



# **Roadside Parking ANPR Camera**

**User Manual**

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

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

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# Chapter 1 Introduction

## 1.1 Product Introduction

Roadside Parking ANPR Camera (hereinafter referred to as "device") supports capture and recognition of vehicle entering and exiting parking spaces, parking over spaces alarm, and parking over line alarm.

## 1.2 Key Feature

- HD camera.
- H.265/H.264 encoding with high compression ratio and flexibility. Captured pictures adopt JPEG encoding and Smart JPEG compression, and the quality of pictures can be set.
- Built-in TF card. Automatic network replenishment of captured pictures.
- Motor-driven vari-focal lens.
- Supports capture and recognition of vehicle entering and exiting parking spaces, and supports text overlay (capture time, license plate number, entry and exit status, parking space No., etc.).
- Supports parking over spaces alarm, and parking over line alarm.
- Dustproof, waterproof, anti-surge protection, and other functions.

## Chapter 2 Activation and Login

### 2.1 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 SADP software, web browser, and iVMS-4200 Client.



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

---

#### 2.1.1 Default Information

Device default information are as follows.

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

#### 2.1.2 Activate via SADP

SADP is a tool to detect, activate, and modify the IP address of the devices over the LAN.

##### Before You Start

- Get the SADP software from the supplied disk or the official website ( <https://www.hikvision.com/> ), and install it according to the prompts.
- The device and the computer that runs the SADP tool should belong to the same network segment.

The following steps show how to activate one device and modify its IP address. For batch activation and IP address modification, refer to *User Manual of SADP* for details.

##### Steps

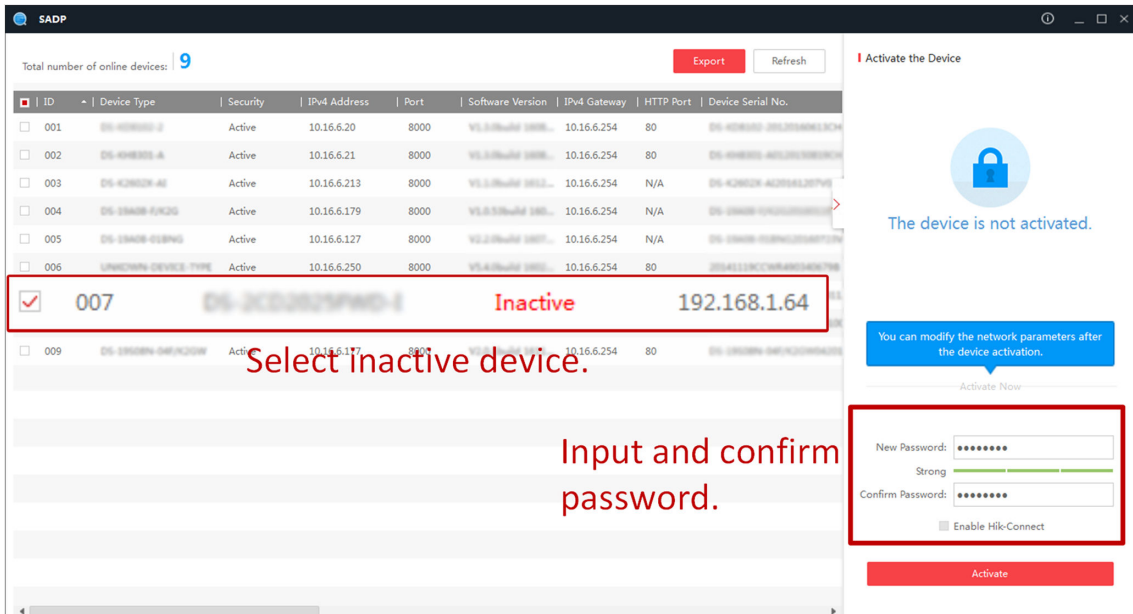
1. Run the SADP software and search the online devices.
2. Find and select your device in online device list.
3. Enter a new password (admin password) and confirm the password.



**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 **Activate** to start activation.



**Figure 2-1 Activate via SADP**

Status of the device becomes **Active** after successful activation.

5. Modify IP address of the device.
  - 1) Select the device.
  - 2) Change the device IP address to the same network segment as your computer by either modifying the IP address manually or checking **Enable DHCP**.
  - 3) Enter the admin password and click **Modify** to activate your IP address modification.

## 2.1.3 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 connect to the same LAN.

### 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.

## 2.2 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 other languages from the drop-down list on the upper right corner of the interface to switch the language.
3. Enter **User Name** and **Password**.
4. Click **Login**.
5. Click **Plugin Download** on the upper right corner of the interface to download and install the plugin for your web browser. Follow the installation prompts to install the plugin.
6. Reopen the web browser after the installation of the plugin and repeat steps 1 to 3 to log in.
7. **Optional:** Click **Logout** on the upper right corner of the interface to log out of the device.

## Chapter 3 Parking Space Detection

### 3.1 Set Parking Detection

Set parking detection to detect the parking status of the parking spaces, and capture license plates.

#### Steps

1. Go to **Configuration** → **Capture** → **Application Mode** .

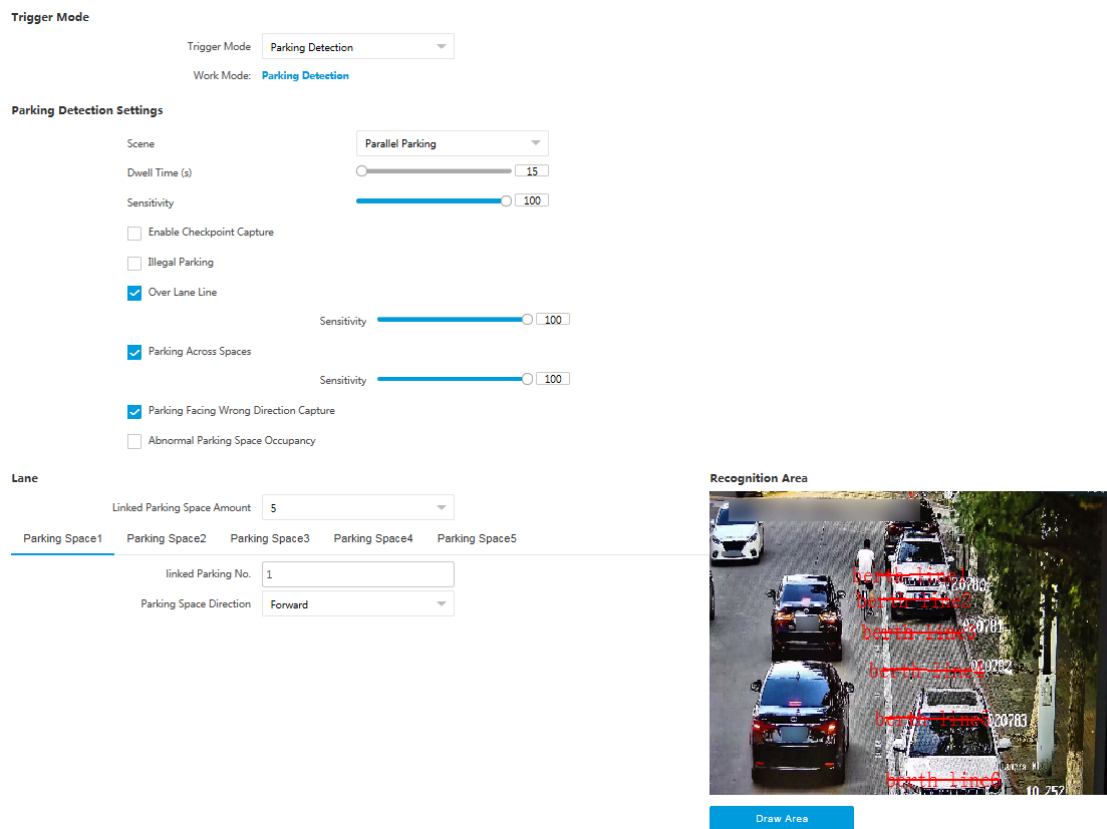


Figure 3-1 Set Parking Detection

2. Select scene according to the actual condition.

#### Parallel Parking

Select it for parallel parking. Vehicles from bidirections can be captured.

#### Perpendicular Parking

Select it for backing into a parking space or pulling in head. You need to set the direction for capture.

3. Set **Dwell Time** and **Sensitivity**.

#### Dwell Time

When the vehicle enters into the parking space and has been parked longer than the set time, capture will be triggered.

### **Sensitivity**

The higher the sensitivity is, the more easily the parking vehicles will be captured. Set an appropriate value according to the actual needs to avoid mistaken capture.

4. **Optional:** For parallel parking, check **Enable Checkpoint Capture** to capture the vehicles in the drawn lines range.
5. Check the supported parking violation behaviors to be detected and set the corresponding parameters.

### **Illegal Parking**

Check it to capture the illegal parking vehicles.

#### **Sensitivity**

The higher the sensitivity is, the more easily the illegal parking vehicles can be recognized. Set an appropriate value according to the actual needs to avoid mistaken capture.

#### **Duration**

If the parking duration exceeds the set value, it is considered as illegal parking, and the vehicle will be captured.

### **Over Lane Line**

Check it to capture the vehicle if it is parked over the lane line. Set the sensitivity.

### **Parking Across Spaces**

Check it to capture the vehicle if it is parked across two parking spaces. Set the sensitivity.

### **Parking Facing Wrong Direction Capture**

If the actual parking direction is opposite to the set **Parking Space Direction** for the parking space, the vehicle will be captured.

### **Abnormal Parking Space Occupancy**

If there are some other objects (such as trash cans, cartons, plastic bags, tricycles, two-wheelers, motorcycles, pedestrians, and tyres) occupying the parking spaces longer than the set **Duration**, it is considered as abnormal parking space occupancy, and pictures will be captured every set **Interval**.

6. Select **Linked Parking Space Amount** to link and enter the lined parking space No. for each parking space according to the actual needs.
7. Click **Draw Area** to adjust the lines on the live view image to make them overlap with the lines in the actual scene.
8. Click **Save**.

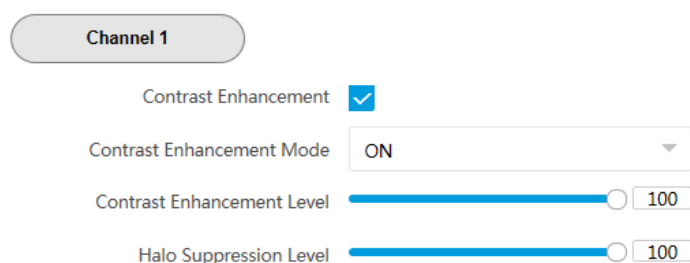
## 3.2 Set Capture Parameters

### 3.2.1 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 3-2 Set Captured Image Parameters**

2. Set the captured image parameters.

#### Contrast Enhancement

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

Contrast Enhancement Mode	Description
On	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 <b>Brightness Level</b> .

#### Contrast Enhancement Level

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

#### Halo Suppression Level

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

## 3.2.2 Set License Plate Recognition Parameters

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

### Steps

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

License Parameters

Country/Region: Europe

License Plate Recognition:  Forward  Backward

Save

**Figure 3-3 Set License Plate Recognition Parameters**

2. Select **Country/Region**.

3. Select **License Plate Recognition**.

- Select **Forward** when license plates of vehicles from the approaching direction need to be recognized.
- Select **Backward** when license plates of vehicles from the leaving direction need to be recognized.

4. Click **Save**.

## 3.2.3 Set Supplement Light Parameters

Supplement light can enhance the image stabilization and adjust the brightness and color temperature. You can use supplement light to supplement light at night or when the light is dim.

### Steps



#### Note

Only when the constant light is connected, can the set parameters take effect.

---

1. Go to **Configuration → Capture → Capture Parameters → Supplement Light Parameters** or **Live View → Supplement Light Parameters**

F1

I/O Output Mode: Constant Light Mode

Enable Mode:  Default  Time Schedule  Environment Bright...

Duty Ratio(0-40): 15

Save

**Figure 3-4 Set Supplement Light Parameters**

2. Set the supplement light parameters according to actual conditions.



## Enable Mode

### Default

The usage of the supplement light is determined based on the license plate brightness in the scene.

### Time Schedule

In this mode, **Start Time** and **End Time** need to be set. The device enables the supplement light only during the set time range.

### Environment Brightness

In this mode, **Threshold** needs to be set. When the brightness of the image reaches the set threshold, the supplement light is enabled automatically.

### Duty Ratio

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

3. Click **Save**.

## 3.2.4 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



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

---

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

**Image Composition**

Enable Composition

One Picture

Two Pictures

Three Pictures

Close-up Zooming Ratio

Close-up Picture No.

Close-up Offset(px)

Output Close-up Independently

Close-up Picture Upload Order

**Figure 3-5 Set Picture Composition**

2. Check **Enable Composition**.
3. Set composition types for different picture quantities.
4. Set other composition parameters.

#### **Close-up Zooming Ratio**

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

#### **Close-up Picture No.**

It is the picture where the close-up comes from.

#### **Close-up Offset**

The default value is 0, which is recommended to be adopted. The device can capture close-up pictures according to the set offset when no license plate is recognized.

5. **Optional:** Check **Output Close-up Independently** and set **Close-up Picture Upload Order** to output close-up pictures independently according to the order when the picture composition is not enabled.



#### **Note**

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

6. Click **Save**.

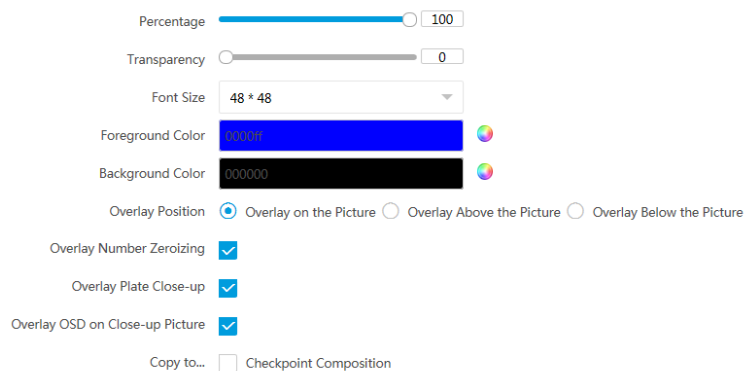
## 3.2.5 Set Information Overlay

### Set Single Picture Overlay

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

#### Steps

1. Go to **Configuration → Capture → Capture Parameters → Text Overlay**.
2. Click **Checkpoint Single**.
3. Check **Capture Picture Overlay**.



**Figure 3-6 Set Single Picture Overlay**

4. Set the percentage, front size, color, overlay position, etc.

#### Percentage

It 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.

#### Transparency

It is the condition of viewing the live view image through the overlaid information.

#### Overlay Number Zeroizing

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 Plate Close-up

Check it to overlay license plate close-up pictures on the captured pictures.

#### Overlay OSD on Close-up Picture

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

5. **Optional:** Check the other channel(s) to copy the same settings.

6. Select the overlay information from the list.





### Note

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

---

7. Set the overlay information.

<b>View Default Type</b>	You can view the default overlay information.
<b>Set Type</b>	You can edit the type.
<b>Set Overlay Information</b>	For some information types, you can edit the detailed information.
<b>Set Overlay Position</b>	If you check it, the current information will be displayed from a new line.
<b>Set Space</b>	Edit the number of space between the current information and the next one from 0 to 255. 0 means there is no space.
<b>Set Line Break Characters</b>	Edit the number of characters from 0 to 100 between the current information line and the previous information line. 0 means no line break.
<b>Adjust overlay sequence</b>	Click  /  to adjust the display sequence of the overlay information.

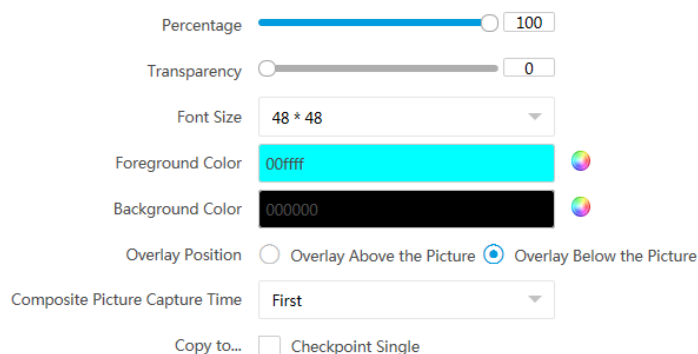
8. Click **Save**.

### 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 → Text Overlay**.
2. Click **Checkpoint Composition**.
3. Check **Capture Picture Overlay**.



**Figure 3-7 Set Composite Picture Overlay**

**4. Set the font size, color, overlay position, etc.**

**Percentage**

It 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.

**Transparency**

It is the condition of viewing the live view image through the overlaid information.

**Composite Picture Capture Time**

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

**5. Optional:** Check the other channel(s) to copy the same settings.

**6. Select the overlay information from the list.**

---

 **Note**

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

---

**7. Set the overlay information.**

<b>View Default Type</b>	You can view the default overlay information.
<b>Set Type</b>	You can edit the type.
<b>Set Overlay Information</b>	For some information types, you can edit the detailed information.
<b>Set Overlay Position</b>	If you check it, the current information will be displayed from a new line.
<b>Set Space</b>	Edit the number of space between the current information and the next one from 0 to 255. 0 means there is no space.
<b>Set Line Break Characters</b>	Edit the number of characters from 0 to 100 between the current information line and the previous information line. 0 means no line break.

## Adjust overlay sequence

Click ^ / v to adjust the display sequence of the overlay information.

8. Click **Save**.

## 3.2.6 Set Image Encoding Parameters

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

### Steps

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

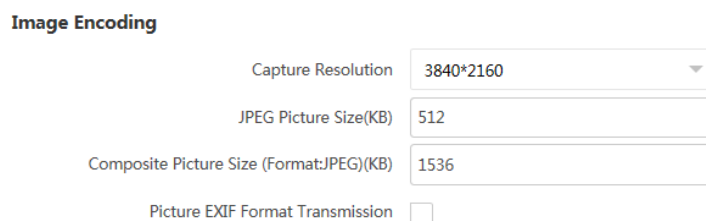


Image Encoding

Capture Resolution	3840*2160
JPEG Picture Size(KB)	512
Composite Picture Size (Format:JPEG)(KB)	1536
Picture EXIF Format Transmission	<input type="checkbox"/>

**Figure 3-8 Set Image Encoding Parameters**

2. Select **Capture Resolution**.

3. Enter the picture size.

### JPEG Picture Size

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

### Composite Picture Size

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

### Picture EXIF Format Transmission

Check it ,and the captured pictures will be transmitted in the EXIF format.

4. Click **Save**.

## 3.2.7 Set Violation Dictionary

Violation dictionary defines corresponding codes of violation types. You can set the violation code, violation type, and violation description in this section. The default parameters are recommended.

## Steps

---

### Note

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

---

1. Go to **Configuration** → **Capture** → **Capture Parameters** → **Illegal Action Glossary** .
2. Set **Violation Code**, **Violation Type**, and **Illegal Action** description according to the actual needs.
3. **Optional**: Click **Default** to restore the parameters to the default settings.
4. Click **Save**.

## Result

The violation code and description will be displayed on the captured picture when the corresponding violation happens.

## 3.3 View Real-Time Picture

You can view the real-time captured pictures and information of the captured vehicles.

## Steps

1. Go to **Live View** → **Real-time Capture** .
2. Click **Arming**.
3. Select an item from the list, and you can view the capture scene picture and recognized license plate information.

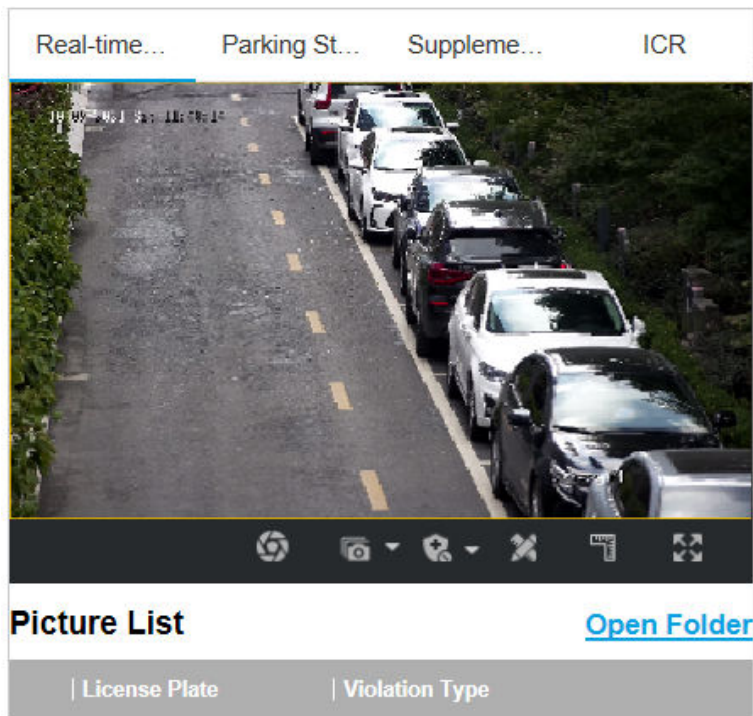









Figure 3-9 Real-Time Picture

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


-  /  / 
  - **Level 1 Arming** can only connect one client or web. The uploaded pictures will not be stored in the storage card. The pictures in the storage card will be uploaded to the level 1 arming.
  - **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** is to cancel the alarm status or real-time picture.
- 

Click it to measure the license plate pixel. Click it again to disable the measurement.
- 

Click it to enable the ruler to measure the license plate.
- 

Click it to enable manual capture.
- 

Click it to set continuous capture parameters and the device will capture pictures according to the set interval.

  - **Capture Times:** Up to five pictures can be captured per continuous capture.
  - **Interval:** Up to four intervals can be set, and the default interval is 100 ms.
- 

Display the images in full screen mode.
- Open Folder** Open the saving path of captured pictures.

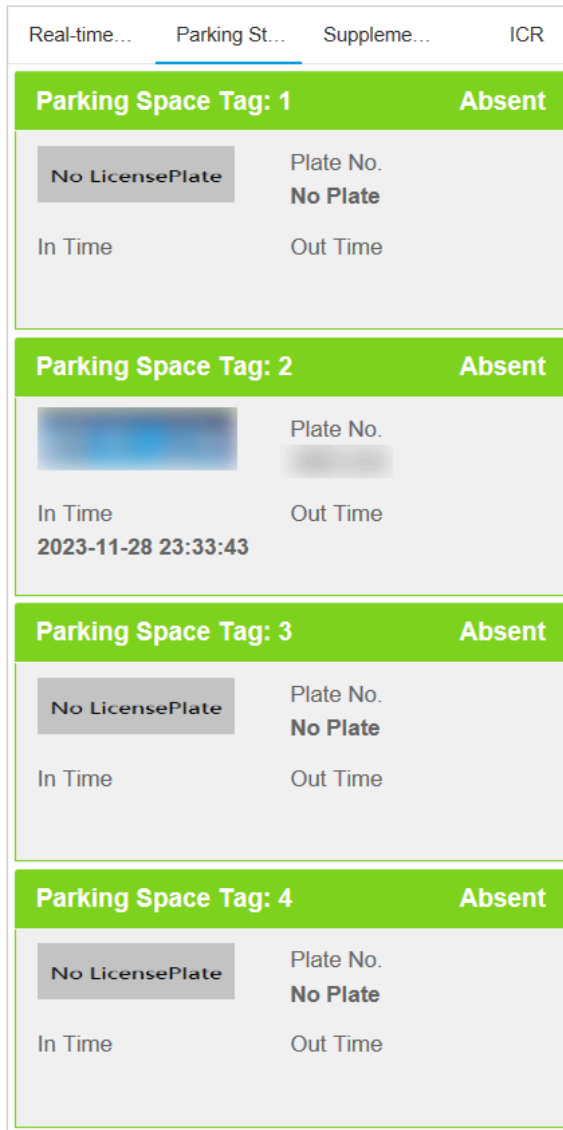


### 3.4 View Parking Status

You can view the parking status such as the parking space occupation status, recognized license plate number, entry time, and exit time of the vehicle.

#### Steps

1. Go to **Live View** → **Parking Status** .



**Figure 3-10 View Parking Status**

2. View the parking status such as the parking space occupation status, recognized license plate number, entry time, and exit time of the vehicle.

## 3.5 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:** 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.


## Chapter 4 Live View and Local Configuration

### 4.1 Live View

#### 4.1.1 Start/Stop Live View

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


#### 4.1.2 Select Image Display Mode

Click  to select an image display mode.

#### 4.1.3 Select Window Division Mode

Click  to select a window division mode.

#### 4.1.4 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 the custom stream.



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

---

#### 4.1.5 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:** Click **Configuration** → **Local** → **Picture and Clip Settings** to view the saving path of snapshots in live view.

#### 4.1.6 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:** Click **Configuration** → **Local** → **Record File Settings** to view the saving path of record files.

## 4.1.7 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.

## 4.1.8 Enable Regional Focus

### Steps



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.

## 4.1.9 Select Video Mode

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

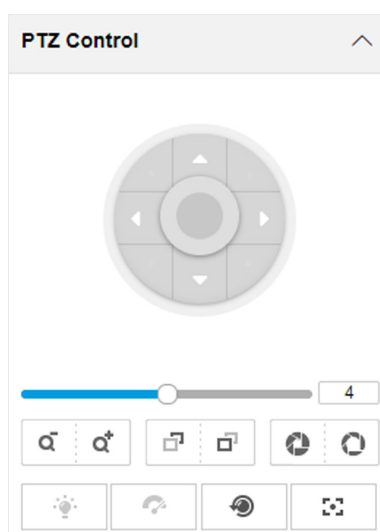
Click  and select  when the device is running normally.

## 4.2 PTZ Operation

Click **Live View**. Click  and click  to show the PTZ control panel.

**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 4-1 Control Panel**

**Table 4-1 Button Description**

Button	Description
	Adjust the PTZ speed.
	Zoom + and Zoom - <ul style="list-style-type: none"> <li>• Hold  to zoom in the scene.</li> <li>• Hold  to zoom out the scene.</li> </ul>
	Focus + and Focus - <ul style="list-style-type: none"> <li>• Hold  under the manual focus mode to make near objects become clear and distant objects become vague.</li> <li>• Hold  to make distant objects become clear and near objects become vague.</li> </ul>
	Iris + and Iris - <ul style="list-style-type: none"> <li>• Hold  to increase the iris diameter when in a dark environment.</li> <li>• Hold  to decrease the iris diameter when in a bright environment.</li> </ul>

Button	Description
	<b>Lens Initialization</b> It is applicable to devices with motorized lenses. You can use this function when overcoming image blurs caused by overtime zooming or focusing.
	<b>Auxiliary Focus</b> It is applicable to devices with motorized lenses. Use this function to focus the lens automatically and make images become clear.

### 4.3 Local Configuration

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

## Live View Parameters

Protocol	<input checked="" type="radio"/> TCP	<input type="radio"/> UDP	<input type="radio"/> HTTP	<input type="radio"/> HTTPS
Stream Type	<input checked="" type="radio"/> Main Stream	<input type="radio"/> Sub-Stream		
Play Performance	<input type="radio"/> Shortest Delay	<input checked="" type="radio"/> Balanced	<input type="radio"/> Fluency	
Decoding Type	<input checked="" type="radio"/> Software Decoding	<input type="radio"/> Hardware Decoding		
Rules Information	<input type="radio"/> Enable	<input checked="" type="radio"/> Disable		
Feature Information	<input type="radio"/> Enable	<input checked="" type="radio"/> Disable		
Image Size	<input checked="" type="radio"/> Auto-fill	<input type="radio"/> 4:3	<input type="radio"/> 16:9	
Image Format	<input checked="" type="radio"/> JPEG	<input type="radio"/> BMP		

## Record File Settings

Record File Size	<input type="radio"/> 256M	<input checked="" type="radio"/> 512M	<input type="radio"/> 1G
Save record files to	<input type="text" value="C:\Users\ \MT Web\RecordFiles"/>	<input type="button" value="Browse"/>	
Save downloaded files to	<input type="text" value="C:\Users\ \MT Web\DownloadFiles"/>	<input type="button" value="Browse"/>	

## Picture and Clip Settings

Save snapshots in live view to	<input type="text" value="C:\Users\ \MT Web\CaptureFiles"/>	<input type="button" value="Browse"/>
Save downloaded pictures to	<input type="text" value="C:\Users\ \MT Web\ViewPics"/>	<input type="button" value="Browse"/>
Save scene pictures to	<input type="text" value="C:\Users\ \MT Web\SecenPics"/>	<input type="button" value="Browse"/>
Save snapshots when playback to	<input type="text" value="C:\Users\ \MT Web\PlaybackPics"/>	<input type="button" value="Browse"/>
Save clips to	<input type="text" value="C:\Users\ \MT Web\PlaybackFiles"/>	<input type="button" value="Browse"/>

**Figure 4-2 Local Configuration**

## Protocol Type

Select the network transmission protocol according to the actual needs.

### TCP

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

### UDP

Provides real-time audio and video streams.

### 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 the rule information, tracking frames will be displayed on the live view interface when there are vehicles passing.

## **Feature Information**

Enable it to display feature information of the target in the live view image.

## **Image Size**

The display ratio of live view.

## **Image Format**

The saving format of manually captured images.

## **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 for the manually recorded video files.

## **Save downloaded files to**

Set the saving path for the download files.

## **Save snapshots in live view to**



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

### **Save downloaded pictures to**

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


### **Save clips to**



Set the saving path for the clips in playback.

## Chapter 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 6 Record and Capture

### 6.1 Set Storage Path

#### 6.1.1 Set Memory Card

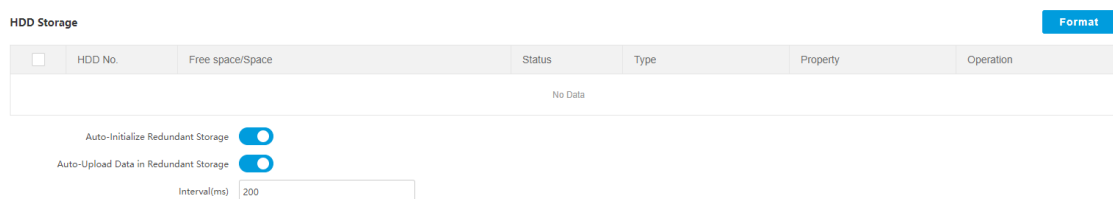
If you want to store the files to the memory card, make sure you insert and format the memory card in advance.

##### Before You Start

Insert the memory card to the device.

##### Steps

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



**Figure 6-1 Set Memory Card**

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

##### Note

For the newly installed memory card, you need to format it manually before using it normally.

- If you want to format the memory card automatically when the card is abnormal, check **Auto-Initialize Redundant Storage**.
3. **Optional:** If the device has been connected to the platform, and you want to upload the memory card information automatically, check **Auto-Upload Data in Redundant Storage** and set **Interval** to upload.
  4. Click **Save**.

#### 6.1.2 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** .

FTP

Enable FTP

Number of Enabled FTP  One

Server Address Type IP

Server Address 0.0.0.0

Port 21

User Name

Password

Password Confirm

Path/Picture Name Encoding Mode UTF-8

Connection Mode Transitory Connection

FTP Test

Protocol Type FTP

Directory Structure Save in the root directory

Parent Directory None

Child Directory None

Level 3 Directory None

Level 4 Directory None

Level 5 Directory None

Level 6 Directory None

Not Upload Plate Close-up

Upload Additional Information to FTP

Upload CSV Vehicle Passing Statistic...

Figure 6-2 Set FTP

2. Check **Enable FTP**.

3. Select **Number of Enabled FTP**.

### Note

You can only enable one FTP.

4. Set FTP Parameters.

- 1) Select **Server Address Type** and enter corresponding information.
- 2) Enter **Server Address** or **Server Domain Name**.
- 3) Enter **Port**.
- 4) Enter **User Name** and **Password**, and confirm the password.
- 5) Select **Protocol Type**.
- 6) Select **Directory Structure**.

### Note

You can customize the directory structure according to your needs.

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.

5. **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 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.

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

### UTF-8

UNICODE encoding.

**7. Optional:** Click **FTP Test** to check the FTP server.

**8.** Set naming rules and separators according to the actual needs.

**9. 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.

**10.** Click **Save**.

## 6.1.3 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** .

### SDK Listening

IP Address/Domain

Port


Enable Picture Uploading Listening

Cloud Storage Disabled

**Figure 6-3 Set SDK Listening**

**2.** Set **IP Address/Domain** and **Port** if you need to upload the alarm information and pictures.

**3. Optional:** Enable the picture uploading listening if you need to upload image information.

- 4. Optional:** If you want to save the alarm information and pictures to the cloud storage, click  to set **Cloud Storage**. Refer to [Set Cloud Storage](#) for details.
- 5.** Click **Save**.

### 6.1.4 Set Arm Host

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

#### Steps

---

##### **Note**

For level 1 arm, the pictures can be uploaded normally. If uploading failed, the device will upload again. For level 2 arm, the pictures will be uploaded once. No more upload if uploading failed. For level 3 arm, pictures will not be uploaded.

---


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

#### Arm Upload

Cloud Storage  Disabled

 Save

**Figure 6-4 Set Arm Host**

2. Click  to set **Cloud Storage**. Refer to [Set Cloud Storage](#) for details.
3. Click **Save**.

### 6.1.5 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** .

ANPR IP/Domain	<input type="text" value="0.0.0.0"/>
ANPR Port	<input type="text" value="80"/>
Host URL	<input type="text" value="/test"/>
Cloud Storage	<input type="checkbox"/> Disabled

**Figure 6-5 Set ISAPI Listening**

2. Set **ANPR IP/Domain**, **ANPR Port**, and **Host URL**.
3. **Optional:** If you want to save the alarm information and pictures to the cloud storage, click  to set **Cloud Storage**. Refer to [Set Cloud Storage](#) for details.
4. Click **Save**.

## 6.1.6 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 level 1 arm in **Live View** → **Real-time Capture** .

### Steps

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

The screenshot shows a configuration form for setting cloud storage. It contains the following fields and values:

- Enable:** A checkbox that is checked.
- Version:** A dropdown menu set to 'V2.0'.
- IP Address:** A text input field containing '127.0.0.1'.
- Port:** A text input field containing '6001'.
- accessKey:** A text input field with masked characters (dots).
- secretKey:** A text input field with masked characters (dots).
- Resource Pool ID:** A text input field containing '1'.

At the bottom of the form is a blue button with a floppy disk icon and the text 'Save'.

Figure 6-6 Set Cloud Storage

2. Check **Enable**.

3. Select **Version**.

**V1.0** a. Enter **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 **IP Address** and **Port**

b. Enter **accessKey** and **secretKey**.

c. Enter **Resource Pool ID** according to the server storage area No. of uploading pictures.

4. Click **Save**.

## 6.2 Set Quota

Set the video and picture ratio in the storage.

### Before You Start

Install the memory card.

### Steps

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

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



## Note

The percentage sum of the capture and video quota ratio should be 100%.

3. Click **Save**.

### What to do next

Format the memory card after the settings.

## 6.3 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. **Optional:** Enable the recording overwriting.

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

3. Enable the record schedule.

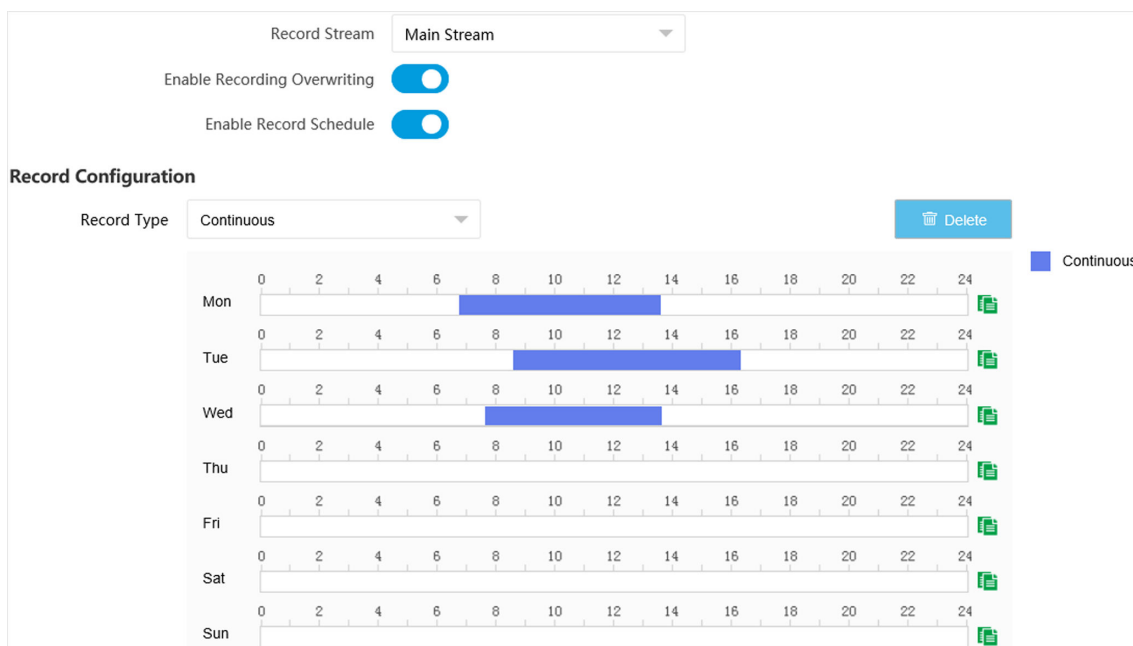



Figure 6-7 Set Record Schedule

4. Select **Record Type**.

5. 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.
  - Click a set recording period and click **Delete** on the record configuration interface.
8. **Optional:** Click  to copy set recordings to other days.
9. Click **Save**.

## Result

The device will only record at the set periods.

## 6.4 Set Scheduled Capture

You can enable scheduled capture of the device. Then the device will capture a picture every the set interval.

### Steps

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

Timed Snap

Open Timed Snap Function

Format

Video Quality

Span Interval(seconds)  s

Figure 6-8 Set Scheduled Capture

2. Check **Open Timed Snap Function**.
3. Select **Format** and **Video Quality**.
4. Enter **Span Interval**.
5. Click **Save**.

## Result

The device will capture a picture every the set interval.

## Chapter 7 Encoding and Display

### 7.1 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



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.

---



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**.

## **7.2 Set Image Parameters**

You can adjust the image parameters to get clear image.

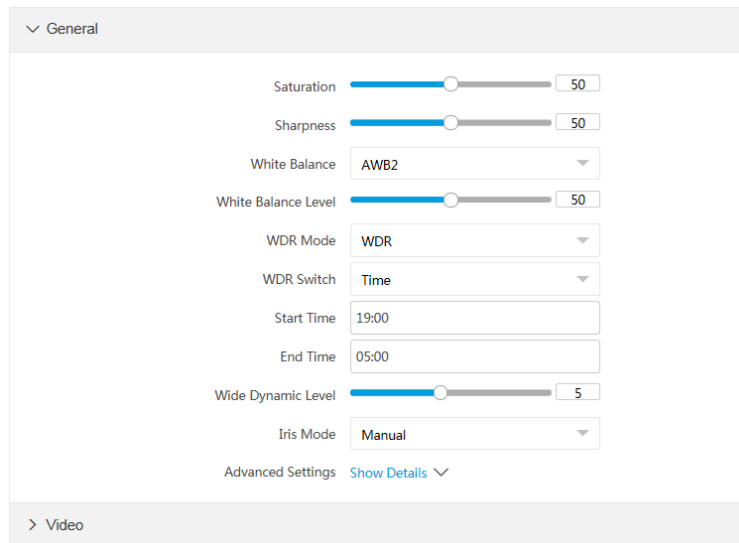
### **Steps**



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

---

1. Go to **Configuration** → **Video** → **Camera Parameter** → **Camera Parameter** .



**Figure 7-1 Set Image Parameters**

## 2. Adjust the parameters.

### General

#### Saturation

It refers to the colorfulness of the image color.

#### Sharpness

It refers to the edge contrast of the image.

#### White Balance

It is the white rendition function of the device used to adjust the color temperature according to the environment.

#### WDR Mode

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 Switch** and set corresponding parameters according to your needs.

#### On

Set **WDR Level**. The higher the level is, the higher the WDR strength is.

#### Time

Enable WDR according to the start time and end time.

#### Brightness

Set **Light Threshold**. When the brightness reaches the threshold, WDR will be enabled.

#### Iris Mode

Only manual iris mode is supported.

## Brightness Enhancement at Night

The scene brightness will be enhanced at night automatically.

## Enable Defog

Enable defog to get a clear image in foggy days.

## Image Rotation

The image can be rotated in the set degree.



### Note

Changes to the image rotation degree will take effect after you reboot the unit.

---

## Light Compensation on License Plate

Check it. The light compensation on license plates 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 Gamma Correction

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

## Black and White Mode at Night

When ICR is in night mode, you can check it to keep the video in black and white mode.

## Video

### Brightness

It refers to the max. brightness of the image.

### Contrast

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

### 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 special intensity is too high, the outline of the image may become fuzzy and the details may lose. If the time 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.

### Video Standard

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

## 7.3 Set ICR

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.

### Steps

1. Go to **Configuration → Capture → Capture Images → ICR** , or **Live View → ICR** .
2. Select **ICR Mode**.

**Auto-Switch** Switches to ICR mode automatically at night or in dark light conditions.

**Manual Switch** Switches to the day or night manually.

**Scheduled Switch** Set day/night mode, start time, and end time to switch to ICR mode only during the set time period.



The four start times and end times cannot be the same. At least one minute interval should be set.

3. Click **Save**.

## 7.4 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** .

**Stream Type**

Stream Type

**Fixed Region**

Enable

Region No.

ROI Level

Area Name


 Save

Figure 7-2 Set ROI

2. Select **Stream Type**.
3. Set ROI region.
  - 1) Check **Enable**.
  - 2) Select **Region No.**
  - 3) Click **Draw Area**.
  - 4) Drag the mouse on the live view image to draw the fixed area.
  - 5) Select the fixed area that needs to be adjusted and drag the mouse to adjust its position.
  - 6) Click **Stop Drawing**.
4. Enter **Area Name** and select **ROI Level**.

---

 **Note**

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

---

5. Click **Save**.
6. **Optional:** Select other region No. and repeat the steps above if you need to draw multiple fixed areas.

## 7.5 Set OSD

You can customize OSD information on the live view.

### Steps

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



## Overlay Information

Camera Name

Camera Name

Display Date

Time Format

Date Format

Display Week

Millisecond

Custom Information

## Status

Display Mode

OSD Size

Font Color

Alignment

Figure 7-3 Set OSD

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

---

### Note

Up to 6 items of custom information can be added.

4. Set display properties (font, color, etc.).
5. Select **Alignment**.

---

### Note

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

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

### Result

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

## 7.6 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. Check **Enable**.
3. Drag the mouse to draw an area in the live view image.  
The drawn area will be exposed.
4. Click **Save**.

## Chapter 8 Network Configuration

### 8.1 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.

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

#### NIC Settings

NIC Type	10M/100M Self-adaptive ▼
DHCP	<input type="checkbox"/>
IPv4 Address	<input type="text"/>
IPv4 Subnet Mask	<input type="text"/>
IPv4 Default Gateway	<input type="text"/>
IPv6 Mode	DHCP ▼
IPv6 Address	<input type="text"/>
IPv6 Prefix Length	<input type="text"/>
IPv6 Default Gateway	::
Mac Address	bc:5e:33:41:6d:df
MTU	1500
Multicast Address	0.0.0.0

#### DNS Server

Preferred DNS Server	<input type="text" value="8.8.8.8"/>
----------------------	--------------------------------------

 Save

Figure 8-1 Set IP Address

## 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.



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.



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 Subnet Mask**, and **IPv6 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.

## 8.2 Connect to Platform

### 8.2.1 Connect to ISUP Platform

ISUP (EHome) 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**.

#### ISUP

Enable	<input checked="" type="checkbox"/>
Protocol Version	v5.0
Address Type	IP Address
Server IP Address	
Server Port	
Device ID	
SecretKey	••••••
Register Status	Offline

 Unable to send picture to ISUP platform at the first access. Please restart the system and try again.

 Save

**Figure 8-2 Connect to ISUP Platform**

2. Check **Enable**.
3. Select **Protocol Version**.
4. Select **Address Type**.
5. Enter **Sever IP Address**, **Server Port**, and **Device ID**.
6. Enter **SecretKey**.
7. Click **Save**.
8. **Optional**: View **Register Status**.

## What to do next

When the registration status shows online, you can add or manage the device via the platform software. Refer to its corresponding manual for details.

## 8.2.2 Connect to OTAP

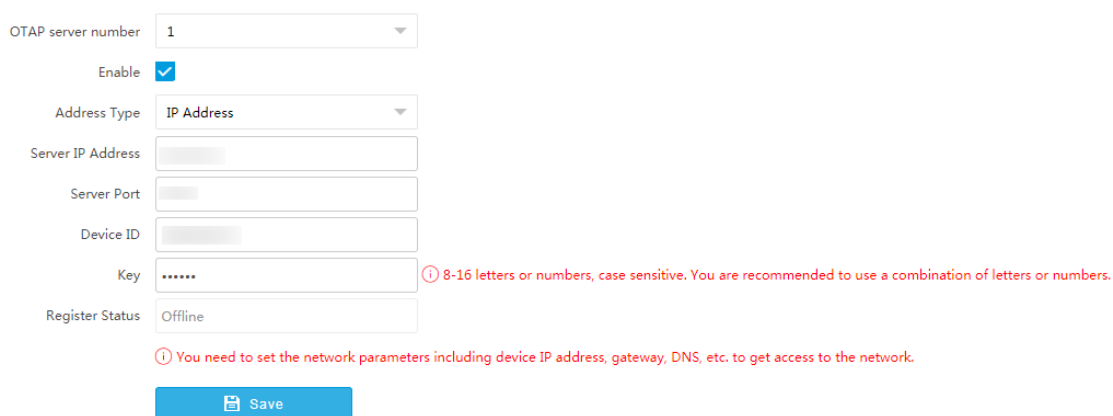
The device can be accessed to the maintenance platform via OTAP protocol, in order to search and acquire device information.

### Before You Start

Ensure the device can communicate with the platform normally.

### Steps

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



OTAP server number: 1

Enable:

Address Type: IP Address

Server IP Address: [Empty]

Server Port: [Empty]

Device ID: [Empty]

Key: [Masked] ⓘ 8-16 letters or numbers, case sensitive. You are recommended to use a combination of letters or numbers.

Register Status: Offline

ⓘ You need to set the network parameters including device IP address, gateway, DNS, etc. to get access to the network.

Save

**Figure 8-3 Connect to OTAP**

3. Set corresponding parameters.

---

### Note

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

---

4. Click **Save**.

## What to do next

When the registration status is online, you can add or manage the device via the platform software. Refer to its corresponding manual for details.

## 8.2.3 Connect to Hik-Connect

The device can be remotely accessed via Hik-Connect.

## Before You Start

- Connect the device to the Internet.
- Set the IP address, subnet mask, gateway, and DNS server of the LAN.
- OTAP connection is disabled.

## Steps

1. Go to **Configuration** → **Network** → **Data Connection** → **Hik-Connect Platform** .
2. Check **Enable Hik-Connect Platform**.

Enable Hik-Connect Platform

Platform Access Mode: Hik-Connect

Protocol Version: 2.0

Server Domain Name: litedev.hik-connect.com  Custom

Register Status: Offline

Offline Reason: Invalid Verification Code

Offline Code: 100605

Binding Status: Unknown

Verification Code: ●●●●●● ① 6-16 letters or numbers, case sensitive. You are recommended to use a combination of letters or numbers.

① You need to set the network parameters including device IP address, gateway, DNS, etc. to get access to the network.

**Figure 8-4 Connect to Hik-Connect**

3. Select **Platform Access Mode** and **Protocol Version**.
4. **Optional:** If you have allocated a custom server, check **Custom** and enter the custom **Server Domain Name**.
5. Enter a custom **Verification Code** used to add the device via Hik-Connect.



### Caution

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

6. Click **Save**.
7. Register an account and 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** → **Hikvision App Store** .
    - Scan the QR code below to download the application.



Figure 8-5 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.

---

## 8.3 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 for details.
- Complete port mapping. The default ports are 80, 8000, and 554.

### Steps

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



Enable DDNS

DDNS Type

Server Address

Device Domain

Server Port

User Name

Password

Password Confirm

**Figure 8-6 Set DDNS**

2. Check **Enable DDNS**.
3. Enter the server address and other information.
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.

## 8.4 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** .
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. SNMP v1 is not secure and SNMP v2 requires password for access. SNMP v3 provides encryption and if you use the third version, HTTPS protocol must be enabled.

---

3. Set the SNMP parameters.

4. Click **Save**.

## 8.5 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 Video/Audio DSCP, Event/Alarm DSCP, and Management DSCP according to the actual needs.

---

## 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**.

## 8.6 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.

The screenshot displays a configuration interface for setting various ports. It is organized into sections for different protocols:

- HTTP Port:** 'Enable HTTP Port' is checked (checkbox with blue checkmark). The 'HTTP Port' field contains the value '80'.
- HTTPS Port:** 'Enable HTTPS Port' is unchecked (empty checkbox). The 'HTTPS Port' field contains the value '443'.
- RTSP Port:** 'Enable RTSP Port' is checked (checkbox with blue checkmark). The 'RTSP Port' field contains the value '554'.
- SDK Port:** The 'SDK Port' field contains the value '8000'.
- SADP Port:** The 'SADP Port' checkbox is checked (checkbox with blue checkmark).
- SDK over TLS Port:** 'Enable SDK over TLS Port' is unchecked (empty checkbox). The 'SDK over TLS Port' field contains the value '8433'.

**Figure 8-7 Set Port**

## **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 for login.

## **HTTPS Port**

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

## **RTSP Port**

It refers to the port of real-time streaming protocol.

## **SDK Port**

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

### **SADP Port**

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

### **SDK over TLS Port**

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



- 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.
-

## Chapter 9 Exception Alarm

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

### Steps

---



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**.

## Chapter 10 Safety Management

### 10.1 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. Select **Password Level**.

The password level of the added user should conform to the selected level.

3. Add a user.
  - 1) Click **Add**.
  - 2) Enter **User Name** and select **Type**.
  - 3) 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.

---

- 4) Assign remote permission to users based on needs.

#### User

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

#### Operator

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

- 5) Click **OK**.

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

**Change the password and permission** Click  to change the password and permission.

**Delete the user** Click  to delete the user.

### 10.2 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. Check **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**.

## 10.3 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 the user lock function.
3. Click **Save**.

#### **Result**

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

## 10.4 Set HTTPS

### 10.4.1 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.

### 10.4.2 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**.

### 10.5 Set SSH

To raise network security, 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. Disable **SSH Service**.
3. Click **Save**.

### 10.6 Set RTSP Authentication

You can improve network access security by setting RTSP authentication.

#### Steps

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

#### **digest**

The device only supports digest authentication.

#### **digest/basic**

The device supports digest or basic authentication.

3. Click **Save**.



### 10.7 Set Timeout Logout

You can improve network access security by setting timeout logout.

#### Steps

1. Go to **Configuration** → **System** → **Security** → **Security Service** → **Timeout Logout** .
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.

### 10.8 Set Password Validity Period

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

#### Steps

1. Go to **Configuration** → **System** → **Security** → **Security Service** → **Password Validity Period** .
2. Select **Validity Type**.
  - 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**.

## Chapter 11 Maintenance

### 11.1 View Device Information

#### Basic Information and Algorithms Library Version

Go to **Configuration** → **System** → **System Settings** → **Basic Information** to view the basic information and algorithms library 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 and live view and arming status.

### 11.2 Log

#### 11.2.1 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.

##### Steps

1. Go to **Configuration** → **System** → **Security** → **Security Service** → **Log Audit Service** .
2. Enable system log service.
3. Enter **IP Address** and **Port** of the log server.
4. Click **Save**.

##### Result

The device will upload the security audit logs to the log server regularly.

#### 11.2.2 Search Log

Log helps to locate and troubleshoot problems.

##### Steps

1. Go to **Configuration** → **System** → **Maintenance** → **Log Search** .
2. Set search conditions.

### 3. Click **Search**.

The matched log files will be displayed on the log list.

### 4. **Optional**: Click **Export** to save the log files to your computer.

### 11.2.3 Search Security Audit Log

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.

#### **Before You Start**

Go to **Configuration → System → Security → Security Service → Log Audit Service** and enable system log service.

#### **Steps**

#### 1. Go to **Configuration → System → Maintenance → Security Audit Log** .

#### 2. Set search conditions.

### 3. Click **Search**.

The matched log files will be displayed on the log list.

### 4. **Optional**: Click **Export** to save the log files to your computer.

### 11.2.4 Enable Log According to Module

You can enable the log according to the module for debugging.

#### **Steps**



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

---

#### 1. Go to **Configuration → System → Maintenance → Debug → Log** .

#### 2. Check the module(s) according to your needs.

---



If you want to disable the log automatically, you can enable auto close log and set close time.

---

### 3. Click **Save**.

## 11.3 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 **Working Mode**.

#### 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**.

## 11.4 Upgrade

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

### Before You Start

- Prepare the upgrade file. If the upgrade file is a compressed package, it needs to be decompressed into the .dav format.
- Update the plugin before upgrade.

### Steps

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



#### Note

The upgrade process will take 1 to 10 minutes. Do not cut off the power supply.

---

### Result

The device will reboot automatically after upgrade.

## 11.5 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 → System → Maintenance → Upgrade & Maintenance → Device Maintenance** .
2. Click **Reboot**.
3. Click **OK** to reboot the device.



## Note

You can also click **Reboot** on the upper right corner of the page to reboot the device.

---

## 11.6 Restore Parameters

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

### Steps

1. Go to **Configuration → System → Maintenance → Upgrade & Maintenance → Device Maintenance** .
2. Select the restoration mode.
  - Click **Restore**, and click **OK**. Then the parameters except the IP parameters and user parameters will be restored to the default settings.
  - Click **Default** and click **OK** to restore all the parameters to the factory settings.

## 11.7 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 Synchronization

Select it to synchronize the device time with that of the NTP server. Set **Server Address**, **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**.

#### Satellite Time

Select it to synchronize the device time with that of the satellite. Set **Interval**.

#### 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.

4. Click **Save**.

## 11.8 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. Check **Enable DST**.
3. Set **Start Time, End Time, and DST Bias**.
4. Click **Save**.

## 11.9 Debug



### **Note**

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

---

### 11.9.1 Debug Device

You can enable the function to debug the device.

#### **Steps**

1. Go to **Configuration → Capture → Advanced → System Service**.
2. Check the debug information according to your needs.

#### **Enable Algorithm POS Information Debug**

The algorithm POS information will be overlaid on the image.

3. Click **Save**.

## 11.9.2 Vehicle Capture and Recognition Service

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

### Steps



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

---

1. Go to **Configuration → Capture → Advanced → Vehicle Capture and Recognition Service** .
  2. Click the settings respectively to check the service(s) according to your needs.
- 



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

---

### Parking Event Settings

#### Capture Parking Space Change

In parallel parking scene, if the driver parks the vehicle from one parking space to another one, pictures will be captured.

#### Auto Inspection

If the picture of vehicle leaving the parking space is not captured, the device will detect the parking space for two minutes to judge if it is occupied. If not, abnormal alarm will be uploaded.

#### Filter Target Tampering

In some scenes, there is a fork road between two parking spaces. Some vehicles will enter into the fork road. Enable the function to filter the captures of these vehicles.

#### Filter Repeated Entry

The repeated entry of the same vehicle will only be captured once. No more captures will be triggered. It is enabled by default.

#### Target Fuzzy Matching

The vehicle exiting capture will match the license plate number. For the vehicle parked furthest from the device, only when the license plate numbers of the vehicle entering or exiting are consistent, capture will be triggered. For the other vehicles, when the license plate numbers of the vehicle entering or exiting are similar (two or less characters of the license plate numbers are inconsistent), capture will be triggered. Enable the function and edit the No. of parking spaces which need to enable target fuzzy matching. 1 represents the parking space furthest from the device.

#### Optimize LPR for Wide-Angle U-Turn

If the recognized license plate numbers of the same vehicle entering or exiting are not consistent (two or less characters of the license plate numbers are inconsistent), the

recognized exiting license plate number of the vehicle will be changed as same as the entering license plate number forcibly.

### **Guide Parking via Auto Inspection**

The parking space status will be uploaded for third-party parking guidance and inspection project.

### **Debug Info**

Enable the debug information.

### **Picture Upload Settings**

#### **Multi-Protocol Upload**

The captured pictures will be uploaded to all the connected uploading channels, such as ISUP, OTAP, FTP, arm host, SDK listening, cloud storage, etc, without priority. It is enabled by default.

### **Scheduled Capture Settings**

#### **Overlay Parking Space No.**

The entering and exiting pictures of the vehicle will be overlaid with the parking space No. It is enabled by default.

### **Capture Upload Settings**

#### **Overlay Parking Space No.**

The entering and exiting pictures of the vehicle will be overlaid with the parking space No. It is enabled by default.

#### **Overlay Target Frame**

The entering and exiting pictures of the vehicle will be overlaid with the target frame. It is enabled by default.

#### **Overlay Parking Space Frame**

The entering and exiting pictures of the vehicle will be overlaid with the parking space frame.

3. Click **Save**.

### **11.9.3 Set Image Format**

You can enable smartJPEG which can save the storage space without influencing the resolution.

#### **Steps**

1. Go to **Configuration → Capture → Advanced → Image Service** .
2. Check **smartJPEG**.
3. Set image quality according to your needs.



---

### Note

The higher the value is, the better the image quality is.

---

4. Click **Save**.

## 11.10 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 → System → Maintenance → Upgrade & Maintenance → Data Export** .
  2. Click **Export** after **Configuring 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**.

## 11.11 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 → System → Maintenance → Upgrade & Maintenance → Advanced Settings → Data Import** .
  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.

### 11.12 Export Violation Type File

You can export the violation type file to check the violation types of the vehicles.

#### Steps

1. Go to **Configuration → System → Maintenance → Upgrade & Maintenance → Advanced Settings → Violation Code** .
2. Click **Export**.
3. Select the saving path and enter the file name.
4. Click **Save**.

### 11.13 Import Violation Type File

You can import the violation type file from the computer to the device.

#### Before You Start

Save the violation type file on your computer.

#### Steps

1. Go to **Configuration → System → Maintenance → Upgrade & Maintenance → Advanced Settings → Violation Code** .
2. Click **Browse** to select the violation type file.
3. Click **Import**.
4. Click **OK** in the popup window.



The upgrade process will take 1 to 5 minutes. Do not cut off the power supply.

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### 11.14 Export Debug File

The technicians can export the debug file to troubleshoot and maintain the device.

#### Steps

1. Go to **Configuration → System → Maintenance → Upgrade & Maintenance → Data Export** .
2. Click **Export** after **Debug File**.
3. Select the saving path, and enter the file name.
4. Click **Save**.

## 11.15 Export Diagnosis Information

The technicians can export the diagnosis information to troubleshoot and maintain the device.

### Steps

1. Go to **Configuration** → **System** → **Maintenance** → **Upgrade & Maintenance** → **Data Export** .
2. Click **Export** after **Diagnosis Information**.
3. Select the saving path, and enter the file name.
4. Click **Save**.

