non-motor vehicles. Set **Speed Limit for Non-Motor Vehicle**. • **Checkout Mode**: If you select **By Triggering Line**, when the vehicle passes over the triggering line and the passing ratio is larger than the set **Capture Position Ratio**, speeding capture will be triggered. If you select **By Duration**, when the speeding incident lasts for more than the set **Duration**, speeding capture will be triggered.

4.2.3 Draw Lane Lines and Incident Areas

Draw lane lines and incident areas to detect and capture the violations or incidents in the linked areas.

Before You Start

Set lane and violation incident parameters.

Steps

1. Refer to the drawing guide below the live view image on the interface.
2. Draw lane lines.
   1) Select the default lane lines, right border line, and trigger line, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
   2) Click **Add Lane Line** to add a new lane line. You can click to hide the lane lines, and click to display the lane lines.
   3) **Optional:** Select a lane line, and click on the right of **Add Lane Line** to delete it.

   Note

   The borderlines and trigger line cannot be deleted.
3. Draw incident areas.
   1) Click **Add Incident Area**, and click the left button of the mouse to draw a rectangular or polygonal frame, and then click the right button of the mouse to save the area.
   2) Click **Linked Area** to select **Area Type** of the added incident area.

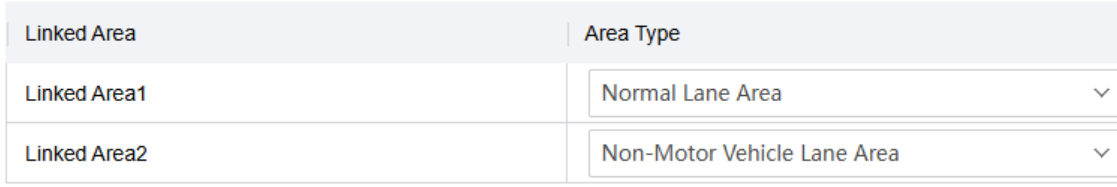

Figure 4-7 Linked Area

   3) Repeat the steps above to add more incident areas.

   Note

   - Up to 12 incident areas are supported.
   - You can click to hide the incident areas, and click to display the incident areas.

   4) **Optional:** Select an area, and click on the right of **Add Incident Area** to delete the area.

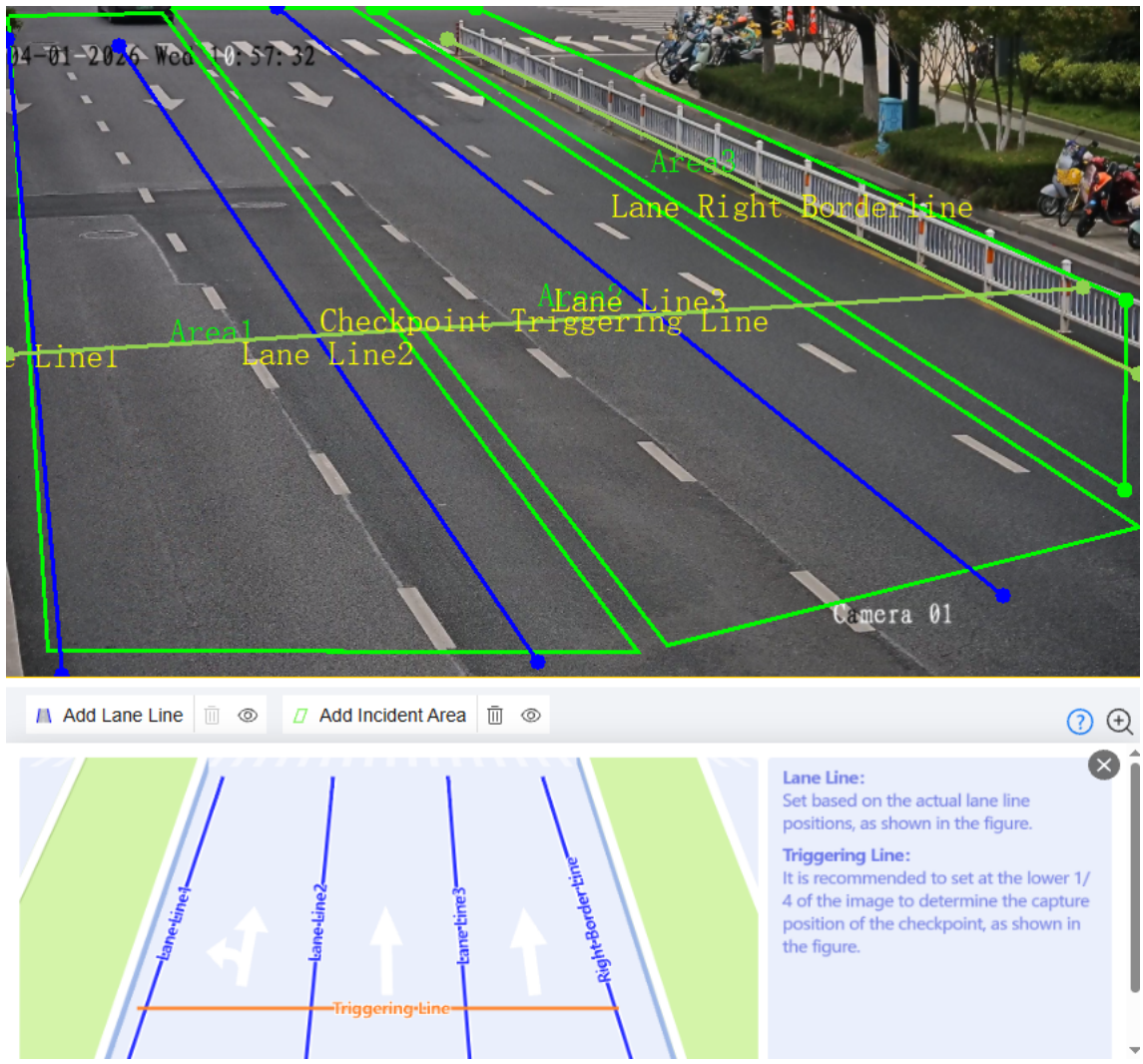

Figure 4-8 Draw Lane Lines and Incident Areas

4. **Optional:** Other operations.
   - Click to hide the drawing guide, and click to display the drawing guide.
   - Click to enable digital zoom. Place the cursor on the live view image position which needs to be zoomed in. Drag the mouse rightwards and downwards to draw an area. The area will be zoomed in. Click to disable digital zoom.
   - Double click the live view image to draw in the full screen.
5. Click **Save**.

4.3 Set Data Collection

The device supports to detect the traffic flow, POS, and other information.

Steps

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **Incident Detection**.
3. Click **Data Collection**.
4. Set the parameters according to the instructions below, and click **Save**.

4.3.1 Set Linked Lane Parameters

You can set the properties and parameters of the linked lanes.

Steps

1. Click **Lane Configuration**.
2. Select **Total Lanes**.
3. Select a lane No. to set the lane parameters.

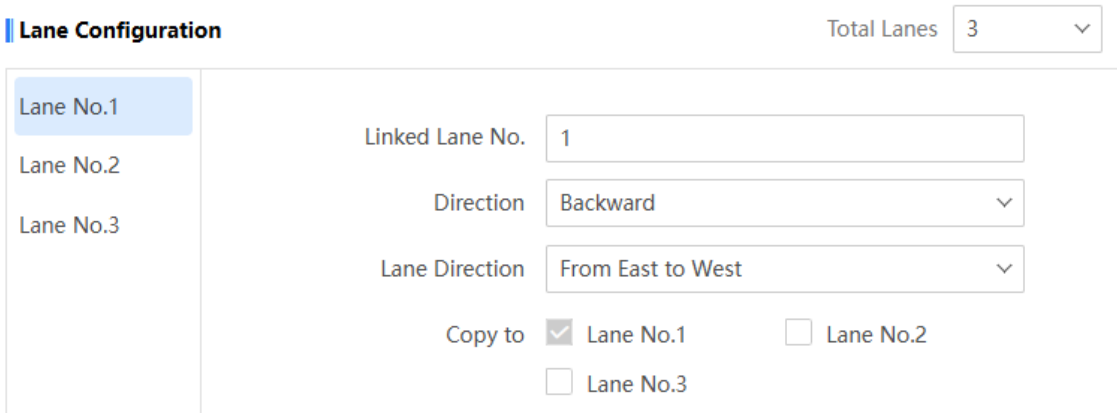

Figure 4-9 Set Lane Parameters

Linked Lane No.

The device will number the lane in ascending order from left to right automatically. The lane No. will be marked in the capture pictures and alarm information.

Direction

Select **Forward** when the vehicle is driven towards the camera. Select **Backward** when the vehicle is driven far away from the camera.

Lane Direction

The guidance direction of the lane.

4. **Optional:** Check the other lane(s) to copy the same settings.
5. Click **Save**.

4.3.2 Set Traffic Flow Detection

Steps

1. Click **Traffic Flow Detection**.

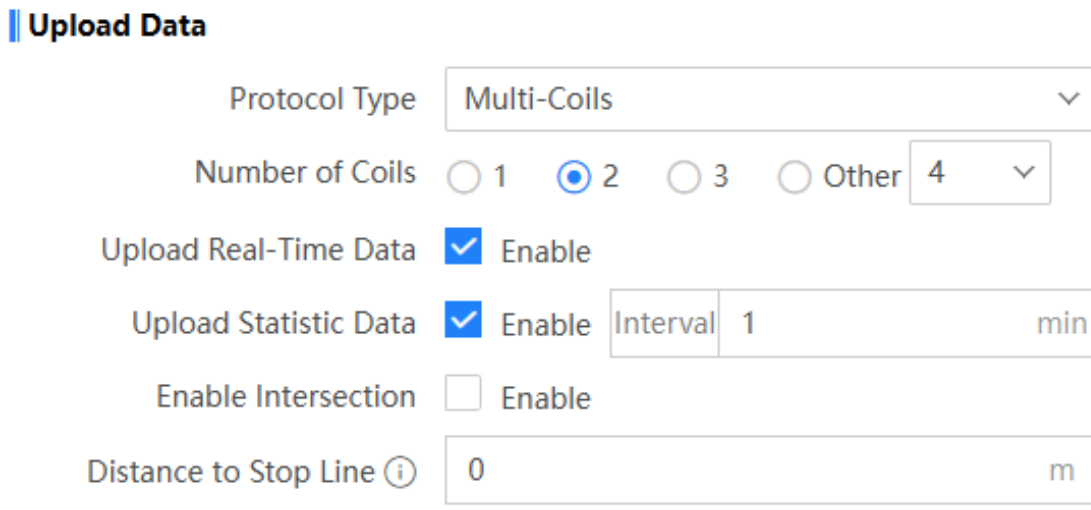

Figure 4-10 Set Traffic Flow Detection

2. Set the data upload parameters.

Note

The supported functions vary with different models. The actual device prevails.

Protocol Type

Unicoil

One coil for each lane.

Double Coil

Two coils for each lane.

Multi-Coils

Multi-coils for each lane. Select **Number of Coils**.

Upload Real-Time Data

The device will upload the real-time data to the server. The real-time data include road status, time, lane No., entrance/exit status, instantaneous speed, space headway, time headway, congestion traffic flow, driving direction, queue length, congestion level, and intersection dedicated data such as the signals when leaving the left turn line, right turn line, going straight line, and stop line at intersections (only supported for multi-coils protocol).

Upload Statistic Data

The device will upload the statistic data to the server according to the set **Interval**. The statistic data include lane No., traffic, average speed, traffic state, lane queue length, time interval of vehicle head, headway distance, lane space occupancy, lane time occupancy, average delay, and average number of stops.

Distance to Stop Line

It is the distance from the device blind spot to the stop line at the intersection.

Enable Intersection

If you select **Protocol Type** as **Multi-Coils**, you can enable intersection and the scene will be an intersection with a stop line, a left turn border line, and a right turn border line.

Traffic Jam over Stop Line in Intersection

In multi-coils protocol, if you enable intersection, you can enable the function to detect the traffic jam at intersection, and set **Threshold**. When the vehicle queue over the stop line has lasted for the set threshold, it is regarded as traffic jam over stop line at intersection.

3. Click **Save**.

4.3.3 Draw Lane Lines and Coil Areas

Steps

1. Refer to the drawing guide below the live view image on the interface. The left drawing guide is applicable to the scene with an intersection in multi-coils protocol. The right drawing guide is applicable to the scene without an intersection.
2. Draw coil areas manually or automatically.
   - Draw manually:
     a. Select **Draw Manually**.
     b. Select the corresponding lane No. Click **Add Coil**, and select the coil No. Click the left button of the mouse to draw a rectangular or polygonal frame on the live view image, and then click the right button of the mouse to save the coil area.

     Note

     - It is recommended that the coil height is half of the small-sized vehicle length and the width is the lane width.
     - The coils should be set at the positions where the radar and video can both detect.

     c. You can select a coil area, and click on the right of **Add Coil** to delete it. Click on the right of **Add Coil** to hide the coil area, and click to display the coil area.
   - Draw automatically:
     a. Select **Draw Automatically**. Click **Generate**, and the coil areas will be generated automatically according to the actual scene.
     b. You can select a coil area, and click on the right of **Add Coil** to delete it. Click on the right of **Add Coil** to hide the coil area, and click to display the coil area.
3. Draw lane lines. Adjust the default lane lines on the live view image, or click **Add Lane Line** to add a new lane line. Adjust its position and shape according to the actual scene.

Note

- You can select a lane line, and click on the right of **Add Lane Line** to delete it. The borderlines and trigger line cannot be deleted.
- Click on the right of **Add Lane Line** to hide the lane line, and click to display the lane line.

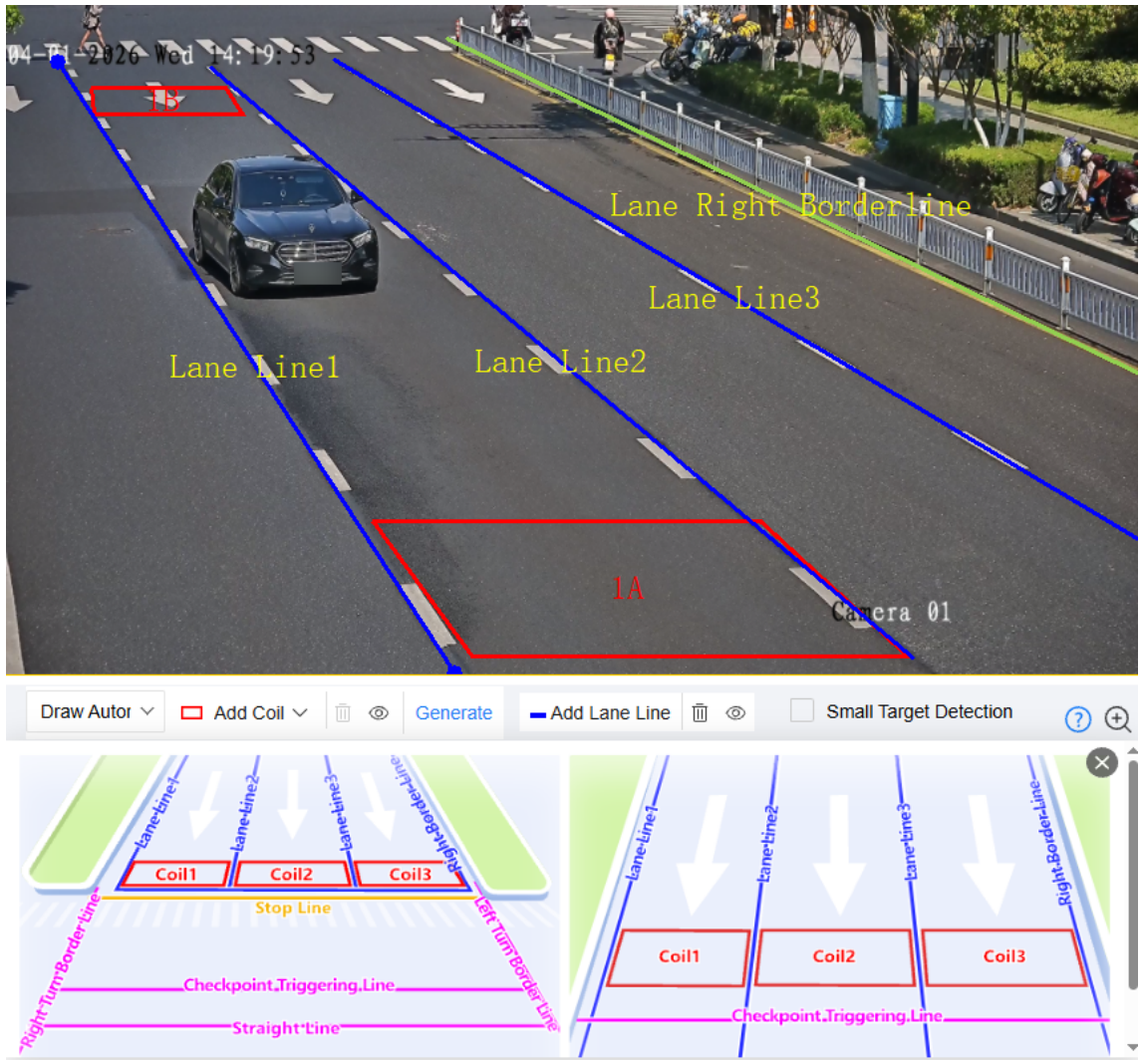

Figure 4-11 Draw Lane Lines and Coil Areas

4. **Optional:** Enable **Small Target Detection** to improve the detection effect of the distant incidents in the image. The small target detection area will appear on the live view image with a fixed size of 736 × 384. Adjust the area position to the most distant area on the live view image. The vehicle width pixels within the small target detection area are recommended to be between 10 to 60 pixels.
5. **Optional:** Other operations.

- Click to hide the drawing guide, and click to display the drawing guide.
- Click to enable digital zoom. Place the cursor on the live view image position which needs to be zoomed in. Drag the mouse rightwards and downwards to draw an area. The area will be zoomed in. Click to disable digital zoom.
- Double click the live view image to draw in the full screen.

6. Click **Save**.

4.3.4 Set Traffic Flow Information Overlay

Steps

1. Click **Overlay Traffic Flow Info.**

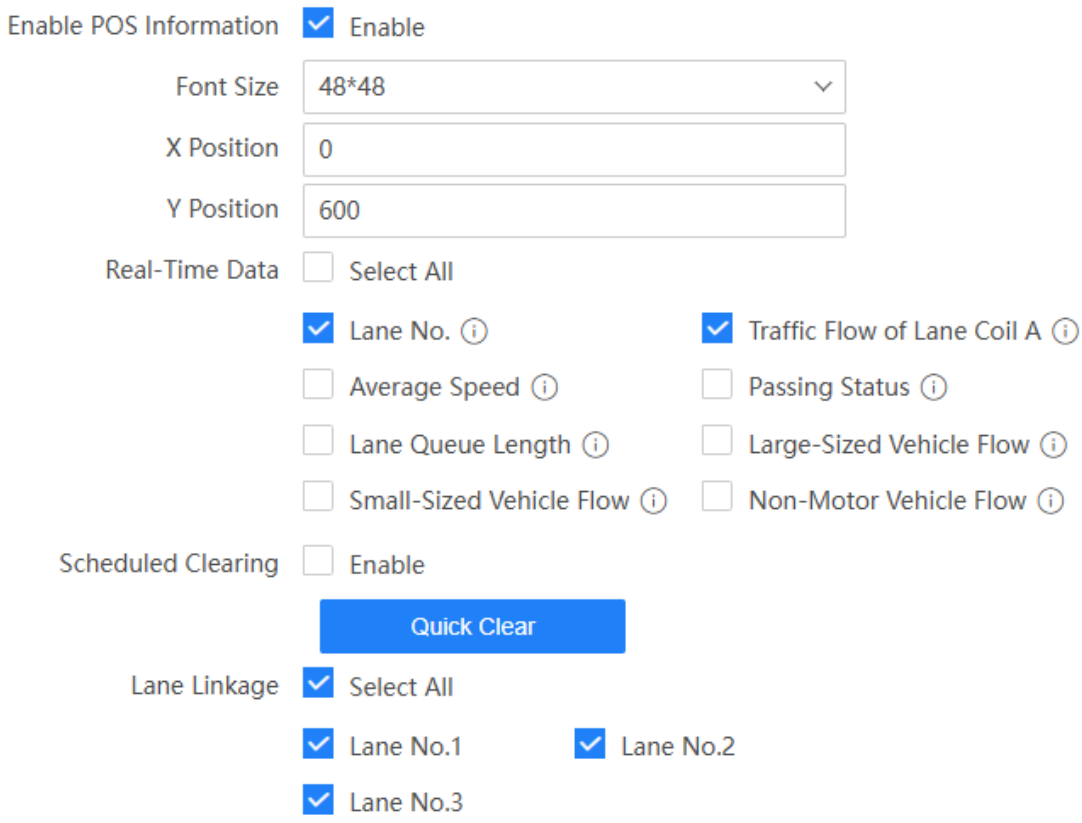

Figure 4-12 Set Traffic Flow Information Overlay

2. Set the information overlay.

Enable POS Information

Check it to overlay the feature information on the video stream and display on the live view image.

Font Size

Select the font size for the overlaid information.

X/Y Position

Enter **X Position** and **Y Position** to display on the image.

Real-Time Data

Select the real-time data to overlay on the image.

3. **Optional:** Clear the traffic flow data if needed.
   - Click **Quick Clear** to clear all the traffic flow data quickly.
   - If you want to clear the traffic flow data at the fixed time daily, enable **Scheduled Clearing** and set **Daily Clearing Time**.
4. Select the linked lane(s).
5. Click **Save**.

4.4 Set Enclosed Area Speeding

The device supports target speed detection in an enclosed area, speed information display on the connected screen, and incident detection and capture in the scenes of enclosed area main roads, curves, and entrances and exits of parking lots, in which speeding may easily to happen.

Steps

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **Enclosed Area Speeding**.
3. Set the parameters according to the instructions below, and click **Save**.

4.4.1 Set Linked Lane Parameters

You can set the properties and parameters of the linked lanes.

Steps

1. Click **Lane Configuration**.
2. Select **Total Lanes**.
3. Select a lane No. to set the lane parameters.

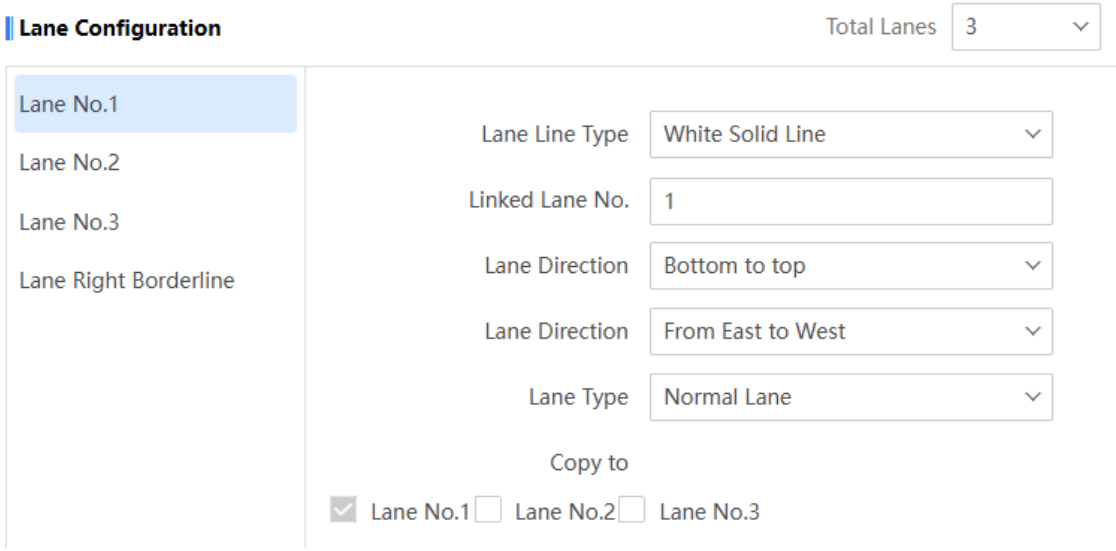

Figure 4-13 Set Lane Parameters

Lane Line Type

Select the lane line type according to the actual scene.

Linked Lane No.

The device will number the lane in ascending order from left to right automatically. The lane No. will be marked in the capture pictures and alarm information.

Direction

Select **From Top to Bottom** when the vehicle is driven towards the camera. Select **From Bottom to Top** when the vehicle is driven far away from the camera.

Lane Direction

The guidance direction of the lane.

Lane Type

Select the lane type according to its usage.

4. **Optional:** Check the other lane(s) to copy the same settings.
5. Click **Save**.

4.4.2 Set Violation Incident

The device can capture pictures of the targets passing the checkpoint in the linked lanes according to the set rules.

Click **Violation Incident**.

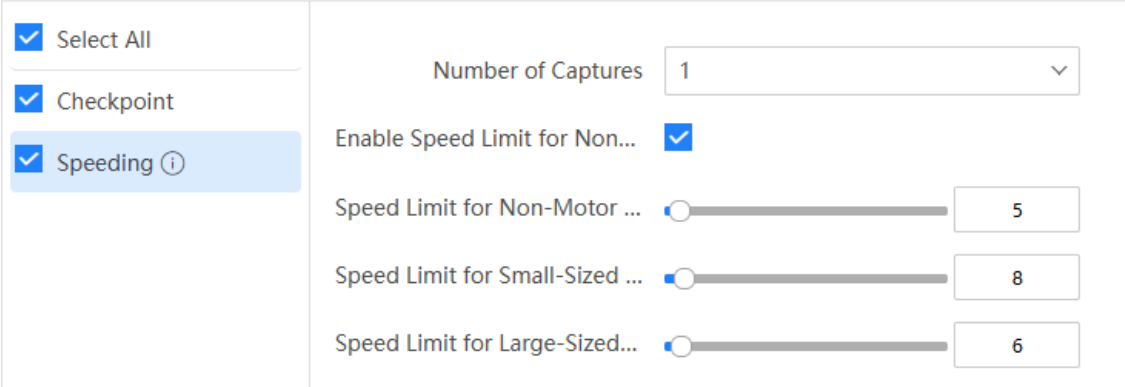

Figure 4-14 Set Violation Incident

Table 4-3 Incident Type Description

Incident Type	Parameters Description
Checkpoint	Check it and select the number of captured picture(s). Select **Capture Type**.
Speeding	The motor or non-motor vehicle is driven in the speed larger than the max. speed limit of the lane. Check it and select the number of captured picture(s). Set the parameters. • **Enable Speed Limit for Non-Motor Vehicle**: Check it to enable the speeding capture for the non-motor vehicles. Set **Speed Limit for Non-Motor Vehicle**. • **Speed Limit for Small/Large-Sized Vehicle**: The max. speeds for the small-sized and large-sized vehicles respectively. When the vehicle speed exceeds the value, speeding capture will be triggered.

4.4.3 Draw Lane Lines and Incident Areas

Draw lane lines and incident areas to detect and capture the violations or incidents in the linked areas.

Before You Start

Set lane and violation incident parameters.

Steps

1. Refer to the drawing guide below the live view image on the interface.
2. Draw lane lines.
   1) Select the default lane lines, right border line, and trigger line, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.

2) Click **Add Lane Line** to add a new lane line. You can click to hide the lane lines, and click to display the lane lines.
3) **Optional:** Select a lane line, and click on the right of **Add Lane Line** to delete it.

Note

The borderlines and trigger line cannot be deleted.

3. Draw incident areas.
1) Click **Add Incident Area**, and click the left button of the mouse to draw a rectangular or polygonal frame, and then click the right button of the mouse to save the area.
2) Repeat the step above to add more incident areas.

Note

- Up to 13 incident areas are supported.
- You can click to hide the incident areas, and click to display the incident areas.

3) **Optional:** Select an area, and click on the right of **Add Incident Area** to delete the area.

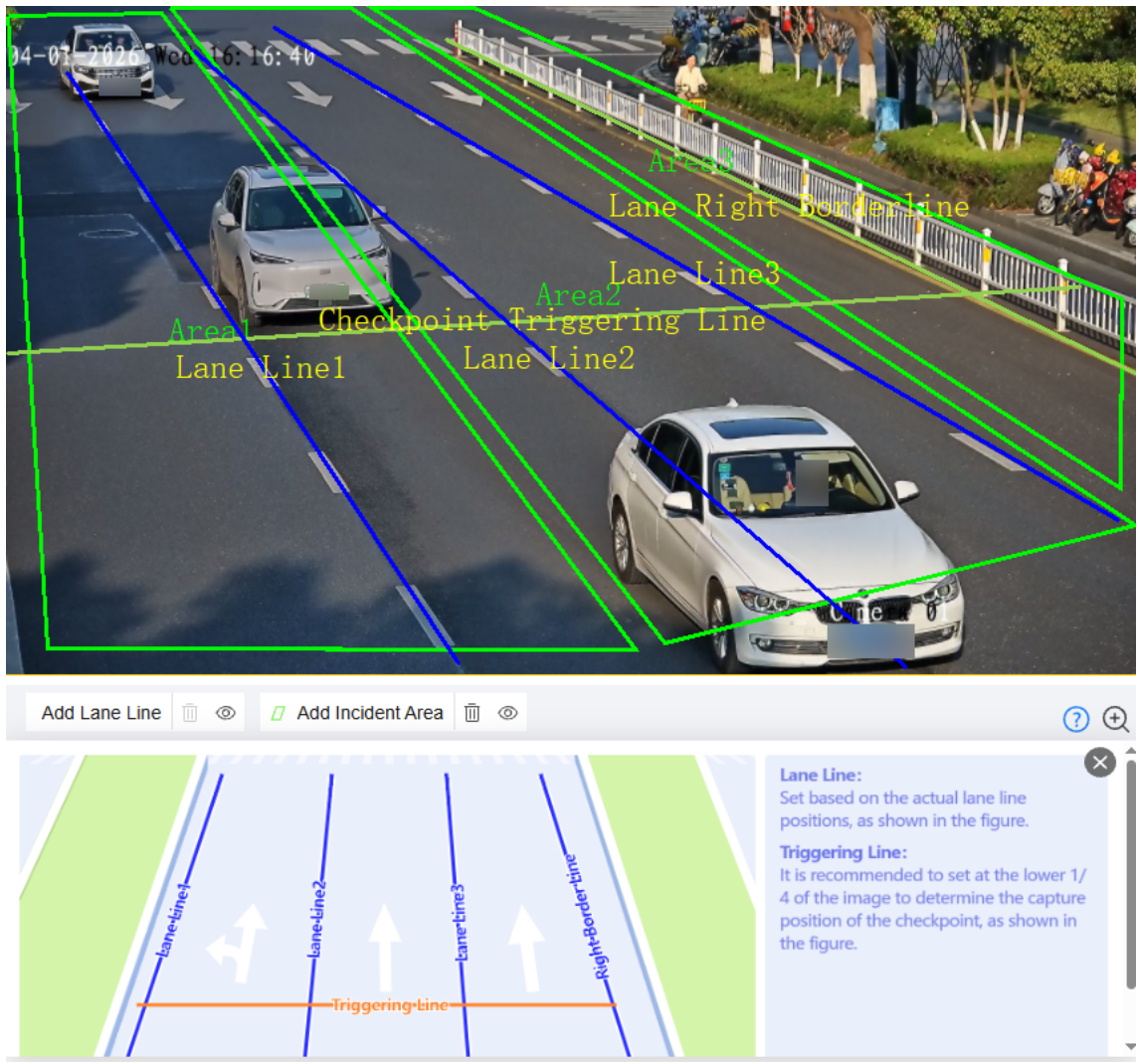

Figure 4-15 Draw Lane Lines and Incident Areas

4. **Optional:** Other operations.
   - Click to hide the drawing guide, and click to display the drawing guide.
   - Click to enable digital zoom. Place the cursor on the live view image position which needs to be zoomed in. Drag the mouse rightwards and downwards to draw an area. The area will be zoomed in. Click to disable digital zoom.
   - Double click the live view image to draw in the full screen.
5. Click **Save**.

4.4.4 Set Speed Detection

Set speed detection and connected vehicle speed screen parameters.

Before You Start

The vehicle speed screen has been connected to the device.

Steps

1. Click **Speed Detection**.
2. Select **Detection Type**.
3. Select **Prompt Mode** and set corresponding parameters.

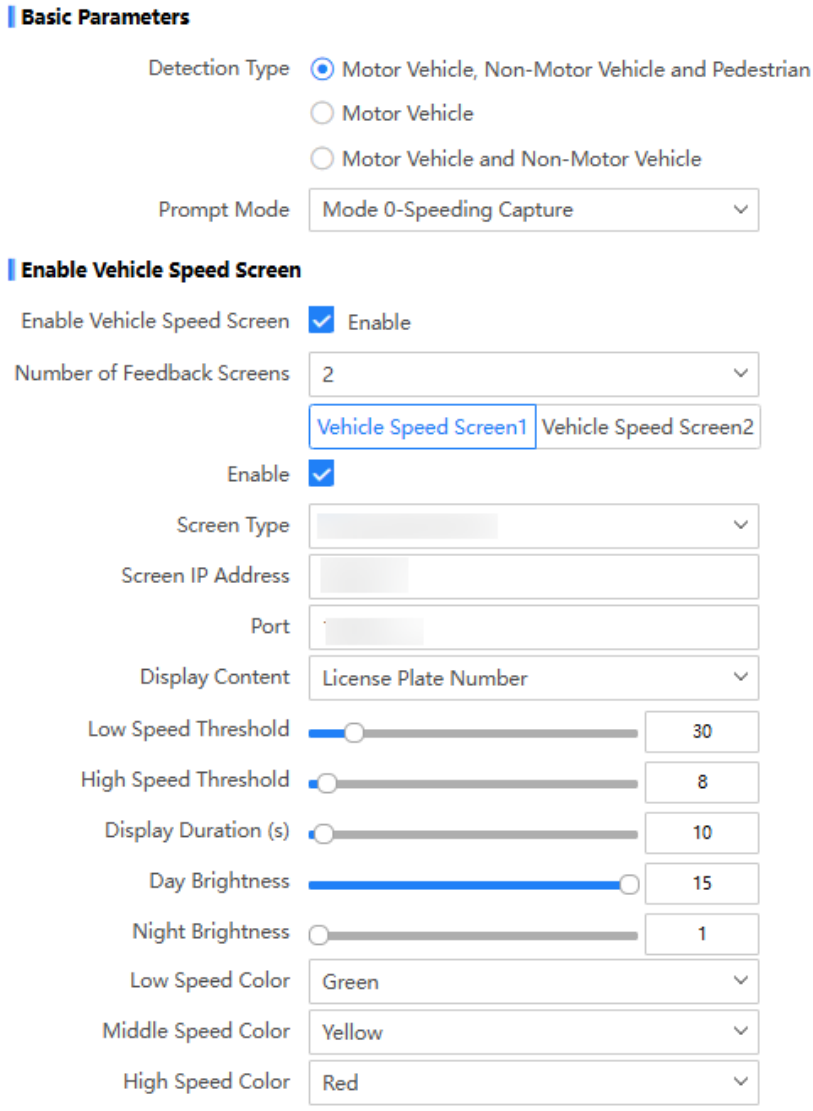

Figure 4-16 Mode 0-Speeding Capture

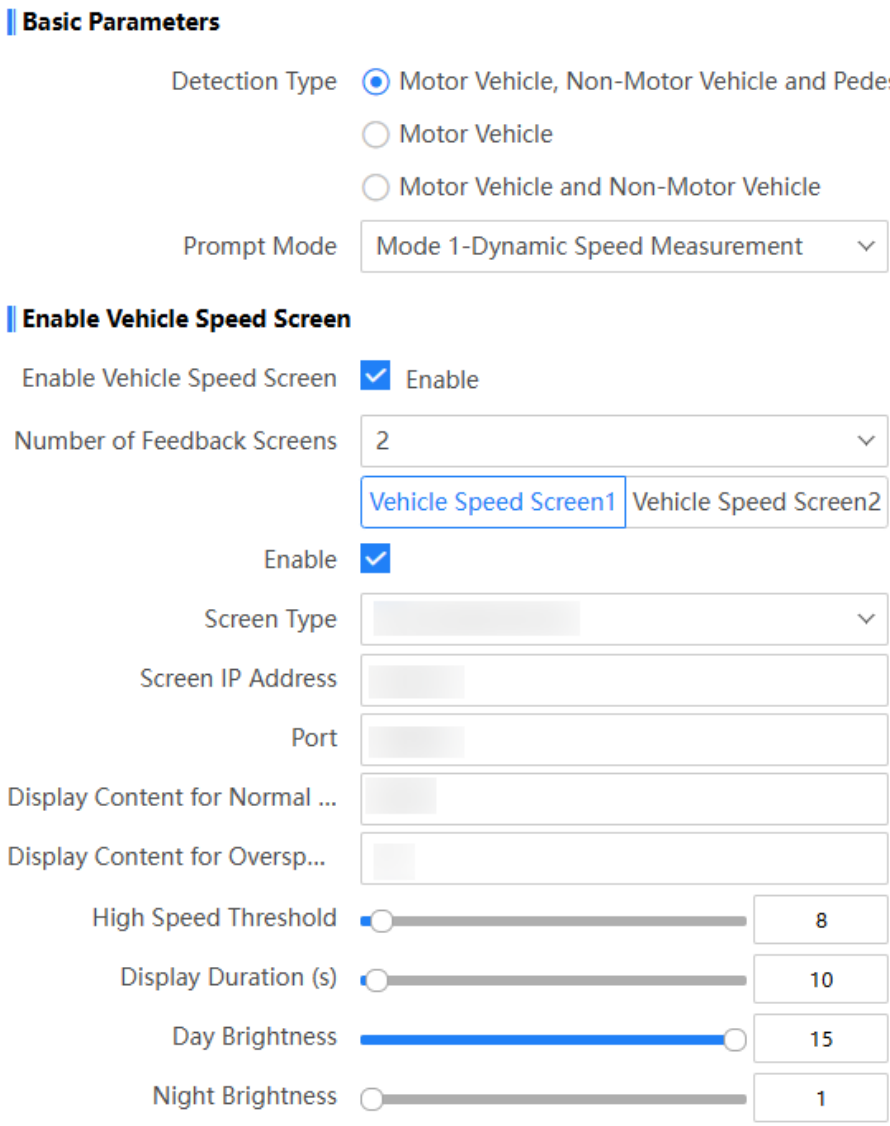

Figure 4-17 Mode 1-Dynamic Speed Measurement

Table 4-4 Prompt Mode Description

Prompt Mode	Parameters Description
Mode 0-Speeding Capture	To capture the speeding violation and upload the license plate number and speed information. Check **Enable Vehicle Speed Screen**. Select **Number of Feedback Screens**, enable the screen, and set the corresponding parameters. • **Screen Type**: Select the connected screen model. • **Screen IP Address/Port**: The IP address and port of the vehicle speed screen.

Prompt Mode	Parameters Description
	• **Display Content**: Select the display content on the screen. If you select **Custom Content**, set **Display Content for Normal Speed** and **Display Content for Overspeed** respectively. • **Low/High Speed Threshold**: When the target speed is higher than the high speed threshold, speeding capture will be triggered. • **Display Duration**: Set the display duration of the content on the screen. • **Day/Night Brightness**: Set the brightness of the screen at daytime and night. • **Low/Middle/High Speed Color**: Set **Low Speed Color** of the display content for the speeds lower than the set **Low Speed Threshold**. Set **Middle Speed Color** of the display content for the speeds between the set **Low Speed Threshold** and **High Speed Threshold**. Set **High Speed Color** of the display content for the speeds higher than the set **High Speed Color**.
Mode 1-Dynamic Speed Measurement	When the target appears in the radar detection range, the screen will display the speed of the target. When multi-targets are detected, the speed of the nearest target will be displayed. If the speed is higher than the set **High Speed Threshold**, the screen will display the set **Display Content for Overspeed** in red color. If the speed is not higher than the set **High Speed Threshold**, the screen will display the set **Display Content for Normal Speed** in green color. The color of the speed and display content is consistent. If the target speed is still larger than the set **High Speed Threshold** when passing the capture trigger line, the license plate number will be displayed too. Set the corresponding parameters. You can refer to the parameters description in Mode 0.

4. Click **Save**.

4.5 Set License Plate Recognition System Capture

If you want to trigger capture of the passing vehicles and recognize the license plate numbers, set license plate recognition system capture.

Steps

1. Go to **Configuration → Capture → Application Mode** .
2. Select **Trigger Mode** as **License Plate Recognition System**.

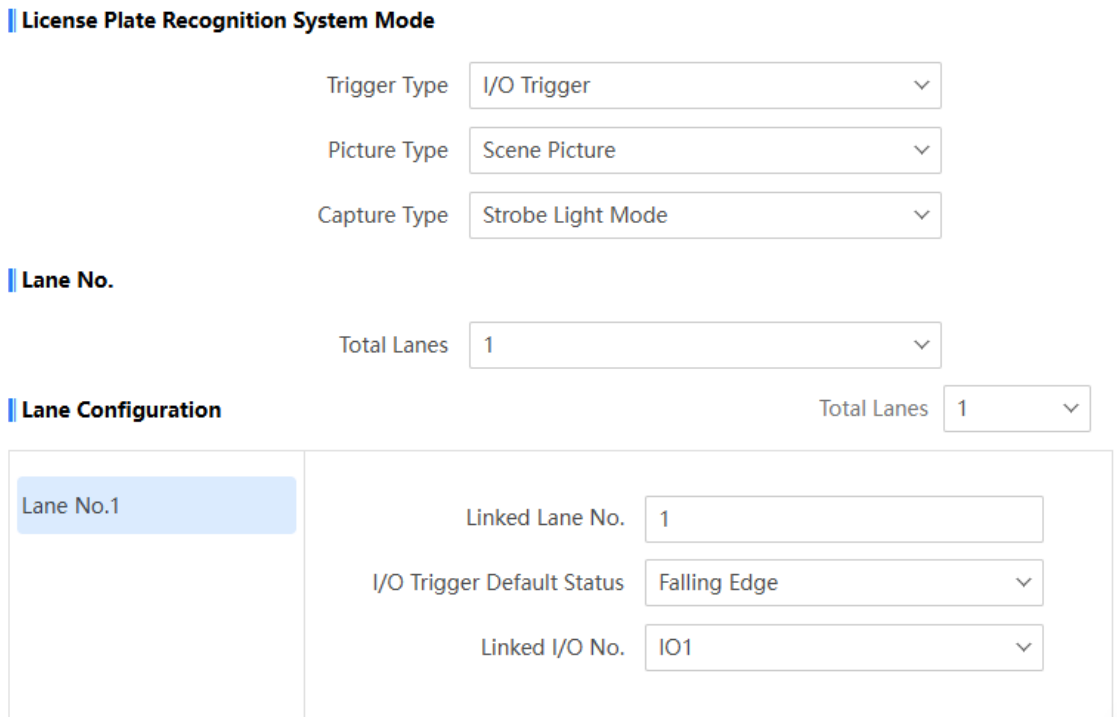

Figure 4-18 Set License Plate Recognition System

3. Select **Trigger Type**.

   Video Detection

   The passing vehicles will be recognized via videos. The **Capture Type** is recommended as **Strobe Light Mode**.

   I/O Trigger

   Select it when the device has been connected to I/O signal.

Note

The trigger types vary with different models. The actual device prevails.

4. Select **Picture Type**.

   Scene Picture

   Only one passing vehicle picture will be output.

5. Select **Total Lanes**. Only one lane is supported.
6. Select the lane No. to set the lane parameters.

   Linked Lane No.

   The device will number the lane in ascending order from left to right automatically. The lane No. will be marked in the capture pictures and alarm information.

   I/O Trigger Default Status

It is available if you select **Trigger Type** as **I/O Trigger**. Capture is triggered according to the level signal status. If you select **Falling Edge**, the device will trigger capture at the moment that the high level falls to low level. If you select **Rising Edge**, the device will trigger capture at the moment that the low level rises to high level.

Linked I/O No.

It is available if you select **Trigger Type** as **I/O Trigger**. When the coil detects that there is a vehicle passing, a rising or falling edge signal is sent to the linked I/O of the device to trigger capture.

7. Draw lane lines.

1) Refer to the drawing guide below the live view image on the interface.
2) Select the default lane lines, right border line, and trigger line, and drag the two end points of the line or drag the whole line to adjust its position according to the actual scene.
3) Draw lane lines.
   - Select a lane line, and click to delete it.

     Note

     The borderlines and trigger lines cannot be deleted.
   - Click **Clear** to clear all the lane lines.
   - Click **Add Lane Line** to add a new lane line.
   - Click to hide the lane lines, and click to display the lane lines.
4) Other operations.
   - Click to hide the drawing guide, and click to display the drawing guide.
   - Click to enable digital zoom. Place the cursor on the live view image position which needs to be zoomed in. Drag the mouse rightwards and downwards to draw an area. The area will be zoomed in. Click to disable digital zoom.
   - Double click the live view image to draw in the full screen.

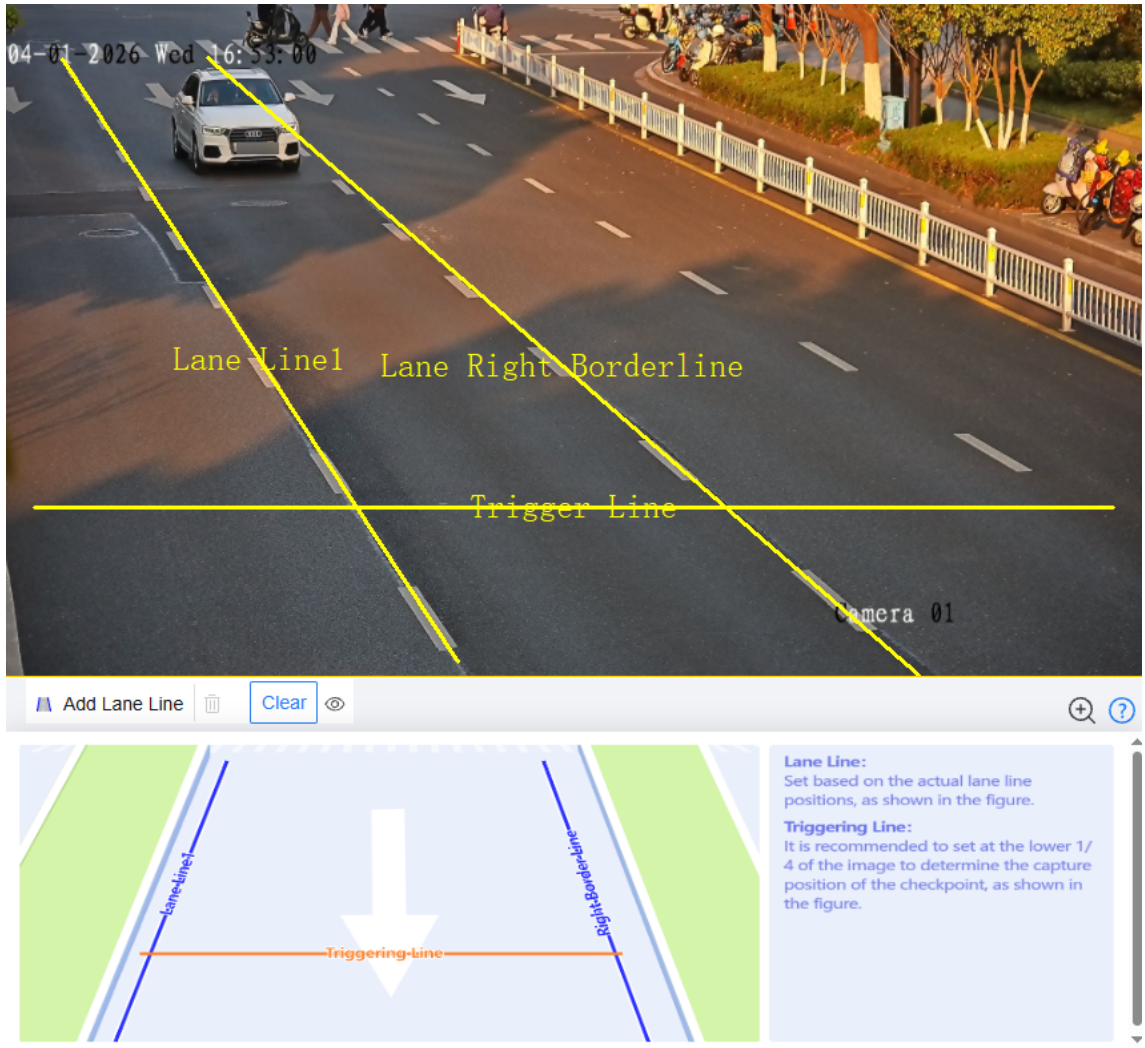

Figure 4-19 Draw Lane Lines

8. Click **Save**.

Chapter 5 Entrance and Exit Configuration

If a barrier gate has been connected to the device, you can link barrier gate to realize the control and management of the vehicles at the entrance or exit.

Note

The function is only supported for the application modes of smart mode and license plate recognition system. The actual device prevails.

5.1 Set Allowlist and Blocklist

Set allowlist and blocklist if you want to control the passing vehicles at the entrance or exit via the barrier gate.

Before You Start

- Connect the barrier gate to the relay output interface of the device.
- Install the storage card, and ensure the storage status is normal.

Steps

1. Go to **Configuration → Capture → Entrance and Exit → Allowlist and Blocklist** .
2. Add an allowlist or blocklist.
   1) Click **Add**.
   2) Set **Plate No.** and **Card No.**, and select **List Type**.
   3) **Optional:** If you want to control allowlist vehicles during fixed time period, enable **Time Settings**, and set the effective start time and end time.

      Note

      Only allowlist supports time settings.
   4) Click **OK** to save the current settings and exit, or click **Save and Continue** to save the current settings and add more lists.

      Note

      Wait for 15 minutes to let the added allowlist or blocklist write into the storage. Do not reboot the device during the process.

   The information of the added vehicles in the allowlist or blocklist will be listed below.

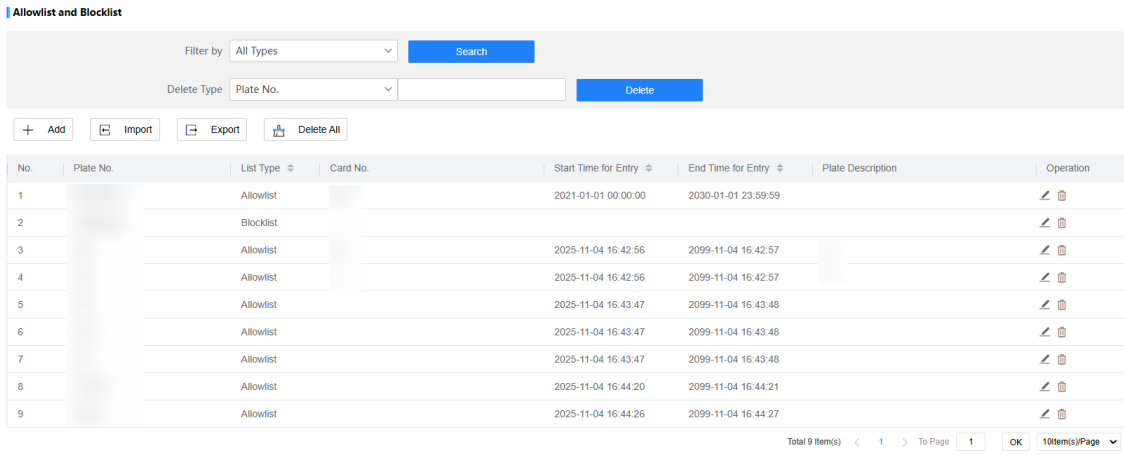

Figure 5-1 Set Allowlist and Blocklist

3. You can search, modify, delete, import, or export the allowlist and blocklist.

Search Select the search type, or enter the keywords. Click **Search**. The searched vehicle information will be listed below.

Modify Select an item from the list, and click . Modify the information, and click **OK**.

Delete
- Select the delete type, or enter the keywords. Click **Delete** to delete the lists of the same type.
- Select an item from the list, and click to delete the item.
- Click **Delete All** to delete all the lists.

Import
a. Click **Import**.
b. Click **Download Template**, and save the template.
c. Open the template, edit the information, and save it.
d. Click **Import** again.
e. Click **Browse** to select the edited template.
f. Click **Import** to import the information to the device.

Export Click **Export**, and the list will be saved to the default downloading directory of the browser in the format of .xls.

5.2 Pass Control

The camera can control the passing rules of different types of vehicles, and upload alarm information.

Before You Start

Set the allowlist and blocklist. Refer to ***Set Allowlist and Blocklist*** for details.

Steps

1. Go to **Configuration → Capture → Entrance and Exit → Pass Control** .

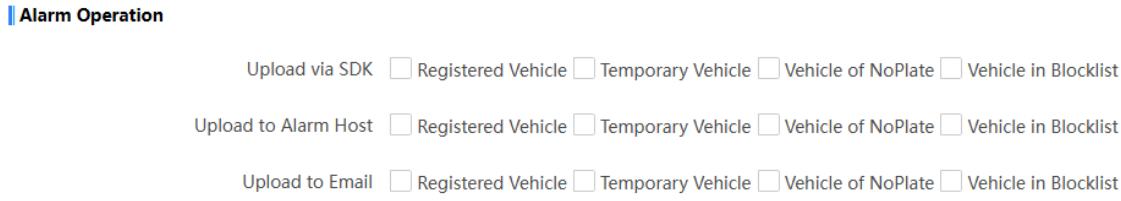

Figure 5-2 Pass Control

2. Select the vehicle type(s) of which the alarm information will be uploaded via SDK, to the alarm host, or to the email.

   Upload via SDK

   If the device has been connected to the platform, you can arm and upload the vehicle information to the arming terminal via SDK.

   Upload to Alarm Host

   If the device has been connected to the alarm device, when the barrier gate is open, the alarm device will be triggered to alarm.

   Upload to Email

   When the email is enabled and set, the device will send an email notification to all designated receivers if an alarm event is detected for the selected vehicles.
3. Click **Save**.

5.3 Set Wiegand Parameters

The device can get access to the access control system or other system supporting Wiegand protocols to send data in the entrance and exit scenes.

Steps

1. Go to **Configuration → Capture → Entrance and Exit → Wiegand Parameters** .
2. Enable the function.

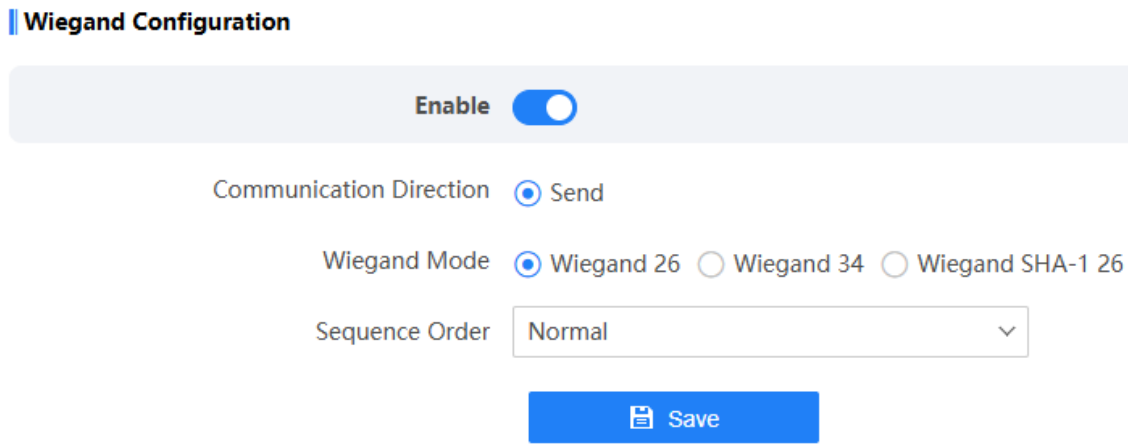

Figure 5-3 Set Wiegand Parameters

3. Select **Communication Direction**.

   Send

   The barrier gate can be connected to the device via Wiegand 26 or Wiegand 34 mode.

4. Select **Wiegand Mode**.

   Wiegand 26

   It is applicable to all the access control projects. The device will get the card No. (pure numbers with no more than 8 digits) from the allowlist and blocklist related to the captured license plate number and send the card No. to the access control system or other system supporting Wiegand protocols via Wiegand 26 protocol.

   Wiegand 34

   It is applicable to all the access control projects. The device will get the card No. (pure numbers with no more than 10 digits) from the allowlist and blocklist related to the captured license plate number and send the card No. to the access control system or other system supporting Wiegand protocols via Wiegand 34 protocol.

   Wiegand SHA-1 26

   It is a data transmission format integrating Wiegand protocol and SHA-1 hash algorithm. This format increases SHA-1 hash value based on the standard Wiegand 26-bit data frame to raise the data security and integrity.

5. Select **Sequence Order**.

   Normal

   The data are sent in the normal order.

   Reverse

   The data are sent in the reversed order.

6. Click **Save**.

Chapter 6 Capture Parameters Configuration

6.1 Set License Plate Recognition Parameters

When there are vehicles of different types passing from different directions, set the license plate recognition parameters.

Steps

Note

The supported parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → License Parameters** .

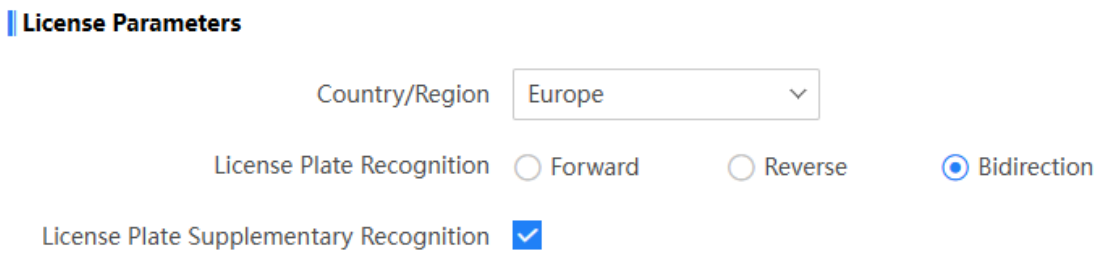

Figure 6-1 Set License Plate Recognition Parameters

2. Set **Country/Region** according to the actual needs.
3. Select **License Plate Recognition**.
   - Select **Forward** when license plates of vehicles from the approaching direction need to be recognized.
   - Select **Reverse** when license plates of vehicles from the leaving direction need to be recognized.
   - Select **Bidirection** when license plates of vehicles from both the approaching direction and the leaving direction need to be recognized.
4. **Optional:** Enable **License Plate Supplementary Recognition** to re-recognize the targets whose license plates are not recognized for the first time.
5. Click **Save**.

6.2 Set Supplement Light Parameters

Supplement light can enhance the image stabilization and adjust the brightness and color temperature.

Steps

Note

- This chapter is only applicable to the device supporting supplement light.
- The supported parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Supplement Light Parameters** .

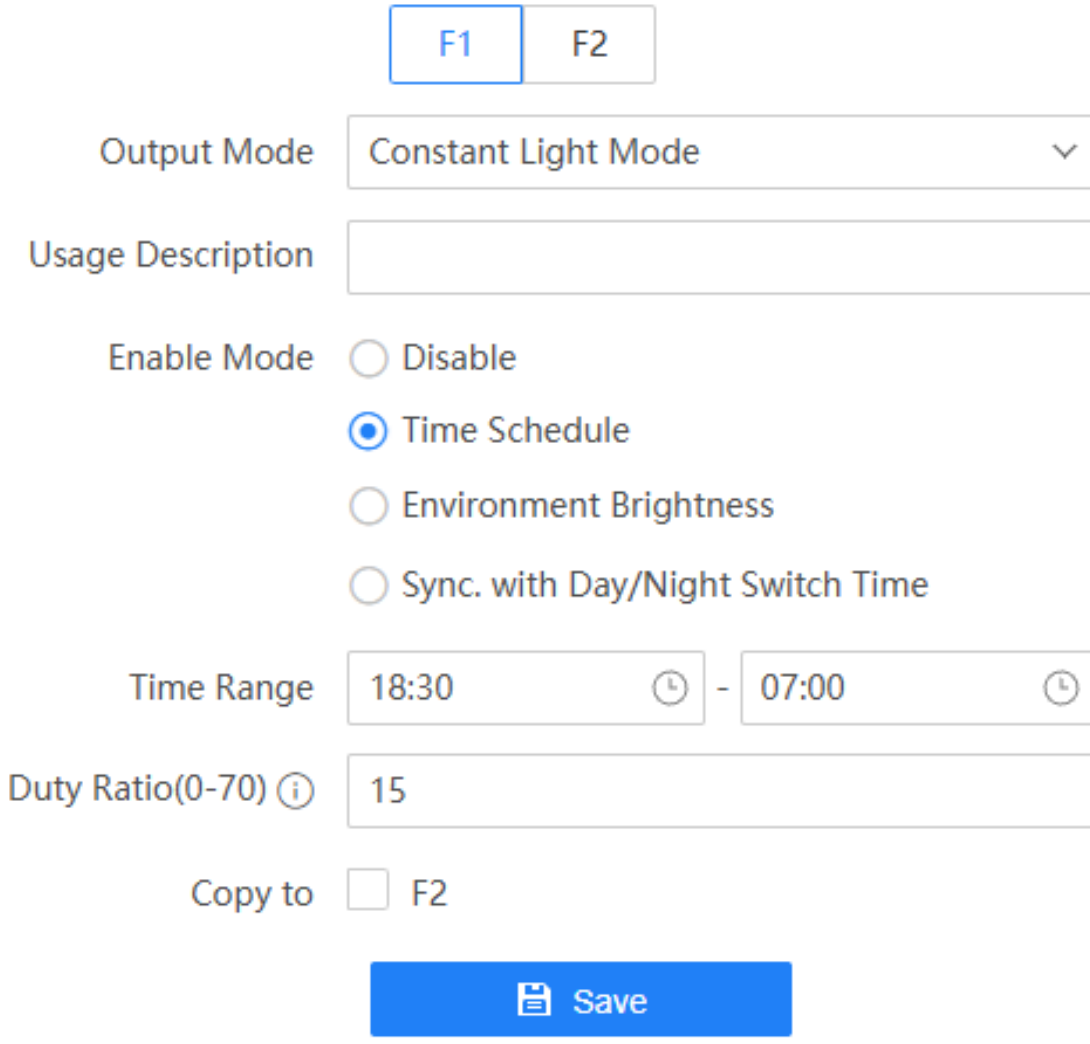

Figure 6-2 Set Supplement Light Parameters

2. Select the I/O and set the supplement light parameters.

Output Mode

Constant Light Mode

The constant light supplements light for the scene.

Usage Description

Enter the usage description of the supplement light.

Duty Ratio

It is the time occupation of the high level in a certain period. The higher the duty ratio, the brighter the light. High duty ratio will cut life span of the light.

3. Set the supplement light **Enable Mode**.
   - Select **Time Schedule** when you want the supplement light to be enabled during a fixed time period. Set the time range.
   - Select **Environment Brightness** when you want the supplement light to be controlled by detecting the surroundings brightness automatically.
   - Select **Sync. with Day/Night Switch Time** to keep the day/night switch of the supplement light consistent with ICR.
4. **Optional:** Select other I/O(s) to copy the same settings.
5. Click **Save**.

6.3 Set Feature Recognition

Set the feature parameters for different targets if you need to detect the features of the corresponding targets.

Steps

Note

The parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Feature Recognition** .
2. Select **Steering Wheel Location** according to the actual condition.
3. Check the feature(s) that needed to be detected, and set the corresponding sensitivity if supported.
4. Click **Save**.

6.4 Set Target Picture Matting

Set target picture matting first if you need to upload target pictures to the platform.

Steps

Note

The function varies with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Target Picture Matting** .
2. Check **Enable Target Picture Matting**.

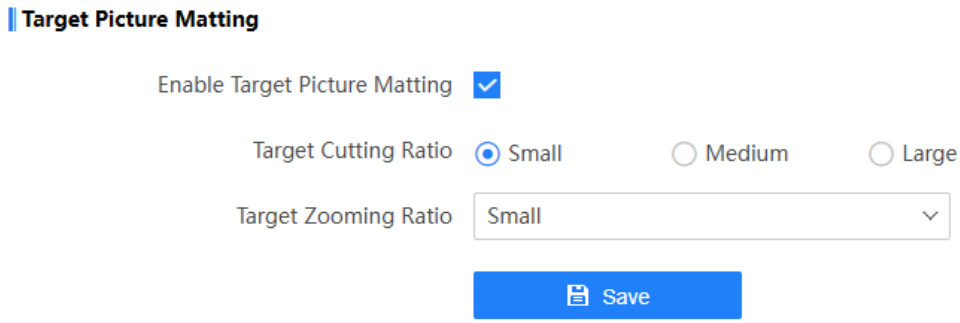

Figure 6-3 Set Target Picture Matting

3. Select **Target Cutting Ratio** to be small, medium, or large.
4. Set **Target Zooming Ratio**.
5. Click **Save**.

Result

If the device is level 1 armed, the matting pictures will be uploaded to this device directly.

6.5 Set Information Overlay

6.5.1 Set Single Picture Overlay

If you want to overlay information on the captured single pictures, set capture overlay.

Steps

Note

The supported parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Capture Overlay Configuration** .
2. Click the single type.
3. Enable text overlay.
4. Select **Overlay Position**.

   Note

   You can select one overlay position, or two overlay positions (**On the Picture** and **Above the Picture**, **On the Picture** and **Below the Picture**) at the same time.
5. Set the overlay style and other parameters.

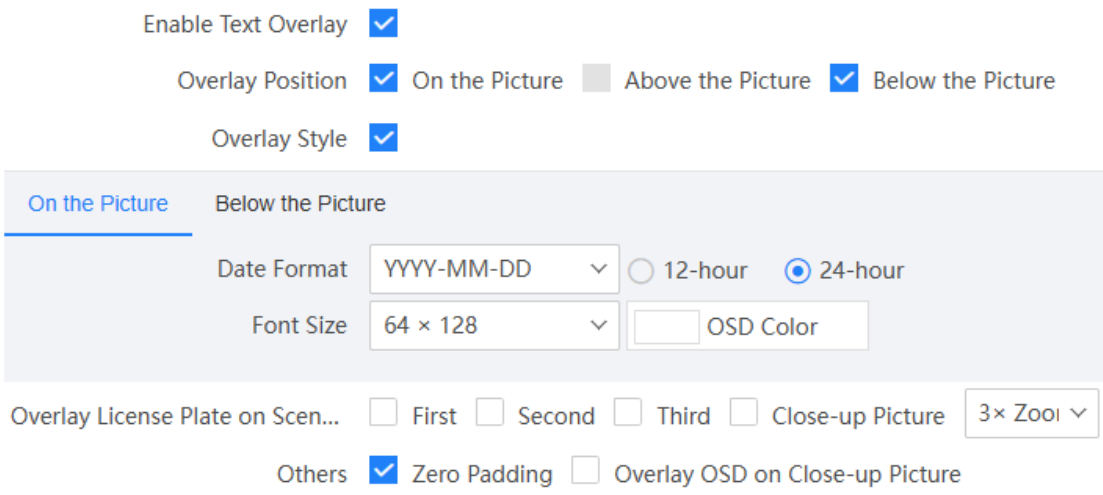

Figure 6-4 Set Single Picture Overlay Style

- If you select one overlay position, set **Date Format**, **Font Size**, and **OSD Color**.
- If you select two overlay positions, check **Overlay Style** and click the position to set **Date Format**, **Font Size**, and **OSD Color** respectively.

Font Color Inversion

Enable the function to detect the gray level of the image overlaid position automatically. When the image color is dark, the overlaid characters will be displayed as white automatically. When the image color is light, the overlaid characters will be displayed as black automatically.

Overlay License Plate on Scene Picture

Select the No. of the captured scene picture or close-up picture to overlay license plate. Please select one scene picture at least. Set the zooming ratio to adjust the overlaid license plate size.

Zero Padding

When the overlaid number digits are smaller than the fixed digits, 0 will be overlaid before the overlaid number. E.g., the fixed digits for lane No. is 2. If the lane No. is 1, 01 will be overlaid on the picture.

Overlay OSD on Close-up Picture

Check it to overlay the OSD information on the close-up pictures.

6. Set overlay content.

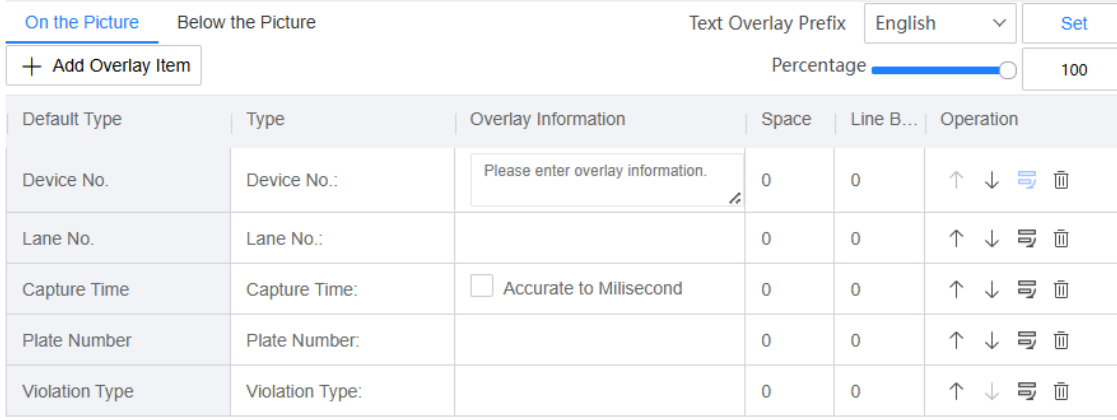

Figure 6-5 Set Single Picture Overlay Content

1) Click the selected overlay position.
2) Select **Text Overlay Prefix** language to overlay the information in corresponding language, and click **Set** to save.

Note

The supported languages depend on the selected **Country/Region** in **Configuration → Capture → Capture Parameters → License Parameters** .

Result: You can edit the custom information name in the selected language.

3) Set **Percentage**, which is the percentage that the overlaid information occupies on the picture. For example, if you set the percentage to 50, the overlaid information in a row will occupy up to half of the image width, and the excess content will be overlaid from a new line.
4) Click **Add Overlay Item** to select the information to overlay, and click **OK**.

Note

The overlay information varies with different models. The actual device prevails.

5) Set the parameters below.
   - **Default Type**: You can view the default overlay information name. If you have edited the name, you can refer to the default name for the definition.
   - **Type**: You can edit a custom overlay information name.
   - **Overlay Information**: For some information types, you can edit the detailed information.
   - **Space**: Edit the number of space between the current information and the next one from 0 to 255. 0 means there is no space.
   - **Line Break Characters**: Edit the number of characters from 0 to 100 between the current information line and the previous information line. 0 means no line break.
   - **Operation**: You can click ↑ / ↓ to adjust the display sequence of the overlay information. Click to overlay the corresponding information from a new line. Click to delete the item.

Note

Starting from a new line is only available for overlay on the picture.

7. **Optional:** Check the other overlay type(s) to copy the same settings.
8. Click **Capture Test** to test the information overlay effect.
9. Click **Save**.

6.5.2 Set Composite Picture Overlay

If you want to overlay information on the composite pictures, set composite picture overlay.

Steps

1. Go to **Configuration → Capture → Capture Parameters → Capture Overlay Configuration** .
2. Click the composite type.
3. Enable text overlay.
4. Select **Overlay Position**.

Note

You can select one overlay position, or two overlay positions (**On the Picture** and **Above the Picture**, **On the Picture** and **Below the Picture**) at the same time.

5. Set the overlay style and other parameters.

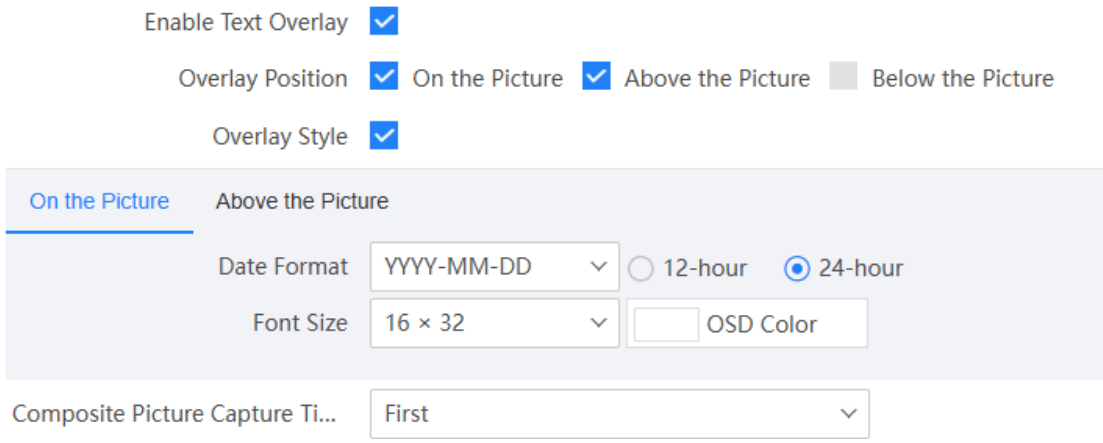

Figure 6-6 Set Composite Picture Overlay Style

- If you select one overlay position, set **Date Format**, **Font Size**, and **OSD Color**.
- If you select two overlay positions, check **Overlay Style** and click the position to set **Date Format**, **Font Size**, and **OSD Color** respectively.

Font Color Inversion

Enable the function to detect the gray level of the image overlaid position automatically. When the image color is dark, the overlaid characters will be displayed as white

automatically. When the image color is light, the overlaid characters will be displayed as black automatically.

Composite Picture Capture Time

The capture time of the selected picture sequence will be overlaid on the composite picture.

6. Set overlay content.

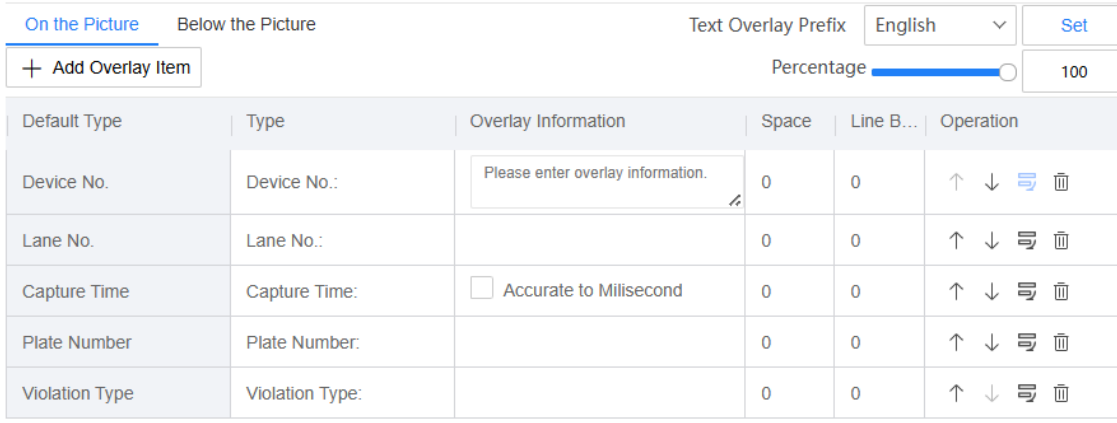

Figure 6-7 Set Composite Picture Overlay Content

1) Click the selected overlay position.
2) Select **Text Overlay Prefix** language to overlay the information in corresponding language, and click **Set** to save.

Note

The supported languages depend on the selected **Country/Region** in **Configuration → Capture → Capture Parameters → License Parameters** .

Result: You can edit the custom information name in the selected language.

3) Set **Percentage**, which is the percentage that the overlaid information occupies on the picture. For example, if you set the percentage to 50, the overlaid information in a row will occupy up to half of the image width, and the excess content will be overlaid from a new line.
4) Click **Add Overlay Item** to select the information to overlay, and click **OK**.

Note

The overlay information varies with different models. The actual device prevails.

5) Set the parameters below.

- **Default Type**: You can view the default overlay information name. If you have edited the name, you can refer to the default name for the definition.
- **Type**: You can edit a custom overlay information name.
- **Overlay Information**: For some information types, you can edit the detailed information.
- **Space**: Edit the number of space between the current information and the next one from 0 to 255. 0 means there is no space.

- **Line Break Characters**: Edit the number of characters from 0 to 100 between the current information line and the previous information line. 0 means no line break.
- **Operation**: You can click ↑ / ↓ to adjust the display sequence of the overlay information. Click to overlay the corresponding information from a new line. Click to delete the item.

Note

Starting from a new line is only available for overlay on the picture.

7. **Optional:** Check the other overlay type(s) to copy the same settings.
8. Click **Capture Test** to test the information overlay effect.
9. Click **Save**.

6.6 Set Image Encoding Parameters

If the captured pictures are not clear, set the resolution, size, and quality of the captured pictures.

Steps

1. Go to **Configuration → Capture → Capture Parameters → Image Encoding and Composition → Image Encoding** .

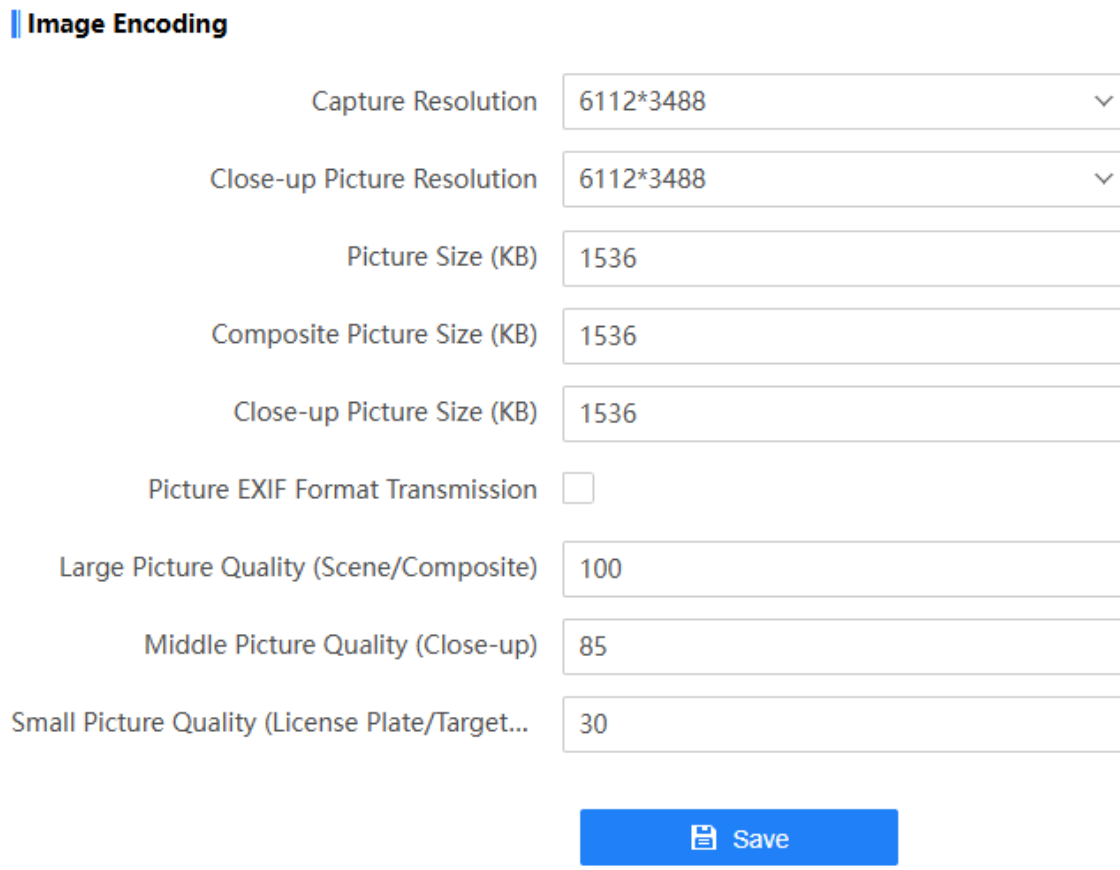

Figure 6-8 Set Image Encoding Parameters

2. Set the parameters below.

Capture Resolution

Select the resolution of the captured scene picture. When the picture size keeps the same, the higher the resolution, the more the picture will be compressed, and the slower the picture will be handled.

Close-up Picture Resolution

Select the resolution of the target close-up picture. When the picture size keeps the same, the higher the resolution, the more the picture will be compressed, and the slower the picture will be handled.

Picture Size

The size of the captured scene picture. The actual size is related to the scene complexity.

Composite Picture Size

The size of the composite picture. The actual size is related to the scene complexity.

Note

Only the device supporting picture composition supports composite picture size settings. The actual device prevails.

Close-up Picture Size

The size of the target close-up picture. The actual size is related to the scene complexity.

Picture EXIF Format Transmission

The captured pictures will be transmitted in the EXIF format.

Large Picture Quality (Scene/Composite)

Set the quality of the scene pictures and composite pictures. The value ranges from 1 to 100. The higher the value, the better the quality of the captured pictures.

Middle Picture Quality (Close-up)

Set the quality of the target close-up pictures. The value ranges from 1 to 100. The higher the value, the better the quality of the captured pictures.

Small Picture Quality (License Plate/Target/Face)

Set the quality of the license plate, target, or face pictures. The value ranges from 1 to 100. The higher the value, the better the quality of the captured pictures.

3. Click **Save**.

6.7 Set Picture Composition

You can enable the picture composition to composite several pictures into one to make it convenient to view the violation captured pictures.

Steps

Note

Functions and parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Image Encoding and Composition → Picture Composition** .

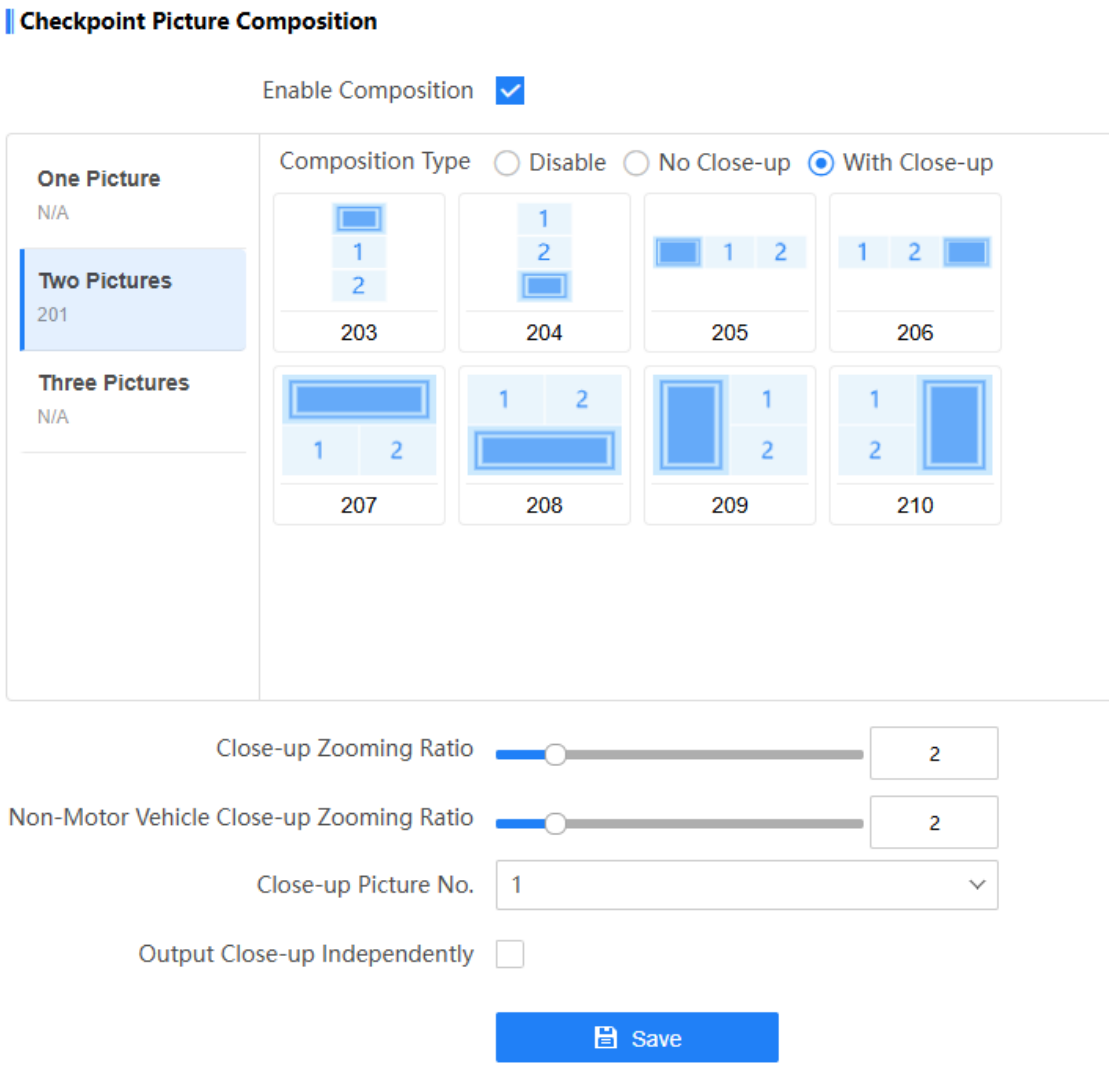

Figure 6-9 Set Picture Composition

2. Check **Enable Composition**.
3. Set **Composition Type** for different picture quantities. Refer to the layout displayed on the interface to view the composition effect.
4. Set other composition parameters.

Close-up Zooming Ratio

The higher the value, the larger the close-up picture.

Non-Motor Vehicle Close-up Zooming Ratio

The higher the value, the larger the non-motor vehicle close-up picture.

Close-up Picture No.

It is the scene picture No. where the close-up comes from.

Output Close-up Independently

Enable the function to output a close-up picture before or after the scene picture independently.

Note

Enabling composition and outputting close-up independently functions conflict with each other. You can only enable one.

5. Click **Save**.

6.8 Set Capture Schedule

You can set the schedule for the violation behavior capture or checkpoint capture if needed.

Steps

Note

The function varies with different models. The actual device prevails.

1. Go to **Configuration → Capture → Capture Parameters → Capture Schedule** .
2. **Optional:** Enable **No Plate Vehicle Capture** according to the actual needs.
3. Click ✎ to set the capture schedule according to the actual needs.

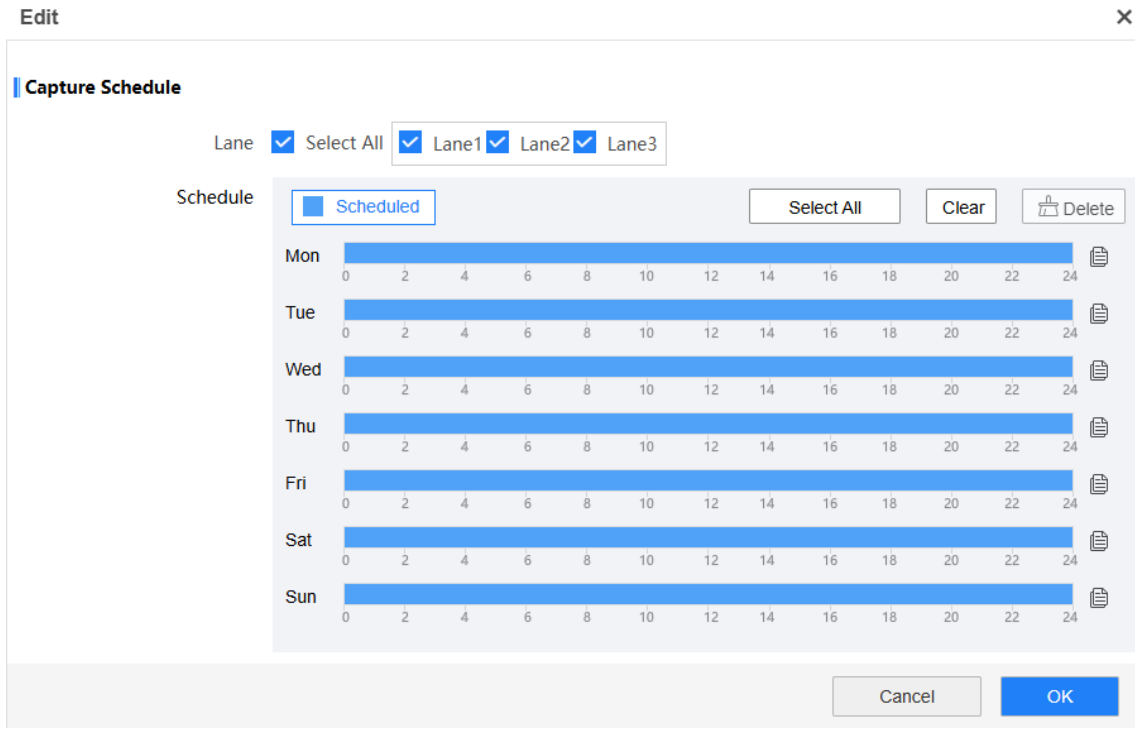

Figure 6-10 Set Capture Schedule

4. Select **Lane**.

5. Adjust the time period.
   - Click **Select All** to capture all day.
   - Click on the selected time period, and enter the desired value. Click **Save**.
   - Click on the selected time period. Drag the both ends to adjust the time period.
6. **Optional:** Delete capture schedules.
   - Click a set time period and click **Delete** in the pop-up window.
   - Click a set time period and click **Delete** above the schedule.
   - Click **Clear** to delete all the schedules.
7. **Optional:** Click to copy the same settings to other days.
8. Click **OK**.
9. **Optional:** Check **Upload to Mailbox** to email the capture schedule to the user.
10. Click **Save**.

6.9 Set Captured Image Parameters

Set the parameters of captured images to raise the image quality.

Steps

1. Go to **Configuration → Capture → Capture Images → Image Parameters** .

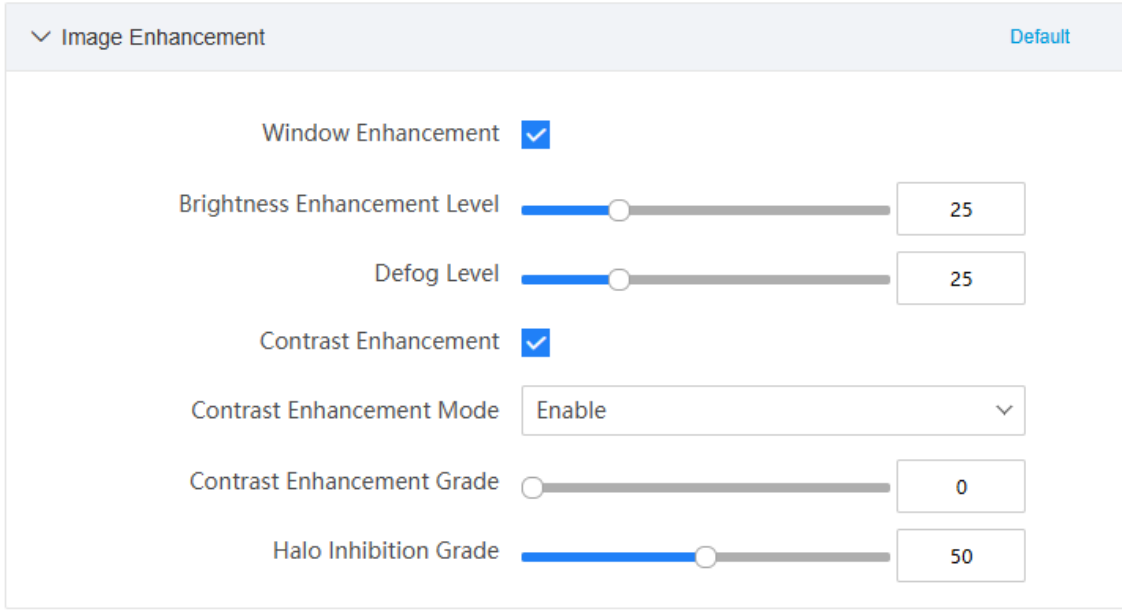

Figure 6-11 Set Captured Image Parameters

2. Set the captured image parameters.

Note

You can click **Default** to restore all the set parameters to the default settings.

Image Enhancement

Window Enhancement

In front light or back light scene, the flash light may not pass through the vehicle window, or the image effect of the window is bad caused by the light. In this condition, you can check **Window Enhancement**. The higher the **Brightness Enhancement Level** is, the brighter the window image is. The higher the **Defog Level** is, the better the permeability of the window image is.

Contrast Enhancement

Check **Contrast Enhancement** to capture clearer images. Select **Contrast Enhancement Mode**, and set corresponding parameters.

Contrast Enhancement Mode	Description
Enable	The contrast enhancement mode is always enabled.
Time	The contrast enhancement mode is enabled during the set start time and end time. In other time, it is disabled.
Brightness	The contrast enhancement mode is enabled according to the brightness of the surroundings. In this case, you can set **Brightness Grade**.

Contrast Enhancement Grade

The higher the grade is, the more the contrast is enhanced.

Halo Suppression Grade

Halo suppression is to suppress the halo of the vehicle headlights. The higher the grade is, the more the halo is suppressed.

6.10 Advanced Configuration

Note

The advanced configurations below are only provided to debug the device by the professionals.

6.10.1 System Service

You can enable the functions to debug the device.

Steps

1. Go to **Configuration → Capture → Advanced → System Service** .
2. Enable the functions according to your needs.

Note

The supported parameters vary with different models. The actual device prevails.

Enable Algorithm POS Information Debug

The algorithm POS information will be overlaid on the playback image when you play back the video with the dedicated tool.

Enable Checkpoint Positioning Frame Debug

The positioning frames of vehicle bodies and license plates will be overlaid on the captured pictures for checkpoint capture.

Enable Violation Positioning Frame Debug

The positioning frames of vehicle bodies and license plates will be overlaid on the captured pictures for violation capture.

Enable Closed Positioning Frame

The bottom lines of the positioning frames on the captured pictures will be displayed. The frames will be closed.

Enable License Plate Frame

The license plate frames will be overlaid on the captured pictures.

Enable Multi-Way Upload

Data will be uploaded in multiple set ways simultaneously.

Enable Lane Line Debug

Check it to overlay lane lines on a captured picture.

Enable Display License Plate Frame

The license plate frames will be overlaid on the live view.

License Plate Frame Color

Enter the color code of the license plate frames overlaid on the captured pictures. 1 stands for red. 2 stands for yellow. 3 stands for green.

3. Click **Save**.

6.10.2 Vehicle Capture and Recognition Service

Set the vehicle capture and recognition service to debug the device.

Steps

Note

The function varies with different models. The actual device prevails.

1. Go to **Configuration → Capture → Advanced → Vehicle Capture and Recognition Service** .
2. Set the service(s) according to your needs.

Note

The supported services vary with different models. The actual device prevails.

Common Parameters

Enable ANR

Enable ANR (Automatic Network Replenishment) to save the videos in the condition of network disconnection, and synchronize data after the network is recovered.

OSD Capture Time Type

Select the time type to overlay OSD on the captured pictures.

- **Picture Generation Time**: The OSD will be overlaid when the captured picture is output.
- **Picture Exposure Time**: The OSD will be overlaid when the captured picture is exposed.

Checkpoint Parameters

Filter Checkpoint Capture of Same Vehicle

It is used to debug the device with the same vehicle. When the same vehicle is triggered many times during a short period in the scene, the checkpoint pictures of the vehicle will not be captured. Set **Effective Time of Filtering** to filter the vehicle during the set time.

Do Not Capture Reverse-driving Vehicle

The reverse-driving vehicles will not be captured. For example, if you need to capture the vehicles driven from the west to the east, enable the function and the vehicles driven from the east to the west will not be captured.

Enable Non-Motor Vehicle Flow Statistics

Enable the function to count the upload the non-motor vehicle flow data.

Filter Two-Wheelers Without License

Check it to not capture the two-wheelers without license plates.

Capture Frame Priority Mode

Check it to adopt license plate recognition results that processed by the single frame recognition algorithm.

Note

The function is only valid when **Capture Mode** is set as **Flash** for the application mode configuration.

Enable Pure License Plate Recognition

In smart mode, enable the function to capture once a license plate is recognized, no matter whether the target is tracked or not.

Filter Pictures with Unknown Speeds

Enable the function to filter the capture results of vehicles with unknown speeds.

Violation Parameters

Filter Violation Capture of Same Vehicle

It is used to debug the device with the same vehicle. When the same vehicle is triggered many times during a short period in the scene, the violation pictures of the vehicle will not be captured. Set **Effective Time of Filtering** to filter the vehicle during the set time.

Add No. After Violation Type

The No. of the captured pictures will be added after the overlaid violation type on the pictures.

Disable Non-Motor Vehicle Speed Detection

The speeds of non-motor vehicles will not be detected.

3. Click **Save**.

6.10.3 Set Image Service

You can enable smartJPEG which can save the storage space without influencing the resolution and set other parameters.

Steps

1. Go to **Configuration → Capture → Advanced → Image Service** .
2. Enable **smartJPEG** to save the storage space without influencing the resolution.
3. Set the parameters below.

Expansion Ratio of License Plate Image

Enter the ratio to expand the cutout scale of license plate image.

4. Click **Save**.

6.10.4 View Traffic Statistics

View Real-Time Traffic Statistics

You can view the real-time traffic statistics if the device supports this function.

Steps

Note

This function varies with different models. The actual device prevails.

1. Go to **Configuration → Capture → Advanced → Traffic Statistics Parameters → TPS Parameters** , or **Live View → Traffic Statistics** .
2. Enable **TPS Statistics Collection**.
3. Set **Statistics Interval**.

What to do next

Go to **Live View → Traffic Statistics** to view the arming status. You can click / to arm, and the captured pictures during the set interval will be saved as a .zip file in the browser default downloading directory. Click to disarm.

View Traffic Flow Statistics

The device supports counting and uploading traffic follow data.

Steps

Note

This function varies with different models. The actual device prevails.

1. Go to **Configuration → Capture → Advanced → Traffic Statistics Parameters → Traffic Statistics Parameters** , or **Live View → Traffic Statistics** .
2. Enable **Traffic Flow Statistics Collection**.
3. Set **Statistics Interval**.
4. Click **Save**.

What to do next

Go to **Live View → Traffic Statistics** to view the arming status. You can click / to arm, and the captured pictures during the set interval will be saved as a .zip file in the browser default downloading directory. Click to disarm.

Chapter 7 Radar Detection

Radar is used to detect the target and link the capture. Set radar detection parameters before capturing vehicle pictures.

Note

The function is only supported for the application mode of smart mode. The actual device prevails.

7.1 Set Detection Parameters

For speed detection via radar, there is no strong relationship between the detected speed results and vehicle targets, which may result in the consequence that the speed result is linked to incorrect target or the speed result is lost. To solve the problems, speed detection via both radar and video is recommended. In this mode, the radar not only outputs the speed result of the target, but also outputs the coordinates of the position relationship between the target and radar. You can create the relationship between the radar position coordinates and vehicle pixel coordinates in the video via calibration to realize the linkage of the speed result and the vehicle target.

Before You Start

- Go to **Configuration → System → System Settings → Device Status** to view the radar status. If the status is normal, you can debug it. If the radar is in upgrading status, do not reboot the device.
- Go to **Configuration → Local** to enable **Rules Information** and **Radar Track**.

Steps

1. Go to **Radar → Lane Parameters → Radar** .

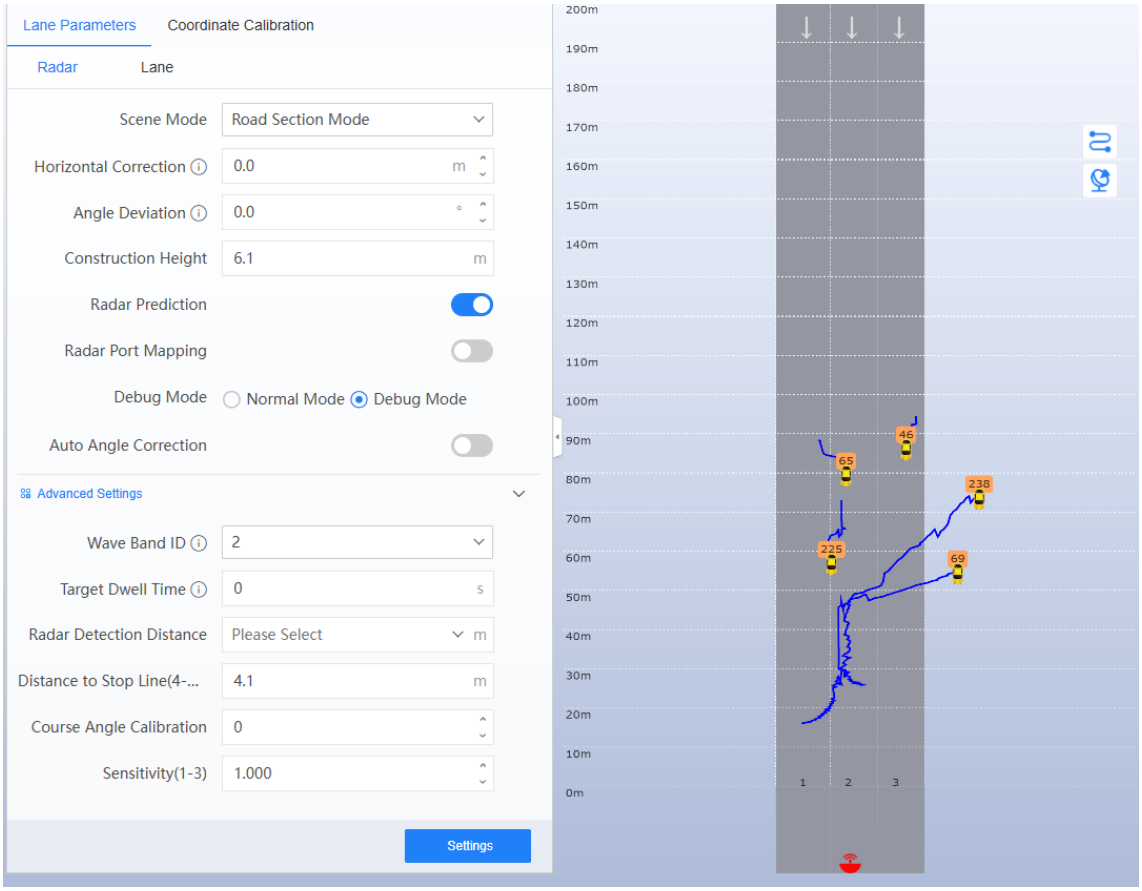

Figure 7-1 Set Radar Parameters

2. Set the basic parameters of the radar.

Scene Mode

Select the scene mode according to the actual construction scene of the device.

Horizontal Correction

It is the horizontal position deviation between the radar detected lane and the actual lane. You can set it in two ways.

- Method 1: Move the detected lane in the diagram leftwards or rightwards to overlap it with the actual lane to correct the difference.
- Method 2: Enter the horizontal distance(m) from the radar installation position to the middle line of the actual lane to correct the difference.

Angle Deviation

It is the angle deviation between the radar detected lane and the actual lane. Rotate the angle of the detected lane in the diagram to overlap it with the actual lane to correct the difference.

Construction Height

Set the construction height of the radar according to construction at the actual scene.

Radar Prediction

It is only used for debug by the professionals. Enable the function, and the radar will predict the target track which can be displayed on the interface according to the detected coordinates.

Radar Port Mapping

Enable the function and **SSH Service**, and the debugging command with radar configuration information will be sent to the device. The radar specified port can be mapped to the camera, and the radar can be debugged via the camera IP address with the radar debug software.

Debug Mode

Select **Debug Mode**. In this mode, the vehicles outside the drawn area will be displayed, to make it convenient to debug the radar. After debug, you should switch to **Normal Mode**.

Auto Angle Correction

After enabling radar debug mode, you can enable it to get the radar deviation angle according to the moving path of vehicle.

3. Click **Advanced Settings** to expand the advanced settings menu. Set advanced parameters of the radar.

Wave Band ID

0 to 4 stand for five frequencies. Set different wave bands for different radars in the same scene to prevent the radars in the same wave band from influencing each other.

Target Dwell Time

The dwell time of the vehicle. If the target dwell time is longer than the set time, vehicle data statistics will not be operated. Set it as 0 when measuring the queue length. It is only effective for the static targets.

Radar Detection Distance

It is the farthest distance that the radar can detect. The default value is 200 m. You can select the value to match the radar detection distance.

Distance to Stop Line

It is the distance from the point on the ground just below the installed radar to the stop line at the intersection. The targets detected in this range will be filtered.

Course Angle Calibration

Set the angle between the driving direction and the device installation direction. The radar course angle information of the current frame will be included when matching the video detected targets and radar detected targets.

Sensitivity

The lower the sensitivity is, the more sensitive the detection will be. For the detection which is too sensitive (e.g., some fixed facilities, such as the bus station on the lane, are detected as vehicles), you can adjust the sensitivity higher.

4. Click **Settings**.
5. **Optional:** You can click the icons on the upper right corner of the target track area to adjust the display status.

Table 7-1 Icon Description

Icon	Description
/	Click to enable or disable the radar targets tracks display.
/	Click to switch to the radar track or fusion track. The fusion track refers to the target track fused with the video detection and radar detection. In fusion track mode, you can view the targets detected by single radar, single video, or both radar and video according to the different colors displayed on the interface, and the detected vehicle information will be displayed in the vehicle list.

7.2 Set Lane Parameters

Set the parameters of the radar detected lanes.

Steps

1. Go to **Radar → Lane Parameters → Lane** .

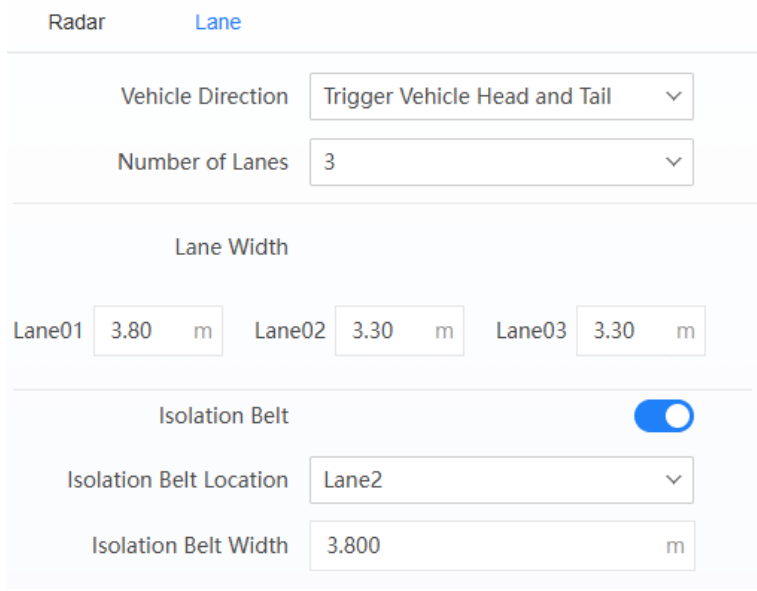

Figure 7-2 Set Lane Parameters

2. Set the lane parameters below.

   Vehicle Direction

Trigger Vehicle Head

The vehicles are driven towards the construction position of the camera.

Trigger Vehicle Tail

The vehicles are driven far away from the construction position of the camera.

Trigger Vehicle Head and Tail

There are vehicles driven both towards and far away from the construction position of the camera.

Number of Lane

The number of lanes should be consistent with the total lanes in the application mode settings.

Lane Width

Set the width of corresponding lane according to the actual scene.

Isolation Belt

When there is an isolation belt between the lanes of opposite directions, enable the function. Select the lane No. on the left of the isolation belt as **Isolation Belt Location**, and set **Isolation Belt Width** according to the actual scene.

3. Click **Settings**.

7.3 Set Radar Calibration

Calibrate radar in order to transfer the detected vehicle actual distance into the positions in the video.

Before You Start

Enable **Rules Information** and **Radar Track** in **Configuration → Local** to display the recognized license plate number, red speed frames, and green target frames in the live view image to make it convenient for calibration.

Steps

1. After enabling debug mode, click **Coordinate Calibration**.
2. Set the radar calibration.
   - Set manual calibration. Refer to ***Manual Calibration*** for details.
   - Set auto calibration. Refer to ***Auto Calibration*** for details.
   - Set force auto calibration. Refer to ***Force Auto Calibration*** for details.

Note

You're recommended to use auto calibration.

7.3.1 Manual Calibration

Steps

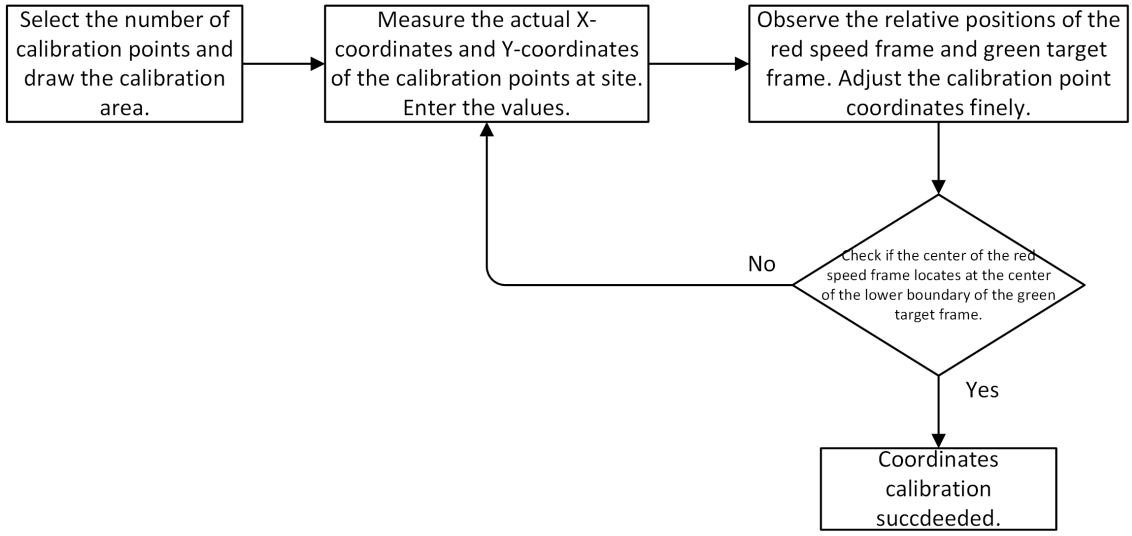

Figure 7-3 Manual Calibration Flow

1. Click **Coordinate Calibration**.
2. Select **Calibration Mode** as **Manual Mode**.

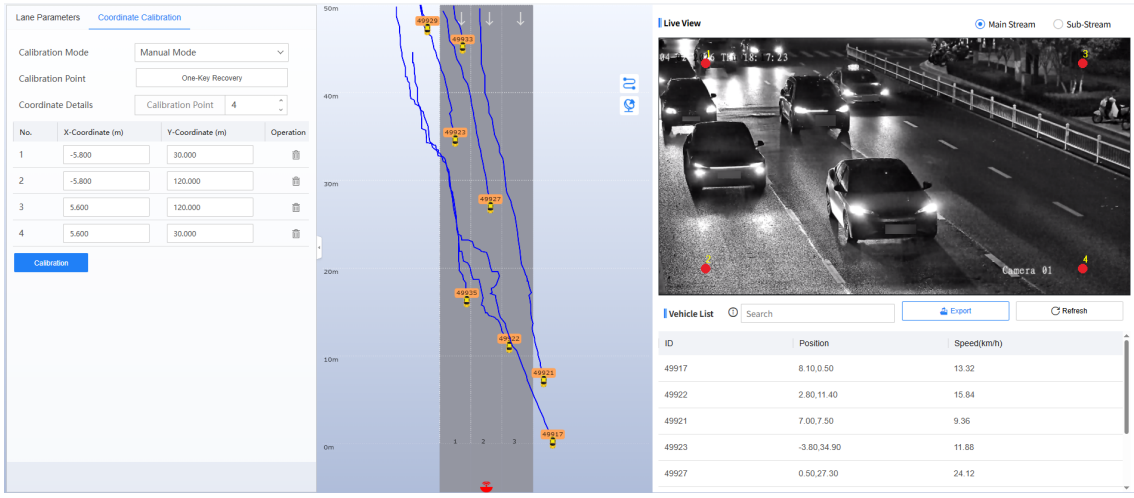

Figure 7-4 Manual Calibration

3. Adjust the calibration area.
   1) Select **Calibration Point**.

Note

4-point calibration by default.

2) Adjust the default calibration points on the live view image to form a calibration area according to the actual scene, or click **One-Key Recovery** to redraw the area.
3) Measure the X-coordinates and Y-coordinates of the calibration points with measurement tool at site accurately, and enter the values in the corresponding coordinate text fields.

Note

- X-coordinate stands for the horizontal distance from the calibration point to the origin of the radar coordinates. Y-coordinate stands for the vertical distance from the calibration point to the origin of the radar coordinates. The origin (0, 0) of the radar coordinates locates in the middle of the whole lanes detected by the radar.
- If there are 4 points for the calibration area, the X-coordinates of point 1 and 2 should be negative values.
- If the speed displayed on the live view image is 0, you need to calibrate again. The best calibration effect is that the center of the speed frame locates at the center of the lower boundary of the target frame.

4. **Optional:** If there is no condition to measure the coordinates of the calibration points accurately at site, you can draw a calibration area and estimate the coordinates of the calibration points first, and then perform fine adjustment to the coordinates as the steps below.
   1) Find a vehicle passing the calibration point in the live view image, and observe the relative position relationship between the vehicle target and the speed frame. The distance between the position of the speed frame and that of the target frame may be large before calibration. You need to observe the moving tendency of the target frame and the speed frame.
   2) According to the relative positions, if the speed frame is in front of the target frame, decrease the Y-coordinate value. If the speed frame is behind the target frame, increase the Y-coordinate value. Adjust the values until the lower boundaries of the speed frame and the target frame are on the same horizontal line.
   3) According to the relative positions, if the speed frame is in the left position of the lower boundary center of the target frame, decrease the X-coordinate value. If the speed frame is in the right position of the lower boundary center of the target frame, increase the X-coordinate value. Adjust the values until the lower boundaries of the speed frame and the target frame are on the same vertical line.
   4) Adjust the other calibration points according to the methods above until all the vehicles in the detection area satisfy the requirement.
5. Click **Calibration**.

7.3.2 Auto Calibration

Steps

1. Click **Coordinate Calibration**.
2. Select **Calibration Mode** as **Auto Calibration**.

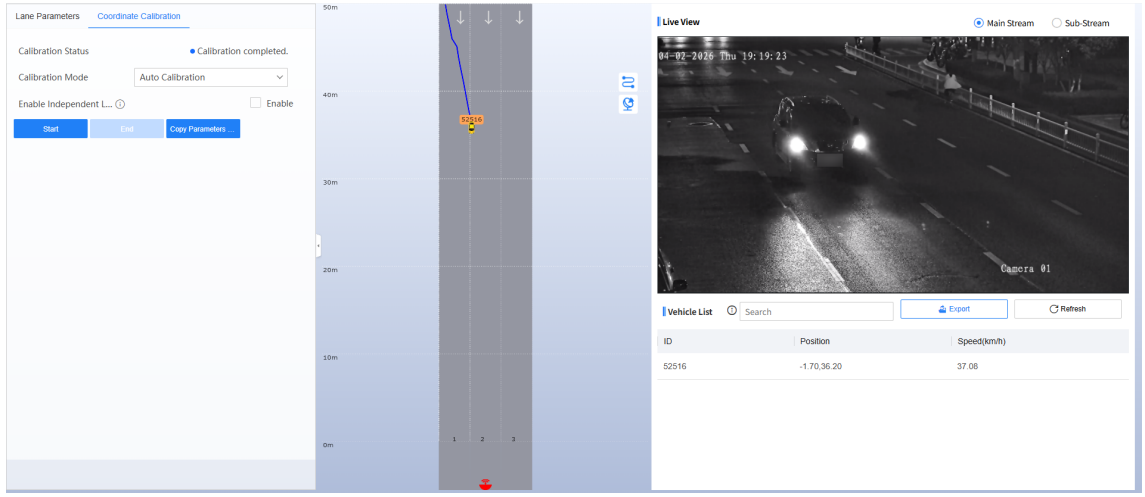

Figure 7-5 Auto Calibration

3. Enable or disable independent lane settings.
   - If you disable independent lane settings, the device will recognize the lane lines in the scene and match the drawn lines according to the selected number of total lanes.
   - If you enable independent lane settings and select the number of total lanes, the corresponding number of lane lines will display on the live view image, and you need to adjust the lines according to the scene manually.

Note

If the lanes are bidirectional ways, or the lane range to be calibrated is inconsistent with the lanes set in the application mode, you are recommended to enable independent lane settings to draw the lane lines independently.

4. **Optional:** Select the lane line No. and click **Start Drawing** to redraw the corresponding lane line.

Note

The lane lines must be set accurately before auto calibration. For the scenes to which auto calibration is not applicable, like congestion, vehicles are waiting for the red traffic light, there are too few vehicles passing, etc., manual calibration is recommended.

5. Click **Start**.

Note

To guarantee the auto calibration learning effect, you're recommended to click **Start** when the vehicles in the straight lane are about to move.

The auto calibration starts, and you can view the calibration status and progress. 100% means the auto calibration is finished.

6. Wait for the calibration result after 3 to 5 full traffic light cycles.

Note

The standard auto calibration progress is 0% → 50% → 90% → calibration finished. If there are vehicles passing but no progress for more than 10 minutes, contact the technical support.

7. **Optional:** Click **End** if the speed detection effect via radar and video fusion mode has met the requirement during the process.
8. **Optional:** Click **Copy Parameters to Coordinate Mode** to copy the auto calibrated coordinates to the manual calibration mode.

What to do next

- After auto calibration, exit from the interface. Observe the calibration effect after a period of time. As shown below, if the speed frame locates at the lower boundary center of the target frame, that is, the speed frame locates at the license plate position, and the speed frame follows with the moving target, the calibration effect satisfies the requirements. Otherwise, you need to calibrate again, or perform fine adjustment to the coordinates by the methods for the manual calibration. Refer to step 5 of ***Manual Calibration*** for details.

Figure 7-6 Good Calibration Effect Example

- For the scene with multiple lanes and congestion, observe the auto calibration effect. If the fusion effect is not good after the auto calibration is finished, you need to calibrate again manually. Refer to ***Manual Calibration*** for details.

7.3.3 Force Auto Calibration

You can select force auto calibration for the scene that the personnel at the site drives a car or SUV to pass in the visual field of the device to complete the calibration quickly.

Before You Start

- There is up to one moving target (a car or a SUV) in the visual field of the device during calibration.
- The vehicle speed keeps 20 to 40 km/h during calibration.

Steps

1. Click **Coordinate Calibration**.
2. Select **Calibration Mode** as **Force Auto Calibration**.

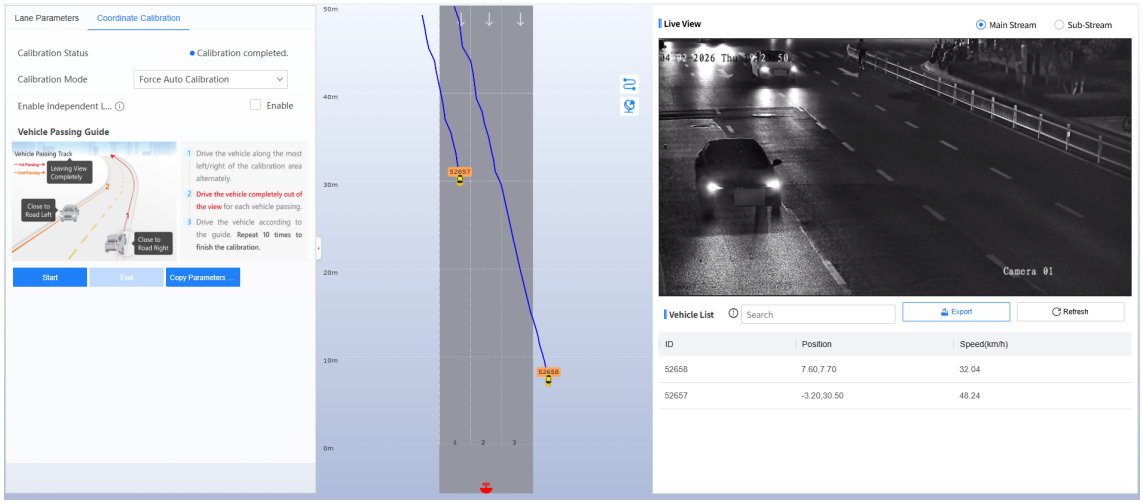

Figure 7-7 Force Auto Calibration

3. Enable or disable independent lane settings.
   - If you disable independent lane settings, the device will recognize the lane lines in the scene and match the drawn lines according to the selected number of total lanes.
   - If you enable independent lane settings and select the number of total lanes, the corresponding number of lane lines will display on the live view image, and you need to adjust the lines according to the scene manually.

Note

If the lanes are bidirectional ways, or the lane range to be calibrated is inconsistent with the lanes set in the application mode, you are recommended to enable independent lane settings to draw the lane lines independently.

4. **Optional:** Select the lane line No. and click **Start Drawing** to redraw the corresponding lane line.

Note

The lane lines must be set accurately before auto calibration. For the scenes to which auto calibration is not applicable, like congestion, vehicles are waiting for the red traffic light, there are too few vehicles passing, etc., manual calibration is recommended.

5. The personnel at the site drives a car or SUV along the most left/right of the calibration area alternately. Drive the car or SUV completely out of the view for each vehicle passing. Repeat 10 times to finish the calibration. If there is only one lane in the scene, drive along the far left/right

lane line. You can drive the vehicle along the marked routes shown in the **Vehicle Passing Guide** diagram on the interface.

6. Click **Start**.

   The auto calibration starts, and you can view the calibration status and progress. 100% means the auto calibration is finished.

7. **Optional:** Click **End** if the speed detection effect via radar and video fusion mode has met the requirement during the process.
8. **Optional:** Click **Copy Parameters to Coordinate Mode** to copy the auto calibrated coordinates to the manual calibration mode.

What to do next

- After auto calibration, exit from the interface. Observe the calibration effect after a period of time. As shown below, if the speed frame locates at the lower boundary center of the target frame, that is, the speed frame locates at the license plate position, the calibration effect satisfies the requirements. Otherwise, you need to calibrate again, or perform fine adjustment to the coordinates by the methods for the manual calibration. Refer to step 5 of ***Manual Calibration*** for details.

Figure 7-8 Good Calibration Effect Example

- For the scene with multiple lanes and congestion, observe the auto calibration effect. If the fusion effect is not good after the auto calibration is finished, you need to calibrate again manually. Refer to ***Manual Calibration*** for details.

7.4 Search Detected Vehicles

You can search the radar detected vehicles and export the information.

Steps

1. Click **Radar**.
2. View the detected vehicle information in the vehicle list.

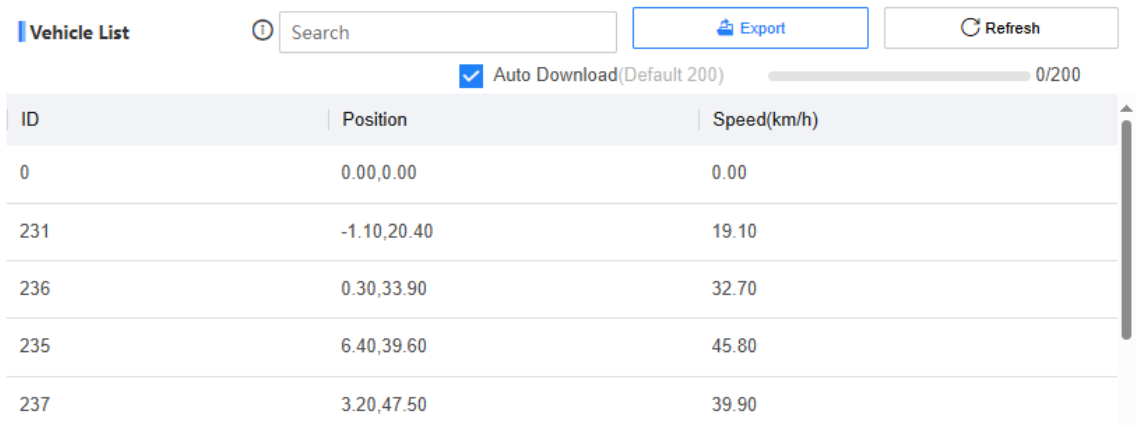

Figure 7-9 Vehicle List

3. Enter the vehicle No. in the text field, and press **Enter** to search the vehicle information.
4. **Optional:** Export the vehicle information.
   - Search the vehicle first, and click **Export** to export the searched vehicle information to the selected directory of the computer.
   - Click **Export** directly to export the information of all the detected vehicles to the selected directory of the computer.
5. **Optional:** In no plug-in mode, you can enable **Auto Download** to download the captured pictures to the computer directly.

Note

- If you have downloaded and installed plug-in, auto download is not supported.
- The latest captured pictures will be downloaded and compressed as a file in the format of .zip automatically. There are up to 200 pictures in one compressed file. If you exit from the current interface, the auto downloading will stop. The auto downloaded files will be saved to the default downloading directory of the browser in the format of .zip. You can go to the directory, decompress the file, and view the captured pictures.
- If you disable **Auto Download**, when you exit from the current interface, the dialogue box will pop up to prompt you if you need to download the arming captures. Click **OK** and the latest captured pictures will be downloaded and compressed as a file in the format of .zip automatically.

Chapter 8 Smart Display

You can view the live view image and the captured pictures in real time. The properties of the captured targets can be analyzed in real time and you can view the detailed information of the captured targets and data statistics results of the captured face pictures, motor vehicles, and non-motor vehicles.

Note

The smart display is only available for the browsers of IE 9 or above, Google Chrome 45 or above, Edge, and Firefox.

Click **Smart Display**. Refer to the figure and table below for the description of the interface.

Figure 8-1 Smart Display

Table 8-1 Smart Display Interface Description

No.	Description
1	The live view image. You can click the icons below the image to operate. Refer to ***Live View*** for details.
2	To display the captured pictures of motor vehicles, non-motor vehicles, and faces.
3	To view the detailed information of the captured targets.
4	To view the data statistics of the captured targets. You can click ‹ or › to view more pictures.

Note

In no plug-in mode, you can enable **Auto Download** to download the captured pictures to the computer directly. The latest captured pictures will be downloaded and compressed as a file in the format of .zip automatically. The max. number of pictures in one compressed file depends on the selected **Number of Auto Captured Pictures** in **Configuration → Local** in no plug-in mode. If you exit from the interface, the auto downloading will stop. The auto downloaded files will be saved to the default downloading directory of the browser in the format of .zip. You can go to the directory, decompress the file, and view the captured pictures. If you disable **Auto Download**, when you exit from the interface, the dialogue box will pop up to prompt you if you need to download the arming captures. Click **OK** and the latest captured pictures will be downloaded and compressed as a file in the format of .zip automatically.

Chapter 9 View Real-Time Picture

You can view the real-time captured pictures and license plate information.

Steps

Note

- The supported parameters vary with different models. The actual device prevails.
- The supported functions are different in plug-in mode and no plug-in mode. In no plug-in mode, level 2 arming, measuring license plates, and enabling ruler are not supported.

1. Go to **Live View → Real-Time Capture** .
2. Click **Arming**.

   The device will capture pictures automatically according to the set application mode parameters.
3. Select an item from the list, and you can view the capture scene picture, vehicle type, violation type, speed, and recognized license plate information.

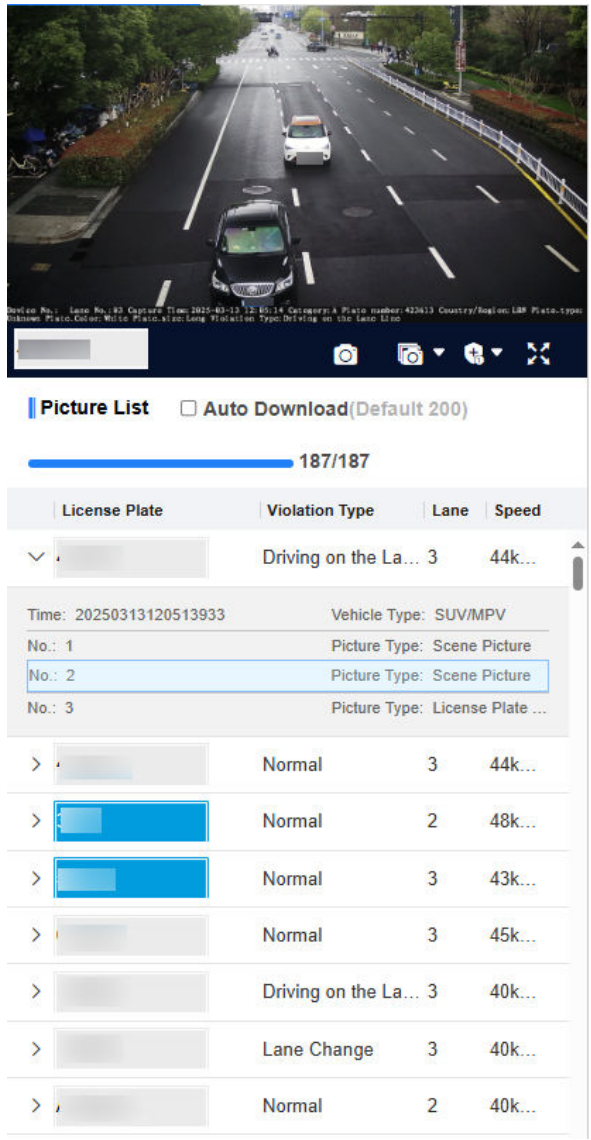

Figure 9-1 Real-Time Capture (No Plug-in)

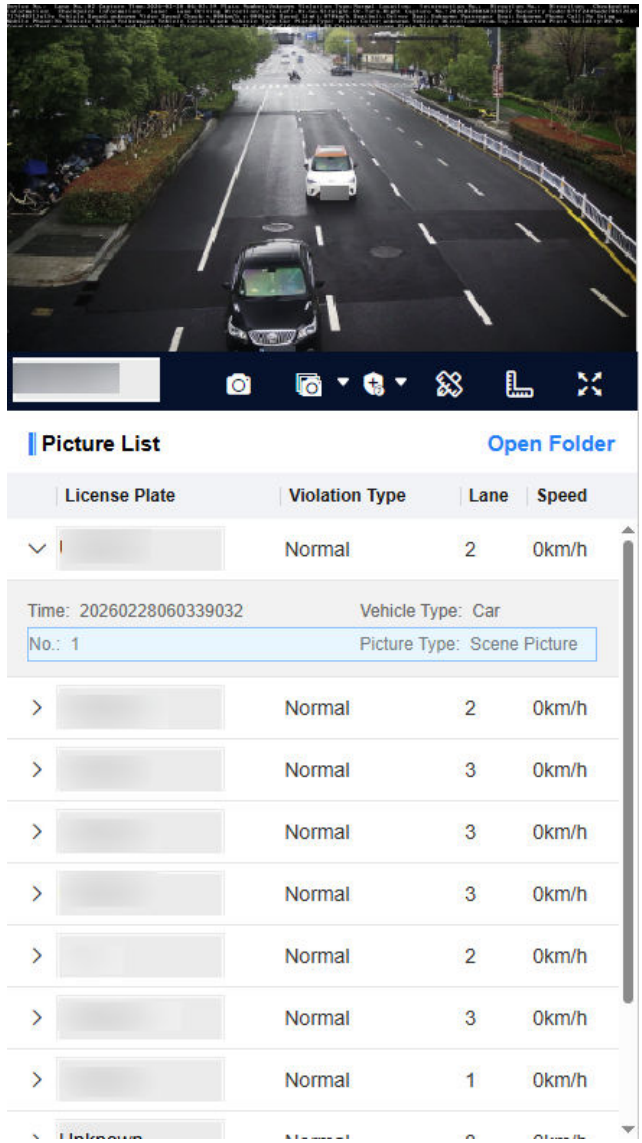

Figure 9-2 Real-Time Capture (with Plug-in)

4. **Optional:** You can do the following operations.

/ /
- **Level 1 Arming**: Only the current computer can arm the device and receive the captured pictures in real time. The pictures will not be stored in the storage card. The pictures in the storage card will be uploaded to the level 1 arming terminal.
- **Level 2 Arming** can connect three clients or webs. The pictures will be uploaded to the client/web, and stored in the storage card.
- **Disarming**: Disable the real-time capture function.

 Click it to capture a picture manually.

	Click the arrow to set continuous capture parameters and then click the icon to enable continuous capture manually. The device will capture pictures according to the set interval. • **Trigger Channel**: If the camera has multiple channels, enter the channel No. to enable continuous capture. • **Waiting Time**: Set the interval between continuous captures when triggering continuous capture continuously. • **Capture Times**: Select the number of captured pictures per continuous capture. • **Interval**: Set the interval between each capture in the continuous capture. Up to four intervals can be set, and the default interval is 100 ms.
	The function is only available in plug-in mode. Click it to measure the license plate pixel of the captured picture. Drag to draw a rectangle, and then drag the rectangle to move it, and adjust corners to resize it.
	The function is only available in plug-in mode. Click it to enable the ruler and adjust the ruler to measure the vehicle pixel.
	Click it to display the captured picture in full screen mode. Press **Esc** on the keyboard to exit from the full screen mode.
Open Folder	The button is available in plug-in mode. You can click it to open the saving path of captured pictures.
Auto Download	In no plug-in mode, you can enable **Auto Download** to download the captured pictures to the computer directly. The latest captured pictures will be downloaded and compressed as a file in the format of .zip automatically. The max. number of pictures in one compressed file depends on the selected **Number of Auto Captured Pictures** in **Configuration → Local** in no plug-in mode. If you disarm, the auto downloading will stop. You can view the downloading progress on the interface. The auto downloaded files will be saved to the default downloading directory of the browser in the format of .zip. You can go to the directory, decompress the file, and view the captured pictures. If you disable **Auto Download**, when you disarm, the dialogue box will pop up to prompt you if you need to download the arming captures. Click **OK** and the latest captured pictures will be downloaded and compressed as a file in the format of .zip automatically.

Chapter 10 Live View and Local Configuration

10.1 Live View

10.1.1 Start/Stop Live View

Click to start live view. Click to stop live view.

10.1.2 Select Image Display Mode

Click to select an image display mode.

10.1.3 Select Window Division Mode

Click to select a window division mode.

10.1.4 Select Stream Type

Click to select the stream type. It is recommended to select the main stream to get the high-quality image when the network condition is good, and select the sub-stream to get the fluent image when the network condition is not good enough. The third stream is custom.

Note

The third stream varies with different models. The actual device prevails.

10.1.5 Capture Picture Manually

You can capture pictures manually on the live view image and save them to the computer.

Steps

1. Click to capture a picture.
2. **Optional:** Go to **Configuration → Local → Live View Parameters** and select **Image Format**.
3. **Optional:** Go to **Configuration → Local → Picture and Clip Settings** to view the saving path of snapshots in live view.

10.1.6 Record Manually

You can record videos manually on the live view image and save them to the computer.

Steps

1. Click to start live view.
2. Click to start recording.
3. Click to stop recording.
4. **Optional:** Go to **Configuration → Local → Record File Settings** to view the saving path of record files.

10.1.7 Start/Stop Two-Way Audio

The device supports two-way audio with terminals, such as computers.

Before You Start

The device is equipped with an audio input interface and audio output interface, which support connecting with the corresponding devices, such as microphones and loudspeakers.

Steps

Note

The function varies with different models. The actual device prevails.

1. Select a window to start two-way audio.
2. Click to start live view.
3. Click to start two-way audio.

   When speaking at the computer end, you can hear the voice at the device end and vice versa.
4. Click the icon again to stop two-way audio.

10.1.8 Enable/Disable Audio

Enable the audio if necessary after connecting an audio input device under the audio & video stream. Click to enable and adjust it. Click again to disable this function.

Note

The function varies with different models. The actual device prevails.

10.1.9 Enable Digital Zoom

You can enable digital zoom to zoom in a certain part of the live view image.

Steps

1. Click to start live view.
2. Click to enable digital zoom.
3. Place the cursor on the live view image position which needs to be zoomed in. Drag the mouse rightwards and downwards to draw an area.

The area will be zoomed in.

4. Click any position of the image to restore to normal image.
5. Click to disable digital zoom.

10.1.10 Enable Regional Focus

Steps

Note

The function varies with different models. The actual device prevails.

1. Click .
2. Drag the cursor from the upper left corner to the lower right corner to select the area that needs to be focused.

Result

The selected area is focused.

10.1.11 Select Video Mode

Set the video mode when adjusting the device focus during construction.

Click and select the normal mode when the device is running normally.

10.2 Set Snapshot Mode

Click **Live View**, and you can enable or disable snapshot mode on the upper right corner of the interface.

- : The snapshot mode is enabled. In this mode, only the image in the live view interface is in real-time streaming, and the live view images in other interfaces are just pictures. You can refresh the interfaces to refresh the pictures. For the conditions that the network is unstable, or the computer performance is not that good, you're recommended to enable snapshot mode to raise the operation efficiency.
- : The snapshot mode is disabled. All the live view images are in real-time streaming.

Note

Disable snapshot mode before drawing areas for cropping capture pictures, ROI, privacy mask, and regional exposure.

10.3 PTZ Operation

Click **Live View**. The **PTZ Control** menu is displayed on the left.

Note

- The PTZ supports power-off memory. When the device is suddenly cut off power or restarted normally, it can automatically return to the position before the power cut or reboot.
- The PTZ function varies with different models. The actual device prevails.
- Other unmentioned buttons are reserved buttons.

Figure 10-1 PTZ Control Panel

Table 10-1 Button Description

Button	Description
4	Adjust the PTZ speed.
/	Zoom + and Zoom - • Hold to zoom in the scene. • Hold to zoom out the scene.
/	Focus + and Focus - • Hold to make near objects become clear and distant objects become vague. • Hold to make distant objects become clear and near objects become vague.
/	Iris + and Iris –

Button	Description
	• Hold to increase the iris diameter when in a dark environment. • Hold to decrease the iris diameter when in a bright environment.
	Lens Initialization It is applicable to devices with motorized lenses. You can use this function when overcoming image blurs caused by overtime zooming or focusing.
	Auxiliary Focus It is applicable to devices with motorized lenses. Use this function to focus the lens automatically and make images become clear.
	Regional Auto Focus Click it and drag a rectangle on the live view image, and the area will be auto focused.
/	Lock/Unlock Click to lock PTZ control, and click to unlock PTZ control.
	Zoom Calibration Click it and the lens will perform zoom calibration automatically.

10.4 Local Configuration

Go to **Configuration → Local** to set the live view parameters and change the saving paths of videos, captured pictures, scene pictures, etc.

Note

The interfaces in no plug-in mode and plug-in mode are different.

Local Configuration in Plug-in Mode

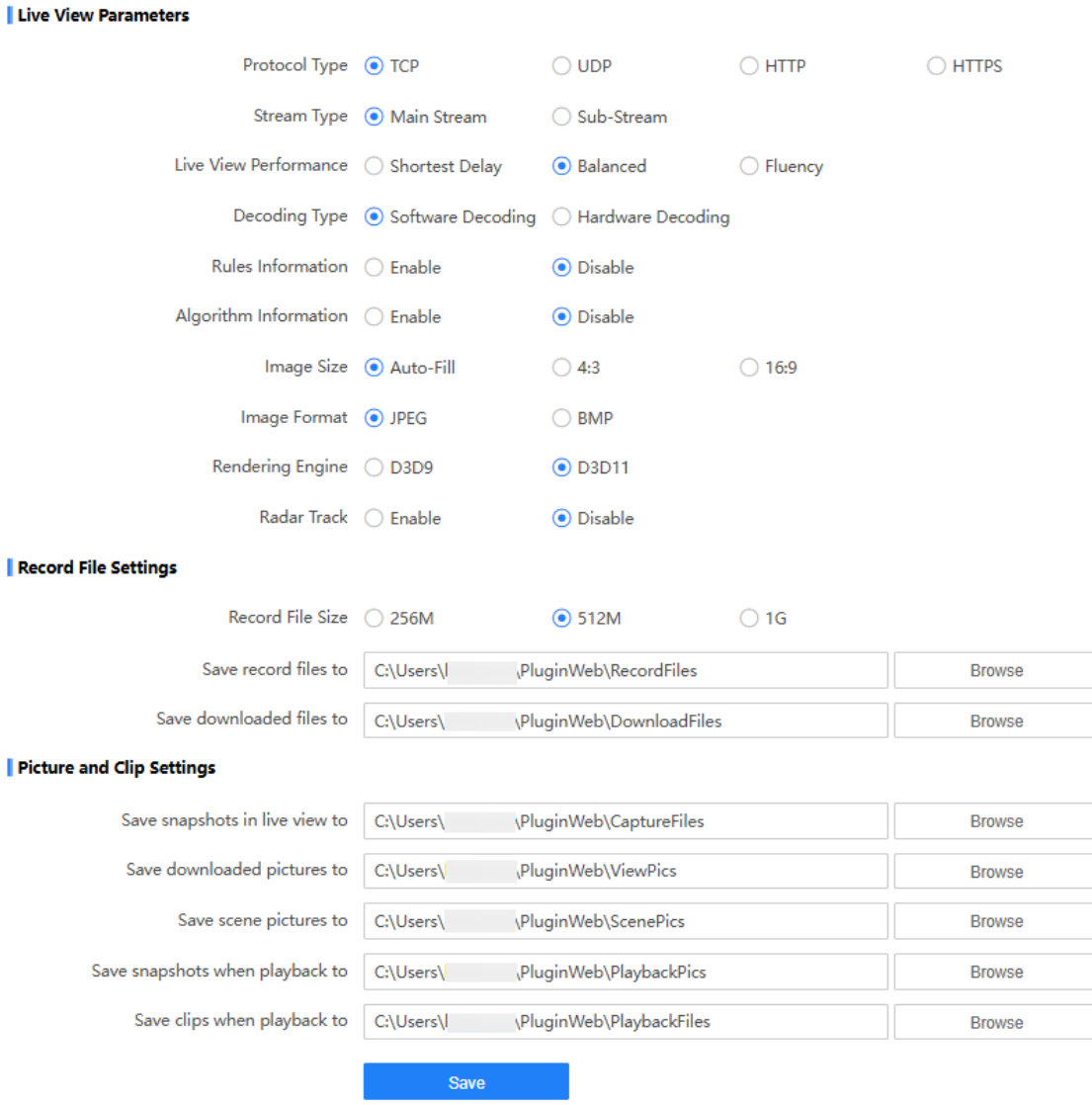

Figure 10-2 Local Configuration in Plug-in Mode

Protocol Type

Select the network transmission protocol according to the actual needs.

TCP

Ensures complete delivery of streaming data and better video quality, but the real-time transmission will be affected.

UDP

Provides real-time audio and video streams.

HTTP

Gets streams from the device by a third party client.

HTTPS

Gets streams in https format.

Stream Type

Main Stream

Select it to get the high-quality image when the network condition is good.

Sub-Stream

Select it to get the fluent image when the network condition is not good enough.

Live View Performance

Shortest Delay

The video is real-time, but its fluency may be affected.

Balanced

Balanced mode considers both the real time and fluency of the video.

Fluency

When the network condition is good, the video is fluent.

Decoding Type

Software Decoding

Decode via software. It takes up more CPU resources but provides images with better quality when it compares to the hardware decoding.

Hardware Decoding

Decode via GPU. It takes up less CPU resources but provides images with worse quality when it compares to the software decoding.

Rules Information

If you enable this function, tracking frames will be displayed on the live view interface when there are vehicles passing.

Algorithm Information

Enable it to overlay algorithm information of the stream.

Image Size

The display ratio of the live view image.

Image Format

The saving format of manually captured images.

Rendering Engine

Select the rendering API of the browser. D3D9 uses fixed rendering pipeline. D3D11 uses programmable graphics pipeline, in which the shader replaces the traditional fixed rendering pipeline to improve visual effects and enhance the picture quality.

Radar Track

When the radar is connected, enable it to generate and overlay the radar tracks.

Note

The function is only applicable to the device supporting radar.

Record File Size

Select the packed size of the manually recorded video files. After the selection, the max. record file size is the value you selected.

Save record files to

Set the saving path of the manually recorded video files.

Save downloaded files to

Set the saving path of the download files.

Save snapshots in live view to

Set the saving path of the manually captured pictures in live view mode.

Save downloaded pictures to

Set the saving path of the downloaded pictures.

Save scene picture to

Set the saving path of the captured pictures in **Live View → Real-Time Capture** .

Save snapshots when playback to

Set the saving path of the manually captured pictures in playback mode.

Save clips when playback to

Set the saving path of the clips in playback mode.

Local Configuration in No Plug-in Mode

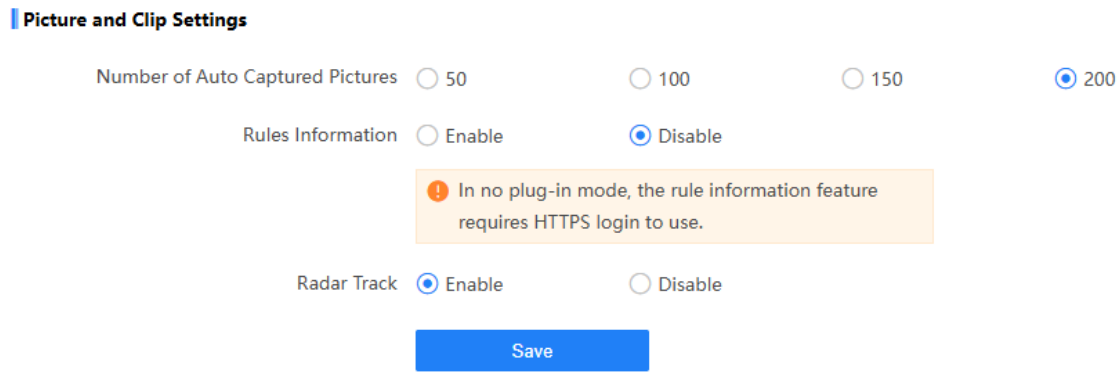

Figure 10-3 Local Configuration in No Plug-in Mode

Number of Auto Captured Pictures

Select the max. number of auto downloaded pictures in one compressed file in **Live View → Real-Time Capture** in no plug-in mode.

Rules Information

If you enable this function, tracking frames will be displayed on the live view interface when there are vehicles passing.

Note

In no plug-in mode, the rule information function requires access via HTTPS.

Radar Track

When the radar is connected, enable it to generate and overlay the radar tracks.

Note

The function is only applicable to the device supporting radar.

Chapter 11 Record and Capture

11.1 Set Storage Card

If you want to store the files to the storage card, make sure you insert and format the storage card in advance.

Before You Start

Insert the storage card to the device.

Steps

1. Go to **Configuration → Storage → Storage Management → HDD Management** .

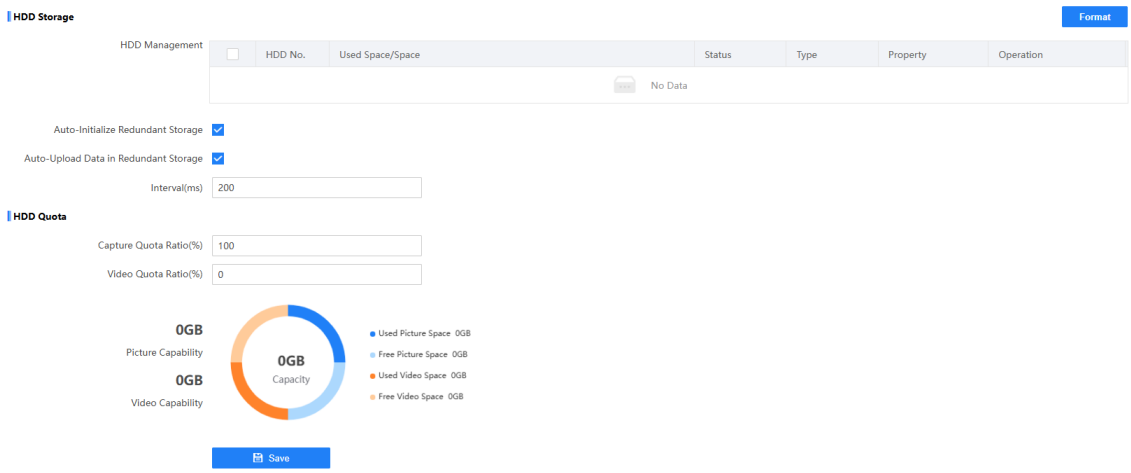

Figure 11-1 Set Storage Card

2. Format the storage card in two ways.
   - Check the storage card, and click **Format** to format it manually.

     Note

     For the newly installed storage card, you need to format it manually before using it normally.
   - If you want to format the storage card automatically when the card is abnormal, enable **Auto-Initialize Redundant Storage**.

     Note

     If you enable **Auto-Initialize Redundant Storage**, reboot the device to take the settings into effect.
3. Set other parameters.

   Auto-Upload Data in Redundant Storage

   If the device has been connected to the platform, and you want to upload the storage card information automatically, enable the function and set the interval.

4. Set **Capture Quota Ratio** and **Video Quota Ratio** according to the actual needs.

Note

The percentage sum of all the quota ratio should be 100%.

5. Click **Save**.

11.2 Set Record Schedule

Set record schedule to record video automatically during configured time periods.

Before You Start

Install the storage card.

Steps

1. Go to **Configuration → Storage → Schedule Settings → Record Schedule** .
2. Select **Record Stream**.
3. **Optional:** Enable the functions below according to your needs.

   Enable Overwritten Recording

   When the storage is full, the earliest videos will be overwritten.

   Enable Storage Expiration

   Enable the function and set **Expiry Time** for the recorded videos stored in the storage card. Beyond the time, the files will be overwritten.
4. Enable the record schedule.

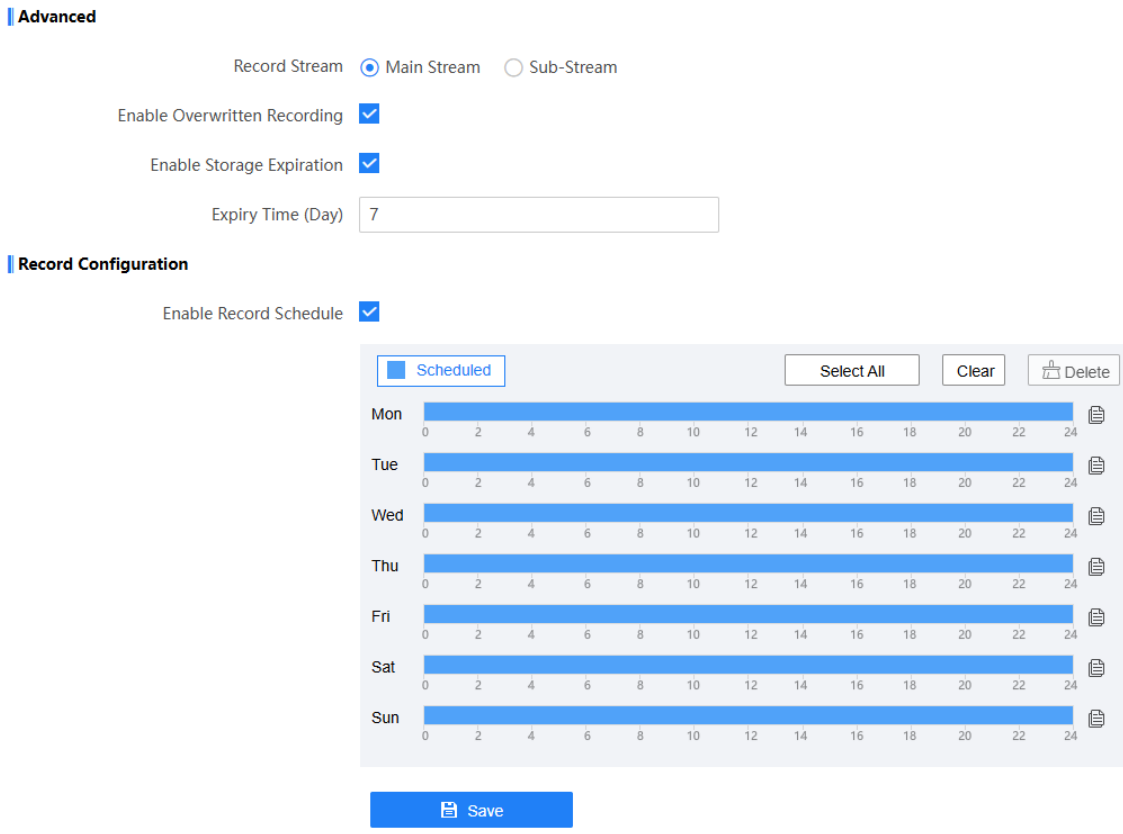

Figure 11-2 Set Record Schedule

5. Click **Select All** to enable the device to record the whole days. Or drag the cursor on the time bar to set a recording time.

Note

Up to 8 time periods can be set on a time bar.

6. Adjust the recording time.
   - Click a set recording period and enter the start time and end time in the pop-up window.
   - Drag two ends of the set recording period bar to adjust the length.
   - Drag the whole set recording period bar and relocate it.
7. **Optional:** Delete recording periods.
   - Click a set recording period and click **Delete** in the pop-up window or click **Delete** above the schedule.
   - Click **Clear** to delete all the schedules.
8. **Optional:** Click to copy the settings to other days.
9. Click **Save**.

Result

The device will only record at the set periods.

11.3 Set Capture Schedule

You can enable storage expiration of the captured pictures saved in the storage card.

Before You Start
Install the storage card.

Steps
1. Go to **Configuration → Storage → Schedule Settings → Capture Schedule** .
2. Enable storage expiration.
3. Set **Expiry Time**.
4. Click **Save**.

Result

Beyond the set expired time, the captured pictures saved in the storage card will be overwritten.

11.4 Search Picture

You can search the captured pictures stored in the storage card and export the pictures you need.

Before You Start
Install the storage card, and ensure the storage status is normal.

Steps
1. Click **Picture**.
2. Set search conditions.

   Note

   Search conditions vary with different models. The actual device prevails.
3. Click **Search**.

   The searched pictures information will be displayed in the picture list.

   Note

   If you have set level 1 arming for the device, the captured pictures will not be saved in the storage card. Go to the saving path of scene pictures to view them. You can go to **Configuration → Local** to check the saving path.
4. **Optional:** You can do the following operations.

Download pictures	Check picture(s) and click **Download** to save them to local. The downloaded picture(s) will be marked as "Downloaded". You can go to **Configuration → Local** to check the saving path.
View picture details	Click **Live View** to view the picture details, such as the license plate number, vehicle type, etc.

11.5 Playback

You can search, play back, and download videos that stored on the storage card.

Steps

1. Click **Playback**.
2. Select a channel.
3. Select a date.
4. Click **Search**.
5. Click ▶ to start playback.
6. **Optional:** You can also do the following operations.

Set playback time	• Drag the time bar to the target time and click ▶ to play the video. • Click the current time point showed above the time bar and enter the target time point in the popup window. Click **OK** and click ▶ to play the video.
Capture image	Click to capture an image.
Clip record	Click / to start/stop clipping the record.
Play back in single frame	Click once to play back the video in one frame.
Download record	a. Click . b. Select the start time and end time. c. Click **Search**. d. Check record files that need to be downloaded. e. Click **Download**.
Stop playback	Click ■ to stop playback.
Slow forward	Click to slow down the playback.
Fast forward	Click to speed up the playback.
Digital zoom	Click to enable digital zoom. Click to disable digital zoom.

Chapter 12 Encoding and Display

12.1 Set Camera Parameters

You can adjust the image parameters to get clear image.

Steps

Note

The supported parameters may vary with different models. The actual device prevails.

1. Go to **Configuration → Video → Camera Parameters → Camera Parameters** .
2. Set the camera parameters.

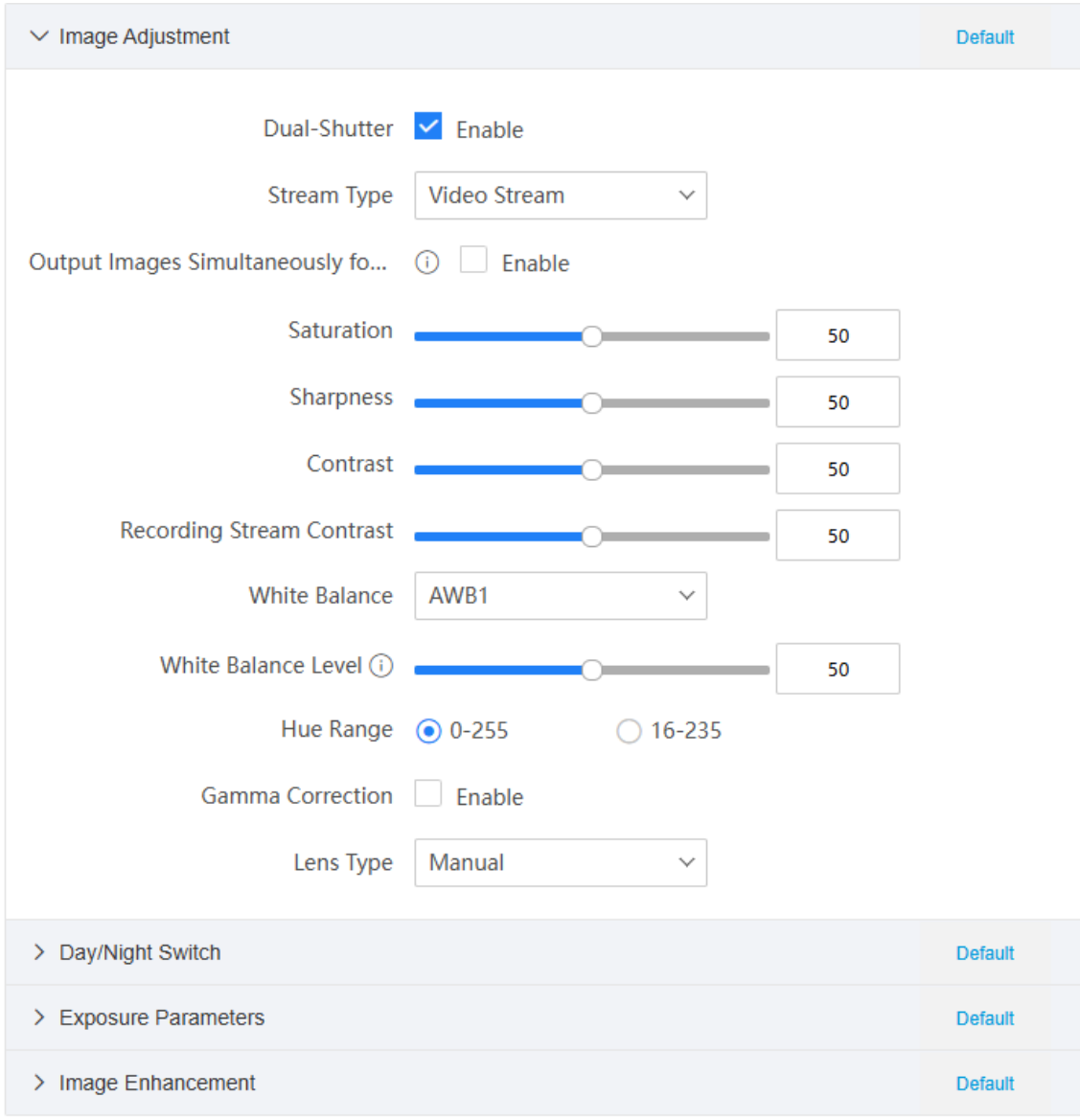

Figure 12-1 Set Camera Parameters

Note

- The supported parameters vary with different models. The actual device prevails.
- You can click **Default** to restore the parameters to default settings.

Image Adjustment

Dual-Shutter

Select **Stream Type** and enable **Output Images Simultaneously for Video and Recording Streams** (Recording stream does not produce images in flash light mode.) if needed after enabling it. Reboot the device to take the settings into effect.

Saturation

It refers to the colorfulness of the image color.

Sharpness

It refers to the edge contrast of the image.

Contrast

It refers to the contrast of the image. Set it to adjust the levels and permeability of the image.

Recording Stream Contrast

Adjust the contrast of the recording stream.

White Balance

It is the white rendition function of the device used to adjust the color temperature according to the environment. Set **White Balance Level**.

Hue Range

Select the range to adapt to the display.

Gamma Correction

The higher the gamma correction value is, the stronger the correction strength is.

Lens Type

Select the lens type according to the actual needs.

Day/Night Switch

Automatic Parameters

Day to Night Switching Threshold

In daytime mode, higher value means darker sky and later switch to night.

Night to Day Switching Threshold

In nighttime mode, higher value means darker sky and earlier switch to day.

Day Delay Time

When switching from daytime to nighttime, extend daytime duration.

Night Delay Time

When switching from nighttime to daytime, extend nighttime duration.

Day-night Mode

Day-night Mode

- **Manual Switch**: Select **Current Mode** as **Day** or **Night** manually.

Enable **ICR Follow-up** as needed. If you enable the function, in day-night mode, the ICR will automatically move into or out of the optical path according to the lighting conditions to ensure that the image sensor can achieve the best image quality under different lighting conditions. For day mode, the ICR filter is moved into the optical path to filter out IR light and prevent color distortion while maintaining realistic colors. In night mode, the ICR filter is moved out of the optical path to allow IR light to enter the sensor and improve the brightness and detail of black-and-white images at night. If you enable the function, you do not need to set ICR mode.

- **Scheduled Switch**: Select **Time Schedule**. If you select **By Day**, set **Start Time** and **End Time** of the night to switch to the night mode only during the set time period in one day. If you select **By Month**, you can set 2 plans to enable the night mode in one year. Set **Month** of Plan 1, and then the other months will be enabled for Plan 2 automatically. In each plan, set the night time period to switch to the night mode only during the set time period in corresponding months.
  Enable **ICR Follow-up** as needed. If you enable the function, in day-night mode, the ICR will automatically move into or out of the optical path according to the lighting conditions to ensure that the image sensor can achieve the best image quality under different lighting conditions. For day mode, the ICR filter is moved into the optical path to filter out IR light and prevent color distortion while maintaining realistic colors. In night mode, the ICR filter is moved out of the optical path to allow IR light to enter the sensor and improve the brightness and detail of black-and-white images at night. If you enable the function, you do not need to set ICR mode.
- **Auto Switch**: The device will switch to day or night mode automatically according to the surrounding light conditions.
  Enable **ICR Follow-up** as needed. If you enable the function, in day-night mode, the ICR will automatically move into or out of the optical path according to the lighting conditions to ensure that the image sensor can achieve the best image quality under different lighting conditions. For day mode, the ICR filter is moved into the optical path to filter out IR light and prevent color distortion while maintaining realistic colors. In night mode, the ICR filter is moved out of the optical path to allow IR light to enter the sensor and improve the brightness and detail of black-and-white images at night. If you enable the function, you do not need to set ICR mode.

ICR

If you disable **ICR Follow-up**, select **ICR Mode**. ICR adopts mechanical IR filter to filter IR in the day to guarantee the image effect, and to remove the IR filter at night to guarantee full-spectrum rays can get through the device.

- **Manual Switch**: Select **Current Mode** as **Day** or **Night** manually.
- **Scheduled Switch**: Set **Day-night Mode**, **Start Time** and **End Time** to switch to the day or night mode only during the set time period.
- **Auto Switch**: The ICR mode will switch to day or night mode automatically according to the surrounding light conditions.

HLC

Wide Dynamic Range (WDR) can be used when there is a high contrast of the bright area and the dark area of the scene.

Select **WDR Mode** and set corresponding parameters according to your needs.

WDR

WDR is designed for scenes with high contrast between light and dark areas, such as back light scenes, where it retains details in both bright and dark areas, thereby enhancing the overall image quality. Set **WDR Level** and select **WDR Switch** mode.

- **ON**: WDR is enabled all the time.
- **Time**: WDR is only enabled during the set time period.
- **Brightness**: WDR is enabled according to the brightness of the scene. When the brightness level of an area in the image exceeds a specific threshold, WDR is automatically enabled to enhance the overall image quality.

HLC

High Light Compensation (HLC) is specifically designed to suppress overexposed bright areas in the image (such as vehicle lights and strong light reflections), thereby preventing the loss of detail. Set **WDR Level** and select **WDR Switch** mode.

- **ON**: HLC is enabled all the time.
- **Time**: HLC is only enabled during the set time period.
- **Brightness**: HLC is enabled according to the brightness of the scene. When the brightness level of an area in the image exceeds a specific threshold, HLC is automatically enabled to locally suppress this area.

Close

Disable the function all the time.

Exposure Parameters

Brightness

It refers to the brightness the image.

Shutter

If the shutter speed is quick, the details of the moving objects can be displayed better. If the shutter speed is slow, the outline of the moving objects will be fuzzy and trailing will appear.

Gain

It refers to the upper limit value of limiting image signal amplification. It is recommended to set a high gain if the illumination is not enough, and set a low gain if the illumination is enough.

Slow Shutter

If dual-shutter is disabled, you can enable slow shutter in underexposure condition. It lengthens the shutter time to ensure full exposure. The higher **Slow Shutter Level** is, the slower the shutter speed is.

Video Standard

Select the video standard according to the actual power supply frequency.

Image Enhancement

Brightness Enhancement at Night

The scene brightness will be enhanced at night automatically.

Plate Brightness Compensation

Check it. The plate brightness compensation can be realized, and various light supplement conditions can be adapted via setting license plate expectant brightness and supplement light correction coefficient. The higher the sensitivity is, the easier this function can be enabled. Enable **Compensation Threshold** and set the max. and min. thresholds.

3D DNR

Digital Noise Reduction (DNR) reduces the noise in the video stream.

In **Normal Mode**, the higher the **3D DNR Level** is, the stronger the noise will be reduced. But if it is too high, the image may become fuzzy.

In **Expert Mode**, set **Spatial Intensity** and **Time Intensity**. If the space domain intensity is too high, the outline of the image may become fuzzy and the details may lose. If the time domain intensity is too high, trailing may appear.

2D DNR

The higher the **2D DNR Level** is, the stronger the noise will be reduced. But if it is too high, the image may become fuzzy.

Defog

Enable defog to get a clear image in foggy days.

Black and White Mode at Night

For the device supporting black and white mode at night, when the day-night mode is night, and **Black and White Mode at Night** has been enabled, the image displays as black and white. When **Black and White Mode at Night** is disabled, the image displays as color.

3. **Optional:** Click **Capture Test** to check the image effect.

12.2 Set OSD

You can customize OSD information on the live view.

Steps

1. Go to **Configuration → Video → Text Overlay on Video** .

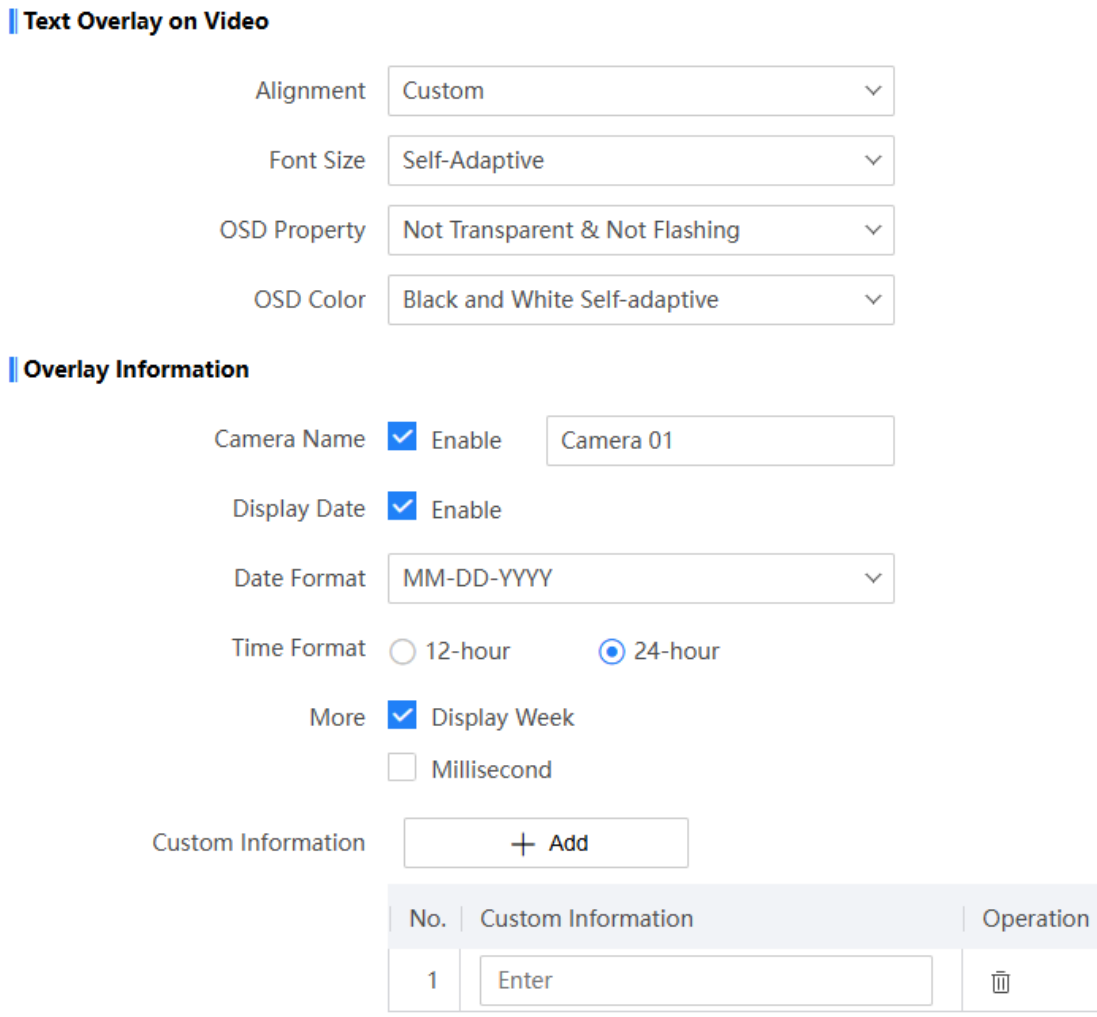

Figure 12-2 Set OSD

2. Set display properties (font, color, etc.).

   Alignment

   If you select **Align Left** or **Align Right**, set **Min. Horizontal Margin** and **Min. Vertical Margin**.

3. Set display contents.
   1) Enable **Camera Name**, and enter the camera name.
   2) Enable **Display Date**, and set the time and date format.
   3) Enable **Display Week** or **Millisecond** according to your needs.
4. **Optional:** Click **Add** and enter information if you want to add custom information.

   Note

   Up to 6 items of custom information can be added.

5. Drag the red frames on the live view image to adjust the OSD positions.
6. Click **Save**.

Result

The set OSD will be displayed in live view image and recorded videos.

12.3 Set Video Encoding Parameters

Set video encoding parameters to adjust the live view and recording effect.

- When the network signal is good and the speed is fast, you can set high resolution and bitrate to raise the image quality.
- When the network signal is bad and the speed is slow, you can set low resolution, bitrate, and frame rate to guarantee the image fluency.
- When the network signal is bad, but the resolution should be guaranteed, you can set low bitrate and frame rate to guarantee the image fluency.
- Main stream stands for the best stream performance the device supports. It usually offers the best resolution and frame rate the device can do. But high resolution and frame rate usually means larger storage space and higher bandwidth requirements in transmission. Sub-stream usually offers comparatively low resolution options, which consumes less bandwidth and storage space. Third stream is offered for customized usage.

Steps

Note

The supported parameters vary with different models. The actual device prevails.

1. Go to **Configuration → Video → Video Encoding → Video Encoding** .
2. Set the parameters for different streams.

   Stream Type

   Select the stream type according to your needs.

   Note

   The supported stream types vary with different models. The actual device prevails.

   Bitrate

   Select relatively large bitrate if you need good image quality and effect, but more storage spaces will be consumed. Select relatively small bitrate if storage requirement is in priority.

   Frame Rate

   It 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

   The higher the resolution is, the clearer the image will be. Meanwhile, the network bandwidth requirement is higher.

SVC

Scalable Video Coding (SVC) is an extension of the H.264/AVC and H.265 standard. Enable the function 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 variable, 6 levels of video quality are selectable. The higher the video quality is, the higher requirements of the network bandwidth.

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

It refers to the number of frames between two key frames. The larger the I frame interval is, the smaller the stream fluctuation is, but the image quality is not that good.

Video Encoding

The device supports multiple video encoding types, such as H.264, H.265, and MJPEG. Supported encoding types 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.

3. Click **Save**.

12.4 Set ROI

ROI (Region of Interest) encoding helps to assign more encoding resources to the region of interest, thus to increase the quality of the ROI whereas the background information is less focused.

Before You Start

Please check the video encoding type. ROI is supported when the video encoding type is H.264 or H.265.

Steps

1. Go to **Configuration → Video → Video Encoding → ROI** .

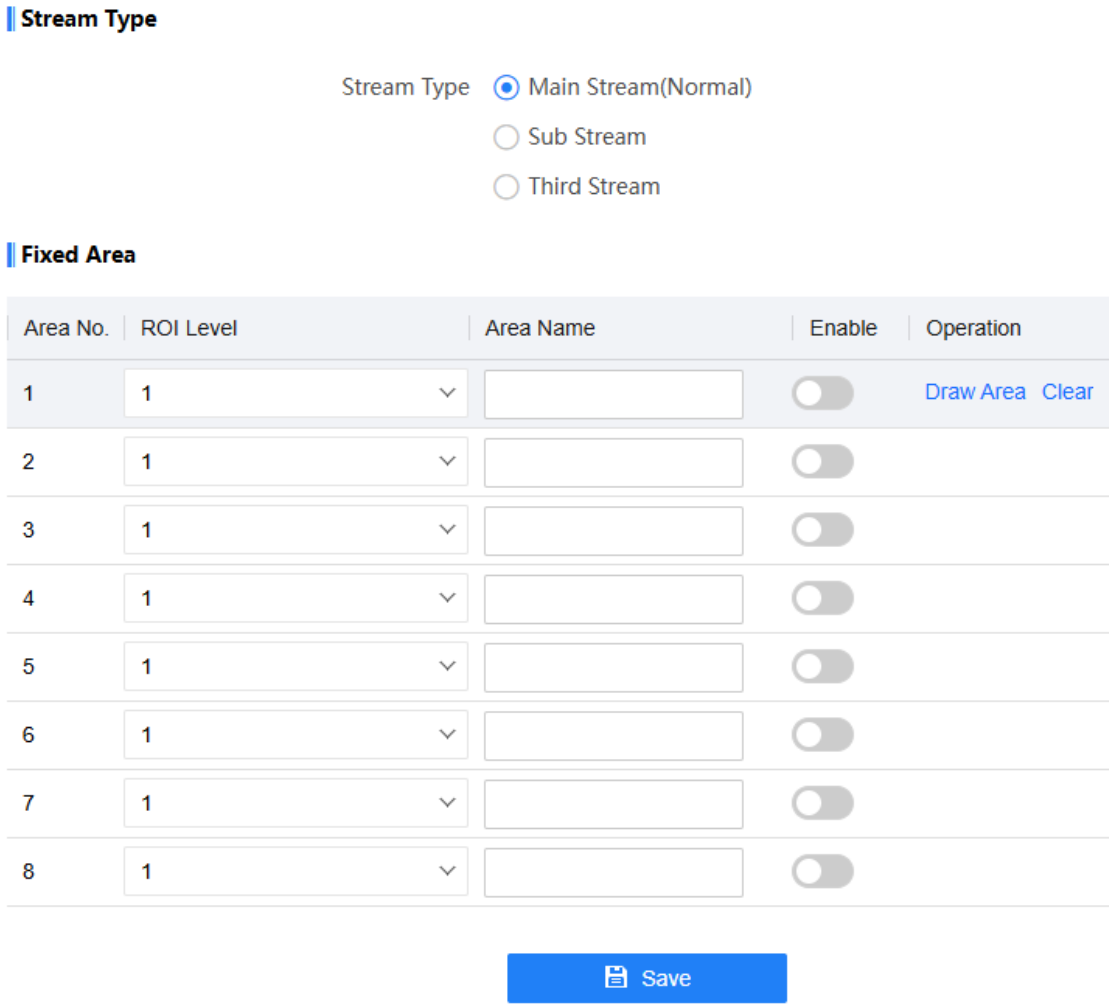

Figure 12-3 Set ROI

2. Select **Stream Type**.

3. Set ROI area.

1) Enable the corresponding area.

2) Select **ROI Level**.

Note

The higher the ROI level is, the clearer the image of the detected area is.

3) Enter **Area Name**.

4) Click **Draw Area**.

5) Drag the mouse on the live view image to draw the fixed area.

6) Select the fixed area that needs to be adjusted and drag the mouse to adjust its position.

7) Click **Stop Drawing**.

8) Repeat the steps above to set more areas. Up to 8 areas are supported.

9) **Optional:** If you want to delete the area, click **Clear** to delete.

4. Click **Save**.

12.5 Set Privacy Mask

The privacy mask can be used to protect personal privacy by concealing parts of the image from view or recording with a masked area.

Steps

1. Go to **Configuration → Video → Video Encoding → Privacy Mask** .

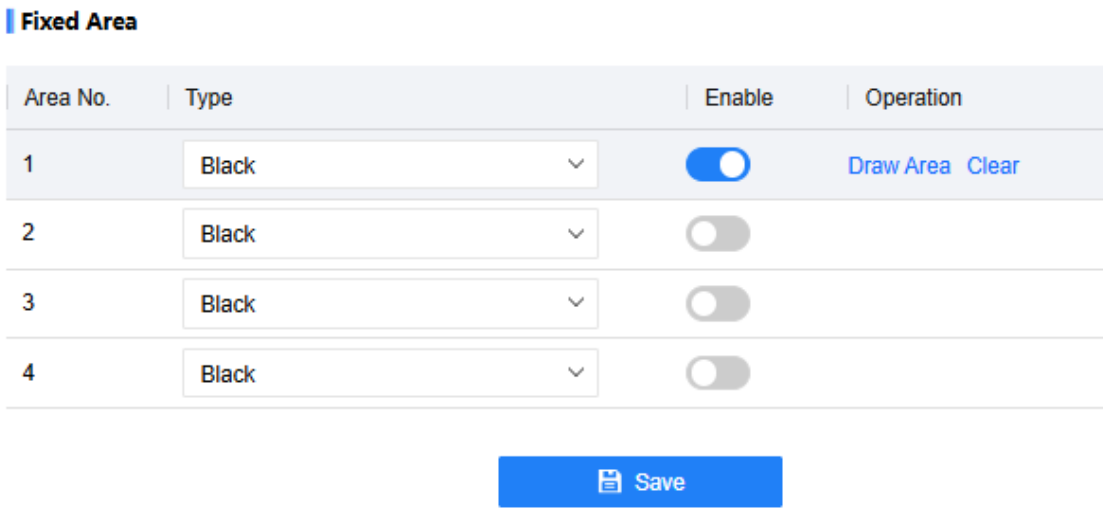

Figure 12-4 Set Privacy Mask

2. Set the privacy mask area.
   1) Enable the corresponding privacy mask area.
   2) Select **Type**.
   3) Click **Draw Area**.
   4) In the live view image, drag the mouse to draw the privacy mask area of the selected area No.
   5) Click **Stop Drawing**.
   6) Repeat the steps above to set more areas. Up to 4 areas are supported.
   7) **Optional:** If you want to delete the area, click **Clear** to delete.
3. Click **Save**.

12.6 Enable Regional Exposure

Enable regional exposure to expose partial area of the live view image.

Steps

1. Go to **Configuration → Video → Video Encoding → BLC** .
2. Enable **Regional Exposure**.
3. Drag the mouse to draw an area in the live view image.

The drawn area will be exposed.

4. Click **Save**.

Chapter 13 Event and Alarm

13.1 Exception Alarm

Set exception alarm when the network is disconnected, the IP address is conflicted, etc.

Steps

Note

The supported exception types vary with different models. The actual device prevails.

1. Go to **Configuration → Event → Alarm Linkage → Exception** .
2. Select the exception type(s) and the linkage method.
3. Click **Save**.

13.2 Set Email

When the email is enabled and set, the device will send an email notification to all designated receivers if an alarm event is detected.

Before You Start

Set the DNS server before using the email function. Go to **Configuration → Network → Network Parameters → Network Interface** for DNS settings.

Steps

1. Go to **Configuration → Network → Data Connection → Email** .
2. Enable Email.

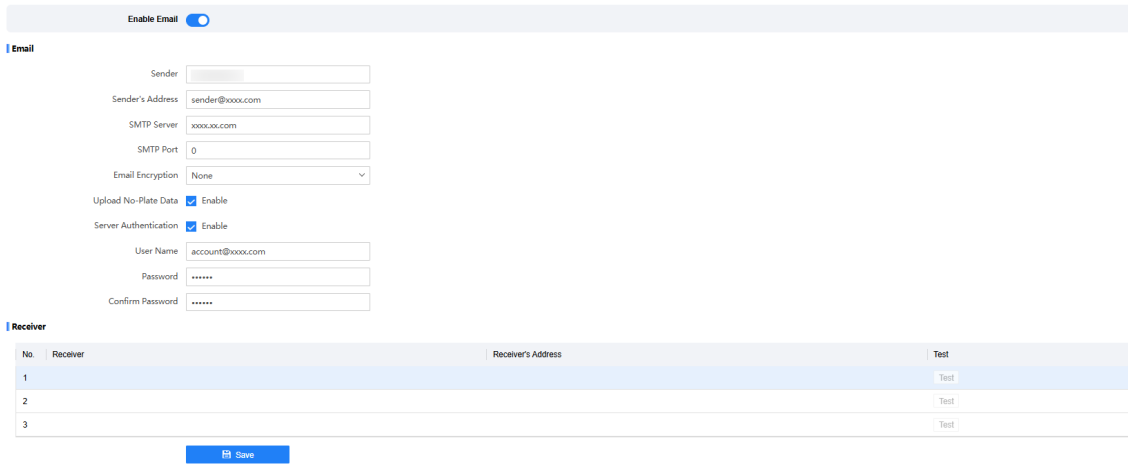

Figure 13-1 Set Email

3. Set email parameters.

1) Enter the sender's email information, including **Sender**, **Sender's Address**, **SMTP Server**, and **SMTP Port**.
2) Select **Email Encryption**.

   None

   Emails are sent without encryption.

   TLS

   Emails are sent after being encrypted by TLS.
3) **Optional:** If you want to upload no-plate data, enable **Upload No-Plate Data**.
4) **Optional:** If your email server requires authentication, enable **Server Authentication** and enter your user name and password to log in to the server.
5) Enter the receiver's information, including the receiver's name and address.
6) **Optional:** Click **Test** to test if the function is well configured.

4. Click **Save**.

13.3 Set Email Event

When the set event occurs, the device can be set to send an email with alarm information to the user.

Before You Start

The email has been enabled and related email parameters have been configured.

Steps

1. Go to **Configuration → Event → Alarm Linkage → Email Event** .
2. Enable linkage to trigger an email for login alarm.
3. Click **Save**.

Chapter 14 Safety Management

14.1 Manage User

The administrator can add, modify, or delete other accounts, and grant different permissions to different user levels.

Steps

1. Go to **Configuration → System → User Management → User List** .
2. Add a user.

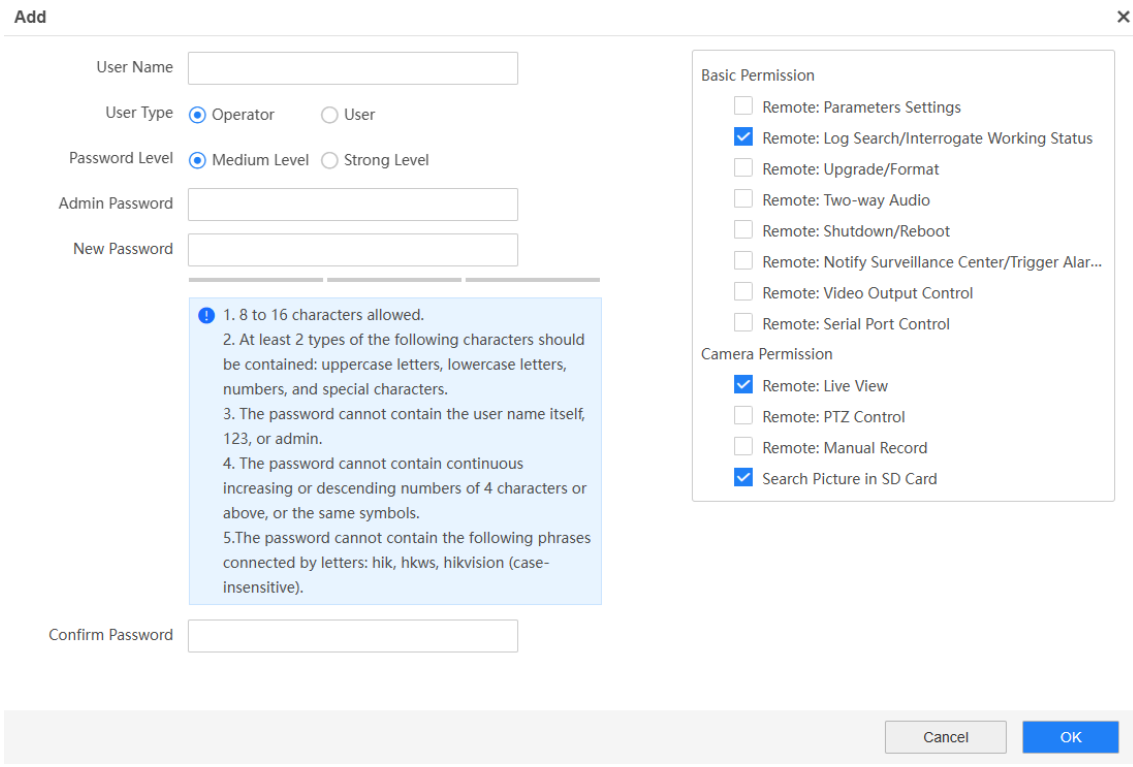

Figure 14-1 Add User

1) Click **Add**.
2) Enter **User Name** and select **User Type**.
3) Select **Password Level**. The password level of the added user should conform to the selected level.
4) Enter **Admin Password**, **New Password**, and confirm the password.

Caution

To increase security of using the device on the network, please change the password of your account regularly. Changing the password every 3 months is recommended. If the device is

used in high-risk environment, it is recommended that the password should be changed every month or week.

5) Assign remote permissions to users based on needs.

User

Users can be assigned permissions of viewing live video and changing their own passwords, but no permissions for other operations.

Operator

Operators can be assigned all permissions except for operations on the administrator and creating accounts.

6) Click **OK**.

3. **Optional:** You can do the following operations.

Edit the user information	Click to edit the user information.
Delete the user	Click to delete the user.

14.2 Enable User Lock

To raise the data security, you are recommended to lock the current IP address.

Steps

1. Go to **Configuration → System → Security → Security Service → Software** .
2. Enable user lock.
3. Click **Save**.

Result

When the times you entered incorrect passwords have reached the limit, the current IP address will be locked automatically.

14.3 Set SSH

To raise network security, you are recommended to disable SSH service. The configuration is only used to debug the device for the professionals.

Steps

1. Go to **Configuration → System → Security → Security Service → Software** .
2. Enable or disable **SSH Service**, and set **SSH Port** if you enable the function.
3. Click **Save**.

14.4 Prohibit PING

You can prohibit the external devices to operate network connection volume test to the current device.

Steps

1. Go to **Configuration → System → Security → Security Service → Software** .
2. Enable **Prohibit PING**.
3. Click **Save**.

14.5 Set HTTP Referrer Strategy

HTTP Referrer Strategy is a security mechanism, which controls how browsers handle the Referrer request header when sending HTTP requests. It allows website developers to decide whether and how to include the URL information of the source page, balancing functionality with user privacy protection.

Steps

1. Go to **Configuration → System → Security → Security Service → Software** .
2. Select **HTTP Referrer Strategy**.

   None

   The Referer header is not sent. For example, when navigating from page A to page B, the request to page B does not include any source information.

   origin

   Only the protocol, domain, and port of the source page are sent, not the specific path. For example, when navigating from ***https://example.com/path1***, only ***https://example.com*** is sent.
3. Click **Save**.

14.6 Set SDK Protocol Authentication Mode

When you need to operate development integration or data collection via SDK protocol, you are recommended to enable SDK protocol authentication to enhance the information security.

Steps

1. Go to **Configuration → System → Security → Security Service → Authentication Settings** .
2. Select **SDK Protocol Authentication Mode**.

Note

You are recommended to select **Safety Mode**. In this mode, the device cannot be logged in via an invertible password of SDK protocol, which can enhance the information security.

3. Click **Save**.

14.7 Set RTSP Authentication

You can improve network access security by setting RTSP authentication.

Steps

1. Go to **Configuration → System → Security → Security Settings → Authentication Settings** .
2. Select **RTSP Authentication**.

   digest

   The device only supports digest authentication.
3. Click **Save**.

14.8 Set Serial Port Authentication

Serial Port Authentication refers to the method of authenticating an identity or authorizing a device via a serial port. It is a lightweight security mechanism based on a serial interface, suitable for resource-constrained or closed systems.

Steps

1. Go to **Configuration → System → Security → Security Service → Authentication Settings** .
2. Enable or disable **Serial Port Authentication**.
3. Click **Save**.

14.9 Set Timeout Logout

You can improve network access security by setting timeout logout.

Steps

1. Go to **Configuration → System → Security → Security Service → Login Management** .
2. Enable timeout logout for static page.
3. Set **Max. Timeout**.
4. Click **Save**.

Result

When the page static time exceeds the set time, the device will automatically log out.

14.10 Set Password Validity Period

You can improve network access security by setting password validity period.

Steps

1. Go to **Configuration → System → Security → Security Service → Login Management** .
2. Select **Password Validity Period**.
   - Select **Permanent**. The password will be permanently valid.
   - Select **Daily** and set **Password Expiry Time**. It will prompt you that the password is expired according to the set password expiry time, and you need to set the new password.
3. Click **Save**.

14.11 Set IP Address Filtering

You can set the IP addresses allowable and not allowable to access the device.

Steps

1. Go to **Configuration → System → Security → Security Settings** .
2. Enable IP address filtering.
3. Set **Filtering Mode**.

   Blocklist Mode

   The added IP addresses are not allowed to access the device.

   Allowlist Mode

   The added IP addresses are allowed to access the device.
4. Click **Add**, enter the IP address, and click **OK**.

   Note

   The IP address only refers to the IPv4 address.
5. **Optional:** Edit, delete, or clear the added IP addresses.
6. Click **Save**.

14.12 Set HTTPS

14.12.1 Create and Install Self-signed Certificate

HTTPS is a network protocol that enables encrypted transmission and identity authentication, which improves the security of remote access.

Steps

1. Go to **Configuration → Network → Network Parameters → HTTPS** .
2. Select **Create Self-signed Certificate**.
3. Click **Create**.
4. Follow the prompt to enter **Country/Region**, **Domain/IP**, **Validity**, and other parameters.
5. Click **OK**.

Result

The device will install the self-signed certificate by default.

14.12.2 Install Authorized Certificate

If the demand for external access security is high, you can create and install authorized certificate via HTTPS protocol to ensure the data transmission security.

Steps

1. Go to **Configuration → Network → Network Parameters → HTTPS** .
2. Select **Create certificate request first and continue the installation**.
3. Click **Create**.
4. Follow the prompt to enter **Country/Region**, **Domain/IP**, **Validity**, and other parameters.
5. Click **Download** to download the certificate request and submit it to the trusted authority for signature.
6. Import certificate to the device.
   - Select **Signed certificate is available, start the installation directly**. Click **Browse** and **Install** to import the certificate to the device.
   - Select **Create the certificate request first and continue the installation**. Click **Browse** and **Install** to import the certificate to the device.
7. Click **Save**.

Chapter 15 Maintenance

15.1 View Device Information

Basic Information and Algorithms Library Version

Go to **Configuration → System → System Settings → Basic Information** to view the basic information and algorithms version of the device.
You can edit **Device Name** and **Device No.** The device No. is used to control the device. It is recommended to reserve the default value.

Device Status

Go to **Configuration → System → System Settings → Device Status** to view the device status, live view and arming status, and data upload monitoring.

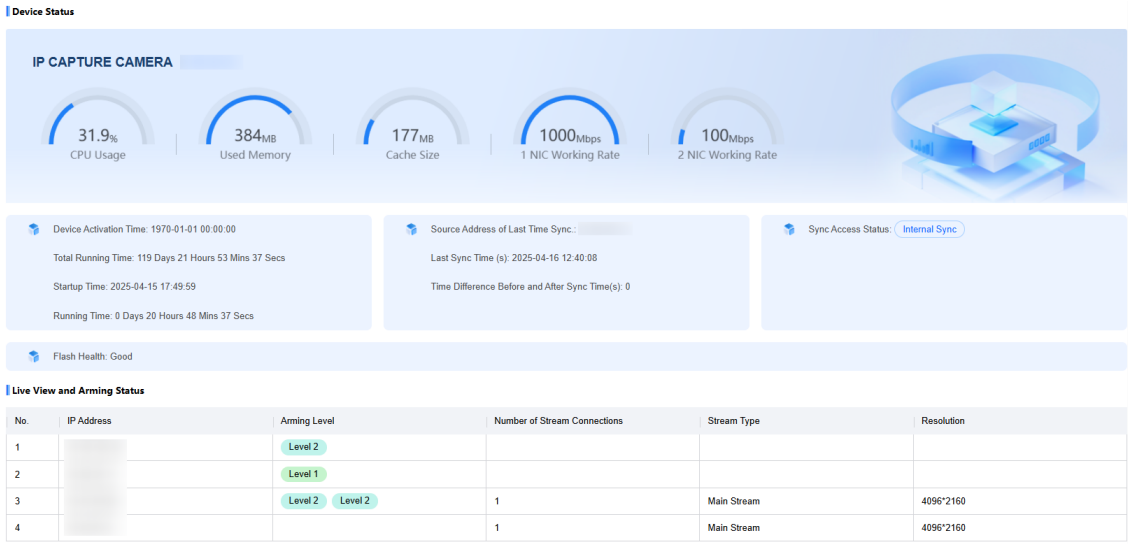

Figure 15-1 Device Status

You can click **24h Data Monitoring**, and select the IP address of the picture upload server to view the data upload statistics in 24 hours. The statistics data will be cleared if the device is rebooted by default. You can enable **Flash Storage** and set **Flash Storage Days** to keep the statistics data not to be cleared when the device is rebooted within the set time.

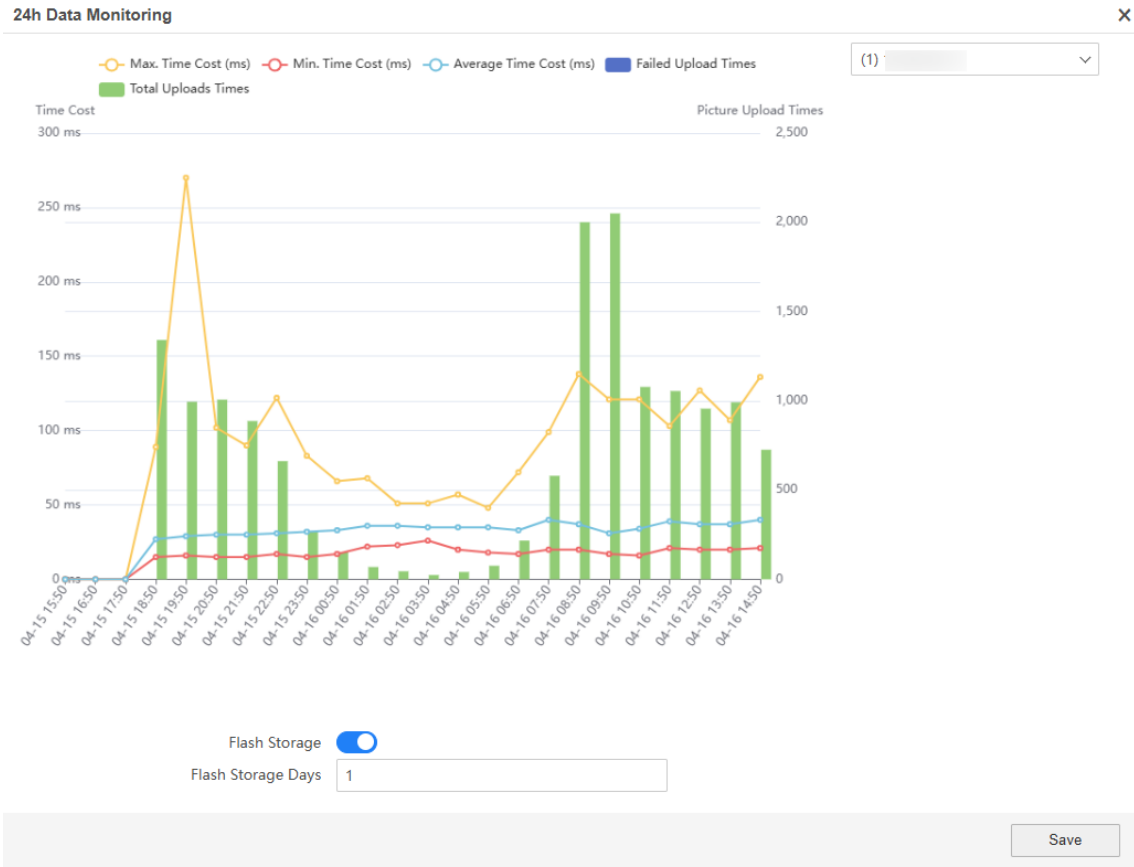

Figure 15-2 24h Data Monitoring

15.2 Synchronize Time

Synchronize the device time when it is inconsistent with the actual time.

Steps

1. Go to **Configuration → System → System Settings → Time Settings** .
2. Select **Time Zone**.
3. Select **Sync Mode**.

NTP Time Sync.

Select it to synchronize the device time with that of the NTP server. Set **Server IP**, **NTP Port**, and **Interval**. Click **NTP Test** to test if the connection between the device and the server is normal.

Manual Time Sync.

Select it to synchronize the device time with that of the computer. Set time manually, or check **Sync. with computer time**.

SDK

If the remote host has been set for the device, select it to synchronize time via the remote host.

ONVIF

Select it to synchronize time via the third-party device.

No

Select it to disable time synchronization.

All

Select it, and you can select any mode above.

PTP Time Sync.

Select it to synchronize time more accurately. Precision Time Protocol (PTP) is a protocol to synchronize clocks in a computer network, similar to NTP. NTP is accurate, under ten milliseconds. PTP, however, is accurate up to less than a microsecond and is measured in nanoseconds.

Note

The time synchronization modes vary with different models. The actual device prevails.

4. Click **Save**.

15.3 Set DST

If the region where the device is located adopts Daylight Saving Time (DST), you can set this function.

Steps

1. Go to **Configuration → System → System Settings → DST** .
2. Enable **DST**.
3. Set **Start Time**, **End Time**, and **DST Bias**.
4. Click **Save**.

15.4 Set RS-485

Set RS-485 parameters if the device needs to be connected to other peripheral devices controlled by RS-485 serial port.

Before You Start

The corresponding device has been connected via the RS-485 serial port.

Steps

Note

The number of available RS-485 serial port varies with different models.

1. Go to **Configuration → System → System Settings → Serial Port → RS-485** .
2. Set **Baud Rate**, **Data Bit**, **Stop Bit**, etc.

   Note

   The parameters should be same with those of the connected device.
3. Set **Work Mode**.

   Note

   - The supported work modes vary with different models. The actual device prevails.
   - You need to reboot the device after editing the work mode to take effect.

   Application Trigger

   Select it when a signal trigger device (such as a radar) is connected to the RS-485 serial port of the device.

   Transparent Channel

   Select it when the other peripheral device is connected to the RS-485 serial port of the device for communication transmission.

   Traffic Signal Controller Mode

   Select it when a traffic signal controller is connected to the RS-485 serial port of the device for communication transmission.
4. Click **Save**.

15.5 Set RS-232

Set RS-232 parameters if you need to debug the device via RS-232 serial port.

Before You Start

The debugging device has been connected via the RS-232 serial port.

Steps

1. Go to **Configuration → System → System Settings → Serial Port → RS-232** .
2. Set **Baud Rate**, **Data Bit**, **Stop Bit**, etc.

   Note

   The parameters should be same with those of the connected device.
3. Select **Work Mode**.

Note

- The supported work modes vary with different models. The actual device prevails.
- You need to reboot the device after editing the work mode to take effect.

Console

Select it when you need to debug the device via RS-232 serial port.

Transparent Channel

Select it, and the network command can be transmitted to RS-232 control command via the RS-232 serial port.

Narrow Bandwidth Transmission

Reserved.

4. Click **Save**.

15.6 Download Debug Data

You can search and download the diagnostics information, video BAYER, capture picture BAYER, and capture picture YUV of the device to debug the device.

Steps

1. Go to **Configuration → System → Maintenance → Debug Data Download** .

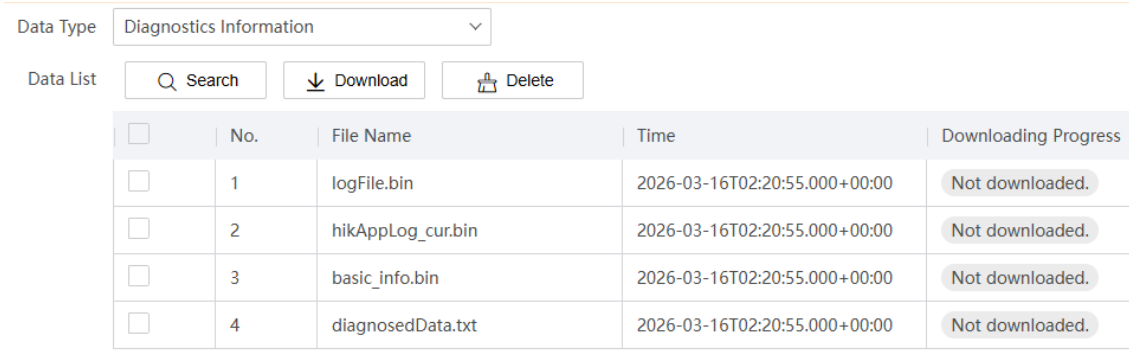

Figure 15-3 Download Debug Data

2. Select **Data Type**.

Diagnostics Information

The diagnostics information includes kernel, status, version information, etc.

Calibration Data

To collect the calibration data.

Log File

You can search and download the APP or DSP log files. Select **Data Type**. Set **Start Time** and **End Time** of the log files.

Network Packet Capture Data

The device is installed with tcpdump tool for network packet capture by default. All the network packet data of NIC 1 will be captured by default. If you want to capture the network packet data of specified host IP address, port, or protocol, select **Filtering Rule** and set corresponding parameters. Click **Start** to start collection, and click **Finish** to finish collection.

Note

Up to 30 records of data can be collected once. The collection will stop automatically for the data exceeding the limit.

3. Click **Search** to search the data list.
4. Select the file(s) to be downloaded, and click **Download** to download the file(s). You can view the downloading progress.
5. **Optional:** Select the file(s) to be deleted, and click **Delete** to delete the file(s).

15.7 Search Log

Log helps to locate and troubleshoot problems.

Before You Start
Install the TF card.

Steps
1. Go to **Configuration → System → Maintenance → Log Search** .
2. Set search conditions.
3. Click **Configuration** to select the logs to be searched according to modules or enable system log service.
   1) Select the module(s) from the dropdown list of **Enable According to Module**.
   2) Enable the functions below.

      Disable Debuglog Automatically

      Enable the function to disable the log automatically, and set **Auto Disabling Time**.

      Enable System Log Service

      The security audit logs refer to the security operation logs. You can search and analyze the security log files of the device so as to find out the illegal intrusion and troubleshoot the security events. Security audit logs can be saved on device internal storage. The log will be saved every half hour after device booting. Due to limited storage space, you are recommended to save the logs on a log server. Enter **IP Address** and **Port** of the log server.
   3) Click **OK**.
4. Click **Search**.

   The matched log files will be displayed on the log list.
5. **Optional:** Click **Export** to save the log files to your computer.

15.8 Enable Maintenance Service

If you want to realize remote camera maintenance and debug via the platform server, enable maintenance service and set the access mode.

Steps

1. Go to **Configuration → System → Maintenance → Maintenance Service** .
2. Enable maintenance service.

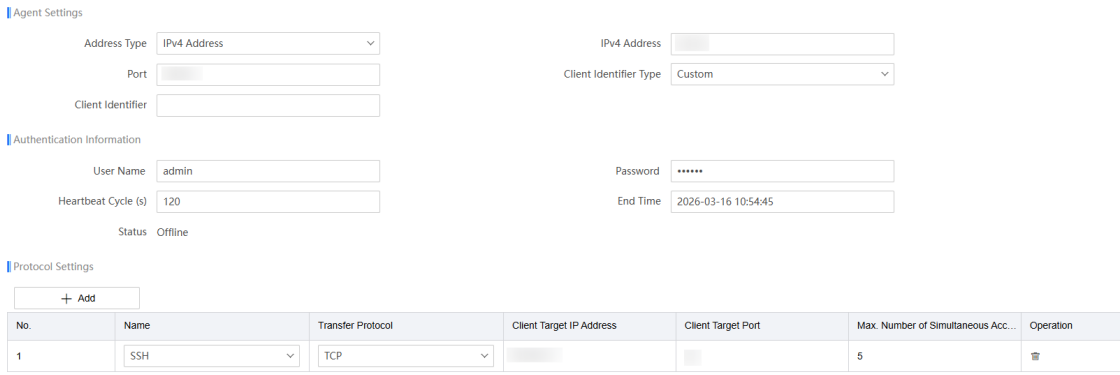

Figure 15-4 Maintenance Service

3. Set agent parameters.
   1) Select **Address Type**.
   2) Set the IP address/domain name and port of the agent.
   3) Select **Client Identifier Type** and set **Client Identifier** according to the actual supporting conditions of the camera. The identifier serves as a unique mark of the camera.
4. Set the authentication information.

   User Name/Password

   The user name and password of the camera for the authentication via the platform server access.

   Heartbeat Cycle

   You are recommended to keep the default value.

   End Time

   The camera will disconnect with the platform server when reaching the set end time.
5. Set protocol parameters.
   1) Click **Add** to add a protocol.
   2) Set the corresponding parameters of the protocol.

   Note

   You can login and access up to 5 cameras (clients) simultaneously via HTTP or SSH protocol.
6. Click **Save**.

What to do next
After settings, refresh the interface and check the authentication status of the camera. If the status is online, you can access and debug the camera via the platform server.

15.9 Reboot

When the device needs to be rebooted, reboot it via the software instead of cutting off the power directly.

Steps
1. Go to **Configuration → Upgrade → Device Maintenance** .
2. Click **Reboot**.
3. Click **OK** to reboot the device.

Note
You can also click on the upper right corner of the interface to reboot the device.

15.10 Restore Parameters

When the device is abnormal caused by the incorrect set parameters, you can restore the parameters.

Steps
1. Go to **Configuration → Upgrade → Device Maintenance** .
2. Select the restoration mode.
   - Click **Restore**, and select the parameters to be saved instead of being restored. Click **OK**. Then the parameters except the IP parameters, user parameters, and the saved parameters will be restored to the default settings.
   - Click **Restore Factory Settings** and click **OK** to restore all the parameters to the factory settings.
3. Click **OK**.

15.11 Export Parameters

You can export the parameters of one device, and import them to another device to set the two devices with the same parameters.

Steps
1. Go to **Configuration → Upgrade → Backup and Import Parameters** .
2. Click **Export** after **Configuration Parameters**.
3. Set an encryption password, confirm the password, and click **OK**.

Note

The password is used for importing the configuration file of the current device to other devices.

4. Select the saving path, and enter the file name.
5. Click **Save**.

15.12 Import Configuration File

Import the configuration file of another device to the current device to set the same parameters.

Before You Start

Save the configuration file to the computer.

Steps

Caution

Importing configuration file is only available to the devices of the same model and same version.

1. Go to **Configuration → Upgrade → Backup and Import Parameters** .
2. Select **Importing Method**.

Note

If you select **Import Part**, check the parameters to be imported.

3. Click **Browse** to select the configuration file.
4. Click **Import**.
5. Enter the password which is set when the configuration file is exported, and click **OK**.
6. Click **OK** on the popup window.

Result

The parameters will be imported, and the device will reboot.

15.13 Upgrade

Upgrade the system when you need to update the device version.

Before You Start

- Update the plugin before upgrade.
- Prepare the upgrade file in .dav format.

Steps

1. Go to **Configuration → Upgrade → Device Upgrade** .
2. Click **Browse** to select the upgrade file.
3. Click **Upgrade**.
4. Click **OK** in the popup window.

Note

The upgrading process will take minutes. Do not power off the device. The device will restart automatically after upgrading. If the network condition is poor, it may take more time.

Result

The device will reboot automatically after upgrade.


See Far, Go Further