Portable Speed Dome

User Manual

Initiatives on the Use of Video Products

Thank you for choosing Hikvision products.

Technology affects every aspect of our life. As a high-tech company, we are increasingly aware of the role technology plays in improving business efficiency and quality of life, but at the same time, the potential harm of its improper usage. For example, video products are capable of recording real, complete and clear images. This provides a high value in retrospect and preserving real-time facts. However, it may also result in the infringement of a third party's legitimate rights and interests if improper distribution, use and/or processing of video data takes place. With the philosophy of "Technology for the Good", Hikvision requests that every end user of video technology and video products shall comply with all the applicable laws and regulations, as well as ethical customs, aiming to jointly create a better community.

Please read the following initiatives carefully:

- Everyone has a reasonable expectation of privacy, and the installation of video products should not be in conflict with this reasonable expectation. Therefore, a warning notice shall be given in a reasonable and effective manner and clarify the monitoring range, when installing video products in public areas. For non-public areas, a third party's rights and interests shall be evaluated when installing video products, including but not limited to, installing video products only after obtaining the consent of the stakeholders, and not installing highly-invisible video products.
- The purpose of video products is to record real activities within a specific time and space and under specific conditions. Therefore, every user shall first reasonably define his/her own rights in such specific scope, in order to avoid infringing on a third party's portraits, privacy or other legitimate rights.
- During the use of video products, video image data derived from real scenes will continue to be generated, including a large amount of biological data (such as facial images), and the data could be further applied or reprocessed. Video products themselves could not distinguish good from bad regarding how to use the data based solely on the images captured by the video products. The result of data usage depends on the method and purpose of use of the data controllers. Therefore, data controllers shall not only comply with all the applicable laws and regulations and other normative requirements, but also respect international norms, social morality, good morals, common practices and other non-mandatory requirements, and respect individual privacy, portrait and other rights and interests.
- The rights, values and other demands of various stakeholders should always be considered when processing video data that is continuously generated by video products. In this regard, product security and data security are extremely crucial. Therefore, every end user and data controller, shall undertake all reasonable and necessary measures to ensure data security and avoid data leakage, improper disclosure and improper use, including but not limited to, setting up access control, selecting a suitable network environment (the Internet or Intranet) where video products are connected, establishing and constantly optimizing network security.

- Video products have made great contributions to the improvement of social security around the world, and we believe that these products will also play an active role in more aspects of social life. Any abuse of video products in violation of human rights or leading to criminal activities are contrary to the original intent of technological innovation and product development. Therefore, each user shall establish an evaluation and tracking mechanism of their product application to ensure that every product is used in a proper and reasonable manner and with good faith.

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

FCC Information

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

FCC Conditions

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

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

EU Conformity Statement

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

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

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

Industry Canada ICES-003 Compliance

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

Symbol Conventions

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

Symbol	Description
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

Regulatory Information

This is a class A product and may cause radio interference in which case the user may be required to take adequate measures.

Laws and Regulations

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

Power Supply

- Use of the product must be in strict compliance with the local electrical safety regulations.
- Use the power adapter provided by qualified manufacturer. Refer to the product specification for detailed power requirements.
- It is recommended to provide independent power adapter for each device as adapter overload may cause over-heating or a fire hazard.
- Make sure that the power has been disconnected before you wire, install, or disassemble the device in the authorized way according to the description in the manual.
- 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.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- Make sure the power supply has been disconnected if the power adapter is idle.
- Connect to earth before connecting to the power supply.

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.
- Install the device in such a way that lightning strikes can be avoided. Provide a surge suppressor at the inlet opening of the equipment under special conditions such as the mountain top, iron tower, and forest.
- 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.

- No naked flame sources, such as lighted candles, should be placed on the equipment.
- DO NOT touch the sharp edges or corners.
- To prevent possible hearing damage, DO NOT listen at high volume levels for long periods.
- The device can only be safely used in the region below 2,000 meters above the sea level.

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 the unauthorized 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. 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.

Screen

Clean the screen with soft and dry cloth or other substitutes to wipe the interior and exterior surface. DO NOT use alkaline detergents. Protect the screen from scratches.

Battery

- DO NOT charge the battery continuously more than one week. Overcharging may shorten the battery life.
- Battery will discharge gradually if it is not used for a long time. It must be recharged before using.
- If the device contains dismountable battery, store the device and battery separately if it is not used.
- The battery must be charged and discharged every three months if it is not used, and recharged to 60% to 70% power percentage to store.
- The scrapped battery should be discarded in compliance with the local laws and regulations. If

there are no corresponding laws or regulations, throw it in a hazardous trash can.

- DO NOT pierce the battery or shorten the electrodes, or it may cause explosion or fire hazard.
- DO NOT dispose of the battery into fire or a hot oven, or mechanically crush or cut the battery, which may result in an explosion.
- CAUTION: Please use the specific battery supported by the device, or it may cause explosion. If the battery is damaged and needs to be changed, contact the device manufacturer or local distributor.
- If the device contains button battery, keep it far away from children.
- DO NOT expose the battery pack or battery combination to sunlight, fire, or similar overheated environment. DO NOT leave the battery in an extremely high temperature surrounding environment or subject the battery to extremely low air pressure, which may result in an explosion or the leakage of flammable liquid or gas.
- Keep new and used batteries away from children. If the battery compartment does not close securely, stop using the product and keep it away from children.

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 Product Introduction

Embedded with 4G, Wi-Fi, and GPS module, and the LPR (License Plate Recognition) and deep learning algorithm, portable speed dome is widely used in temporary events security and license plate recognition for mobile scenes, e.g., outdoor concert, law enforcement, onboard monitoring, etc.

1.2 Key Feature

- Multiple video compression modes to save network transmission bandwidth and storage space.
- Dual built-in TF cards storage.
- Wired and wireless network module and GPS module.
- Quick installation with the magnetic base and the tripod bracket.
- Supports hotspot, which allows to connect the phone to the camera directly and control the camera conveniently.
- Pluggable battery for continuous work.
- Replaceable battery for sustainable work.
- Supports PTZ.
- Accessible via web browser.
- Supports LPR and blocklist.
- Supports face picture capture.
- Supports safety helmet detection.

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.

Note

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

2.1.1 Default Information

Device default IP address and user name are as follows.

- Default IP address: 192.0.0.64
- Default port No.: 80
- 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 ***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.

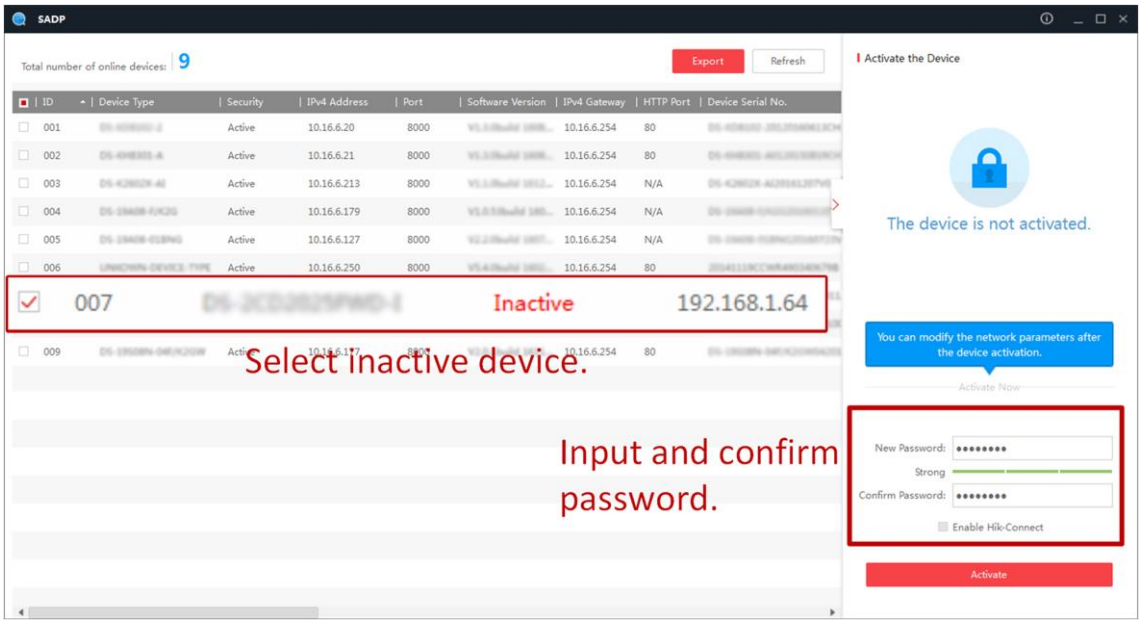

Figure 2-1 Activate via SADP

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. 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 3 Capture Configuration

3.1 Set Capture Parameters

3.1.1 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** → **Capture Overlay Configuration**.
2. Check **Text Overlay on Capture**.

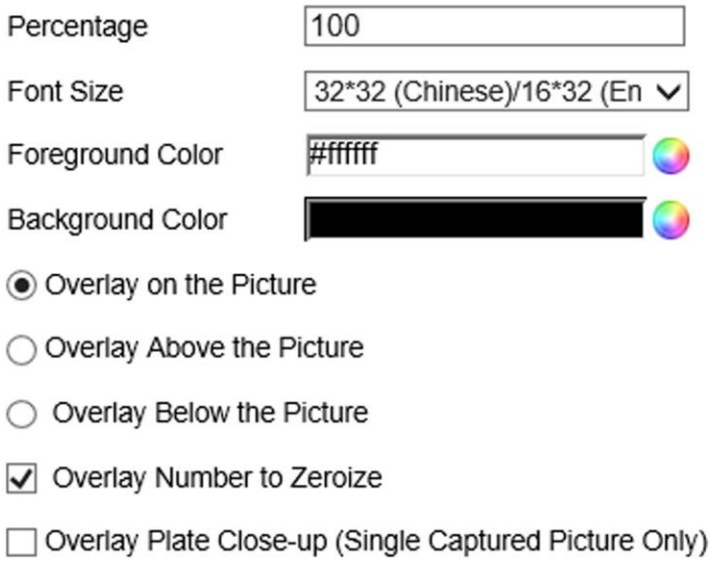

Figure 3-1 Set Capture Overlay

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

Percentage

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

Overlay Number to Zeroize

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 varies with different models. The actual device prevails.

5. Set the overlay information.

Set Type	You can edit the type.
Set Overlay Information	For some information type, you can edit the detailed information.
Set Overlay Position	If you select **Overlay on the Picture**, you can check it. Then the current information will be displayed from a new line.
Set Space	Edit the number of space between the current information and the next one from 0 to 255. 0 means there is no space.
Set 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 overlay sequence	Click ↑/↓ to adjust the display sequence of the overlay information.

6. Click **Save**.

3.1.2 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**.

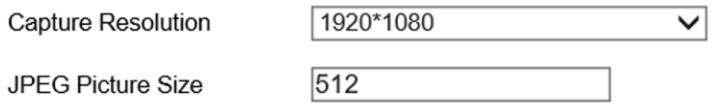

Figure 3-2 Set Image Encoding Parameters

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

3.1.3 Set Voice Broadcast

With built in MIC, speaker, external Bluetooth headset, and other audio input and output devices, you can set voice broadcast content and parameters.

Steps

Note

Voice broadcast may vary with different models. Please refer to the actual product.

1. Go to **Configuration** → **Device Configuration** → **Encoding and Storage** → **Audio Announcement**.

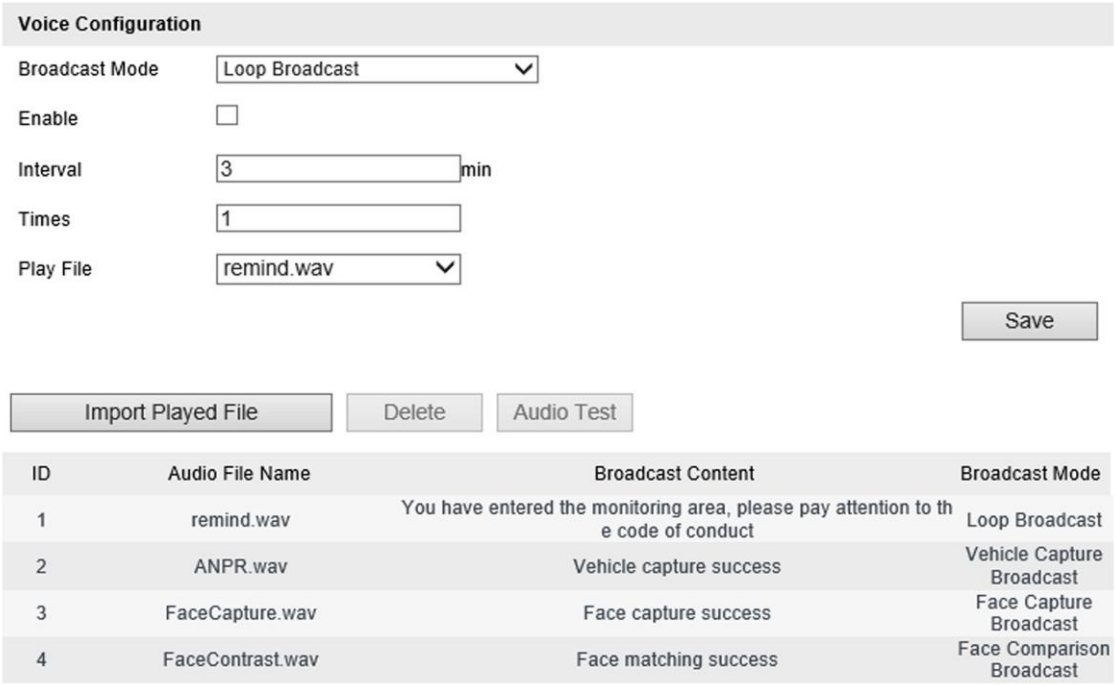

Figure 3-3 Set Voice Broadcast

2. Select **Broadcast Mode**.

Loop Broadcast

The device will loop broadcast according to the set interval.

Vehicle Capture Broadcast

The device will broadcast vehicle information captured in vehicle arming mode.

Face Capture Broadcast

After enabling face picture comparison, when the face picture comparison fails, the device will broadcast face information captured in face detection mode.

Face Comparison Broadcast

After enabling face picture comparison, when the face picture comparison is successful, the

device will broadcast face comparison information captured in face detection mode.

3. Check **Enable**.
4. Set **Interval**, **Times** and **Play File**.
5. Click **Import Played File** according to your actual needs.

Note

Only the broadcast files in WAV format, 8K sampling rate, 16 bits, and 400 K size below can be imported.

6. Optional: You can delete or test the imported file.

Delete	Select the file, and click **Delete** to delete the broadcast file.
Audio Test	Click **Audio Test** to test the imported file broadcast effect.

7. Click **Save**.

3.2 Vehicle Arming

3.2.1 Set Vehicle Arming

Set vehicle arming to detect vehicles and recognize license plates in the detection area. It is mainly applied to city streets and highways.

Steps

1. Go to**Configuration** → **Device Configuration** → **Application Mode**.
2. Select **Trigger Mode** as **Vehicle Arming**.

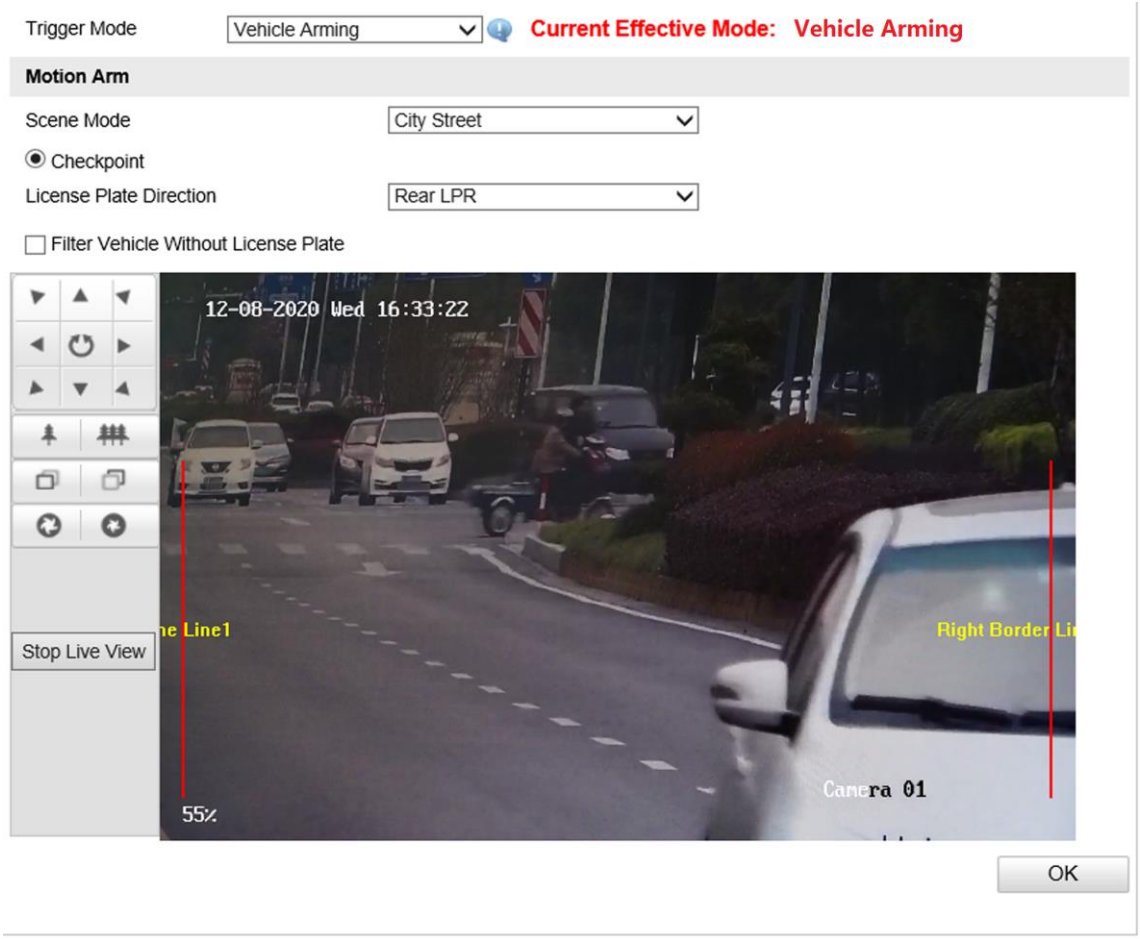

Figure 3-4 Set Vehicle Arming

3. Select **Scene Mode** according to the actual needs.
4. Set corresponding parameters.

License Plate Direction

Select **Front LPR** to capture the front license plates. Select **Rear LPR** to capture the rear license plates.

Filter Vehicle Without License Plate

Vehicles without license plates will not be captured.

5. Adjust the lane line 1 and right border line of the lane in the live view image.
6. Click **OK**.

What to do next

Reboot the device to take the application mode into effect.

3.2.2 Set Blocklist

Set blocklist to capture and control vehicles in the blocklist.

Before You Start

Install the storage card, and ensure the storage status is normal.

Steps

1. Go to **Configuration** → **Device Configuration** → **Capture Parameters** → **Blocklist**.
2. Add a blocklist.
   1) Click **Add**.
   2) Enter **License Plate Number** , select **License Plate Type** and **License Plate Color**.
   3) Optional: If you want to control vehicles during fixed time period, check **Enable Time Settings**, and set the effective start time and end time.
   4) Click **OK**.

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

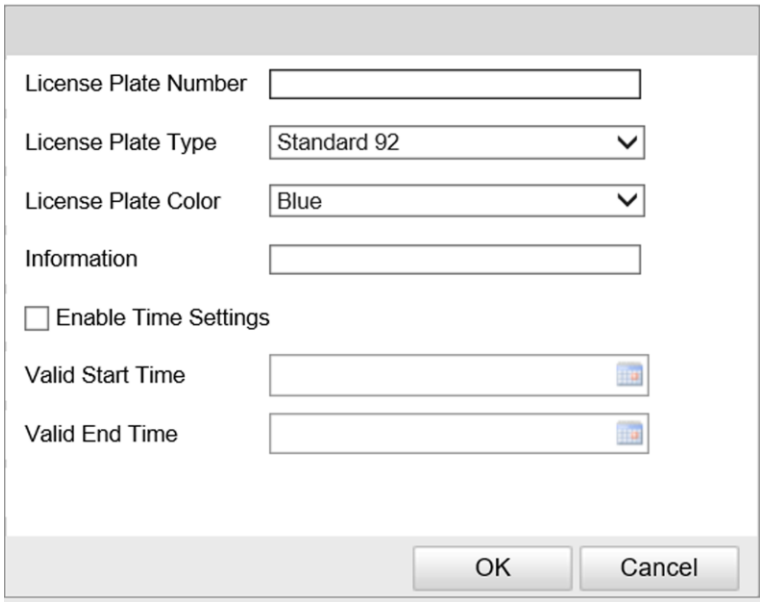

Figure 3-5 Set Blocklist

3. Optional: You can also do following operations.

Search vehicle information	Set search condition or keywords when there are various items in the blocklist. Click **Search** to list vehicle information below.
Delete vehicle information	Select the delete type or enter keywords. Click **Delete**.
Import vehicle information in batch	1. Click **Import**. 2. Click **Download Template**, and save the template. 3. Open the template, edit the information, and save it. 4. Click ... to select the edited template.

5. Click **Import**.

Modify vehicle information	Select an item from the list, and then click **Edit** to edit the vehicle information. Click **OK** after completing the modification.

3.2.3 Set Vehicle Feature Parameters

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

Steps

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

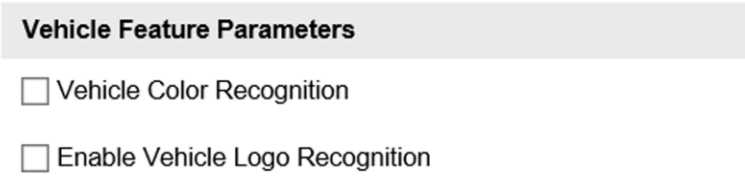

Figure 3-6 Set Vehicle Feature Parameters

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

3.2.4 View Vehicle Arming Real-Time Picture

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

Before You Start

Vehicle arming has been set. Refer to "Set Vehicle Arming" for details.

Steps

1. Click **Alarm**.
2. Select an item from the list, and you can view the live view image, capture scene picture, license plate number, etc.

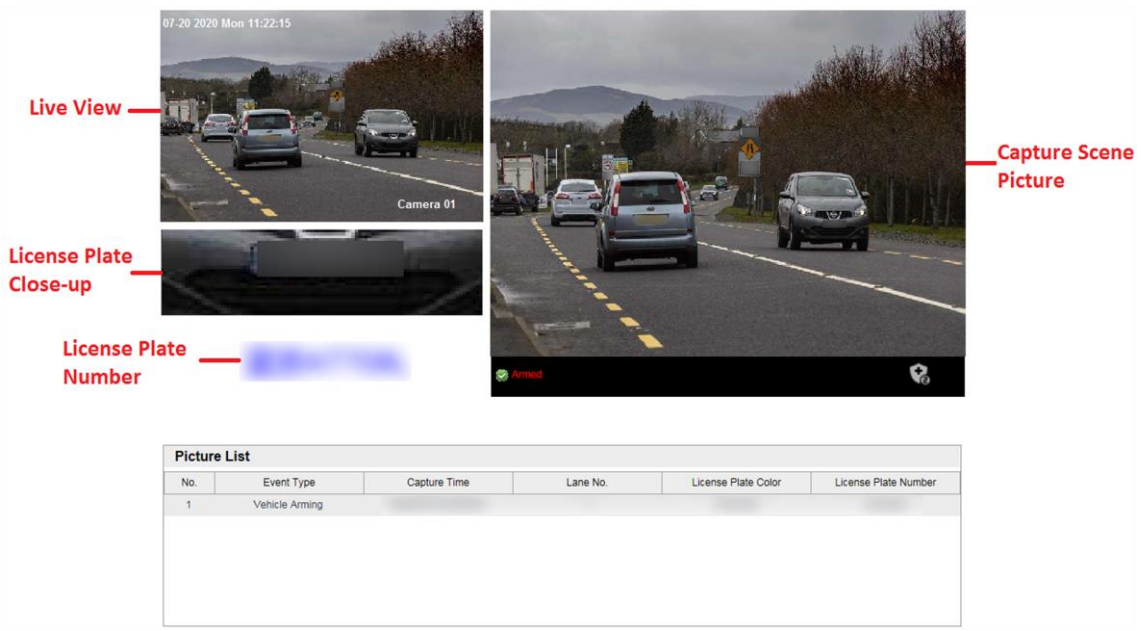

Figure 3-7 Real-Time Picture of Vehicle Arming

3. Select the arming level.
   - Click to select Level 1 Arming which 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.
   - Click to select Level 2 Arming which can connect three clients or webs. The pictures will be uploaded to the client/web, and stored in the storage card.
   - Click to disarm to cancel the alarm status or real-time picture.

3.3 Face Picture Capture and Comparison

3.3.1 Set Face Detection

If you need the device to capture the face pictures appeared in the detection area and upload them to the platform, set face detection.

Steps

1. Go to **Configuration** → **Device Configuration** → **Application Mode**.
2. Select **Trigger Mode** as **Face Detection**.

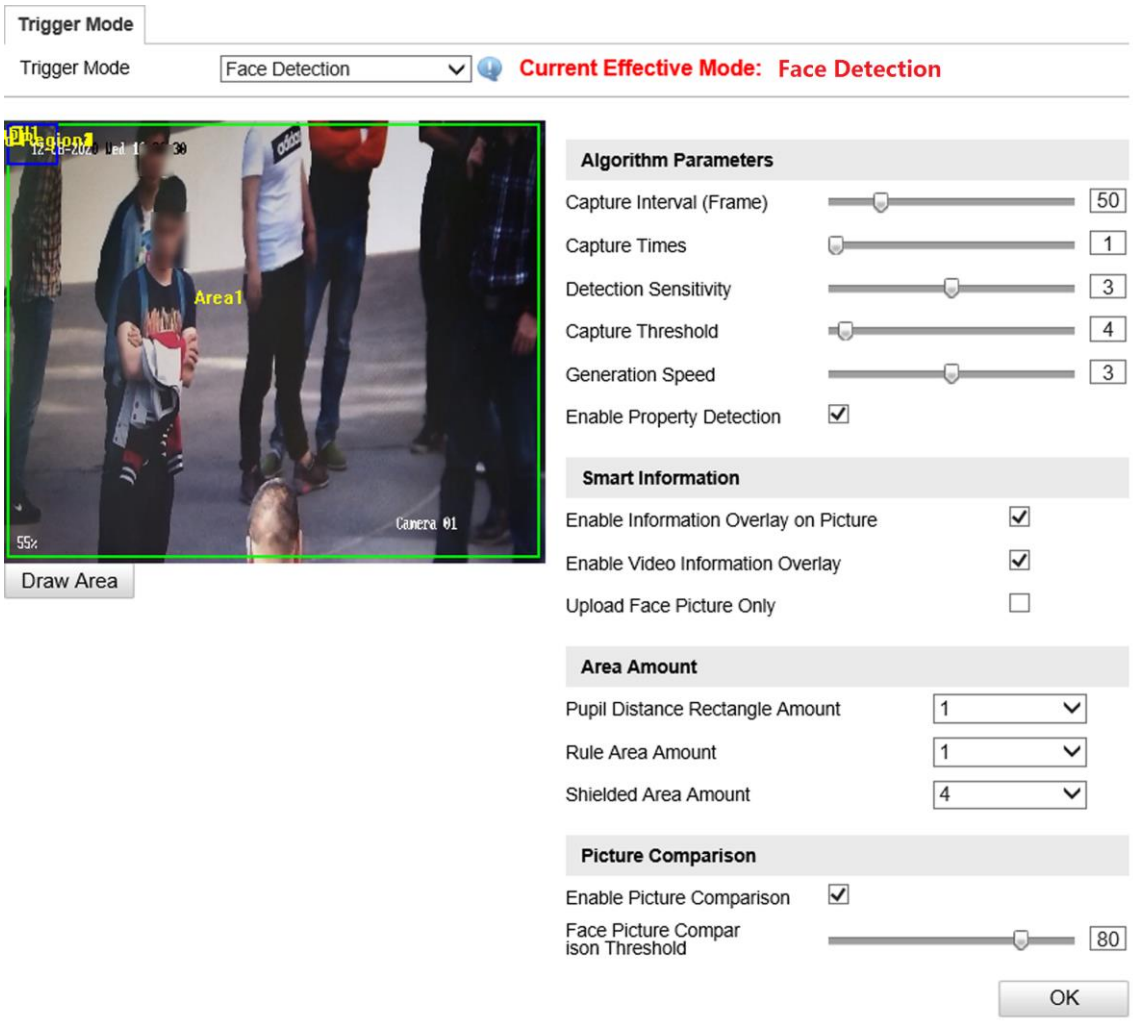

Figure 3-8 Set Face Detection

3. Set the algorithm parameters.

Capture Interval

Set the frame interval of every capture during the process that the face appears in the detection area and disappears from the area. The face picture with the highest quality rating will be captured.

Capture Times

Set the capture times of the same face picture during the process that the face appears in the detection area and disappears from the area.

Detection Sensitivity

Set the face detection sensitivity. If there are many mistaken captures, adjust the sensitivity smaller. If there are many missing captures, adjust the sensitivity larger.

Capture Threshold

Set the face capture rating threshold. Only the face picture larger than or equaling to the threshold can be captured.

Generation Speed

Set the generation speed of the face target appearing in the detection area. The larger the speed is, the more quickly the target can be generated.

Enable Face Picture Exposure

When the face is recognized, the detected face area can be exposed partially to raise the brightness of the area.

4. Set the smart information.

Enable Information Overlay on Picture

Check it to overlay the detection rectangle on the face appeared in the captured scene picture.

Enable Video Information Overlay

Check it to overlay the detection rectangle on the face appeared in the video.

Note

You need to enable rule information in **Configuration** → **Local Configuration** before enabling video information overlay.

Upload Face Picture Only

If you check it, only the close-up face picture will be uploaded to the platform. Otherwise, both the scene picture and close-up face picture will be uploaded to the platform.

5. Select **Pupil Distance Rectangle Amount**, **Rule Area Amount**, and **Shielded Area Amount**.
6. Set face picture comparison parameters if you want to enable the function.
   1) Check **Enable Picture Comparison**.
   2) Set **Face Picture Comparison Threshold**.

Note

Add and enable the face picture library before enabling face picture comparison. Refer to "Set Face Picture Library" for details.

When the similarity between the captured face picture and the face picture in the face picture library exceeds the set threshold, alarm will be triggered and the captured face picture will be uploaded to the platform. You can view the captured face picture and information, capture scene picture, similarity, and the face picture in the face picture library. Refer to "View Face Detection Real-Time Picture" for details.

7. If the default area does not fit the current scene, click **Draw Area** to redraw the area.

Redraw pupil distance	Pupil distance refers to the distance between the pupils of both eyes. Draw to set the value. The recommended value is 40. 1. Click **Redraw Pupil Distance**. 2. Drag the mouse to draw the pupil distance rectangle. 3. Click **OK**.

Note

Pupil distance must be set, or the face picture cannot be captured.

Redraw rule area

Click the left button of the mouse to draw a rectangular or polygonal frame, and then click the right button of the mouse to save the settings.

Note

- Up to a decagonal frame can be drawn.
- The rule area is recommended to occupy 1/2 of the live view image, and not more than 2/3 of the live view image.

Redraw shielded area

Draw the rectangular or polygonal frame. The faces detected in the shielded area will not be captured. Up to four shielded areas can be set.

Note

The drawing method of the shielded area is the same with that of the rule area.

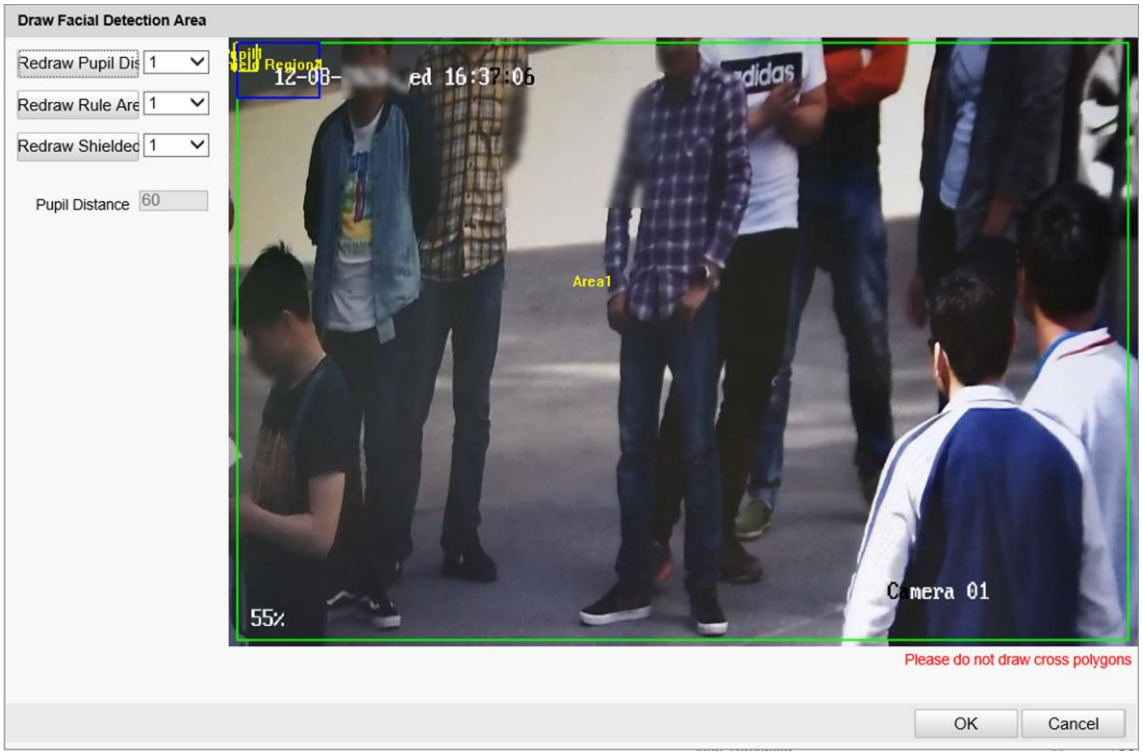

Figure 3-9 Draw Area

8. Click **OK**.

What to do next

Reboot the device to take the settings into effect.

3.3.2 Set Face Picture Library

Manage Face Picture Library

You can add, edit, or delete the face picture library locally.

Steps

1. Click **Face Picture Lib**.
2. Click + to add a face picture library.
3. Enter **Face Picture Library Name**, and click **OK**.

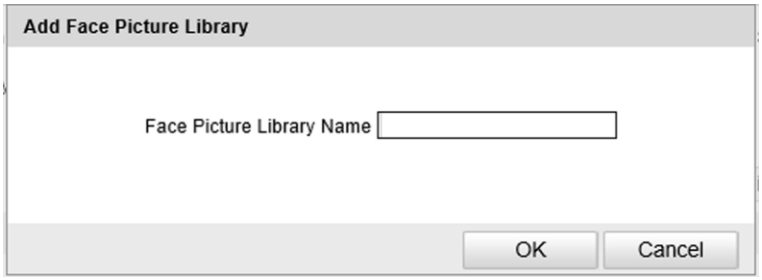

Figure 3-10 Add Face Picture Library

Note

Up to ten face picture libraries can be added.

4. Click **Enabled** to enable the added face picture library.
5. Optional: Edit, delete, or disable a face picture library.
   - Select a face picture library, and click to edit its name.
   - Select a face picture library, and click to delete it.
   - Select a face picture library, and click **Disabled** to disable it.

Add Face Picture

You can add face pictures one by one to the face picture library.

Steps

1. Click **Face Picture Lib**.
2. Select a face picture library.
3. Click **Add**.

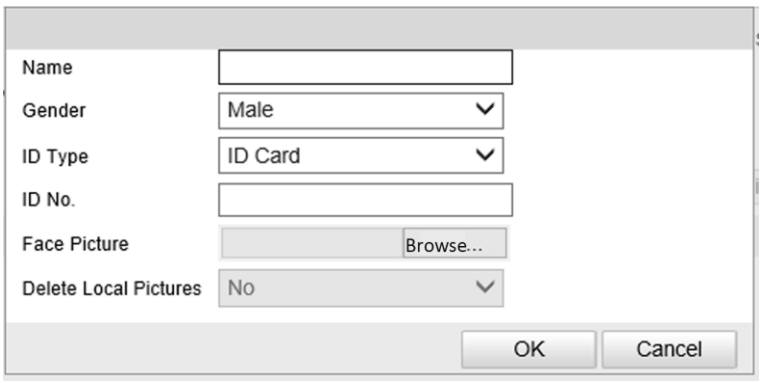

Figure 3-11 Add Face Picture

4. Set **Name**, **Gender**, **ID Type**, and **ID No.**
5. Click **Browse**, and select a face picture from the computer to add to the library.

Note

- The added face picture size cannot exceed 1 M.
- Only the face picture in the format of .jpg can be added.

6. Optional: If you want to delete the face picture in the device local storage after it is added to the library and modeled successfully to protect data security, select **Delete Local Pictures** as **Yes**.
7. Click **OK**.
   The added face picture information will be displayed in the list. You can click ☰ or ⠿ to switch between the list mode and picture mode.
8. Optional: Edit or delete the face picture information.
   – Select the added face picture information, and click **Edit** to edit the information.
   – Select the added face picture information, and click **Delete** to delete the information.

Import Face Picture to Library in Batch

You can import face pictures from the computer to the library manually in batch.

Steps

1. Click **Face Picture Lib**.
2. Select a face picture library.
3. Click **Import**.
4. Click **Yes** or **No** in the popup window asking you whether to delete the pictures in the device local storage before importing pictures.
   – Click **Yes**, and the face picture in the device local storage will be deleted automatically after it is added to the library and modeled successfully to protect data security.
   – Click **No**, and the face picture in the device local storage will not be deleted.
5. Select the file folder storing the face pictures, and click **OK**.

Note

- The imported face picture should be named as "name_gender_ID No.jpg". Here the gender should be 0/1/2 to stand for the male/female/unknown gender respectively. E.g., Jim_0_1234567890.jpg. If the face picture name does not conform to the requirement, the device will recognize the face picture name as the person name to import.
- Only the face picture in the format of .jpg can be imported.
- Up to 50,000 face pictures can be imported to a face picture library.

6. Check the importing information in the popup window, and click **OK**.
   The imported face picture information will be displayed in the list. You can click ☰ or ⠿ to switch between the list mode and picture mode.
7. Optional: Edit or delete the face picture information.
   – Select the imported face picture information, and click **Edit** to edit the information.
   – Select the imported face picture information, and click **Delete** to delete the information.

Search Face Picture

You can search the face pictures according to the set conditions.

Steps

1. Click **Face Picture Lib**.
2. Select a face picture library.
3. Set the search conditions. You can search according to the name, gender, modeling status, ID type, and ID No.
4. Click **Search**.

Result

The face picture information conforming to the conditions will be displayed in the list.

3.3.3 View Face Detection Real-Time Picture

The device supports showing the real-time picture of face detection.

Before You Start

Set the face detection parameters. Refer to "Set Face Detection" for details.

Steps

1. Click **Alarm**.
2. Select an item from the picture list, and you can view the captured face picture, face picture comparison similarity, the face picture in the library, etc.

Note

Only after you have enabled face picture comparison in face detection, can the similarity and face picture in the library be shown. Up to the top 5 similarities and the corresponding face pictures in the libraries can be shown.

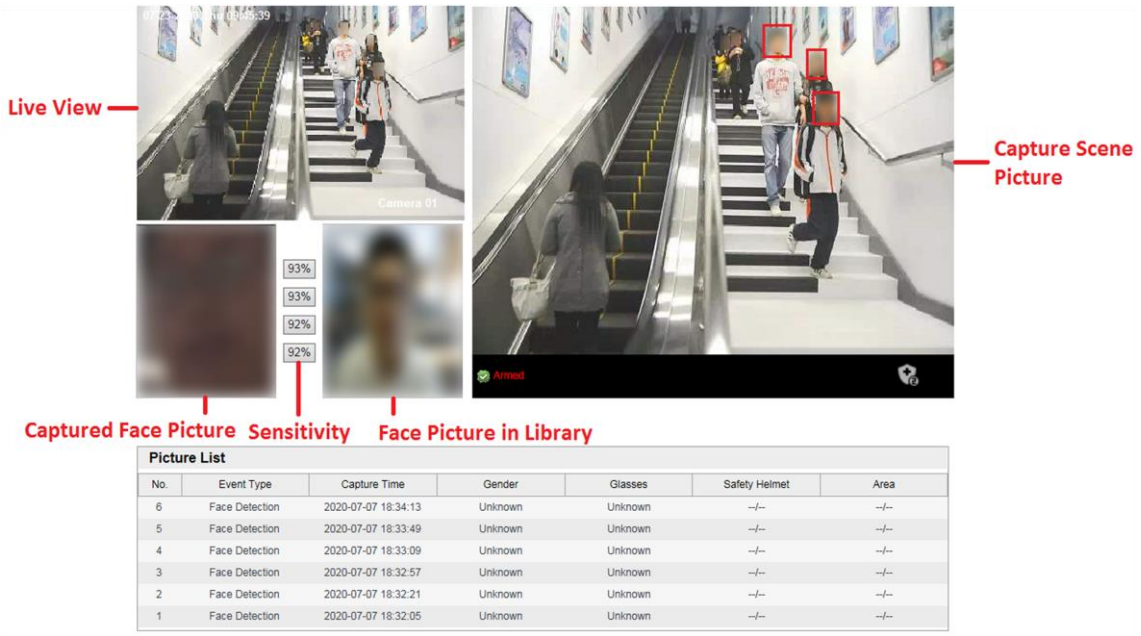

Figure 3-12 View Face Detection Real-Time Picture

3. Select the arming level.
   - Click to select Level 1 Arming which 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.
   - Click to select Level 2 Arming which can connect three clients or webs. The pictures will be uploaded to the client/web, and stored in the storage card.
   - Click to disarm to cancel the alarm status or real-time picture.

3.4 Search Picture

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

Before You Start

Install the storage card, and ensure the storage status is normal.

Steps

1. Click **Picture**.
2. Set the search conditions, such as **Data Type**, **Begin Time**, and **End Time**.

3. Click **Search**.

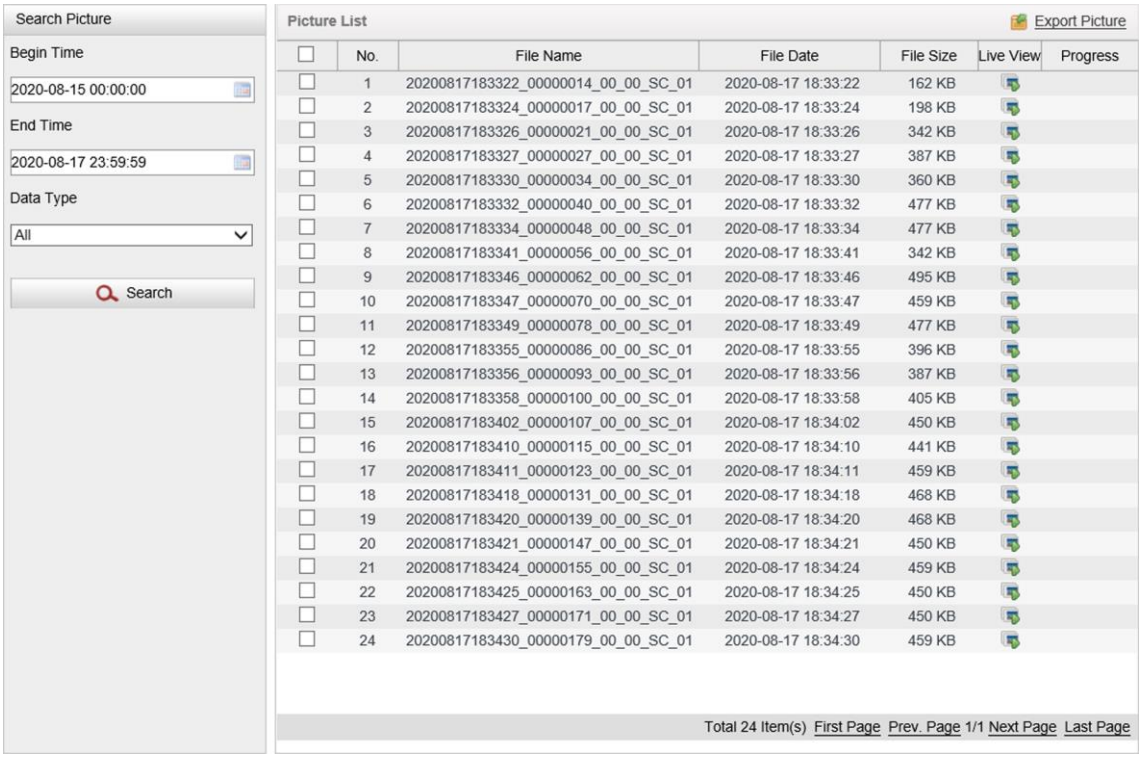

Figure 3-13 Search Picture

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

4. Optional: Click to preview the selected picture.
5. Optional: Check pictures and click **Export Picture** to export them to the saving path that you set. The downloaded picture(s) will be marked as "Downloaded". You can go to **Configuration** → **Local Configuration** to get the saving path of downloaded pictures.

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

4.1.3 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.

4.1.4 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.

4.1.5 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.

4.1.6 Start/Stop Two-Way Audio

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

Before You Start

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

Steps

1. Click to start live view.
2. Click to start two-way audio.
   When speaking at the PC end, you can hear the voice at the device end and vice versa.
3. Click to stop two-way audio.

4.1.7 Enable/Disable Audio

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

4.1.8 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.

4.1.9 Enable 3D Positioning

You can enable 3D positioning to select an area of the live view image and move it to the center of the image to zoom in and view the details.

Steps

1. Click .
   The icon will change to , which means the 3D positioning is enabled.
2. Click anywhere of the image, and the lens will move the image center to the point.
   - Hold the left button of the mouse to draw a rectangular area to the lower/upper right of the image, and then the lens will move the image center to the area and zoom in.
   - Hold the left button of the mouse to draw a rectangular area to the upper/lower left of the image, and then the lens will move the image center to the area and zoom out.

3. Click to disable the 3D positioning.

4.1.10 Display in Full Screen

You can display the live view image in full screen.
On **Live View** interface, click to display the live view image in full screen.
In full screen mode, press **esc** on the keyboard to exit full screen mode.

4.2 Local Configuration

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

Note

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

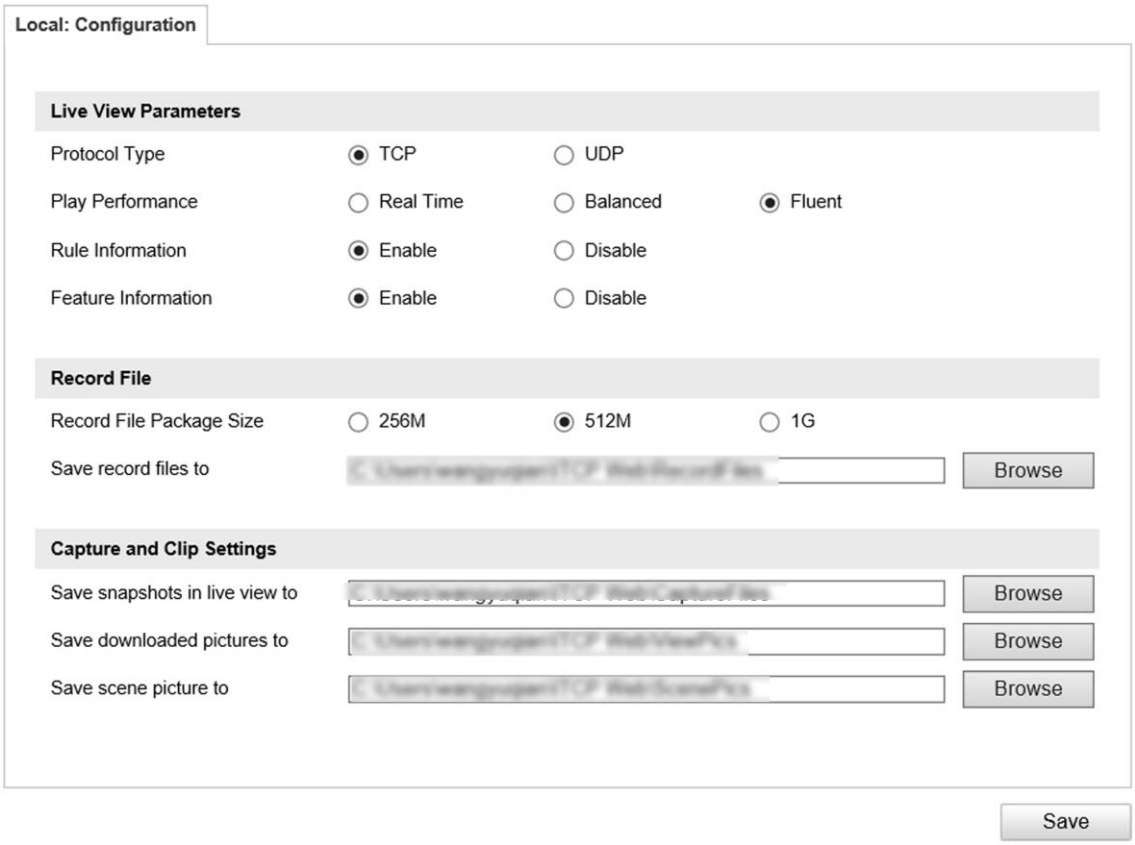

Figure 4-1 Local Configuration

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.

Play 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.

Rule Information

When the rule information is enabled, the rule rectangles of vehicle arming and face detection will appear on the live view image.

Feature Information

Reserved.

Record File Package 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 of 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 **Real-Time Picture** interface.

Chapter 5 PTZ

Enter a short description of your concept here (optional).
This is the start of your concept.

5.1 PTZ Control Panel

Click to show/hide the PTZ control panel.

Figure 5-1 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 button descriptions are as follows:

Table 5-1 Button Description

Button	Description
	Hold the direction buttons to pan/tilt the device. Click , and the device keeps panning. Click it again to stop panning.
	Zoom + and Zoom – ● Hold to zoom in the scene. ● Hold to zoom out the scene.
	Focus + and Focus – ● Hold under the manual focus mode to make near objects become clear and distant objects become vague. ● Hold to make distant objects become clear and near objects become vague.
	Iris + and Iris –

Button	Description
	● Hold to increase the iris diameter when in a dark environment. ● Hold to decrease the iris diameter when in a bright environment.
	Drag the slider to adjust the speed of pan/tilt movement.
	Auxiliary buttons: light, windshield wiper, one-touch focus, and lens initialization.

5.2 Set Preset

A preset is a predefined image position. For the defined preset, you can call the preset No. to view the position.

Steps

1. Click .

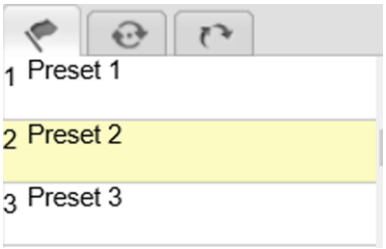

Figure 5-2 Set Preset

2. Operate the direction buttons of the PTZ control panel to turn the PTZ to the desired position.
3. Select the preset to be set.
4. Click and set the preset according to the prompt information.
5. Optional: You can call, reset, and clear the preset.

Call preset	Click , and the PTZ will turn to the set position.
Reset preset	Click to reset the preset.
Clear preset	Click to clear the PTZ position information corresponding to the preset.

5.3 Call Preset

This feature enables the camera to point to a specified position when an event takes place.
Click to call the preset.

Note

- The special preset is named with the function name, not the "Preset X". Special presets can only be called.
- Special presets may vary with different models. Please refer to the actual product.

The functions corresponding to the special presets are shown as the table below.

Table 5-2 Special Preset Function

Preset No.	Function	Preset No.	Function
10	Vehicle control	46	High beam off
11	Face detection	47	Low beam on
34	Back to origin	48	Low beam off
35 to 38	Call patrol 1 to 4	94	Remote reboot
39	Day mode	96	Stop a scan
40	Night mode	99	Start auto scan
41 to 44	Call pattern 1 to 4	102 to 105	Call patrol 5 to 8
45	High beam on	/	/

5.4 Set Patrol

Patrol scan is a function to automatically move among multiple presets.

Before You Start

Set two or more presets.

Steps

1. Click .
2. Click to select the path.
3. Click to add the presets.
   1) Select **Preset**.
   2) Enter **Patrol Time**, which is the duration staying on one patrol point.
   3) Click **OK**.
   4) Repeat the above steps to add more presets.

Note

- At least 2 presets need to be added in one patrol.
- Up to 32 presets can be added in one patrol.

4. Click to save paths.
5. Optional: You can also start, stop, edit, and delete patrol.

Start/stop patrol	Click to start patrol, and click to stop patrol.
Edit preset	Select a preset, and click to edit it.
Delete preset	Select a preset, and click to delete it.
Delete patrol path	Click to delete the whole patrol path information.

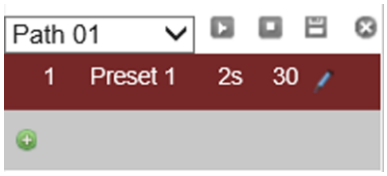

Figure 5-3 Edit Patrol

5.5 Set Pattern

The device can move as the recorded pattern.

Steps

1. Click , and select a pattern scan path.
2. Click to start recording pattern scan.
3. Click PTZ control buttons as demands.
4. Click to save pattern scan path.
5. Optional: You can click or to start or stop pattern scan.

5.6 Set Basic Parameters

You can configure the basic PTZ parameters, including proportional pan, preset freezing, preset speed, etc.

Steps

1. Go to **Configuration** → **Device Configuration** → **PTZ** → **Basic Settings**.
2. Check or set corresponding parameters.

Basic Parameters

Enable/disable proportional pan and preset freezing.

Proportional Pan

If you enable this function, the pan/tilt speeds change according to the amount of zooming. When there is a large amount of zooming, the pan/tilt speed will be slower to prevent the live view image from moving too fast.

Preset Freezing

This function enables the live view to switch directly from one scene defined by a preset to another, without showing the middle areas between these two, to ensure the efficiency. It can also reduce the use of bandwidth in a digital network system.

Note

Preset freezing function is invalid when you call a pattern.

Keyboard Control Speed

Define the speed of PTZ control by a keyboard.

Zoom Speed

The zoom speed is adjustable from level 1 to 3.

PTZ OSD

Set the on-screen display duration of the PTZ status.

Zoom Status

Set the OSD duration of zooming status.

PT Status

Set the azimuth angle display duration while panning and tilting.

Preset Status

Set the preset name display duration while calling the preset.

3. Click **Save**.

5.7 Set Park Action

You can set a certain action or return to a certain position that the PTZ needs to perform when it does not receive a control signal within the park time.

Before You Start

Set the desired action mode. For example, if you need to realize pattern scan, set the pattern scan first.

Steps

Note

Scheduled task is prior to park action. When these two functions are set at the same time, only the scheduled task function takes effect.

1. Go to **Configuration** → **Device Configuration** → **PTZ** → **Park Action**.

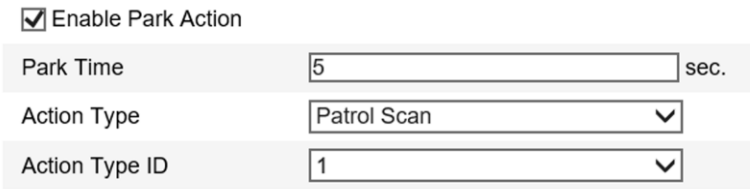

Figure 5-4 Set Park Action

2. Check **Enable Park Action**.
3. Set **Park Time** as the inactivity time of the PTZ before it starts the park actions.
4. Select **Action Type**.

Note

Action type may vary with different models. Please refer to the actual product.

5. Set **Action Type ID**.
6. Click **Save**.

5.8 Set Scheduled Task

You can configure the device to perform a certain action automatically in a defined time period.

Steps

1. Go to **Configuration** → **Device Configuration** → **PTZ** → **Scheduled Task**.

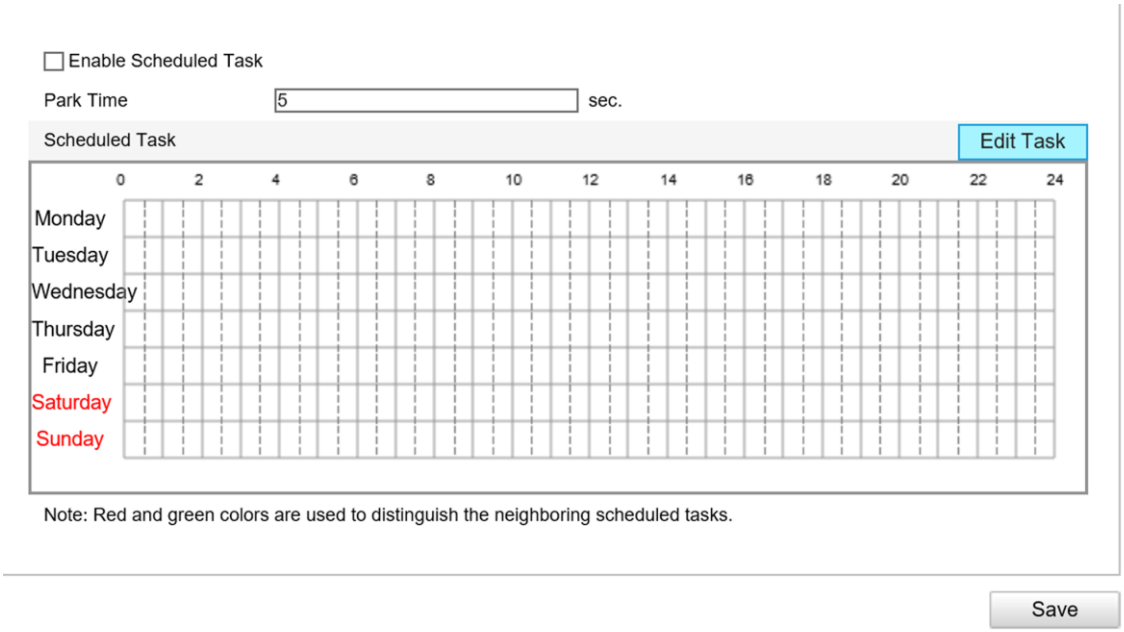

Figure 5-5 Set Scheduled Task

2. Check **Enable Scheduled Task**.
3. Set **Park Time** (a period of inactivity) before the device starts the scheduled tasks.
4. Set the schedule and task details.
   1) Click **Edit Tasks** to edit the task schedule.

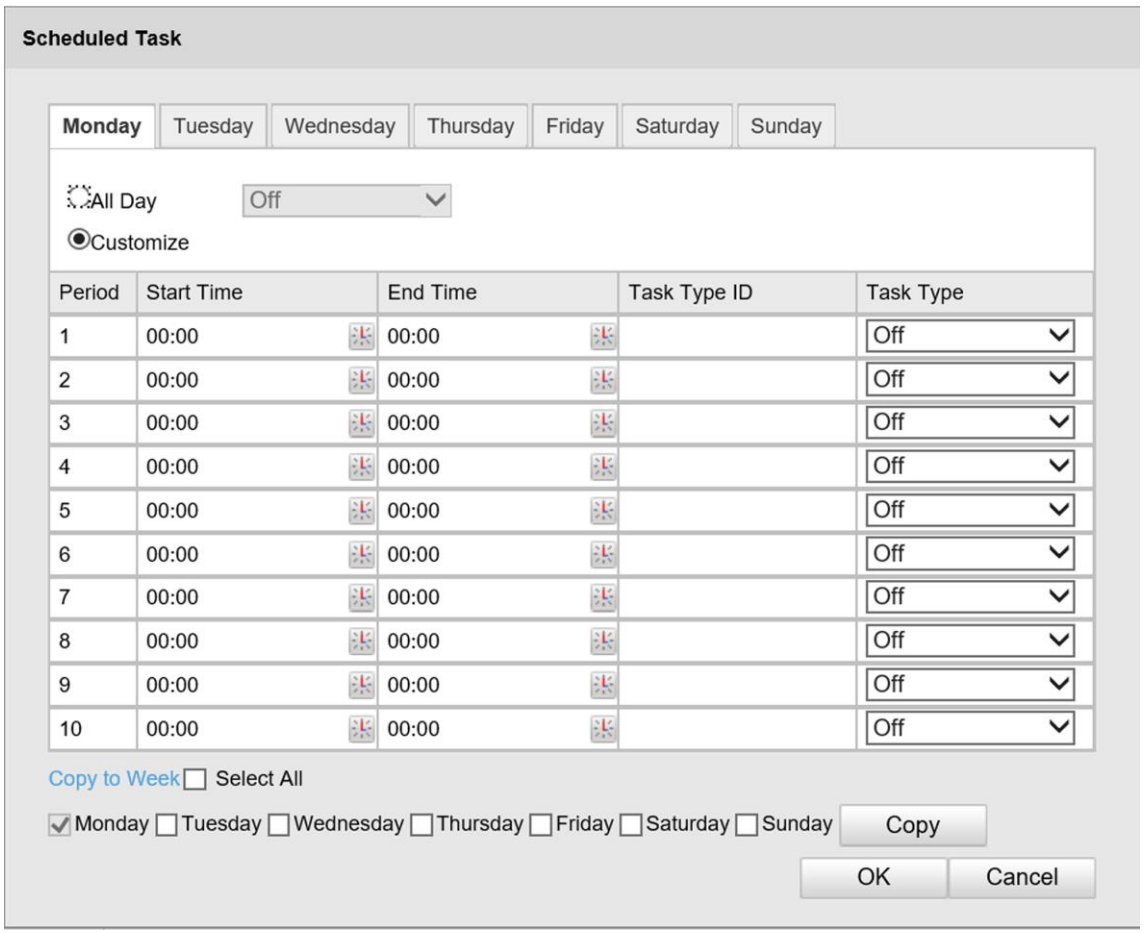

Figure 5-6 Edit Tasks

2) Select the day you want to set the task schedule.
3) Click **All Day** to set the schedule as all day; or click **Customize** and enter the **Start Time** and **End Time** for each task, and click **Enter** on your keyboard to enter the time.
4) Select **Task Type**. You can select preset, patrol, pattern, etc.
5) Optional: After you set the scheduled task, you can copy the task to other days.
6) Click **OK** to save the settings.

Note

The time of each task cannot be overlapped. Up to ten tasks can be configured for each day.

5. Click **Save**.

5.9 Clear PTZ Settings

You can clear PTZ configurations, including all presets, patrols, patterns, privacy masks, PTZ limits,

and scheduled tasks.

Steps

1. Go to **Configuration** → **Device Configuration** → **PTZ** → **Clear Config.**
2. Check the items you want to clear.
3. Click **Save** to clear the settings.

Chapter 6 Playback

You can search, playback, and download videos that stored on the TF card in the Playback interface.

Steps

1. Click **Playback**.
2. Select date.
3. Click **Search**.
4. Click to play the video.
5. Optional: You can also use following functions.

Set playback time	● Drag the time bar to the target time and click to play the video. ● Enter the time point in **Set playback time** 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.
Adjust volume	Click to enable, disable, or adjust the volume.
Download record	1. Click . 2. Select the date and click **Search**. 3. Check record files that need to be downloaded. 4. Click **Download**.
Stop playback	Click to stop playback.
Slow forward	Click to apply 1/2 or 1/4 speed playback.
Fast forward	Click to apply 2× or 4× speed playback.

Chapter 7 Record and Capture

7.1 Set Storage Path

7.1.1 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** → **Device Configuration** → **Encoding and Storage** → **Backup Storage**.

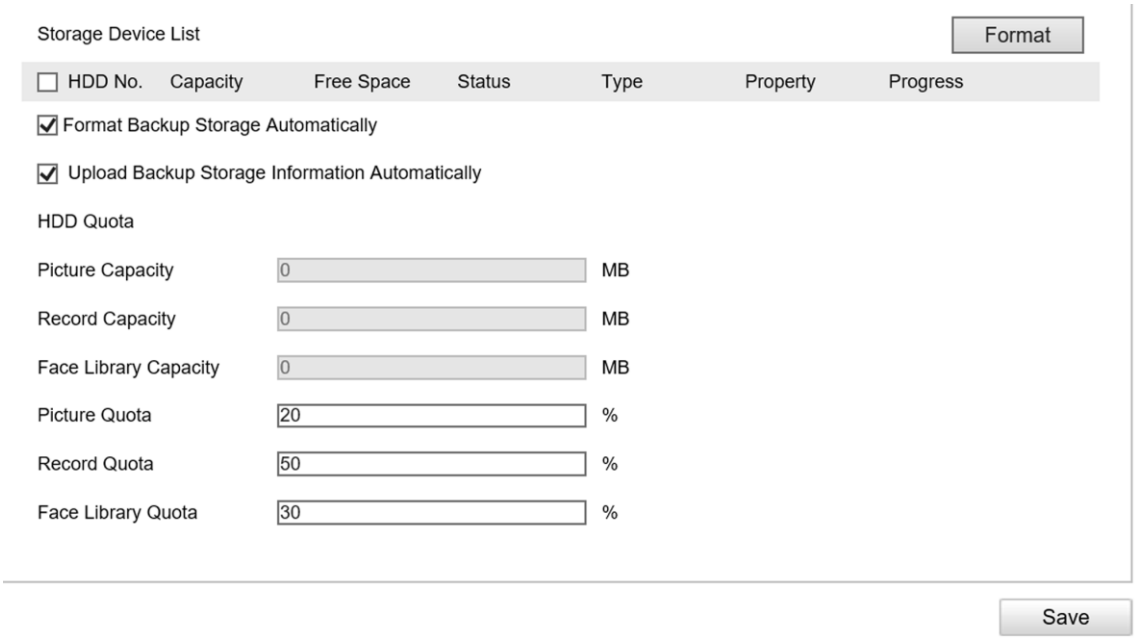

Figure 7-1 Set Memory Card

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 **Format Backup Storage Automatically**.

3. Optional: If the device has been connected to the platform, and you want to upload the memory card information automatically, check **Upload Backup Storage Information Automatically**.
4. Click **Save**.

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

Upload to FTP

☐ Upload Additional Information

Enable FTP	Enable Two
Upload to FTP 1	Upload Checkpoint Data
Upload to FTP 2	Upload Violation Data

FTP1 FTP2

Server IP Address	0.0.0.0	Directory Structure	Save in Root Directoı
Port	21	Parent Directory	Empty
User Name		Level 2 Directory	Empty
Password		Level 3 Directory	Empty
Confirm		Level 4 Directory	Empty

☐ Not Upload Plate Close-up

Picture Name Rule /: _

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

OSD Information

Location		Intersection No.	
Device No.		Camera Location 1	
Direction No.		Direction Description	

Save

Figure 7-2 Set FTP

2. Optional: Check **Upload Additional Information**, and then the related information can be attached when uploading.
3. Enable the FTP server.
4. Set FTP parameters.
   1) Enter **Server IP 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 Quota

Set the video, picture, and face picture library ratio in the storage.

Before You Start

Install the memory card.

Steps

1. Go to **Configuration** → **Device Configuration** → **Encoding and Storage** → **Backup Storage**.
2. Set **Picture Quota**, **Record Quota**, and **Face Library Quota** according to the actual needs.

   Note

   The percentage sum of the picture, video, and face picture library ratio should be 100%.

3. Click **Save**.

What to do next

Format the memory card after the settings.

7.3 Set Record Schedule

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

Before You Start

Install the memory card, and the video quota ratio is not 0.

Steps

1. Go to **Configuration** → **Device Configuration** → **Encoding and Storage** → **Record Settings**.

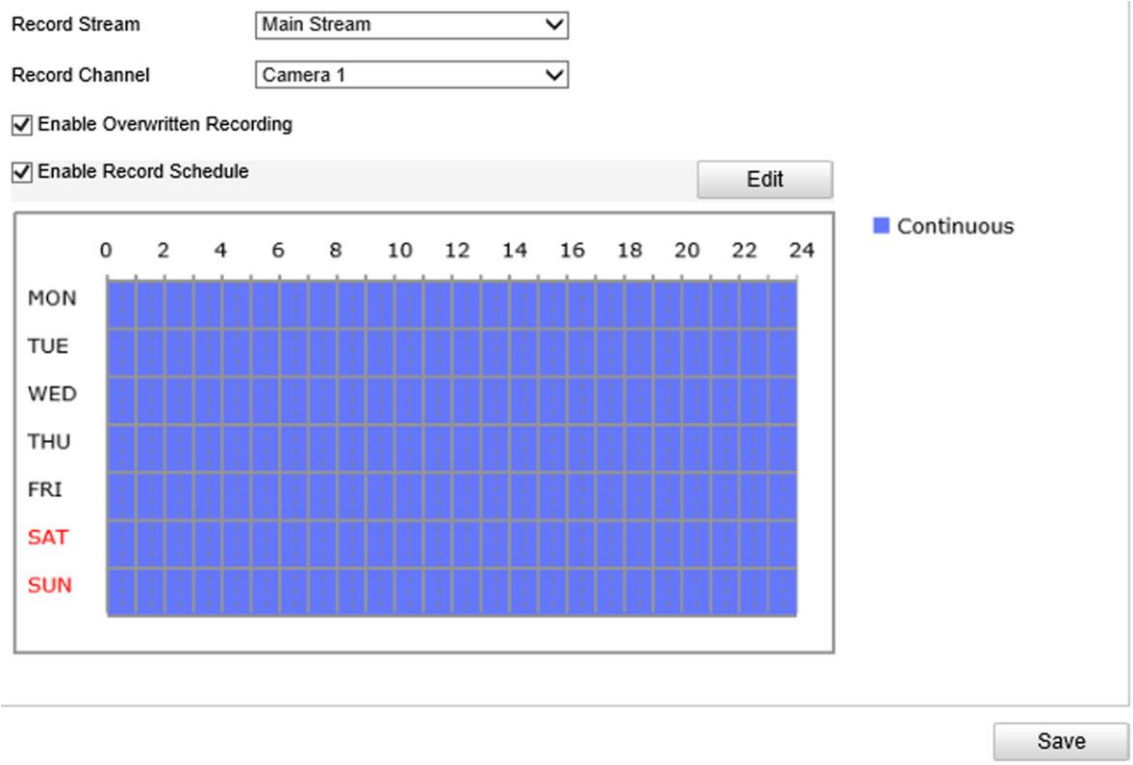

Figure 7-3 Set Record Schedule

2. Optional: Check **Enable Overwritten Recording**.
   When the storage is full, the earliest videos will be overwritten.
3. Check **Enable Record Schedule**.
4. Click **Edit** to edit the record schedule.
   1) Select **Customize**.
   2) Set the start time and end time.
   3) Optional: Select the other days and click **Copy** to copy the settings to other days.
   4) Click **OK**.
5. Click **Save**.

7.4 Set Capture Schedule

The device captures pictures all day by default. If you need to capture pictures in a certain period of time, you can set capture schedule.

Before You Start

Install and format the storage media.

Steps

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

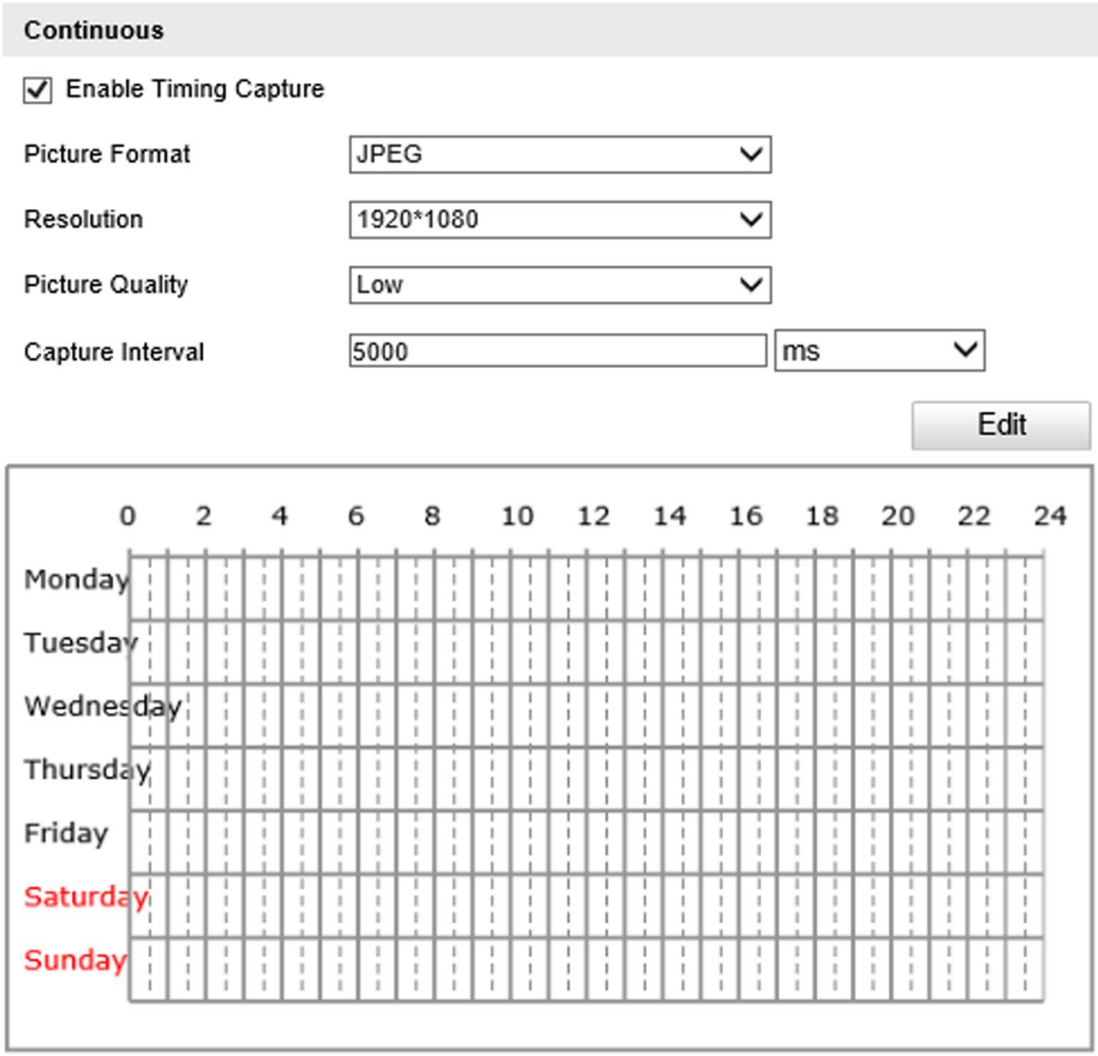

Figure 7-4 Set Capture Schedule

2. Check **Enable Timing Capture**.
3. Select **Picture Format**, **Resolution**, **Picture Quality** and **Capture Interval**.
4. Click **Edit** to set the capture schedule.

Note

Refer to step 4 of "Set Record Schedule" for details.

5. Click **Save**.
   The device captures pictures according to the capture schedule.

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.

Steps

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

Video Type

Video stream and video & audio stream are selectable.

Resolution

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

Bitrate Type

Select the bitrate type to constant, variable, MVBR, or SVBR.

Image Quality

When bitrate type is not constant, 6 levels of image quality are selectable. The higher the image quality is, the higher requirements of the network bandwidth.

Max. 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.

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.

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.

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.

4. Click **Save**.

8.2 Set Audio Encoding Parameters

Set audio encoding parameters to adjust the audio effect.

Steps

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

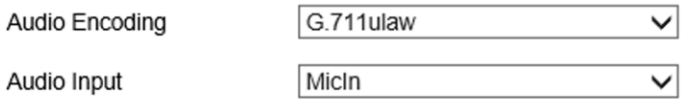

Figure 8-1 Set Audio Encoding Parameters

2. Select **Audio Encoding** and **Audio Input**.
3. Click **Save**.

8.3 Set Image Parameters

You can adjust the image parameters to get clear image.

Note

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

Go to **Configuration** → **Device Configuration** → **Image Parameters** → **Image Parameters**.

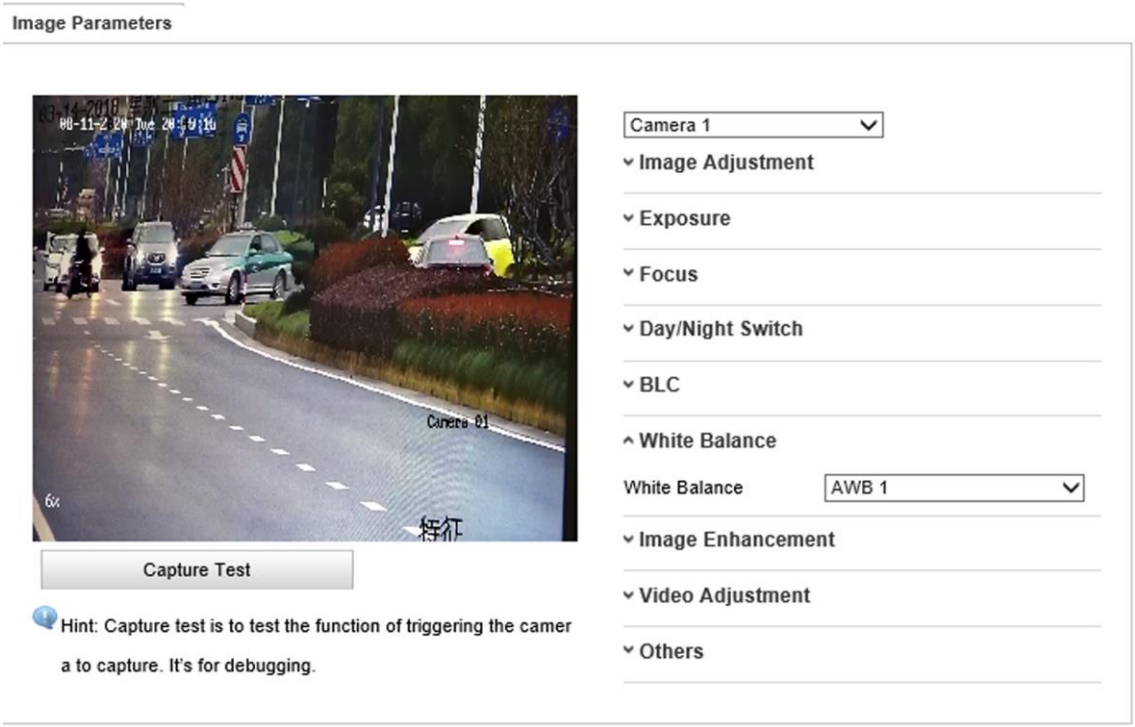

Figure 8-2 Set Image Parameters

Image Adjustment

Brightness

This feature is used to adjust brightness of the image.

Contrast

This feature enhances the difference in color and light between parts of an image.

Saturation

This feature is used to adjust color saturation of the image.

Sharpness

Sharpness function enhances the detail of the image by sharpening the edges in the image.

Exposure

Iris Type

Auto

The iris, shutter and gain values will be adjusted automatically according to the brightness of the environment.

Manual

In manual mode, you can adjust the values of **Gain**, **Shutter**, and **Iris manually**.

Iris Priority

The value of iris needs to be adjusted manually. The shutter and gain values will be adjusted automatically according to the brightness of the environment.

Shutter Priority

The value of shutter needs to be adjusted manually. The iris and gain values will be adjusted automatically according to the brightness of the environment.

Max./Min. Iris Limit

This function is used to limit the iris range to help the device adapt to different scenes. Increase the iris diameter when monitoring subjects nearby, whereas decrease the iris diameter when monitoring subjects in the distance.

Max./Min. Shutter Limit

This function is used to limit the shutter range, so that can help the camera to adapt to different scenes. The faster the shutter speed is, the darker the image is.

Gain Limit

This feature is used to adjust gain of the image.

Slow Shutter

This function can be used in underexposure condition. It lengthens the shutter time to ensure full exposure.

Focus

Focus Mode

Auto

The device focuses automatically at any time according to objects in the scene.

Semi-auto

The device focuses automatically only once after panning, tilting, and zooming.

Manual

In manual mode, you need to click on the control panel to focus manually.

Min. Focus Limit

This function is used to limit the minimum focus distance.

Day/Night Switch

Auto

In auto mode, the day mode and night mode can switch automatically according to the light condition of environment.

Day

In day mode, the device displays color image. It is used for normal lighting conditions.

Night

In night mode, the image is black and white. Night mode can increase the sensitivity in low light conditions.

Continuous

In continuous mode, you can set the time schedule for day mode. The rest time out of the schedule is for night mode.

BLC

BLC (Back Light Compensation)

If there is a bright back light, the subject in front of the backlight appears silhouetted or dark. Enabling BLC function can correct the exposure of the subject. But the back light environment is washed out to white.

WDR (Wide Dynamic Range)

The WDR function helps the camera provide clear images even under back light circumstances. When there are both very bright and very dark areas simultaneously in the field of view, WDR balances the brightness level of the whole image and provide clear images with details.

HLC (High Light Compensation)

HLC makes the camera identify and suppress the strong light sources that usually flare across a scene. This makes it possible to see the detail of the image that would normally be hidden.

White Balance

White Balance

White balance compensates for the differences in color temperature of the surrounding light.

Image Enhancement

Digital Noise Reduction

The digital noise reduction function processes the noise in the video signal. You can set **Digital Noise Reduction** as **Expert Mode**, **Normal Mode**, and **OFF**. Under normal mode, you can adjust **DNR Level**. Under expert mode, you can adjust **Space DNR Level** and **Time DNR Level**.

Defog Mode

When there is fog in the image, you can enable this function to get clear image.

EIS

The live view image would be trembled and dim when the camera is shocked slightly in some monitoring conditions. And the electronic image stabilization (EIS) function is used to overcome this problem to ensure a steady and clear image.

Video Adjustment

Mirror

If you enable the mirror function, the image will be flipped. It is like the image in the mirror. The flip direction can be set to **OFF** or **Center**.

Video Standard

You can set the **Video Standard** according to the video system in your country.

Video Input Mode

You can set **Video Input Mode** to 1920 × 1080@30 fps or OFF.

Others

Lens Initialization

The lens operates the movements for initialization when you check **Lens Initialization**.

Zoom Limit

You can set **Zoom Limit** value to limit the maximum value of zooming.

8.4 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** → **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 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 area codes and repeat the steps above if you need to draw multiple fixed areas.

8.5 Set OSD

You can customize OSD information on the live view.

Steps

Note

Supported parameters may vary with device models. The actual device prevails.

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

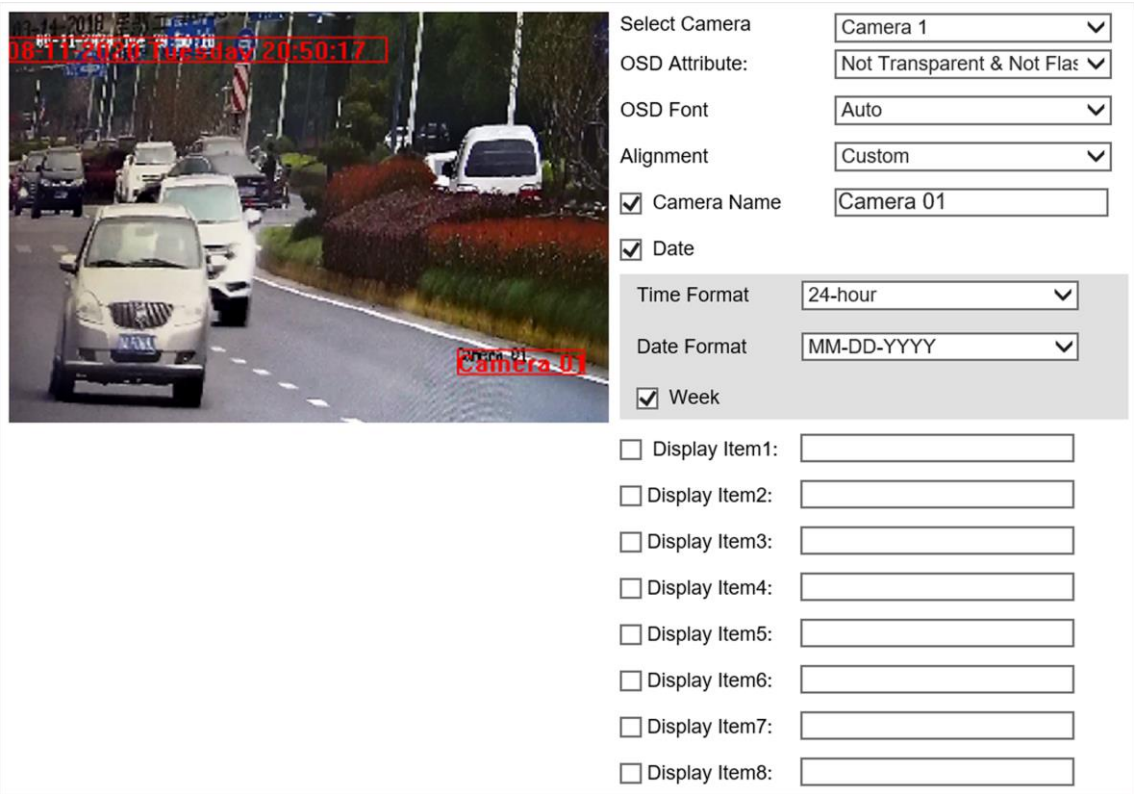

Figure 8-4 Set OSD

2. Set OSD attribute, font, and alignment.

Note

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

3. Set the display content.
   1) Check **Camera Name**, and enter the name.
   2) Check **Date**, and set the time and date format.
   3) Check **Week** to display week.
4. Optional: Check display item(s) and enter overlay information if you want to overlay extra information.

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.
Go to **Configuration** → **Device Configuration** → **System Settings** → **Network Interface Parameters** for parameter settings.

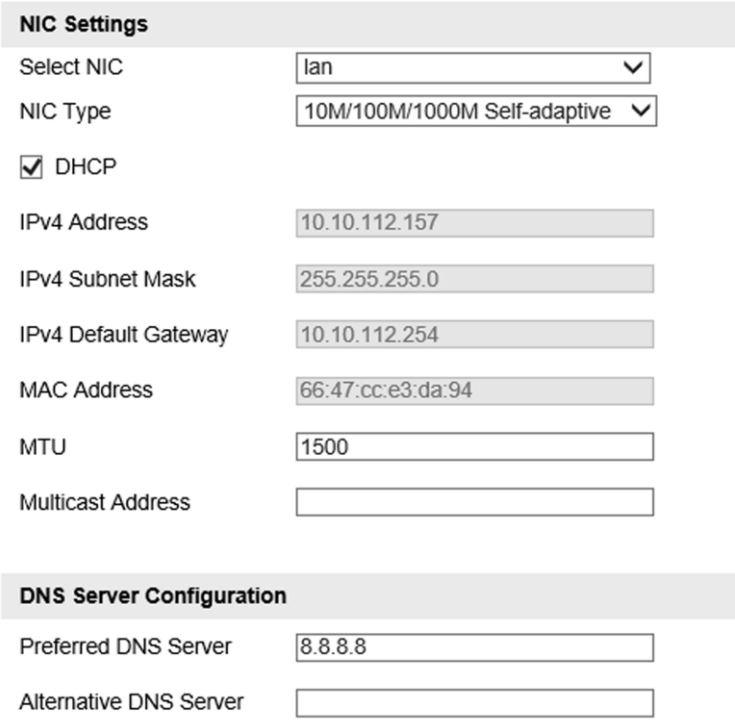

Figure 9-1 Set IP Address

NIC Type

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

IPv4

Two IPv4 modes are available.

DHCP

The device automatically gets the IPv4 parameters from the network if you check **DHCP**. The device IP address is changed after enabling the function. You can use SADP to get the device IP address.

Note

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

Manual

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

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

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 Dial

Set the dialing parameters if you want to connect the device to the network via SIM card.

Before You Start

Install SIM card.

Steps

1. Go to **Configuration** → **Device Configuration** → **System Settings** → **Dial-up Configuration**.
2. Check **Enable**.

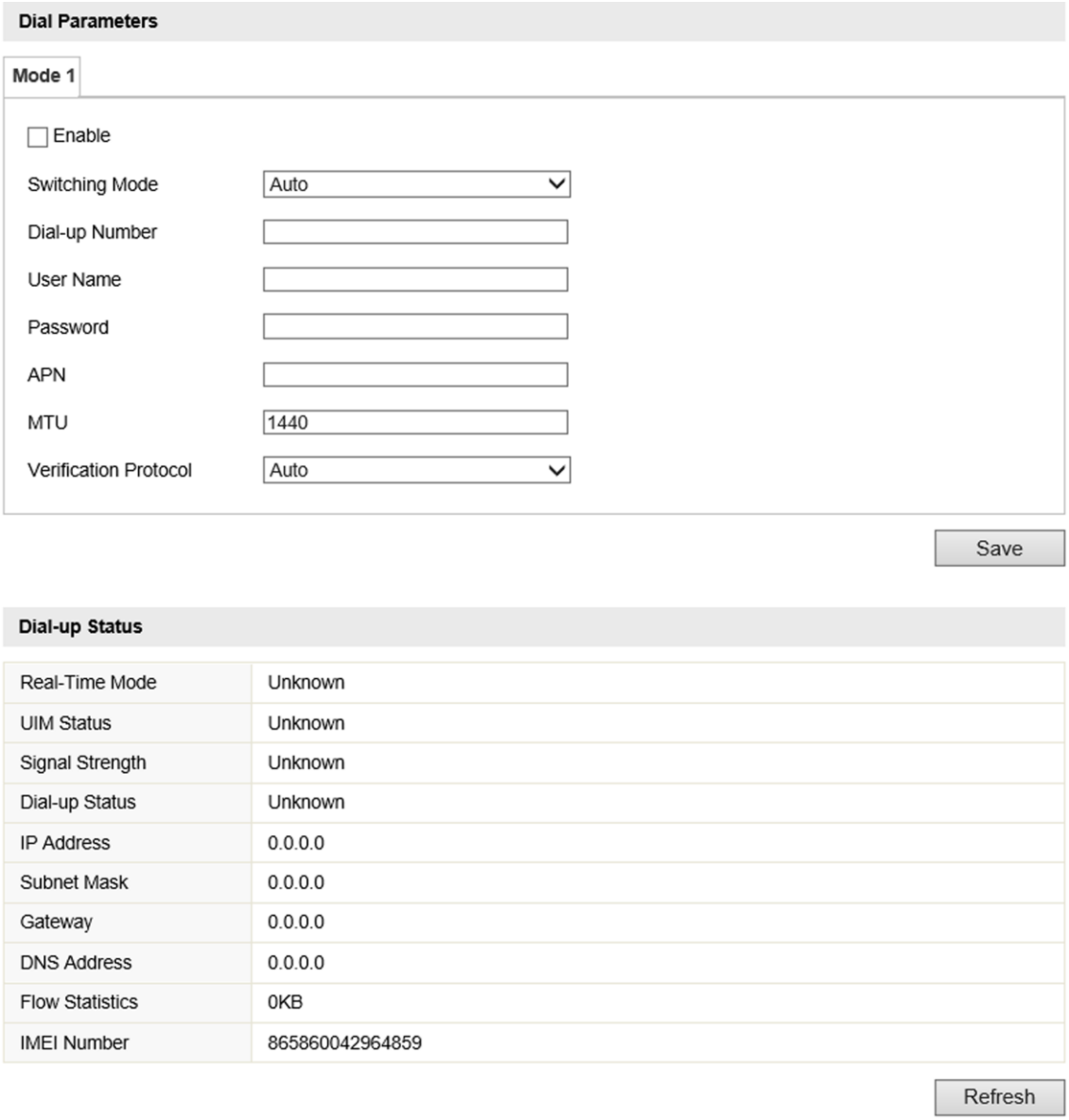

Figure 9-2 Set Dial-up Parameters

3. Optional: If you want to use 3G/4G network only, select **Switching Mode** as **Force Switch to 3G**, or **Force Switch to 4G**.
4. Set the dial-up parameters.
   – When you connect the device to the normal network, you do not need to set the dial-up parameters.
   – When you connect the device to the private network, set the APN information, such as the user name, APN, etc.

Note

- Consult the operator about the dial-up parameters of the private network.
- When you have enabled 3G/4G and Wi-Fi simultaneously, the device will use 3G/4G network in priority.

5. Click **Save**.
6. Optional: Click **Refresh** to view the dial-up status.

9.3 Connect to Wi-Fi

Set Wi-Fi parameters if you want to connect the device to the network via Wi-Fi.

Steps

1. Go to **Configuration** → **Device Configuration** → **System Settings** → **Wi-Fi**.
2. Select **Wi-Fi Mode** as **Wi-Fi**.
3. Click **Search** to search the Wi-Fi.
4. Select a Wi-Fi from the wireless network list, and enter **Key**.
5. Click **Save**.
6. Optional: If you want to edit the IP address connected to the Wi-Fi to make it convenient to access to the device via the IP address of WLAN, set the IP address of WLAN.
   1) Select **IP Address Type** as **Static IP**.
   2) Enter parameters such as IP address, subnet mask, etc.
   3) Click **Configuration** to save the settings.
7. Optional: Go to **Configuration** → **Device Status** to view the connection status of Wi-Fi.

9.4 Set Wi-Fi Hotspot

Set Wi-Fi AP to use the device as a hotspot to share network to another terminal device.

Steps

Caution

Wi-Fi AP and Wi-Fi function cannot be enabled at the same time. Once one of them is enabled, the other will be disabled automatically.

1. Go to**Configuration** → **Device Configuration** → **System Settings** → **Wi-Fi**.
2. Select **Wi-Fi Mode** as **Wi-Fi Hotspot**.

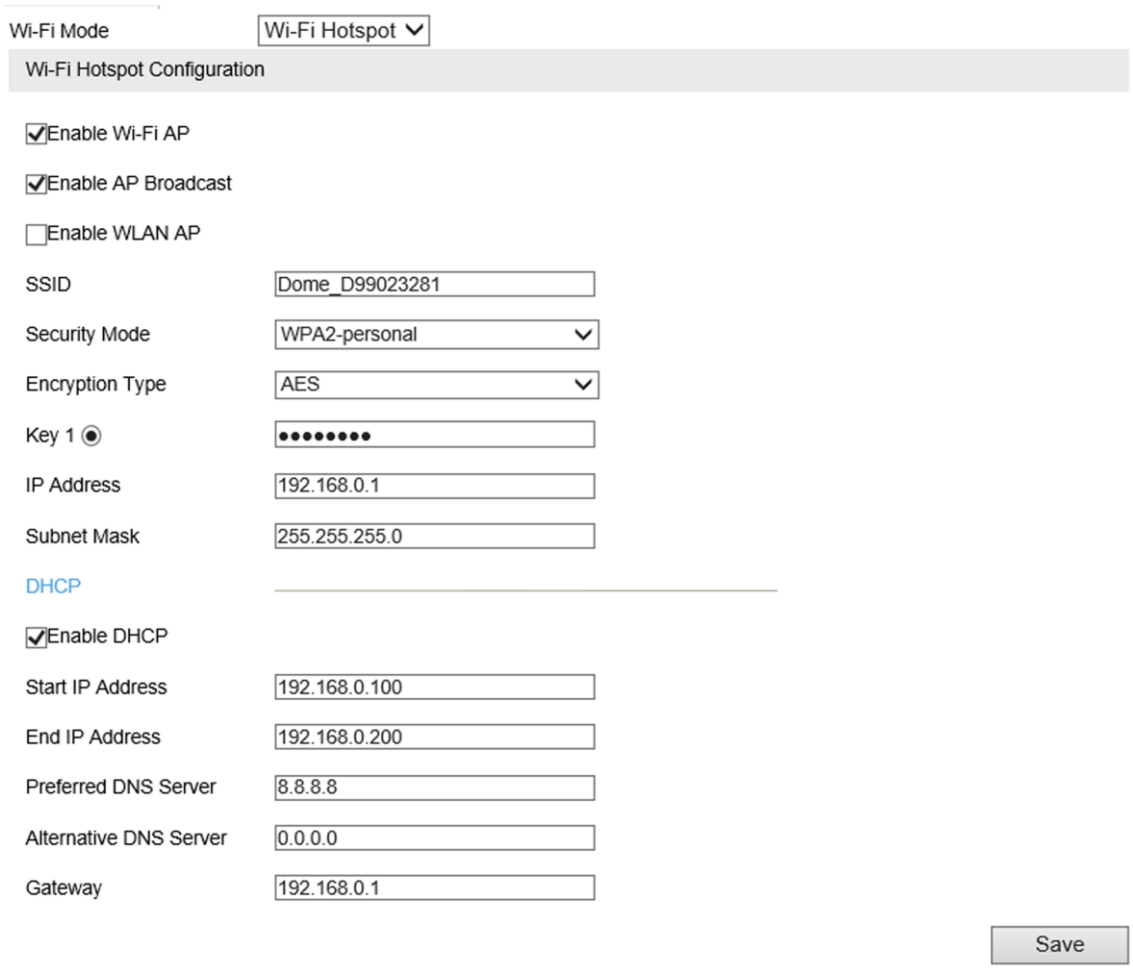

Figure 9-3 Set Wi-Fi Hotspot

3. Check **Enable Wi-Fi AP**, **Enable AP Broadcast**, and **Enable WLAN AP**.
4. Set hotspot information.
   1) Enter **SSID** (hotspot name).
   2) Select **Security Mode**.
   3) Select **Encryption Type**.
   4) Enter **Key**, **IP Address**, and **Subnet Mask**.

Note

The IP address should be different from the one that set in the network parameters.

5. Optional: Check **Enable DHCP** and enter the start/end IP address.
6. Click **Save**.

Result

When the device connects to the network via dialing, the connected peripheral device can get access to the network either.

9.5 Set Satellite Positioning

Set satellite positioning if you want to get the specific location of the device, or synchronize time via satellite.

Steps

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

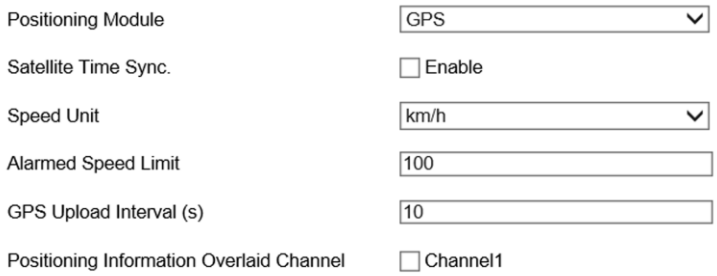

Figure 9-4 Set Satellite Positioning

2. Select **Positioning Module** according to your needs.
3. Optional: Check **Enable** to enable satellite time synchronization.
4. Set the following parameters.

   Speed Unit and Alarmed Speed Limit

   For example, when the **Speed Unit** is set to km/h and the **Alarmed Speed Limit** is set to 60, an alarm will be triggered when it detects that the vehicle speed exceeds 60 km/h.

   GPS Upload Interval

   The device will upload the positioning information every the set interval.

   Positioning Information Overlaid Channel

   The positioning information will be overlaid on the video of the selected channel when live view and playback.
5. Click **Save**.

9.6 Set Bluetooth

After the device is connected to the platform, the platform can listen to the audio collected from the bluetooth headsets.

Before You Start

- Prepare the bluetooth headsets (supporting bluetooth 4.0), and put it near the device.
- Ensure the device network communication is normal.

Steps

1. Go to **Configuration** → **Device Configuration** → **System Settings** → **Bluetooth Settings**.
2. Check **Enable**.

3. If you want to customize the device PIN code, enter **Custom PIN Code**, and click **Save**.
   When pairing the bluetooth headsets, the custom PIN code will be used to verify the correct device.
4. Click **Pair** to pair with the selected device.

Figure 9-5 Pair with Online Device

Note

After enabling bluetooth, the online devices will be searched automatically. If no device is displayed, click **Refresh** to refresh the online devices, or adjust the position of the bluetooth device to make it searched.

5. Optional: View the connection status.

Note

When it displays "Paired", the bluetooth device is connected.

9.7 Connect to Platform

9.7.1 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** → **Device Configuration** → **System Settings** → **ISUP Protocol**.

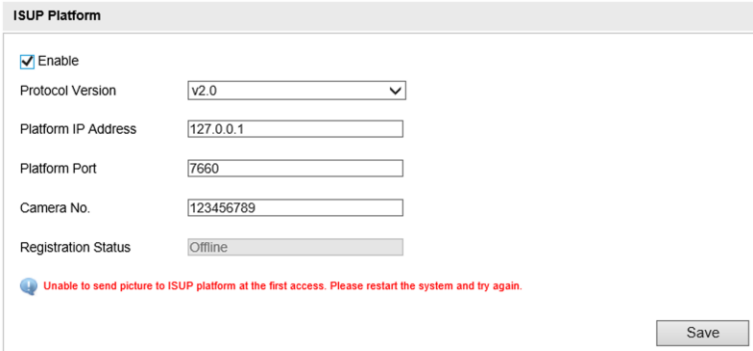

Figure 9-6 Connect to ISUP Platform

2. Check **Enable**.
3. Select **Protocol Version**.
4. Enter **Platform IP Address**, **Platform Port**, and **Camera No.**

Note

The camera No. should be the same with the added one on the ISUP platform.

5. Optional: Enter **Encryption Key** if you select **v5.0**.
6. Click **Save**.
7. Optional: View **Registration 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.

9.7.2 Connect to Guarding Vision

The device can be remotely accessed via Guarding Vision.

Before You Start

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

Steps

1. Go to **Configuration** → **Device Configuration** → **System Settings** → **Guarding Vision**.
2. Check **Enable**.

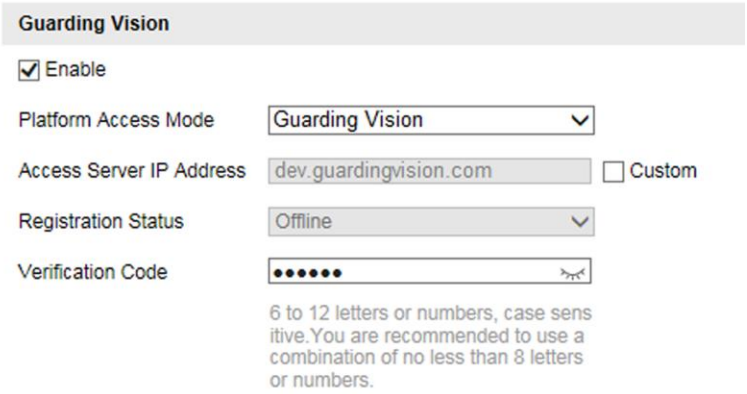

Figure 9-7 Connect to Guarding Vision

3. Enter a customized **Verification Code**. You need to enter the code when adding the device in Guarding Vision.

Caution

Valid security code range [6-12]. You are recommended to use an eight-bit or above combination of numbers, lowercase, and uppercase for the code.

4. Click **Save**.
5. Get Guarding Vision application from the following ways.
   – For computer user: Visit ***dev.guardingvision.com***.
   – For mobile phone user: Download Guarding Vision in App Store (iOS system) or Google Play(TM) (Android system).
6. Register an account and add the device to Guarding Vision.

Note

Refer to the user manual of Guarding Vision for details.

9.8 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 Settings** → **DDNS**.

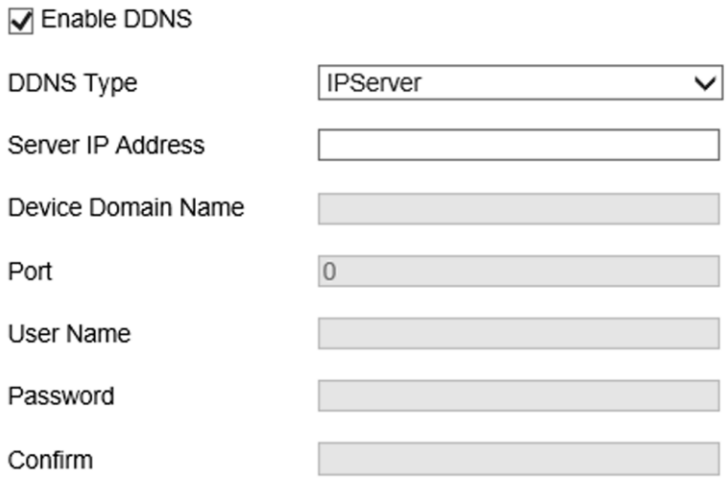

Figure 9-8 Set DDNS

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.

9.9 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 Settings** → **Port** for port settings.

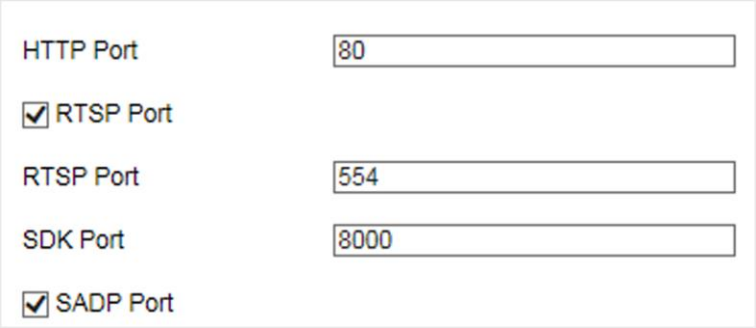

Figure 9-9 Set Port

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.

SADP Port

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

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 Settings** → **Serial Port Parameters**.

RS-485 Parameters

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

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. 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 Settings** → **Serial Port Parameters**.
2. Click **Advanced Settings**.

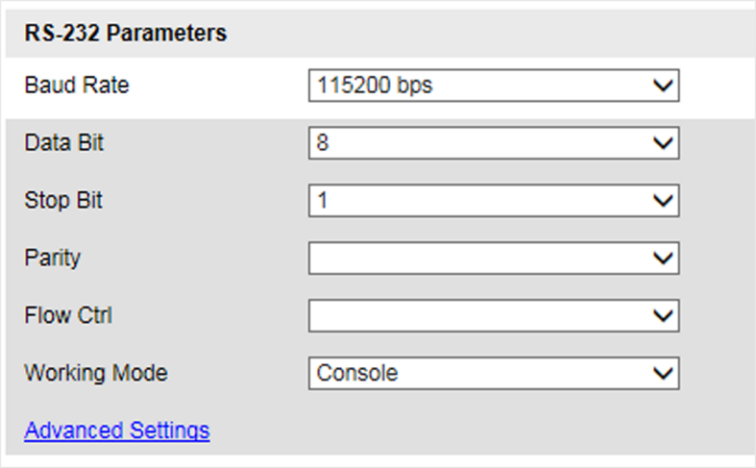

Figure 10-2 Set RS-232

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.

Narrow Band Transmission

Reserved.

5. Click **Save**.

Chapter 11 Exception Alarm

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

Steps

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

Enable	Exception Type	Notify Surveillance Center
☐	HDD Error	☐
☐	Network Bridge Disconnected	
☐	IP Address Conflicted	

Figure 11-1 Set Exception Alarm

2. Select the exception type(s) and the linkage method.
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** → **User**.
2. Add a user.
   1) Click **Add**.
   2) Enter **User Name** and select **User Type**.
   3) Enter **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.

      Common 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. Optional: You can do the following operations.
   – Select a user and click **Edit** to change the password and permission.
   – Select a user and click **Delete** to delete the user.

12.2 Set RTSP Authentication

You can specifically secure the stream data of live view.

Steps

1. Go to **Configuration** → **Device Configuration** → **User Management** → **RTSP Authentication**.
2. Select **Authentication Mode** as **basic** or **disable** to enable or disable the RTSP authentication.
3. Click **Save**.

12.3 Set IP Address Filtering

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

Steps

1. Go to **Configuration** → **Device Configuration** → **User Management** → **IP Address Filter**.
2. Check **Enable IP Address Filter**.
3. Set **IP Address Filter Way**.

   Forbidden

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

   Allowed

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

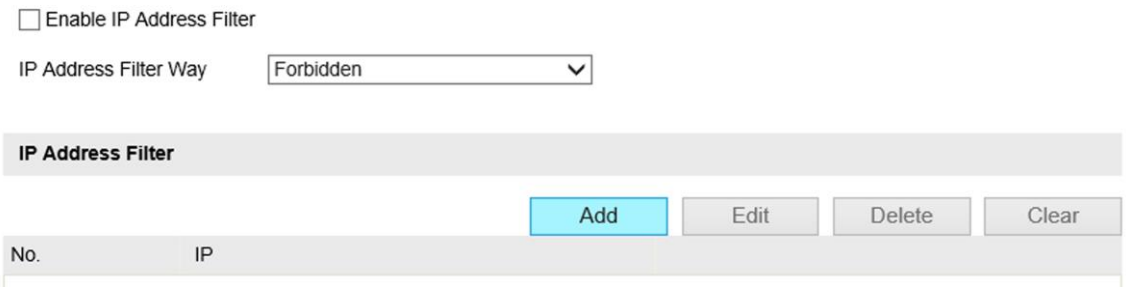

Figure 12-1 Set IP Address Filtering

5. Optional: Edit, delete, or clear the added IP addresses.
6. Click **Save**.

12.4 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 Settings** → **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.

12.5 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** → **Device Configuration** → **System Settings** → **Service**.
2. Uncheck **Enable SSH Service**.
3. Click **Save**.

12.6 Set HTTPS

12.6.1 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** → **Device Configuration** → **System 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.

12.6.2 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 Settings** → **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 Set Startup Mode

Power management is used to set the device startup mode.

Steps

1. Go to **Configuration** → **Device Configuration** → **System Settings** → **Power Management**.
2. Select **Startup Mode**.

   Manual

   After connecting to power, hold the power supply button for 3 s to power on the device.

   Auto

   After connecting to power, the device will be powered on automatically.
3. Click **Save**.

13.2 View Device Information

Basic Information

Go to **Configuration** → **Device Configuration** → **System Settings** → **Device Information** to view the basic information.
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 device status, Wi-Fi status, Wi-Fi AP status, etc.

13.3 Search Log

Log helps to locate and troubleshoot problems.

Steps

1. Click **Log**.
2. Set search conditions.
3. Click **Search**.
   The matched log files will be displayed on the log list.
4. Optional: Click **Save Log** to save the log files to your computer.

13.4 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.

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

13.6 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** → **Restore Default Settings**.
2. Select the restoration mode.
   - Click **Restore** to restore the parameters except the IP parameters and user parameters to the default settings.
   - Click **Restore Factory Settings** to restore all the parameters to the factory settings.
3. Click **OK**.

13.7 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 Settings** → **DST**.
2. Check **Enable DST**.
3. Set **Start Time**, **End Time**, and **DST Bias**.
4. Click **Save**.

13.8 Synchronize Time

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

Steps

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

NTP Time Sync.

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

Note

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

4. Click **Save**.

13.9 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 Parameters**.
2. Click **Export Parameters**.
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**.

13.10 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 Config. 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.

13.11 Export Violation Type File

You can export the violation type file to check whether the vehicle has illegal types, etc.

Steps

Note

Export violation type file function vary with different models, please refer to the actual product.

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

2. Click **Export Violation Type File**.
3. Select the saving path and enter the file name.
4. Click **Save**.

13.12 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**.

A. Communication Matrix

Scan the QR code below to get the communication matrix of the device.

See Far, Go Further