Network Camera User Manual

Manual Version: V3.07

Thank you for your purchase. If you have any questions, please do not hesitate to contact your dealer.

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Safety Instructions

CAUTION!
The default password is intended only for your first login. For security, we strongly recommend you set a strong password of at least 9 characters comprising digits, letters, and special characters.

Be sure to read this manual carefully before use and strictly comply with this manual during operation.

The illustrations in this manual are for reference only and may vary depending on the version or model. The screenshots in this manual may have been customized to meet specific requirements and user preferences. As a result, some of the examples and functions featured may differ from those displayed on your monitor.

- This manual is intended for multiple product models, and the photos, illustrations, descriptions, etc., in this manual may be different from the actual appearances, functions, features, etc., of the product.
- The mouse operations described in this manual are right-handed operations.
- Uniview reserves the right to change any information in this manual without any prior notice or indication.
- Due to uncertainties such as physical environment, discrepancy may exist between the actual values and reference values provided in this manual. The ultimate right to interpretation resides in our company.
- Users are fully responsible for the damages and losses that arise due to improper operations.

Environmental Protection

This product has been designed to comply with the requirements on environmental protection. For the proper storage, use and disposal of this product, national laws and regulations must be observed.

Safety Symbols

The symbols in the following table may be found in this manual. Carefully follow the instructions indicated by the symbols to avoid hazardous situations and use the product properly.

Symbol	Description
WARNING!	Indicates a hazardous situation which, if not avoided, could result in bodily injury or death.
CAUTION!	Indicates a situation which, if not avoided, could result in damage, data loss or malfunction to product.
NOTE!	Indicates useful or supplemental information about the use of product.

Contents

1 Login

1.1 Preparation

Refer to the camera's quick guide to complete installation, and then connect the camera to power to start it up. You can log in to the camera's web interface to perform management or maintenance operations. Windows 7, 8 or later is installed on the PC. The following takes Windows 7 as an example.

Check before login

- The camera runs normally.
- The PC has a network connection to the camera.
- You have permission to operate the PC.
- Google Chrome 105 or later is recommended on the PC.
- A 32-bit or 64-bit Web browser is required if you are using a 64-bit operating system. It is recommended to use a monitor with the highest resolution for better display.

> **NOTE!**
> Recommended PC configurations for 32MP live view: Intel® Core™ i7 8700 processor; GTX 1080 graphics card; DDR4 8GB or higher.

1.2 Login

The default static IP address of the camera is **192.168.1.13**, and the default subnet mask is **255.255.255.0**.

DHCP is enabled by default on the camera. If a DHCP server is deployed in the network, the camera may be assigned an IP address, and you need to use the assigned IP address to log in.

Follow the steps below to log in to the camera's web interface:

1. Open Chrome, enter the IP address of your camera in the address bar and press **Enter**.
2. At your first login, you need to follow the on-screen instructions to install a plug-in (close all browsers before installation), and then open the browser again to log in. To manually load the plug-in, type http://*IP address*/ActiveX/Setup.exe in the address bar and press **Enter**.

⚠ Please click here to **Download** and install the latest plug-in. Close your browser before installation.

> **NOTE!**
> When using a non-IE browser, you can log in without installing the plug-in. However, some functions in the Live View, Photo, and Setup pages may not work properly without the plug-in. Please refer to the actual interface.

3. Set whether to start live view automatically after login.

- With **Live View** selected, live view will start automatically after login.
- With **Live View** not selected, you need to start live view manually.

![NOTE icon] **NOTE!**

👁: Click to display the password and release to hide. This operation is also applicable to all password entry boxes after login.

4. Enter the username and password (**admin/123456** by default) and click **Login**. To clear the **Username** and **Password** text boxes, click **Reset**.

5. After first login, the **Device Initialization** page appears. Please complete the settings as needed.

   (1) Read the privacy policy and select **I have read and agree to the above policy**. Click **Next**.

   (2) Change the default password to a strong password and enter an email address for password reset or recovery. Click **Next**.

![NOTE icon] **NOTE!**

See [User](#) for more information.

If you forgot your password, click **Forgot Password** in the login page, then follow the on-screen instructions to reset your password.

(3) Select the region (default is none) and video standard (see Video Standard) as needed. Click **Next**.

Region	United States of America(USA) ⌄
Video Standard	NTSC ⌄

(4) Select whether to enable **EZCloud** (see EZCloud), and then click **Finish**.

1.3 Global Search

Some devices allow for quick navigation to specific function pages by using the search button in the upper-right corner of the page.

Click 🔍 and enter the function page name in the entry box. Click on the page name from the search results to go directly.

Please input ...	×

Basic Info
Setup-Common-Basic Info-Basic Info

About
Setup-Common-Basic Info-About

Local Parameters
Setup-Common-Local Parameters-Local Parame

Wired Network
Setup-Common-Wired Network-Wired Network
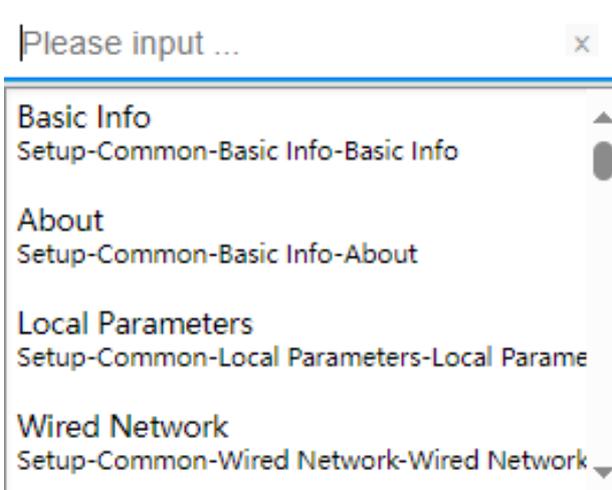
NOTE!
The **-** symbol indicates a sub-level menu. This function supports navigation to level-4 function pages, such as Basic Info, About, Local Parameters, and Wired Network pages.

2 Live View

2.1 Live View

After login, the **Live View** page appears, showing the live video from the camera. You may double-click the window to enter or exit full screen mode.

Live view page of dual-channel camera
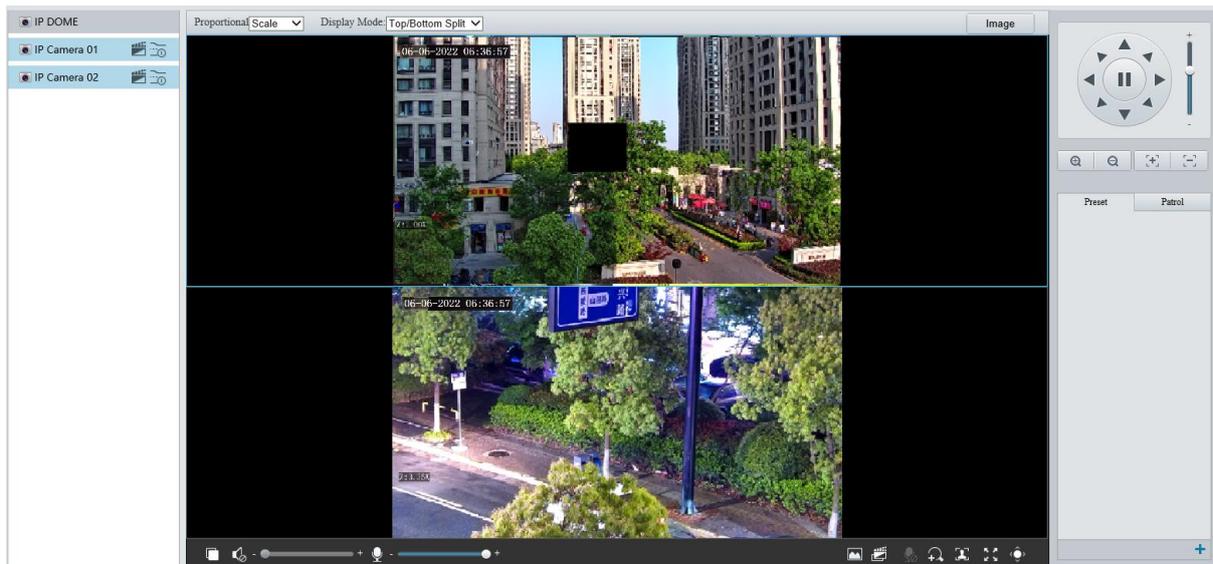
Live view page of single-channel camera

NOTE!

Live view operations supported may vary with device model.

Live View Toolbar

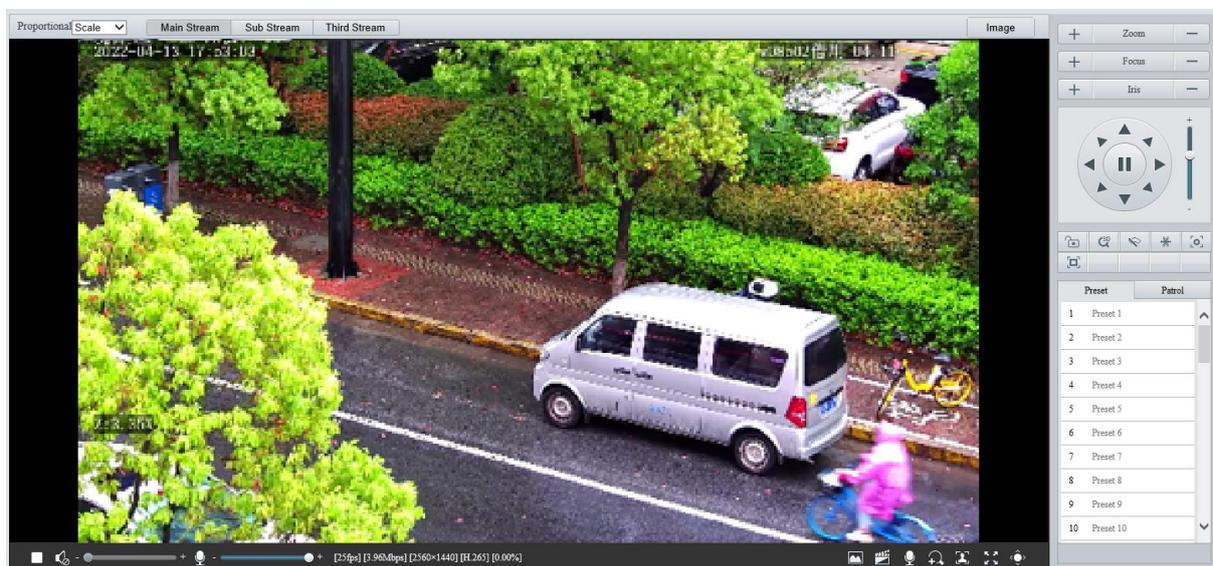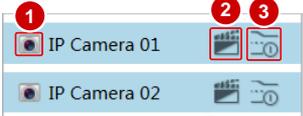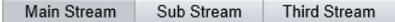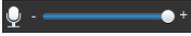| Item	Description
Proportional Scale ▼	Set the image display ratio in the window. ● Scale: Displays 16:9 images. ● Stretch: Displays images according to the window size (stretch images to fit the window). ● Original: Displays images with original size.
Display Mode: Top/Bottom Split ▼	Set the image display mode in the window. ● Single Channel: Displays live video of a single channel. ● Left/Right Split: Displays live video in left/right split mode. ● Top/Bottom Split: Displays live video in top/bottom split mode. ● Picture in Picture: Opens a floating live view window on top of the current window. **NOTE!** This function is only available on dual-channel cameras.
IP Camera 01 / IP Camera 02	**1** : Stop/start live view of the selected channel. **2** : Start local recording. **3** : Switch streams.
Main Stream Sub Stream Third Stream	Select a live video stream according to your camera.
Image	Set image parameters.
▶ / ◻	Start/stop live view.
🔊 / 🔇	Turn off/on sound.
🔊 - ——●—— +	Adjust the output volume for the media player on the PC. Range: 1 to 100.
🎤 - ————●— +	Adjust the microphone volume on the PC during audio communication between the PC and the camera. Range: 1 to 100.
[25fps] [7.24Mbps] [3840×2160] [H.264] [0.00%]	Frame rate/bit rate/resolution/packet loss rate.
⊓ / ⊓ₓ	Enable/disable pixel calculation.
🖼	Take a snapshot from the displayed live video. **NOTE!** See Local Parameters for the path of the saved snapshots.
🎬 / 🎬ₓ	Start/stop local recording. **NOTE!** ● See Local Parameters for the path of the saved local recordings. ● VLC media player is recommended for playing local recordings of 4K cameras.
🎤 / 🎤	Start/stop two-way audio.
🔍 / 🔍ₓ	Start/stop digital zoom. See Digital Zoom for details.
📷 / 📷ₓ	Start/stop capturing. See Capture for details.
⛶	Full screen.
⊞	Display/hide the **PTZ Control**, **General Parameters** tabs.

	Distance for Optimum Multi-Sensor Splice(m) button, used to adjust the distance from the monitored object to the lens to get the optimal images. The value range is [2.0-100]m, the default is 10m.

Distance for Optimum M... ✕
▬▬●▬▬▬▬▬▬▬ `10.0`
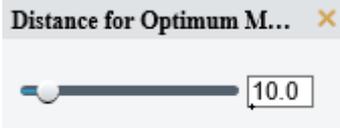
Adjust the splicing distance to optimize the splicing effect of the left and right screens. Examples are shown below:

● The distance is too small, causing double images.	● The distance is appropriate. The image is displayed correctly.	● The distance is too large. The image looks smaller than normal.

NOTE!

- This function is available on certain multi-sensor cameras.
- You need to set the optimal splicing distance according to the actual scene.

2.1.1 Pixel Calculation

1. Click on the live view toolbar to enable pixel calculation.
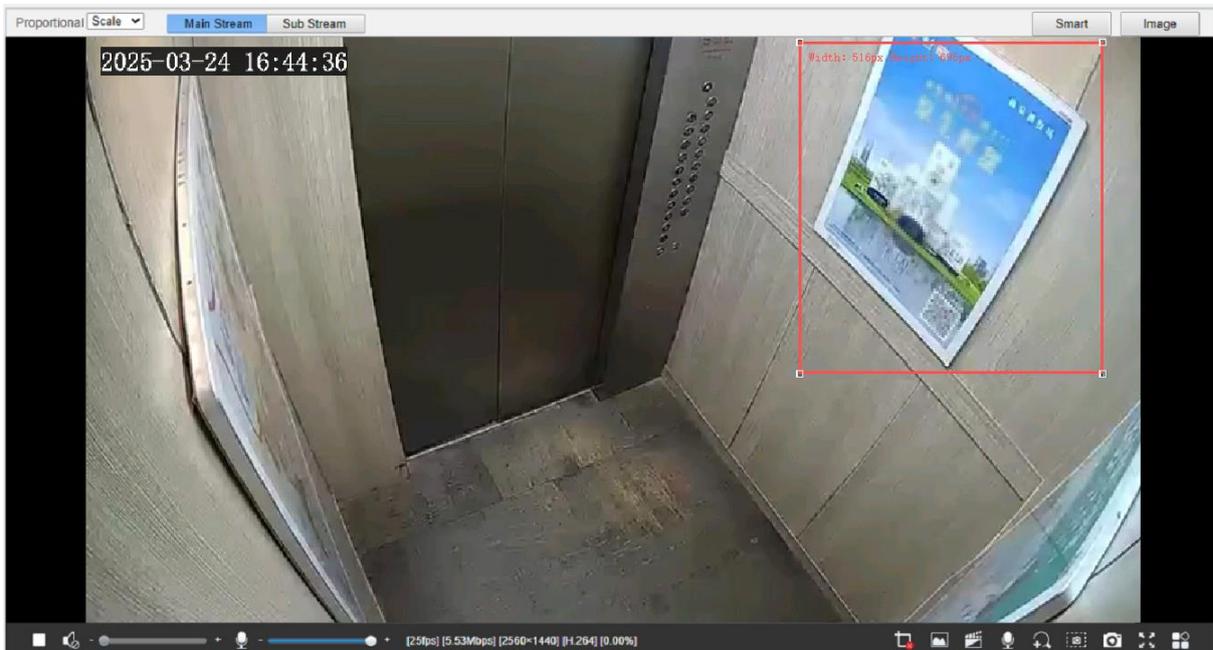
2. Adjust the position and size of the detection area. The pixel value changes with the size of the detection area.

- To adjust the position of the detection area, point to a border of the area and drag it to the desired position.
- To adjust the size of the detection area, point to a handle of the box and drag to resize it.

- To redraw the detection area, click on the image and drag to draw a new one.

3. To disable pixel calculation, click ⬚.

2.1.2 Digital Zoom

1. Click 🔍 on the live view toolbar to enable digital zoom.
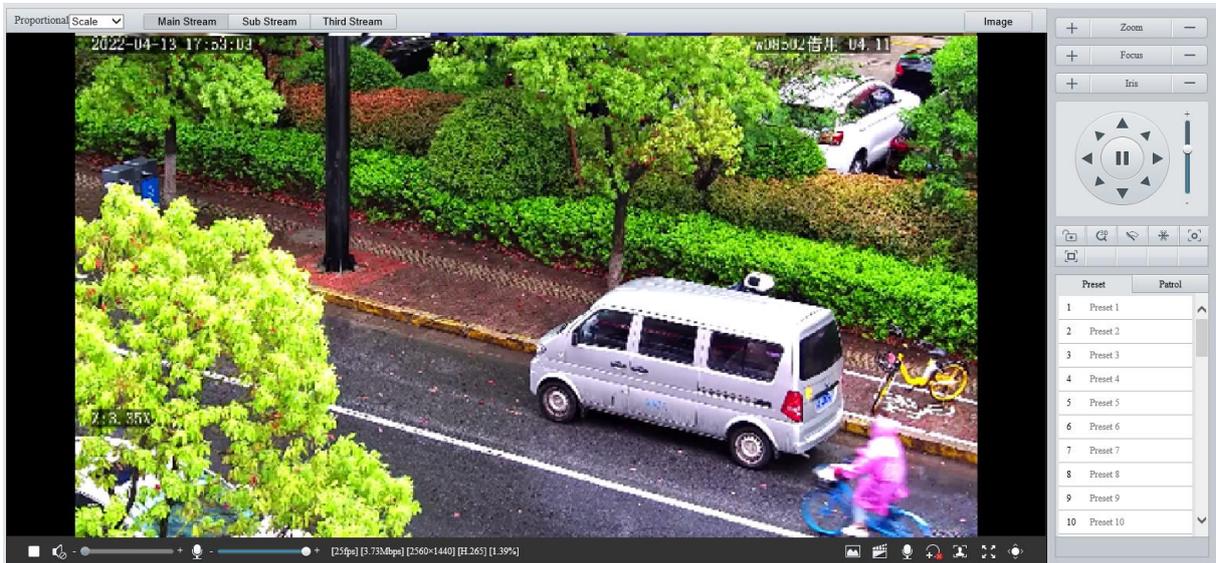
2. View the magnified area.
- Click in the live view window and roll the wheel to zoom in or out on the image. Drag your mouse to view all the magnified area. To restore, right-click in the window.
- Click in the live view window and drag your mouse to specify the area (rectangular area) to be magnified. Drag your mouse to view all the magnified area. To restore, right-click in the window.

3. To exit, click 🔍.

2.1.3 Capture

	NOTE!
📝	This function is only available on certain models.

1. Click 🔲 on the live view toolbar to start capture.

2. View captured images.

- Click **Open Image Folder** to view the images captured from the live video on your PC. The images are saved in JPEG format.

  You can change the storage location in **Setup** > **Common** > **Local Parameters**. If the disk has less than 100MB free space, you will be prompted to clear up the auto snapshot folder, and new snapshots will not be displayed in the live view page until the disk space is freed.

- To delete all captured images, click **Clear All Records**.
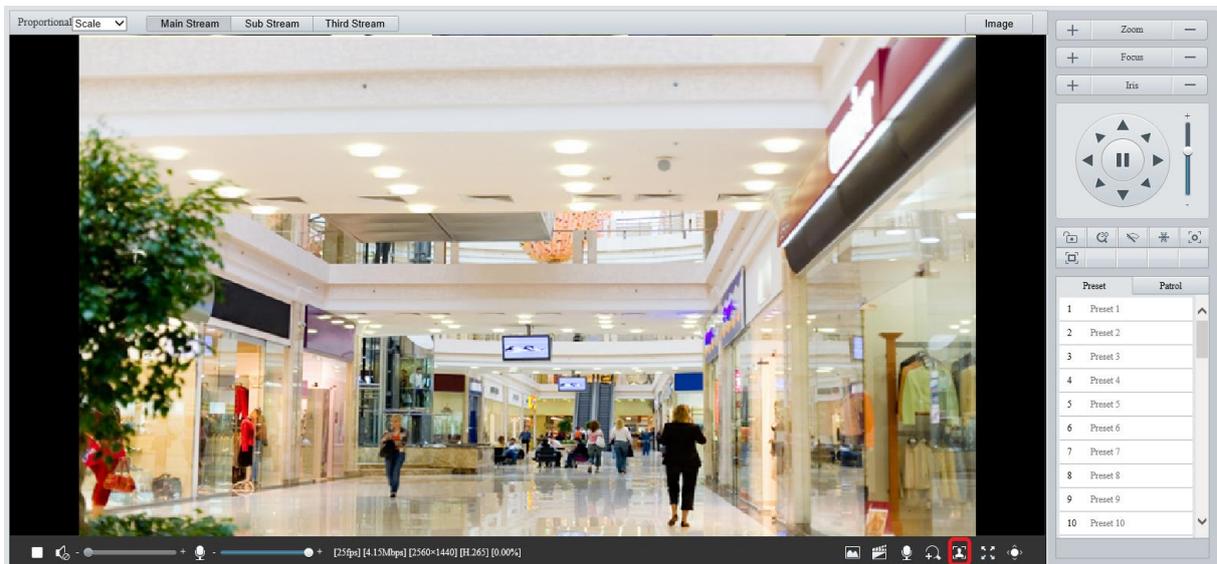
3. To exit, click [icon].

2.1.4 **5ePTZ**

1. Click [icon] on the live view toolbar to enable 5ePTZ tracking.

2. Set the tracking area. In 5ePTZ tracking mode, the live view window is divided into 1 panoramic window and 5 small tracking windows. You may rest the cursor on a tracking box in the panoramic window or in a tracking window and use the scroll wheel to zoom in or out, and drag the tracking windows to relocate them.

3. Enable perimeter protection (see Smart), then the camera can automatically detect moving objects in the detection area, and simultaneously track and zoom in on 5 objects that have triggered the alarm rules until the objects disappear.

4. To exit, click [icon].

2.2 **PTZ Control**

[icon] **NOTE!**
- This function is only available on PTZ cameras or cameras installed on PT mounts.
- Some lens control functions are available on cameras equipped with motorized lenses.
- The PTZ control buttons may vary with camera model.

8

Item	Description
+ Zoom −	Zoom in/out on images.
+ Focus −	Focus far/near for sharp images at a distance/at close range.
+ Iris −	Increase/reduce the amount of light that enters the camera for brighter/darker images.
🔓	Scene lock, used to lock pan/tilt and the lens to avoid changing the zoom ratio and scene by mistake. **NOTE!** After you lock the scene, the camera does not move, zoom and focus.
Q³ᴰ	3D positioning.
[○]	One-click focus.
[□]	Area focus.
✎ / ✎⊠	Enable/disable wiper.
🏰	One-click auto guard. Set the current position as Preset 90 (preset ID: 90) and enable Auto Guard. **Note:** This function is available to devices that support **Auto Guard** function.
[speed slider]	Adjust the rotation speed of the camera. Drag up to increase the rotation speed, or drag down to decrease the rotation speed.
[directional pad]	Adjust the rotation direction of the camera or stop rotation.
•)) / •⟩⊠	Enable/disable IR.
☀ / ☀⊠	Enable/disable heater.
💡 / 💡⊠	Enable/disable light.
❄ / ❄⊠	Enable/disable snow removal.
⊕ ⊖	Adjust camera zoom.
◉ ↻	Auto back focus adjustment.
◀▶▼ ◢◣ ◥ ▼ ▲	Shortcut keys for PTZ control. After the mouse cursor changes to one of these shapes in live view, click and hold the left mouse button to operate the PTZ camera. **NOTE!** These buttons are unavailable when 3D positioning or digital zoom is enabled.
⊕ ⊖	Shortcut keys for zooming in or out in live view. Scroll the wheel forward to zoom in or backward to zoom out.

	NOTE!
	This function is only available on cameras with motorized lenses.

2.2.1 **3D Positioning**

> **NOTE!**
> This function is only available to PTZ dome cameras and box cameras with motorized lens and pan/tilt capability.

1. Click in the PTZ control panel to enable 3D positioning.
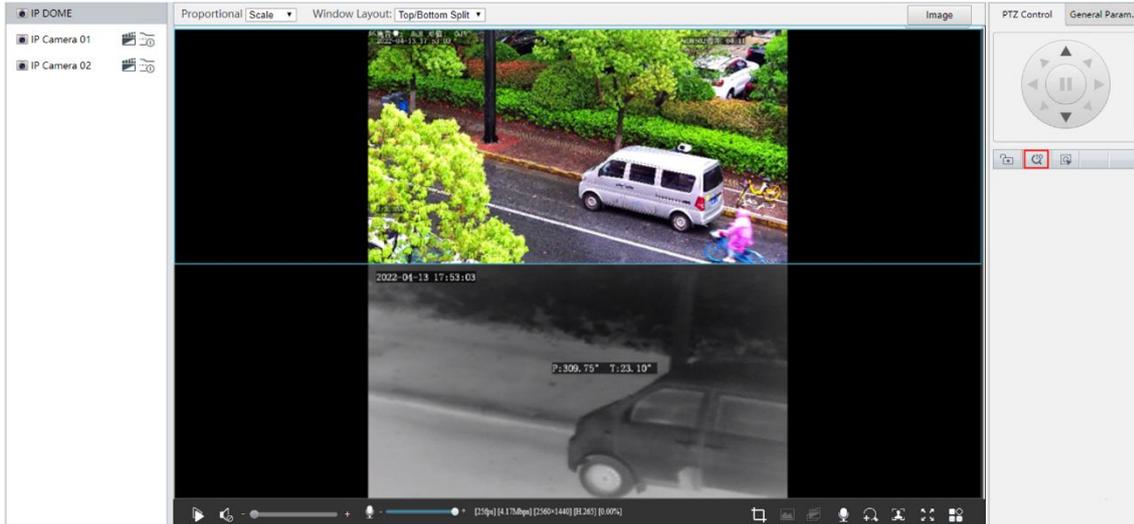
2. Click on the image and drag down/up to delineate a rectangular area to zoom in/out.

3. To exit, click .

2.2.2 **Area Focus**

1. Click in the PTZ control panel to enable area focus.

2. Click on the image and drag to delineate a rectangular area to start auto focus in this area.

3. To exit, click .

2.2.3 Preset

A preset position (preset for short) is a saved view used to quickly steer the PTZ camera to a specific position.

On the PTZ control panel, click **Preset**.

● Add a preset

1. Use the PTZ directional buttons to steer the camera to the desired position.

2. Select a preset not in use and click ✏ to edit the preset name.

3. Click 🖫 to save.

● Call a preset

In the preset list, select the preset to call, and then click ➦.

● Delete a preset

In the preset list, select the preset to delete, and then click 🗑.

● Preset Sort

Click ⇶ under the preset list. Then the configured presets will be displayed at the top of the list, sorted by preset ID in ascending order. When in sorting status, adding or deleting preset(s) will change the preset order immediately.
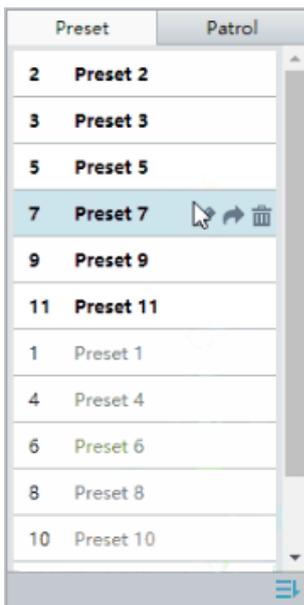
2.2.4 Patrol

Patrol is an action where a PTZ camera rotates between different types of actions. A patrol route consists of several actions.

Based on the different rotation tracks between two actions and the different route adding method, basic patrol are divided into 3 types: common patrol, scan patrol, and recorded patrol. Each PTZ camera can be configured with multiple patrol routes. To scan irregular areas, you can combine multiple basic patrol routes together.

1. Add a patrol route

Configure basic patrol route

- Add a common patrol route

In a common patrol route, the PTZ camera performs linear motion between presets.

1. On the PTZ control panel, click **Patrol**.

2. Click .

3. Set the route ID and name. On certain models, you may need to set the **Patrol Type** to **Common Patrol**.

4. Click **Add** to add patrol actions.
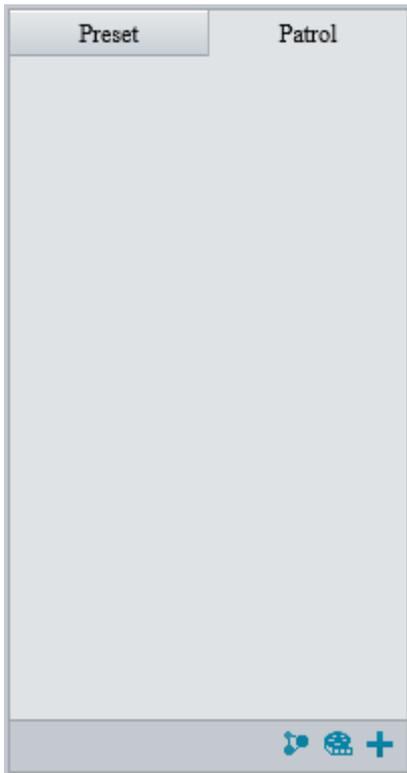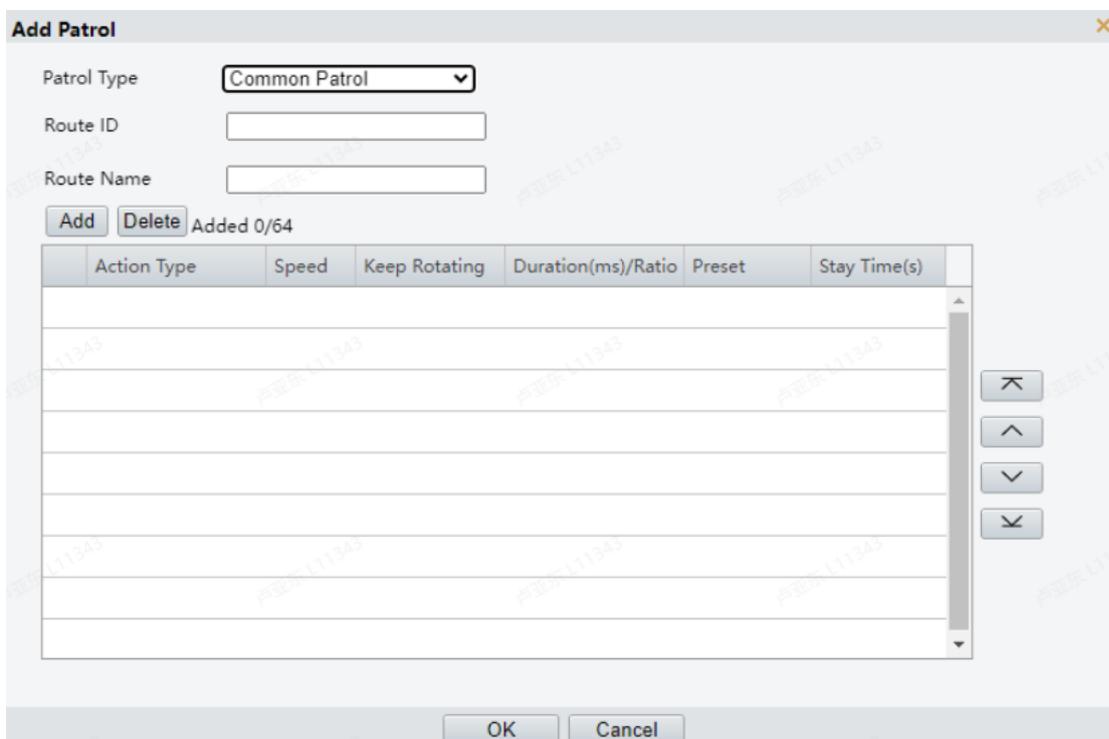
5. Complete the action settings.

Item	Description
Action Type	Supported action types include **Move Left**, **Move Right**, **Move Up**, **Move Down**, **Move Up Left**, **Move Up Right**, **Move Down Left**, **Move Down Right**, **Zoom**, **Goto Preset**. Up to 64 actions are allowed. All action types except **Goto Preset** are recorded as 2 actions. You may use the up and down arrows to rearrange the patrol actions. **NOTE!** It is recommended to set the first action to **Goto Preset**.
Speed	Rotation speed. • 1-9 levels (from slow to fast). • Preset Speed: Related to the preset speed level set in **Setup** > **PTZ** > **Basic Parameters**. The higher the preset speed level, the higher the preset speed.
Keep Rotating	When enabled, the camera keeps rotating and does not perform other actions. **NOTE!** Continuous rotation may affect the PTZ's lifespan. Please consider carefully.
Duration(ms)/Ratio	Set the duration/zoom ratio for the action.
Preset	Select the preset you want the camera to go to.
Stay Time	Set the dwell time after the camera performs an action. Range: 15s to 1800s. **NOTE!** The actual stay time supported may vary with camera.

6. Click **OK**.

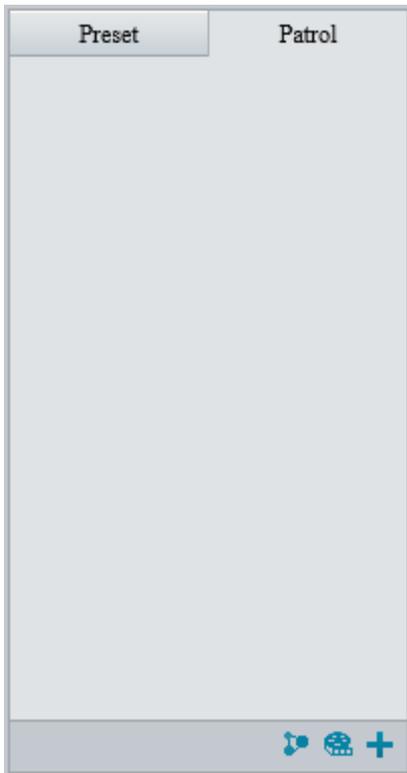| Item	Description
▶	Start patrol.
✎	Edit patrol route.
🗑	Delete patrol route.

● Add a scan patrol route

In a scan patrol route, the camera rotates from the start preset to the end preset in a specified gradient and direction.

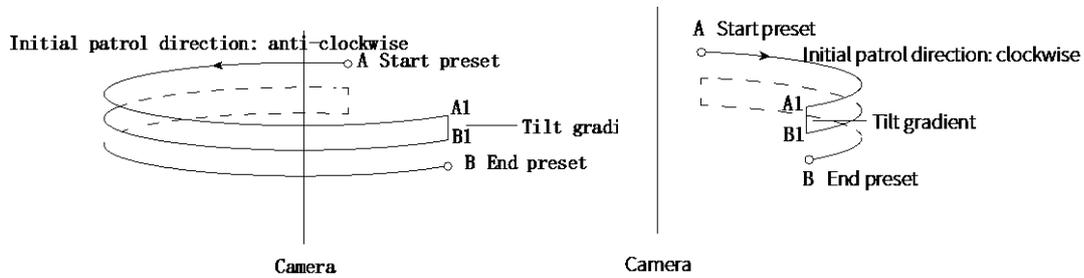> 📝 **NOTE!**
> This function is only available on certain models.

1. Before adding a scan patrol route, set presets first. See Preset for details.
2. On the PTZ control panel, click **Patrol**.

3. Click ➕.

4. Set the patrol type to **Scan Patrol**.

5. Set the route ID and name.

6. Set the patrol parameters.

Item	Description
Speed	Set how fast the camera rotate. 1 means the slowest, 9 means the fastest.
Tilt Gradient	The average division value of the vertical distance between the start and end presets. The greater the value, the shorter the patrol route.
Initial Patrol Direction	The direction of the first rotation from the start preset to the end preset.
Start/End Preset	Select a preset from the drop-down list as the start/end preset. The start and end presets must be different.

- Record a patrol route

1. On the PTZ control panel, click **Patrol**.
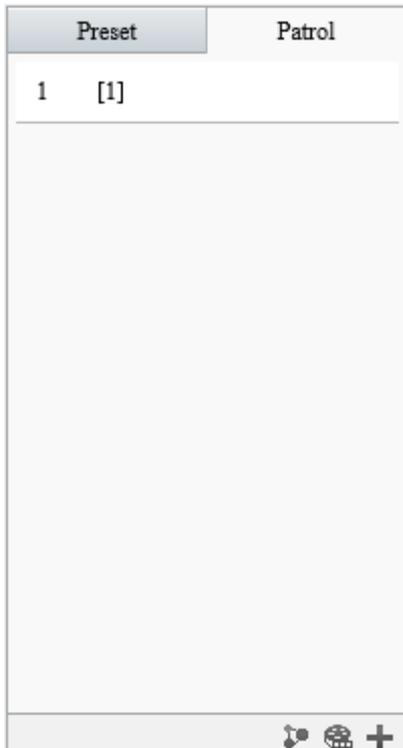
2. Click 🖥 to start recording. You can adjust the direction, rotation speed and zoom of the camera during recording. All movement data of the camera will be recorded.

3. Click ▬ to finish recording and the recording is saved as a patrol route automatically.

Preset	Patrol
1 [1]	
2 [Mode Route]	

Configure composite route

> **CAUTION!**
> Please complete the configuration in <u>Preset</u> and Basic Patrol Route first.
> For example: You want the camera to patrol the areas in the red box.

(1) Plan the patrol route, with common patrol and scan patrol as an example.
(2) Set presets.

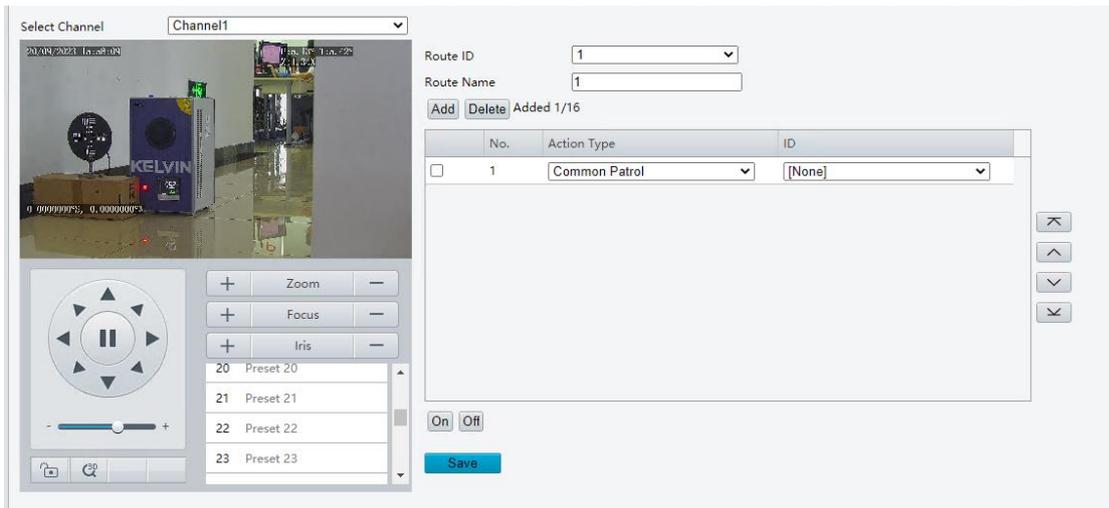(3) Configure basic patrol routes.

Gradient

(4) Combine common patrol routes with scan patrol routes into a composite route.
(5) Call the configured composite patrol route.

1. Go to **Setup** > **PTZ** > **Patrol** > **Composite Routes**.

2. Select a channel to configure and set the composite route ID and route name.

3. Click **Add** to select the patrol route and ID.

> **NOTE!**
> - Up to 4 composite routes are allowed. Each composite route allows for up to 16 patrol routes.
> - ⌐⊼⌐ / ⌐⌃⌐ / ⌐⌄⌐ / ⌐⊻⌐ : Select a route and click on the button to change the order.

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

5. Click **On** to start patrol according to the composite route.

2. Call a patrol route

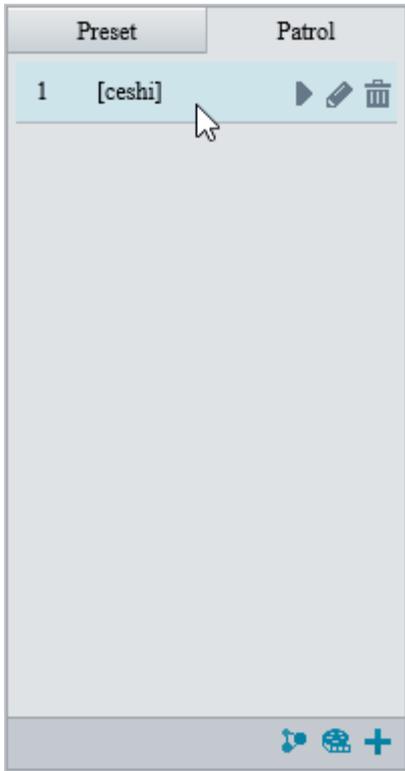Manual calls take precedence over scheduled calls.

Auto tracking and trigger tracking is executed only within the duration that the camera stays at a position during common patrol.

Call basic patrol route manually

1. On the PTZ control panel, click **Patrol**.

Select the patrol route to call and click ▶ to start patrol.

Call by schedule

1. On the PTZ control panel, click **Patrol**.

2. Click .

3. Select the **Enable Patrol Plan** checkbox.

4. Select the patrol route to call and set a start time and an end time for it.

5. Click **OK**.

2.3 General Parameters

Set general parameters to view image effects directly.

On the live view page, click **General Parameters**.
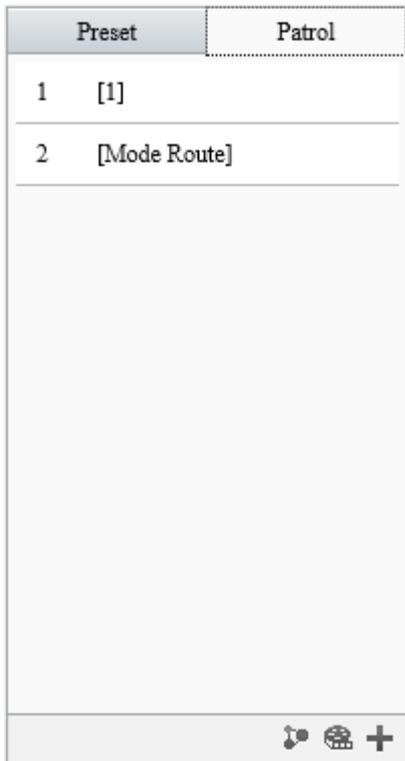
3 Playback

NOTE!

- Edge recordings refer to video recorded on storage media of cameras; local recordings refer to video recorded on a local PC.
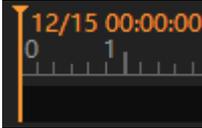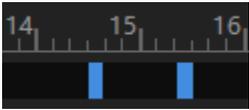- Before you search for edge recordings, make sure that the camera has storage resources such as memory card, and the storage parameters in Storage are properly configured.
- Recording playback and download functions are only available on certain models.
- For dual-channel devices, you can set playback parameters for the channels separately.

On the home page, click **Playback**.
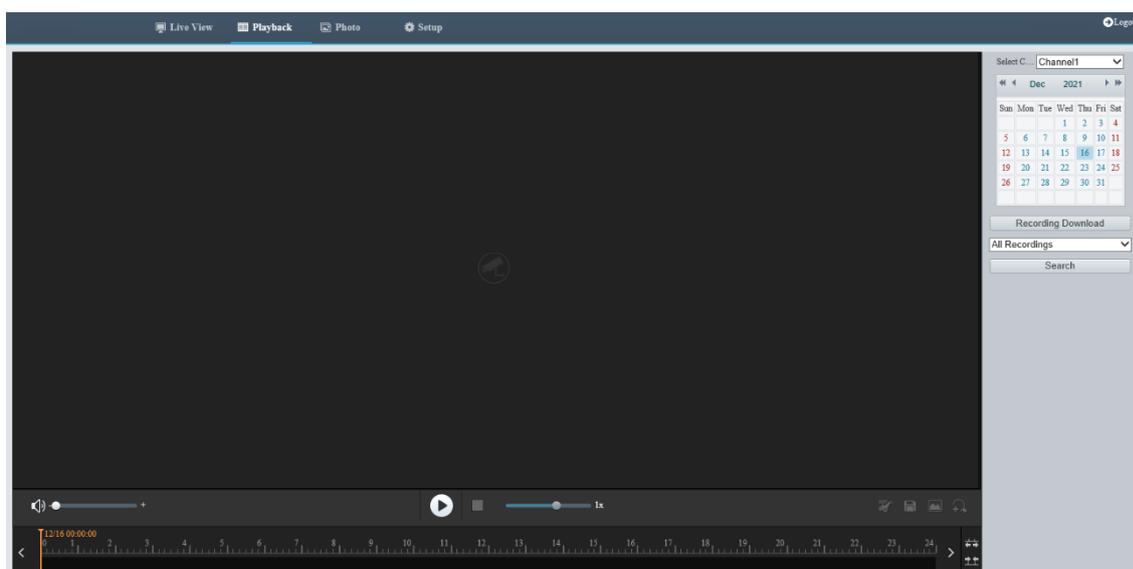
3.1 Playback Toolbar

Button	Description
	Adjust sound volume. Range: 1 to 100.
	Start playback.
	Pause playback.
	Stop playback.
	Clip video.
	Save.
	Adjust playback speed. The default speed is 1x. 2x plays faster, and 1/2x plays slower. -2x rewinds fast.
	Take a snapshot. The snapshots are saved locally by default. You can change the storage location in Local Parameters.
	Digital zoom. See Digital Zoom for details.
	Zoom in/out on the time scale. You can also use the scroll wheel to zoom.
	When the time scale is zoomed in, you can click ◁ or ▷ to view the previous or next section of the video.

Button	Description
12/15 00:00:00 0 1	Playhead. Drag the playhead to the desired point in the video.
14 15 16	Playback timeline, including two colors: ● Blue: Normal recording. ● Red: Alarm recording. To view alarm recordings, you need to configure alarm-triggered recording. See Alarm-triggered Actions for details.

3.2 Search and Playback

NOTE!
Certain cameras support simultaneous playback on two clients.

1. For a multi-channel camera, select the channel first.
2. Select the date on the calendar.
3. Click **All Recording** in the list and then choose the recording type you want to search.
4. Click **Search**. Search results are displayed.
5. Double-click an item in the list to play the recording. The playback stops till it reaches the end of the list or when you click ⏸ to pause.

3.3 Recording Download

You can download videos or video clips in batches.

● Download recordings

1. Click **Recording Download**.
2. Choose the recording type, set a time range, and then click **Search**. Search results are displayed.
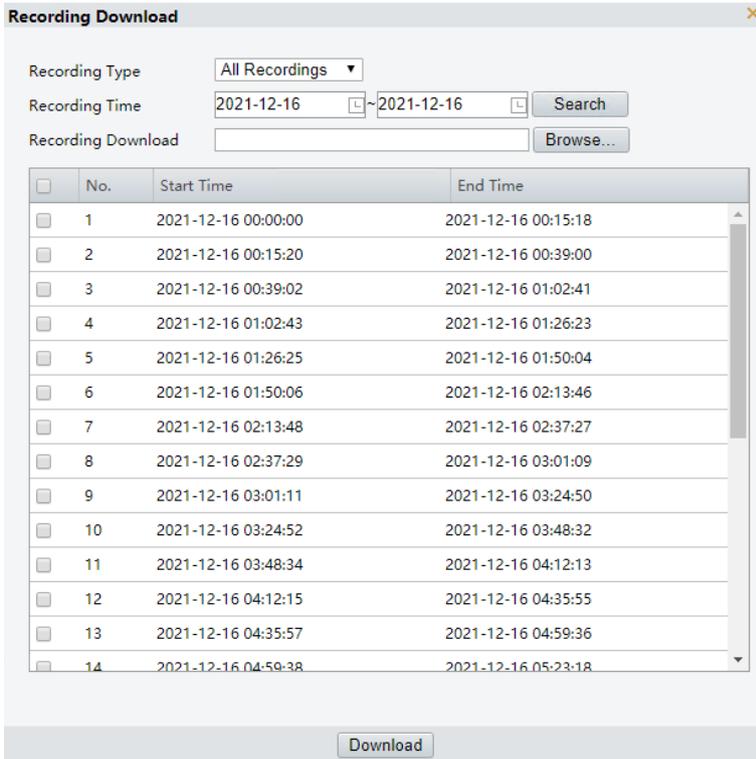
3. Click **Browse…** and set the download destination.

4. Select the checkboxes for the recordings you want to download and click **Download**.
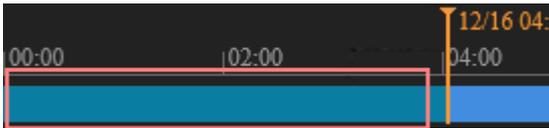
- Download video clips

1. Search for the video you want to clip. See Search and Playback.

2. On the playback toolbar, click ✂.

3. Click on the timeline to specify the clip by setting the start and end time.

4. Click ✂×. The clip turns cyan on the timeline.
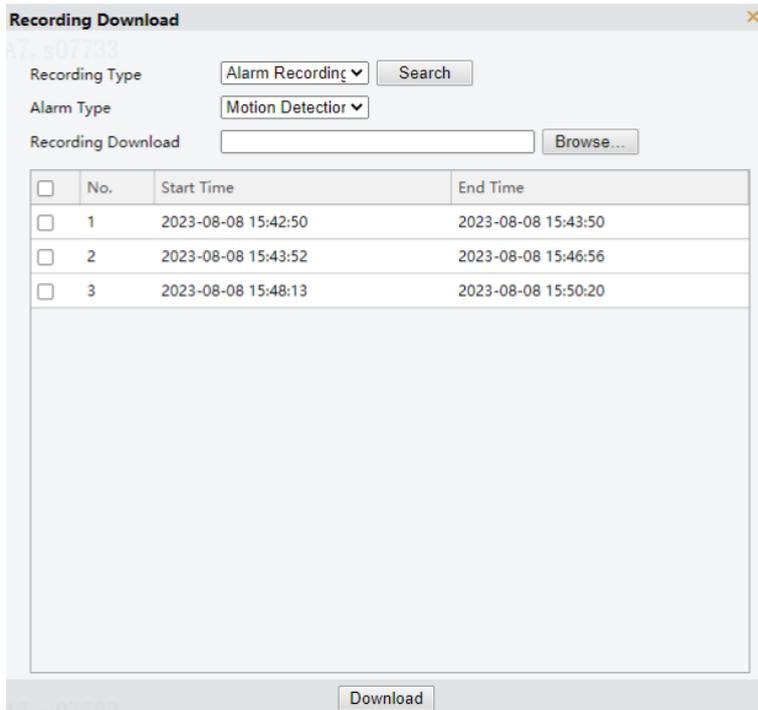

5. Click 💾. The **Recording Download** page appears.

> 📝 **NOTE!**
>
> Recording download functions supported may vary with device model. Please refer to the actual interface. The following diagrams are 2 typical examples.

6. Click **Browse…** and set the download destination.
7. Select the checkbox for the clips you want to download and click **Download**.

4 Photo

View the photo storage status. See Storage for photo storage policy.

📝 **NOTE!**
This function is only available on cameras with storage capabilities.

On the home page, click **Photo**.
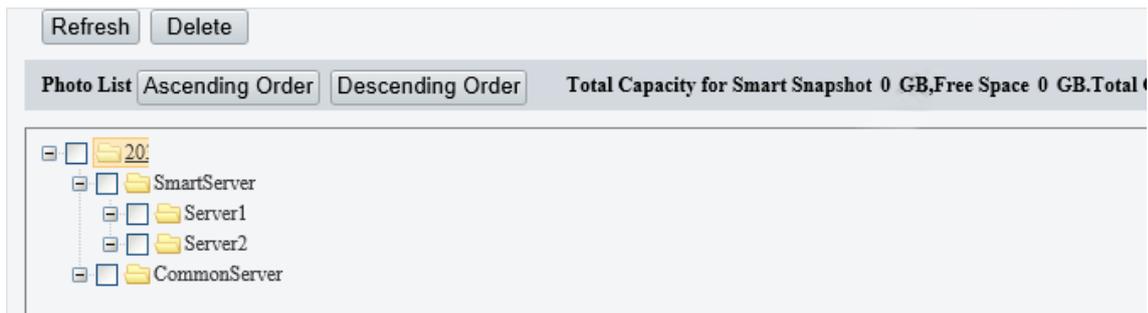
Item	Description
Refresh	Refresh the displayed content.
Export	Export the selected photos.
Delete	Delete the selected photos.
Export & Delete	Export the selected photos and delete them on the server.
Ascending Order	Arrange the items in chronological order.
Descending Order	Arrange the items in reverse chronological order.
Smart Server	Used to store smart snapshots.
Common Server	Used to store common snapshots.

5 Setup

5.1 Local Parameters

Set local parameters for your PC, including smart, video, recording and snapshot.

> **NOTE!**
>
> The local parameters displayed may vary with camera model.

1. Go to **Setup** > **Common** > **Local Parameters**.

2. Set local parameters as needed.

Item		Description
Smart	Intelligent Mark	This function shall be used with Cross Line Detection, Intrusion Detection, Enter Area Detection, Leave Area Detection, Multi-Target Detection, and Face Detection.
	Target Mark	When enabled, detection boxes will appear on the specified object type(s) on the live view page.
	Object Metadata	When this feature and snapshot are enabled (see Snapshot), snapshot thumbnails will show object metadata.
	Font Size	Set the font size of object metadata, including **Large**, **Medium**, and **Small**.
	Display Human Body Snapshot	When enabled, human body snapshots appear on the live view page. **NOTE!** Only effective when face detection is enabled.

25

Video	Display Mode	Set the display mode according to the network status, including **Min. Delay**, **Balanced**, and **Fluent** (from low delay to high delay). You may also customize the display mode as needed.
	Protocol	Set the protocol used to transmit media streams to be decoded by the PC, including **TCP** and **UDP**.
Recording and Snapshot	Recording	● Subsection By Time: Length of each local recording file. For example, 2 minutes. ● Subsection By Size: Size of each local recording file. For example, 10MB.
	Subsection Time (min)/Subsection Size (MB)	● Subsection Time (min): Available when **Subsection By Time** is selected. 1 to 60 minutes allowed. ● Subsection Size (MB): Available when **Subsection By Size** is selected. 10 to 1024MB allowed.
	When Storage Full	● Overwrite Recording: When the local recording capacity is full, older recordings are overwritten automatically. ● Stop Recording: When the local recording capacity is full, recording stops automatically.
	Total Capacity (GB)	Allocate storage capacity for local recording. Range: 1 to 1024GB.
	Local Recording	Set the file format for saving local recordings, including **TS** and **MP4**.
	Files Folder	Set the location where snapshots and recordings are saved. ● Click **Browse...** to select the storage location. ● Click **Open** to quickly open the folder. **NOTE!** The maximum length of the directory is 260 bytes. If the limit is exceeded, recording or snapshot during live view will fail.

3. Click **Save**.

5.2 **Network**

5.2.1 **Basic Config**

Complete the basic network configuration so the camera can communicate with other devices on the network.

1. **Ethernet**

1. Go to **Setup** > **Network** > **Basic Config**.

2. Configure Ethernet parameters.

NOTE!
When ARP Protection is enabled, you will need to reconfigure ARP protection after changing the gateway.

● IPv4

  ➢ Manual

  (1) Select **Manual** from the **Obtain IP Address** drop-down list.

  (2) Enter the IP address, subnet mask, and default gateway address. Make sure that the IP address of the camera is unique in the network.

  (3) Click **Save**.

> ➢ PPPoE

Configure PPPoE to assign a dynamic IP address.

(1) Select **PPPoE** from the **Obtain IP Address** drop-down list.

(2) Enter the username and password provided by your ISP (Internet Service Provider).

(3) Click **Save**. The camera will be assigned an IP address.

> ➢ Obtain Automatically(DHCP)

DHCP (Dynamic Host Configuration Protocol) is enabled by default. If a DHCP server is deployed in the network, the camera can automatically obtain an IP address from the DHCP server.

(1) Select **Obtain Automatically(DHCP)** from the **Obtain IP Address** drop-down list.

(2) Complete the settings as shown below.

● IPv6

> ➢ Obtain Automatically(DHCP)

The default mode is **Obtain Automatically(DHCP)**. In this mode, the IP address is assigned by the DHCP server.

> ➢ Manual

(1) Choose **Manual**.

(2) Enter the IPv6 address, prefix length and default gateway. Make sure that the IPv6 address is unique in the network.

3. Set the MTU value, port type and operating mode.

● MTU: Maximum transmission unit. Input an appropriate value. The greater the value, the higher the transmission efficiency, and the higher the delay.

● Port Type: The default type is **FE Port**.

● Operating Mode: The default is **Auto-negotiation**.

Basic

MTU	1500
Port Type	FE Port ⌄
Operating Mode	Auto-negotiation ⌄

4. Click **Save**.

2. **Wi-Fi**

Go to **Setup** > **Network** > **Basic Config** > **Wi-Fi**.

● Connecting to Wi-Fi

This status only appears in factory mode, indicating that the device has not been configured for any Wi-Fi mode yet. It disappears once a Wi-Fi mode has been configured and will reappear if the device is restored to factory defaults.

● Wi-Fi Mode

This mode appears when the device is connected to network through a Wi-Fi or the one-click pair function in NVR.

1. Select **Wi-Fi** from the drop-down list. You can view the current network status.

SSID	None
IP Address	0.0.0.0
Subnet Mask	0.0.0.0
Default Gateway	0.0.0.0
Strength	.ıll

2. Choose the Wi-Fi network to connect to from the Wi-Fi network list. The list displays all Wi-Fi networks around the device. If needed, you can click **Search** to search for the surrounding Wi-Fi networks again.

Search

SSID	Channel	MAC Address	Authentication	Encryption	Strength	Strength(dBm)
IPCWiFi7E2952	6	30:1b:97:07:7d:38	WPA-PSK WPA2-PSK	TKIP	.ıll	-41
DZ1807112_08773	3	b4:0f:3b:62:7f:61	WPA-PSK WPA2-PSK	CCMP-TKIP	.ıll	-43
DZ1710057_08687	1	48:7d:2e:7c:89:2e	WPA-PSK WPA2-PSK	CCMP	.ıll	-47
zbbwifitest6	11	00:0a:f5:9f:82:84	WPA-PSK WPA2-PSK	CCMP	.ıll	-51
DZ1508019_00383	6	88:25:93:12:0a:5e	WPA-PSK WPA2-PSK	CCMP-TKIP	.ıll	-56
IPCWiFi7F7988	6	a0:9f:10:a9:34:14	WPA-PSK WPA2-PSK	TKIP	.ıll	-57
Uni_Wireless	1	4c:e9:e4:83:f8:c0	WPA-PSK WPA2-PSK	CCMP-TKIP	.ıll	-58

3. Set Wi-Fi parameters under **Wi-Fi Configuration** according to the Wi-Fi network to be connected.

SSID	Xiaomi_923B
Authentication	WPA-PSK WPA2-PSK ⌄
Password	••••••••
Confirm	••••••••
Encryption	CCMP ⌄
Obtain IP Address	DHCP ⌄
MTU	1500

You can configure parameters according to the following table.

Item	Description
SSID	Automatically filled in after selecting a Wi-Fi network for connection.
Authentication	Select the authentication mode that is consistent with the Wi-Fi network to be connected. Supports OPEN, SHARED, WPA-PSK WPA2-PSK, and WPA2-enterprise mode. ● OPEN: No password is required. ● SHARED: Enter a password of 5, 13, or 16 characters, which can be plain digits, plain letters, common characters, or a combination of two or three types. ● WPA-PSK WPA2-PSK: Enter a password between 8 to 63 characters, which can be plain digits, plain letters, common characters, or a combination of two or three types. ● WPA2-enterprise: Commonly used in enterprise-level networks and needs to use with a Radius server.
Username	Required in WPA2-enterprise mode only. Enter the username registered in the Radius server.
Password	Enter the Wi-Fi password. When the authentication mode is WPA2-enterprise, enter the password registered in the Radium server.
Confirm	Enter the Wi-Fi password again to confirm.
Encryption	Select the same encryption type as the Wi-Fi network to be connected.
Obtain IP Address	Choose an IP obtain mode as needed: **DHCP** or **Manual**.
MTU	Set the maximum transmission unit (MTU). Default: **1500**. The larger the MTU value, the more efficient the communication, but the greater the transmission delay. Please set an appropriate MTU value that balances both factors.

● Wi-Fi Hotspot Mode

1. Select **Wi-Fi Hotspot** from the drop-down list. In this case, IPC can be used as a hotspot for other devices to connect to.

2. Set Wi-Fi hotspot configurations under **Hotspot Settings**.

You can configure parameters according to the following table.

Item	Description
SSID	Set the name according to the rules on the interface.
Password	Set the password according to the rules on the interface.
Confirm	Enter the password again to confirm.
Channel	Select the appropriate channel according to your actual needs.
Gateway Address	Set a valid gateway address according to the rules on the interface. **Note:** When the device is connected to a wired network, the device's Wi-Fi hotspot function will be disabled and will be automatically enabled when disconnected from the wired network.

● Off
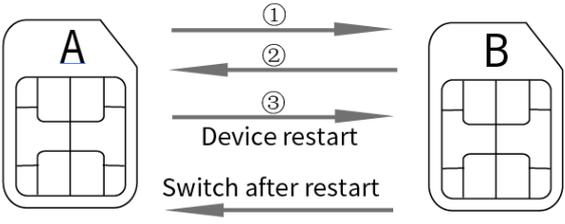
Disable the configured Wi-Fi mode.

3. Mobile Network

1. Go to **Setup** > **Network** > **Basic Config** > **Mobile Network**.

Type 1:

Type 2:

2. Configure the mobile network parameters.

Item	Description
APN	The Access Point Name (APN) is a network operator for a dedicated network and the name can be customized. **Note:** ● A network access technology. ● APN determines which access methods the device uses to access network.

Item	Description
Assess Number	The SIM card's access number. This access will be used for mobile network parameter sync and device's mobile network connection. Range: 1 to 3. **Note:** This function is only available on certain models. Please refer to the actual interface.
Username	The username of the APN.
Password	The password of the APN
Confirm	Enter the password of the APN again to confirm.
Authentication Mode	Choose an authentication mode: None (default), PAP, CHAP, and Auto.
MCC	Mobile country code. Uniquely identifies the country of the mobile user. Examples: China: 460; USA: 310.
MNC	Mobile network code. Identifies the mobile network operator.Please refer to the actual network operator for details.
MTU	Maximum transmission unit. The default is 1500. Higher MTU values can improve communication efficiency but may increase transmission delay. Please choose an appropriate MTU value that balances efficiency and delay.
Auto-Switch SIM Card	● If not selected, you can manually choose to use either the built-in or external card for mobile network connection; ● When selected and dual SIM cards are in use, if SIM A fails to connect to the mobile network, the system will automatically switch to SIM B after 10 minutes. If the connection still fails after 3 switches, the device restarts. If SIM B remains disconnected after restart, the system will switch to SIM A once more. If the final attempt also fails (3 switches + 1 restart + 1 final switch), no further actions will be taken. Please check the SIM card status. **Note:** ● The built-in SIM card is integrated into the device and cannot be removed, while the external SIM card is removable. ● The device can only recognize only one SIM card at a time.

3. Click **Save**.

4. **DNS**

The DNS service is a globally distributed service that translates human readable domain names into numeric IP addresses. To use the DNS service, you need to configure DNS server information.

1. Go to **Setup** > **Network** > **Basic Config** > **DNS**.

2. Set the preferred and alternate DNS server addresses. The default settings are as follows.

5. DDNS

DDNS (Dynamic Domain Name Server) can map the dynamic IP address of the camera to a fixed domain name and so users can access the camera using the easy-to-remember domain name.

1. Go to **Setup** > **Network** > **Basic Config** > **DDNS**.
2. Enable **DDNS Service**.
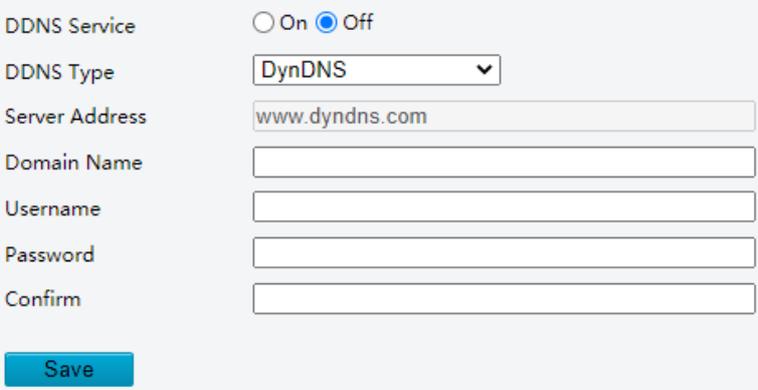
DDNS Service	○ On ⦿ Off
DDNS Type	DynDNS
Server Address	www.dyndns.com
Domain Name	
Username	
Password	
Confirm	

Save

3. Select the DDNS type.

   ➢ DynDNS/NO-IP: Third-party DDNS service provider. Enter the server address and domain name provided by your DDNS service provider.

   ➢ EZDDNS: Uniview DDNS service. Enter a domain name and then click **Test** to check its availability.
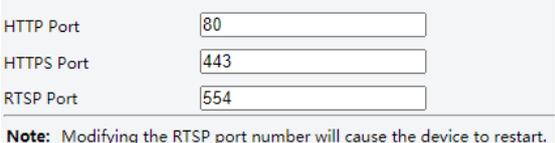
DDNS Service	○ On ⦿ Off
DDNS Type	EZDDNS
Server Address	http://en.ezcloud.uniview.com
Domain Name	Test
Device Address	http://en.ezcloud.uniview.com

Save

4. Click **Save**.

6. Port

1. Go to **Setup** > **Network** > **Basic Config** > **Port**.

HTTP Port	80
HTTPS Port	443
RTSP Port	554

Note: Modifying the RTSP port number will cause the device to restart.

2. You can use the default ports. If a port entered has been used for other services, you need to change the port to avoid conflict.

CAUTION!

- If the HTTP port number you entered is being used by another service, a message indicating port conflict will appear. Ports 23, 81, 82, 85, 3260, and 49152 are reserved for other purposes and cannot be used.

- In addition to the above port numbers, the system can also dynamically detect other port numbers that are already in use.

- HTTP/HTTPS Port: If you change the HTTP/HTTPS port number, then you need to add the new port number after the IP address when logging in. For example, if the HTTP port number is set to 88, you need to use http://192.168.1.13:88 to log in to the camera.
- RTSP Port: Real-Time Streaming Protocol port, enter an available port number.

3. Click **Save**.

7. Port Mapping

Configure port mapping so users can access your camera on the LAN from the Internet.

1. Go to **Setup** > **Network** > **Port** > **Port Mapping**.
2. Enable **Port Mapping**.
3. Select the mapping type.

- UPnP

> ➢ Auto: When enabled, the camera will negotiate external ports with the router automatically. Make sure UPnP is enabled on the router.
> ➢ Manual: In this mode, you need to enter external ports manually and make sure the ports entered are available; otherwise, port mapping does not take effect.

- Manual

> ➢ If your router does not support UPnP, you need to set the external port numbers manually. Make sure the entered ports are available; otherwise, port mapping does not take effect.
> ➢ **Inactive** will be displayed in the **Status** column if the port number entered is already in use by another service.

4. Click **Save**.

8. **802.1x**

802.1x enhances network security for your intranet by performing port-based authentication before allowing the device to access the LAN. Only successfully authenticated devices are allowed to access the LAN.

1. Go to **Setup** > **Network** > **Basic Config** > **802.1x**.

2. Enable **802.1x**.

3. Choose a protocol type.

- EAP-MD5

802.1x	◉ On ○ Off
Protocol	EAP-MD5 ▾
EAPOL Version	1 ▾
Username	admin
Password	••••••••
Confirm	••••••••

Save

    (1) Choose the EAPOL version according to the protocol version on the network switch.

    (2) Enter the device username and password, confirm the password.

- EAP-TLS

802.1x	◉ On ○ Off
Protocol	EAP-TLS ▾
EAPOL Version	1 ▾
Username	admin
Client Certificate	default ▾
CA Certificate	▾

Save

    (1) Choose the EAPOL version according to the protocol version on the network switch.

    (2) Enter the device username.

    (3) Click ˅ to choose a client certificate and a CA certificate (see Certificate Management for details)

NOTE!

- Only certificates with a "normal" status can be selected. Certificates with an "expired" status are not displayed.
- You must use an imported client certificate and a CA certificate for the camera to pass authentication. The camera cannot pass authentication with a self-signed certificate and a default certificate.

4. Click **Save**.

5.2.2 Service Configuration

1. Email

Configure E-mail so that the camera can e-mail an alarm message to the specified email addresses when an alarm occurs.

1. Go to **Setup** > **Network** > **Service Config > E-mail**.

2. Set the sender and recipient information.

Item	Description
Sender Name	Enter the device name.
Sender Address	Enter the email address to receive information.
SMTP Server/SMTP Port	Enter the IP address and port number of the sender's SMTP server. ● Take Gmail as an example, the SMTP server is smtp.gmail.com. ● The default SMTP port number is 25. Common SMTP ports include 465, 587, etc. **NOTE!** Different email providers have different SMTP servers and ports. Please refer to the actual email provider for details.
TLS/SSL	When enabled, emails will be encrypted by TLS or SSL during transmission. **NOTE!** If SMTP supports TLS/SSL, it tries SSL first to establish a secure connection for email sending.
Snapshot Interval	Choose a snapshot interval: 2s, 3s, 4s, or 5s.

Item	Description
Attach Image	When enabled, an alarm e-mail with attached snapshots taken at set interval will be sent after an alarm occurs. For some alarm types, only one snapshot will be taken and there's no need to set snapshot interval. **217.2.1.196-lly: Motion Detection** ☆ **217.2.1.196-lly** 发给 th@th.com 📎 217.2.1.196-lly-20220307... (120 KB) 📎 217.2.1.196-lly-20220307... (118 KB) 📎 217.2.1.196-lly-20220307... (120 KB) This is an automatically generated e-mail from your IPC. EVENT TYPE: Motion Detection EVENT TIME: 2022-03-07,10:23:39 IPC NAME: 217.2.1.196-lly IPC S/N: 210235C5R17452683019 1. Select the **Attach Image** checkbox. 2. Enable Snapshot and set the snapshot resolution as needed. There's no need to set snapshot schedule. Snapshot ◉ On ○ Off Resolution 2560×1440 Max. Size (KB) 500 **Scheduled Snapshot** Snapshot Interval(s) 1 Number to Snapshot 1 Snapshot Mode ◉ Schedule ○ Repeat No. Snapshot Time ➕
Server Authentication	Enable SMTP server authentication to secure e-mail transmission.
Username/Password	Enter the username and password of the SMTP server. **NOTE!** • The email only shows the sender name. Username will not be displayed. ◦ 📎 217.2.1.196-lly 217.2.1.196-lly: Motion Detection 03-07 10:23 489 KB • The password allows special characters.
Recipient Name/Address	1. Enter the recipient names and email addresses. 2. Click **Test** to test the email sending function.
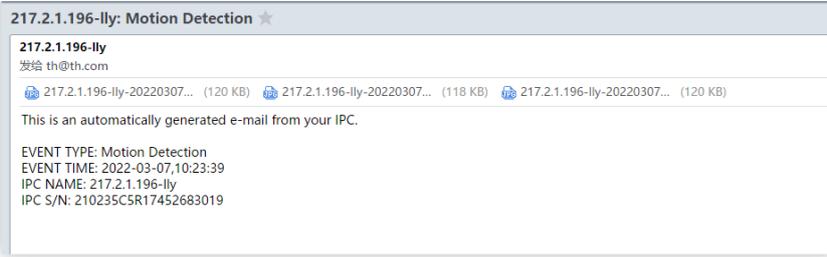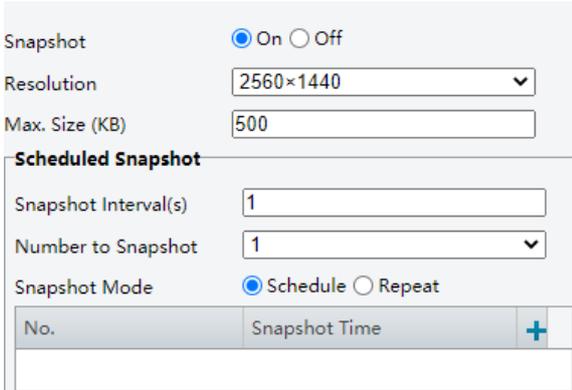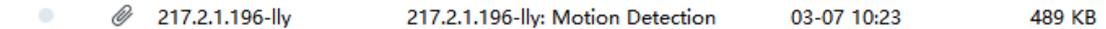
3. Click **Save**.

2. SNMP

The Simple Network Management Protocol (SNMP) allows the camera to be remotely managed by a management server. The camera can be configured to support SNMP and send messages to the management server for important events or status change.

1. Go to **Setup** > **Network** > **Service Config** > **SNMP**.

2. Click **On** to enable **SNMP**.

> **NOTE!**
> On certain device models, SNMP is enabled after an upgrade to the latest version. It is normal.

3. Set SNMP parameters.
- SNMPv3

> **NOTE!**
> Before you enable SNMPv3, make sure SNMPv3 is supported both on your camera and the server.

Item	Description
SNMP Type	The default is **SNMPv3**.
Password	Set an authentication password.
Confirm	Confirm the authentication password by entering it again.
Password	Set an encryption password.
Confirm	Confirm the encryption password by entering it again.
Trap Server Address	It is filled in automatically after you complete management server configuration.
SNMP Port	The default is 161. You may change it as needed.

- SNMPv2

Item	Description
SNMP Type	A message will appear to remind you of potential risks and prompt for your confirmation after you choose **SNMPv2**. To choose SNMPv2 anyway, click **OK** to ignore the reminder.

Item	Description
Read Community	The default is **public**. You may change it as needed, but make sure you also change it on the server; otherwise, authentication will fail.
Trap Server Address	Go to **Setup** > **Network** > **Platform Access** > **Management Server** to configure the server address.
SNMP Port	The default is **161**. You may change it as needed.

4. Click **Save**.

3. QoS

QoS (Quality of Service) can alleviate network delay and network congestion by prioritizing different services.

1. Go to **Setup** > **Network > Service Configuration > QoS**.

2. Assign a priority level (0 to 63) for each service. The greater the value, the higher the priority. For example, the camera first ensures smooth audio and video in the case of network congestion.

NOTE!
The same QoS rules must also be configured on the router or network switch.

3. Click **Save**.

4. RTSP

The real-time streaming protocol (RTSP) provides remote control over media streams, such as start, pause, fast-forward, and stop, but it does not transmit data itself.

1. Go to **Setup** > **Network** > **RTSP**.

2. Choose whether to enable RTSP. When disabled, video playing will be unavailable on the **Live View** page.

3. Click **Save**.

5. ONVIF (ANR)

The Open Network Video Interface Forum (ONVIF) protocol allows the integration of devices, such as IPCs and NVRs, from various manufacturers into a unified system, facilitating centralized management and control.

1. Go to **Setup** > **Network** > **ONVIF**.

2. Select **On** for ONVIF.

3. Choose whether to enable **Camera Detection**.

When enabled, the device can be automatically discovered by software such as EZTools. When disabled, the device is undiscoverable.

4. Configure ANR as needed.

If the network connection between the camera and the stream receiving address is disconnected, the camera can store videos; and after the network connection is restored, the camera can retransfer the video stored during the interruption period to the stream receiving address.

5. Click **Save**.

5.2.3 Platform Access

1. Intelligent Platform

Configure intelligent platform to receive smart snapshots from the camera. A camera can be managed by two intelligent servers.

Local snapshot cannot be enabled when the number of subscriptions has reached the upper limit.

If local snapshot has been enabled, when the number of subscriptions reaches the upper limit, higher-priority subscriptions will take precedence, and local snapshot will be disabled.

> **NOTE!**
> - The number of subscriptions supported may vary with camera.
> - Priority level of subscription from different platforms: Platform 1 > Platform 2 > LAPI subscription > WebSocket subscription.
> - For certain devices, this page may display as Intelligent Server. Please refer to the actual interface.

- Video&Image Database
1. Go to **Setup** > **Network > Platform Access > Intelligent Platform**.
2. Select the **Enable** checkbox.
3. Choose **Video&Image Database** as the protocol.

4. Configure the parameters.

Item	Description
Protocol Version	Choose the protocol version: **VIID_2017**, **VIID_2018**, **VIID_2018 (multi-channel)**. **Note:** When choosing VIID_2018 (multi-channel), you need to enter the video channel ID for each channel.
Server IP	Enter the IP address of the platform.
Server Port	Use the default **5196**.
Device ID	Input a valid ID according to on the instructions and keep it the same on the platform. The ID shall comply with VIID protocol.
Username	Enter the username for authentication, which must be the same as that configured on the platform.
Platform Access Code	Enter the password for authentication, which must be the same as that configured on the platform.
Confirm Platform Access Code	Input the password again for confirmation.
Coordinate Mode	Used to position structured information on the image, which must be in the same format as that on the platform, Percentage Mode, Pixel Mode, or Normalized Mode.
Connection Mode	Choose Persistent Connection or Short-lived Connection as needed. In general, you can use the default option (Short-lived Connection).
Report Data Type	Choose the type(s) of data to be sent to the intelligent platform: Motor Vehicle, Non-Motor Vehicle, Person, and Face.
Status	● Offline: The camera is disconnected from the platform. ● Online: The camera is connected to the platform.

● UNV

1. Go to **Setup** > **Network > Platform Access > Intelligent Platform**.

2. Select the **Enable** checkbox.
3. Configure the parameters.

Item	Description
Server IP	Enter the IP address of the platform.
Server Port	Use the default **5196**.
Camera No.	Keep it the same as the device ID on the management platform.
Device No.	Custom device ID.
Status	• Offline: The camera is disconnected from the platform. • Online: The camera is connected to the platform.

4. Click **Save**.

● FTP
1. Go to **Setup** > **Network > Platform Access > Intelligent Platform**.
2. Select the **Enable** checkbox.
3. Choose **FTP** as the protocol.

4. Click **Configure FTP**. A page as shown below appears.

5. Set server parameters.

Item	Description
Server IP	Enter the IP address of the FTP server.
Port No.	Use the default 21.
Username	Enter the username used for accessing the FTP server.
Password	Enter the password used for accessing the FTP server.
Test	Click to test the connection to the FTP server.
Upload Images	Select the checkbox to enable uploading smart snapshots. Overwrite Storage: After the number of photos in the lowest-level folder reaches the set threshold, new photos will overwrite older photos in the folder. For example, the storage path is "\IP\date", the lowest-level folder is the level-2 folder named "date". When the number of photos uploaded on Jan. 4, 2022 reaches 1000 (default value), new photos overwrite old photos in the 20220104 folder. **NOTE!** ● To choose **Overwrite Storage**, make sure the last naming element of the files is the image sequence number. ● Overwrite At (image): The default is 1,000, up to 100,000 is allowed.
Custom Naming Rule	Select the checkbox, and then you can customize the file naming rules as needed. For the naming rules, see **File Path** in step 6.
Covert Path into UTF8	Select the checkbox, and the path will be converted into UTF8 format.

6. Configure the image storage path.

Item	Description
File Path	Six levels are allowed. If not set, the default path "\IP\Date\Intelligent" will be used, where "Intelligent" means smart snapshots.
File Name	Naming element: Up to 20 fields are allowed. If not set, sequence numbers will be used as file names, for example, "1, 2, 3", etc.

Item	Description
	Naming rule: Format string: prefix <(front string) front length % > suffix.

7. Click **Save**.

2. EZCloud

Add the camera to EZCloud so you can access the camera anytime, anywhere from your mobile phone for live view, playback, camera configuration, etc.

> **NOTE!**
> - You can add the camera to EZCloud using UNV link or EZLive or through the EZCloud website.
> - UNV link and EZLive are free apps that can be downloaded from app stores, including iOS and Android versions. You need to download and install the app on your mobile phone in order to access your camera from your mobile phone. The following takes UNV link as an example to describe the operations.
> - You can add the camera to EZCloud with or without a cloud account. A cloud account is required if you want full functionalities on the app. Some functions, such as cloud upgrade, will not be available if the camera is added to EZCloud without a cloud account.

1. Go to **Setup** > **Network** > **Platform Access > EZCloud**. Check that EZCloud is enabled.

EZCloud ⓘ	◉ On ○ Off
Encryption	○ On ◉ Off
Address	en.ezcloud.uniview.com
Register Code	31439E9060F1R033ET7W6vTV2
Device Status	Offline
Scan	

[Save]

2. Add the device on the UNV-Link app or the EZCloud website.

3. Choose whether to enable encryption. When enabled, the transmission between the device and EZCloud will be encrypted.

4. Click **Save**.

5. Check the device status. If online, the username of the user currently using the device will be displayed.

   ➢ Device Web: Check the device status in **Setup** > **Network** > **EZCloud**.

   ➢ EZCloud Website: Check the device status in **Device Management** > **My Cloud Devices**.

6. (Optional) Click **Logout** to unbind the device from the current EZCloud account.

Add Device

Option 1: Add device on the UNV-Link app

1. Scan the QR code on the **EZCloud** page or search **UNV-Link** in the app stores to download and install the app.

2. Register an account and log in to the app.

3. Tap **Add Device** on the home screen.

4. Scan the register code on the camera or on the Quick Guide, and then tap **OK**.

5. Select a connection method according to the actual situation.

6. Follow the on-screen instructions to add the device.

Option 2: Add device on the EZCloud website

1. Visit en.ezcloud.uniview.com using a web browser.

2. On the login page, click **Sign Up** and follow on-screen instructions to create an account.

3. Log in to the website.

4. Go to **Device Management** > **My Cloud Devices** and click **Add**.

Item	Description
Device Name	Enter the device name.
Register Code	Enter the register code, which can be found on the **EZCloud** page of the device's web interface.
Organization	Select an organization for your camera.

Item	Description
	By default, the root organization is selected. You may add or delete organizations under **Organization Management** > **My Cloud Organizations**.

5. Click **OK**.

6. Click **Save**.

3. IoT Platform

Report the related information in conjunction with the geographic location in the device information.

> **NOTE!**
> For certain devices, this page may display as Third-Party Server or Qianxun Server. Please refer to the actual interface.

1. Go to **Setup** > **Network** > **Platform Access** > **IoT Platform**.

UDP Platform IP	0.0.0.0
UDP Platform Port	9892
Report Interval(s)	10

2. Enter the UDP platform IP and set the report interval. Use the default platform port (9892).

3. Click **Save**.

4. WebSocket

WebSocket can connect your camera to a third-party platform and enable remote management of the camera from the third-party platform, including viewing device version and capabilities, control PTZ, and receive alarms.

1. Go to **Setup** > **Network** > **Platform Access > WebSocket**.

WebSocket	○ On ● Off
Destination IP	
Destination Port	7766
Device ID	
Authentication Key	
Confirm Authentication Key	
Online Status	Offline

Save

2. Set the parameters.

Item	Description
WebSocket	Select to enable or disable WebSocket.
Destination IP	Enter the IP address of the third-party platform.
Destination Port	Enter the listener port of the third-party platform.
Device ID	The default device ID is the device's serial number. You can set a device ID as needed.

	Enter the authentication key used to connect the camera to the third-party platform. Make sure the authentication keys configured on the camera and the third-party platform are the same.
Authentication Key	**NOTE!**
	If you first choose not to enable Authentication Key and then enable it after the camera is connected to the platform, authentication does not take effect immediately; it will take effect when the next time the camera is successfully connected to the platform.
Confirm Authentication Key	Confirm the authentication key by entering it again.
Online Status	Check whether the device is successfully connected to the third-party platform.

3. Click **Save**.

5. **Alarm Platform**

The camera can automatically report alarms to a third-party server. You need to configure the third-party information such as server IP, server port, and protocol type first.

> **NOTE!**
> For certain devices, this page may display as Alarm Server. Please refer to the actual interface.

1. Go to **Setup** > **Network** > **Platform Access** > **Alarm Platform**.

☐ Enable

Server IP	0.0.0.0	Test
Port	80	
Transfer Protocol Type	HTTP ⌄	
Device ID	001	

Save

2. Select **Enable**.
3. Set the server IP and port, and then click **Test** to check if the server is available.
4. Choose a protocol type: **HTTP** or **HTTPS**.
5. Enter the device ID (0-32 characters: letters, digits, underscores, etc.).

> **NOTE!**
> Third-party servers can distinguish between devices reporting alarm information using device ID. If you have multiple devices, ensure each is configured with a unique device ID.

6. Click **Save**.

5.3 Video & Audio

For dual-channel devices, you can set video and audio parameters for the channels separately.

5.3.1 Video

1. **Video**

1. Go to **Setup** > **Video & Audio** > **Video**.

2. Select a capture mode for your camera.

The **Extended Encoding** function is available only when the capture mode is greater than 8MP.

After you change the capture mode, the encoding settings will be reset to defaults and some models of cameras will restart.

3. Set stream parameters.

The streams are independent of each other and can be set with different resolutions, frame rates, video compression formats, etc. Only the main stream supports full resolution.

> **NOTE!**
> - The fourth and fifth streams are only available on certain models.
> - Before configuring the fifth stream, you need to enable the fourth stream first.

Item	Description
Video Compression	Select a video compression standard for your camera: **H.265**, **H.264** or **MJPEG**. **NOTE!** - When H.265 or H.264 is selected, **Image Quality** is not available; When MJPEG is selected, **Bit Rate**, **I Frame Interval**, **Smoothing**, **SVC** and **U-Code** are not available. - The bit rate restores to the default when you switch between H.264 and H.265.
Resolution	Select a video resolution for your camera. The higher the resolution, the clearer the image.
Frame Rate(fps)	Select the frame rate. **NOTE!** To ensure image quality, the frame rate shall not be greater than the reciprocal of the shutter speed.
Bit Rate(Kbps)	Set the bit rate. Range: 128 to 16384. **NOTE!** The bit rate range may vary with device model.
Bitrate Type	Select the bitrate type. - CBR: The camera keeps a specific bit rate by varying the quality of video streams. - VBR: The camera keeps the quality of video streams as constant as possible by varying the bit rate.

Item	Description
Image Quality	Configurable when **Bitrate Type** is set to **VBR**. The closer the slider is to **Quality**, the higher the bit rate, and the higher the image quality. The closer the slider is to **Bit Rate**, the lower the bit rate, and the image quality will be affected.
I Frame Interval	Set the number of frames between I-frames. A shorter interval presents better image quality but consumes more bandwidth and storage.
GOP	Group of Pictures, defines the basic pattern of the video stream encoded with I and P frames.
Smoothing	Set the smoothness of the video stream. Drag the slider to choose whether smoothness or clarity takes precedence. **NOTE!** Smoothing is recommended for fluent video in a poor network environment.
SVC	When enabled, Scalable Video Coding (SVC) can achieve temporal layers to extract partial bit streams and achieve fractional frame rates, reducing bandwidth consumption without compromising the video quality.
U-Code	Select the U-code mode. ● Basic Mode: Reduces the bit rate by about 25%. ● Advanced Mode: Reduces the bit rate by about 50%.

4. Set the BNC output format, **PAL** or **NTSC**.
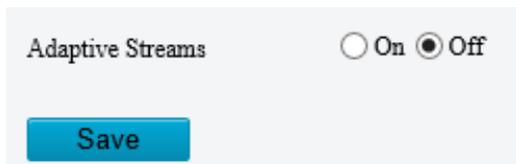
5. Click **Save**.

2. **Adaptive Streams**

The bit rate of the media stream is automatically adjusted according to the network conditions.

> **NOTE!**
> - This function is only available on certain models.
> - This function is enabled by default on certain models.
> - It's recommended to enable Adaptive Streams in a poor network environment.
> - To enable adaptive streams, you need to choose the TCP protocol at **Setup** > **Commons** > **Local Parameters**; otherwise, adaptive streams cannot be enabled.

1. Go to **Setup** > **Video & Audio** > **Video** > **Adaptive Streams**.

2. Enable **Adaptive Streams**.

3. Click **Save**.

5.3.2 Snapshot

Configure basic snapshot parameters and scheduled snapshot.

1. Go to **Setup** > **Video & Audio** > **Snapshot**.

> **NOTE!**
> - For dual-channel devices, you can set snapshot parameters for the channels separately.
> - When you configure e-mail and FTP, you only need to enable Snapshot and set the resolution and maximum size; it's unnecessary to configure the scheduled snapshot.

2. Enable **Snapshot**, set the resolution and maximum size of snapshots.
3. Set the snapshot mode.

➢ Schedule: Set a snapshot time. For example, with **Snapshot Interval** set to 20s, **Number to Snapshot** set to 3, and snapshot time set to 16:00:00, the camera will take a snapshot at 16:00:00, 16:00:20 and 16:00:40. You can click ✚ to add a snapshot time by choosing from the list or by adjusting based on a listed time.

To delete a snapshot time, click 🗑.

➢ Repeat: Set a snapshot interval. For example, with snapshot plan set to 16:00:00 to 20:00:00 on Monday, **Repeat Interval** set to 120s, **Snapshot Interval** set to 20s, and **Number to Snapshot** set to 2, the camera will take a snapshot at 16:00:00, 16:00:20, 16:02:00 and 16:02:20.

a Select **Repeat** and set the repeat interval. A valid repeat interval is an integer within the range of 1 to 86400. The snapshot interval * number of snapshots to take cannot be greater than the interval (**Snapshot Interval** * **Number of Snapshot** cannot be greater than **Interval**).

b Select the **Enable Snapshot Plan** checkbox and set the snapshot plan. See [Arming Schedule](#) for details. A 24/7 snapshot plan is enabled by default.

📝 **NOTE!**

- The time periods cannot overlap.
- Up to 4 time periods are allowed.

4. Set the snapshot interval (unit: second) and number to snapshot (1, 2, or 3). For example, if the interval is set to 1s and the number to snapshot is set to 2, the camera will take 2 snapshots (take one first and then take another after 1 second).

5. Click **Save**.

5.3.3 Audio

1. Audio

1. Go to **Setup** > **Video & Audio** > **Audio**.

2. Set audio input parameters.

Item	Description
Audio Input	Enable/disable audio input. **NOTE!** If audio is not needed, it is recommended to turn it off to improve camera performance.
Access Mode	Choose the audio input mode; **Line/Mic** or **RS485**. **NOTE!** This function is not available on dual-channel cameras.
Input Volume	Drag the slider or input a value to set the input volume.
Audio Compression	Choose the audio compression format: **G.711U, G.711A, and AAC-LC**. **NOTE!** The supported audio compression formats may vary with device model. Please refer to the actual interface.
Sampling Rate(kHz)	Choose a sampling rate, 8kHz, 16kHz and 48kHz. The higher the sampling rate, the better the sound quality.
Noise Suppression	It can reduce noises and improve audio output quality.

Item	Description
Channel 1/Channel 2	Select the **Enable** checkbox to enable audio input for Channel 1 or Channel 2 (if available). Only one channel can be enabled. Channel 1 supports **Mic** (default) and **Line**. Channel 2 is available on certain models only.

3. Set audio output parameters.

Item	Description
Audio Output	Choose an audio output mode, **Line** or **Speaker**. ● Line: A speaker or an earphone needs to be connected. ● Speaker: Speaker mode. **Note:** The audio output modes supported may vary with device model. Please refer to the actual interface.
Output Volume	Set the output volume using the slider.

4. Click **Save**.

2. **Audio File**

1. Go to **Setup** > **Video & Audio** > **Audio**.

2. Set audio file parameters.

Item	Description
Alarm Volume	Drag the slider or input a value to set alarm volume.

Item	Description
Alarm Audio File	Click **Browse…** to import audio files. ● To play an audio file, click 🔊 . ● To edit audio contents, click ✏ . ● To delete an audio, click 🗑 . **NOTE!** ● This function is available only on certain models. Up to 5 audio files are allowed. ● Built-in audio files may vary depending on the smart functions supported by the device. ● Certain models without smart functions provide built-in alarm audios and support user-imported audios.

3. Click **Save**.

(Optional) Record Audio

Record an audio clip and import the recorded audio clip.

1. Enter a custom audio name.

2. Connect a microphone to your computer. Click **Start Recording** to begin recording, and click **Stop Recording** to finish.

> **NOTE!**
>
> - The maximum recording duration is 5 seconds. The recording will stop after 5 seconds, and the audio file will be automatically saved to local.
>
> - If the browser does not have microphone access, click ❓/❓ and follow the on-screen instructions to grant microphone permissions.
>
> - The steps to grant microphone permissions may vary with browser and device model. Please refer to the actual interface.

3. Click **Browse...** to select the recorded audio file from local, and then click **Import** to import it.

> **NOTE!**
> Once imported, you can view, play, edit, or delete the recorded audio clip in the list below.

5.3.4 ROI

Region of Interest (ROI) ensures image quality of specified areas on the image at low bit rate.

1. Go to **Setup** > **Video & Audio** > **ROI**.

2. Set ROI areas.

(1) Click ➕ to add a ROI area. The area is a rectangle by default. Up to 8 areas are allowed.

(2) Adjust the position and size of the area or draw an area as needed.

- ➢ Adjust the position and size of the area.
- – Point to a border of the area and drag it to the desired position.
- – Point to a handle of the area and drag to resize it.
- ➢ Draw an area.

  Click on the image and drag to draw an area.

![NOTE icon] **NOTE!**

When setting the ROI, you can click 🔓 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after finishing setting the ROI.

5.3.5 View Cropping

You can crop the live video to keep only the area of interest and transmit the cropped video by sub or third stream to save bandwidth and storage.

1. Go to **Setup** > **Video & Audio** > **View Crop**.

2. Select the **Enable View Crop** checkbox. A rectangular appears on the image. You may drag to resize or relocate the rectangular on the image.
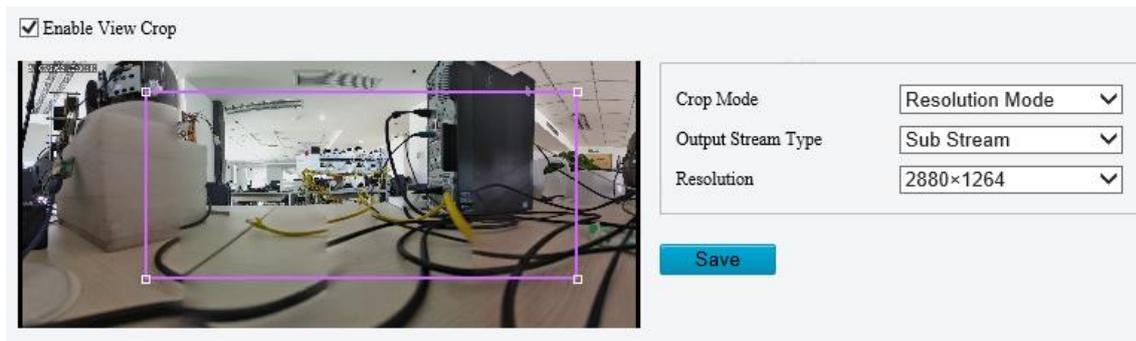
3. Choose a cropping mode.

- Field of View Mode: The camera ensures the size of the specified area. Choose a stream type, set the cropping size and resolution.

- Resolution Mode: The camera ensures the resolution of the specified area first. Choose a stream type, set the resolution.

4. Click **Save**. The live and recorded video only show the specified area (rectangular) of the image.

5.3.6 Media Stream

1. Media Stream

You can configure a media stream for your camera so that media contents from the camera such as audio and video can be transmitted over the network and played immediately on a third-party client rather than being downloaded first.

1. Go to **Setup** > **Video & Audio** > **Media Stream**.

Stream Profile	Protocol	Destination IP	Destination Port	Persistent	Status	+

2. Click ✚ to add a media stream.

3. Complete the media stream settings.

Item	Description
Stream Profile	Select a stream type for the camera to transmit media contents to a third-party client.
Destination IP	Enter the IP address of the device receiving media streams.

Item	Description
Protocol	The camera transmits data to a third-party client through the specific protocol. The default protocol is RTMP.
Persistent	Set whether to automatically establish the configured media stream after the camera restarts.

4. Click **OK**.

2. RTSP Multicast

RTSP multicast allows third-party players to request RTSP multicast media streams from the camera through the RTSP protocol.

1. Go to **Setup** > **Video & Audio** > **Media Stream** > **RTSP Multicast Address**.

2. Set the multicast address and port number (multicast address range: 224.0.1.0 to 239.255.255.255, port number range: 0 to 65535).

3. Click **Save**.

5.4 PTZ

5.4.1 Basic PTZ Settings

Go to **Setup** > **PTZ** > **Basic Settings**.

1. Preset Image Freeze

After you enable **Preset Image Freeze**, as the camera moves from one preset to another, the live view window keeps displaying the image of the previous preset until the camera stops at the next preset.

2. Stop PTZ Control After Timeout

When controlling the PTZ manually, avoid communication loss that may cause continuous abnormal rotations of the PTZ. The PTZ will stop rotation when the predefined timeout period is reached.

3. PTZ Speed

- Speed Level between Presets: Set the rotation speed of the camera between presets.
- Manual Operation Speed Level Range: Set the speed level for manually controlling the PTZ on the live view page.

> **NOTE!**
> - The higher the manual operation speed level, the higher each PTZ speed level on the live view page.
> - When both manual operation speed level and PTZ speed on the live view page are set to the maximum, the PTZ speed reaches the upper limit.

4. PTZ Rectification

Check for PTZ zero point offset and perform rectification.

- Rectify manually: Click **Rectify** to start rectification immediately.
- Rectify automatically: Select the **Enable Auto Rectification** checkbox and set the execute time. The camera automatically performs PTZ rectification at the set time.

5. Power Off Memory

When enabled, the system will record the last position of the PTZ and lens in case of power failure. This function is enabled by default.
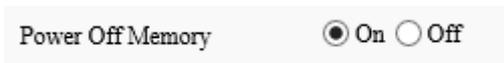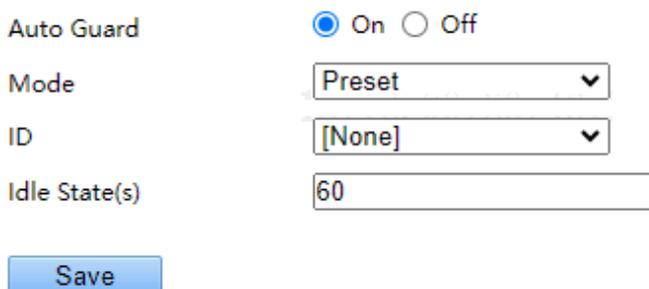

5.4.2 Auto Guard

The PTZ camera can automatically operate as configured (e.g., go to a preset or start patrol) if no operation is made within a specified period.

> **NOTE!**
> Before use, you need to add a preset or a patrol route. See <u>Preset</u> and <u>Add a patrol route</u> for details.

1. Go to **Setup** > **PTZ** > **Auto Guard**.

2. Enable **Auto Guard** and complete the settings.

Item	Description
Mode	Select the Auto Guard mode, including **Preset** and **Patrol**.

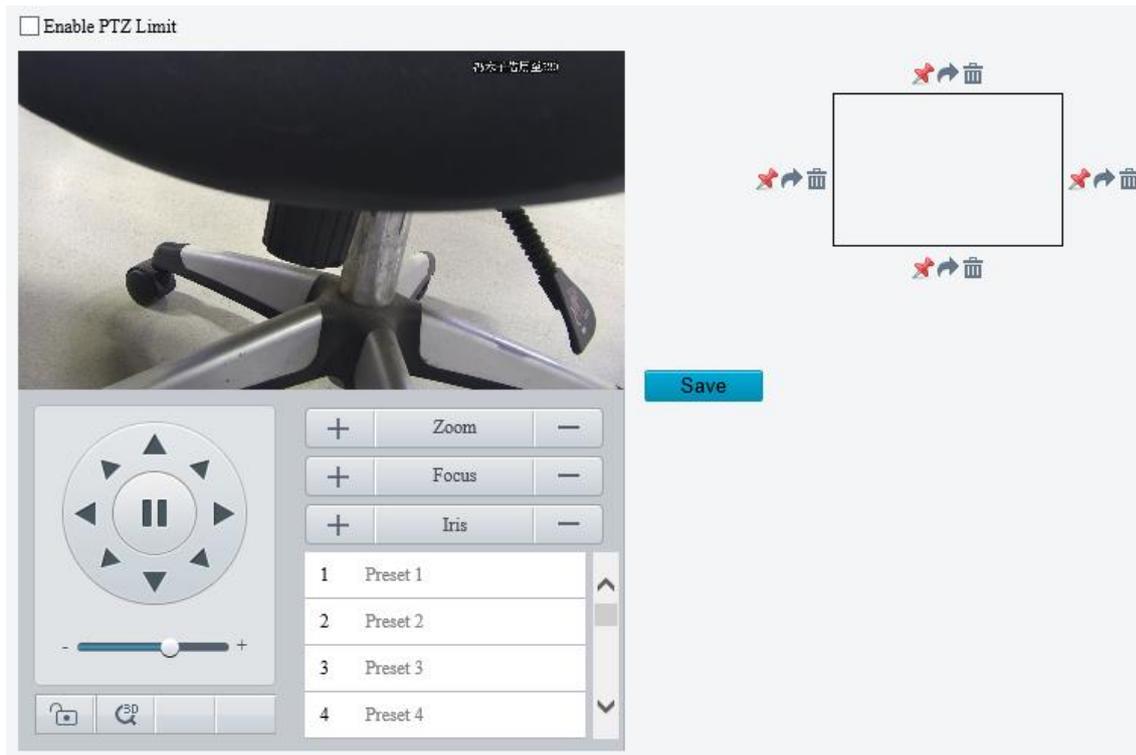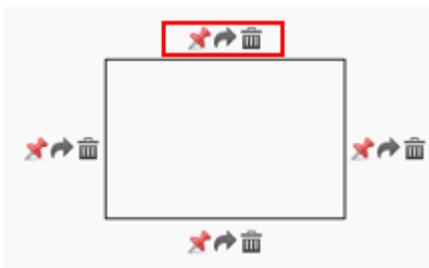| Item	Description
ID	Select the desired preset or patrol route.
Idle State	Set the idle duration for the camera to start auto guard.

3. Click **Save**.

5.4.3 Pan/Tilt Limit

You can filter out the undesired scenes by limiting the pan and tilt movements.
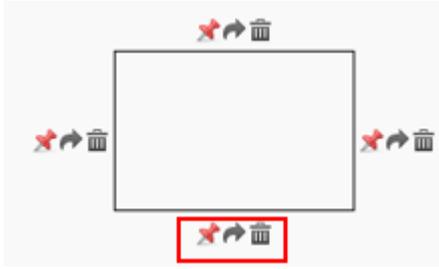
1. Go to **Setup** > **PTZ** > **Limit**.

2. Set the pan and tilt limits. Take the tilt limit configuration as an example:

(1) Use ▲ to move the camera to the desired upper tilt limit position.

(2) Click 📌 above the rectangle to set the position as the upper tilt limit.

(3) Use ▼ to move the camera to the desired lower tilt limit position.

(4) Click 📌 below the rectangle to set the position as the lower tilt limit.

Item	Description
↱	Rotate the camera to the limit.
🗑	Delete the limit.

3. Click **Save**.
4. Select the **Enable PTZ Limit** checkbox.

5.4.4 Preset Snapshot and Patrol Resumption

Go to **Setup** > **PTZ** > **Patrol**.

- Preset Snapshot

The camera takes a snapshot at each preset during patrol and uploads the snapshots to FTP.

> **NOTE!**
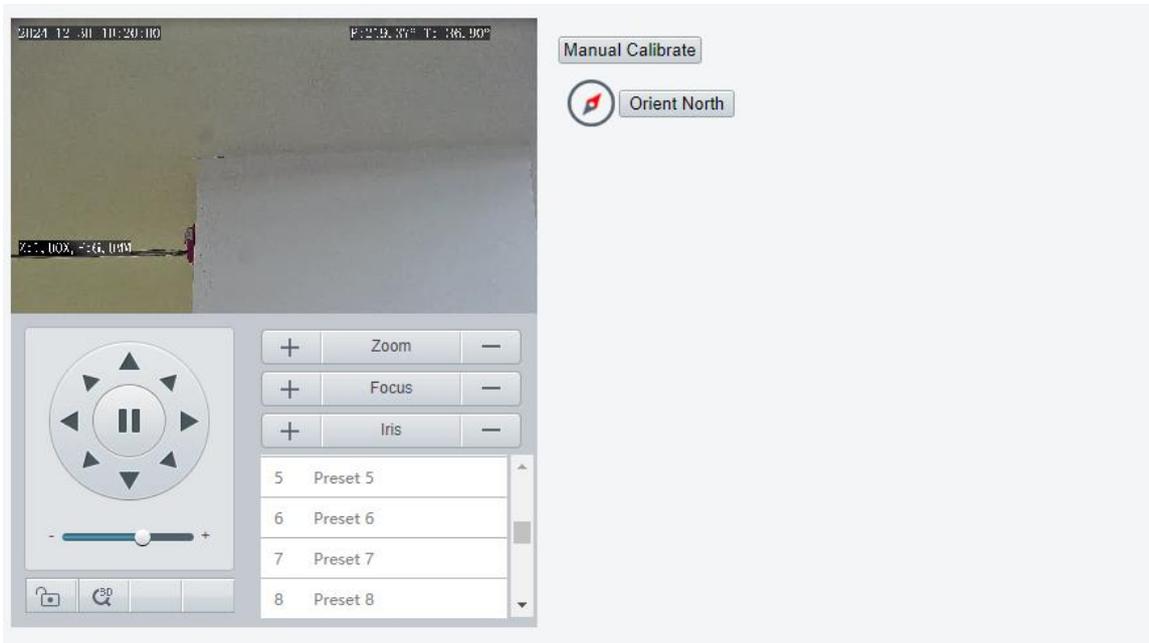> Before use, please configure FTP and Snapshot first.

- Resume Patrol

In the event of a patrol interruption, the camera can automatically resume the patrol after a specified time period.

5.4.5 Orientation

1. Orientation

Calibrate the north direction.

1. Go to **Setup** > **PTZ** > **Orientation** > **Orientation**.

2. Click **Manual Calibrate**. You can set any direction as North.

   Rotate the camera to the north, and then click **Set as North** to set the direction as north.

3. After calibration, you can click **Orient North** to rotate the camera to the calibrated north direction.

2. **Zero Position**

Configure a zero position for the camera as the initial position for pan and tilt movement.

1. Go to **Setup** > **PTZ** > **Orientation** > **Zero Orientation**.

2. Move the camera to the desired position.
3. Click **Set** to set the position as the home position.

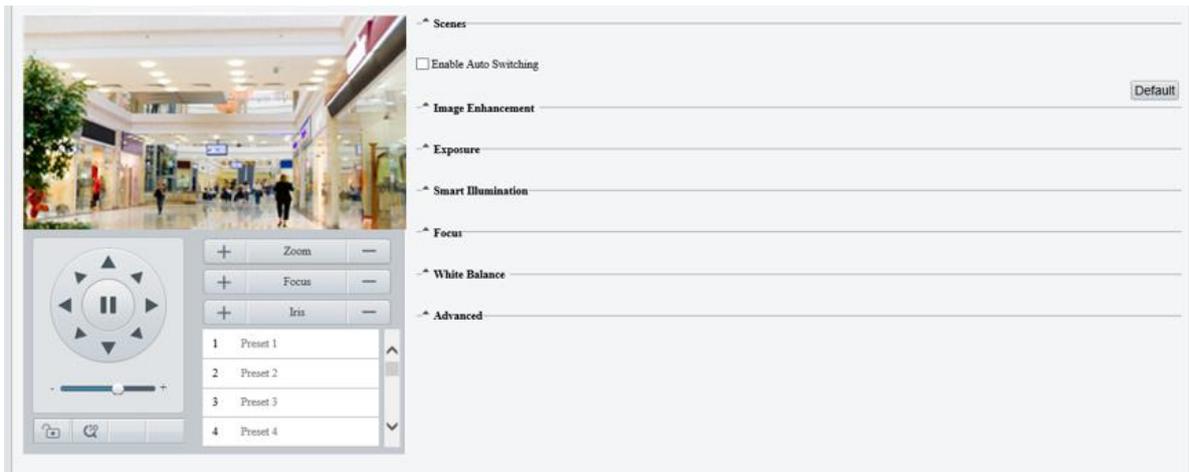| Item	Description
Call	Move the camera to the zero position.
Clear	Clear the zero position.

60

5.5　Image

5.5.1　Image

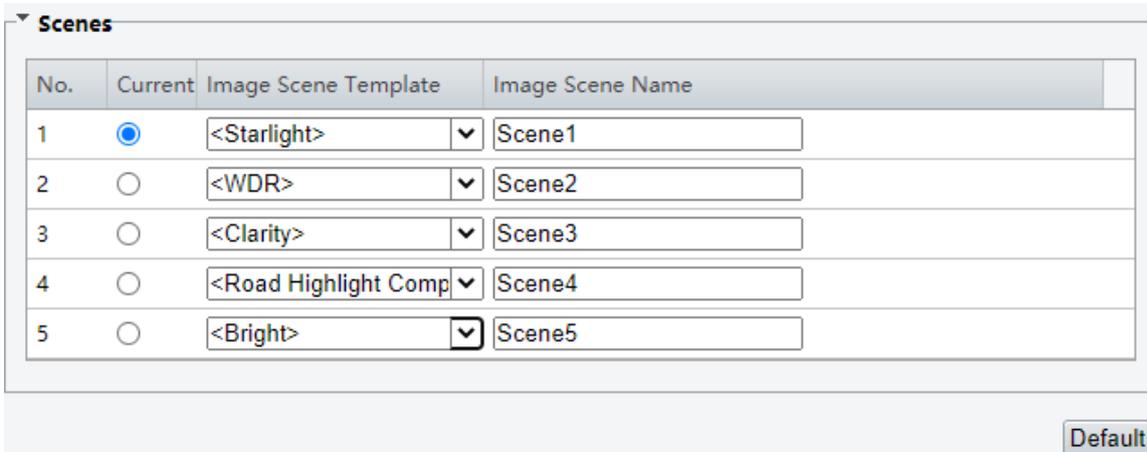For dual-channel devices, you can set image parameters for the two channels separately.

1. Scenes

A scene is a collection of image parameters preset in the camera for users to choose according to the actual scene.

1. Go to **Setup** > **Image** > **Image**.

2. Click **Scenes**.

3. Set the parameters.

Item	Description
Current	Shows the scene that is currently in use. **NOTE!** To apply a scene, click the corresponding radio button in the **Current** column. The scene is selected as the current scene, and the corresponding image parameters apply automatically.

Item	Description
Image Scene Template	The camera provides multiple scenes for you to choose according to the actual scene. After you select a scene, the corresponding image settings apply automatically (you may also fine-tune image settings as needed). ● Common: For outdoor scenes. ● Indoor: For indoor scenes. ● Road Highlight Compensation/Park Highlight Compensation: For capturing license plates in roads, parks, etc. ● WDR: For high-contrast situations. ● Custom: For customizing a scene. ● Test: For testing. ● Standard: For common scenes, indoor and outdoor. ● Vivid: Provides extra saturation based on the Standard scene. ● Bright: Provides extra brightness based on the Standard scene. ● Starlight: For lowlight environments. ● Face: For capturing faces in motion in complicated scenes. ● Person And Vehicle: For monitoring motor vehicles, non-motor vehicles, and pedestrians in road scenes. ● Intrusion Prevention: For perimeter protection scenes. ● VLOG: For outdoor scenes. In this scene, the face brightness is 50, the minimum duration is 5s, the white balance mode is outdoor, and auto exposure and face metering are also enabled.
Image Scene Name	Choose scene names corresponding to the scene templates. The scene names will be used in image scene switching (see Image Scene Switch).

2. **Image Enhancement**

1. On the **Image** page, click **Image Enhancement**.

2. Set the image enhancement parameters.

Item	Description
Brightness	The overall lightness or darkness of the image. Low brightness High brightness

Item	Description
Saturation	The intensity or vividness of colors in the image. Low saturation High saturation
Contrast	The difference between the lightest and darkest tones in the image. Low contrast High contrast
Sharpness	The definition of edges in the image. Low sharpness High sharpness
2D Noise Reduction	Reduce noise by individually analyzing each frame, which may cause image blur.
3D Noise Reduction	Reduce noise by analyzing the difference between successive frames, which may cause image smearing or ghosting.

Item	Description
Image Rotation	The rotation of the image. Normal Flip vertical Flip horizontal 180° 90° clockwise 90° anti-clockwise
Gain Adjustment Mode	Adjusts the image contrast. ● **Adaptive**: Suitable for complex scenes with multiple objects or people. ● **Histogram**: Highlights high-temperature object but may lose some details. Suitable for scenes requiring emphasis on high-temperature objects. ● **Linear**: Suitable for scenes with large areas of homogeneous objects, such as forests or skies. **Note:** This function is only supported on certain thermal imaging devices. Please refer to the actual interface.

To restore defaults, click **Default**.

3. **Exposure**

📝 **NOTE!**
- The exposure settings may vary with device model.
- The default settings are scene-adaptive. Use default settings unless modification is necessary.

1. On the **Image** page, click **Exposure**.

2. Set the exposure parameters.

Item	Description
Exposure Mode	Select the exposure mode. ● Automatic: The camera automatically set the optimum shutter speed according to the scene. ● Custom: User can set exposure parameters as needed. ● Shutter Priority: The camera adjusts shutter as priority to adjust the image quality. ● Iris Priority: The camera adjusts iris as priority to adjust the image quality. ● Indoor 50Hz: Reduce stripes by adjusting the exposure time. **NOTE!** ➢ Stripe effect: The high-contrast condition in an image caused by uneven light energy received by the sensor. ➢ Using this mode in brighter environments aids in adjusting the stripe effect in the image with linear stripe suppression. ● Indoor 60Hz: Reduce stripes by adjusting the exposure time. **NOTE!** Using this mode in brighter environments aids in adjusting the stripe effect in the image with linear stripe suppression. ● Manual: Fine-tune image quality by setting shutter, gain and iris manually. ● Low Motion Blur: Keep the shutter speed short to eliminate motion blur when capturing moving faces.
Shutter(s)	Shutter is used to control the light that comes into the lens. A fast shutter speed is ideal for scenes in quick motion. A slow shutter speed is ideal for scenes that change slowly. **NOTE!** ● This parameter is configurable when **Exposure Mode** is set to **Manual**, **Shutter Priority**, or **Custom**. ● If **Slow Shutter** is disabled, the reciprocal of the shutter speed must be greater than the frame rate.
Gain	Control image signals so that the camera can output standard video signals in different light conditions. **NOTE!** This parameter is configurable when **Exposure Mode** is set to **Manual** or **Custom**.

Item	Description
Slow Shutter	Increase image brightness in low light conditions. **NOTE!** This parameter is configurable when **Exposure Mode** is not set to **Iris Priority** and **Image Stabilization** is disabled.
Slowest Shutter	Set the slowest shutter speed for exposure.
Compensation	Adjust the compensation value as required to achieve the desired image effect. **NOTE!** This parameter is configurable when **Exposure Mode** is not set to **Manual**.
Linear Stripe Suppression	Adjust the linear stripes in the image. Range: 1 to 9, the default is 5. The greater the value, the more obvious the linear stripe suppression effect is, but it may cause overexposure in the image. Please configure this according to the actual scene. **NOTE!** This parameter is configurable when **Exposure Mode** is set to **Indoor 50Hz** or **Indoor 60Hz**.
Restore Auto Exposure(min)	Set the duration for the camera to restore the automatic exposure status before iris adjustment.
Metering Control	Perform luminance statistics on the images captured by the device, automatically adjust the exposure value, and output properly exposed images with optimal brightness. The default is the **Center-Weighted Average Metering**, you may configure this according to the actual scene. ● Center-Weighted Average Metering: Measure light mainly in the central part of the image. ● Evaluative Metering: Measure light in the specified area of the image, suitable for scenes where the target and the background contrast widely. ● Spot Metering: Measure light in a small spot, smaller than evaluative metering, with more accurate light control. If used in brighter areas, the metered area will be properly exposed but darken other areas. If used in darker areas, the metered area will be properly exposed (unable to increase the brightness of the spot) and brighten other areas. ● Face Metering: Adjust image quality in poor lighting or back lighting conditions by controlling the brightness of captured faces in face scenes. **NOTE!** This parameter is configurable when **Exposure Mode** is not set to **Manual**.
Day/Night Mode	● Automatic: The camera automatically switches between day mode and night mode according to the ambient lighting condition to output optimum images. ● Day: The camera outputs high-quality images in daylight conditions. ● Night: The camera outputs high-quality images in low-light conditions. ● Input Boolean: The camera switches between day mode and night mode according to the Boolean value input from a connected third-party device. **NOTE!** The **Input Boolean** option is only available on certain models.
Day/Night Sensitivity	Light threshold for switching between day mode and night mode. A higher sensitivity value means that the camera is more sensitive to the change of light and is therefore more easily to switch between day mode and night mode. **NOTE!** This parameter is configurable when **Day/Night Mode** is set to **Automatic**.
Day/Night Switching(s)	Set the length of time before the camera switches between day mode and night mode after the switching conditions are met. **NOTE!** This parameter is configurable when **Day/Night Mode** is set to **Automatic**.

Item	Description
WDR	Suitable for high-contrast scenes. WDR can balance the brightness in the bright area and dark area, and provide clear image with more details. • On/Off: User needs to identify WDR scenes, and manually enable or disable WDR as needed. • Smart/Automatic: The device can automatically identify typical WDR scenes, and then enable or disable WDR. **Note:** When WDR is enabled, some other functions may not be supported. Please refer to the actual interface.
WDR Level	Adjust the WDR level. **NOTE!** Level 7 or higher is recommended if there is a high contrast between the bright and dark areas in the scene. In the case of low contrast, it is recommended to disable WDR or use level 1 to 6.
WDR On/Off Sensitivity	When **WDR** is set to **Automatic**, adjust the parameter to change the WDR switching sensitivity.
Suppress WDR Stripes	Suppress the stripes in the image caused by the flickering light in WDR mode. When enabled, the camera automatically adjusts the shutter and frequency to minimize stripes.

To restore defaults, click **Default**.

4. **Smart Illumination**

1. On the **Image** page, click **Smart Illumination**.

2. Enable **Smart Illumination**.

3. Set the smart illumination parameters.

Item	Description
Illumination Mode	• Infrared: The camera uses infrared light illumination. • White Light / Smart White Light: The camera uses white light illumination. • Warm Light: The camera uses warm light illumination. • Laser: The camera uses laser light illumination. **Note:** • Before you select Warm Light, please set the Port Mode to Illumination (go to **Setup** > **System** > **Ports & Devices** > **Serial Port**). • This parameter is configurable when **Control Mode** is set to **Custom Level**. Range: 0 to 100. 0 is the weakest, 100 is the strongest. • When **Smart Illumination** is enabled and **illumination mode** is set to **Smart White Light**: ➢ Alarm-trigger enabled: when an alarm is triggered, during the daytime, the white light blinks; at night, the white light is on steadily, otherwise, the white light is on faintly. ➢ Alarm-trigger N/A or disabled: when an alarm is triggered, during the daytime, the white light is off; at night, the white light is on steadily, otherwise, the white light is on faintly.
Control Mode	• Global Mode: The camera automatically adjusts illumination and exposure to achieve the balanced image effect. Some areas might be overexposed if you select this option. This option is recommended if you focus on the monitoring range and image brightness.

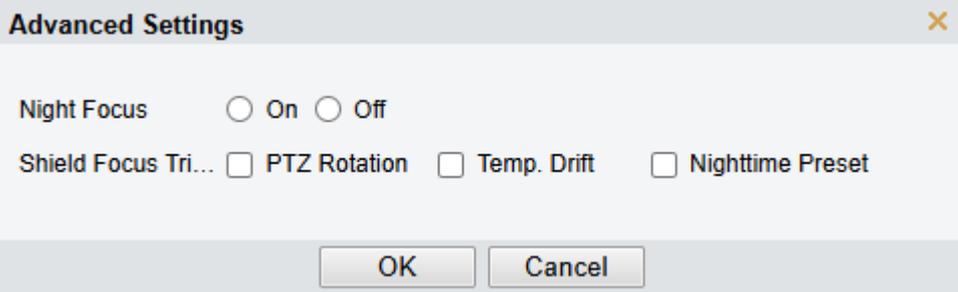| Item	Description
	• Overexposure Restrain: The camera automatically adjusts illumination and exposure to avoid regional overexposure. Some areas might be dark if you select this option. This option is recommended if you focus on the clarity of the monitoring center area. • Preset-Road/ Preset Mode: This mode offers a strong overall illumination and is recommended for monitoring wide-range scenes, for example, road. • Preset-Park: This mode offers a uniform illumination and is recommended for monitoring small-range scenes with many obstacles, for example, park. • Preset-Spotlight Mode: This mode provides more concentrated illumination with a longer distance and is recommended for monitoring long-distance scenes. • Custom Level: This mode allows you to manually control the intensity of illumination. • Custom Level(Always On): In this mode, the illumination is always on. • PTZ Control: In this mode, the module can notify the PTZ to turn on the illumination via a serial port protocol. The PTZ can control the intensity of illumination automatically. **Note:** The illuminator control modes supported may vary with device model. Please refer to the actual interface.
Illumination Level	Set the intensity of the illuminator. The greater the value, the higher the intensity. 0 is off. • Near-illumination Level: Recommended for near focus scenes. • Mid-illumination Level: Recommended for medium distance focus scenes. • Far-illumination Level: Recommended for far focus scenes. **Note:** This parameter is configurable when **Control Mode** is set to **Custom Level**.

To restore defaults, click **Default**.

5. **Focus**

1. On the **Image** page, click **Focus**.

2. Set the focus parameters.

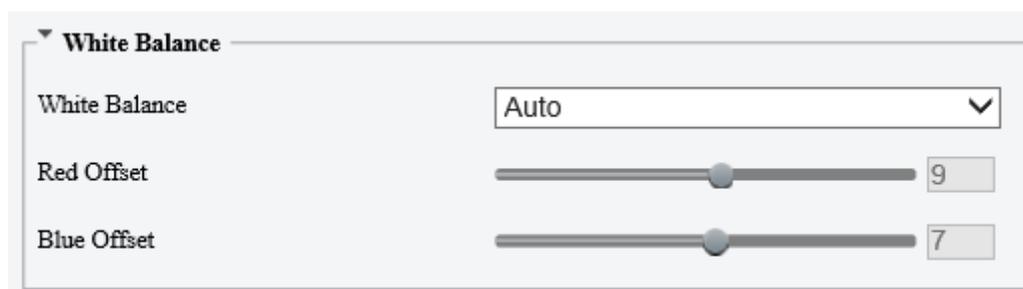| Item	Description
Focus Mode	• Auto Focus: Automatic focus control based on the current light conditions. • Manual Focus: Manual focus control. • One-Click Focus: Automatic focus in the event of rotation, zoom, and preset call. • One-Click Focus (IR): Recommended for low light scenes. • One-click Focus (Locked): Recommended for road highlight scenes.
Advanced Settings	• Night Focus: When enabled, focus will be performed during nighttime conditions. • Shield Focus Trigger Source: Includes 3 scenarios (trigger sources) – PTZ Rotation, Temperature Drift, and Nighttime Preset. Automatic focusing is triggered when the PTZ rotates, significant temperature shifts occurs, or preset switches at night. You can configure advanced settings to prevent automatic focusing in specified scenarios when not required.

Item	Description
	Note: • This function is only supported on certain device models and the trigger sources supported for focus shield supported may vary with device model. Please refer to the actual interface. • When Night Focus is enabled, if PTZ rotation or Temp. Drift is selected, the camera will not focus during PTZ rotation (both day and night) or significant temperature shifts; when Night Focus is disabled, the camera will not focus at night, regardless of whether Nighttime Preset is selected.
Scene	• Normal: Common monitoring scenes such as road, park, etc. • Long Distance: Long-distance monitoring scenes
Zoom Speed	• 1: Low zoom speed. Recommended for common scenes. • 2: High zoom speed. Recommended when **Quick Focus** is enabled.
Min. Focus Distance	Select the minimum focus distance.
Max. Zoom Ratio	Choose an upper limit for digital zoom: **22**, **44**, **88**, **176**, or **352**.

3. To restore the default settings, click **Default**.

6. **White Balance**

White balance is used to eliminate unnatural color casts in images under different color temperatures for optimal color reproduction.

1. On the **Image** page, click **White Balance**.


2. Set the white balance parameters.

Item	Description
White Balance	Adjust the red and blue gains of the image to remove unrealistic color casts. • Auto/Auto 2: Automatically adjust the red and blue gains according to the lighting conditions. If there are still color casts in Auto mode, try Auto 2 mode. • Fine Tune: Manually adjust the red and blue offsets. • Sodium Lamp: Automatically adjust the red and blue gains for optimal color reproduction in sodium light sources. • Outdoor: Recommended for outdoor scenes where the color temperature varies widely. • Locked: Keep the current color temperature. • Area White Balance: Suitable for large pure color scenes and complex color scenes. By customizing the white balance area, this mode improves the accuracy of white balance correction and reduces color casting. **Note:** • If you choose **Area White Balance**, you can adjust the size and location of the bounding box on the live view page manually. • To prevent the selected location in the bounding box from changing due to pan/tilt movement, please click ⬚ to enable scene lock before adjusting it. When finished, click ⬚ to disable scene lock.
Red/Blue Offset	Set the red/blue offset. **Note:** This parameter is configurable when **White Balance** is set to **Fine Tune**.

To restore defaults, click **Default**.

7. Defog

Defog is used to improve image visibility in foggy, hazy and other low-visibility scenes.

1. On the **Image** page, click **Advanced**.
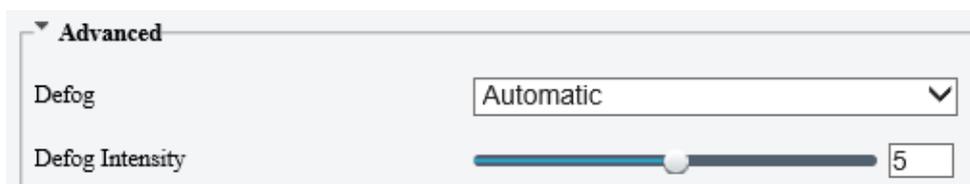
📝 **NOTE!**
This function is only available when WDR is disabled.

2. Set the defog parameters.

Item	Description
Defog	Select the defog mode, including **Automatic**, **On**, and **Off**. In **Automatic** mode, the camera automatically adjusts the defog intensity according to the fog concentration for clear images.
Defog Intensity	Adjust the defog intensity. In a heavy-fog environment, the higher the defog level, the clearer the image; in a fog-free or light-fog environment, there is not much difference between levels 1 to 9. **NOTE!** Optical defog is available on certain models. To enable optical defog, select **On** and set the defog intensity to 6 or higher, or select **Automatic**. Optical defog is automatically turned on in thick fog, and the image changes from color to black and white.

To restore defaults, click **Default**.

8. Heatwave Reduction

Adjust the heatwave reduction level to improve the image quality by eliminating the stripes in the image caused by heatwaves.

> **NOTE!**
> * Please set the heatwave reduction level according to the actual needs.
> * For devices that support heatwave reduction, when in dual-channel mode, only channel 2 supports the heatwave reduction function.

Heatwave Reduction	On ∨

9. Lens Info

> **NOTE!**
> * This function is only available on cameras with external lenses.
> * When using a P-IRIS lens with Z/F function, connect the iris control cable to the Z/F port of the camera.

1. On the **Image** page, click **Lens Info**.

Lens Type	Common ∨
Lens Model	LENS-DM0734P ∨
Aperture Control	Manual ∨
F-Number	100
	Use Recommended Value

2. Set the lens parameters.

Item	Description
Lens Type	Select the lens type, including **Common** and **IR**.
Lens Model	Select the lens model, including **LENS-DC-IRIS**, **LENS-DM0734P**, etc. **NOTE!** The lens models supported may vary with device model.
Aperture Control	Select automatic or manual iris control. **NOTE!** This parameter is configurable when **Lens Type** is **P-IRIS**.
F-Number	Set the f-number to adjust the iris opening manually.
Use Recommended Value	The camera optimizes the iris opening based on the current lighting conditions.

To restore defaults, click **Default**.

10. Dewarping

Dewarping is used to correct distorted images caused by wide-angle lenses.

1. On the **Image** page, click **Advanced**.

| Dewarping	Off ∨
Dewarping Level	5

2. Enable **Dewarping** and set the dewarping level as needed.

To restore defaults, click **Default**.

11. Image Stabilization

A camera mounted outdoors may be shaken by external forces (e.g., wind), causing image blur. In this case, you can enable image stabilization to ensure the image quality.

1. On the **Image** page, click **Advanced**.

Image Stabilization	Off
Stabilizing Intensity	5
Stabilization Accuracy Correction	100
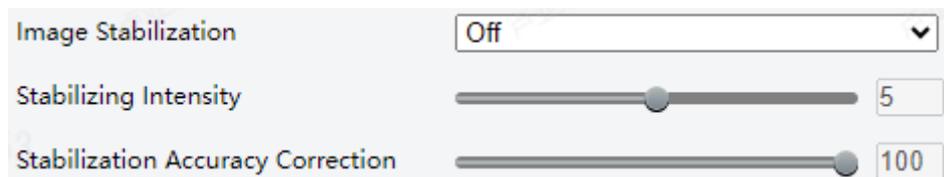
2. Select **On** or **Off** to enable or disable image stabilization, and configure the parameters.

Item	Description
Stabilization Intensity	Default: 5. The greater the value, the higher the stabilization capability. **Caution:** As the level increases, part of the images may be cropped. Please configure the level as needed.
Stabilization Accuracy Correction	Default: 0. Adjust the correction value to eliminate individual errors, making the displayed image more stable. Valid range: -100 to 100. **Note:** ● This function is only supported on certain device models. Please refer to the actual interface. ● The optimal correction value varies with device models. Please adjust the value as needed.

To restore defaults, click **Default**.

12. Non-Uniformity Correction

Non-uniformity correction improves image quality by correcting the non-uniformity of pixels caused by different response rates of thermal units.

1. On the **Image** page, select **Channel 2** and click **Advanced**.

Non-Uniformity Correction	Shutter Compensation
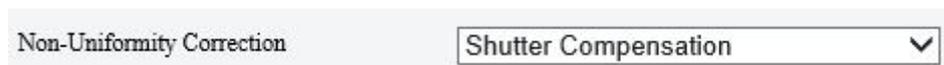
2. Select the non-uniformity correction mode.
● Shutter Compensation: In this mode, the live video may be lost.
● Background Compensation: In this mode, scene change may occur during image collection.
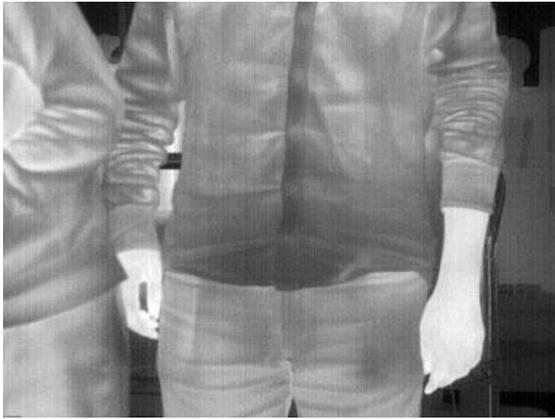
13. Reduce Vertical Stripe Noise

This function helps remove vertical stripes in images caused by the sensor or external temperature.
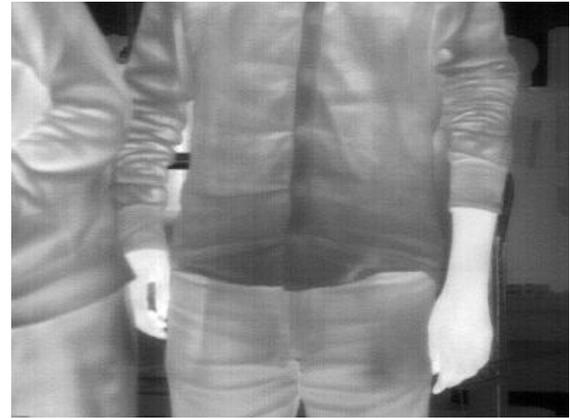
1. On the **Image** page, select **Channel 2** and click **Advanced**.

Reduce Vertical Stripe Noise	3

2. Drag the slider or enter a number to set the intensity. The greater the value, the blurrier the image.

Before   After

14. Thermal Imaging Palette

The camera offers a variety of color display options for thermal imaging. The rainbow palette has a strong contrast and a clear distinction between colors of different temperatures, ideal for pinpointing objects in environments with subtle temperature differences.

1. On the **Image** page, select **Channel 2** and click **Advanced**.
2. Select the appropriate thermal imaging palette for your camera.

Common Palette "Rainbow 3"

Common Palette "White Hot"

15. Image Scene Switch

Configure image scene switch so the camera can automatically switch image scenes according to the configured time schedules or linked presets.

1. Go to **Setup** > **Image** > **Image Scene Switch**.

2. Choose a switch mode.

- Timed Switch: Switch to a specified scene at a set time.
- Preset Switch: Switch to a specified scene at a set time specified for a specified preset.

3. Configure the switch mode parameters.

- Timed Switch

Item	Description
Auto Switching	When auto switch is enabled and switching conditions are met, the system switches scenes automatically. The list includes the default scene.
Schedule	The default scene (No.1) takes effect when the current time is not within the listed periods. You can add up to 5 periods and assign a scene for each period. The periods must not overlap. Click ⌞ to set time.
Image Scene Name	Choose a scene for each period. The scenes are configured on the **Scenes** page (see Scenes).

- Preset switch

Choose linked presets for locations. You can set up to 4 locations and link them to different presets (which need to be configured in advance, see Preset), and configure 4 schedules for the locations, each schedule includes different periods and corresponding image scenes.

4. (Optional) Select the **Enable Auto Switch** checkbox.

- Timed Switch

➢ The camera switches to the linked image scene at the start time of a period.

➢ The camera switches to the default scene at the end time of a period, or to the corresponding scene at the start time of the next period.

➢ The camera switches image scene at once when **Auto Switch** is enabled.

● Preset Switch

➢ The camera switches scenes when calling a linked preset.

➢ The camera checks the current time when calling a preset:

– If the current time is within a listed period, the camera switches to the scene corresponding to the period.

– If no scene has been set for the period, the camera switches to the default scene.

– If the current time is not within any listed periods, the camera switches to the default scene.

5. Click **Save**.

16. Engineering Parameters

During lens rotation, the camera may lose focus, causing unclear images. In this case, you can initialize the lens to refocus.

1. Go to **Setup** > **Image** > **Engineering**.

2. Reset lens.

● To reset manually, click **Reset**.

● To reset automatically, select the **Enable Auto Initialization** checkbox and set an execution time.
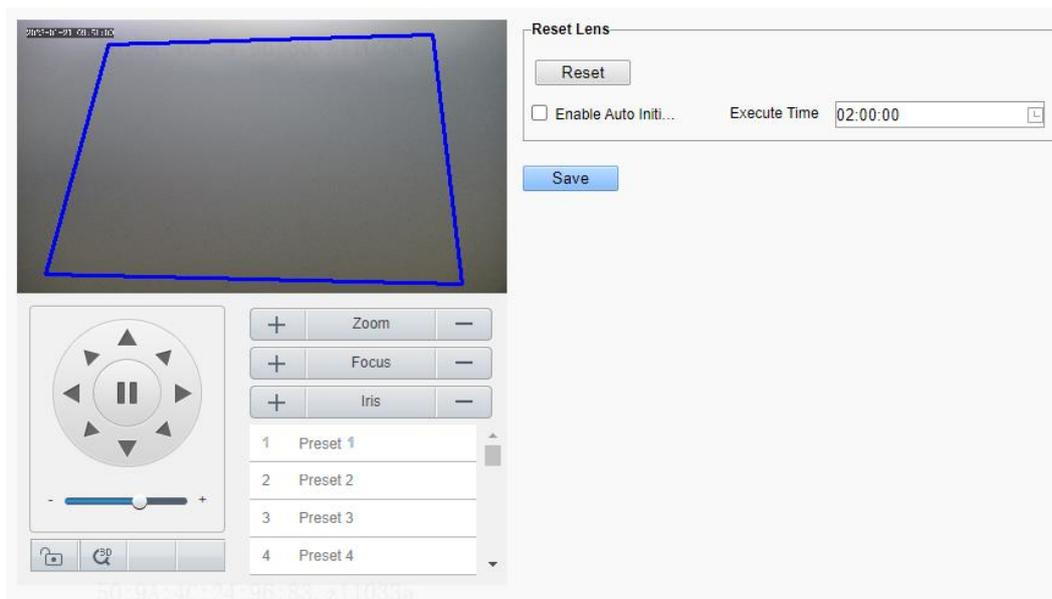
3. Click **Save**.

17. Video Standard

Select the P/N standard for video capture to suppress the stripes in the image.

1. Go to **Setup** > **Image** > **Image**.

2. Click **Video Standard**.
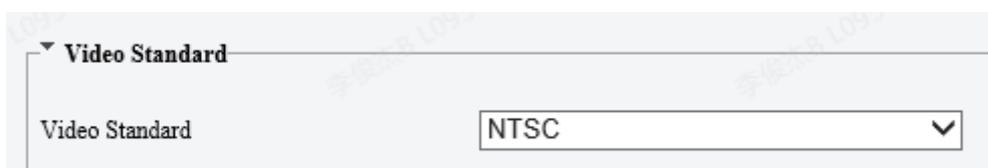
3. Select the P/N standard from the **Video Standard** drop-down list. Even if you switch the capture mode in <u>Video</u>, the P/N standard configured in this page still prevails.

5.5.2 **OSD**

On Screen Display (OSD) are characters displayed with video images, for example, camera name, date and time.

![NOTE icon] **NOTE!**

- This function may vary with device model.
- For dual-channel cameras, you can set OSD parameters for the channels separately.

Configure OSD displayed on the live video.

1. Go to **Setup** > **Image** > **OSD**.
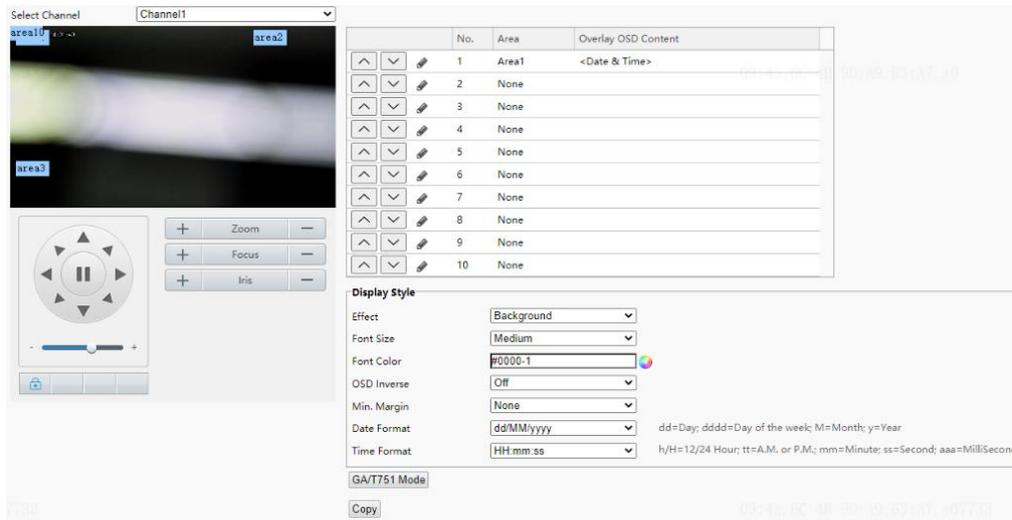
2. Configure parameters in the OSD Toolbar

![NOTE icon] **NOTE!**

OSD operations supported may vary with device model.

Item	Description
Enable	Select the checkboxes in the **Enable** column to overlay the corresponding OSD contents on live video. **NOTE!** Up to 10 OSDs are allowed.
Overlay OSD Content	Set OSD content you want to overlay. Point to the OSD content, click ✎ , select the OSD content from the drop-down list or customize it. **NOTE!** • An OSD content takes effect only when the **Enable** checkbox is selected. • Some models allow multiple OSD contents in one overlay area.
X-Axis/Y-Axis	Specify the exact position of the OSD by entering the X and Y coordinates. The top left corner of the image is the origin (0, 0), the horizontal axis is the X-axis, and the vertical axis is the Y-axis. **NOTE!** You can also drag an OSD to the desired position: point to the OSD box in the preview window, and drag when the cursor shape changes.

Item	Description
Upload Picture	This parameter is available only when the **Overlay OSD Content** is set to **Picture Overlay**. 3. Click **Browse…** to select the picture you want to overlay. 4. Click **Upload**, then the picture is displayed on the live video. Overlay Area Upload Picture [ ] Browse… Upload Note: The uploaded picture should be a 24-bit or 32-bit BMP/PNG file, with max size 64K.
ScrollOSD	This parameter is available only when the **Overlay OSD Content** is set to **Picture Overlay**. 1. Enter the text you want to overlay. 2. The text appears on the live video and scrolls from right to left. Overlay Area ScrollOSD: [ ] Up to 200 characters are allowed and only displays in the area wit…
Copy	After configuring the OSD for one channel, you can click **Copy** to copy the OSD content and style of the channel to other channels.
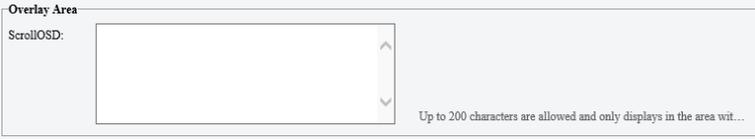
3. Overlay OSD Contents.

➢ Custom: Customizes the OSD contents.

➢ Date & Time: Displays the current date and time of the camera according to the set format (content style), for example, Friday, 25 March, 2022 14:25.

➢ PTZ Coordinates: Specify the exact position of the PTZ camera. For example, P: 165.42°, T: 1.49°. P stands for horizontal coordinates, T stands for vertical coordinates.

➢ Zoom: Displays the zoom information of the PTZ, for example, Z: 1.00X.

➢ Preset: Displays current preset ID on live video, for example, Preset 1.

➢ Serial Port: The IPC will receive and parse the serial port information in correct format and display the information in the live view window. Only some models support this function.

➢ Direction: Displays the coordinates of the 8 directions of the PTZ camera, including the basic directions: East, South, West, North, and the intermediate directions: Northeast, Southeast, Northwest, and Southwest.

➢ People Counting: Displays people flow information (number of people entering/leaving), crowd density information (number of people present), or face detection information (number of people entering/leaving) on live video. You need to enable and configure People Flow Counting, Crowd Density Monitoring, or Face Detection.

➢ Time: Displays the current time of the device.

➢ Date: Displays the current date of the device.

➢ Picture Overlay: Displays locally imported pictures. You may set the picture transparency according to your need.

➢ Temperature/Humidity: Displays the device's ambient temperature and humidity. Format example: Temperature: 24.1℃ Humidity: 45%.

➢ ScrollOSD: The OSD text displays on the live video and scrolls from right to left.

➢ Network Port: The IPC will receive and parse the network port information in correct format and display the information in the live view window.

➢ Device Latitude and Longitude Coordinates: Displays the latitude and longitude coordinates of the device location.

> ➢ Motor Vehicle&Non-Motor Vehicle&Pedestrian Count: Displays motor vehicle/non-motor vehicle/pedestrian counting information on live video. You need to enable <u>Multi-Target Detection</u> and Motor Vehicle&Non-Motor Vehicle&Pedestrian Count first.

NOTE!

- To disable an OSD, clear the OSD content or clear the corresponding **Enable** checkbox.
- Some models allow multiple OSDs.

4. Set the OSD display style.

Item	Description
Effect	Choose a display effect: **Background**, **Stroke**, **Hollow**, or **Normal**.
Font Size	Choose a font size: **X-large**, **Large**, **Medium**, or **Small**.
Font Color	Click 🔵 to choose a font color.
OSD Inverse	When enabled, the OSD content color is opposite to the live view color.
Min. Margin	Choose a minimum distance between the OSD area and the edge of image: ● None: Zero margin. ● Single: One-character margin. ● Double: Two-character margin.
Date Format	Choose a date format from the drop-down list: **dd/MM/yyyy**, **MM/dd/yyyy**, etc.
Time Format	Choose a time format: **HH:mm:ss** or **hh:mm:ss tt**.

5.5.3 **Privacy Mask**

Privacy mask is used to cover certain areas on the image for privacy, for example, ATM keyboard.

NOTE!

- This function may vary with device model.
- For dual-channel devices, you can set privacy mask parameters for the channels separately.

1. Go to **Setup** > **Image** > **Privacy Mask**.
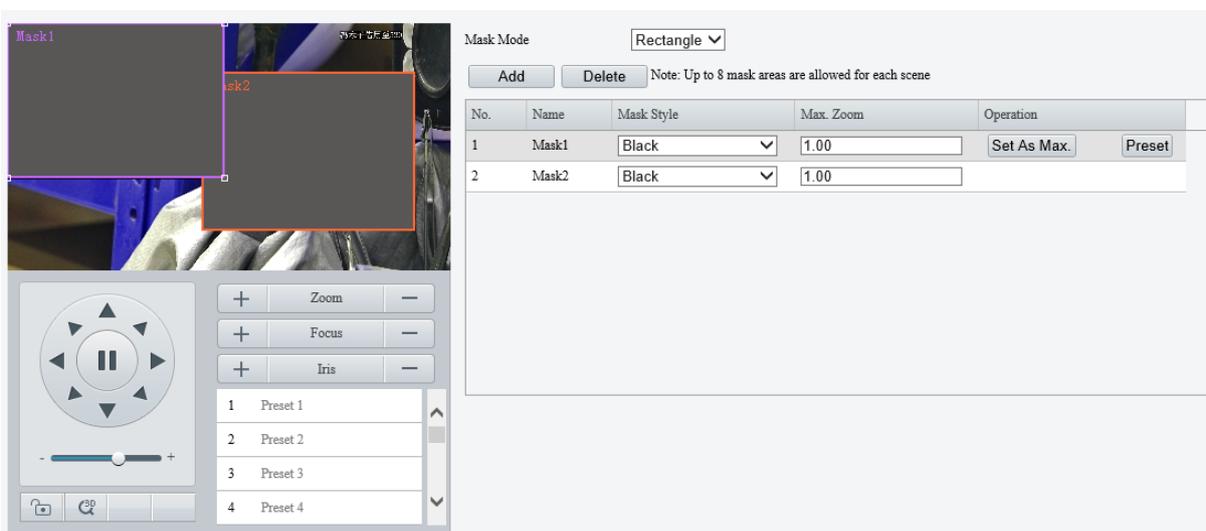
2. Select the mask mode, **Rectangle** or **Polygon**.

- 2D-mask camera: For a PTZ camera, the privacy mask does not move and zoom with the camera.

- 3D-mask camera: For a PTZ camera, the privacy mask moves and zooms with the camera and the masked area is always covered.

3. Add a privacy mask.

   (1) Click **Add**. The privacy mask is a rectangle by default.
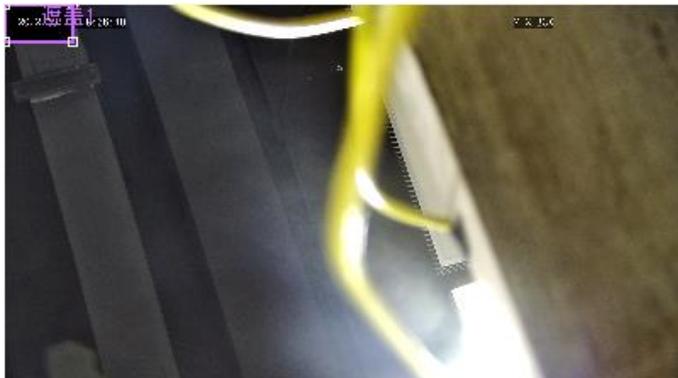
   (2) Adjust the position and size of the mask or draw a mask as needed.

   ➢ Adjust the position and size of the mask.

   – Point to a border of the mask and drag it to the desired position.

   – Point to a handle of the mask and drag to resize it.

   ➢ Draw a mask.

   – Polygon: Click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 4 lines are allowed.

   – Rectangle: Click on the image and drag to draw a rectangle.

4. Set the privacy mask.

Item	Description
Mask style	Select the mask style, **Black** or **Mosaic**. **NOTE!** • This parameter is configurable when **Mask Mode** is set to **Rectangle**. By default, the mask style of polygon mask is black and cannot be modified. • Mosaic is only available on certain models.
Max. Zoom (3D-mask camera)	Set the maximum zoom ratio to determine whether to show or hide the privacy mask. If the current lens zoom ratio is less than the maximum zoom ratio, the privacy mask is invalid.
Set As Max. (3D-mask camera)	Click to set the current lens zoom ratio as the maximum zoom ratio.
Preset (3D-mask camera)	Click to rotate the camera to the masked area (generally, the masked area is in the center of the live video).

5.5.4 Quick Focus

Fast focus effectively saves focus time and avoids missing important information after the camera changes the scene, focus and zoom.

> **NOTE!**
> • This function is only available on certain models.
> • Set the zoom speed to 2 on the **Image** page when quick focus is enabled.

1. Go to **Setup** > **Image** > **Quick Focus**.

2. Select the **Enable Quick Focus** checkbox to enable it.
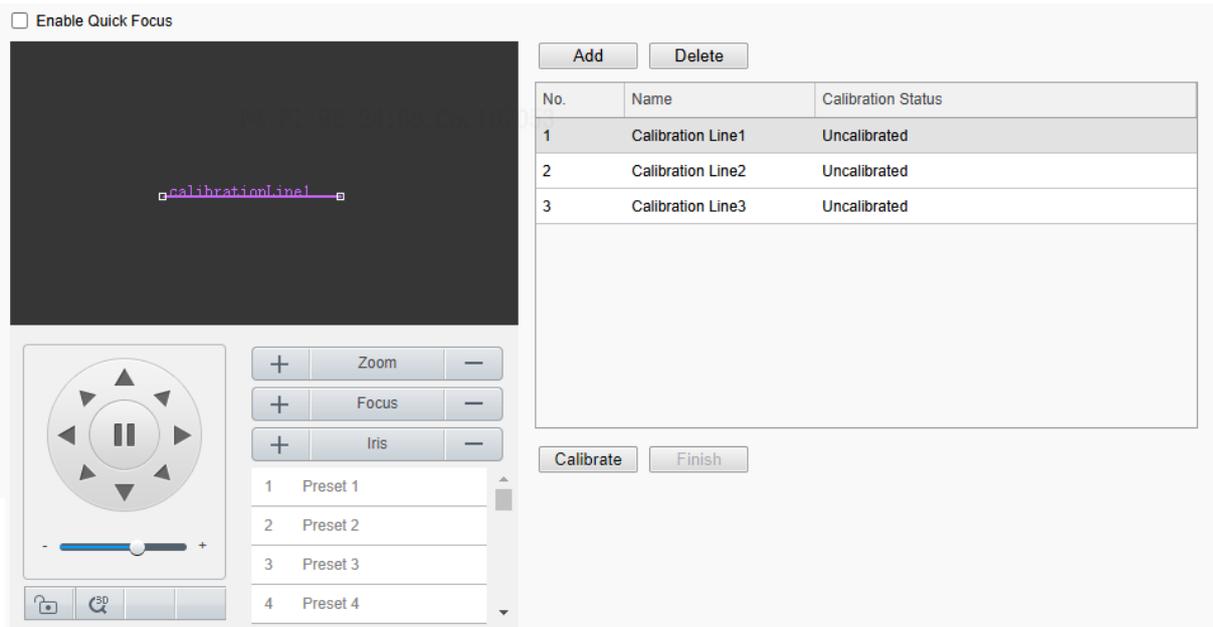
3. Add a calibration line for the desired scene.
   (1) Click **Add**. A line displays on the image.
   (2) Adjust the position and length of the line or draw a line as needed.
   ➢ Adjust the position and length of the line.
   – Point to the line and drag it to the desired position.
   – Point to a handle of the line and drag to resize it.
   ➢ Draw a line.
   Click on the image and drag to draw a line.
4. Click **Calibrate** to start automatic zoom. After the auto zoom is completed, click **Finish** to complete calibration. If you click **Finish** during calibration, the calibration line is considered invalid.
5. Repeat the above steps to calibrate more scenes. Up to 4 scenes are allowed.

5.6 Smart

On the **Smart** page, you can select the smart event to be monitored and click ⚙ to configure relevant parameters.

The smart events supported by the device and the parameters supported by the events may vary with device model.
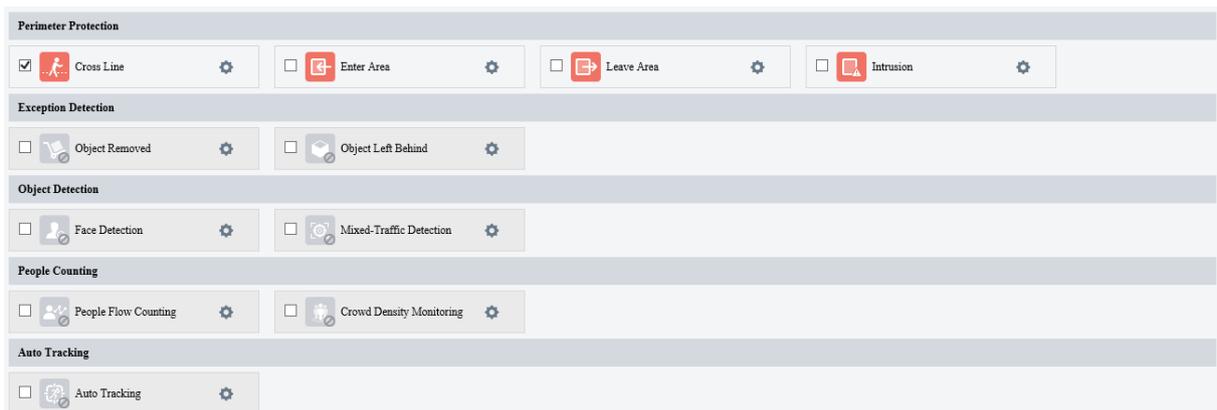
Common Button Description

Button	Description
✚	Create detection rules. Up to 4 detection rules are allowed for each smart event.
🗑	Delete detection rules.

> **NOTE!**
> - For dual-channel devices, you can set smart parameters for the channels separately.
> - Some smart functions are mutually exclusive. When a smart function is enabled, the functions that are mutually exclusive with it are grayed out.
> - For multi-sensor network dome cameras, each of the 4 fixed dome cameras function as independent channels.
>   - ➢ Inter-channel: Smart functions are not mutually exclusive.
>   - ➢ Intra-channel: Some smart functions are mutually exclusive.

5.6.1 Alarm-triggered Actions

Configure linkage actions to be triggered when an alarm occurs.

Perimeter protection, exception detection, object detection, people flow counting, and auto tracking support alarm-triggered actions (also known as linkage actions).

1. **Conventional alarm-triggered actions**

Item	Description
Upload to FTP	The camera uploads snapshots to the specified FTP server when an alarm occurs. 1. Configure FTP and Snapshot. 2. Select the **Upload to FTP** checkbox to enable this function.
Send E-mail	The camera sends snapshots to the specified email addresses when an alarm occurs. 1. Configure E-mail and Snapshot. 2. Select the **Send Email** checkbox to enable this function.
Alarm the Center	The camera uploads alarm information to the surveillance center when an alarm occurs. Select the **Alarm the Center** checkbox to enable this function.
Report Data to Center	The camera uploads data to the server when an alarm occurs. 1. Configure management platform. 2. Select the **Report Data to Center** checkbox to enable this function.

Metadata Collection	The camera uploads the metadata information collected from the captured object to the server when an alarm occurs. 1. Configure Metadata Collection. 2. Select the **Metadata Collection** checkbox to enable this function.
Upload Image(Original)	The camera uploads the original snapshot and the cutout image of the captured object to the server when an alarm occurs. Select the **Upload Image(Original)** checkbox to enable this function. For dual-channel cameras, when this function is configured for channel 2 (thermal channel), it will trigger channel 1 (visible light channel) to capture an image and upload the original image with the cutout image of the captured object to the server.
Upload Image(Target)	The camera uploads the cutout image of the captured object to the server. Select the **Upload Image(Target)** checkbox to enable this function.

2. **Alarm output**

Item	Description
Alarm Output	Connect the external alarm output devices, such as alarm lights and alarm bells, etc., to the camera's ALARM OUT interfaces. The camera triggers alarm output devices when an event occurs. A->1: **A** refers to the ALARM OUT interface on the device, 1 means the first ALARM OUT interface. **A->2** means the second ALARM OUT interface on the device, and so on. The number of ALARM OUT interfaces may vary with the device model. See the device datasheet for specifications. ☐ A → 1 ☑ A → 2 1. Configure Alarm Output. 2. Select the **Alarm Output** checkbox to enable this function.
Alarm Sound	The camera plays warning sounds when an alarm occurs. 1. Select the **Alarm Sound** checkbox, and then click ⚙. 2. Set the arming schedule for audible alarms. See Arming Schedule for details. 3. Set the alarm audio content and alarm times. ● Audio: Set the audio content to be played when an alarm occurs. See Audio File. ● Repeat: Set the number of times the audio to be played when an alarm occurs. **NOTE!** This function may vary with device model.
Flashing Light	The light flashes for a certain period of time when an alarm occurs. 1. Select the **Flashing Light** checkbox, and then click ⚙. 2. Set the flash duration. 3. Set the arming schedule. See Arming Schedule for details. **NOTE!** This function may vary with device model.
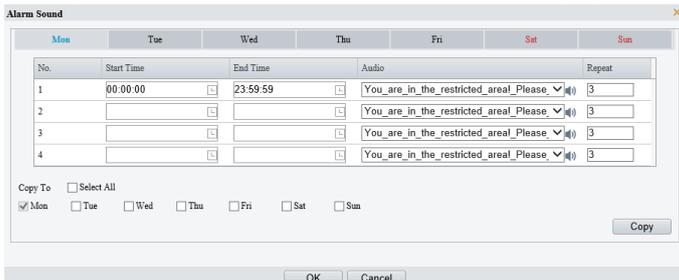
3. Alarm-triggered storage

Item	Description
Recording Edge Storage	The camera saves alarm recordings to its memory card or NAS when an alarm occurs. 1. Configure Memory Card or Network Disk. 2. Select the **Recording Edge Storage** checkbox.
Image Edge Storage	The camera saves alarm snapshots to its memory card or NAS when an alarm occurs. 1. Configure Memory Card or Network Disk. 2. Select the **Image Edge Storage** checkbox.
FTP Video Storage	The camera uploads alarm recordings to the specified FTP server when an alarm occurs. 1. Configure FTP. 2. Select the **FTP Video Storage** checkbox.

4. Alarm-triggered PTZ

Item	Description
Trigger Tracking	The camera tracks and zooms on the object that triggered the alarm until the set tracking time is reached or the object disappears. 1. Select the **Trigger Tracking** checkbox. 2. Click **Tracking** to configure tracking parameters. See Tracking for details.
Link with Secondary Device	When an alarm is triggered, the secondary device will be linked to track the target. 1. Select **Link with Secondary Device** and click **Linkage Parameters**. 2. Complete the Panoramic Linkage settings.
Panoramic Linkage	The camera automatically tracks the object that triggered the alarm. 1. Configure panoramic linkage. See Panoramic Linkage for details. 2. Select the **Panoramic Linkage** checkbox.
Go to Preset	The camera automatically goes to a preset position when an alarm occurs. 1. Select the **Go to Preset** checkbox. 2. Choose the preset to be linked with motion detection alarm. See PTZ for details.

5.6.2 Arming Schedule

You can set an arming schedule to determine when the camera performs detection.

● Draw a schedule

To set an armed period, click **Armed**, and then click or drag on the schedule to select the time cells you want to enable arming. To set a disarmed period, click **Unarmed**, and then click or drag on the schedule to select the time cells you want to disable arming.
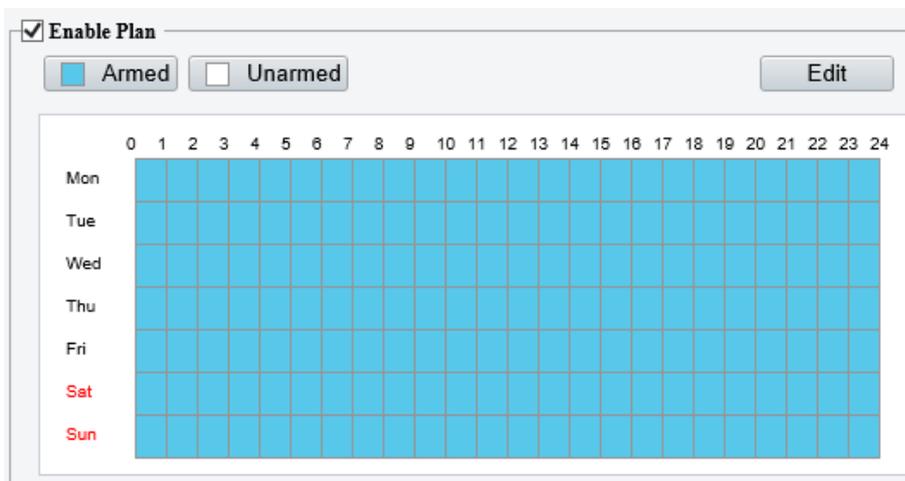
- Edit a schedule

Click **Edit**, set the arming time, and then click **OK**.

NOTE!

- Up to 4 time periods are allowed per day. The time periods cannot overlap.
- To apply the same time settings to other days, select the desired day(s), and then click **Copy**.

5.6.3 Smart Service Switch

Configure smart service switch so the camera can automatically switch smart services according to time schedules or linked presets.

1. Go to **Setup** > **Smart**> **Smart Service Switch**.

2. Click ∨ and choose a switch mode.
- Timed Switch: Switch to a specified smart service at a set time.
- Preset Switch: Switch to a specified smart service at a set time specified for a specified preset.
3. Configure the switch mode parameters.
- Timed Switch

Item	Description
Auto Switching	When auto switch is enabled and switching conditions are met, the system switches to the corresponding smart service automatically. The list includes the default service.
Schedule	The default service (No.1, by default, unspecified) takes effect when the current time is not within the listed periods. You can add up to 5 periods and assign a smart service for each period. Click ⬜ to set time. • For certain perimeter protection functions, you can configure overlapping periods, which means, multiple smart services may be effective during the same period. • For mutually exclusively smart services which cannot be enabled at the same time, overlapping periods are not allowed, and on-screen messages will appear. • When panoramic linkage has been enabled and a specified smart service is mutually exclusive with panoramic linkage, an on-screen message will also appear.
Smart Service	Click ⌄ to choose smart functions. All the functions on the **Smart Service** page except panoramic linkage are listed in the drop-down list.
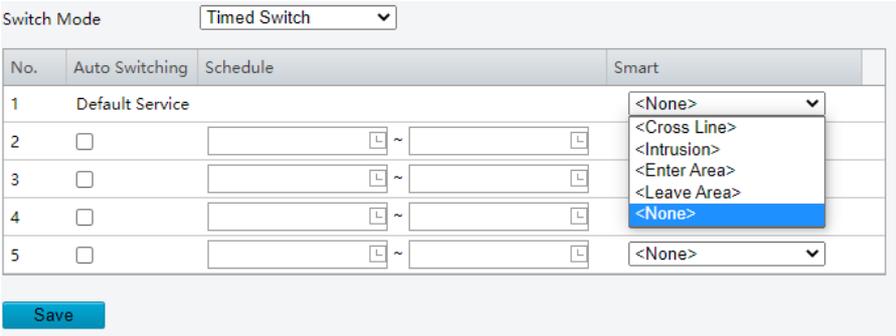
- Preset Switch

Click ⌄ to choose a preset. You can set up to 4 locations and link a location to a preset (the linked presets must be configured in advance, see Preset). The steps for configuring a position are similar to that for configuring timed switch, that is, you can configure 4 locations and 4 corresponding schedules, each schedule includes periods and corresponding smart services.
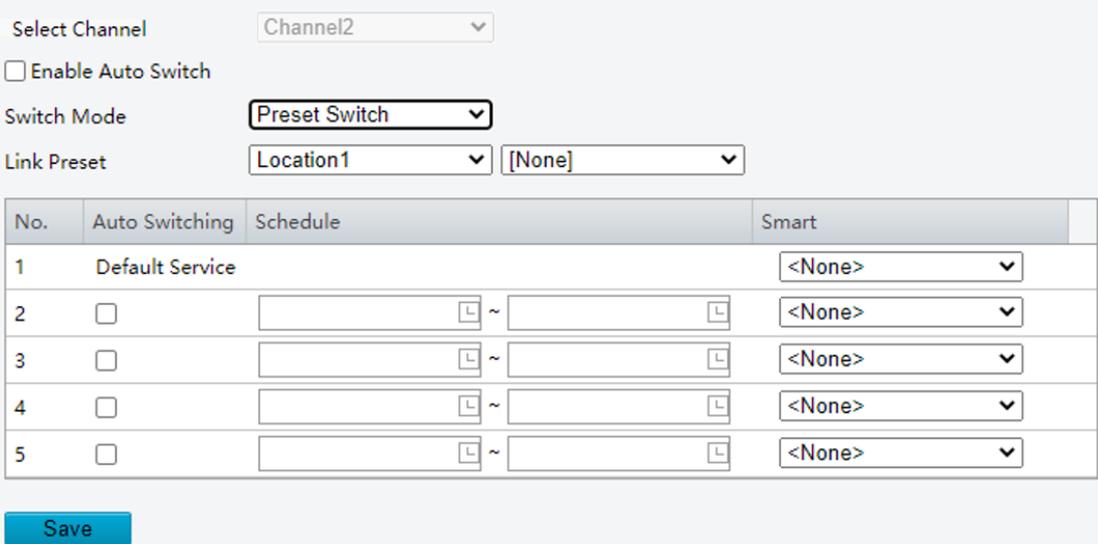
4. (Optional) Select the **Enable Auto Switch** checkbox. After selecting the **Enable Auto Switch** checkbox, you may still configure or enable/disable smart services.

- Timed Switch
  - ➢ The camera switches to the linked smart service at the start time of a period.
  - ➢ The camera switches to the default service at the end time of a period, or switches to the corresponding smart service at the start time of the next period.

➢ The camera switches smart service at once when Auto Switch is enabled.

● Preset Switch

➢ The camera switches smart service only when calling a linked preset.

➢ The camera checks time when calling a preset. If the current time is within a specified period, the camera switches to the smart service linked to the period.

➢ The camera switches to the default smart service of the preset if the current time is not within any listed periods.

5. Click **Save**.

5.6.4 Cross Line Detection

Cross line detection detects objects crossing a user-specified virtual line in a specified direction. The camera reports an alarm when the detection rule is triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Cross Line** and click ⚙ to configure it.

3. Add a detection rule.

(1) Click ➕ to add a detection line. Up to 4 detection rules are allowed.

(2) Adjust the position and length of the line or draw a line as needed.

➢ Adjust the position and length of the line.

– Point to the line and drag it to the desired position.

– Point to a handle of the line and drag to resize it.

➢ Draw a line.

Click on the image and drag to draw a line.

> **NOTE!**
>
> When editing detection rules, you can click 📷 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after you finish editing detection rules.

4. Set the detection rule.

Item	Description
Trigger Direction	Select the direction from which the object crosses the line to trigger an alarm. • A->B: The camera reports a cross line alarm when it detects an object crossing the line from A to B. • B->A: The camera reports a cross line alarm when it detects an object crossing the line from B to A. • A<->B (default): The camera reports a cross line alarm when it detects an object crossing the line from A to B or from B to A.
Sensitivity	Set the detection sensitivity. The higher the sensitivity, the more likely cross line behaviors will be detected, and the more likely false alarms will occur.
Level	Select the priority of the detection rule, including **High**, **Medium**, and **Low**. The camera detects the rule that is triggered first by default. If multiple rules are triggered at the same time, the camera detects the rule with higher priority.
Detection Object	Select the object to be detected, including **Motor Vehicle**, **Non-Motor Vehicle**, and **Pedestrian**. **Note:** • Some models only support configuring motor vehicle and pedestrian as the detection objects. • The detection objects supported may vary with device model. Please refer to the actual interface.
Filter Type	After you select a detection object, you can set a filter rule for it. For example, if you have selected **Motor Vehicle** as a detection object, select **Motor Vehicle** from the **Filter Type** drop-down list and set the **Max. Size** or **Min. Size** for it, then motor vehicles larger than the Max. Size or smaller than the Min. Size will not be detected.
Max. Size/Min. Size	When enabled, a box appears on the image, you can point to a handle of the box and drag to resize it. The camera filters objects larger than the Max. Size or smaller than the Min. Size. The width and height of the maximum filter area must be greater than that of the minimum filter area.
Overlay	• Bounding Box: Select **On** to add the bounding box ID within the code stream, which is suitable for viewing recordings with a bounding box on a third-party platform. • Detection Rule: Select **On** to view the drawn detection rules in video streams.

5. Set the alarm-triggered actions and arming schedule. See Alarm-triggered Actions and Arming Schedule for details.

6. Click **Save**.

5.6.5 Enter Area Detection

Enter area detection detects objects entering a user-specified area. The camera reports an alarm when the detection rule is triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Enter Area** and click ⚙ to configure it.

3. Add a detection rule.

(1) Click ![+] to add a detection area. The detection area is a hexagon by default. Up to 4 detection rules are allowed.

(2) Adjust the position and size of the area or draw an area as needed.

 ➢ Adjust the position and size of the area.

 – Point to a border of the area and drag it to the desired position.

 – Point to a handle of the area and drag to resize it.

 ➢ Draw an area.

 Click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 6 lines are allowed.

![NOTE icon] **NOTE!**

When editing detection rules, you can click ![unlock icon] to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click ![lock icon] to unlock the scene after you finish editing detection rules.

4. Set the detection rule.

Item	Description
Sensitivity	Set the detection sensitivity. The higher the sensitivity, the more likely entry behaviors will be detected, and the more likely false alarms will occur.
Level	Select the priority of the detection rule, including **High**, **Medium**, and **Low**. The camera detects the rule that is triggered first by default. If multiple rules are triggered at the same time, the camera detects the rule with higher priority.
Detection Object	Select the object to be detected, including **Motor Vehicle**, **Non-Motor Vehicle**, and **Pedestrian**. **Note:** ● Some models only support configuring motor vehicle and pedestrian as the detection objects. ● The detection objects supported may vary with device model. Please refer to the actual interface.
Filter Type	After you select a detection object, you can set a filter rule for it. For example, if you have selected **Motor Vehicle** as a detection object, select **Motor Vehicle** from the **Filter Type** drop-down list and set the **Max. Size** or **Min. Size** for it, then motor vehicles larger than the Max. Size or smaller than the Min. Size will not be detected.

Item	Description
Max. Size/Min. Size	When enabled, a box appears on the image, you can point to a handle of the box and drag to resize it. The camera filters objects larger than the Max. Size or smaller than the Min. Size. The width and height of the maximum filter area must be greater than that of the minimum filter area.
Overlay	• Bounding Box: Select **On** to add the bounding box ID within the code stream, which is suitable for viewing recordings with a bounding box on a third-party platform. • Detection Rule: Select **On** to view the drawn detection rules in video streams.

5. Set the alarm-triggered actions and arming schedule. See [Alarm-triggered Actions](#) and [Arming Schedule](#) for details.

6. Click **Save**.

5.6.6 Leave Area Detection

Leave area detection detects objects leaving a user-specified area. The camera reports an alarm when the detection rule is triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Leave Area** and click ⚙ to configure it.

3. Add a detection rule.

(1) Click ➕ to add a detection area. The detection area is a hexagon by default. Up to 4 detection rules are allowed.

(2) Adjust the position and size of the area or draw an area as needed.

➢ Adjust the position and size of the area.

– Point to a border of the area and drag it to the desired position.

– Point to a handle of the area and drag to resize it.

➢ Draw an area.

Click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 6 lines are allowed.

4. Set the detection rule.

Item	Description
Sensitivity	Set the detection sensitivity. The higher the sensitivity, the more likely cross line behaviors will be detected, and the more likely false alarms will occur.
Level	Select the priority of the detection rule, including **High**, **Medium**, and **Low**. The camera detects the rule that is triggered first by default. If multiple rules are triggered at the same time, the camera detects the rule with higher priority.
Detection Object	Select the object to be detected, including **Motor Vehicle**, **Non-Motor Vehicle**, and **Pedestrian**. **Note:** • Some models only support configuring motor vehicle and pedestrian as the detection objects. • The detection objects supported may vary with device model. Please refer to the actual interface.
Filter Type	After you select a detection object, you can set a filter rule for it. For example, if you have selected **Motor Vehicle** as a detection object, select **Motor Vehicle** from the **Filter Type** drop-down list and set the **Max. Size** or **Min. Size** for it, then motor vehicles larger than the Max. Size or smaller than the Min. Size will not be detected.
Max. Size/Min. Size	When enabled, a box appears on the image, you can point to a handle of the box and drag to resize it. The camera filters objects larger than the Max. Size or smaller than the Min. Size. The width and height of the maximum filter area must be greater than that of the minimum filter area.
Overlay	• Bounding Box: Select **On** to add the bounding box ID within the code stream, which is suitable for viewing recordings with a bounding box on a third-party platform. • Detection Rule: Select **On** to view the drawn detection rules in video streams.

5. Set the alarm-triggered actions and arming schedule. See Alarm-triggered Actions and Arming Schedule for details.

6. Click **Save**.

5.6.7 Intrusion Detection

Intrusion detection detects objects entering a user-specified area and staying for a preset time. The camera reports an alarm when the detection rule is triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Intrusion** and click [icon] to configure it.

3. Add a detection rule.

(1) Click ![+] to add a detection area. The detection area is a hexagon by default. Up to 4 detection rules are allowed.

(2) Adjust the position and size of the area or draw an area as needed.

- ➢ Adjust the position and size of the area.
- – Point to a border of the area and drag it to the desired position.
- – Point to a handle of the area and drag to resize it.
- ➢ Draw an area.

  Click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 6 lines are allowed.

![NOTE icon] **NOTE!**

When editing detection rules, you can click ![unlock icon] to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click ![lock icon] to unlock the scene after you finish editing detection rules.

4. Set the detection rule.

Item	Description
Time Threshold(s)	Set how long the object stays in the detection area to trigger an intrusion alarm.
	If an object stays in the detection area for the set time, an intrusion alarm will be triggered.
Sensitivity	Set the detection sensitivity.
	The higher the sensitivity, the more likely intrusion behaviors will be detected, and the more likely false alarms will occur.
Percentage	The percentage for the area an object occupies within the detection area. Objects smaller than the set percentage will not be detected or trigger an alarm.
Level	Select the priority of the detection rule.
	The camera detects the rule that is triggered first by default. If multiple rules are triggered at the same time, the camera detects the rule with higher priority.
Detection Object	Select the object to be detected, including **Motor Vehicle**, **Non-Motor Vehicle**, and **Pedestrian**.
	Note:
	● Some models only support configuring motor vehicle and pedestrian as the detection objects.
	● The detection objects supported may vary with device model. Please refer to the actual interface.
Filter Type	After you select a detection object, you can set a filter rule for it.
	For example, if you have selected **Motor Vehicle** as a detection object, select **Motor Vehicle** from the **Filter Type** drop-down list and set the **Max. Size** or **Min. Size** for it, then motor vehicles larger than the Max. Size or smaller than the Min. Size will not be detected.

	When enabled, a box appears on the image, you can point to a handle of the box and drag to resize it. The camera filters objects larger than the Max. Size or smaller than the Min. Size. The width and height of the maximum filter area must be greater than that of the minimum filter area.
Max. Size/Min. Size	
Overlay	● Bounding Box: Select **On** to add the bounding box ID within the code stream, which is suitable for viewing recordings with a bounding box on a third-party platform. ● Detection Rule: Select **On** to view the drawn detection rules in video streams.

5. Set the alarm-triggered actions and arming schedule. See Alarm-triggered Actions and Arming Schedule for details.

6. Click **Save**.

5.6.8 Object Removed Detection

Object removed detection detects objects removed from a user-specified area. The camera reports an alarm when the detection rule is triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Object Removed** and click ⚙ to configure it.

3. Add a detection rule.

(1) Click ➕ to add a detection area. The detection area is a hexagon by default. Up to 4 detection rules are allowed.

(2) Adjust the position and size of the area or draw an area as needed.

➢ Adjust the position and size of the area.

– Point to a border of the area and drag it to the desired position.

– Point to a handle of the area and drag to resize it.

➢ Draw an area.

Click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 6 lines are allowed.

> **NOTE!**
>
> When editing detection rules, you can click 📷 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after you finish editing detection rules.

4. Set the detection rule.

Item	Description
Time Threshold(s)	Set how long the object is removed from the detection area to trigger an alarm. If an object is removed from the detection area for the set time, an alarm will be triggered.
Sensitivity	Set the detection sensitivity. The higher the sensitivity, the more likely object removal behaviors will be detected, and the more likely false alarms will occur.

5. Set the alarm-triggered actions and arming schedule. See Alarm-triggered Actions and Arming Schedule for details.

6. Click **Save**.

5.6.9 Object Left Behind Detection

Object left behind detection detects objects left behind in a user-specified area. The camera reports an alarm when the detection rule is triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Object Left Behind** and click ⚙ to configure it.

3. Add a detection rule.

(1) Click ➕ to add a detection area. The detection area is a hexagon by default. Up to 4 detection rules are allowed.

(2) Adjust the position and size of the area or draw an area as needed.

➢ Adjust the position and size of the area.

– Point to a border of the area and drag it to the desired position.

– Point to a handle of the area and drag to resize it.

➢ Draw an area.

Click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 6 lines are allowed.

NOTE!

When editing detection rules, you can click 🔓 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after you finish editing detection rules.
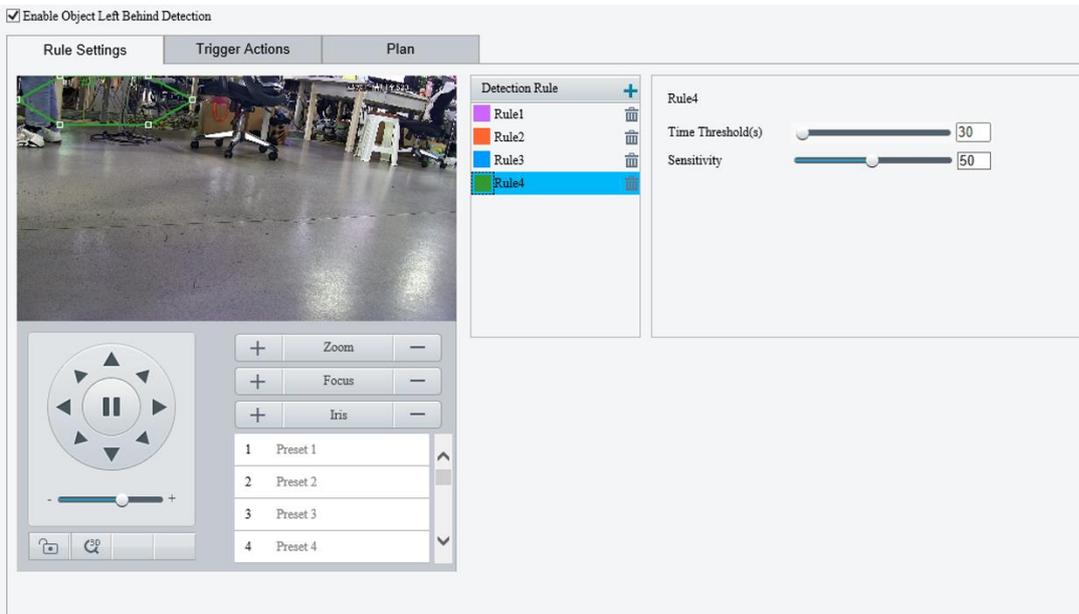
4. Set the detection rule.

Item	Description
Time Threshold(s)	Set how long the object is left behind in the detection area to trigger an alarm. If an object is left behind in the detection area for the set time, an alarm will be triggered.
Sensitivity	Set the detection sensitivity. The higher the sensitivity, the more likely object left behind behaviors will be detected, and the more likely false alarms will occur.

5. Set the alarm-triggered actions and arming schedule. See [Alarm-triggered Actions](#) and [Arming Schedule](#) for details.

6. Click **Save**.

5.6.10 Defocus Detection

Defocus detection detects lens defocus. The camera reports an alarm when the detection rule is triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Defocus** and click ⚙ to configure it.

3. Set the detection sensitivity. The higher the sensitivity, the more likely defocus will be detected, and the more likely false alarms will occur.

4. Set the alarm-triggered actions. See [Alarm-triggered Actions](#) for details.

5. Click **Save**.

5.6.11 Scene Change Detection

Scene change detection detects the change of surveillance scene caused by external factors such as intentional camera movement. The camera reports an alarm when the detection rule is triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Scene Change** and click ⚙ to configure it.
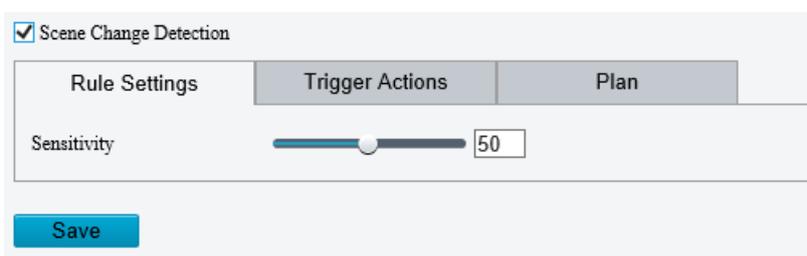
3. Set the detection sensitivity. The higher the sensitivity, the more likely scene change behaviors will be detected, and the more likely false alarms will occur.

4. Set the alarm-triggered actions and arming schedule. See [Alarm-triggered Actions](#) and [Arming Schedule](#) for details.

5. Click **Save**.

5.6.12 Face Detection

Face detection detects and captures faces in a specified detection area.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Face Detection** and click ⚙ to configure it.
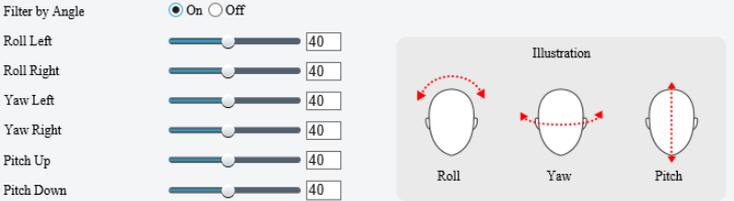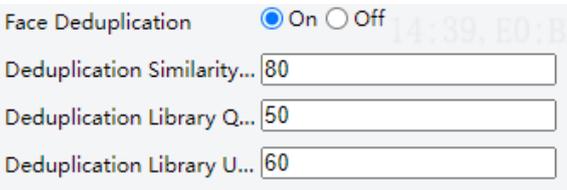
3. Set the face detection rule.

Item	Description
Snapshot Area	Select the snapshot area. ● Full Screen: The camera detects and captures all faces in the live video. ● Specified Area: The camera only detects and captures faces in a specified area of live video. ➢ Select **Specified Area** and a detection box appears in the left preview window. ➢ Adjust the position and size of the area or draw an area as needed. – Adjust the position and size of the area. Point to a border of the area and drag it to the desired position. Point to a handle of the area and drag to resize it. – Draw an area. Click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 6 lines are allowed. **NOTE!** When editing detection rules, you can click 🔓 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after you finish editing detection rules.
Snapshot Sensitivity	Set the snapshot sensitivity. The higher the sensitivity, the more likely a face will be detected.
Snapshot Mode	Set the snapshot mode. ● Intelligent Recognition: The camera continuously performs face detection. ● Alarm Input: The camera only performs face detection in the event of an alarm input. Before use, you need to enable alarm input and configure arming schedule for it. See Alarm Input for details.
Human Body Snapshot	Select to enable or disable human body snapshot.
Min. Pupillary Distance (px)	The minimum distance (unit: pixel) between two pupils. Faces with a pupillary distance smaller than the value will not be captured. To set the minimum pupillary distance, click **Draw**, when the cursor shape changes, drag to change the distance; or type a value in the text box directly.
Static Object Detection	Choose whether to detect static objects.
Overlay	● Bounding Box: Select **On** to add the bounding box ID within the code stream, which is suitable for viewing recordings with a bounding box on a third-party platform. ● Detection Rule: Select **On** to view the drawn detection rules in video streams.

4. Set the face selection rule.

Item	Description
Selection Mode	Select the face selection mode. ● Quality Priority: The camera selects 1 to 3 snapshots with the best quality to report. You can specify the number of photos to select. ● Speed Priority: The camera selects certain number of snapshots from the moment that the face is detected till **Selection Timeout** is up. You can specify the number of photos to select. ● Periodic Selection: The camera selects a snapshot in every selection period. For example, if **Selection Period** is set to 500ms, the camera selects a face snapshot every 500ms, and if **Upload Original Image** is enabled, both the original snapshot containing the face and the face cutout will be uploaded.
Number of Selected Photos	Set the number of snapshots to be selected in the range of 1 to 3. This parameter is set to 1 by default and cannot be modified on certain models.
Filter by Angle	After you enable **Filter by Angle** and set the filtering rule, faces with unqualified angles (larger than the set angles) will be filtered during face detection.

Face Deduplication	For scenarios where the face appears several times within the detection rule in a short period of time.
	Click **On** to enable face deduplication. When enabled, the camera extracts and filters the features from the captured face images, then selects the best quality face image.
	● Deduplication Similarity Threshold: Determine if there is a duplicate face in deduplication library. If the face similarity is higher than the set threshold, the camera will consider there is a duplicate face and will not perform capture.
	● Deduplication Library Quality Threshold: Determine if the face can enter the deduplication library.
	  ➢ If the face quality score is higher than the set value, the face can enter the deduplication library.
	  – If there is a similar face in the deduplication library, and the face quality score is higher than the similar face quality score in the deduplication library, the similar face will be overwritten.
	  – If there is no similar face in the deduplication library, the face automatically enters the deduplication library.
	  – If the deduplication library is full, it deletes the earliest face.
	  ➢ If the face quality score is equal or lower than the set value, the face cannot enter the deduplication library.
	● Deduplication Library Update Interval(s): Determines if the face(s) in the deduplication library need to be deleted. If the actual retention of the face is higher than the set value, it is deleted automatically.

5. Set the face recognition rule. See Face Recognition for details.

 NOTE!
Face recognition cannot be enabled with human body snapshot and face deduplication at the same time.

6. Mask undesired areas.

  (1) Click to add a masked area. The masked area is a hexagon by default. Up to 4 masked areas are allowed.

(2) Adjust the position and size of the area or draw an area as needed.

➢ Adjust the position and size of the area.

– Point to a border of the area and drag it to the desired position.

– Point to a handle of the area and drag to resize it.

➢ Draw an area.

Click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 6 lines are allowed.

> **NOTE!**
>
> When editing detection rules, you can click 🔓 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after you finish editing detection rules.

7. Set the **Overlay & Snapshot**.

Go to the **Overlay & Snapshot**.Configure OSD that will overlay on images captured from live video.

● Use Live View OSD: Use the OSD that overlays on live video.

- Configure Separately: Configure photo OSD separately (different from live video OSD).

    (1) Click ⬤ behind **Font Color** and **Background Color** to set the font color and background color of each image.

    (2) Set other parameters as needed.

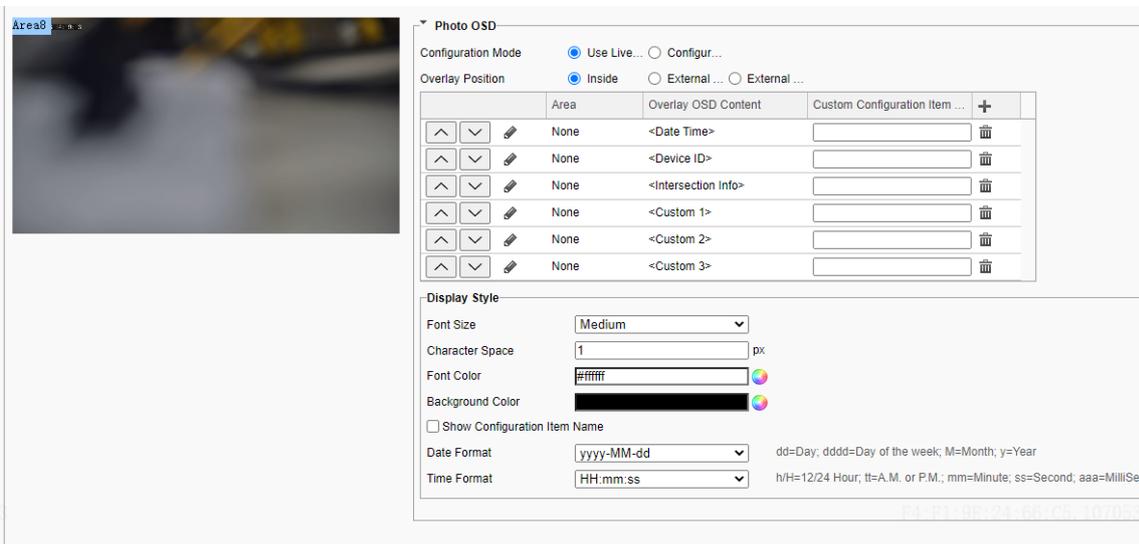| Item	Description
Overlay Position	Select the position of OSD on the photo. ● Inside: Overlay inside the image. ● External Top: Overlay on the top of the image, and the image will be bigger. ● External Bottom: Overlay on the bottom of the image, and the image will be bigger.
Font Size	Choose a font size: **X-large**, **Large**, **Medium**, or **Small**. You can select the size of the text on the snapshot as needed. This size is relative and will be adjusted automatically depending on the size of the picture.
Character Space	Set the distance between the OSD area and the edge of image. Range: 0 to 10px.
Show Configuration Item Name	Choose whether to show the configuration item name, such as **Date & Time**, **Device ID**, etc.
Time Format	Choose a time format: **HH:mm:ss**, **HH:mm:ss.aaa**, **hh:mm:ss tt**, or **hh:mm:ss.aaa tt**.
Date Format	Choose a date format from the drop-down list: **yyyy-MM-dd**, **MM-dd-yyyy**, **yyyy/MM/dd**, etc.

    (3) Set overlay type.

Item	Description
Overlay Area	Customize the X and Y coordinates. Overlay information will be displayed in the corresponding position in the screen. ● The top left corner of the image is the origin (0, 0), the horizontal axis is the X-axis, and the vertical axis is the Y-axis. ● This parameter is available only when **Overlay Position** is set to **Inside**.
Overlay Type	Select the checkbox, the corresponding overlay information will be displayed on the photo. Up to 6 overlay information are allowed. ● Date&Time: Displays the current date of the device. ● Device ID: Displays device ID on the photo. The device ID can be set in **Setup** > **System** > **Device Information**. ● Intersection ID: Displays the intersection information of device's location. ● Custom 1/2/3: Displays customized contents on the photo. Up to 3 customized overlay information are allowed.
Customize Configuration Item Name	Customize the overlay type name. Up to 6 configuration item names can be customized.
Overlay Position	Click the drop-down list to select the position of OSD on photo. ● Select the overlay position, for example, Area 1. You may change the position of the area by entering X and Y coordinates. After saving, the overlay information of Area 1 will be displayed in the corresponding position. ● Change the overlay area. For example, when change Area 1 to Area 2, the display position of overlay information will also be changed from Area 1 to Area 2.
Space Count	Set the number of spaces after the OSD content. Range: 0 to 10.

Item	Description
Line Feed Count	Set whether and how to break line(s) for the subsequent configuration items. ● 0: No line break. ● 1: Display the subsequent contents in the second line in the same area. ● 2/3: Display the subsequent contents in the third or fourth line in the same area. **NOTE!** ● In **External Top** or **External Bottom** mode, if the **Line Feed Count** is set to 2 or 3, the subsequent configuration items move to the next line. ● In **External Top** or **External Bottom** mode, up to 8 lines can be displayed. The larger the font size, the fewer lines are displayed; the smaller the font size, the more lines are displayed.
∧ / ∨	Use the two buttons to rearrange the order of configuration items.
🗑	Delete an unneeded configuration item.

(4) Click **Save**.

8. Set the alarm-triggered actions and arming schedule. See Alarm-triggered Actions and Arming Schedule for details.
9. Click **Save**.

5.6.13 Face Recognition

Face recognition compares the faces captured in live view with the faces stored in face libraries, and uploads the comparison results to the server.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Face Detection** and click ⚙ .

3. Click the **Face Library** tab.
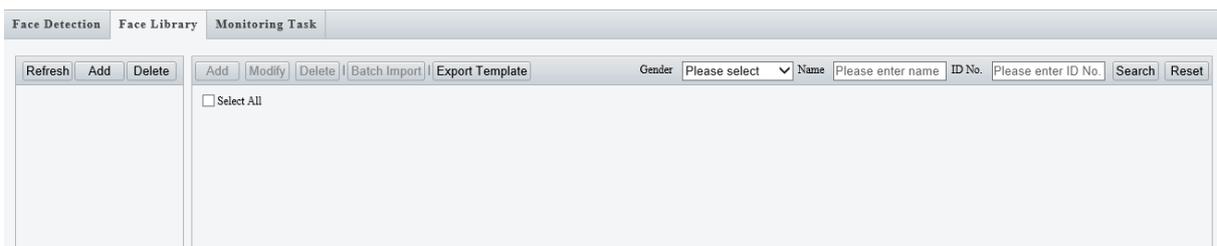
4. Create face libraries.

Click **Add** in the left area, enter the library name, and click **OK**.
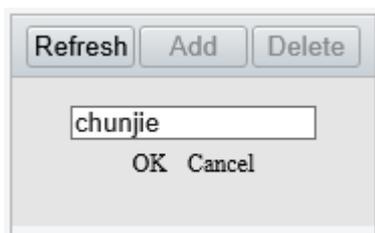
5. Add face data.

Item	Description
Add one by one	1. Click **Add**. 2. Upload a face image and complete the required face information.
Add in batches	1. Click **Export Template** to export the CSV face template file to the PC. 2. Complete the required face data in the template with reference to the import guide. Refer to the import guide to fill in the template with the required face data. 3. Click **Batch Import**, select the CSV file you have edited, and click **Upload**.
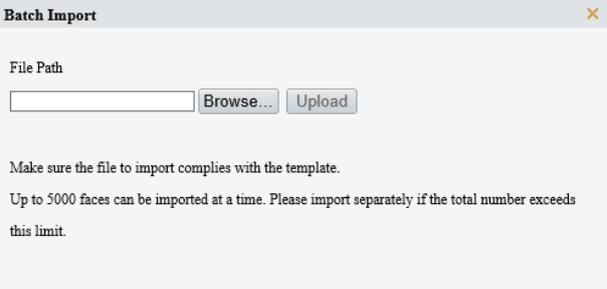
The imported face data are shown as below:
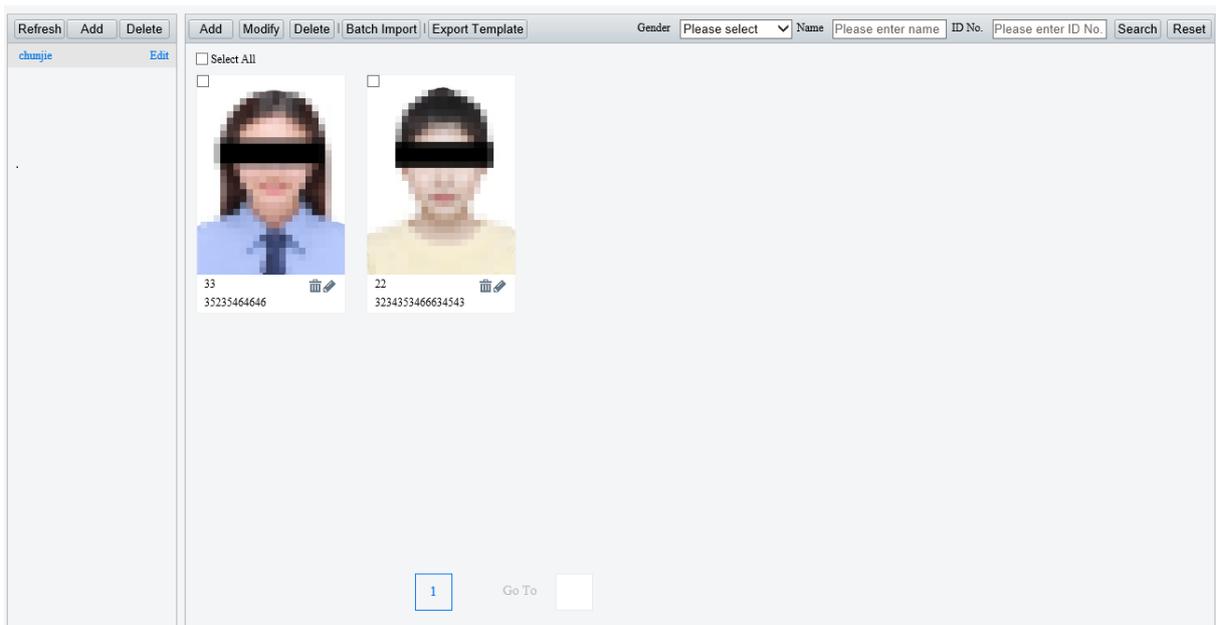
6. Add monitoring tasks.

Open the **Monitoring Task** tab.

(1) Click **Add**.

(2) Complete the monitoring task settings.

Monitoring Type	Description
Monitoring Task	Select to enable or disable the monitoring task.
Monitoring Task Name	Enter a name for the monitoring task.
Cause of Monitoring	Enter the cause of the monitoring task.
Monitoring Type	Select the monitoring type. ● All: The camera reports an alarm and performs the set alarm-triggered actions once it detects a face. ● Match Alarm: The camera reports a match alarm and performs the set alarm-triggered actions when the similarity between a captured face and a face in the monitored face library reaches the confidence threshold. ● Not Match Alarm: The camera reports a not match alarm and performs the set alarm-triggered actions when the similarity between a captured face and a face in the monitored face library fails to reach the confidence threshold.
Confidence Threshold	By default, the confidence threshold is set to 80. A match alarm/not match alarm occurs when the similarity between a captured face and a face in the face library reaches/fails to reach the threshold. The higher the value, the more accurate the face recognition.

(3) Select the face library to be monitored.

(4) Set the alarm-triggered actions and arming schedule. See Alarm-triggered Actions and Arming Schedule for details.

(5) Click **OK**.

7. Click **Save**.

5.6.14 Human Body Detection

Human body detection detects humans in a specified area. The camera reports an alarm when the detection rule is triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Human Body Detection** and click ⚙ to configure it.
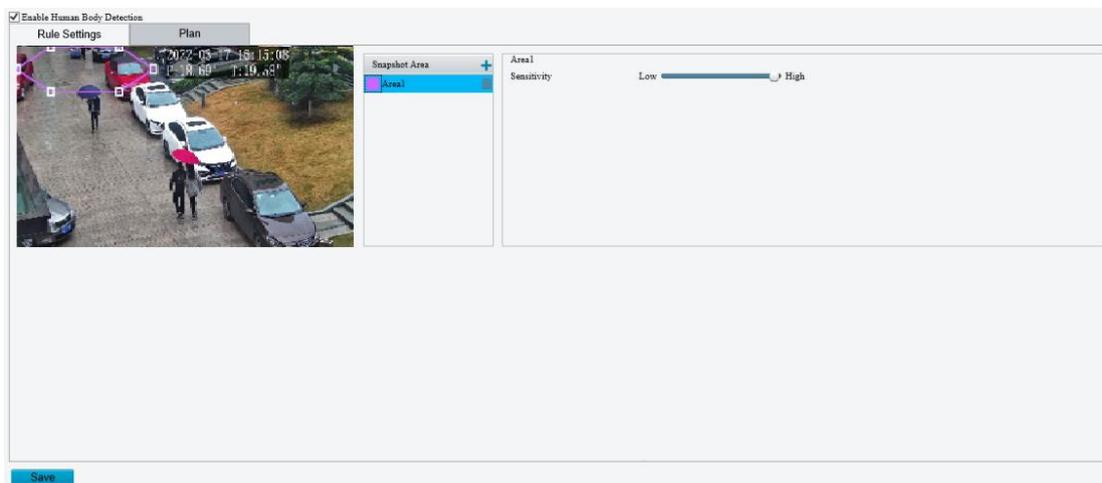
3. Add a snapshot area.

   (1) Click ➕. The snapshot area is a hexagon by default. Only one snapshot area is allowed.

   (2) Adjust the position and size of the area or draw an area as needed.

   ➤ Adjust the position and size of the area.
      Point to the area and drag it to the desired position. Drag the corners of the area to resize it.

   ➤ Draw an area.
      Click in the preview window to draw a polygonal area with up to 6 sides.

> **NOTE!**
>
> When editing detection rules, you can click 🔓 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after you finish editing detection rules.

4. Set the detection sensitivity. The higher the sensitivity, the more likely humans will be detected, and the more likely false alarms will occur.

5. Set the alarm-triggered actions and arming schedule. See [Alarm-triggered Actions](#) and [Arming Schedule](#) for details.

6. Click **Save**.

5.6.15 Multi-Target Detection

Multi-Target detection detects and captures motor vehicles, non-motor vehicles, and pedestrians in a user-specified area. You can set a multi-target counting OSD to view real-time motor vehicle, non-motor vehicle and pedestrian statistics on the live video. See OSD for details.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Multi-Target Detection** and click ⚙ to configure it.

3. Set the detection rule.

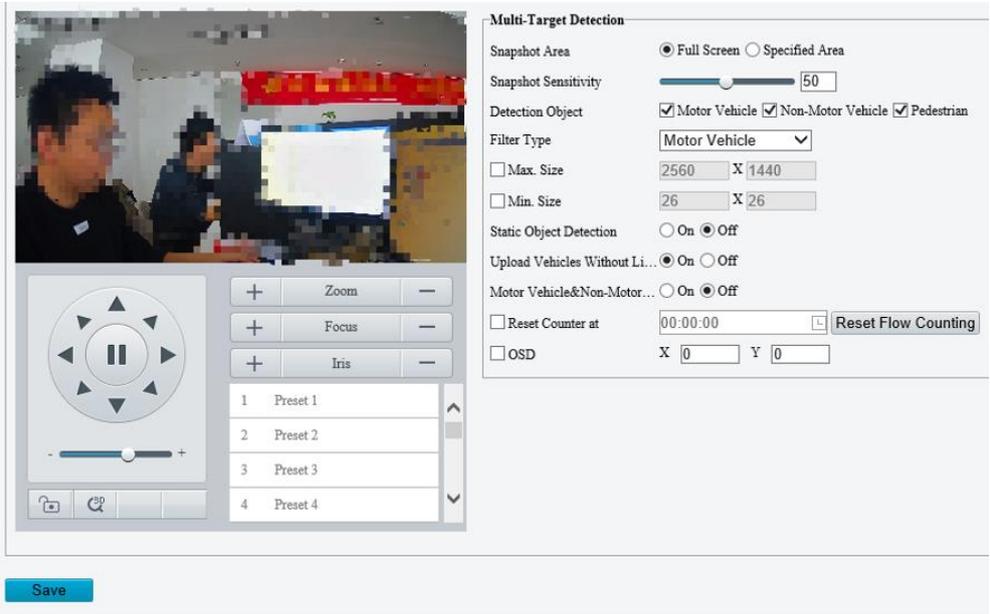| Item	Description
Snapshot Area	Select the snapshot area. ● Full Screen: The camera detects and captures objects in the live video. ● Specified Area: The camera only detects and captures objects in a specified area of live video. ➢ Select **Specified Area** and a detection box appears in the left preview window. ➢ Adjust the position and size of the area or draw an area as needed. – Adjust the position and size of the area. Point to the area and drag it to the desired position. Drag the corners of the area to resize it. – Draw an area. Click in the preview window to draw a polygonal area with up to 6 sides. Select the area you want to monitor. **NOTE!** When editing detection rules, you can click 🔓 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after you finish editing detection rules.
Snapshot Sensitivity	Set the detection sensitivity. The higher the sensitivity, the more likely objects will be detected, and the more likely false alarms will occur.
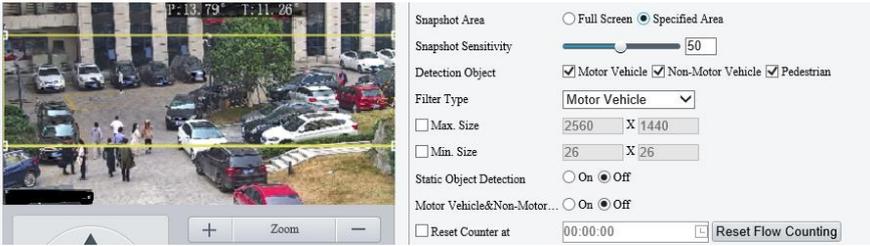
Item	Description
Detection Object	Select the object to be detected, including **Motor Vehicle**, **Non-Motor Vehicle**, and **Pedestrian**.
Filter Type	After you select a detection object, you can set a filter rule for it. For example, if you have selected **Motor Vehicle** as a detection object, select **Motor Vehicle** from the **Filter Type** drop-down list and set the **Max. Size** or **Min. Size** for it, then motor vehicles larger than the Max. Size or smaller than the Min. Size will not be detected.
Max. Size/Min. Size	When enabled, a box appears on the image, you can point to a handle of the box and drag to resize it. The camera filters objects larger than the Max. Size or smaller than the Min. Size. The width and height of the maximum filter area must be greater than that of the minimum filter area.
Static Object Detection	Select whether to detect static objects.
Upload Vehicles Without License Plates	● On: Supports uploading snapshots without license plate information. ● Off: Only snapshots with license plate information can be uploaded.
Motor Vehicle&Non-Motor Vehicle&Pedestrian Count	Select whether to count motor vehicles, non-motor vehicles and pedestrians.
Reset Counter at	You can set a time for the camera to clear the traffic statistics or click **Reset Flow Counting** to clear immediately.
OSD	Adjust the OSD position: Specify the exact position of the OSD by entering the X and Y coordinates. The top left corner of the image is the origin (0,0), the horizontal axis is the X-axis, and the vertical axis is the Y-axis. **Note:** Drag the overlay area on the live view window will change its X/Y value correspondingly.

4. Mask undesired areas.

(1) Click ➕ to add a masked area. The masked area is a hexagon by default. Up to 4 masked areas are allowed.

(2) Adjust the position and size of the area or draw an area as needed.

➢ Adjust the position and size of the area.

Point to the area and drag it to the desired position. Drag the corners of the area to resize it.

➢ Draw an area.

Click in the preview window to draw a polygonal area with up to 6 sides.

5. Set **Overlay & Snapshot**.

Go to the **Overlay & Snapshot**. Set the overlay information that will be displayed on the snapshots captured by the camera.

(1) Select the OSD configuration mode.

➢   Use Live View OSD: Use the OSD that overlays on live video.

➢   Configure Separately: Configure photo OSD separately (different from live view OSD).

(2) Set the overlay position.

➢   Inside: Overlay inside the image.

➢   External Top: Overlay on the top of the image, and the image will be bigger.

➢   External Bottom: Overlay on the bottom of the image, and the image will be bigger.

(3) Set the target type and overlay parameters.

Target types include Motor Vehicle, Non-Motor Vehicle, Pedestrian, and Face. You can set overlay parameters for each target type separately.

Item	Description
![pencil]	Specify the exact position of the OSD by entering the X and Y coordinates.
	The top left corner of the image is the origin (0, 0), the horizontal axis is the X-axis, and the vertical axis is the Y-axis.
	NOTE!
	You can also drag an OSD to the desired position: point to the OSD box in the preview window, and drag when the cursor shape changes.

	Select the checkbox, and the corresponding overlay information will be displayed on the photo. Up to 14 overlay information are allowed.
Overlay OSD content	The overlay content options are based on the metadata collected (see [Metadata Collection](#)) for each target type. The options supported may vary with device model. Please refer to the actual interface.
	Examples of common overlay contents:
	● Time: Displays the device time on the photo.
	● Device No.: Displays device number on the photo.
	● Intersection Info: Displays the intersection information of device's location.
	● Custom 1/2/3: Displays customized contents on the photo. Up to 3 customized overlay information are allowed.
	● Plate Type: Displays the license plate type on the photo.
	Note:
	Location, camera ID, device number, and intersection information can be retrieved in **Setup** > **System** > **Device Info**. See details in [Device Information](#).
Custom Configuration Item Name	Enter a custom configuration item name, which can replace the display name of the overlay OSD content.
Area	Click the drop-down list to select the position of OSD.
	● Select the overlay position, for example, Area 1. You may change the position of the area by entering X and Y coordinates. After saving, the overlay information of Area 1 will be displayed in the corresponding position.
	● Change the overlay area. For example, when change Area 1 to Area 2, the display position of overlay information will also be changed from Area 1 to Area 2.
Space Count	Set the number of spaces after the OSD content. Range: 0 to 10.
Line Feed Count	Set whether and how to break line(s) for the subsequent configuration items. Range: 0 to 3.
	● 0: No line break.
	● 1: Displays the subsequent contents in the second line in the same area.
	● 2/3: Displays the subsequent contents in the third or fourth line in the same area.
	Note:
	● In **External Top** or **External Bottom** mode, if the **Line Feed Count** is set to 2 or 3, the subsequent configuration items move to the next line.
	● In **External Top** or **External Bottom** mode, up to 8 lines can be displayed.
∧ / ∨	Use the two buttons to rearrange the order of configuration items.
🗑	Delete an unneeded configuration item.

(4) Set the display style.

Item	Description
Font Size	Choose a font size as needed: **X-large**, **Large**, **Medium**, or **Small**. The font size is relative and will be adjusted automatically depending on the size of the photo.
Character Space	Set the distance between the OSD area and the edge of image. Range: 0-10 px.
Font Color/ Background Color	Click 🔴 to choose a font color and background color.
Show Configuration Item Name	Choose whether to show the configuration item name, such as Date & Time, Device ID, etc. Take **Date & Time** as an example, if selected, **Data & Time: yyyy-MM-dd** will be displayed; if unselected, **yyyy-MM-dd** will be displayed.
Time Format	Choose a time format from the drop-down list: **HH:mm:ss**, **HH:mm:ss.aaa**, **hh:mm:ss tt**, or **hh:mm:ss.aaa tt**.
Date Format	Choose a date format from the drop-down list: **yyyy-MM-dd**, **MM-dd-yyyy**, **yyyy/MM/dd**, etc.

(5) Click **Save**.

6. Set the alarm-triggered actions and arming schedule. See <u>Alarm-triggered Actions</u> and <u>Arming Schedule</u> for details.

7. Click **Save**.

5.6.16 Traffic Monitoring /ANPR

1. Traffic Monitoring

The traffic monitoring function can capture motor vehicles, motorcycles, non-motor vehicles, and pedestrians on the roads or in parks, and can identify and monitor specific vehicles, specific license plates, etc.

> **NOTE!**
> - Enabling or disabling the traffic monitoring function will restart the device.
> - The actual rule settings, trigger actions, and monitoring plan may vary with device model. Please refer to the actual interface.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Enable Traffic Monitoring**, and the device will restart.

3. After the device restarts, re-enter the **Smart** page, and click ⚙ to go to the **Traffic Monitoring** page.

4. Select the number of lanes from the drop-down list. Up to 4 lanes are allowed.

5. Select the Lane1/2/3/4 tab to draw the corresponding detection rules. Draw tripwires and lane lines as needed. The device takes a snapshot when the detected target crosses the tripwire.

   (1) Click **Draw Detection Rules**.

   (2) Click on the tripwire/lane line.

   (3) Point to a handle of the tripwire/lane line and drag it to adjust the length and direction. Point to any position of the tripwire/lane line and drag it to the desired position.
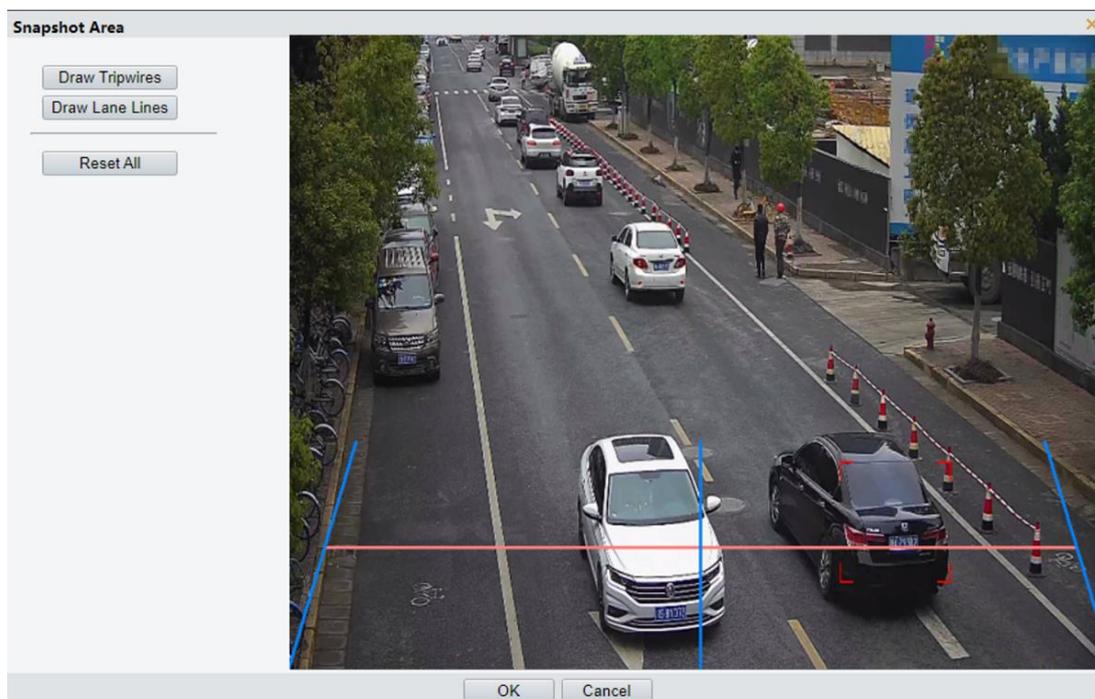
(4) (Optional) Click **Reset All** to clear all and draw again.

(5) Click **OK**.

6. Set the traffic monitoring rules.

Item	Description
High/Low Pole	Traffic monitoring needs to choose to install on the high/low pole according to the application scenarios. Select **High Pole**/**Low Pole** from the drop-down list as needed. • High Pole: Mainly used in 3-6m scenes. Supports capturing motor vehicles, non-motor vehicles, and pedestrians. • Low Pole: Mainly used in 1-3m scenes. Supports capturing vehicle license plates.
Upload Vehicles Without License Plates	• On: Supports uploading snapshots without license plate information. • Off: Only snapshots with license plate information can be uploaded.
Lane ID	Enter an integer in the range of 1 to 254.
Lane Description	Enter the lane description with 0-24 characters.
Vehicle Head Only	Set whether to capture vehicle head only.
Detection Type	Select the detection type(s) as needed: Motor Vehicle, Non-Motor Vehicle, and Pedestrian.
Clear Flow Statistics	• Select the **Reset Counter at** checkbox and set a time for the camera to clear people counting statistics on the OSD. • To clear now, click **Clear**.
OSD	Adjust the OSD position: Specify the exact position of the OSD by entering the X and Y coordinates. The top left corner of the image is the origin (0,0), the horizontal axis is the X-axis, and the vertical axis is the Y-axis. **Note:** Drag the overlay area on the live view window will change the X/Y value correspondingly.
Video Source	View live videos and snapshots. • Local Video: Select **Local Video** to view the live videos. You may click **Pause** to pause the video as needed. • Photo Directory: Select **Photo Directory** to view the photo directory. Click **Browse** to select a path to view snapshots. • Click **Next** to view cached snapshots.

7. Set the arming schedule. See [Arming Schedule](#) for details.

8. Click **Save**.

2. ANPR

The ANPR (Automatic Number Plate Recognition) function can capture motor vehicles, motorcycles, non-motor vehicles, and pedestrians on the roads or in parks, and can identify and monitor specific vehicles, specific license plates, etc.

> **NOTE!**
> - Enabling or disabling the ANPR function will restart the device.
> - The actual rule settings, trigger actions, and monitoring plan may vary with device model. Please refer to the actual interface.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **ANPR**, and the device will restart.

3. After the device restarts, re-enter the **Smart** page, and click ⚙ to go to **ANPR** page.

4. Select the number of lanes from the drop-down list. Up to 4 lanes are allowed.

5. Select the **Lane1/2/3/4** tab to draw the corresponding detection rules. Draw tripwires and lane lines as needed. The device takes a snapshot when the detected target crosses the tripwire.

   (1) Click **Draw Detection Rules**.

   (2) Click on the tripwire/lane line.

   (3) Point to a handle of the tripwire/lane line and drag it to adjust the length and direction. Point to any position of the tripwire/lane line and drag it to the desired position.
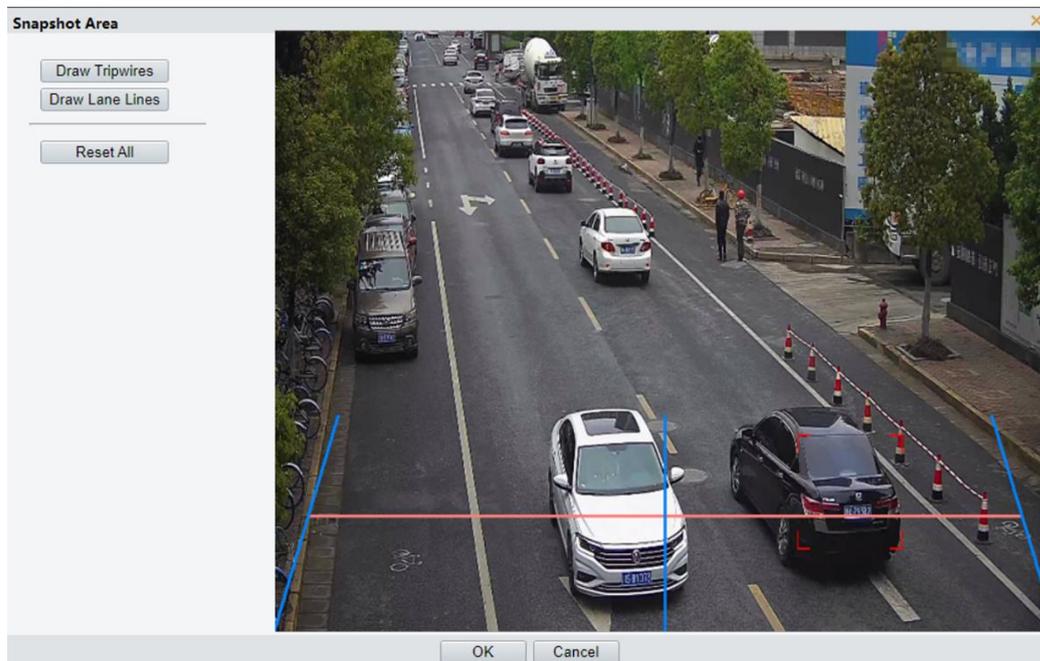
(4) (Optional) Click **Reset All** to clear all and draw again.

(5) Click **OK** to save the detection rules.

6. Set the ANPR rules.

Item	Description
High/Low Pole	ANPR function needs to choose to install the high/low pole according to the application scenarios. Select **High Pole**/**Low Pole** from the drop-down list as needed. • High Pole: Mainly used in 3-6m scenes. Supports capturing motor vehicles, non-motor vehicles, and pedestrians. • Low Pole: Mainly used in 1-3m scenes. Supports capturing vehicle license plates.
Upload Vehicles Without License Plates	• On: Supports uploading snapshots without license plate information. • Off: Only snapshots with license plate information can be uploaded.
Country/Region	Select ALL or a specific country or region to detect all license plate types (letters+digits) or plates of a certain country or region (e.g. USA, SAU). **Note:** The supported countries/regions may vary with device model. Please refer to the actual interface.
Lane ID	Enter an integer in the range of 1 to 254.
Lane Description	Enter the lane description with 0-24 characters.
Vehicle Head Only	Set whether to capture vehicle head only.
Detection Type	Select the detection type(s) as needed: Motor Vehicle, Motorcycle, Non-Motor Vehicle, and Pedestrian. **Note:** For some device models, if **Motorcycle** is selected, the non-motor vehicles are processed as motor vehicle.
Clear Flow Statistics	• Select the **Reset Counter at** checkbox and set a time for the camera to clear people counting statistics on the OSD. • To clear now, click **Clear**.
OSD	Adjust the OSD position: Specify the exact position of the OSD by entering the X and Y coordinates. The top left corner of the image is the origin (0,0), the horizontal axis is the X-axis, and the vertical axis is the Y-axis. **Note:** Drag the overlay area on the live view window will change its X/Y value correspondingly.

Item	Description
Video Source	View live videos and snapshots. • Local Video: Select **Local Video** to view the live videos. You may click **Pause** to pause the video as needed. • Photo Directory: Select **Photo Directory** to view the photo directory. Click **Browse** to select a path to view snapshots. • Click **Next** to view cached snapshots.

7. Set the alarm-triggered actions and arming schedule. See <u>Alarm-triggered Actions</u> and <u>Arming Schedule</u> for details.

8. Click **Save**.

3. Snapshot Handling

Snapshot handling can process the captured snapshots, especially for motor vehicle close-up images.

1. Go to **Setup** > **Intelligent** > **Smart** > **Traffic Monitoring / ANPR** > **Snapshot Handling**.

2. Drag the slider to set the motor vehicle close-up photo cutout range. Range: 1-7. The larger the range, the smaller the motor vehicle in the close-up image.

3. Set the driving direction, which can be displayed as a Overlay & Snapshot on ANPR snapshots.

4. (Optional) Devices support radar function can configure **Vehicle Track** to view the vehicle movement track in radar's Web interface.

5. Click **Save**.

4. Overlay & Snapshot

On Screen Display (OSD) is the characters displayed on live videos and snapshots, for example, date, time, people counting statistics, and zoom.

1. Go to **Setup** > **Intelligent** > **Smart** > **Traffic Monitoring / ANPR** > **Overlay & Snapshot**.
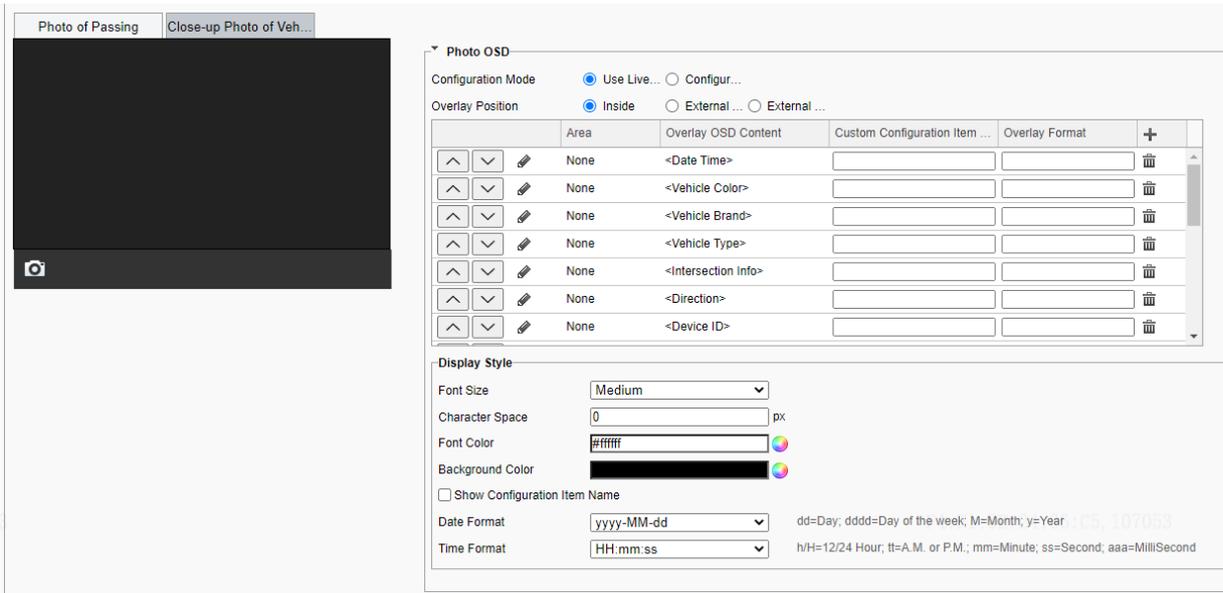
2. Select the OSD configuration mode.

- Use Live View OSD: Use the OSD that overlays on live video.

- Configure Separately: Configure photo OSD separately (different from live view OSD).

3. Click 🎨 next to **Font Color** and **Background Color** to set the font color and background color of the overlay information on image.

4. Set parameters for the single photo of passing.

Item	Description
Overlay Position	Select the position of OSD on the photo. - Inside: Overlay inside the image. - External Top: Overlay on the top of the image, and the image will be bigger. - External Bottom: Overlay on the bottom of the image, and the image will be bigger.
Font Size	Choose a font size as needed: **X-large**, **Large**, **Medium**, or **Small**. The font size is relative and will be adjusted automatically depending on the size of the photo.
Character Space	Set the distance between the OSD area and the edge of image. Range: 0-10 px.
Show Configuration Item Name	Choose whether to show the configuration item name, such as Date & Time, Device ID, etc.
Passing Close-up OSD	When select **Passing Close-up OSD**, the snapshot will be zoomed in. You can select **Close-up Photo OSD** to configure the OSD to be overlaid on the close-up photo, e.g., Date & Time, Device ID, etc.
Close-up Photo OSD	Select the OSD overlay mode from the drop-down list. - Selected OSD: Configure the close-up photo OSD separately. - Copy Single Photo of Violation OSD: Use the OSD that overlays on the single photo of passing.
Time Format	Choose a time format from the drop-down list: **HH:mm:ss**, **HH:mm:ss.aaa**, **hh:mm:ss tt**, or **hh:mm:ss.aaa tt**.
Date Format	Choose a date format from the drop-down list: **yyyy-MM-dd**, **MM-dd-yyyy**, **yyyy/MM/dd**, etc.

5. Set the overlay type(s). Overlay items should be configured with corresponding intelligent service snapshot handling or metadata collection.

Item	Description
Overlay Type	Select the checkbox, and the corresponding overlay information will be displayed on the photo. ● Date Time: Displays the device time on the photo. ● Location: Displays the device location on the photo. ● Direction: Displays the lane direction on the photo. See details in Snapshot Handling ● Device No.: Displays device number on the photo. ● Lane: Displays the lane on the photo. ● Camera ID: Displays the camera ID on the photo. ● Plate Number: Displays the license plate number on the photo. ● Motor Vehicle/Non-Motor Vehicle/Pedestrian Flow: Displays the real-time motor vehicle/non-motor vehicle/pedestrian flow. ● Intersection Info: Displays the intersection information of device's location. ● Custom 1/2/3: Displays customized contents on the photo. Up to 3 customized overlay information are allowed. ● Plate Type: Displays the license plate type on the photo. ● Vehicle Type: Displays the vehicle type on the photo. ● Vehicle Brand: Displays the vehicle brand on the photo. ● Vehicle/Plate Color: Displays the vehicle/license plate color on the photo. **Note:** ● The supported overlay types may vary with device model. Please refer to the actual interface. ● Plate types and plate numbers are obtained from metadata collection. Before configuration, you need to enable metadata collection. See Metadata Collection for details. ● Location, camera ID, device number, and intersection information can be retrieved in **Setup** > **System** > **Device Info**. See Device Information for details.
Customize Configuration Item Name	Customize the overlay type name.
Overlay Position	Click the drop-down list to select the position of OSD. ● Select the overlay position, for example, Area 1. You may change the position of the area by entering X and Y coordinates. After saving, the overlay information of Area 1 will be displayed in the corresponding position. ● Change the overlay area. For example, when change Area 1 to Area 2, the display position of overlay information will also be changed from Area 1 to Area 2.
Space Count	Set the number of spaces after the OSD content. Range: 0 to 10.
Line Feed Count	Set whether and how to break line(s) for the subsequent configuration items. Range: 0 to 3. ● 0: No line break. ● 1: Displays the subsequent contents in the second line in the same area. ● 2/3: Displays the subsequent contents in the third or fourth line in the same area. **Note:** ● In **External Top** or **External Bottom** mode, if the **Line Feed Count** is set to 2 or 3, the subsequent configuration items move to the next line. ● In **External Top** or **External Bottom** mode, up to 8 lines can be displayed.
⌃ / ⌄	Use the two buttons to rearrange the order of configuration items.
🗑	Delete an unneeded configuration item.

6. Click **Save**.

5.6.17 Elevator Entrance Detection

Elevator entrance detection detects whether bicycles or electric mopeds are entering the elevator in live view. Once detected, a snapshot will be captured and an alarm will be triggered.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Elevator Entrance Detection** and click ⚙ to configure it.
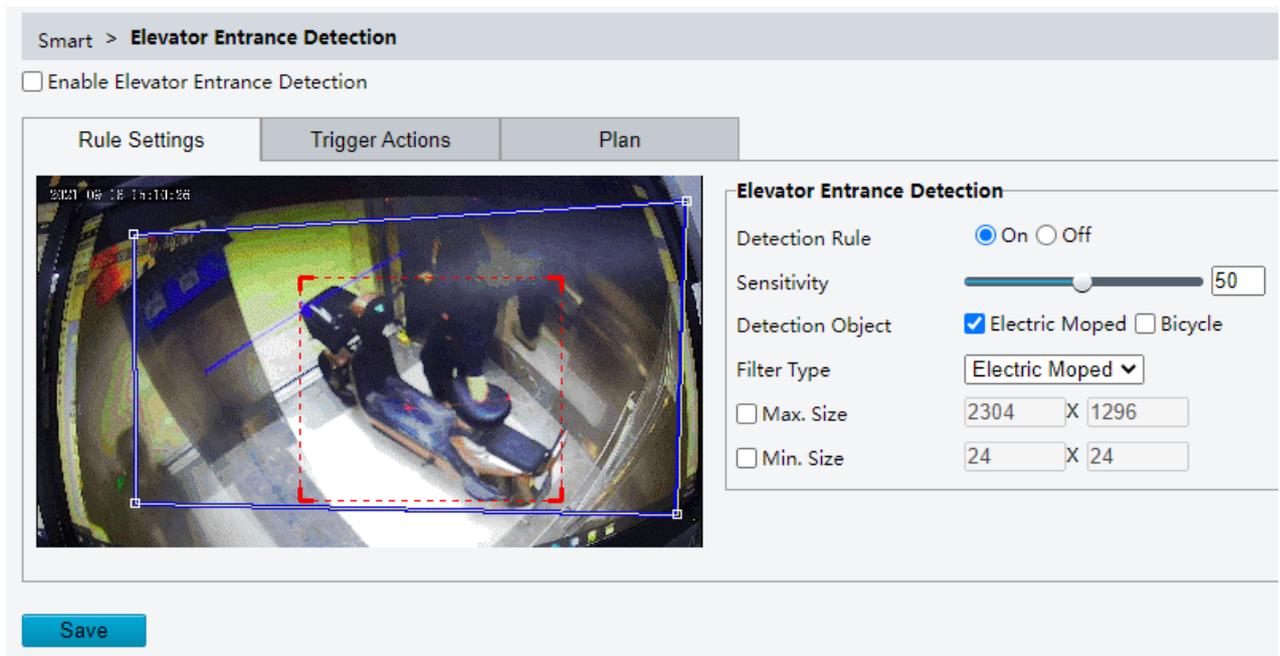
3. Draw the detection rule.

   (1) Select **On** for Detection Rule. A detection rule box appears on the left-side live video image.

NOTE!
For certain device models, Detection Rule is enabled by default. So you don't need to enable it repeatedly.

   (2) Adjust the position and size of the area or draw an area as needed.

   ➢ Adjust the position and size of the area.

   – Point to a border of the area and drag it to the desired position.

   – Point to a handle of the area and drag to resize it.

   ➢ Draw an area.

   Click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 6 lines are allowed.

NOTE!
When editing detection rules, you can click 🔓 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after you finish editing detection rules.

4. Set the detection rule.

Item	Description
Sensitivity	Set the detection sensitivity. The higher the sensitivity, the more likely electric mopeds and bicycles will be detected, and the more likely false alarms will occur.
Detection Object	Select the object to be detected, including **Electric Moped** and **Bicycle**.

Item	Description
Filter Type	After you select a detection object, you can set a filter rule for it. For example, if you have selected **Electric Moped** as a detection object, select **Electric Moped** from the **Filter Type** drop-down list and set the **Max. Size** or **Min. Size** for it, then electric mopeds larger than the Max. Size or smaller than the Min. Size will not be detected.
Max. Size/Min. Size	When enabled, a box appears on the image, you can point to a handle of the box and drag to resize it. The camera filters objects larger than the Max. Size or smaller than the Min. Size. The width and height of the maximum filter area must be greater than that of the minimum filter area.

5. Set the alarm-triggered actions and arming schedule. See [Alarm-triggered Actions](#) and [Arming Schedule](#) for details.

6. Click **Save**.

5.6.18 Heat Map

Detect the heat flow of people in different areas and integrate with the back-end platform to display the heat map in different colors.

> **NOTE!**
> - Only some device models support heat map configuration. This function is mainly used with the back-end platform. Please refer to the actual device.
> - Depending on the device capability, the linkage method (report data to center) of the heat map will only be displayed to supported devices.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Heat Map** and click 🔧 . A page as shown below appears.

3. Set the detection rules.

Item	Description
Number of Zones	Select the number of zones (1-4) from the drop-down list. The left live view page displays the default detection box. Adjust the position and size of the detection area as needed. ● To adjust the position of the detection area, point to a border of the area and drag it to the desired position. ● To adjust the size of the detection area, point to a handle of the box and drag to resize it. ● To redraw the detection area, click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. 3-6 lines are allowed. **Note:** When editing detection rules, you can click to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click to unlock the scene after you finish editing detection rules.
Background Update Rate	Drag the slider to adjust the background update speed. The greater the value, the faster the background updates.
Sensitivity	Drag the slider to adjust the detection sensitivity. The higher the sensitivity, the more likely small motions will be detected, and the more likely false alarms will occur. Set based on the scene and your actual needs.
Min. Object Size	Drag the slider to adjust the minimum object size. The greater the value, the more small objects will be filtered.
Update Interval (min)	Set the update interval of the heat map.

4. Set the arming schedule. See Arming Schedule for details.
5. Click **Save**.

5.6.19 People Flow Counting

People flow counting counts people passing a tripwire, including the number of people that have entered, left, and the total.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select the **People Flow Counting** checkbox, and click ⚙ to configure it.

3. A tripwire is displayed in the left preview window. Adjust the position and size of the tripwire as needed or draw a new one. Only one tripwire is allowed.

- Adjust the position and size of the tripwire, or draw a new tripwire:
  - ➢ Click the tripwire, point to an endpoint, and drag to change the length and direction.
  - ➢ Point to the tripwire and drag it to the desired position.
  - ➢ Click on the image and drag to draw a new tripwire.
4. Draw a detection area on the image. The default detection area is the full screen. You can draw a polygon. Make sure the tripwire is inside the polygon; otherwise, counting will fail.
  - ➢ Point to a handle of the detection area and drag to change its size and direction.
  - ➢ Point to a border of the detection area and drag it to the desired position.
  - ➢ Click and drag on the image to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. Up to 6 lines are allowed.

> 📝 **NOTE!**
>
> When editing detection rules, you can click 📷 to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click 🔒 to unlock the scene after you finish editing detection rules.


5. Set counting rules.

Item	Description
Data Report Interval(s)	Set a time interval for the camera to send people flow statistics to the server. You need to configure a server to receive the statistics. Default: 60. Range: 1 to 60.
Reset Counter at	● Select the **Reset Counter at** checkbox and set a time for the camera to clear people counting statistics on the OSD. ● To clear now, click **Clear**. **NOTE!** Only OSD statistics will be reset; it does not reset people flow statistics reported to the server.
Enter	Choose an entry direction: ● A- >B: From A to B. ● B- >A: From B to A.
Counting Type	Choose a counting type to display real-time statistics on live video. You need to configure a people counting OSD first. See OSD for details. ● Total: Displays the total number of people entering and leaving the area. ● People Entered: Displays the number of people entering the area. ● People Exited: Displays the number of people leaving the area.
People Present Alarm	Set thresholds for triggering people present minor/major/critical alarm. An alarm is triggered when the number of people present reaches a set threshold. Range: 1 to 180. ● Minor Alarm: Threshold for triggering a people present minor alarm. ● Major Alarm: Threshold for triggering a people present major alarm. The value must be greater than that of minor alarm. ● Critical Alarm: Threshold for triggering a people present critical alarm. The value must be greater than that of major alarm. **NOTE** The range supported may vary with camera model.

Overlay	● Bounding Box: Select **On** to add the bounding box ID within the code stream, which is suitable for viewing recordings with a bounding box on a third-party platform. ● Detection Rule: Select **On** to view the drawn detection rules in video streams.

6. Set the alarm-triggered actions and arming schedule. See [Alarm-triggered Actions](#) and [Arming Schedule](#) for details.

	Rule Settings	Trigger Actions	Plan	
No.	Trigger Actions			
1	People Present Minor Alarm			🖉
2	People Present Major Alarm			🖉
3	People Present Critical Alarm			🖉

Edit-Trigger Actions-People Present Minor Alarm   ✕

Alarm Output

☐ A → 1

☐ Alarm Sound

OK   Cancel
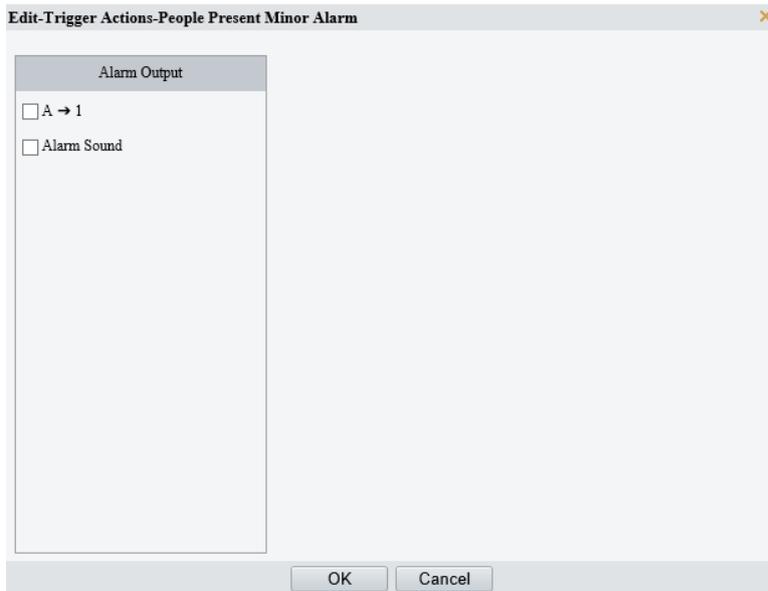
7. Click **Save**.

5.6.20 Crowd Density Monitoring

Crowd density monitoring monitors the number of people in a specified area and triggers an alarm if the number exceeds the set alarm threshold.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Crowd Density Monitoring** and click ⚙ to configure it.

3. A detection box is displayed in the left preview window by default. You can adjust the position and size of it or draw an area as needed. Only one area is allowed.

- Adjust the position and size of the area.

  Point to the area and drag it to the desired position. Drag the corners of the area to resize it.
- Draw an area.

  Click in the preview window to draw a polygonal area with up to 6 sides.
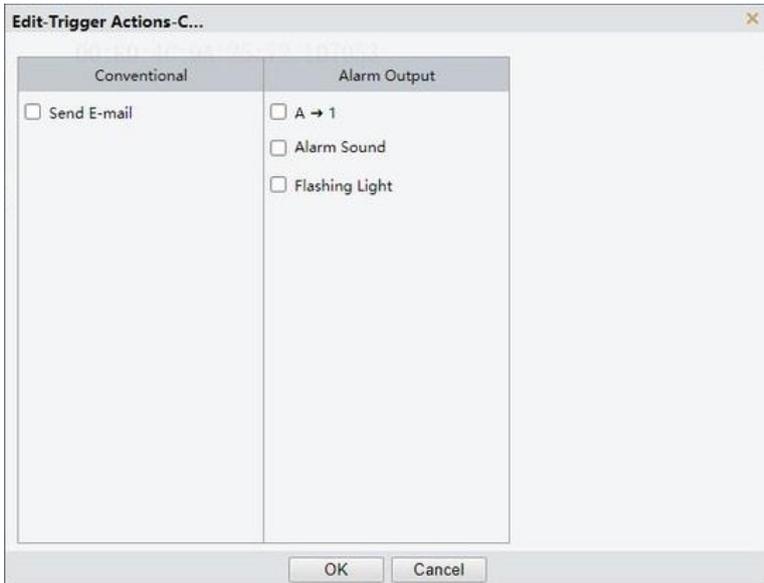
> **NOTE!**
>
> When editing detection rules, you can click [icon] to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click [icon] to unlock the scene after you finish editing detection rules.

4. Set the crowd density monitoring rule.

Item	Description
Report Interval(s)	Set the time interval for reporting crowd density statistics. Default: 60. Range: 1 to 60. For example, if the interval is set to 60, the camera will report crowd density statistics to the server every 60 seconds.
OSD	Adjust the OSD position: Specify the exact position of the OSD by entering the X and Y coordinates. The top left corner of the image is the origin (0,0), the horizontal axis is the X-axis, and the vertical axis is the Y-axis. **Note:** Drag the overlay area on the live view window will change its X/Y value correspondingly.
People Present Alarm	Set the crowd density alarm threshold. When the number of people in the specified area reaches a set threshold, an alarm is triggered. ● Minor Alarm: A minor alarm is triggered when the number of people in the specified area reaches the set value. ● Major Alarm: A major alarm is triggered when the number of people in the specified area reaches the set value. The value of major alarm must be greater than that of minor alarm. ● Critical Alarm: A critical alarm is triggered when the number of people in the specified area reaches the set value. The value of critical alarm must be greater than that of major alarm.
Overlay	● Bounding Box: Select **On** to add the bounding box ID within the code stream, which is suitable for viewing recordings with a bounding box on a third-party platform. ● Detection Rule: Select **On** to view the drawn detection rules in video streams.

5. Set the alarm-triggered actions and arming schedule. See and for details.

Rule Settings	Trigger Actions	Plan	
No.	Trigger Actions		
1	Crowd Density Minor Alarm		🖉
2	Crowd Density Major Alarm		🖉
3	Crowd Density Critical Alarm		🖉

Edit-Trigger Actions-C...		✕
Conventional	Alarm Output	
☐ Send E-mail	☐ A → 1	
	☐ Alarm Sound	
	☐ Flashing Light	

OK   Cancel

NOTE!
The rules supported may vary with device model. Please refer to the actual interface.

6. Click **Save**.

5.6.21 Auto Tracking

The camera can automatically track objects that trigger the predefined tracking rule.

1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Auto Tracking** and click ⚙ to configure it.

3. Set the tracking rule.

Item	Description
Tracking Object	Select the object to be tracked, including **Motor Vehicle**, **Non-Motor Vehicle**, and **Pedestrian**. **Note:** The objects supported may vary with device model. Please refer to the actual interface.
Filter Type	After you select a detection object, you can set a filter rule for it. For example, if you have selected **Motor Vehicle** as a detection object, select **Motor Vehicle** from the **Filter Type** drop-down list and set the **Max. Size** or **Min. Size** for it, then motor vehicles larger than the Max. Size or smaller than the Min. Size will not be detected.
Max. Size/Min. Size	When enabled, a box appears on the image, you can point to a handle of the box and drag to resize it. The camera filters objects larger than the Max. Size or smaller than the Min. Size. The width and height of the maximum filter area must be greater than that of the minimum filter area.
Tracking	Click to set tracking parameters. See Tracking for details.
Overlay	● Bounding Box: Select **On** to add the bounding box ID within the code stream, which is suitable for viewing recordings with a bounding box on a third-party platform. ● Detection Rule: Select **On** to view the drawn detection rules in video streams.

4. Set the alarm-triggered actions and arming schedule. See Alarm-triggered Actions and Arming Schedule for details.

5. Click **Save**.

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5.6.22 Smoke Detection

Smoke detection detects smoke in the visible light channel and triggers an alarm. The camera uploads the original snapshots triggered by smoke alarms by default.
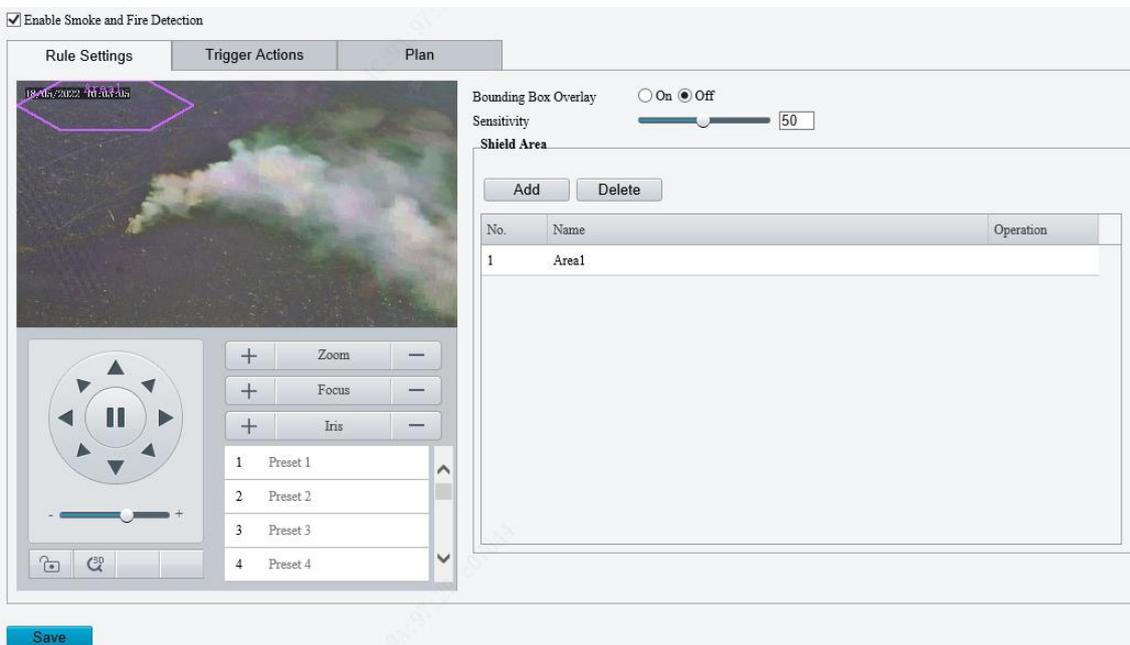
1. Go to **Setup** > **Intelligent** > **Smart**.

2. Select **Smoke Detection** and click ⚙ to configure it.
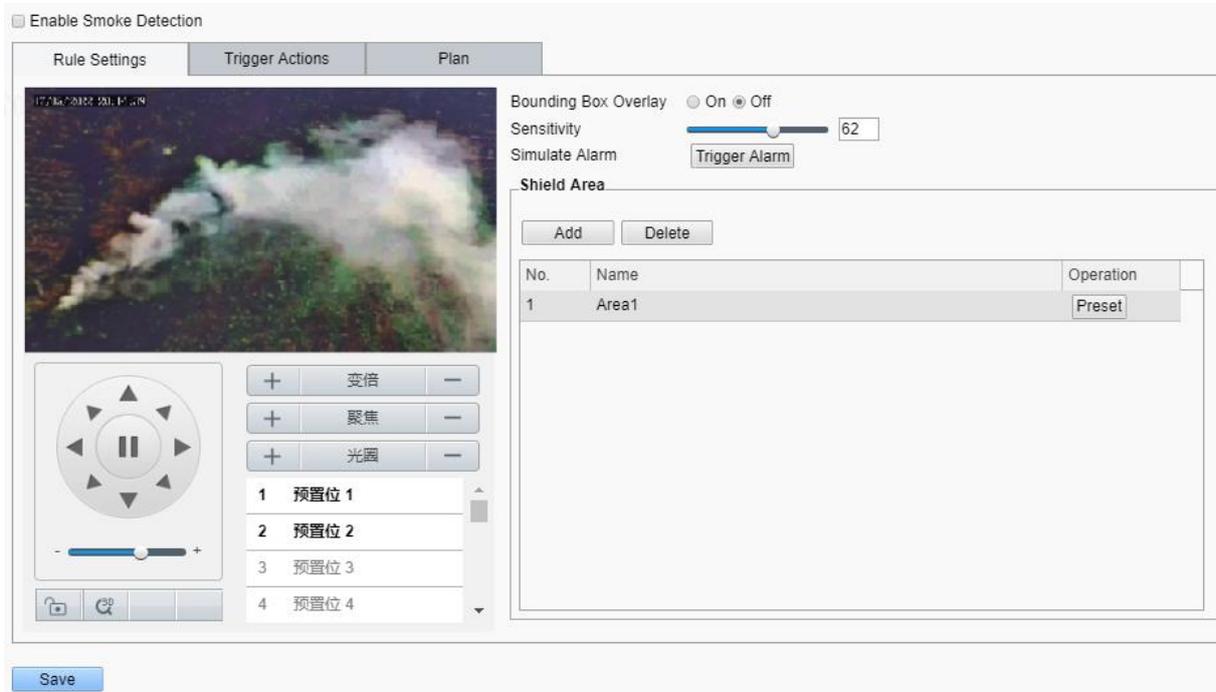
3. Set the detection rule.

- Bounding Box Overlay: A rectangular box is used to frame the object that triggers the detection rule for you to quickly locate it.

- Sensitivity: Set the detection sensitivity. The higher the sensitivity, the more likely smoke will be detected, and the more likely false alarms will occur.

- Simulate Alarm: Simulate fire or smoke to quickly trigger detection rules, improving the connection testing efficiency.

- Shield Area: Shield areas that may interfere with detection or trigger false alarms. A total of 64 shielding areas are allowed, with a maximum of 8 shielding areas per image.

    (1) Move the camera to the desired position manually or using presets.
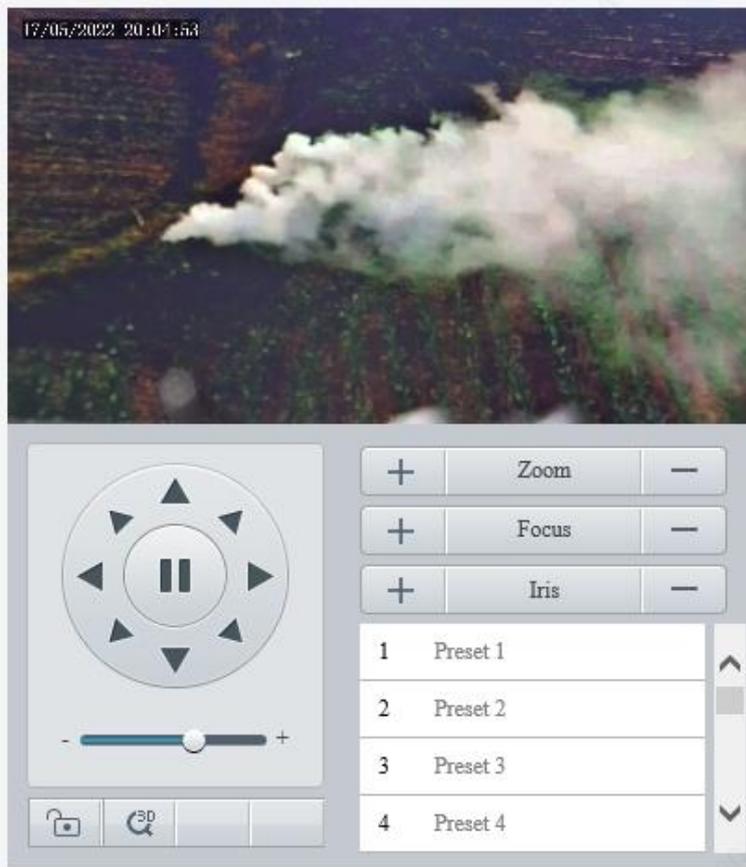
(2) Click **Add**.

(3) Adjust the position and size of the area or draw an area as needed.

➢ Adjust the position and size of the area.

Point to the area and drag it to the desired position. Drag the corners of the area to resize it.

➢ Draw an area.

Click in the preview window to draw a polygonal area with up to 6 sides.

17/05/2022 20:47:44

![note icon] **NOTE!**

When editing detection rules, you can click ![lock icon] to lock the scene to prevent pan/tilt movement caused by triggered detection rules, and click ![lock icon] to unlock the scene after you finish editing detection rules.

Item	Description
Preset	Click to move the shielding area to the center of the image. For example: Area 1 in the figure below is set as a shielding area. After you click **Preset**, the shielding area is moved to the center of the image. **NOTE!** The area box does not move with the shielding area.
Delete	Delete the shielding area.

4. Set the alarm-triggered actions and arming schedule. See [Alarm-triggered Actions](#) and [Arming Schedule](#) for details.
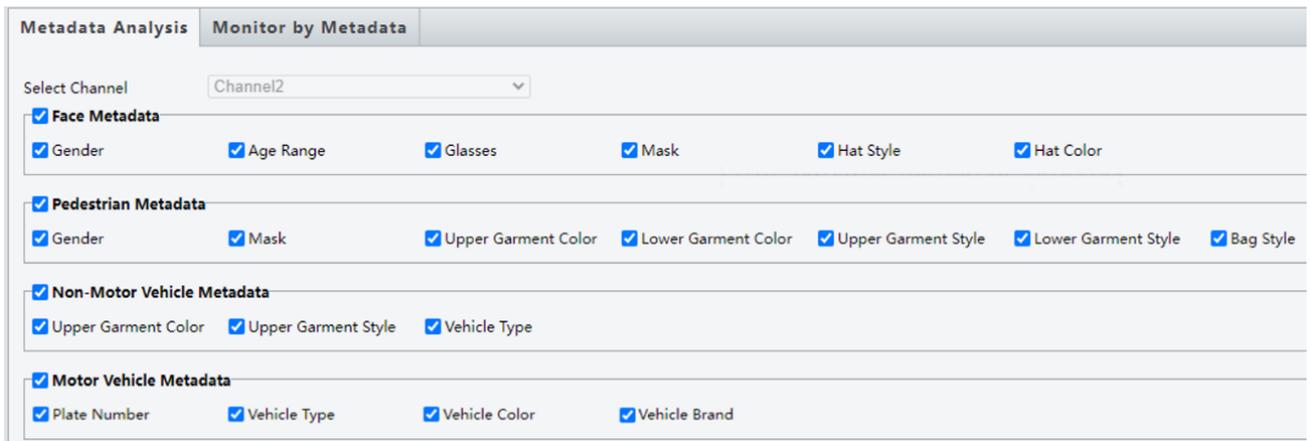
5. Click **Save**.

5.6.23 Metadata Collection

For dual-channel cameras, you can configure metadata collection parameters for the channels separately.

1. Collect Metadata

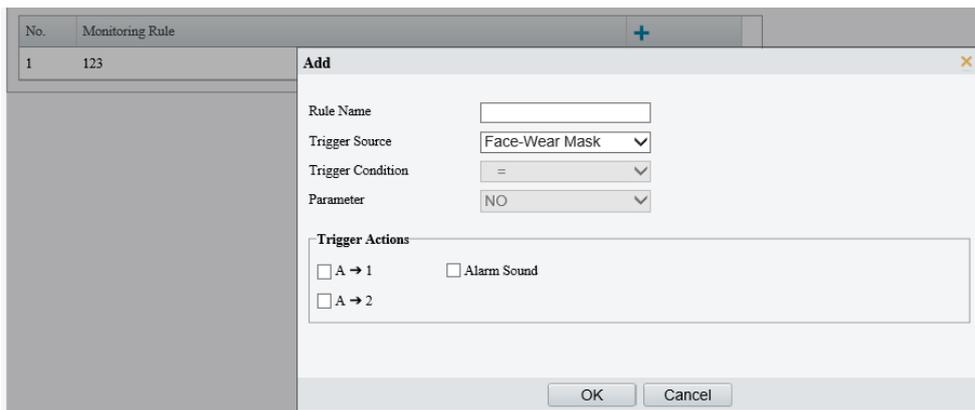Configure metadata collection rules to collect desired metadata information of the monitored objects.

1. Go to **Setup** > **Intelligent** > **Metadata Collection**.

2. Select the metadata to be collected.

3. Click **Save**.

2. Monitor by Metadata

1. Go to **Setup** > **Intelligent** > **Metadata Collection** > **Monitor by Metadata**.

2. Click ➕ to add a monitoring rule.

3. Set the monitoring rule.

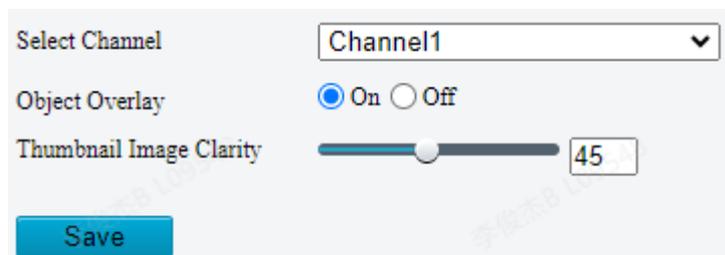| Item	Description
Rule Name	Set a name for the rule.
Trigger Source	Choose the metadata to trigger monitoring: **Face-Wear Mask** or **Face-Body Temperature**.
Trigger Actions	See [Alarm-triggered Actions](#) for details.

4. Click **OK**.

5.6.24 Advanced Settings

Advanced settings include snapshot clarity and detection mode for smart functions.

1. Photo

1. Go to **Setup** > **Intelligent** > **Advanced Settings** > **Photo Parameters**.

Select Channel	Channel1 ▾
Object Overlay	◉ On ○ Off
Thumbnail Image Clarity	——●——— 45

Save

2. Select a channel for configuration.
3. Select to enable or disable object overlay on the image. When enabled, a bounding box will overlay on the object in the original image.
4. Drag the slider or input a number to set the thumbnail image clarity. Please disable **Face Detection** before setting the photo parameters.
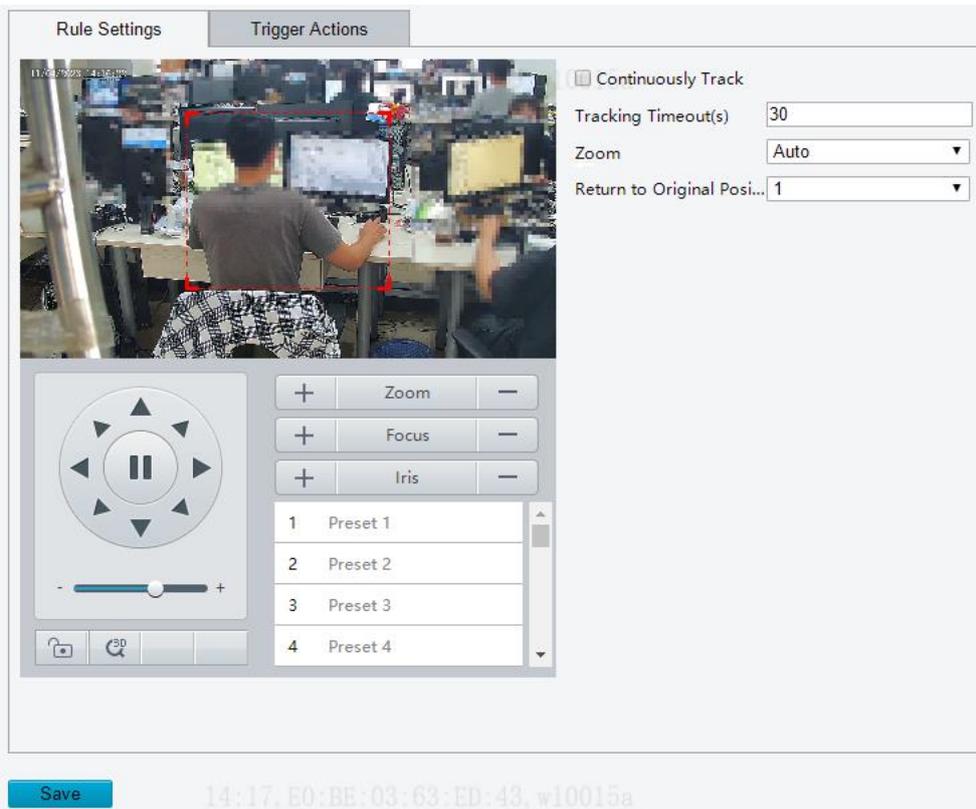5. Click **Save**.

2. Detection

1. Go to **Setup** > **Intelligent** > **Advanced Settings** > **Detection Parameters**.
2. Set the detection parameters.

Item	Description
Sync Intelligent Mark with Video	When enabled, intelligent marks (bounding boxes) will follow the detected objects (motor vehicle/non-motor vehicle/pedestrian/face) on live video images. **NOTE!** Before you enable **Sync Intelligent Mark with Video**, you need to complete the configuration of **Metadata Collection** first (see **Metadata** Collection).

3. Click **Save**.

3. Tracking

1. Go to **Setup** > **Intelligent** > **Advanced Settings** > **Tracking**.

2. Set the tracking parameters.

| Item	Description
Continuously Track	When enabled, the camera continuously tracks the object that triggers the tracking rule until the object disappears.
Tracking Timeout(s)	Set the tracking time. When the set time is reached, the camera stops tracking. **NOTE!** • This parameter is not configurable when **Continuously Track** is enabled. • If the object disappears within the set time, the actual tracking time is the time from the appearance to the disappearance of the object.
Zoom	Select the tracking zoom ratio. • Auto: The camera automatically adjusts the zoom ratio according to the object distance during tracking. • Current Zoom: The camera keeps the current zoom ratio during tracking.
Return to Original Position(s)	Set the return to original position time after the tracking target disappears. Range: 1s~10s, the default is 1s. For example, if the time is set to 5s, after the last tracking target disappears for 5s, the camera returns to the original position.

5.6.25 Panoramic Linkage

Panoramic linkage includes drag-to-zoom, click-to-link, tracking, and face snapshot functions. You need to calibrate on the panoramic and closeup images first (see Calibration) and then configure linkage (see Configure Linkage).

1. Calibration

Calibrate in closeup image and panoramic image to ensure accurate panoramic linkage.

1. Go to **Setup** > **Intelligent** > **Calibration**.
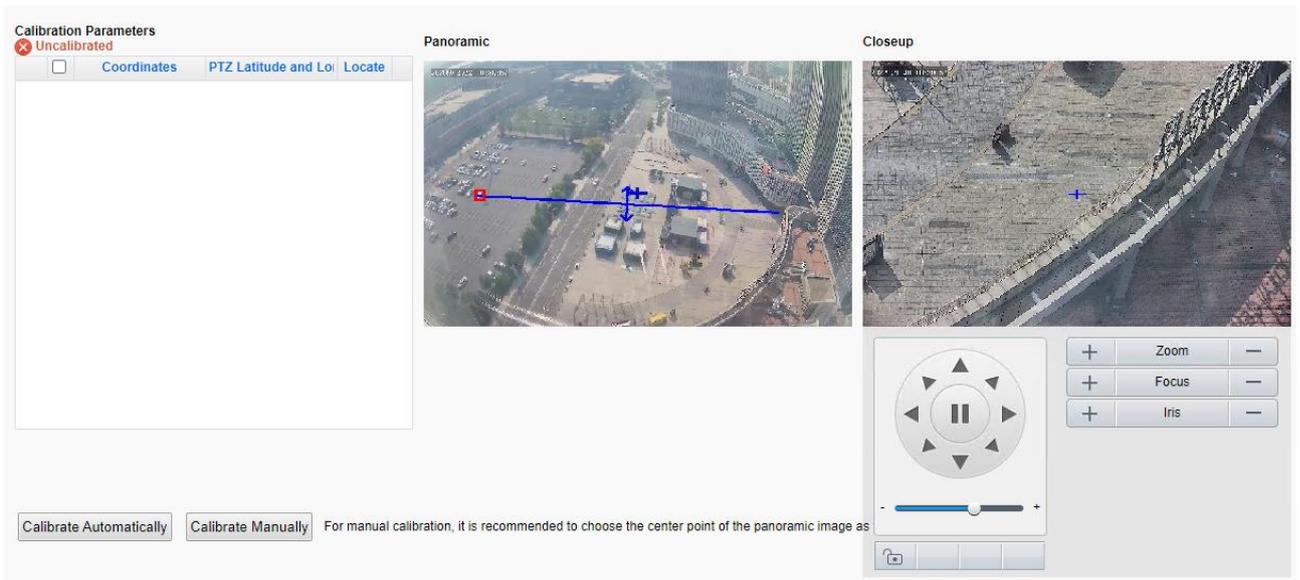
2. Choose a calibration mode.

> **NOTE!**
> - The calibration is valid in the current scene. After you switch the scene, you need to calibrate again.
> - Multi-channel device supports **Single Scene Calibration**. To calibrate multiple scenes, select the corresponding lens number to operate in sequence.
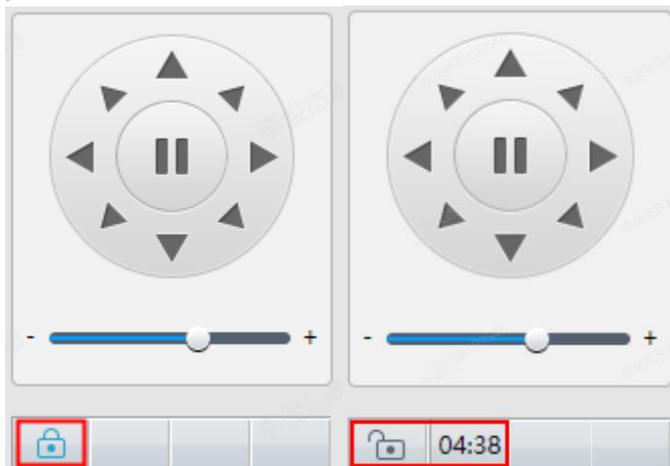
Calibrate Automatically: The system automatically calibrates after user manually calibrates the center of panoramic image and closeup image.

Calibrate Manually: User manually calibrates 5-12 times by choosing reference objects on the images. You may also use manual calibration to fine-tune after an automatic calibration.

> **NOTE!**
> Before calibration, click ![lock] to unlock the primary device. Then, you can adjust the primary device's position within a limited time.

- Calibrate Automatically
  (1) Click **Calibrate Automatically**.
  (2) The system calibrates automatically.

Item	Description
Calibrate Automatically	1. Calibrate image center manually: Click **Calibrate Automatically**, click on the closeup image to move the crosshair + till it points to the same position as the crosshair + on the panoramic image, click **Finish**. 2. Click **Next**, click **One-Click Calibrate** to start Calibrate Automatically.
Exit	Click **Exit** to quit calibration.
Finish	Click **Finish** to finish calibration. After automatic calibration succeeded, the scene status shows green.
Re-calibrate	You can click **Exit** to calibrate again. The scene status shows red if the calibration failed.

- Calibrate Manually

  (1) Click **Calibrate Manually**.

  (2) Calibrate manually.
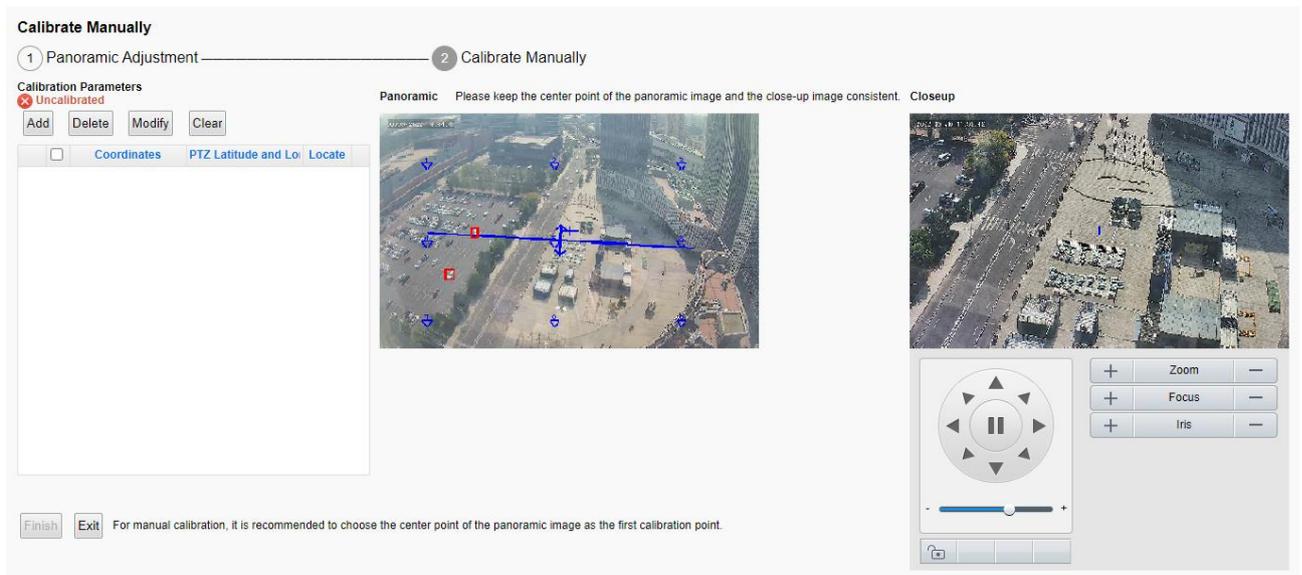
Item	Description
Exit	Quit calibration without saving the current calibration results; restore the previous calibration results.
Finish	Finish calibration and return to the **Calibration** page.
Add	Add a calibration point.
Delete	Delete a calibration point.
Modify	Modify a calibration point.
Clear	Clear all the calibration points on the current page. For certain devices, you need to clear calibration points page by page.

  (3) Calibration on a single calibration page is as follows:

  a Click **Add**. On the left-side panoramic image, click on the target calibration area. A small white block appears as you click, and the area is magnified, allowing you to fine-tune the position of the calibration point. To calibrate on other areas on the image, click **Exit** to return to the panoramic image and calibrate again.

b On the closeup image, find the point that you have marked on the panoramic image, click ![+] till the zoom ratio reaches the maximum, adjust the position of the calibration point (small white block) on the panoramic image till it overlaps with the crosshair on the closeup image, and click **Calibrate**.

c Repeat the above two steps to calibrate other points. Depending on the scene, you may need to calibrate 5-12 times. Click **Finish** when you complete. Certain devices may require multiple such calibration procedures.

2. **Configure Linkage**

● Drag to zoom

Draw a detection box on the panoramic image. The corresponding area will be magnified on the closeup image to show details.

(1) Go to **Setup** > **Intelligent** > **Panoramic Linkage**> **Linkage Parameter**.

(2) Select **Enable Panoramic Linkage**.

(3) Click **Save**.

(4) Go to **Setup** > **Intelligent** > **Panoramic Linkage**.

(5) Click **Drag to Zoom**. A rectangle detection area appears on the left-side panoramic image.

(6) Adjust the position and size of the detection area or draw a new one as needed.

➢ Point to a handle (vertex) of the rectangle and drag to resize the detection area.

➢ Point to a border of the rectangle and drag the detection area to the desired position.

➢ Click on the image and drag to draw a new detection area.

The right-side close-up image shows the magnified image of the detection area.

- Click to link

Click anywhere on the panoramic image, the closeup image shows the clicked point at the image center.

    (1) Go to **Setup** > **Intelligent** > **Panoramic Linkage**.

    (2) Select **Enable Panoramic Linkage**.

    (3) Click **Save**.

    (4) Go to **Setup** > **Intelligent** > **Panoramic Linkage**.

    (5) Click **Link**. When you click anywhere on the panoramic image, the closeup image will zoom in on the clicked point at the center of the image. Click **Cancel** to deactivate this function.

- Track mode

This feature is used with perimeter protection.

    (1) Go to **Setup** > **Intelligent** > **Panoramic Linkage**> **Linkage Parameter**.

    (2) Select **Enable Panoramic Linkage**.

(3) Set track parameters.

Item	Description
Operating Mode	Choose **Track Mode** from the drop-down list. When an object triggers perimeter protection rules, the PTZ camera will be triggered to track the object and give a closeup of the tracked object till the set tracking duration expires or the object disappears. If the PTZ camera supports mixed traffic detection, you may configure track & snapshot. See Alarm-triggered Actions and Storage. ● Auto Track: The camera chooses an object that triggered detection rules. ● Manual Track: User chooses motor vehicles, non-motor vehicles, and pedestrians. After the camera detects an object, you can click **Track** on the **Calibration** page and choose a bounding box to zoom in on and track the selected object.
PTZ Camera	● PTZ Camera IP Address: IP address of the PTZ camera. ● HTTP port: The default is 80. ● Zoom Coefficient: Enter a coefficient. The greater the coefficient, the greater the zoom ratio of the PTZ camera. **NOTE!** For certain models it's unnecessary to configure **PTZ Camera IP Address** and **HTTP Port**.
Tracking	● Select the **Continuously Track** checkbox. ● Set tracking duration. The tracking stops when the set duration expires or when the object disappears.
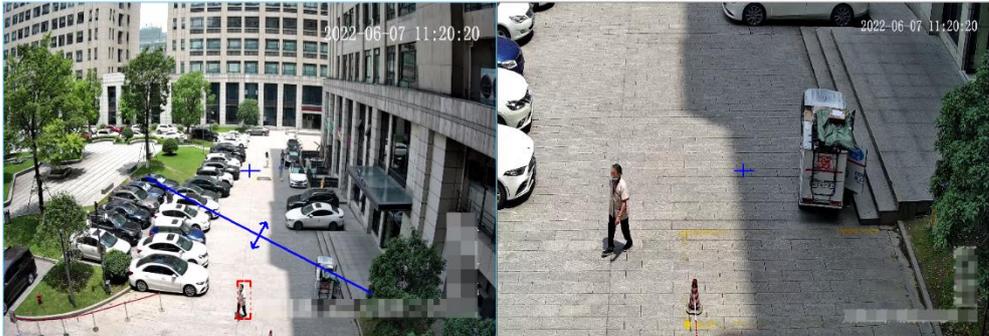
(4) Click **Save**.

5.7 Alarm

Configure the alarm function, so the camera can report alarms when an event occurs. Configure alarm linkage, so the camera can trigger other devices to perform specified actions when an event occurs.
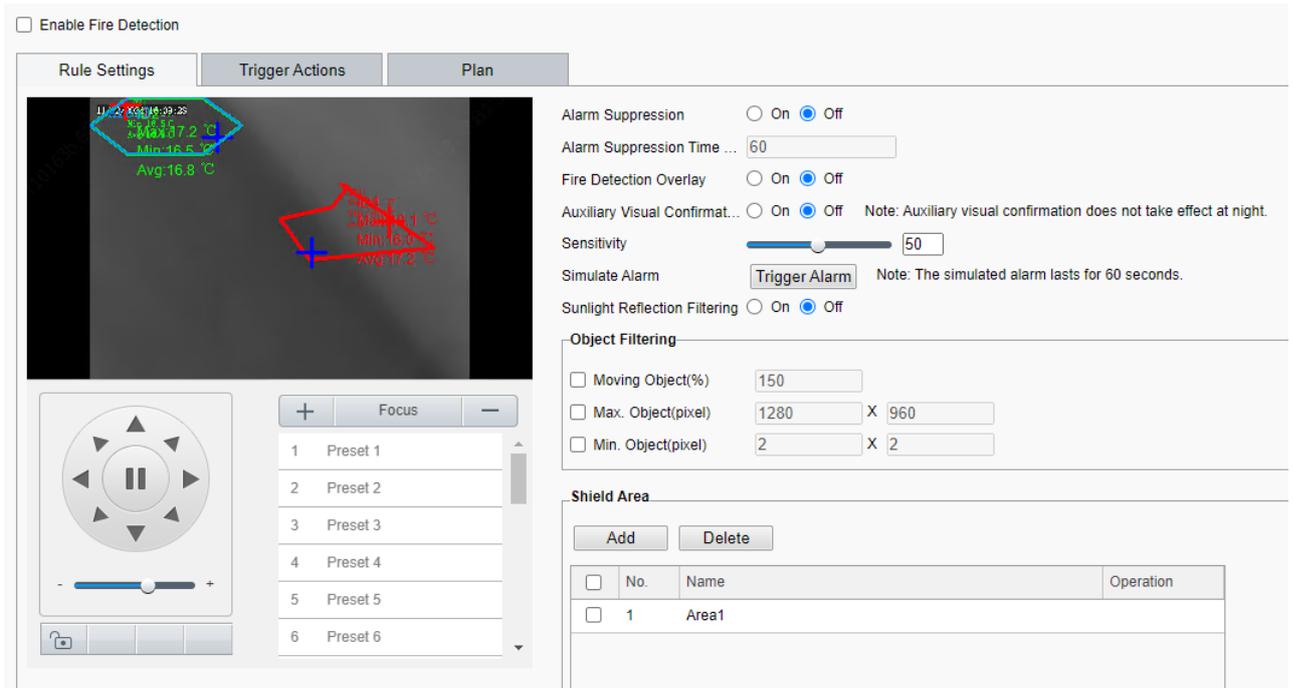
NOTE!
The supported alarms and linkage actions (or trigger actions) may vary with camera model.

5.7.1 Thermal Imaging Alarm

1. Fire Detection

Fire detection detects fire or heat in the environment and triggers an alarm according to the configured policy.

1. Go to **Setup** > **Events** > **Thermal Alarm** > **Fire Detection**. The page displayed may vary with device model.

2. Set detection rules.

Item	Description
Detection Mode	Choose a detection mode: **Fire Detection** or **Smoking Detection**.
Fire Detection Overlay	When enabled, object bounding boxes will be added to video streams. This feature is applicable to viewing recorded videos showing object bounding boxes on a third-party platform.
Auxiliary Visual Confirmation	When enabled, smoke and fire detection will assist in fire detection to make detection results more accurate. After fire detection detects a fire point, smoke and fire detection will detect smoke around the fire point. A fire alarm will be reported if smoke is detected. **NOTE!** • When this feature is enabled, all other smart functions except smoke and fire detection will be unavailable. • This feature is effective only in daytime.
Sensitivity	Drag the slider to adjust detection sensitivity. The higher the sensitivity, the more likely fire and heat will be detected, and the more likely false alarms will occur. The specific value should be determined according to the actual scene or test.
Simulate Alarm	Simulate fire or smoke to quickly trigger detection rules, improving the connection testing efficiency.
Fire Alarm Suppression	When enabled, fire detection will not report the same fire point repeatedly within a certain length of time.
Fire Alarm Suppression Time (min)	Enter an integer in the range of 1-600. **NOTE!** Fire detection will not report the detected fire point again within the set time.
Sunlight Reflection Filtering	When enabled, sunlight detected as a fire point will be filtered and will not trigger an alarm.
Object Filtering	Object filtering is intended to reduce false fire alarms by allowing user to specify the movement speed and the maximum and minimum sizes of detected fire points. This feature is disabled by default. To use this feature, select the checkboxes and input appropriate values.

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☑ Moving Object(%)	15		
☐ Max. Object(pixel)	125	X	2
☐ Min. Object(pixel)	1	X	1

- Moving Object(%): Enter an integer in the range of 10-1000. The detected object will be filtered if the changed position of the object reaches the set value.
- Max. Object(pixel): The default value is the maximum size to detect. Objects whose size exceeds the set value will be filtered.
- Min. Object(pixel): The default is 2*2. Objects whose size is less than the set value will be filtered.

NOTE!

The camera may falsely detect car windows or static reflective objects as fire points due to their high temperatures caused by sunlight. For example, **Moving Object** is set to 150%, the object is a car that is 1m long. Fire detection detects fire once per second, totally 3 times. If the vehicle's movement distance is greater than or equal to 1.5 meters in any of the three detections, then the ratio of the car movement distance to the car length is greater than or equal to 150%, then the object will not be considered a fire point and will be filtered. See the diagram below.

1M   1.5M

3. Set **Shield Area**.

Set shield areas to prevent false alarms caused by high-temperature objects in other areas on the image.and totally 64 are allowed on different images.

(1) Rotate the camera to the shield area. You may use presets to quickly rotate the camera to the intended direction.

(2) Click **Add**. A shield area appears in the upper left corner of the image.

(3) Drag it to the intended position or draw a new one. Repeat the step if necessary.

➢ To adjust the size of the detection area, point to a handle of the box and drag to resize it. To adjust the position of the detection area, point to a border of the area and drag it to the desired position.

➢ To redraw the detection area, click on the image and drag to draw a line. Repeat the action to draw more lines to form an enclosed shape as needed. 3-6 lines are allowed.

Item	Description
Preset	Click the button, the camera will rotate to display the shield area at the center of the image.
Delete	Select ☐ for area(s) to be deleted and click **Delete**.

NOTE!

When editing detection rules, you can click [icon] to lock the scene to prevent pan/tilt movement cause by triggered detection rules, and click [icon] to unlock the scene after you finish editing detection rules.

4. Set alarm linkage and an arming schedule.

Go to the **Trigger Actions** page to set alarm linkage. Go to the **Plan** page to set an arming schedule. See Alarm-triggered Actions and Arming Schedule for more information.

5. Click **Save**.

2. Temperature Detection

Temperature detection detects the temperature of objects in a specified area and triggers an alarm if the temperature exceeds the set alarm threshold. The camera reports an alarm according to the configured policy.

> **NOTE!**
> - This function is only available for thermal imaging cameras.
> - The function may vary with camera models.

1. Go to **Setup** > **Alarm** > **Thermal Alarm** > **Temperature Detection**.

2. Select **Enable Temperature Detection.**
3. Set temperature parameters.

Parameter	Description
Temperature Unit	Select the temperature unit, including **Celsius(˚C)** and **Fahrenheit(˚F)**.
Show Temperature Gradient Bar	When enabled**,** the temperature gradient bar appears on right of the live video, and user can observe the temperature more intuitively.
Tracking Highest&Lowest Temperature	When enabled, the highest and lowest temperature will be shown as a red and blue spot respectively that moves with temperature changes.
Overlay Temperature on Video	When enabled, temperature information will overlay on the original video (including live videos and recordings).
Overlay Temperature on Snapshot	When enabled, temperature information will overlay on snapshots.
Temperature Position on Snapshot	Select the temperature position on snapshot, including **Around Detection Area** and **Upper Left Corner of Image**.
Sunlight Reflection Filtering	When enabled, high temperatures due to sunlight will be filtered and will not trigger an alarm.

4. Set the detection rule. Up to 12 detection rules are allowed.

(1) Click ➕, add a temperature detection rule. A detection area is displayed in the left preview window by default. To draw a detection point or a detection line, select **Point** or **Line** from the drop-down box.

(2) Adjust the detection area, point or line as needed.

(3) Set temperature detection parameters.

5. Set the temperature comparison rule.

(1) Click ➕.
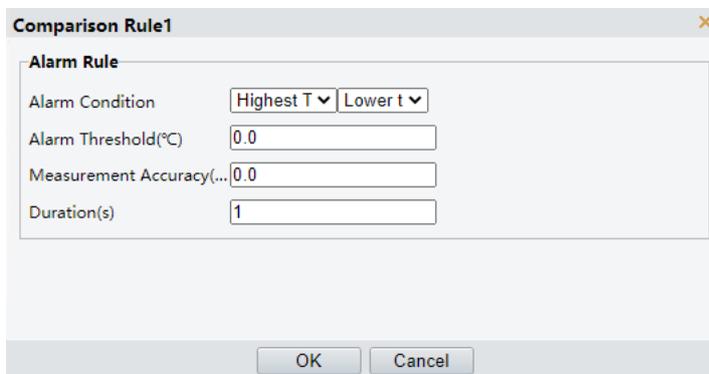
(2) Set the alarm rule.

Example: If the alarm threshold is set to to 100℃, with the measurement accuracy of 2℃, and the duration of 3 seconds, the camera will take snapshots and report an alarm when the temperature exceeds 102℃ for 3 seconds.

(3) Click **OK**.

6. Set alarm linkage and an arming schedule. See [Alarm-triggered Actions](#) and [Arming Schedule](#) for details.

7. Click **Save.**

5.7.2 Common Alarm

1. Motion Detection

1. Go to **Setup** > **Events** > **Common Alarm**.
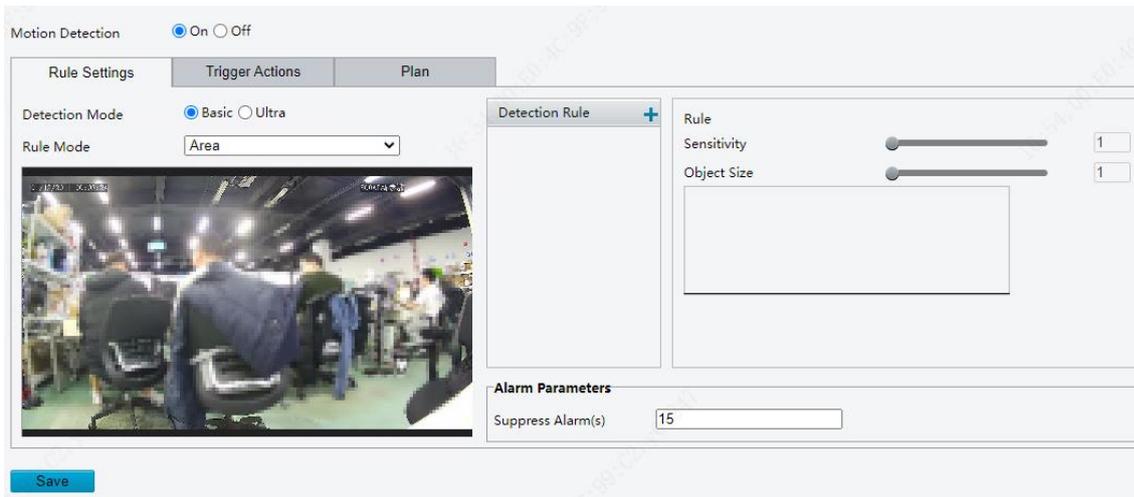
2. Choose the detection mode, including basic mode and ultra mode.

● Basic: Only moving objects in the specified areas or grids will be detected.

● Ultra: Objects (motor vehicle, non-motor vehicle, and pedestrian) in the specified areas in the ultra mode and moving objects in the basic mode will both be detected.

Basic Mode

The camera detects motions in specified detection areas or grids on the image and will take snapshots and report an alarm when detection rules are triggered.

● Detection area

(1) To add a detection area, click , then a rectangle appears on the image. Up to four detection areas are allowed.

(2) Adjust the position, size and shape of the rectangle detection area, or draw a new one.

➢ Point to a border of the area and drag it to the desired position.

➢ Point to a handle of the area and drag to resize it.

➢ Click anywhere on the image, and then drag to draw a new area.

(3) Set detection rules.

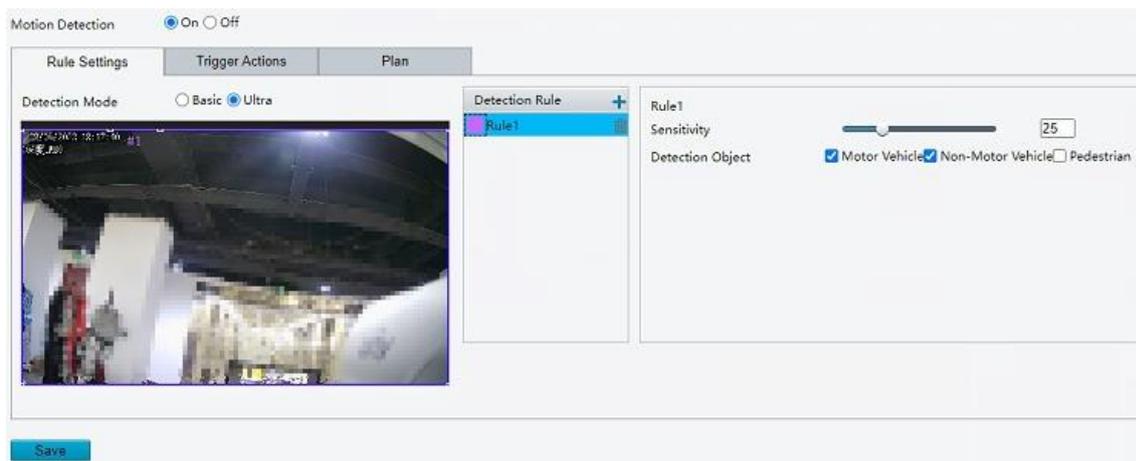| Item	● Description
Sensitivity	Drag the slider to adjust detection sensitivity. The higher the sensitivity level, the higher the detection rate of small motions, and the higher the false alarm rate. Set based on the scene and your actual needs.

Item	• Description
Object size	Drag the slider to set object size. • Object size: The ratio of the size of the detected object to the size of the detection area. An alarm is triggered when the ratio reaches the set value. To detect motion of small objects, you need to draw a small detection area separately. • Motion detection results of the current detection area are shown below in real time. The red means motions that have triggered a motion detection alarm. The height of the lines indicates the extent of motion. The density of the lines indicates the frequency of motion. The higher a line, the greater the extent. The denser the lines, the higher the frequency.
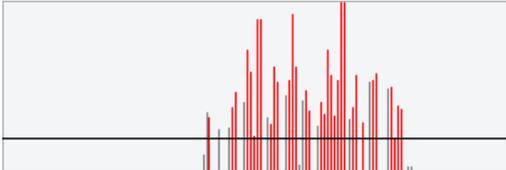
(4) Set **Suppress Alarm** to avoid receiving the same alarms within a certain length of time (alarm suppression time). For example, alarm suppression time is set to 5s, after an alarm is reported:

➢ If no motion is detected within the next 5s, new alarms can be reported after 5s when the alarm suppression time (5s) is over.

➢ If motion is detected within the next 5s, the alarm suppression time recounts from the time of the last alarm, and new alarms can be reported when the alarm suppressions time (5s) is over.

● Grid detection
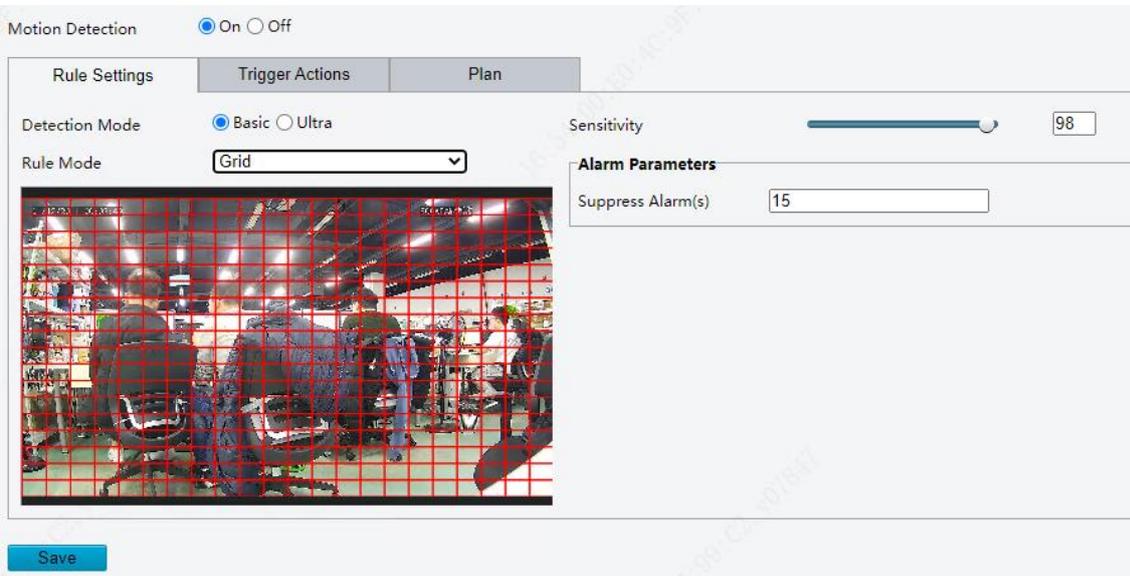
(1) Set grid detection areas (covered by grid).

(2) Edit detection areas as needed.

➢ Click or drag on grid areas to erase grids.

➢ Click or drag on blank areas to draw grids.

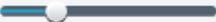(3) Drag the slider to adjust detection sensitivity.

The higher the sensitivity level, the higher the detection rate of small motions, and the higher the false alarm rate. Set based on the scene and your actual needs.

(4) Set **Suppress Alarm** to avoid receiving the same alarms within a certain length of time (alarm suppression time). For example, alarm suppression time is set to 5s, after an alarm is reported:

> ➢ If no motion is detected within the next 5s, new alarms can be reported after 5s when the alarm suppression time (5s) is over.

> ➢ If motion is detected within the next 5s, the alarm suppression time recounts from the time of the last alarm, and new alarms can be reported when the alarm suppression time (5s) is over.

3. Set alarm linkage and an arming schedule. See Alarm-triggered Actions and Arming Schedule for details.

4. Click **Save**.

Ultra Mode

The camera detects motions of motor vehicles, non-motor vehicles and pedestrians in specified detection areas and will take snapshots and report an alarm when detection rules are triggered.

1. Set detection rules.

   (1) To add a detection area, click ➕, then a rectangle appears on the image. Up to four detection areas are allowed.

   (2) Adjust the position, size and shape of the rectangle detection area, or draw a new one.

   > ➢ Point to a border of the area and drag it to the desired position.

   > ➢ Point to a handle of the area and drag to resize it.

   > ➢ Click anywhere on the image, and then drag to draw a new area.

   (3) Drag the slider to adjust detection sensitivity.

   The higher the sensitivity level, the higher the detection rate of small motions, and the higher the false alarm rate. Set based on the scene and your actual needs.

   (4) Select the detection object.

2. Set alarm linkage and an arming schedule. See Alarm-triggered Actions and Arming Schedule for details.

3. Click **Save**.

2. Tampering Detection

The camera triggers a tampering alarm after the lens is blocked for a certain length of time.

1. Go to **Setup** > **Events** > **Common Alarm** > **Tampering Detection**.
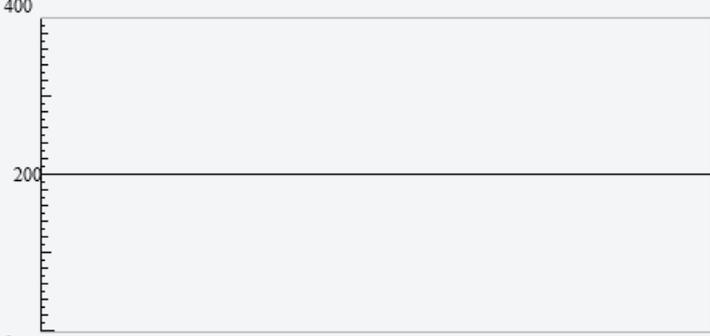
2. Select **Enable Tampering Detection**.

3. Set detection rules.

    (1) Drag the slider to adjust detection sensitivity. The higher the sensitivity level, the higher the detection rate, and the higher the false alarm rate. Set based on the scene and your actual needs.

    (2) Set the duration of lens blocking. The camera reports an alarm when the duration of lens blocking exceeds the set value. Set based on the scene and your actual needs.

4. Set alarm linkage and an arming schedule. See Alarm-triggered Actions and Arming Schedule for details.

5. Click **Save**.

3. Audio Detection

The camera monitors input audio signals and triggers an audio detection alarm when an exception is detected. Make sure an audio collection device (e.g. sound pickup) is connected, and audio detection is enabled (see Audio).

● When audio input mode is Line/Mic.

1. Go to **Setup** > **Events** > **Common Alarm** > **Audio Detection**.

2. Enable **Audio Detection**.

3. Set audio detection rules.

Item	Description
Detection Type	• Sudden Rise: Detects sudden rising sound volume, and triggers an alarm when the rise of volume exceeds the difference. • Sudden Fall: Detects sudden falling sound volume, and triggers an alarm when the fall of volume exceeds the difference. • Sudden Change: Detects sudden rising and falling sound volume, and triggers an alarm when the rise or fall of volume exceeds the difference. • Threshold: Triggers an alarm when the volume exceeds the threshold.
Difference/T hreshold	• Difference: The difference between two sound volumes. The camera triggers an alarm when the rise or fall of volume exceeds the difference (range: 0-400). This parameter is applicable when the detection type is **Sudden Rise**, **Sudden Fall**, or **Sudden Change**. • Threshold: The camera triggers an alarm when the sound volume exceeds the threshold (range: 0-400). This parameter is applicable when the detection type is **Threshold**.
Diagram of relative audio intensity	• Audio detection results are displayed and updated in real time. You can control the display progress by clicking the **Start/Stop** button. • The scales are used to measure sound volume. Gray indicates relative sound intensity. Red means sound volume that has triggered alarms.
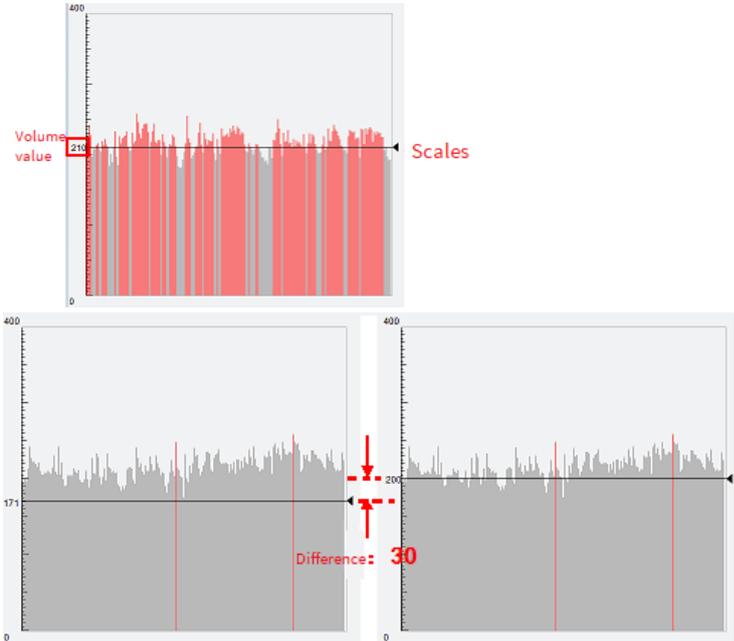
4. Set alarm linkage and an arming schedule. See [Alarm-triggered Actions](#) and [Arming Schedule](#) for details.

5. Click **Save**.

4. **Alarm Input**

The camera can receive alarms from external third-party devices such as infrared detectors, smoke detectors, etc. After alarm input is configured, the third-party device can send signals to the camera after an event occurs.

1. Go to **Setup** > **Events** > **Common Alarm** > **Alarm Input**.

2. Choose an alarm input from the drop-down list.

The number of alarm inputs available may vary with camera model. For example, if the camera has two alarm inputs on the tail cable, you can configure alarm input 1 and alarm input 2 separately.

3. Configure alarm input.

Item	Description
Alarm Name	The default name is the alarm input channel ID. You rename it as needed.
Alarm ID	Set an alarm ID as you need.
Alarm Type	Set the alarm type according to the alarm input device. ● If the alarm input device is normally open (N.O.), choose **N.C.**. ● If the alarm input device is normally closed (N.C.), choose **N.O.**.
Alarm Input	Click **On** to enable **Alarm Input**.

4. Set alarm linkage and an arming schedule. See <u>Alarm-triggered Actions</u> and <u>Arming Schedule</u> for details.

5. Click **Save**.

5. **Alarm Output**

The camera can output alarms to external third-party devices such as alarm bell, buzzer, etc. After alarm output is configured, the camera can output alarm signals when an alarm (such as motion detection alarm, tamping alarm) occurs and trigger the third-party device to perform certain actions.

1. Go to **Setup** > **Events** > **Common Alarm** > **Alarm Output**.


2. Choose an alarm output from the drop-down list. The number of alarm outputs available may vary with camera model.

3. Configure alarm output parameters.

| Item	Description
Alarm Name	The default name is the alarm output channel ID. You can rename it as needed.
Default Status	Choose the default status. The default is **N.O.**. • If the external alarm device is normally open (N.O.), choose **N.O.**. • If the external alarm device is normally closed (N.C.), choose **N.C.**.
Delay(s)	The duration of alarm output after the alarm is triggered. Set it as needed.
Relay Mode	The default is **Monostable**. • Monostable: The circuit can only remain in one stable state. When a trigger pulse is applied, the circuit switches to another state, and then automatically switches back to the original stable state. The circuit will repeat the same actions when the next trigger pulse arrives. • Bistable: The circuit can remain in two stable states. When a trigger pulse is applied, the circuit switches to another state, and remains in this state after the trigger pulse is removed. When the next trigger pulse is applied, the circuit switches back to the other stable state and remains in that state. **NOTE!** Set relay mode to better adapt to third-party alarm devices such as alarm lights. Please set the relay mode according to the trigger mode of the third-party alarm device.

4. On the **Output Schedule** page, select **Enable Plan**, and then set when the camera can output alarms. -
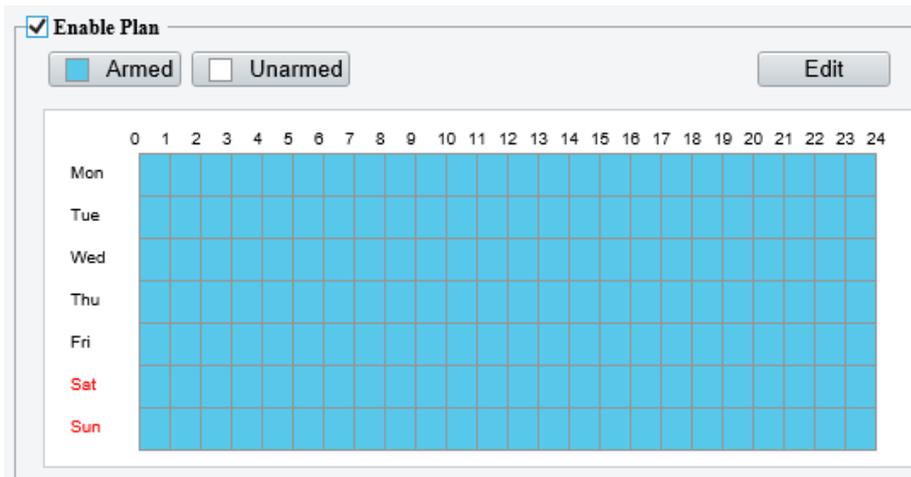
Two methods are available to make an arming schedule:

● Draw a schedule

Click **Armed**, and then drag on the calendar to set when the camera can output alarms. Click **Unarmed**, and then drag on the calendar to set when the camera cannot output alarms.
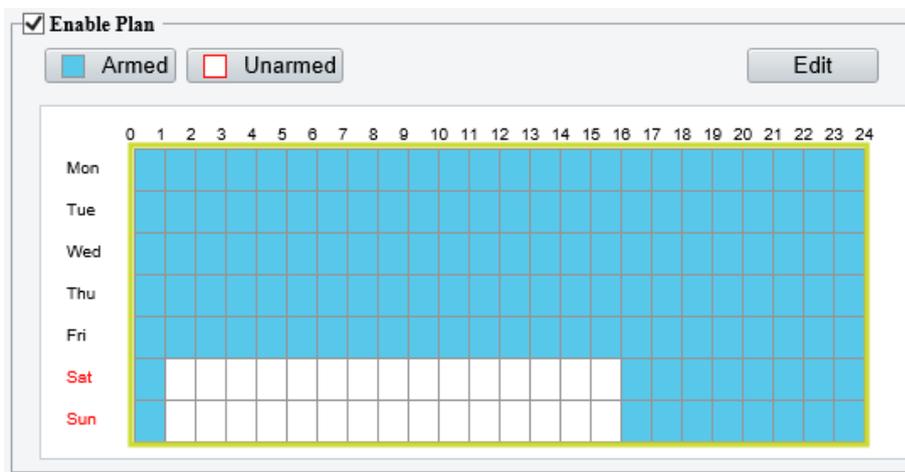
- Edit the schedule

Click **Edit**, set a refined schedule, click **OK**.

Edit						×
Mon	Tue	Wed	Thu	Fri	Sat	Sun

No.	Start Time	End Time
1	00:00:00	23:59:59
2		
3		
4		

Copy To ☐ Select All

☑ Mon ☐ Tue ☐ Wed ☐ Thu ☐ Fri ☐ Sat ☐ Sun

Copy

OK Cancel

5. Click **Save**.

6. **TOF Tampering Detection**

TOF tampering detection employs a TOF sensor to detect tampering behaviors and trigger alarms, solving the issue of elevator entrance detection failure due to malicious tempering. An alarm will be triggered when the tampering duration and distance reach the set threshold.

1. Go to **Setup** > **Alarm** > **Common Alarm** > **TOF Tampering Detection**.

2. Select **Enable TOF Tampering Detection**.
3. Set the TOF tampering detection rules.

Item	Description
Duration (s)	An alarm is triggered when the tampering duration reaches the set value. Range: 1 to 10.
Mounting Height (cm)	Set the device's mounting height according to the actual height of the elevator. The default is 255>=*>245.
Detection Distance (cm)	An alarm will be triggered when the obstruction object is within the detection distance from the sensor. A recommended default value will be provided after selecting the mounting height, or you can enter a custom value.

4. Set alarm linkage and an arming schedule. See <u>Alarm-triggered Actions</u> and <u>Arming Schedule</u> for details.
5. Click **Save**.

7. **Auto Floor Display**

Auto floor display is designed mainly for elevator scenarios to provide real-time floor and floor height information using one or multiple sensors and overlay the information on the image as OSD.

> **NOTE!**
> This function is only available on certain device models. Please refer to the actual interface.

1. Go to **Setup** > **Alarm** > **Common Alarm** > **Auto Floor Display**.

2. Go to the **Floor Config** tab and configure floor settings.

   ➢ **Ultra**: Automatically calculates floor heights based on a learning process.

   a Select **Ultra** and specify the actual floor range.

   b Select ✔ Enable to select all floors and click **Save**.

> 📝 **NOTE!**
> If the elevator does not stop at certain floors, deselect those floors.

   c Click **Start Learning** and manually operator the elevator to stop at each floor within the specified range to complete the learning process.

> 📝 **NOTE!**
> Ensure the elevator is stationary before clicking **Start Learning**.

   ➢ **Manual**: Requires manual entry of accurate floor heights for each floor.

   d Select **Manual** and specify the floor range and the default floor height.

   e Enter the accurate height for each floor.

> 📝 **NOTE!**
> The manual mode requires you to enter the correct floor range and floor height, and perform a manual floor calibration.

Item	Description
Floor Range	Enter the actual floor range. Range: -20 to 1 - 2 to 50.

Item	Description
Default Floor Height (m)	The default floor height, which is configurable only in manual mode.
Sign	The sign for the corresponding floor, which will be displayed in OSD. For example, the sign for the 5th floor is 5F.
Floor	The actual floor number, which is automatically generated based on the floor range and is not configurable.
Floor Height	The actual height of the floor. For example, the height of the 2nd floor is 3m.

3. Go to the **OSD Config** tab. You can customize the OSD prefix and enter X and Y values to set the coordinates of the OSD overlay area.

   The positive X-axis is horizontal to the right, and the positive Y-axis is vertical downward.

4. (Optional) If the displayed real-time floor does not match the current actual floor, you can enter the current actual floor in the **Floor Calibration** filed and click **Calibrate** to update its information.

> **NOTE!**
> Ensure the elevator is stationary before clicking **Calibrate**.

5. Click **Save**.

8. Event Linkage

Configure event linkage rules on the IPC side so when a specified alarm occurs on a third-party platform, IPC can perform linkage actions such as taking snapshots and reporting alarm.

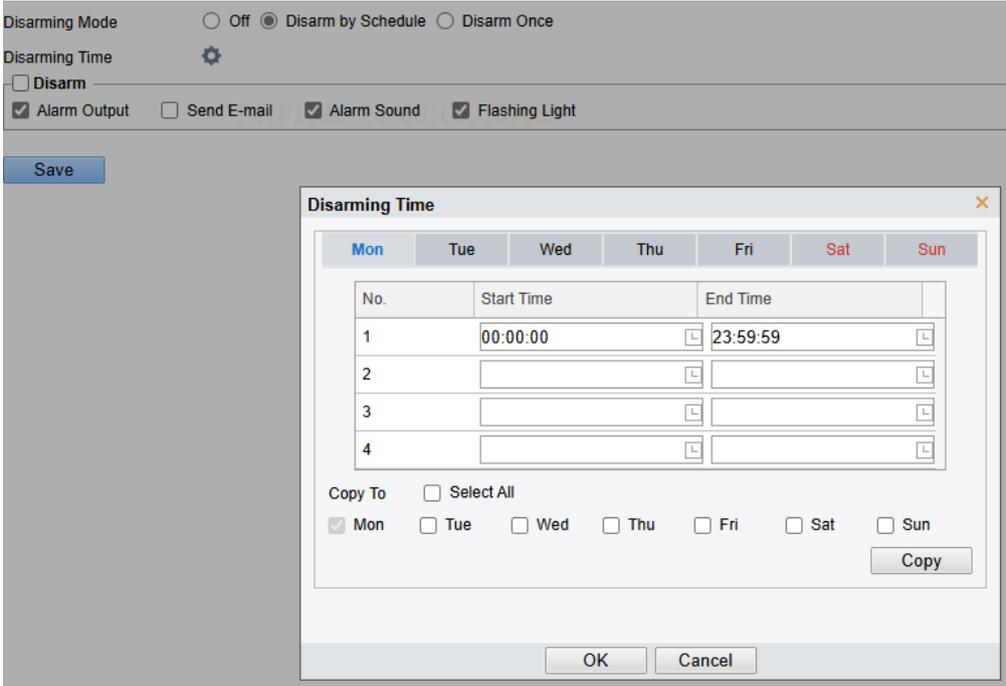1. Go to **Setup** > **Alarm** > **Common Alarm** > **Event Linkage**.

2. Select an event type.

3. Custom the event name and event code.

4. Select **On** next to **Event** to enable event linkage. This option is disabled by default.

5. Set the alarm-triggered actions and arming schedule. See <u>Alarm-triggered Actions</u> and <u>Arming Schedule</u> for details.

6. Click **Save**.

5.7.3 One-key Disarming

The camera cannot trigger linked actions when disarmed.

1. Go to **Setup** > **Events** > **One-key Disarming**.

2. Choose a disarming mode.

● Disarm by Schedule: Disarm according to a weekly schedule.

● Disarm Once: Disarm during a specified time period.

3. Configure disarming schedule or time according to the disarming mode you chose. The disarming schedule or time applies to all the actions selected.

● Disarm by schedule: Click ⚙ to configure disarming time.

● Disarm Once: Set the disarming time.

4. Choose actions to be disarmed. The actual actions available, for example, **Alarm Output, Send E-mail, Alarm Sound, Flashing Light,** may vary with camera model and version.

5. Click **Save**.

5.8 Storage

Go to **Setup** > **Storage** > **Storage**.

Storage Medium	Memory Card ⌄	Format	☑ Enable

Storage Medium Status: Normal

Total Capacity 29 GB, Free Space 27 GB.

Allocate Capacity

Video(GB)	22	(The remaining capacity is used for image storage.)
Common Snapshot(GB)	5	(The remaining capacity is used for smart snapshot storage.)
Smart Snapshot(GB)	2	

Video Storage Info

Storage Policy	○ Manual and Alarm Recording ○ Scheduled and Alarm Recording ◉ Alarm Recording Only
When Storage Full	◉ Overwrite ○ Stop
Post-Record(s)	60

Save

5.8.1 Memory Card

Set **Storage Media** to **Memory Card**, and select **Enable**.

> **NOTE!**
> - Before you use this function, make sure a memory card has been mounted on the camera.
> - If you want to remove the memory card, make sure to unselect **Enable** for it before removal; otherwise, the memory card may malfunction, resulting in the loss of the previously restored photos and recordings.

1. Storage Management

Storage Management

Storage Medium Status:

Normal   [Format]

Encryption Status: Encrypted   [Encrypt&Format] [Verify] [Change Password]

Total Capacity 117 GB, Free Space 117 GB.

> **Caution!**
> To format a storage medium such as a memory card, stop using it first.

- Format: Format the storage medium without encryption.
- Encrypt&Format: Set an encryption password for the memory card, and then format it.

Example: When inserted an unencrypted memory card, to use the memory card encryption function, you must perform **Encrypt&Format** operation to encrypt the memory card. After encryption, insert the card into other device, if no encryption password is obtained or the password stored in the device is not consistent with the password of the memory card, then storage services such as recording storage, download, and search will not be available.

- Verify: Insert an encrypted memory card, if the password of the memory card is not consistent with the encryption password stored in the device, you can click Verify. When succeeded, you can normally use storage services, such as recording storage, download, and search.
- Change Password: You can change the encryption password if the memory card is encrypted.
- Storage Medium Status: Displays the health status of the memory card.

> **NOTE!**
> - This feature is only available to certain devices. Please refer to the actual interface.
> - To monitor the memory card's health status, use a TF card that supports the health status monitoring function.

2. Allocate Capacity

Allocate storage space as needed.

Select Channel	Channel1 ∨
Allocate Capacity	
Channel1 ● Channel2 ○	
Channel Total Capacity(... 0	Channel Free Space 0 GB
Video(GB) 0	(The remaining capacity is used for image storage.)
Common Snapshot(GB) 0	

3. Storage Information.

Select a channel for storage information configuration first.

- To store manual recordings and alarm recordings

Choose **Manual and Alarm Recording**. By default, the main stream is stored.

Storage Policy	● Manual and Alarm Recording ○ Scheduled and Alarm Recording ○ Alarm Recording Only
Stream	Main Stream ∨
When Storage Full	● Overwrite ○ Stop
Post-Record(s)	60

Item	Description
When Storage Full	• Overwrite: When space is used up on the memory card, new data overwrites old data. • Stop: When space is used up on the memory card, the camera stops saving new data.
Post-Record(s)	Sets the duration of alarm-triggered recording after the alarm ended.

- To store scheduled recordings and alarm recordings

    (1) Choose **Scheduled and Alarm Recording**.

Storage Policy	○ Manual and Alarm Recording ● Scheduled and Alarm Recording ○ Alarm Recording Only
Stream	Main Stream ∨
When Storage Full	● Overwrite ○ Stop
Post-Record(s)	60

    (2) The default recording schedule is 24/7. To change the schedule, drag on the calendar or click **Edit**.

- To store alarm recordings only

Choose **Alarm Recording Only**.

5.8.2 Network Disk

Use a Network Attached Storage (NAS) server to store camera videos and snapshots.

1. Set **Storage Medium** to **NAS**.
2. Enter the server address.
3. Enter the path to the destination folder on the NAS server. You can find the path by viewing the folder properties.

	NOTE! For dual-channel cameras, the server address and folder path are the same for the two channels. By default, the folder space is evenly shared by the two channels, among which, 85% space is used to store videos, and 15% is used to store common snapshots. You may change the Channel Total Capacity, video space, and common snapshot space as needed.

	NOTE! The path name may include the following: letters, digits, dots, spaces, and symbols / : , - _ @ = Other characters are not allowed and will cause failed NAS test.

4. After the test succeeded, click **Save**.

5.8.3 FTP

Upload images and videos to an FTP server for storage.

1. Go to **Setup** > **Storage** > **FTP**.

2. Configure server parameters.

Item	Description
Server IP	IP address of the FTP server.
Port No.	The default is 21. You can set a different port as needed.
Username	Username used to log in to the FTP server.
Password	Password used to log in to the FTP server.
Test	Test the connection to the FTP server.
Upload Images	Select the checkbox if you want to upload common (non-smart) snapshots. To configure an FTP server for smart snapshots, go to **Setup** > **System** > **Server** > **Intelligent Server**. Overwrite Storage: When the number of images in the folder of the lowest level reaches the threshold, the server continues to save new images by overwriting the existing images. For example, if the folder path is \IP\date, the level-2 folder "date" is the lowest. When the images uploaded on Jan. 4, 2022 exceeds 1,000, existing images in the 20220104 folder will be overwritten by new images. **NOTE!** • If you select **Overwrite Storage**, make sure the last naming element of filename is **Photo No.**. • The default overwrite storage threshold is 1000 images, and the maximum is 100,000 images.
Upload Video	Select if you want to upload alarm-triggered recordings.
Convert Path into UTF8 Format	Select if you want to convert the path into UTF8 format.
Post-Record(s)	Fill in the number of seconds, which is the duration of the alarm-triggered recording after the alarm has ended.

3. Configure the storage path.

Item	Description
Photo	File path, up to 6 levels. If not specified, the default path "\IP\Date\Common" will be used. Common means common snapshots.
	Filename, up to 20 fields are allowed. If not specified, the sequence number such as 1, 2, 3, … will be used as the filename.
Recording	File path, up to 6 levels. If no path is specified, the default path "\IP\Date\Common" will be used.
	The default filename is "S+recording start time+E+recording end time". For example, S20220104174903E20220104175002.

4. Click **Save**.

5.9 Security

The security functions available may vary with camera model and version.

5.9.1 User

Go to **Setup** > **Security** > **User** to add, edit, or delete users.

No.	Username	User Type
1	admin	Admin

• Add user

1. Click **Add**.

Common User

Operator

2. Configure the parameters.

Item	Description
Username	Set the username that you prefer.
User Type	Choose **Common User** or **Operator**. **NOTE!** • Up to 32 users are allowed, including admin (at least one), common users and operators (up to 31). • Admin has all permissions in the system, including device operation and user management. • Operator has higher privilege than common user and can configure in the web interface.

Item	Description
Password	Enter a password. **NOTE!** A strong password is required for new user. A strong password shall include 9-32 characters consisting of letters, digits, and special characters.
Confirm Password	Enter the password again.
Select Permission	Different user types have different permissions. Select permissions you want to assign to the new user. **NOTE!** You can select the **Select Permission** checkbox to select/deselect all permissions.

3. Click **OK**.

- Edit user information

1. Click the user.

2. Click **Edit**.

Common User

Admin

3. Configure the parameters.

Item	Description
Admin Password	Password of administrator, not the user being editing.
Password	Enter a password that you prefer.
Confirm Password	Enter the password again.
Select Permission	Different user types have different permissions. Select permissions you want to assign to the new user. **Note** You can select the **Select Permission** checkbox to select/deselect all permissions.

4. Click **OK**.

📝	**NOTE!**
	• Only admin can change the device password. The new password must be different from the old.
	• Only admin can change the username and password of a new user. If the user is logged in, the user will log out automatically and must use the new username and password to log in.

● Delete a user

Click the user, click **Delete**, and then click **OK** to confirm.

5.9.2 HTTPS

Enable HTTPS to securely transmit video data of the camera.

1. Go to **Setup** > **Security** > **Network Security** > **HTTPS**.

2. Click **On** to enable HTTPS.

3. (Optional) Click **On** to enable Auto Redirect to HTTPS. When enabled, you will be automatically redirected to the login page via the HTTPS protocol. After re-login, a secure information transmission channel is established.

> 📝 **NOTE!**
> - When disabled, you can use either HTTP or HTTPS protocol to log in.
> - The default HTTPS port is 443. To use a different port, go to **Setup** > **Network** > **Port**.

4. Click ✔ to choose a server certificate.

- Use the default certificate
- Use a certificate created in Certificate Management. See Certificate Management for details.

> 📝 **NOTE!**
> Only certificates with a "normal" status can be selected. Certificates with an "expired" status are not displayed.

5. Click **Save**.

5.9.3 Authentication

Configure RTSP authentication and HTTP authentication to improve the security of network transmission. Only after successful authentication can data such as videos, audios, text, and images be transferred on the network.

1. Go to **Setup** > **Security** > **Network Security** > **Authentication**.

2. Choose an authentication mode.

Item	Description

RTSP Authentication	Choose an authentication mode from the drop-down list. The default is **Digest**.
	● Basic: Basic authentication. The username and password are encrypted by base 64, which imposes serious security risks.
	● Digest: Digest authentication. Displays RTSP digest algorithm configuration. The default is **MD5**.
	  ➢ Digest MD5: Digest authentication, which uses MD5 to protect the username, password, and domain of the requester, not transferred on network in plaintext and provides higher security.
	  ➢ Digest SHA256: Digest authentication, which uses SHA256 for authentication and provides higher security than Digest MD5.
	  ➢ Digest MD5/ SHA256: Supports MD5 or SHA256 algorithm adaption.
	● None: Transmit message without authenticating the RTSP address.

Web Authentication	Choose an authentication mode from the drop-down list. The default is **Digest**.
	● Digest: Digest authentication. Displays Web digest algorithm configuration. The default is **MD5**.
	  ➢ Digest MD5: Digest authentication, which uses MD5 to protect the username, password, and domain of the requester, not transferred on network in plaintext and provides higher security.
	  ➢ Digest SHA256: Digest authentication, which uses SHA256 for authentication and provides higher security than Digest MD5.
	  ➢ Digest MD5/ SHA256: Supports MD5 or SHA256 algorithm adaption.
	● None: Transmit message without authenticating the Web address.

3. Click **Save**.

5.9.4 Registration Information

You can set to hide vendor information of the camera from the server.

1. Go to **Setup** > **Security** > **Registration Information**.
2. Enable **Hide Vendor Info**. Vendor information will not be displayed on the management platform.

3. Click **Save**.

5.9.5 ARP Protection

Configure ARP protection by binding the gateway's IP address with its MAC address to prevent ARP spoofing attacks.

1. Go to **Setup** > **Security** > **Network Security** > **ARP Protection**.

2. Enable **ARP Protection**.
3. Enter the gateway's MAC address.
4. Click **Save**.

5.9.6 IP Address Filtering

Use IP address filtering to allow or forbid access from specified IP addresses.

1. Go to **Setup** > **Security** > **Network Security** > **IP Address Filtering**.

2. Click **On** to enable IP Address Filtering.

3. Choose **Allowlist** or **Blocklist**.

   ➢ Allowlist: Only allows access from the added IP addresses.

   ➢ Blocklist: Denies access from the added IP address.

4. Click ➕ , enter IP addresses.

   ➢ Up to 32 IP addresses can be added. Duplicate addresses are not allowed.

   ➢ The first byte of the IP must be 1-233, and the fourth byte cannot be 0. Invalid IP addresses such as 0.0.0.0, 127.0.0.1, 255.255.255.255, and 224.0.0.1 are not allowed.

5. Click **Save**.

5.9.7 MAC Address Filtering

Use MAC address filtering to allow or deny access to the device from specified MAC addresses.

1. Go to **Setup** > **Security** > **Network Security** > **MAC Address Filtering**.

2. Click **On** to enable MAC Address Filtering.

3. Choose **Allowlist** or **Blocklist**.

   ➢ Allowlist: Only allows access from the added MAC addresses.

   ➢ Blocklist: Denies access from the added MAC address.

4. Click ➕ to add a new MAC address. Up to 32 addresses are allowed.

5. Click **Save**.

5.9.8 **Access Policy**

Access policies are used to prevent unauthorized access and operation from the network.

1. Go to **Setup** > **Security** > **Network Security** > **Access Policy**.

● Illegal Access Lock
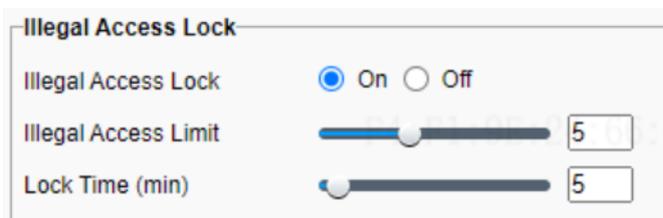
NOTE!

If illegal access lock is disabled, the camera will not lock the account no matter how many times an incorrect password is input.

Item	Description
Illegal Access Lock	If the client IP address is not on the blocklist, the input username is correct, but the input password is wrong, it is an illegal access attempt. **NOTE!** ● When an account is locked, information including the username, IP address, etc, is logged by the system. ● The user can unlock the account by disconnecting power and rebooting the camera.
Illegal Access Limit	The maximum number of illegal access attempts allowed. The account is locked when the limit is reached.
Lock Time (min)	Integer within the range of 1-120.

Example: User A tries to log in from the client IP address 192.168.1.33 and is locked. Then user A cannot log in within the lock time, but user B is not affected and can still log in from the same IP address.

● Session timeout

A session is the connection established between the client (Web browser) and the server (camera). When enabled, the device will log out if there is no user activity (such as clicking or syncing configuration) within the specified time. You will need to log in again from the login page once logged out.

NOTE!

Only admin can enable or disable this feature.

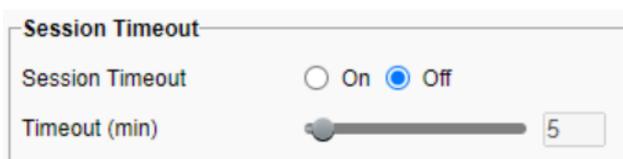| Item	Description
Session Timeout	Sessions are counted as follows. Take one device as an example. ● If the session is established using one web browser from one client IP, there is one session. ● If sessions are established using one web browser from one client IP, there are two sessions. ● If sessions are established using two web browsers from two client IPs (two browsers from each IP), there are four sessions. **NOTE!** Up to 36 sessions are allowed at the same time.
Timeout (min)	Enter an integer within the range of 1-120. **NOTE!** The timer restarts when the session is re-established after a reboot.

● WEB Service

When disabled, you will not be able to log in to the device's Web interface for device management. You can restore the WEB service to its default status (On) using EZTools.

WEB Service   ⦿ On ○ Off
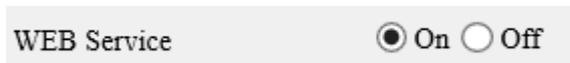
2. Click **Save**.

5.9.9 Certificate Management

On the **Certificate Management** page, you can create and manage certificates, view certificate properties, etc.

1. Go to **Setup** > **Security** > **Network Security** > **Certificate Management**.

Certificate

Create Self-Signed Certificate	Create Certificate	Import Certificate	Export Certificate	Delete Certificate	Certificate Properties

Certificate Name	Valid From	Valid To	Certificate Status	Function
default	2022-06-12 02:53:55	2023-06-13 02:53:55	Normal	HTTPS

CA Certificate

Import Certificate	Delete Certificate	Certificate Properties

Certificate Name	Valid From	Valid To	Certificate Status	Function

1. **Certificate**

1. Create a self-signed certificate or import a certificate.

● Create a self-signed certificate for application scenarios with low-security requirements.

(1) Click **Create Self-Signed Certificate**.

(2) Complete the settings.

Item	Description
Certificate Name	Set a name as needed.
Public Key	Choose a length for the public key: 2048 or 1024. Default: 2048.
Country	Enter the two-character country code, for example, CN for China.
Domain Name/IP	Enter the device's IP address or domain name.
Valid Period(day)	Enter the validity period of the certificate.
Province	Enter the complete province name.
City	Enter the complete city name.
Organization	Enter the organization name.
Organizational Unit	Enter the organizational unit name.
Email	Enter a valid email address of the contact.

(3) Click **OK**.

● Import a non-CA certificate.

(1) Click **Import Certificate**.

(2) Complete the settings.

Item	Description
Import Format	You may choose **Certificate+Private Key**, **PKCS#12**, or **Self-Signed Request Certificate**.

Item	Description
Certificate Name	Enter the certificate name.
Certificate	Click **Browse** and locate the certificate.
Private Key	Click **Browse** and locate the private key.
Private Key Password	Enter the private key password.

(3) Click **OK**.

2. (Optional) Create a certificate request to obtain a trusted signed certificate for application scenarios with high-security requirements.

(1) After creating or importing a certificate, select the certificate, click **Create Certificate Request**.

(2) Complete the settings.

(3) Click **OK**.

> **NOTE!**
> After the certificate request is created, export the certificate request file. After the certificate authority (CA) signs and issues a certificate in accordance with the request, import the certificate into the device.

- Export certificate.

  Click **Export Certificate** to save the certificate to your computer.

- Delete certificate.

  Select a certificate and delete it. A certificate that is in use cannot be deleted.

- View certificate properties.

  Select a certificate to view its properties.

Certificate Properties

Certificate Name	default	
Issued By	Domain Name/IP	192.168.0.1
	Country	CN
	Province	ZJ
	City	HZ
	Organization	EmbeddedSoftware
	Organizational Unit	Uniview
	Email	
Issued To	Domain Name/IP	192.168.0.1
	Country	CN
	Province	ZJ
	City	HZ
	Organization	EmbeddedSoftware
	Organizational Unit	Uniview
	Email	

2. **CA Certificate**

A CA certificate is a certificate issued by a trusted certificate authority (CA) and thus is more secure and reliable.

1. Click **Import Certificate**.
2. Enter the certificate name, select the certificate.

Import Certificate

Certificate Name	
Certificate	Browse...

OK   Cancel

3. Click **OK**.
- Delete certificate.

  Select a certificate and delete it. A certificate that is in use cannot be deleted.
- View certificate properties.

  Select the certificate to view its properties.

5.9.10 Watermark

Use watermark to encrypt custom information in videos to prevent tampering.

> **NOTE!**
> - Watermarks can be verified using EZPlayer (available for download from Uniview website).
> - For devices with two video channels, watermark parameters need to be configured for the channels separately.

1. Go to **Setup** > **Security** > **Watermark**.

2. Enable **Watermark**.

3. Set watermark contents, which may include uppercase letters, lowercase letters, and digits. Up to 16 characters are allowed.

4. Click **Save**.

5.10 System

![NOTE icon] **NOTE!**
User operations in this module may vary with camera model.

5.10.1 Time

Set the device's system time manually or sync it with a server.

1. Go to **Setup** > **System** > **Time**.

2. Set the system time.

● Set manually in the **Set Time** field.

![NOTE icon] **NOTE!**
When setting the system time manually, you need to set **Sync Mode** to **Sync with System Configuration**; otherwise, the camera will still sync with other time sources after you set it manually.

● Sync time

Item	Description
Sync with System Configuration	Default. Time provided by the system's built-in time module.
Sync with Latest Server Time	The camera regularly syncs time with all the connected servers.
Sync with Management Server(Non-ONVIF)	The camera regularly syncs time with the server that is not connected via Onvif.

Item	Description
Sync with Management Server(ONVIF)	The camera regularly syncs time with the server that is connected via Onvif.
Sync with NTP Server	The camera syncs time with the NTP server. You need to configure the server address, port, and update interval (range: 30s-86400s). You can click **Test** to test it.
Sync with Cloud Server	The camera syncs time with the cloud server once when it gets online. The camera does not sync again until it gets offline and online again.
Positioning Module Auto Sync	The camera syncs time with positioning satellites through the positioning module (if equipped).
Sync with Computer Time	The camera syncs time with the client computer from which you log in to the camera.

3. Click **Save**.

5.10.2 DST

1. Go to **Setup** > **System** > **Time** > **DST**.

2. Enable DST, and set the start time, end time, and DST bias.
3. Click **Save**.

5.10.3 Device Info

1. Device Info

Set device information including device name, device id, mounting height, etc., which can be used in smart FTP, OSD, etc.

1. Go to **Setup** > **System** > **Device Info** > **Device Info**.

2. Complete the information as needed.
3. Click **Save**.

2. **Geographic Location**

Collects data such as the device's latitude and longitude, speed, and movement direction via the positioning function. The collected data can be displayed on the live view image using OSD and can also be reported to the data center by configuring a smart server.

> **NOTE!**
> This function is available to certain device models. Please refer to the actual interface.

1. Go to **Setup** > **System** > **Device Info** > **Geographic Location**.

2. Select a Latitude & Longitude Mode and set other parameters as needed.

Item	Description
Automatic	The latitude and longitude information is grayed out and cannot be set manually. And the device will collect the information from the positioning module. **Note:** This function is available to certain device models. Please refer to the actual interface.
Manual	You can manually set the latitude and longitude information.

3. (Optional) By default, **Report Data to Center** is enabled by default. If reporting is not required, you can unselect this option. This function requires UDP platform configuration, which can be configured in **Setup** > **Network** > **Platform Access** > **IoT Platform** > **UDP Platform**.

4. Click **Save**.

5.10.4 **Ports & External Devices**

The RS485 port is used for data transmission between the camera and external third-party devices for PTZ control, OSD, audio collection, illumination control, etc. The serial port parameters configured on the camera must match that of the connected external device.

> **NOTE!**
> Serial ports may not be available on all camera models.

1. Go to **Setup** > **System** > **Ports & Devices** > **Serial Port**.
2. Set **Port Mode** and configure the parameters.

Item	Description
Baud Rate	Data transmission speed (unit: bits per second). The greater the value, the faster the transmission speed, and the shorter the transmission distance. Usually the default value is applicable.
Data Bit	The actual number of data bits in a group of data packets. Usually the default value is applicable.
Stop Bit	Indicates the end of transmission of a group of data. Usually the default value is applicable.
Parity Bit	Used to check whether the received data bits are erroneous. You can choose **Odd-Parity Check** or **Even-Parity Check**.

Item	Description
Flow Control	Used to control data transmission to prevent data loss.

- PTZ control

To control the PTZ using a third-party device, set **Port Mode** to **PTZ Control**.

By sending PELCO-D instructions through the RS485, you can control PTZ without using the PTZ control panel.

(1) Set **Port Mode** to **Local PTZ Control**.

(2) Configure the parameters.

Item	Description
PTZ Protocol	Choose the correct PTZ protocol: PELCO-D, PELCO-P, INTERNAL-PTZ, ALEC, VISCA, ALEC_PELCO-D, ALEC_PELCO-P, MINKING_PELCO-D, MINKING_PELCO-P, YAAN, Private-KR. Some camera models support preset IDs from 1 to 1024 when the PTZ protocol is PELCO-D, and preset IDs from 1 to 255 when the PTZ protocol is other protocols.
Address Code	Set the PTZ address code. **NOTE!** This parameter is configurable only when **Port Mode** is set to **PTZ Control** and **PTZ Protocol** is set to **Local PTZ Control**.

- Trans-channel

Used to transmit data between the RS485 port and the third-party device.

🖉 **NOTE!**
This feature is available only on certain camera models.

(1) Set **Port Mode** to **Trans-Channel**.

(2) Enable **Trans-Channel**.

(3) Configure the transparent channel parameters.

➢ UDP Transmission Protocol

Enter the destination address/port and source address/port. The destination address/port refers to the IP address and port number of the third-party device to which the transparent channel is connected. The source address/port refers to the IP address and port number of this device.

➢ TCP Transmission Protocol

Enter the source address and port, which is the IP address and port number of this device.

(4) Click **Save**.

● OSD

Receive serial port information from the third-party device through the RS485 port and then overlay the parsed information on the OSD.

> **NOTE!**
>
> In order for the camera to correctly parse the received serial port information, make sure the serial port information sent from the third-party device conforms to our data formats. Contact our technical support for more information.

(1) Set **Port Mode** to **OSD**.

     (2) Select **Enable OSD Report**, so OSD data will be uploaded to the platform.

     (3) Click **Save**.

● Trans-Channel via ONVIF

Use the RS485 port for data transmission between the camera and third-party devices via Onvif.

     (1) Set **Port Mode** to **Trans-Channel via ONVIF**.

     (2) Configure the parameters.

     (3) Click **Save**.

● Illumination

Use the RS485 port to transmit data between the camera and the third-party illuminator.

     (1) Set **Port Mode** to **Illumination**.

(2) Configure the parameters.

(3) Click **Save**.

NOTE!

The current module serial port protocols are UART and RS232.The PTZ control modes include **Internal Control** and **External Control**.

- Internal Control: The module controls the lens and the PTZ rotates.

- External Control: The PTZ rotates and controls the module lens.

- Wiper Control

Configure wiper parameters to control the wiper.

(1) Go to **System** > **Ports & Devices** > **External Device**.

(2) Configure wiper parameters.

Item	Item	Description
Control Mode	Serial Port	The wiper is controlled through PELCO-D instructions, so the PTZ protocol must be set to PELCO-D. See PTZ Protocol for more information.
	Alarm Input/Output	Use alarm input and output to open or close the circuit and control the wiper.
Enable Wiper	Normally Open/Normally Closed	Set according to the actual working status of the wiper.

Item	Item	Description
Move Mode	One Time/Repeat/Automatic	One Time: The wiper works once every time you click the wiper icon on the PTZ control panel.
		Repeat: You need to set the **Effective For** and **Time Interval** parameters. The **Effective For** parameter sets the duration of the **Repeat** mode (1 to 24 hours), and the **Time Interval** parameter sets the interval between two wiper movements (1 to 60 minutes). **NOTE!** If **Time Interval** is set to 60 minutes and **Effective For** is set to 1 hour, then the wiper works once at the last minute and then stops. Only integers are allowed.
		Automatic: Use a rain sensor to detect rains and automatically activate the wiper when the threshold is reached.

(3) Click **Save**.

5.10.5 Maintenance

1. Maintenance

System maintenance include software upgrade, system configuration, diagnosis information, power output, and heater settings.

Go to **Setup** > **System** > **Maintenance**.

- Software upgrade

📝 **NOTE!**
- Make sure the version to be used matches the device; otherwise, exceptions may occur.
- The version file is a .zip file that includes all the upgrade files.
- Power must be connected throughout the upgrade.

  ➢ Local upgrade
  (1) Click **Browse**, locate the version. (If applicable) select **Upgrade Boot Program** to upgrade the boot program.
  (2) Click **Upgrade** to start. The device will restart automatically after the upgrade is completed.
  ➢ Component upgrade
    Check for upgradable component such as pan/tilt unit, illuminator, etc., and available versions.
  ➢ Cloud upgrade
    Click **Detect** to check for new versions. You can perform a cloud upgrade if a new version is available on the cloud server.

- System configuration

You can export the current configurations of the camera to the client computer or an external storage device for backup, so when necessary, you can restore camera configurations by importing the backup file.

ⓘ	**CAUTION!**

- Restoring defaults will restore all settings to factory defaults except the administrator password, network interface settings, and system time.
- Before you import a configuration file, make sure the file matches the camera model; otherwise, unexpected results may occur.
- The camera will restart after importing the configuration file.

> ➢ Import configurations

Config Management

Default	☐ Restore all settings to defaults without keeping current network and user settings.		
Importing		Browse...	Import
Exporting		Browse...	Export

(1) Click **Browse** beside the **Import** button.

(2) Locate the configuration file, click **Import**. A dialog box appears.

(3) Enter the password and confirm.

(4) Click **OK**.

> ➢ Export configurations

(1) Click **Browse** beside the **Export** button.

(2) Choose the destination folder, click **Export**. The **File Encryption** dialog box appears.

(3) Enter the password and confirm.

📝	**NOTE!**

Some devices support modifying the name of the exported configuration file. After modifying its name, you can also import the modified configuration file to the device again.

> ➢ Restore defaults
>
> Click **Default**. The system will restore default settings except network settings and user settings.
>
> To restore all settings, select **Restore all settings to defaults without keeping current network and user settings**.

- Diagnosis information

Diagnosis information includes logs and system configurations and can be exported to your client computer.

Export Diagnosis Info		Browse...	Export

(1) Click **Browse** and choose the destination.

(2) Click **Export**.

📝	**NOTE!**

Diagnosis information is exported as a compressed file. You need to decompress it first (using decompression tools like WinRAR) and then open the file using a text editor (like Notepad).

- Power output

The camera can supply power to external devices with lower power consumption such as a sound pickup.

- Restart device

> **CAUTION!**
> Restarting the camera will interrupt the ongoing service.

Click **Restart** and then confirm to restart the device. You may set a schedule to reboot the camera automatically at the set time.

- Heater

Use the heater to eliminate water droplets on the lens in a high humidity environment.

(1) Enable Heater.

(2) Set **Remaining Heating Time**.

2. **Network Diagnosis**

Go to **Setup** > **System** > **Maintenance** > **Network Diagnosis**.

- Select NIC

NIC1 is the camera's IP address.

- IP/port filter

  ➢ All: Capture all packets of the camera.

  ➢ Specify: Capture packets of the specified port or IP.

  ➢ Filter: Filter packets of the specified port or IP and capture other packets.

- Custom Rules

Select **Custom Rules** and set the rules.

Click **Start Capture** to start capturing packets. After packet capture is finished, save data and view the diagnosis.

- Test network delay and packet loss rate

Test network connectivity by sending test packets to a test address.

- ➤ Test Address: Must be a valid IP address or domain name.
- ➤ Packet Size (Bytes): Size of test packets to be sent. Range: [64-65507]. Sometimes a high delay may be caused by a large packet size. If the test failed, set a smaller packet size and then try again.
- ➤ Test results include average delay and packet loss rate.
- – Average delay: Average length of time from test packets are sent till responses are received.
- – Packet loss rate: Ratio of lost packets to the sent packets.

5.10.6 Logs

Search camera operation logs and download to your computer.

Go to **Setup** > **System** > **Log**.

1. Set a time range and choose main and sub log types.
- ● Main type: Including system operation, alarm parameter configuration, network configuration, audio and video configuration, PTZ configuration, image configuration, smart configuration, system configuration, storage configuration, and alarm events.
- ● Sub type: You can choose up to 5 types or choose All.
2. Click **Search**. Up to 100 logs can be displayed. The latest logs are displayed on the top.
3. Click **Export** to save search results as a .csv file to the client computer.

5.10.7 System

For certain dual-channel cameras, you can switch between 1-channel and 2-channel output mode on the **Live View** page.

1. Go to **Setup** > **System** > **System**.

2. Choose a video output mode.

- 2-Channel: Default mode. In this mode, two channels of live video are displayed, with channel 1 (upper) showing the fixed focal image, and channel 2 (lower) showing the varifocal image.

- 1-Channel: In this mode, two channels of live video are merged into one panoramic image by splicing images with adjusted zoom ratios.

ⓘ **CAUTION!**
If you need to adjust iris in 1-channel mode, make sure the zoom ratio is greater than or equal to 1X; otherwise, the iris adjustment does not take effect.

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3. Click **Save**. A message appears, prompting you to switch the output mode and restart the camera.

4. Click **OK**. The new settings take effect after the camera restarts automatically.

5.11 Other Configurations

Fisheye

> **NOTE!**
> This function is available to fisheye cameras only.

Choose to decode live videos by hardware decoding or software decoding.

1. Hardware Decoding

Hardware decoding is to decode the obtained live videos by the camera itself. On the **Hardware** tab, you can set the mount method and display mode, and configure the stream type for each channel.

Table 5-1 Mount Method

Icon	Description
	Ceiling Mount
	Wall Mount
	Desktop Placement

Table 5-2 Display Mode

Icon	Description
	Fisheye. Displays the original image, fisheye stream, the raw image captured by the sensor. This mode uses a wide-angle view, close to the convex eye view of a fish, to produce a large curved image while distorting the perspective and angle of objects in the image.
	Fisheye+4PTZ. For PTZ streams, you can use the direction button on the screen to adjust the PTZ direction.
	Panoramic. Displays the panoramic view, converting the original image to a rectangular image by certain calibration methods.

Icon	Description
	When the mount method is **Ceiling Mount** ( ) and the display mode is **Panoramic**, you can choose to split the image horizontally or vertically. Additionally, you can set the dewarping angle. Range: 0-90°. 0°: Closest to the center of the fisheye, with the least distortion. 90°: Furthest from the center of the fisheye, with the largest distortion.

2. Software Decoding

Software decoding is to decode live videos using the PC where the browser is located. Its performance is depending on the decoding capability of the PC.

Click on the live view image to open/close the software decoding panel.

- When the mount method is **Ceiling Mount**, you can choose the following display methods: Original Image, 360°Panoramic+1PTZ, 180°Panoramic, Fisheye+3/4/8PTZ, and 360°Panoramic+6PTZ.
- When the mount method is **Wall Mount**, you can choose the following display methods: Original Image, Panoramic, and Panoramic+3/4/8PTZ.

 NOTE!
When using the hardware decoding, you can switch to software decoding only when the display method is the original image.

Table 5-3 Display Method

Icon	Description
	Original image.
	360° pamoramic+1PTZ. Each block can be dragged to view and interact with each other.

Icon	Description
	180°panoramic view. Split the fisheye view into two windows. You can drag to view the image horizontally.
	Fisheye+3/4/8PTZ. Every block can be dragged to view, making it easy to locate locally and globally.
	360°panoramic view+6PTZ.
	Panoramic view+3/4/8PTZ.
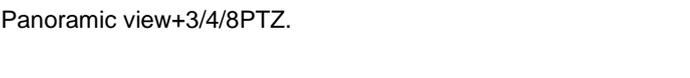
CAUTION!

When the mount method of fisheye camera is **Ceiling Mount** or **Desktop Placement**, the panoramic image (double 180° image) is the dewarping image of the fisheye image (360° image). Please select the appropriate mounting angle according to the actual monitoring view requirements.

Example: If the device is mounted on the ceiling of a hall, and the angle between the tail cable hole (LOGO) on the bottom of the device and the target is approximately 135° clockwise, the detected target can be displayed on the center top of the panoramic view.