



Parking Camera

User Manual

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FCC Information

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

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

FCC Conditions

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

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

EU Conformity Statement



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



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2006/66/EC (battery directive): This product contains a battery that cannot be disposed of as unsorted municipal waste in the European Union. See the product documentation for specific battery information. The battery is marked with this symbol, which may include lettering to indicate cadmium (Cd), lead (Pb), or

mercury (Hg). For proper recycling, return the battery to your supplier or to a designated collection point. For more information see: www.recyclethis.info

Industry Canada ICES-003 Compliance

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

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.

Safety Instruction

Laws and Regulations

Use of the product must be in strict compliance with the local laws and regulations. Please shut down the device in prohibited area.

Power Supply

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

Transportation, Use, and Storage

- To avoid heat accumulation, good ventilation is required for a proper operating environment.
- Store the device in dry, well-ventilated, corrosive-gas-free, no direct sunlight, and no heating source environment.
- Avoid fire, water, and explosive environment when using the device.
- Avoid lightning strike for device installation. Install a lightning arrester if necessary.
- Keep the device away from magnetic interference.
- Avoid device installation on vibratory surfaces or places. Failure to comply with this may cause device damage.
- DO NOT touch the heat dissipation component to avoid burns.
- DO NOT expose the device to extremely hot, cold, or humidity environments. For temperature and humidity requirements, see device specification.

Maintenance

- If smoke, odor, or noise arises from the device, immediately turn off the power, unplug the power cable, and contact the service center.
- If the device cannot work properly, contact the store you purchased it or the nearest service center. DO NOT disassemble or modify the device in any way (For the problems caused by unauthorized modification or maintenance, the company shall not take any responsibility).
- Keep all packaging after unpacking them for future use. In case of any failure occurred, you need to return the device to the factory with the original packaging. Transportation without the original packaging may result in damage to the device and the company shall not take any responsibility.

Network

- Please enforce the protection for the personal information and the data security as the device may be confronted with the network security problems when it is connected to the Internet. Please contact us if network security risks occur.
- Please understand that you have the responsibility to configure all the passwords and other security settings about the device, and keep your user name and password.

Lens

- DO NOT touch the lens with fingers directly in case the acidic sweat of the fingers erodes the surface coating of the lens.
- DO NOT aim the lens at the strong light such as sun or incandescent lamp. The strong light can cause fatal damage to the device.

Data

DO NOT disconnect the power during formatting, uploading, and downloading. Or files may be damaged.

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Chapter 1 Introduction

1.1 Introduction

The parking camera (hereinafter referred to as device) is applied in the parking guidance and find my car system to detect whether the parking space is occupied or not and recognize the license plate. It is integrated with the parking space status indicator which can indicate red, green, yellow, blue, cyan, and magenta colors. Red indicates the parking space is occupied, green indicates the parking space is available, and blue indicates the parking space is reserved.

The device can be widely applied in the environment with dark light, such as road, warehouse, underground garage, bar, garden, etc. to provide HD display.

1.2 Key Feature

- Built-in high-performance AI chip, supporting ANPR, detection of the parking space status, and smart analysis of crossing over line, motion detection, etc.
- HD camera, applied in environment with low illumination such as underground garage.
- 3D noise reduction to guarantee clean and exquisite image.
- Smart detection of the parking space status, and smart analysis of crossing over line, motion detection, etc.
- Energy-saving LED with high brightness and low consumption.
- Speed recognition in second accuracy to indicate the parking space status in real time and provide accurate available parking space number.
- Network wiring with easy connection, installation, and maintenance.
- ROI encoding.
- Two RJ45 interfaces, supporting connecting cameras in series, and no power cord is needed.
- Dual-stream.
- Built-in iBeacon module, supporting indoor positioning and navigation with the help of APP. iOS or Android SDK is provided.

Chapter 2 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 client software.



Note

Refer to the user manual of client software for the activation via client software.

2.1 Default Information

Device default information are as follows.

- Default IP address: 192.0.0.64
- Default port: 8000
- Default user name: admin

2.2 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 (<http://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

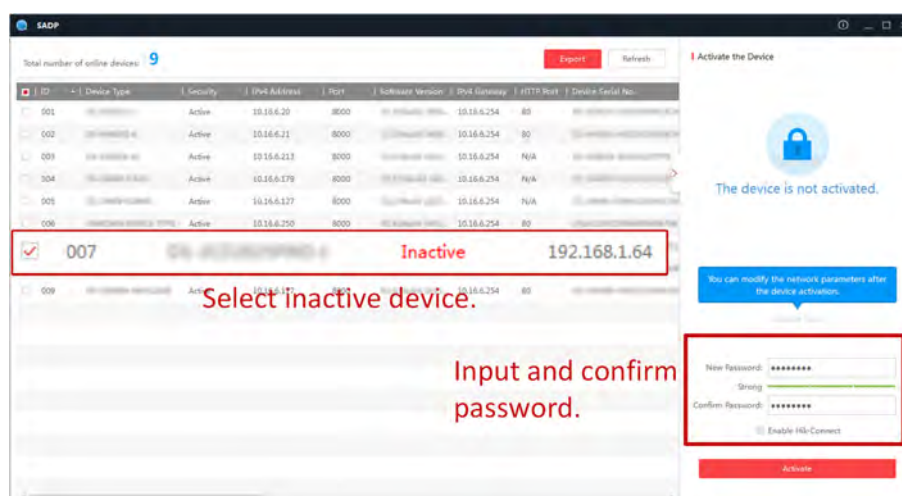
1. Run the SADP software and search the online devices.
2. Find and select your device in online device list.
3. Enter a new password (admin password) and confirm the password.



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 **Activate** to start activation.



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.

2.3 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.

Chapter 3 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. Enter **User Name** and **Password**.
3. Click **Login**.
4. Download and install appropriate plug-in for your web browser. Follow the installation prompts to install the plug-in.
5. Reopen the web browser after the installation of the plug-in and repeat steps 1 to 3 to login.
6. **Optional:** Click **Logout** on the upper right corner of the interface to log out of the device.

Chapter 4 Capture Configuration

4.1 Set Capture Parameters

4.1.1 Set Vehicle Feature Parameters

Set vehicle feature parameters when you need to detect the passing vehicle features.

Steps

1. Go to **Configuration → Device Configuration → Capture Parameters → Vehicle Feature** .

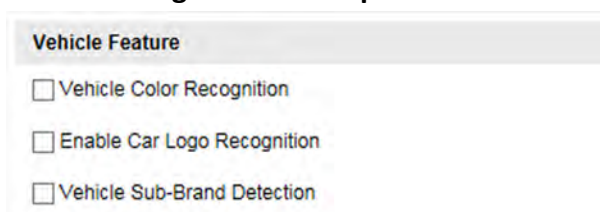


Figure 4-1 Set Vehicle Feature Parameters

2. Check the vehicle features to be detected.
3. Click **Save**.

4.1.2 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 → Device Configuration → Encoding and Storage → Image Encoding** .



Figure 4-2 Set Image Encoding Parameters

2. Select **Capture Resolution**.
3. Enter **JPEG Picture Size**.
4. Click **Save**.

4.1.3 Set Capture Overlay

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

Steps

1. Go to **Configuration → Device Configuration → Text Overlay → Single Picture Overlay** .

2. Check Capture Picture Overlay.

☒ Capture Picture Overlay

Percentage: 100

Font Size: 32*32

Foreground Color: #ffffff

Background Color: [Black]

☒ Overlay on the Picture

☐ Overlay Above the Picture

☐ Overlay Below the Picture

☒ Overlay Number Zeroizing

☐ Overlay Plate Close-up

(Single Captured Picture Only)

Capture Test

Hint: Test the function of triggering the camera to capture.

Overlay Information List ☐ Select All

☐ Location: ☐ Device No.: ☐ Parking Space No.: ☐ Capture Time:

☐ Plate No.: ☐ Vehicle Color: ☐ Vehicle Type: ☐ Vehicle Brand:

Type	Overlay Information	Overlay Position	Space	Line Break Characters	
------	---------------------	------------------	-------	-----------------------	--

Figure 4-3 Set Capture Overlay

3. Set the font size, color, overlay position, etc.

Percentage

It is the percentage that the overlaid information occupies on the picture.

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, and a license plate close-up picture will be overlaid on the upper left corner of the captured picture.

4. Select the overlay information from the list.



Note

The overlay information may vary with different models. The actual device prevails.

5. Set the overlay information.

Type

You can edit the type.

Overlay

For some information type, you can edit the detailed information.

Information

- Overlay Position** If you select **Overlay on the Picture**, you can check it. Then the current information will be displayed from a new line.
- 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.
-  /  Adjust the display sequence of the overlay information.

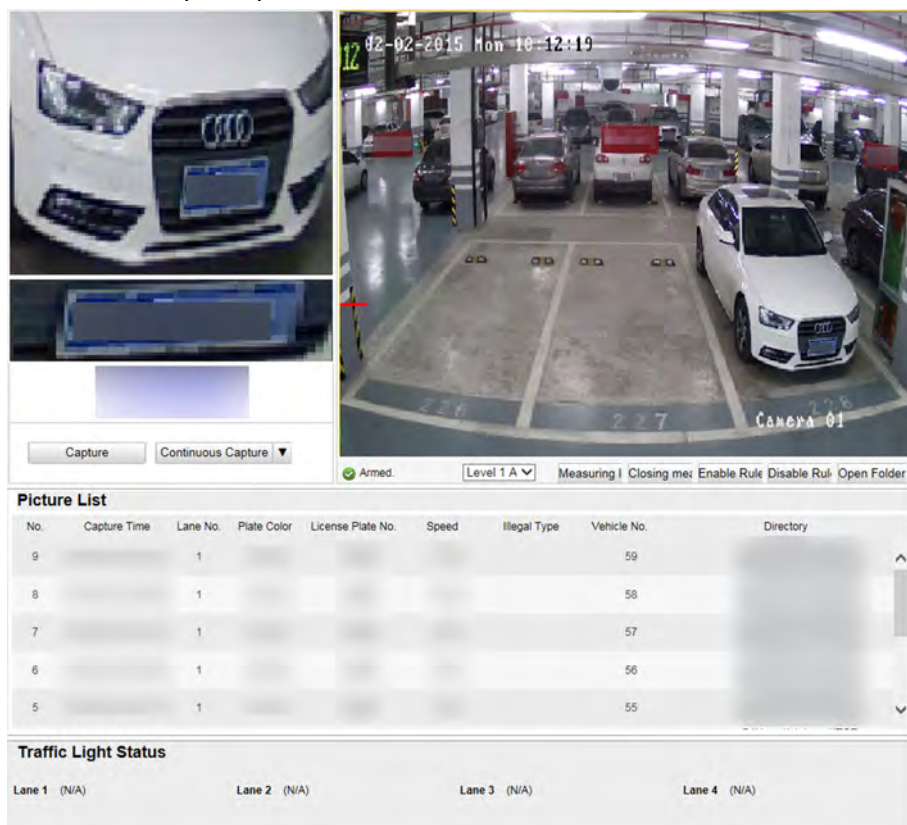
6. Click **Save**.

4.2 View Real-Time Picture

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

Steps

1. Go to **Live View** → **Live Traffic Statistics**.
2. Select the captured picture from the picture list, and you can view the capture scene picture and the captured license plate picture.



Picture List

No.	Capture Time	Lane No.	Plate Color	License Plate No.	Speed	Illegal Type	Vehicle No.	Directory
9		1					59	
8		1					58	
7		1					57	
6		1					56	
5		1					55	

Traffic Light Status

Lane 1	Lane 2	Lane 3	Lane 4
(N/A)	(N/A)	(N/A)	(N/A)

Figure 4-4 Real-Time Picture

3. You can do the following operations on this interface.

- Select the arming mode. **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 **Measuring license plate** to measure the license plate pixel. After the measurement, click **Close measurement**.
- Click **Enable Rule** to enable rule when measuring the license plate. After the measurement, click **Disable Rule**.
- Click **Capture** to enable manual capture. The captured pictures will be saved in the set local path. Or you can click **Open Folder** to view the pictures.
- Click  on the right of **Continuous Capture** to set the continuous capture parameters. After the configuration, click **Continuous Capture** to capture pictures.

Capture Times

Up to five times are supported.

Continuous Capture Interval

Up to four intervals are supported. You can set the time of each interval.

Chapter 5 Parking Space Detection

5.1 Set Detection Rules

To detect the parking spaces, you should enable the smart analysis and set the parameters of parking spaces.

Steps

1. Go to **Configuration** → **Device Configuration** → **Smart Analysis** → **Analytics Parameters**

Camera

Camera 1

Recognized Parking Space(s)

3

Configuration Type

Manual Configuration

Parking Space 1

Parking Space 2

Parking Space 3

Parking Space No.

1

Special Parking Space

☐Yes ☒No

Parking Space Area



Figure 5-1 Smart Analysis

2. **Optional:** Select **Camera** if the device supports dual lens.
3. Select the number of **Recognized Parking Space(s)**.



Note

The number may vary with different models.

According to the number of spaces you set, the quadrilateral(s) of the parking space area(s) will appear in the image.

4. Click the tab of the parking space No. to set the parameters.
 - 1) Enter **Parking Space No.**
 - 2) Click **Yes** if the parking space is a special parking space.
5. Adjust the parking space areas.
 - 1) Select a quadrilateral, and drag the vertices of the quadrilateral to adjust its shape, or drag the quadrilateral to adjust the position.
 - 2) Repeat the step above to adjust other areas.
6. Click **Save**.

5.2 Set Parking Space Indicator

The indicator indicates the parking space status. Different colors stand for different status. You can set the indicator colors and flashing status for different parking space status.

Steps

1. Go to **Configuration → Device Configuration → Parking Space Indicator → Parking Space Indicator**.

Parking Space Indicator Parameters

Indicator Control Mode: Internal & External Indicator

Parking Space(s): 3

Parking Space 1 | Parking Space 2 | Parking Space 3

Indicator Source: Internal Indicator

Parking Space Status	Enable	Indicator Flicker	Indicator Color
Unoccupied	Yes	No	Green
Occupied	Yes	No	Red
Over Line	Yes	No	Yellow
Special Parking Space	Yes	No	Blue

Alternate Indicator Control Parameters

Enable: ☐

IP Address: 0.0.0.0

Figure 5-2 Set Parking Space Indicator

2. Select **Indicator Control Mode**.

Internal Indicator

The parking space status is informed via the internal indicator of the device.

External Indicator

The parking space status is informed via the external indicator connected to the device. After the connection, power up the device and the external indicator will start the self-test by indicating red, green, and blue respectively.



Note

If the self-test fails, check the cable connection.

Internal & External Indicator

The internal and external indicators work at the same time. You can respectively set the indicator to inform the status of each parking space.

3. Set the indicator parameters for different parking space status.

- 1) **Optional:** Select **Indicator Source** if you have selected **Internal & External Indicator** for **Indicator Control Mode**.
- 2) Enable or disable the indication for different parking space status.

Unoccupied

The parking space is free.

Occupied

The parking space is occupied by a vehicle.



Note

If you select **Internal Indicator** or **External Indicator**, occupied status means all the detected parking spaces are occupied, and unoccupied status means not all the detected parking spaces are occupied. E.g., three parking spaces are detected. When the three spaces are all occupied, the indicator will display the color you set for the occupied status. When two spaces are occupied and one space is unoccupied, the indicator remains the color you set for the unoccupied status.

Over Line

A vehicle occupied two parking spaces.

Special Parking Space

The parking space is specified to a certain vehicle.

- 3) Select **Indicator Flicker** and **Indicator Color** for different parking space status.
4. **Optional:** If there are symmetric parking spaces on both sides, and the distance between the device to the monitored parking space lines is too far, you can enable alternate indicator control and set the parameters.
- 1) Check **Enable** of **Alternate Indicator Control Parameters**.
 - 2) Enter **IP Address** of the device on the opposite parking space.

The current device can control the indicator of the device on the opposite parking space, and vice versa.

5. Click **Save**.



Note

For the detailed application of the different indicator control modes, refer to "Typical Application" for details.

5.3 View Parking Space Status

You can view the occupancy status, license plate number, indicator color, etc. of the detected parking spaces.

Steps

1. Go to **Configuration → Device Configuration → Parking Space Indicator → Parking Space Status**.
2. View the parking space status.

Parking Space No.	Occupancy Status	Plate No.	Indicator Flickering Status	Indicator Color	Vehicle Color
1	Occupied	IA757SJ	No	Red	(dark)other
2	Occupied	A1371N	No	Red	(dark)other
3	Occupied	TE0F909	No	Red	(dark)other

Figure 5-3 Parking Space Status

5.4 Typical Application

In this section, the typical applications of the internal indicator control mode, external indicator control mode, alternate indicator control mode, and special parking space will be illustrated.

5.4.1 Internal/External Indicator Application



Note

Here we take example of the scene in which a device monitors three parking spaces.

In internal/external indicator application, the indicator displays the color of occupied status when the three spaces are all occupied. The indicator displays the color of unoccupied status when any of the spaces is free. The indicator displays the color of over line when a parked vehicle occupies two spaces.

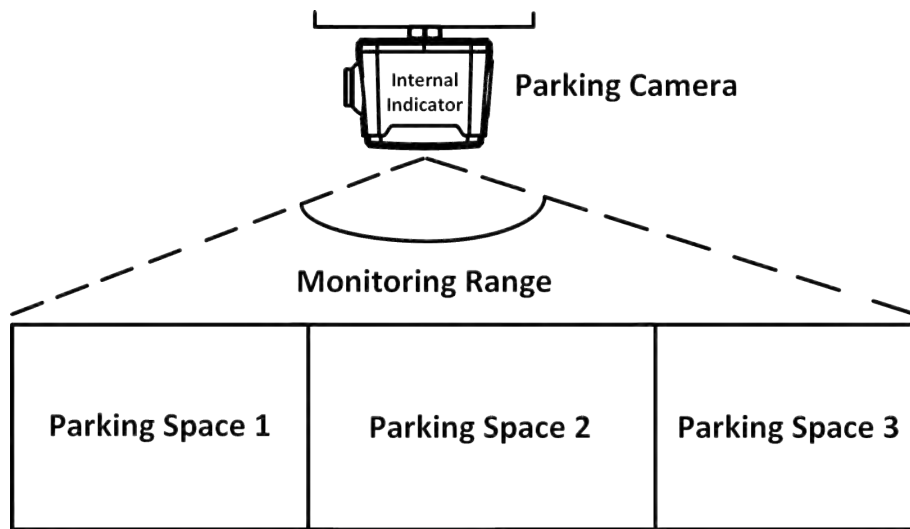


Figure 5-4 Internal Indicator Application

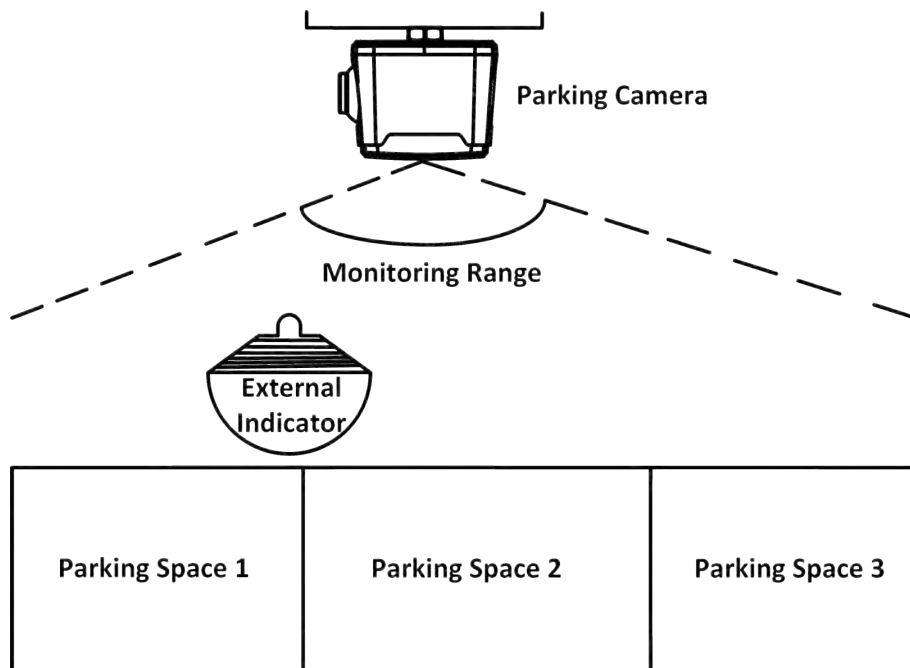


Figure 5-5 External Indicator Application

5.4.2 Internal and External Indicator Application

Note

Here we take example of the scene in which a device monitors three parking spaces.

In internal and external indicator application, the internal and external indicators work at the same time. All the indicators display the set colors for different parking space status. E.g., the parking

camera A controls the internal indicator B, the external indicator 2 of parking camera A, and the external indicator 2 of parking camera B, and detects the status of the parking spaces B1 to B3. The parking camera B controls the internal indicator A, the external indicator 1 of parking camera A, and the external indicator 1 of parking camera B, and detects the status of the parking spaces A1 to A3, as shown below. After the settings, the external indicator 2 of parking camera A will display the different status of parking space B1, the internal indicator B will display the different status of parking space B2, and the external indicator 2 of parking camera B will display the different status of parking space B3. The external indicator 1 of parking camera A will display the different status of parking space A1, the internal indicator A will display the different status of parking space A2, and the external indicator 1 of parking camera B will display the different status of parking space A3.

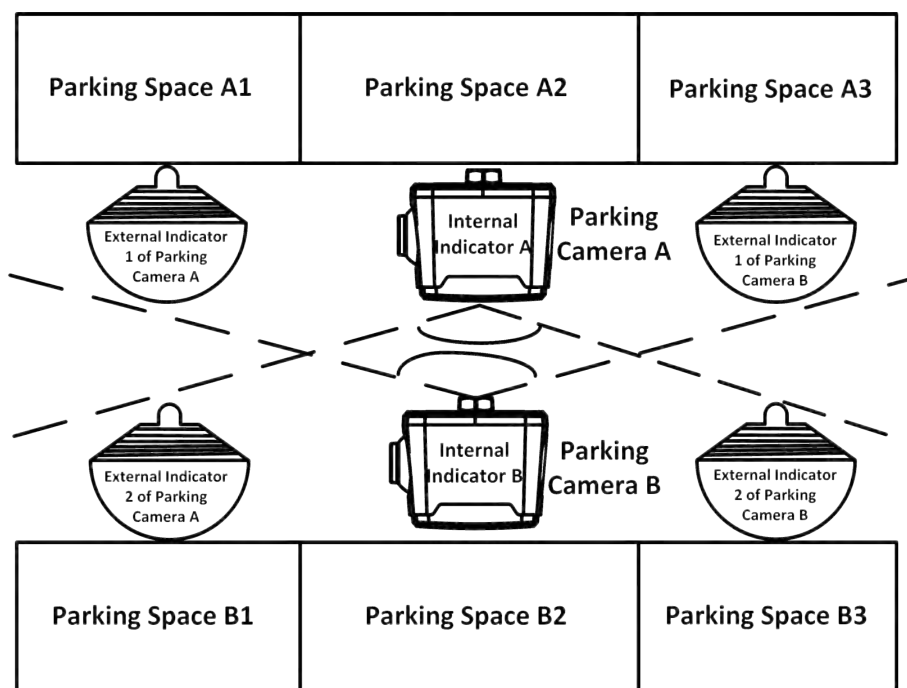


Figure 5-6 Internal and External Indicator Application

5.4.3 Alternate Indicator Control Application



Note

Here we take example of the scene in which two devices monitor six parking spaces.

The alternate indicator control is applicable to the parking lot where there are symmetric parking spaces on both sides, and the distance between the device to the monitored parking space lines is too far.

E.g., the parking camera A controls the indicator B and detects the status of the parking spaces B1 to B3, while the parking camera B controls the indicator A and detects the status of the parking spaces A1 to A3, as shown below. After the settings, the indicator A/B will display the color of

occupied status when the parking spaces A1 to A3/B1 to B3 are all occupied. The indicator A/B will display the color of unoccupied status when any of the three spaces is free. The indicator A/B will display the color of over line when a parked vehicle occupies two spaces.

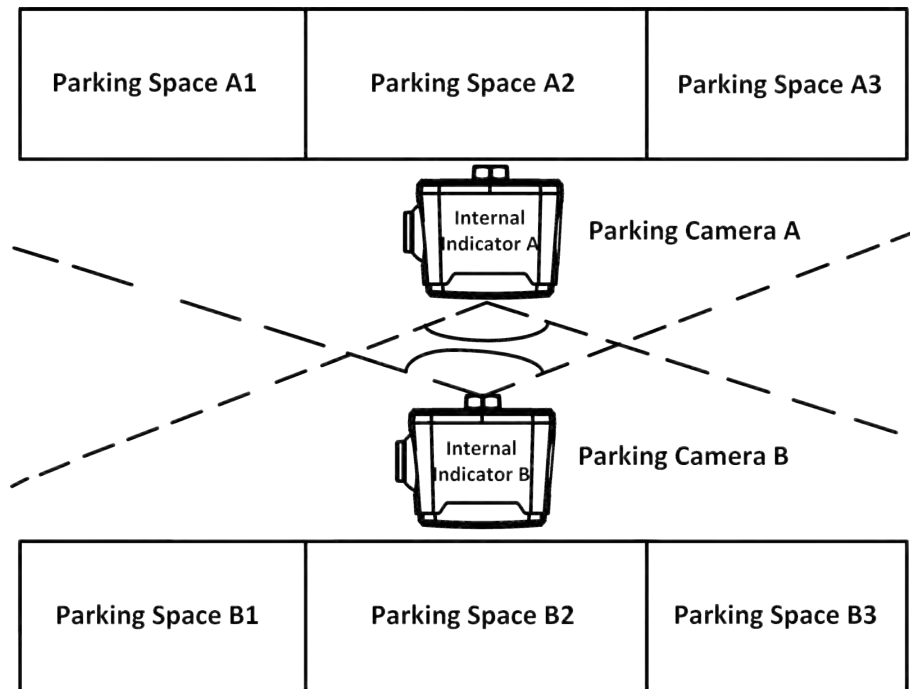


Figure 5-7 Alternate Indicator Control Application

5.4.4 Special Parking Space Application

Note

Here we take example of the scene in which a device monitors three parking spaces.

E.g., the parking space 1 is set as a special parking space in the monitoring range, and its status is indicated by the external indicator 1 connected to the device. Then the external indicator 1 will display the set color for the special parking space, and the occupied, unoccupied, or over-line status is invalid for the indicator.

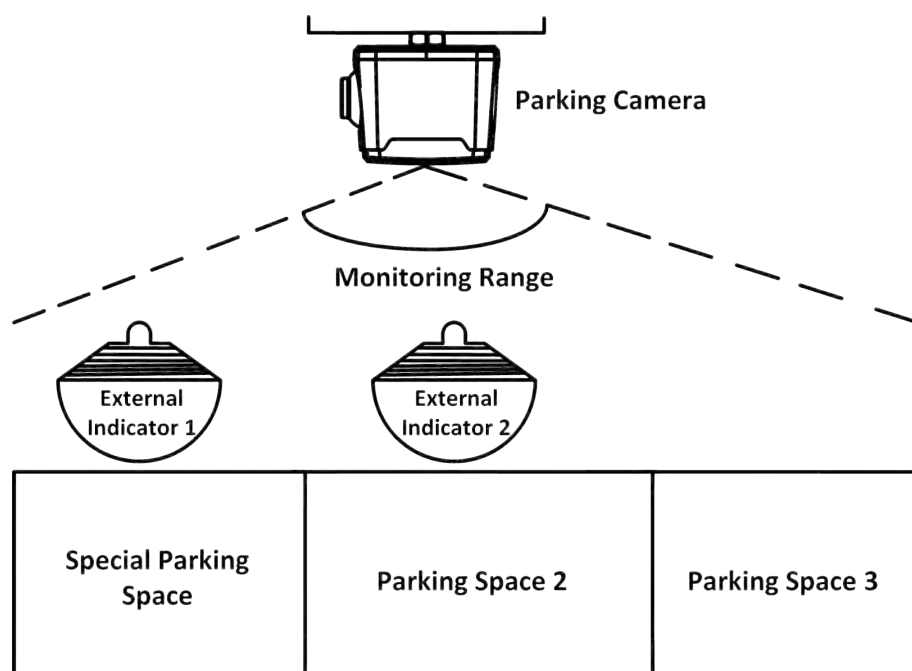


Figure 5-8 Special Parking Space Application

Chapter 6 Live View and Local Configuration

6.1 Live View

6.1.1 Start/Stop Live View

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

6.1.2 Select Image Display Mode

Click     to display the image in 4:3/16:9/original/self-adaptive display mode.

6.1.3 Select Stream Type

Click **Main Stream** / **Sub-Stream** / **Third Stream** 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.



Note

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

6.1.4 Switch Lens

For the dual-lens camera, select   to switch the lens.

6.1.5 Capture Picture Manually

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

Steps

1. Click  to start live view.
2. Click  to capture a picture.
3. **Optional:** Click **Configuration** → **Local Configuration** to view the saving path of snapshots in live view.

6.1.6 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 Configuration** to view the saving path of record files.

6.1.7 Enable Digital Zoom

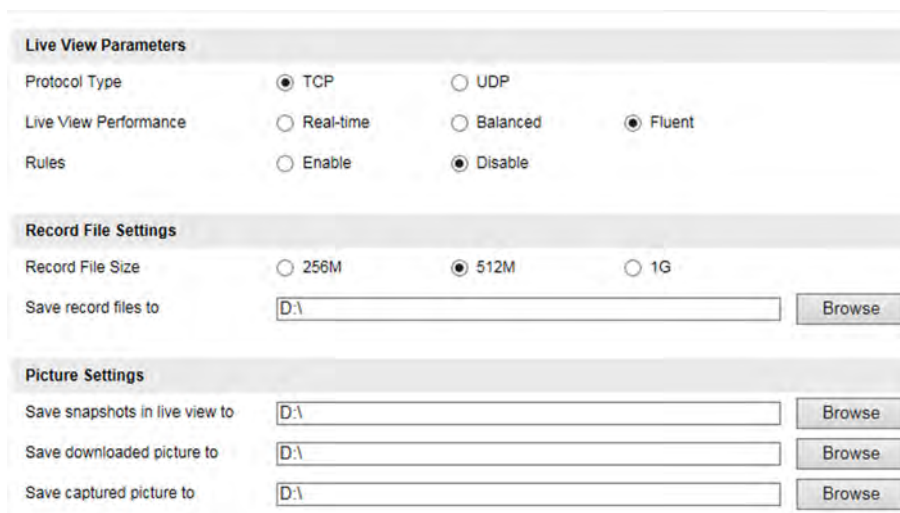
You can enable digital zoom to zoom in a certain part of the live view image.

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.

6.2 Local Configuration

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



The screenshot displays the 'Local Configuration' window with three main sections:

- Live View Parameters:**
 - Protocol Type: ☒ TCP, ☐ UDP
 - Live View Performance: ☐ Real-time, ☐ Balanced, ☒ Fluent
 - Rules: ☐ Enable, ☒ Disable
- Record File Settings:**
 - Record File Size: ☐ 256M, ☒ 512M, ☐ 1G
 - Save record files to:
- Picture Settings:**
 - Save snapshots in live view to:
 - Save downloaded picture to:
 - Save captured picture to:

Figure 6-1 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.

Live View Performance

Real-Time

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

Balanced

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

Fluent

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

Rules

If you enable rules, the colored rectangles will display on the live view image when the motion detection is triggered.

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 snapshots in live view to

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

Save downloaded picture to

Set the saving path for the downloaded pictures.

Save captured picture to

Set the saving path for the captured pictures in **Live View → Live Traffic Statistics** .

Chapter 7 Storage

7.1 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 → Device Configuration → Encoding and Storage → FTP**.

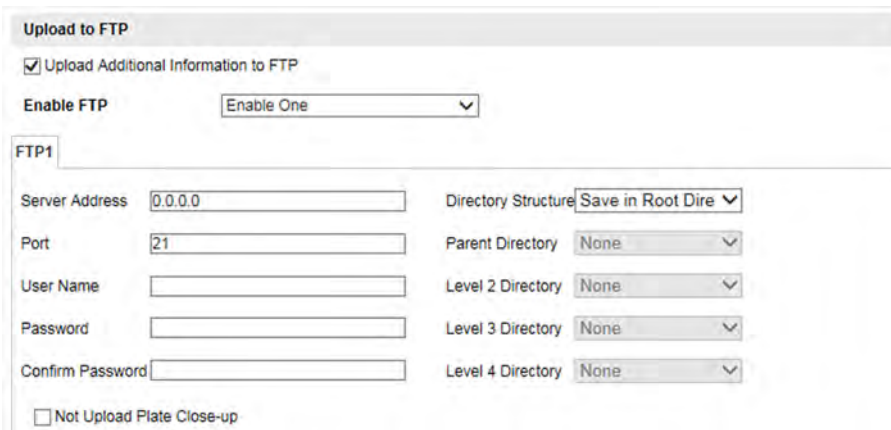


Figure 7-1 Set FTP

2. **Optional:** Check **Upload Additional Information to FTP**, and then the related information can be attached when uploading.
3. Enable the FTP server.
4. Set FTP parameters.
 - 1) Enter **Server Address** and **Port**.
 - 2) Enter **User Name** and **Password**, and confirm the password.
 - 3) Select **Directory Structure**.



Note

If multiple directories are needed, you can customize the directory name.

5. **Optional:** Check **Not Upload Plate Close-up** if the license plate close-up pictures are not needed to upload.
6. Set the name rule and separator according to the actual needs.
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**.

7.2 Set Cloud Storage

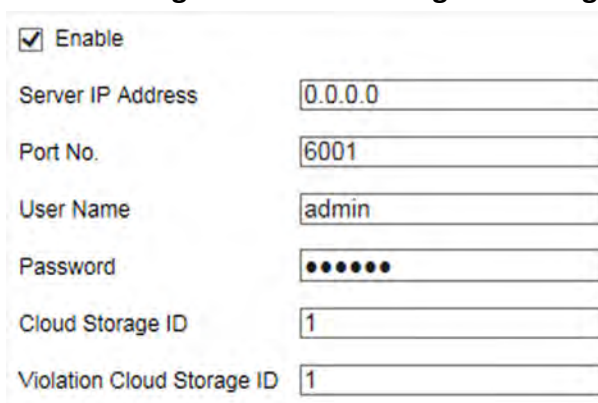
Cloud storage is a kind of network storage. It can be used as the extended storage to save the captured pictures.

Before You Start

- Arrange the cloud storage server.
- You have enabled level 1 arm in **Live View** → **Live Traffic Statistics** .

Steps

1. Go to **Configuration** → **Device Configuration** → **Encoding and Storage** → **Cloud Storage** .



☒ Enable	
Server IP Address	0.0.0.0
Port No.	6001
User Name	admin
Password	•••••
Cloud Storage ID	1
Violation Cloud Storage ID	1

Figure 7-2 Set Cloud Storage

2. Check **Enable**.
3. Set the server parameters.
 - 1) Enter **Server IP Address** and **Port No.**.
 - 2) Enter **User Name** and **Password**.
 - 3) Enter the ID according to the storage area No. of the server.
4. Click **Save**.

7.3 Set Listening Host

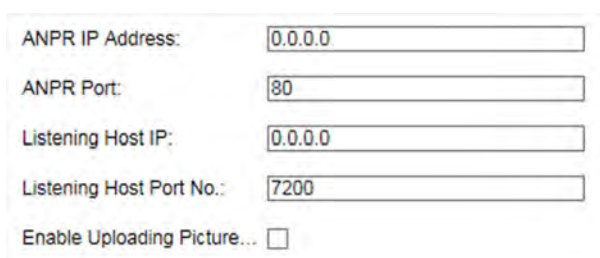
The listening host can be used to receive the uploaded information and pictures of the device arming alarm.

Before You Start

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

Steps

1. Go to **Configuration** → **Device Configuration** → **System Configuration** → **TCP/IP** .



The screenshot shows a configuration form with the following fields and values:

Field	Value
ANPR IP Address:	0.0.0.0
ANPR Port:	80
Listening Host IP:	0.0.0.0
Listening Host Port No.:	7200
Enable Uploading Picture...	☐

Figure 7-3 Set Listening Host

2. Set **ANPR IP Address/Domain** and **ANPR Port** if you need to upload the alarm information.
3. Set **Listening Host IP** and **Listening Host Port No.**, and check **Enable Uploading Picture while Listening** if you need to upload pictures.
4. Click **Save**.

Chapter 8 Encoding and Display

8.1 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

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

Stream Type

Video stream and video & audio stream are selectable.

Max. 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.

Encoding Complexity

Under the same bitrate, the higher the encoding complexity is, the higher the image quality is, and the higher the requirement of the network bandwidth is.

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**.

8.2 Set Image 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 → Device Configuration → Image Parameters → General Parameters / Configuration → Device Configuration → Image Parameters → Video** .

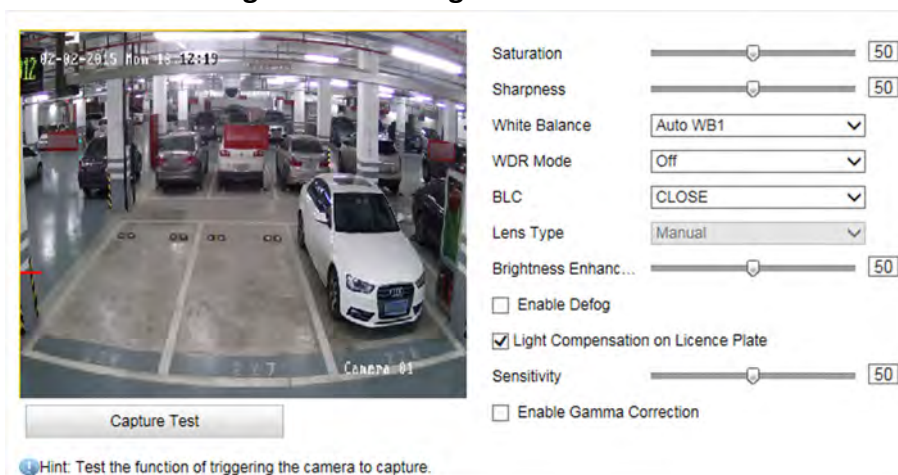


Figure 8-1 Set General Parameters

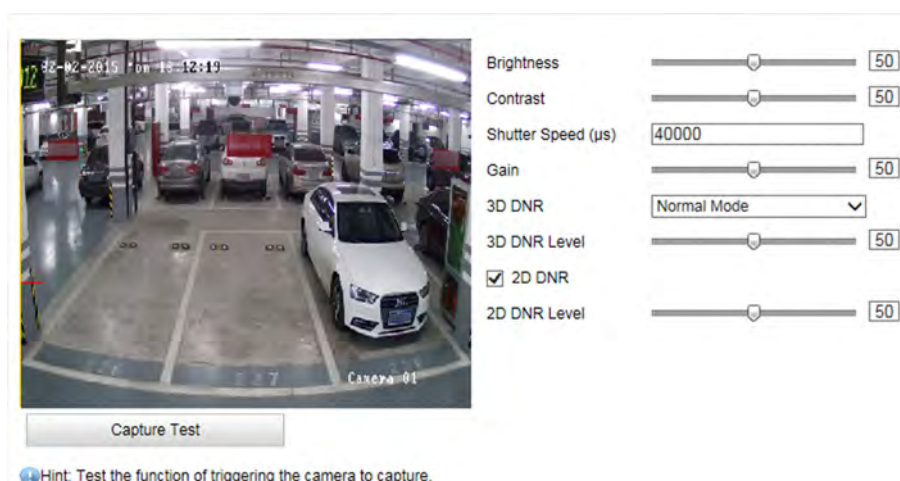


Figure 8-2 Set Video Image Parameters

2. Adjust the parameters.

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 time.

Brightness

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

BLC

If you focus on an object against strong backlight, the object will be too dark to be seen clearly. BLC compensates light to the object in the front to make it clear.

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.

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.

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 Speed

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.

8.3 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 → Device Configuration → Encoding and Storage → ROI**.

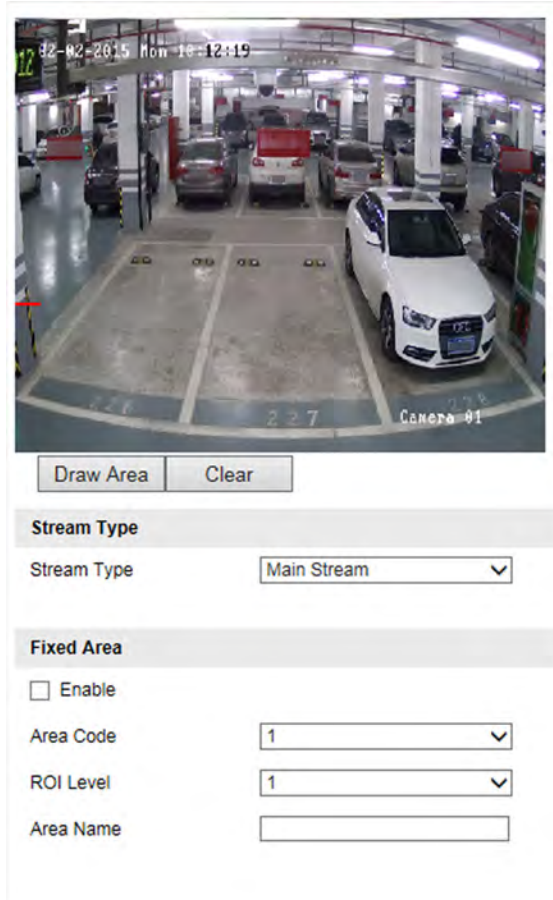


Figure 8-3 Set ROI

2. Select **Stream Type**.
3. Set ROI region.
 - 1) Check **Enable**.
 - 2) Select **Area Code**.
 - 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 area codes and repeat the steps above if you need to draw multiple fixed areas.

8.4 Set OSD

You can customize OSD information on the live view.

Steps

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

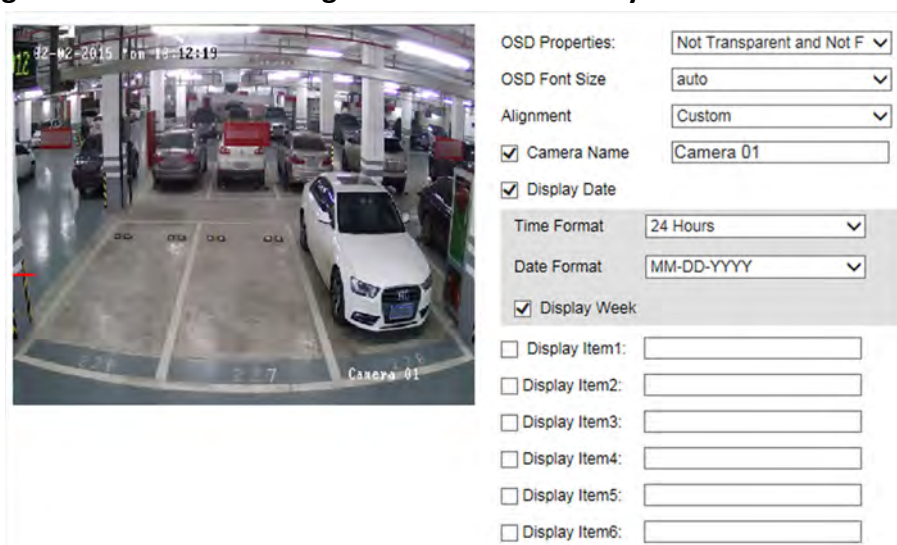


Figure 8-4 Set OSD

2. Set OSD property, font size, alignment, etc.
3. Set the display content.
 - 1) Check **Camera Name** and enter the name.
 - 2) Check **Display Date**, and set the time and date format.
 - 3) Check **Display Week**.
4. **Optional:** Check the display item(s) and enter the information in the text field(s).
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.

Chapter 9 Network Configuration

9.1 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 → Device Configuration → System Configuration → TCP/IP** for parameter settings.

Figure 9-1 Set IP Address

NIC Type

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

IPv4

Two IPv4 modes are available.

Auto-Obtain

The device automatically gets the IPv4 parameters from the network if you check **Auto-Obtain**. 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 auto-obtain.

Manual

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

IPv6

Three IPv6 modes are available.

Route Announcement

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



Note

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

Auto-Obtain

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

Manual

Enter **IPv6 Address**, **IPv6 Subnet Mask**, 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 Server** properly if needed.

9.2 Connect to EHome Platform

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

Before You Start

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

Steps

1. Go to **Configuration** → **Device Configuration** → **System Configuration** → **EHOME** .

Figure 9-2 Connect to EHome Platform

2. Check **Enable Protocol**.

3. Select **Address Type**.

Domain Name

When the server is in extranet, and the IP address is dynamic, you can select it.

IP

When the server IP address is static, you can select it.

4. Enter the parameters below.

Server IP

Enter the static IP address of EHome platform.

Server Port

The default value is 7660.

Device ID

The ID of the device registered on the EHome platform. If you leave it empty, the device will be logged in to the platform with serial No.

5. Click **Save**.

9.3 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 "Set IP Address" for details.
- Complete port mapping. The default port is 80, 8000, and 554.

Steps

1. Go to **Configuration → Device Configuration → System Configuration → DDNS**.

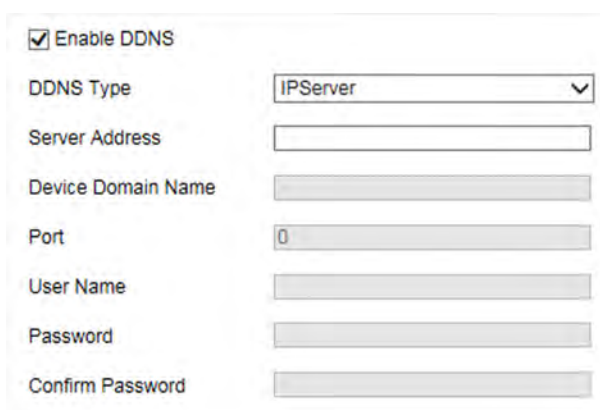


Figure 9-3 Set DDNS

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.

9.4 Set Port

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



Caution

Do not modify the default port parameters at will, otherwise the device may be inaccessible.

Go to **Configuration → Device Configuration → System Configuration → Port** for port settings.

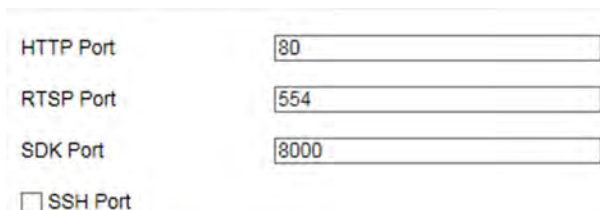


Figure 9-4 Set Port

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.

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.

9.5 Set Bluetooth

You can enable Bluetooth to upload the parking space information to the platform.

Steps



Note

Some models do not support Bluetooth. The actual device prevails.

1. Go to **Configuration → Device Configuration → Bluetooth**.

Enable Bluetooth	☒
Broadcast Time Interval(ms)	100
Rated Power(db)	-61
Transmitted Power	Strong
Parking Lot ID	123
Parking Lot Floor Amount	2
Parking Space Amount on Each Floor	1

Figure 9-5 Set Bluetooth

2. Check **Enable Bluetooth**.
3. Set the Bluetooth parameters according to the platform Bluetooth communication standard.

Broadcast Time Interval

It refers to the frequency of the sent broadcast frames of the Bluetooth module.

Rated Power

It refers to the signal strength received within 1 m range of the device.

Transmitted Power

The higher the transmitted power is, the further the receiving distance is.

4. Set **Parking Lot ID**, **Parking Lot Floor Amount**, etc. according to the actual parking lot environment.



Note

Enter the hex characters (0 to F) according to the corresponding standard of Bluetooth for the parking lot ID.

Chapter 10 Serial Port Configuration

10.1 Set RS-485

Set RS-485 parameters if the device has been connected to a vehicle detector or other RS-485 devices.

Before You Start

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

Steps

1. Go to **Configuration → Device Configuration → System Configuration → Serial Port Parameters**.



Figure 10-1 Set RS-485

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**.

Application Mode Trigger

Select it if the vehicle detector has been connected via the RS-485 serial port.

Transparent Transmission

Select it, and the network command can be transmitted to RS-485 control command via the RS-485 serial port.

4. Click **Save**.

10.2 Set RS-232

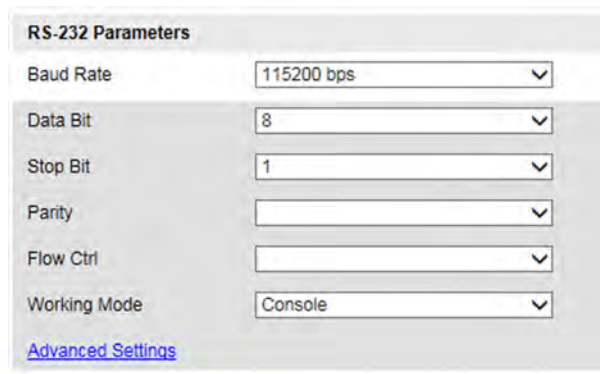
Set RS-232 parameters if you need to debug the device via RS-232 serial port, or peripheral devices have been connected.

Before You Start

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

Steps

1. Go to **Configuration → Device Configuration → System Configuration → Serial Port Parameters**.
2. Click **Advanced Settings**.



RS-232 Parameters	
Baud Rate	115200 bps
Data Bit	8
Stop Bit	1
Parity	
Flow Ctrl	
Working Mode	Console
Advanced Settings	

Figure 10-2 Set RS-232

3. Set **Baud Rate**, **Data Bit**, **Stop Bit**, etc.



Note

The parameters should be same with those of the connected device.

4. 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.

Narrowband

Reserved.

5. Click **Save**.

Chapter 11 Alarm Configuration

This section explains how to set the device to respond to alarm events, including motion detection and exceptions. These events can trigger the linkage methods, such as notifying the surveillance center.

11.1 Set Motion Detection

Motion detection detects the moving objects in the set surveillance area, and a series of actions can be taken when the alarm is triggered.

Steps

1. Go to **Configuration → Device Configuration → Exception → Motion Detection**.
2. Check **Enable Motion Detection** and **Enable Dynamic Analysis**.
3. Set the motion detection area.
 - 1) Click **Draw Area**.
 - 2) Drag the mouse on the live view to draw a motion detection area.
 - 3) Click **Stop Drawing** to complete the current drawing.
 - 4) **Optional:** Repeat the steps to draw more areas.
 - 5) **Optional:** Click **Clear All** to clear all the areas.
 - 6) Adjust **Sensitivity** of the motion detection.

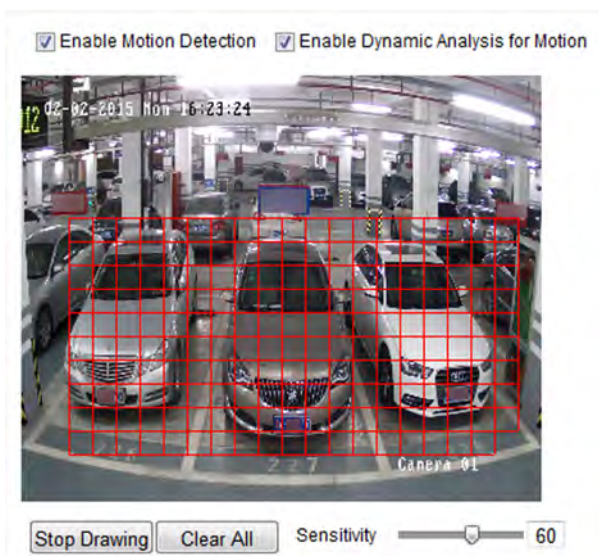


Figure 11-1 Set Motion Detection

4. Set the arming schedule for the motion detection.
 - 1) Click **Edit**.
 - 2) Select a day to set the arming schedule.
 - 3) Set the start time and end time of the periods.

- 4) **Optional:** If you want to copy the arming schedule to other days, check the day(s) and click **Copy**.
- 5) Click **OK**.



Note

The time of each period cannot be overlapped. Up to four periods can be set for each day.

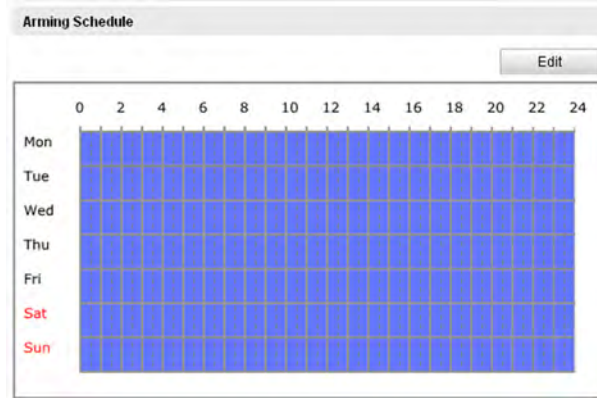


Figure 11-2 Set Arming Schedule

5. Check **Notify Surveillance Center** to send an exception or alarm signal to the surveillance center when the motion detection occurs.
6. Click **Save**.

11.2 Set Exception Alarm

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

Steps

1. Go to **Configuration → Device Configuration → Exception → Exception**.

Enable	Exception Type	Notify Surveillance Center	Trigger Alarm Output	Alarm Dwell Time (s)
☐	Network Disconnected			
☐	IP Address Conflicted			

Figure 11-3 Set Exception Alarm

2. Check the exception type to be alarmed.
3. Click **Save**.

Chapter 12 Safety Management

12.1 Manage User

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

Steps

1. Go to **Configuration → Device Configuration → User Management**.
2. Add a user.
 - 1) Click **Add**.
 - 2) Enter **User Name** and select **Level**.
 - 3) Enter **Admin Password**, **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**.



Note

The administrator can add up to 31 user accounts.

-
3. You can do the following operations.
 - Select a user and click **Modify** to change the password and permission.
 - Select a user and click **Delete** to delete the user.

12.2 Enable User Lock

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

Steps

1. Go to **Configuration → Device Configuration → System Configuration → Service**.
2. Check **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.

12.3 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 → Device Configuration → System Configuration → Port**.
2. Uncheck **SSH Port**.
3. Click **Save**.

12.4 Set HTTPS

12.4.1 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 → Advanced Settings → HTTPS**.
2. Select **Create Self-signed Certificate**.
3. Click **Create**.
4. Follow the prompt to enter **Country, Hostname/IP, Validity**, and other parameters.
5. Click **OK**.

Result

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

12.4.2 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 → Device Configuration → System Configuration → HTTPS**.
2. Select **Create certificate request first and continue the installation**.
3. Click **Create**.

4. Follow the prompt to enter **Country, Hostname/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 13 Maintenance

13.1 View Device Information

Basic Information and Algorithms Library Version

Go to **Configuration → Device Configuration → System Configuration → Device 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 → Device Status** to view the status of the current device and vehicle detector.

13.2 Upgrade

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

Before You Start

Prepare the upgrade file.

Steps

1. Go to **Configuration → Device Configuration → System 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.

13.3 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 → Device Configuration → System Maintenance → Reboot**.
2. Click **Reboot**.
3. Click **OK** to reboot the device.

13.4 Restore Parameters

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

Steps

1. Go to **Configuration → Device Configuration → System Maintenance → Default** .
2. Select the restoration mode.
 - Click **Restore** to restore the parameters except the IP address, subnet mask, gateway, and port No. to the default settings.
 - Click **Restore Factory Settings** to restore all the parameters to the factory settings.
3. Click **OK**.

13.5 Synchronize Time

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

Steps

1. Go to **Configuration → Device Configuration → System Configuration → Time Settings** .
2. Select **Time Zone**.
3. Select **Synchronization 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 Synchronization

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



Note

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

4. Click **Save**.

13.6 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 → Device Configuration → System Configuration → DST** .
2. Check **Enable DST**.

3. Set **Start Time**, **End Time**, and **DST Bias**.
4. Click **Save**.

13.7 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 → Device Configuration → System Maintenance → Export Configuration File**.
2. Click **Export**.
3. Set a 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**.

13.8 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 → Device Configuration → System Maintenance → Import Configuration File**.
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. Enter the password which is set when the configuration file is exported, and click **OK**.
5. Click **Import**.
6. Click **OK** on the popup window.

Result

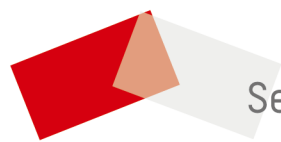
The parameters will be imported, and the device will reboot.

13.9 Export Debug File

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

Steps

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



See Far, Go Further