SOAR1050 Heavy-duty PTZ Web User Manual

V1.0.0

2025.9

Foreword

General

This document provides an introduction to the SOAR1050 Heavy-duty PTZ's product features and functions, basic configuration, daily operations, settings, and maintenance.

Interface Description

This manual mainly introduces the functions related to using the device. Interfaces intended for production, assembly, return inspection, or fault location are not described in this document. If needed, please contact technical support for further information.

Safety Instructions

The following signal words with defined meaning might appear in the manual.

Signal Words	Meaning
	Indicates a high potential hazard which, if not avoided, will result in death or serious injury.
	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
	Indicates a potential risk which, if not avoided, could result in property damage, data loss, reductions in performance, or unpredictable results
	Indicates a laser radiation hazard.
	Provides additional information as a supplement to the text.

General Conventions

Writing Conventions

To simplify descriptions, the following conventions are used in this document for commonly used functions, names, etc.:

- This document applies to multiple product models. Different models may have different functions and interfaces. Function descriptions and interface screenshots in this document are for reference only. Please refer to the actual product functions and interface.
- Unless otherwise specified, “device” in this document refers to the SOAR1050 Heavy-duty PTZ.
- To protect personal privacy, any personal information such as faces or license plates shown in this document has been processed.
- To ensure device security, any IP addresses, MAC addresses, serial numbers, etc., shown in this document have been processed.

Format Conventions

Format	Description	Example
>	Indicates multi-level menu navigation	Select Settings > Event > Face Detection
“ ”	Indicates interface controls, proper nouns, etc.	The system displays the Intelligent Plan interface
【】	Indicates device hardware, keyboard keys, etc.	Press the【Enter】key
Italic	Indicates variables that need to be filled in according to the actual situation	Open a browser and enter “http://DeviceIP” in the address bar.

Mouse Operation Conventions

Action	Description
Single Click	Quickly press and release a mouse button once.
Double Click	Quickly press and release a mouse button twice consecutively.
Drag	Press and hold a mouse button and move the mouse.
Scroll	Scroll the mouse wheel.

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Chapter 1 Product Introduction

1.1 Product Overview

The 1050 Heavy-Duty PTZ platform is designed to meet the needs of various industries such as security, night vision, and fire prevention. It provides services including video preview, control, recording, and intelligent behavior analysis. The product is widely used in perimeter protection, forestry, ports, energy, transportation, and power industries. It can operate independently or in combination with storage devices to deliver practical and scalable solutions for smart cities, workplace safety, campus security, and public area protection.

Key Features:

- Safety and Reliability

Built with a fully embedded system to enable round-the-clock, uninterrupted monitoring.

- Long Detection Range

Supports wide-area coverage and long-distance detection, ideal for large-scale monitoring scenarios.

- Powerful Detection Capability

Provides clear identification of different objects in complete darkness, including camouflaged and concealed targets.

- Strong Anti-Interference Performance

The thermal imaging channel is not affected by light intensity in conditions such as strong light or backlight, ensuring effective detection and recognition.

- Adaptability to Harsh Environments

Performs reliably in conditions of smoke, fog, rain, snow, sand, or high color camouflage, where visibility is typically impaired.

This product can be deployed in a variety of scenarios. A “small-scale application scenario” is presented here as an example.

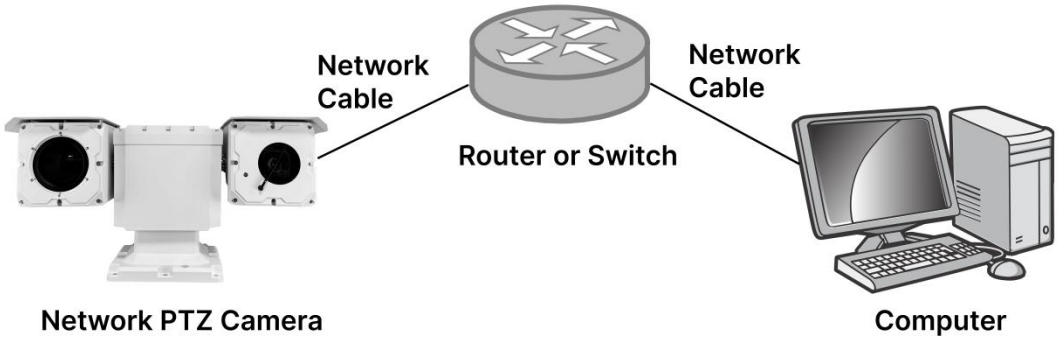


Figure 1-1 Application Scenarios

1.2 Features

Real-time Monitoring

Table 1-1 Real-time Monitoring Functions

Function	Description
Real-time Preview	Supports preview of both visible light and thermal imaging channels.
PTZ Control	Includes pan/tilt rotation, preset setting, patrol group, pattern, horizontal rotation, PTZ speed, idle action, startup action, precise positioning, etc. PTZ operation allows you to expand the monitoring range or focus on target details.
Local Snapshot	During preview, snapshots can be taken of abnormal situations in the monitoring view, facilitating later review and abnormality handling.
Local Recording	During preview, video can be recorded for abnormal situations in the monitoring view, facilitating later review and abnormality handling.
Laser Range Finder (Optional)	For PTZs that support ranging, the real-time distance from the PTZ to the object at the center of the monitoring view can be measured.
Other Functions	■ Switch video stream or streaming protocol. ■ Annotate information in the monitoring view. ■ Check for alarm outputs. ■ Enlarge a local area of the monitoring view or use mouse scroll to zoom. ■ When an intelligent rule is triggered, alarm snapshots can be displayed. ■ Adjust display effects of the monitoring view.

Alarm

- Configure alarm notification method or sound based on the alarm type.
- View alarm information.

User Management

Table 1-2 User Management Functions

Function	Description
User Group Management	■ Supports adding, modifying, and deleting user groups. ■ Supports managing user permissions based on user groups.
User Management	■ Supports adding, modifying, and deleting users. ■ Supports configuring user permissions.
Change Password	Supports changing user passwords.
Online Users	View currently online users.

Intelligent Applications

Table 1-3 Description of Intelligent Thermal Imaging Function

Function	Description
Deep perimeter behavior analysis	■ Supports general behavior analysis, including tripwire intrusion and area intrusion. ■ When an alarm occurs, it supports linked actions such as recording, alarm output, PTZ control, and snapshot capture.
Fire Detection	■ Alarm conditions can be determined simultaneously using both visible light and thermal imaging. ■ When the PTZ detects smoke or fire, an alarm is triggered, supporting linked actions such as audio alerts, snapshot capture, and recording.
Boat Detection	■ When the PTZ detects a vessel in the monitored area, an alarm is triggered, supporting linked actions such as tracking, alarm output, and recording.

Event Management

Function	Description
Alarm Settings	■ When an external alarm input device is triggered, an alarm is activated. ■ When an alarm occurs, it supports linked actions such as recording, alarm output, PTZ control, and snapshot capture.

Chapter 2 Configuration Process

Please complete the configuration according to the actual requirements and the configuration process.

Figure 2-1 Configuration Process

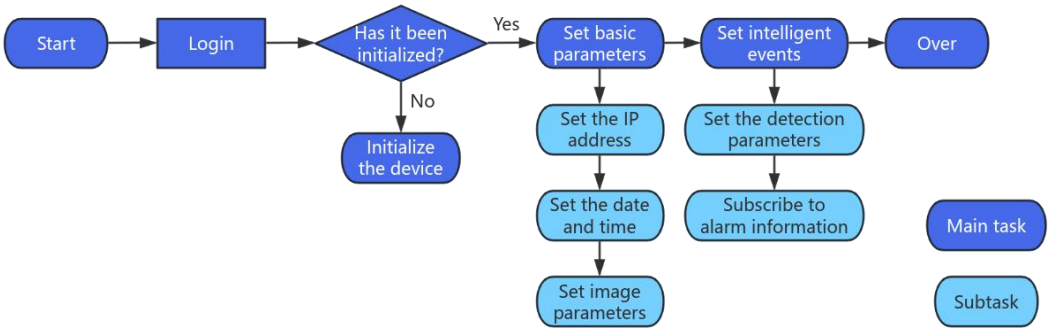


Table 2-2 Operating Instructions

Configuration Item		Description	Reference Chapter
Device Login		Access the WEB interface by entering the device IP address in a PC browser. The default IP address is 192.168.1.10.	3.1
Basic Parameter Setup	Set IP Address	Modify the device IP address according to the network plan.	3.2
	Set System Time	Configure the system date and time to ensure video and recording timestamps are consistent and accurate.	6.4
	Set Image Parameters	Adjust image settings according to the actual scene to ensure proper monitoring display.	9.2
Intelligent Application Setup	Set Detection Parameters	Configure intelligent schemes or detection rule parameters.	Chapter 5

Chapter 3 Device Login

CAUTION

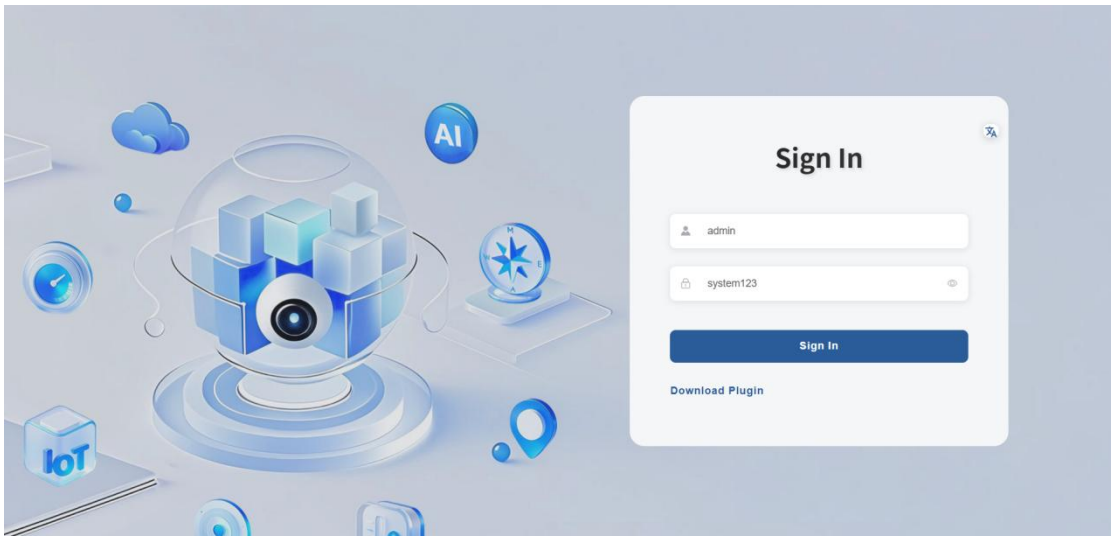
- The device's default IP: **192.168.1.10**; username: **admin**; default login password: **system123**
  - To ensure device security, please keep the admin password safe and change it regularly.
  - The device can only be accessed when its IP address (default 192.168.1.10) is on the same network segment as the PC. **For PC IP configuration, please refer to Appendix 1**.

3.1 Browser Login

Currently, the main supported browsers are Chrome and Edge. The following example uses Chrome.

Operation steps:

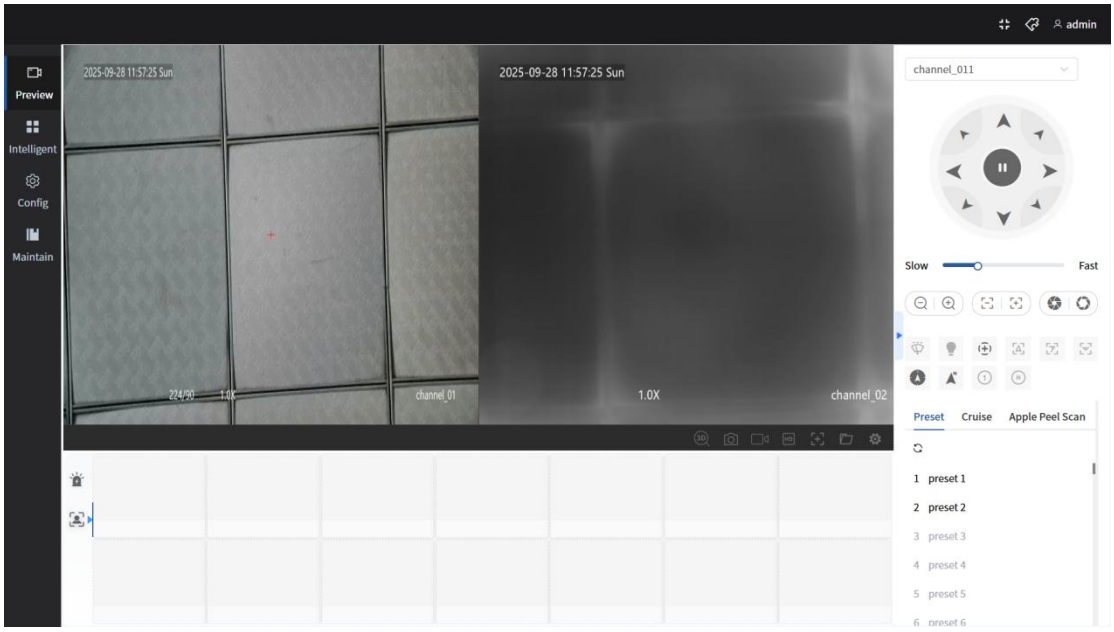
Step 1: Open the Chrome browser, enter the device's default IP address 192.168.1.10 in the address bar, and press Enter.



NOTE

When logging in to the device for the first time, please download and install the plugin on the login page; otherwise, the device may not function properly. **For detailed installation instructions, refer to Appendix 2.**

Step 2: Enter the username admin and the default password system123, then click the Login button. The system will display the preview interface.



3.2 Modify IP Address

To ensure the device can be properly connected to the network, plan the IP address according to the actual network environment.

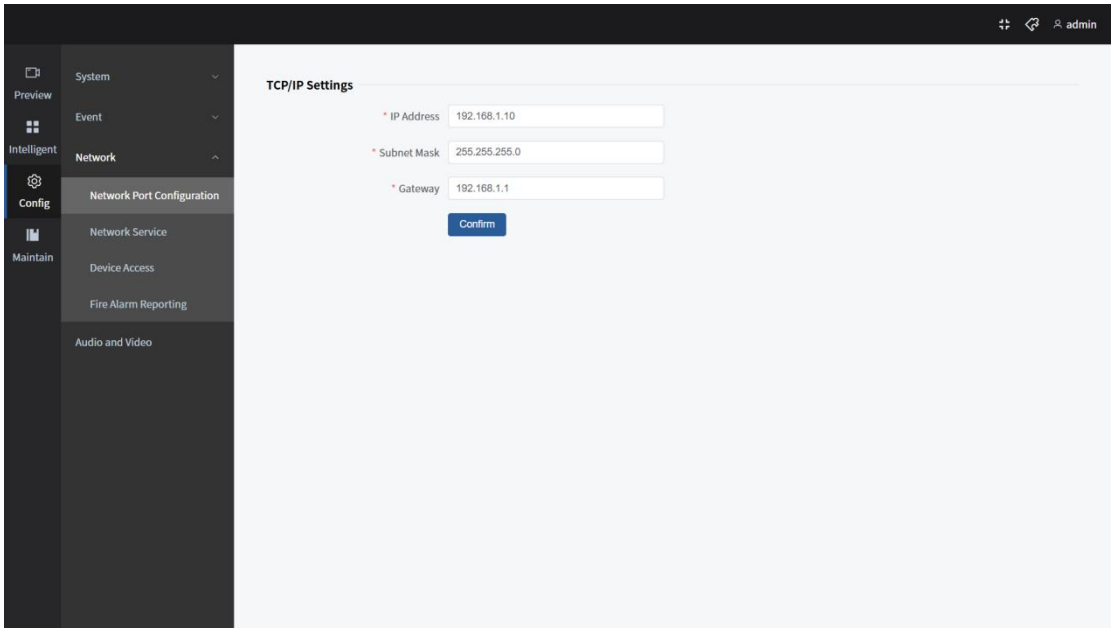
Operation steps:

Step 1: Log in to the device's WEB interface.

NOTE

The device's default IP: **192.168.1.10**; Username: **admin**; Default login password: **system123**

Step 2: Navigate to Configuration > Network > Network Port Settings. The system will display the IP configuration page.



Step 3: Configure the IP address and related information, then click “Confirm”.

NOTE

- When modifying the IP, the IP address and gateway must be in the same network segment. For example, if the IP address is 192.168.3.22, the gateway should be 192.168.3.1.
- After the IP is successfully changed, the device will automatically restart.
- Once the device restarts, the web page will automatically redirect to the newly assigned IP address.

3.3 Change Login Password

To ensure device security, please change and properly keep the admin password, and update it regularly.

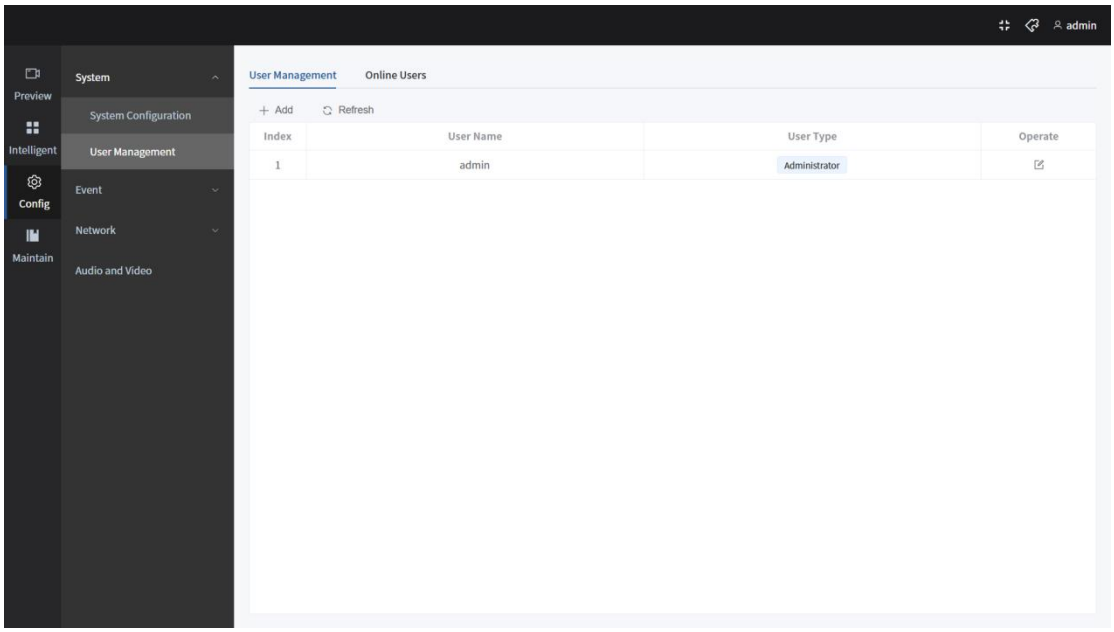
Operation steps:

Step 1: Log in to the device’s WEB interface.

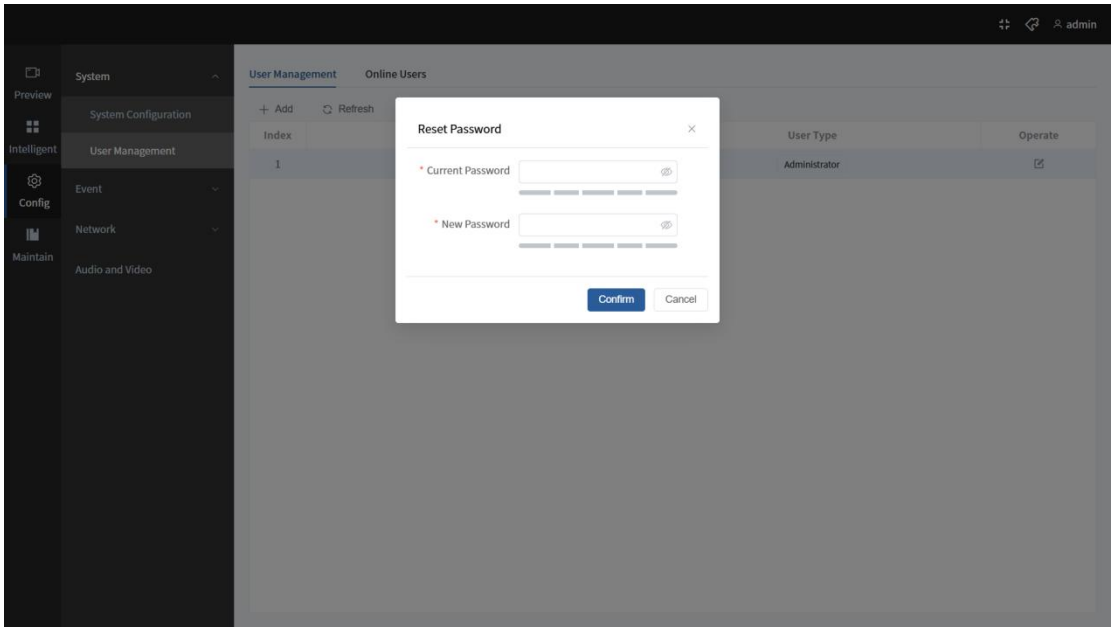
NOTE

The device’s default IP: 192.168.1.10; username: admin; default login password: system123

Step 2: Navigate to Configuration > System > User Management > User Management. The system will display the User Management interface.



Step 3: Click the “Operate”. The system will display the password modification interface.



Enter the current password and the new password, then click Confirm to complete the change.

Chapter 4 Daily Operation

4.1 Video Preview

In the Preview interface, view real-time monitoring footage. The interface also supports operations such as snapshot capture and recording.

NOTE

- The functions may vary depending on the device model; please refer to the actual interface.
- The window with a border indicates the currently selected channel. All operations apply only to the selected channel.
- Double-click the video window to expand the channel to full screen. Double-click again to restore it.

4.2 Preview Interface Overview

This section introduces the shortcut functions available when viewing real-time video.

Log in to the device's WEB interface and click the "Preview" tab. The system will display the Preview interface.

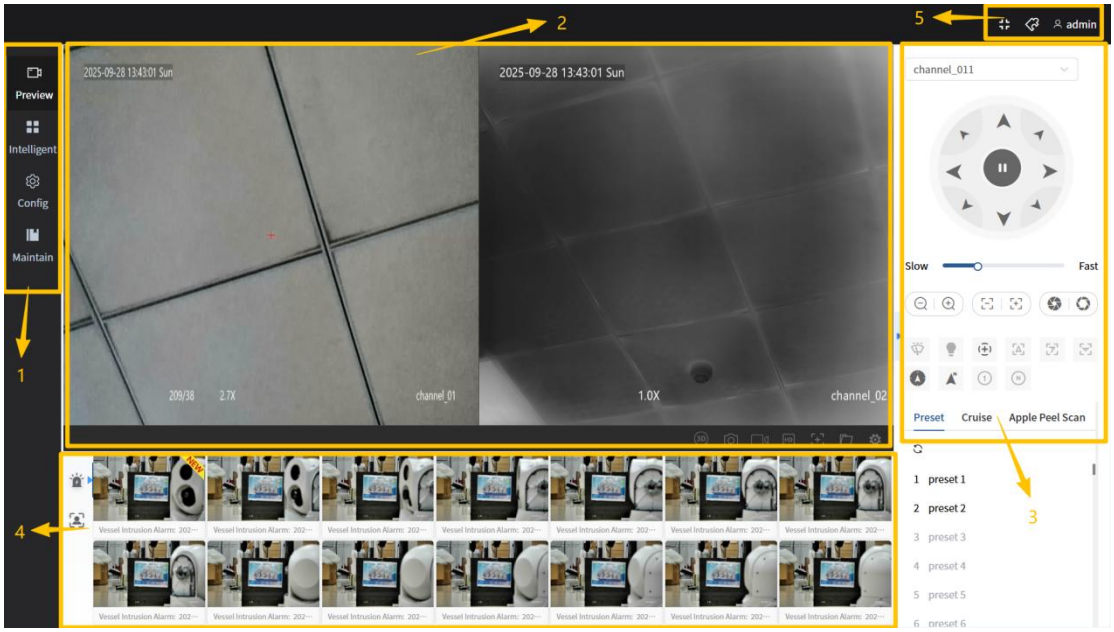


Table 4-1 Function Bar Description

No.	Name	Description
1	System Menu Bar	Click the function tabs on the system menu bar to access the corresponding interface.
2	Video Playback Window	Displays the real-time preview from the camera.
3	PTZ Control	Operate and configure the PTZ.
4	Event & Alarm Display	Shows manually captured or intelligent alarm images.
5	WEB Interface Shortcut	Provides quick access to WEB interface applications and

	Bar	operations.

4.3 WEB Interface Shortcut Bar

NOTE

The functions may vary depending on the device; please refer to the actual interface.

Figure 4-2 WEB Interface Shortcut Bar Options

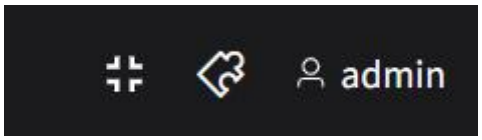


Table 4-3 WEB Interface Shortcut Bar Description

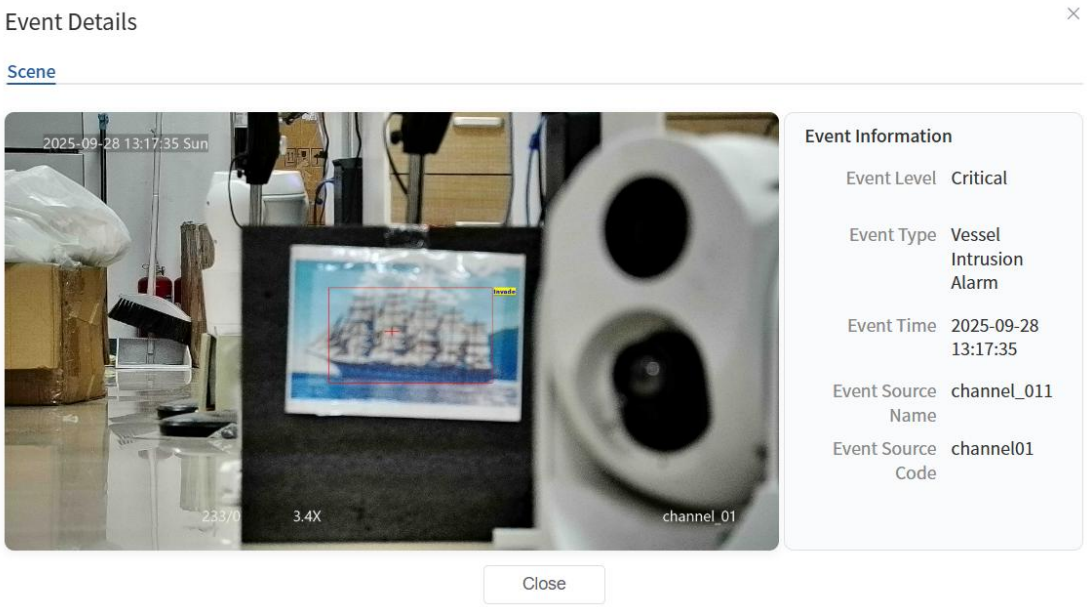
Icon	Name	Description
	Adjust Preview View	Click this icon to display the preview interface in full screen.
	Download Plugin	Click this icon to download the WEB plugin.
admin	Exit System	Click this icon to display the exit system option. Click Login Out to log out and return to the login interface.

4.4 Intelligent Alarm Display Bar

Figure 4-4 Intelligent Alarm Display

After configuring intelligent rules, this display bar shows event alarm images in a continuous loop. Click on an image to view detailed information about the intelligent alarm event.

Figure 4-5 Detailed Display of Alarm Event



4.5 PTZ Control

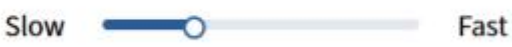
The PTZ control allows you to remotely operate the monitoring device and adjust the real-time monitoring image.

NOTE

The supported PTZ control functions may vary by model; please refer to the actual capabilities of the device.

PTZ Control Directions

- Press and hold the PTZ direction keys to control horizontal, vertical, and other movements. The PTZ will stop moving when the mouse is released.
- When the PTZ is in cruise mode, click the direction key to stop the PTZ for 1 minute, after which it will resume cruising.



- Slide the progress bar to adjust the PTZ rotation speed.

Adjust Focus

- Press and hold to zoom in, enlarging the scene.
- Press and hold to zoom out, reducing the scene.

Focus

- Press and hold to focus on nearby objects, making them clear while distant objects gradually become blurred.
- Press and hold to focus on distant objects, making them clear while nearby objects gradually become blurred.

Aperture

- Press and hold to decrease the aperture.
- Press and hold to increase the aperture.

4.6 Special Function Control Area

The special function control allows operation of the PTZ's advanced features.

NOTE

The supported special function controls may vary by model; please refer to the actual capabilities of the device.

- **Wiper Control**

Click the icon to start or stop the wiper.

- **Light Control**

Click the icon to turn the light on or off.

- **Synchronized Zoom**

Click the icon to automatically synchronize the visible light field of view with the thermal imaging field of view during zooming.

- **Horizontal Stabilization**

Click the icon to enable or disable horizontal image stabilization.

- **Vertical Stabilization**

Click the icon to enable or disable vertical image stabilization.

- **Roll Stabilization**

Click the icon to enable or disable roll image stabilization.

- **True North Direction**

Click the icon to calibrate the device so that it points to geographic north at a horizontal angle of 0°.

- **Current North Direction**

Click the icon to calibrate the current device direction as horizontal 0°.

- **Single Distance Measurement**

Click the icon to perform a single distance measurement.

- **Continuous Distance Measurement**

Click the icon to perform continuous distance measurements.

4.7 Preset

The Preset can be used to record the position of the device. By configuring and calling presets, the device can automatically move to the set positions.

Setting a Preset

Operation Steps:Step 1: Click the preset button Preset in the PTZ control area.
Step 2: Use the PTZ direction keys to move the device to the desired position.

Step 3: Select an available preset slot and click to complete the configuration of one preset.

NOTE

Special presets can only be used for their designated functions when called.

Step 4: Repeat the above steps to set multiple presets.

Calling a Preset

- Click to call the preset.

Deleting a Preset

- Click to delete the preset.

4.8 Cruise Scan

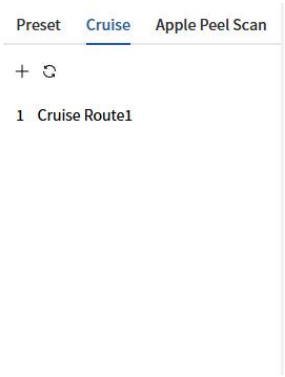
Cruise scan allows the device to automatically move in a loop between multiple pre-configured presets.

Prerequisites
Ensure that at least 2 presets are configured. For instructions on setting presets, refer to *Setting a Preset*.

Operation Steps:Step 1: Click the cruise scan button Cruise in the PTZ control area.

Step 2： Click + to add a cruise scan path.

Figure 4-6 Add a Cruise Scan Path



Step 3: Click +, add presets as needed.

- Preset

Select a configured preset.

- Time

Set the duration to stay at this preset.

Step 4: Optional operations:

- Click Delete to remove a preset from the cruise path.
- Click Move to adjust the order of presets in the cruise path.

NOTE

A cruise path must contain at least 2 presets and can include up to 32 presets.

Step 5: Click OK to complete the setup of one cruise path.

Step 6: Repeat the above steps to configure multiple cruise paths.

NOTE

Each device supports up to 16 cruise paths.

Step 7:

- Click to run cruise scan.

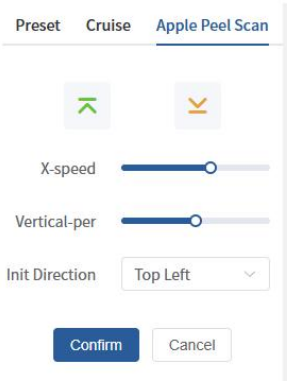
- Click to stop cruise scan.
- Click to modify the cruise path information; the method is the same as adding a new cruise path.
- Click to remove the cruise scan.

4.9 Apple Peel Scan

Apple peel scan refers to the PTZ rotating horizontally and vertically in a specified direction. When it reaches the upper or lower vertical boundary, it reverses direction and repeats the movement.

Operation Steps:Step 1: Click the apple peel scan button Apple Peel Scan in the PTZ control area.
Step 2: Click to add an apple peel scan path.

Figure 4-7 Add an Apple Peel Scan Path



Step 3: Move the PTZ vertically upward to the desired position, then click to complete the upper boundary.

Step 4: Move the PTZ vertically downward to the desired position, then click to complete the lower boundary.
Step 5: Slide the progress bar to adjust the PTZ horizontal rotation speed.

Step 6: Slide the progress bar to adjust the vertical movement range as a percentage of the thermal imaging vertical field of view after the PTZ completes a 360° horizontal rotation.

Step 7: Click the Initial Direction drop-down and select the PTZ's starting movement direction: Top Left, Bottom Left, Top Right, or Bottom Right.

Step 8: Click Confirm to complete the setup of the apple peel scan.

Step 9:

- Click to run the apple peel scan.
- Click to stop the apple peel scan.
- Click to modify the apple peel scan path; the method is the same as adding a new path.
- Click to delete the apple peel scan.

Chapter 5 Intelligent Function

This section introduces the intelligent functions supported by the device and their configuration. The main intelligent functions include perimeter protection, smoke and fire detection, and vessel tracking.

NOTE

- The intelligent functions supported by the device may vary by model; please refer to the actual capabilities of the device.
- Only one intelligent application function can be enabled at a time.

5.1 Perimeter

Intelligent perimeter functions mainly include line crossing detection, intrusion detection, departure detection, loitering detection, and wandering detection.

NOTE

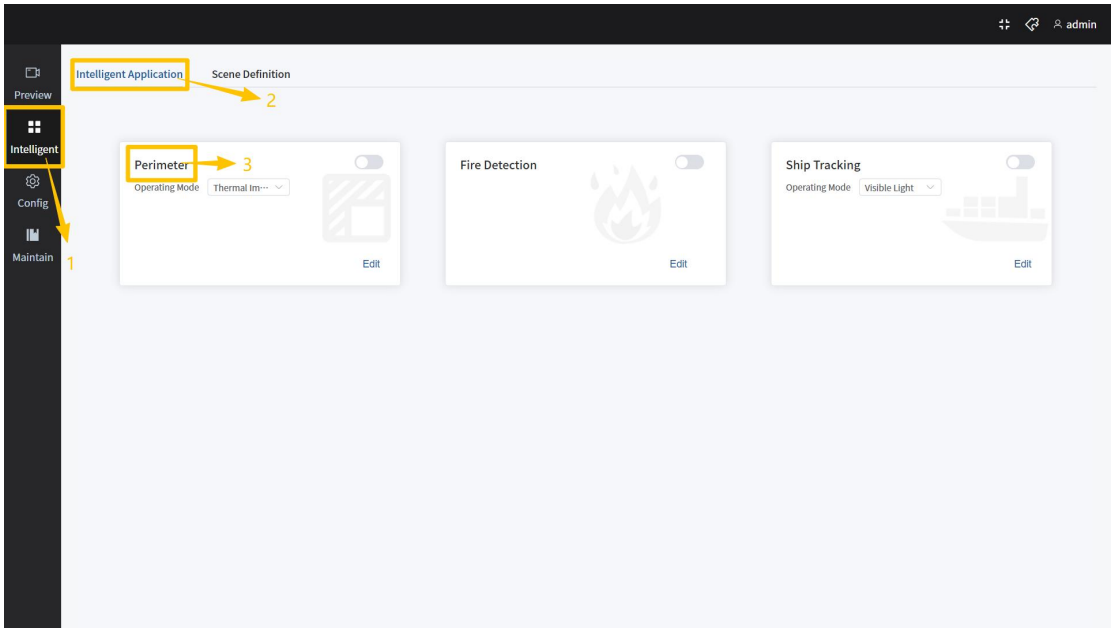
Both visible light and thermal imaging support intelligent perimeter detection, and their configuration methods are similar. The following instructions use visible light mode as an example.

5.1.1 Line Crossing Detection

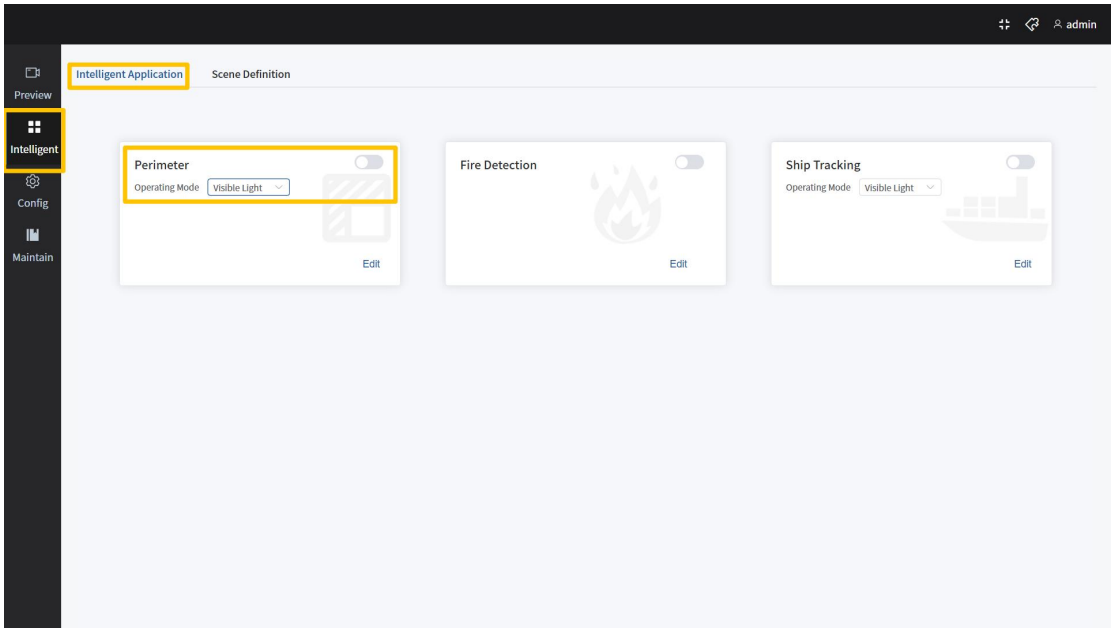
Line crossing detection is used to determine whether a target crosses a defined warning line in a specified direction. If a target crosses in the designated direction, the device triggers linked actions.

Operating steps

Step 1: Navigate to Intelligent > Intelligent Application > Perimeter.



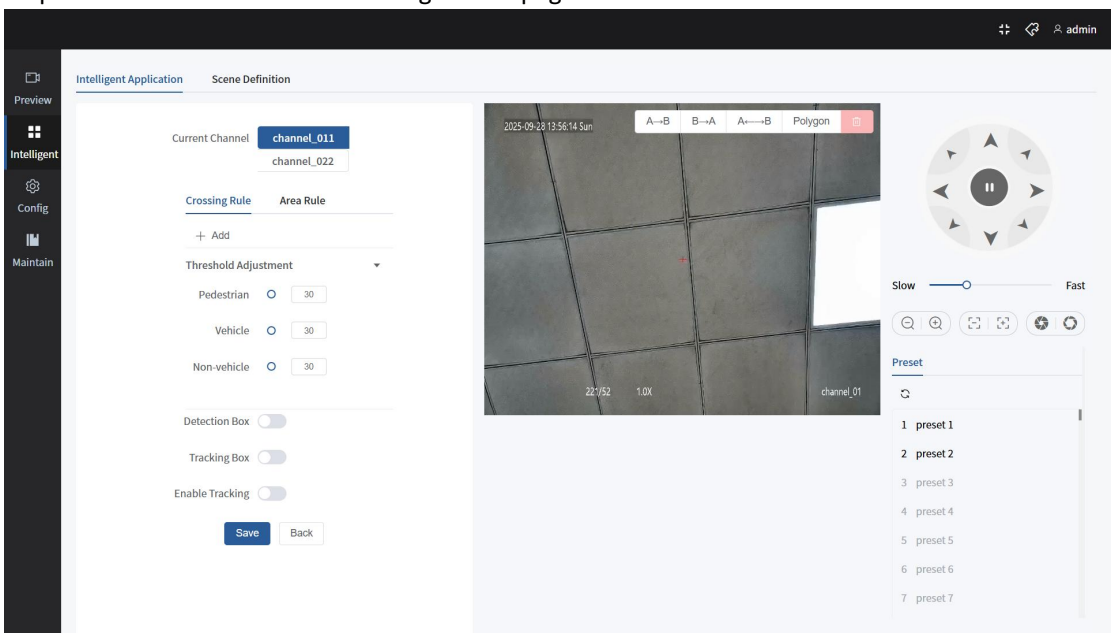
Step 2: Click the Operating Mode drop-down and select **Visible Light.**



NOTE

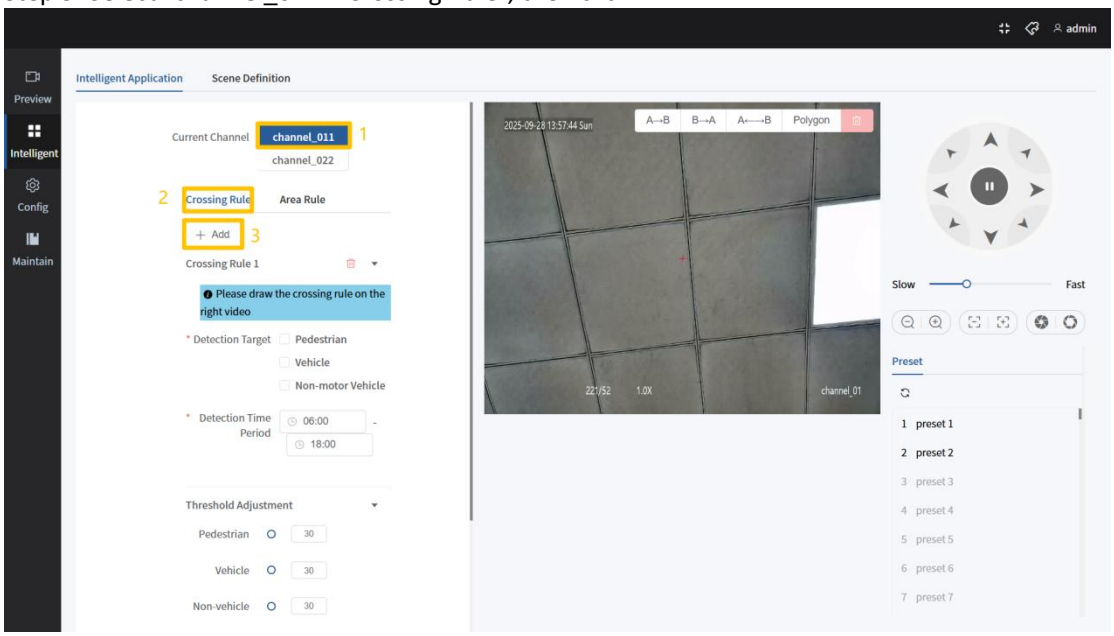
- There are three options for Operating Mode: Visible Light, Thermal Imaging, and Visible Light & Thermal Imaging Switch.
- When applying the perimeter intelligent mode, only one detection type—Visible Light or Thermal Imaging—can be selected within a given time period.

Step 3: Click “Edit” to enter the configuration page.



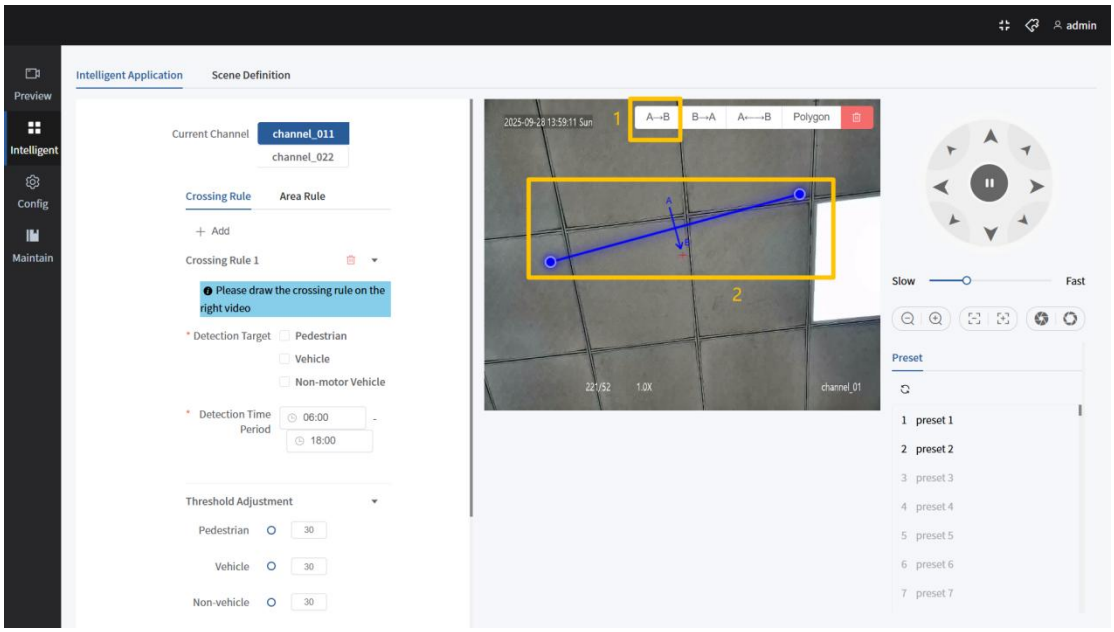
Step 4: Select a warning line and use the PTZ control to adjust it to the desired monitoring area.

Step 5: Select “channel_011 > Crossing Rule”, then click + Add .

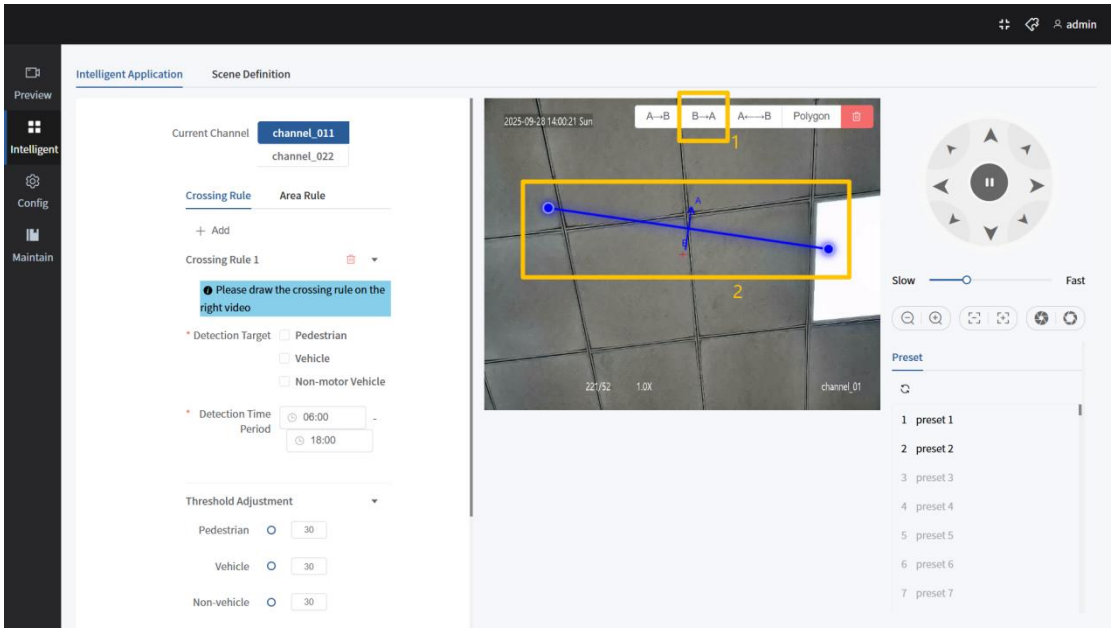


Step 6: In the right-hand screen, select the tripwire rule, then click on the detection area and drag the mouse to draw the tripwire.

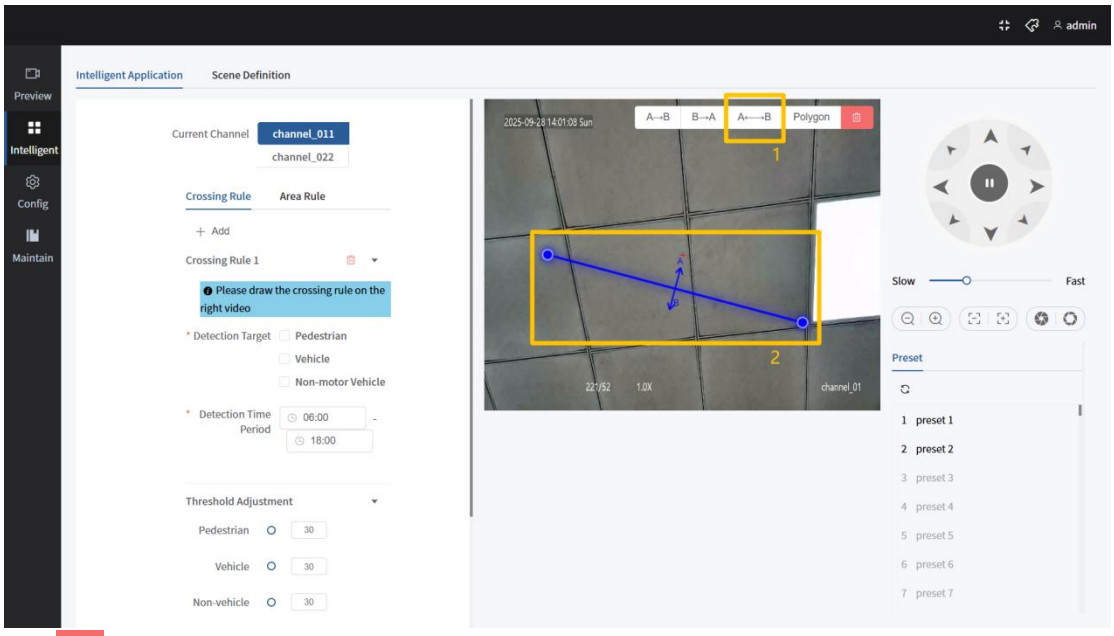
A->B: Detects targets crossing the warning line from side A to side B and triggers an alarm.



B->A: Detects targets crossing the warning line from side B to side A and triggers an alarm.



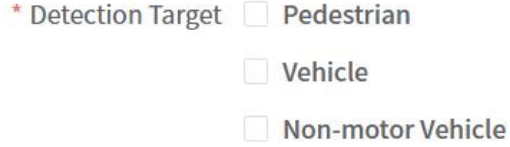
A<->B: Detects targets crossing the warning line in both directions and triggers an alarm.



Click to delete the tripwire rule.

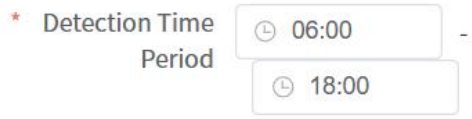
Step 7: Set the rule parameters, then click Confirm to save.

1) Detection Target: Used to specify the targets to be detected. The device will monitor and detect only the selected targets.



Click to select or deselect targets. Multiple selections are allowed.

2) **Detection Time Period**: Set the start and end times for executing the detection task.



- Set Start Time

Click 

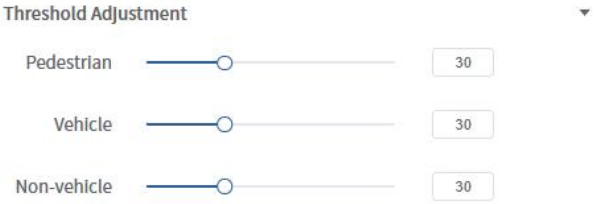
, scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

- Set End Time

Click 

, scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

3) Threshold Adjustment



Slide the progress bar to adjust the detection threshold, or click the input box

to enter the desired threshold value.

NOTE

The higher the threshold value, the lower the detection sensitivity, making it less likely to trigger an alarm.

4) Detection Box: Displays the detection target box.

Click  to enable or disable the detection box.

5) Tracking Box: Displays the tracking target box.

Click  to enable or disable the tracking box.

6) Enable Tracking: Track the detected target.

Click  to enable or disable tracking.

7) Tracking Duration:

Click the input box

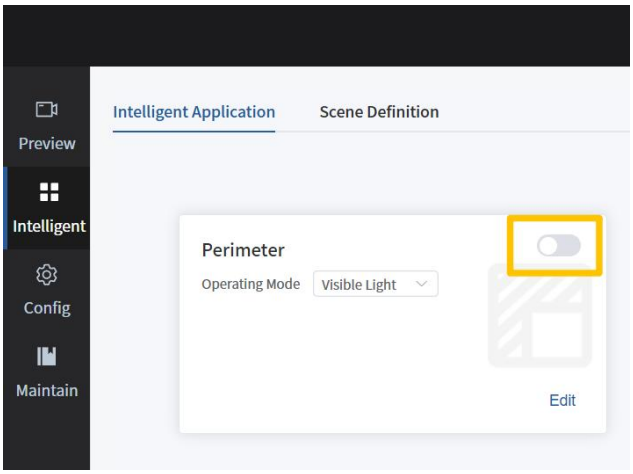
, enter the tracking duration in seconds.

8) Disappear Search Duration:

Click the input box

, enter the disappear search duration in seconds.

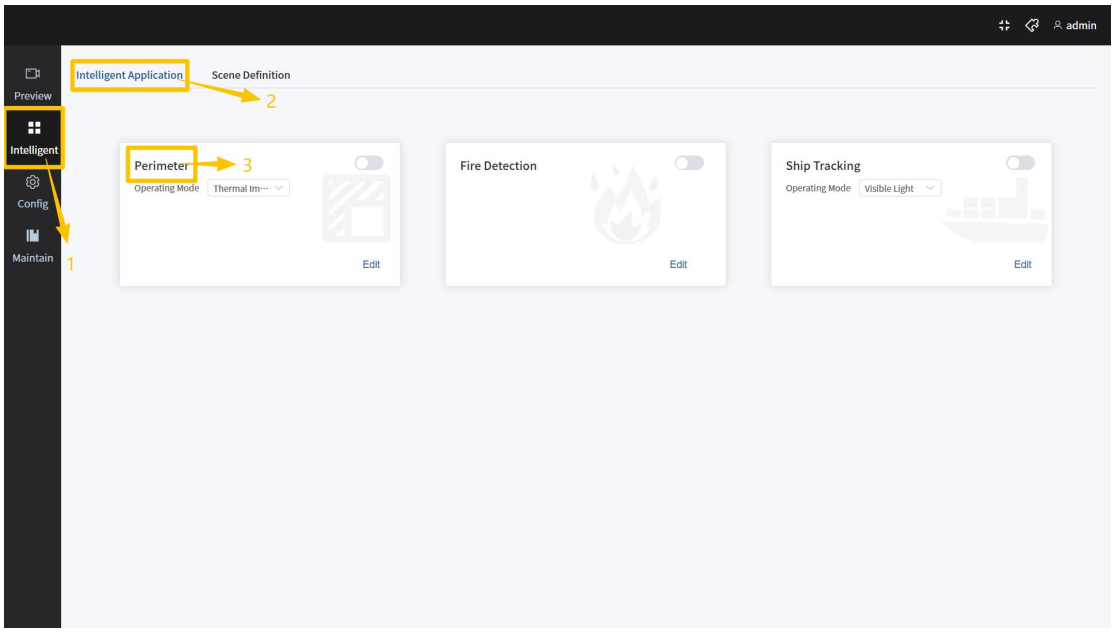
Step 8: Click  to enable the intelligent perimeter function.



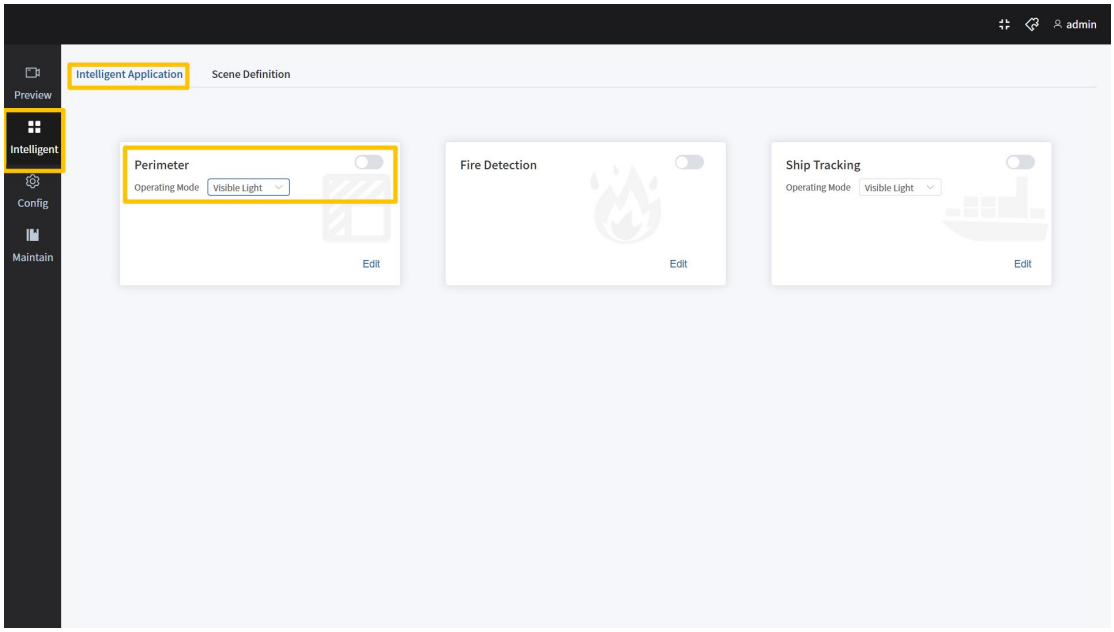
5.1.2 Intrusion Detection

Intrusion detection is used to determine whether a target enters a defined warning area. If a target enters, the device triggers linked actions.

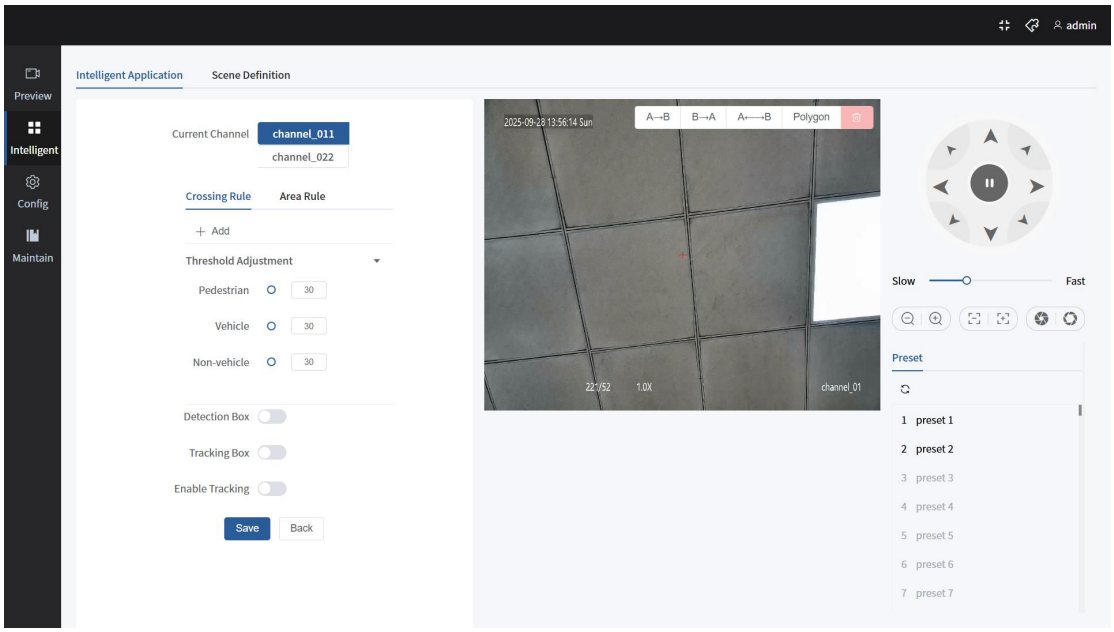
Operation Steps:Step 1: Navigate to “Intelligent > Intelligent Application > Perimeter”.



Step 2: Click the “Operating Mode” drop-down and select “Visible Light”.

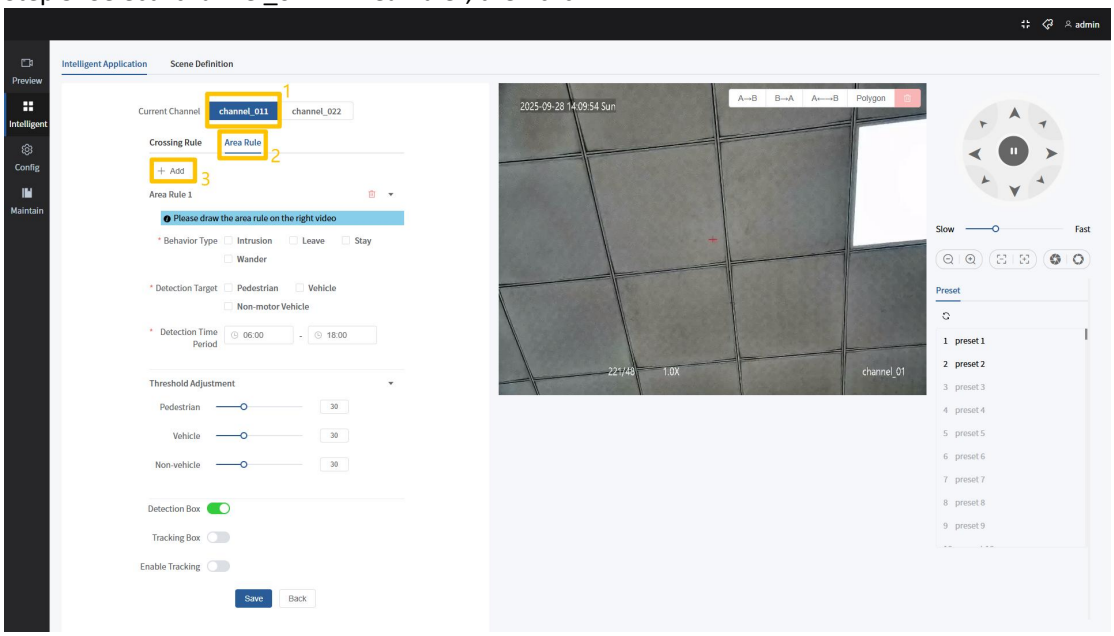


Step 3: Click “Edit” to enter the configuration page.

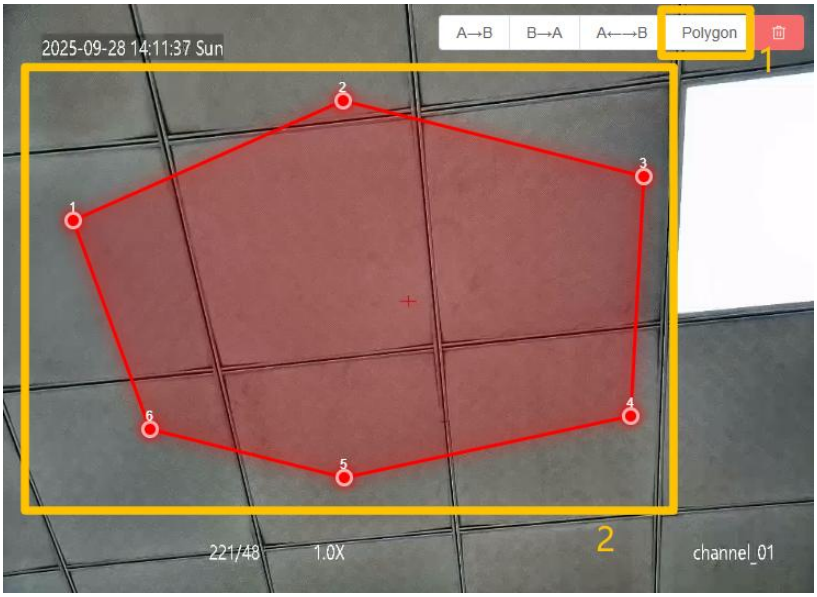


Step 4: Select a warning area and use the PTZ control to adjust it to the desired detection scene.

Step 5: Select “channel_011 > Area Rule”, then click + Add .



Step 6: Draw the rule area in the right-hand screen.



1)Click Polygon.

2)Click the detection area.

3)In the live view, click the left mouse button sequentially to draw the vertices of the polygonal warning area.

4)Click Delete to remove an already drawn area.

Step 7: Set the rule parameters, then click OK to save.

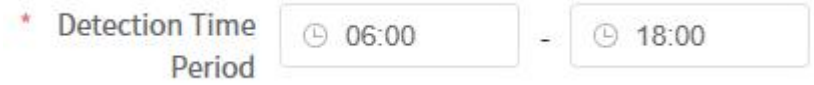
1) Behavior Type: Intrusion

Click , check Intrusion.

2) Detection Target: Used to specify the targets to be detected. The device will monitor and detect only the selected targets.

Click to select or deselect targets. Multiple selections are allowed.

3) Detection Time Period: Set the start and end times for executing the detection task.



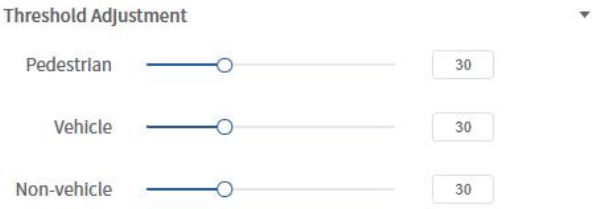
- Set start time

Click 06:00 , scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

- Set End Time

Click 18:00 , scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

4) Threshold Adjustment



Slide the progress bar to adjust the detection threshold, or click the input box 30 to enter the desired threshold value.

NOTE

The higher the threshold value, the lower the detection sensitivity, making it less likely to trigger an alarm.

5) Detection Box: Displays the detection target box.

Click to enable or disable the detection box.

6) Tracking Box: Displays the tracking target box.

Click to enable or disable the tracking box.

7) Enable Tracking: Track the detected target.

Click to enable or disable tracking.

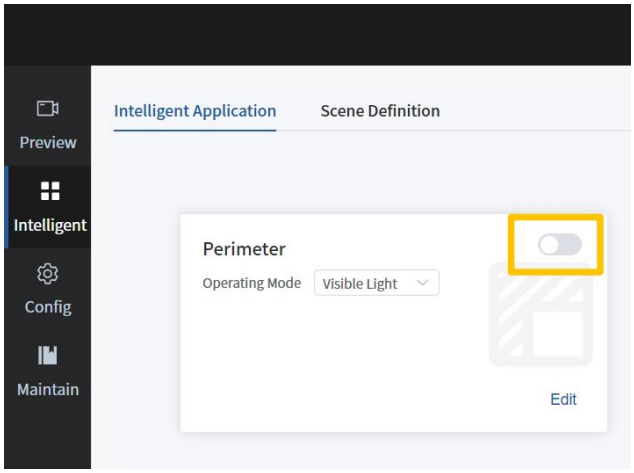
8) Tracking Duration

Click the input box 30 , enter the tracking duration in seconds.

9) Disappear Search Duration

Click the input box 5 , enter the disappear search duration in seconds.

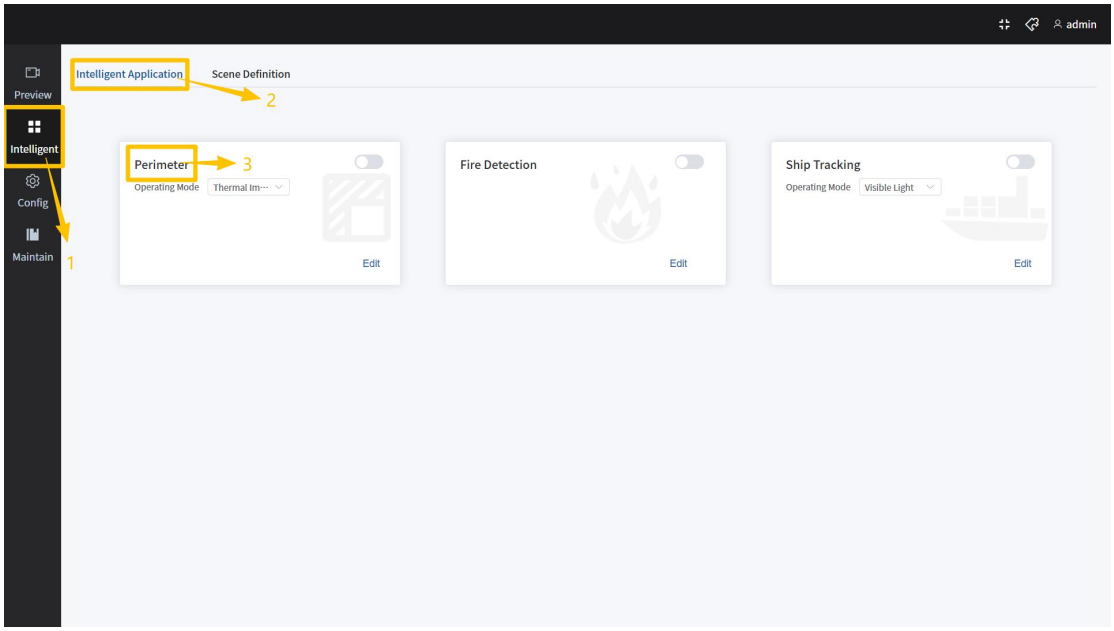
Step 8: Click to enable the intelligent perimeter function.



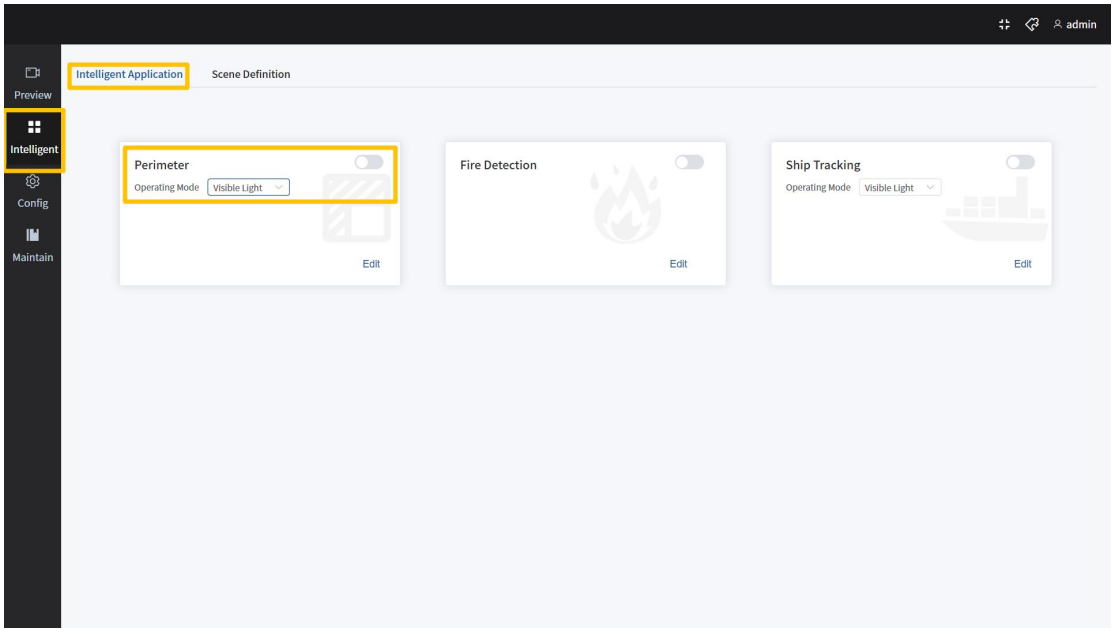
5.1.3 Leave Detection

Leave detection is used to determine whether a target leaves a defined warning area. If a target leaves, the device triggers linked actions.

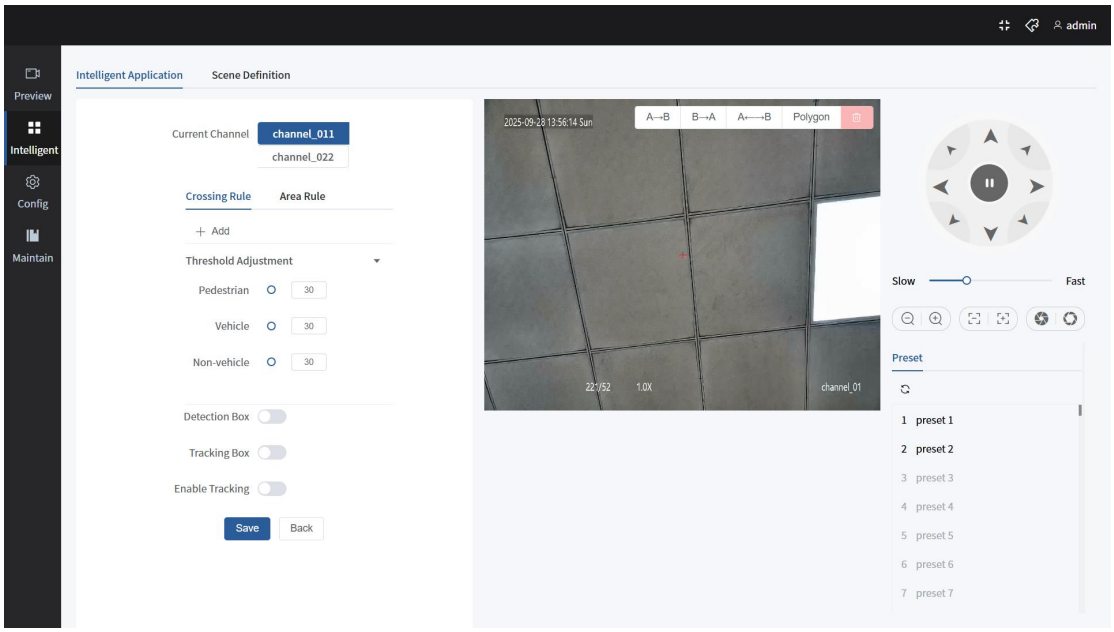
Operation Steps:Step 1: Navigate to “Intelligent > Intelligent Application > Perimeter”.



Step 2: Click the “Operating Mode” drop-down and select “Visible Light”.

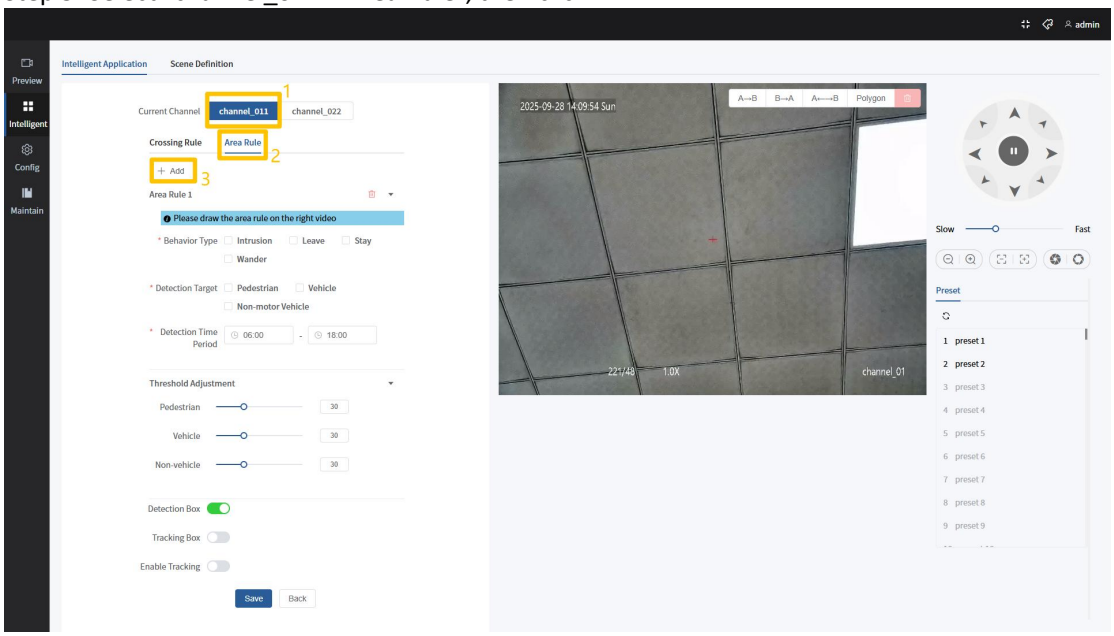


Step 3: Click “Edit” to enter the configuration page.

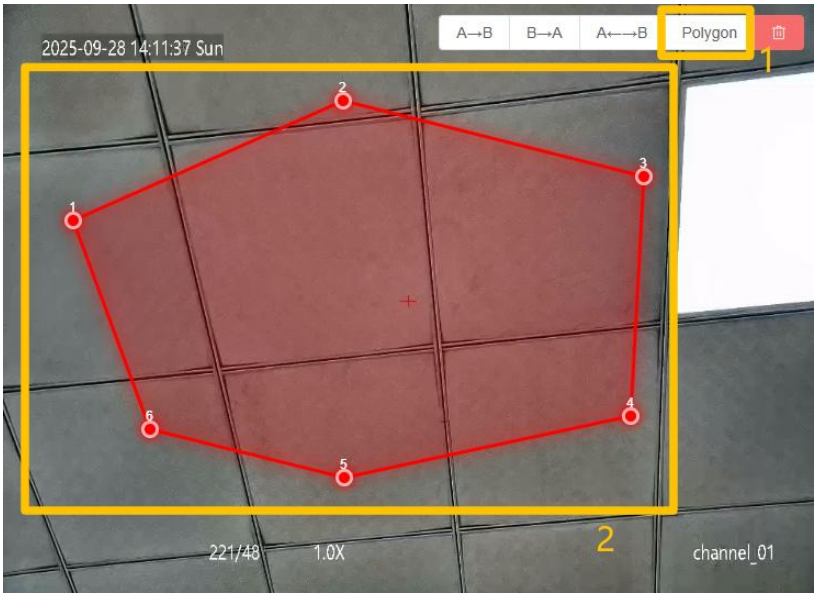


Step 4: Select a warning area and use the PTZ control to adjust it to the desired detection scene.

Step 5: Select “channel_011 > Area Rule”, then click + Add .



Step 6: Draw the rule area in the right-hand screen.



1)Click Polygon.

2)Click the detection area.

3)In the live view, click the left mouse button sequentially to draw the vertices of the polygonal warning area.

4)Click Delete to remove an already drawn area.

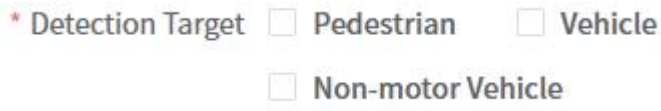
Step 7: Set the rule parameters, then click OK to save.

1) Behavior Type: Leave

Click , check Intrusion.

2) Detection Target: Used to specify the targets to be detected. The device will monitor and

detect only the selected targets.



Click to select or deselect targets. Multiple selections are allowed.

3) Detection Time Period: Set the start and end times for executing the detection task.

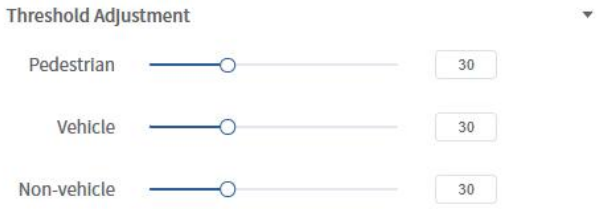
- Set start time

Click 06:00 , scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

- Set End Time

Click 18:00 , scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

4) Threshold Adjustment



Slide the progress bar to adjust the detection threshold, or click the input box 30 to enter the desired threshold value.

NOTE

The higher the threshold value, the lower the detection sensitivity, making it less likely to trigger an alarm.

5) Detection Box: Displays the detection target box.

Click to enable or disable the detection box.

6) Tracking Box: Displays the tracking target box.

Click to enable or disable the tracking box.

7) Enable Tracking: Track the detected target.

Click to enable or disable tracking.

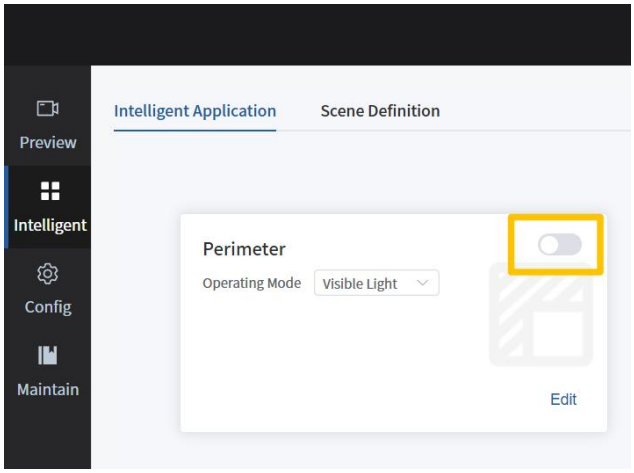
8) Tracking Duration

Click the input box 30 , enter the tracking duration in seconds.

9) Disappear Search Duration

Click the input box 5 , enter the disappear search duration in seconds.

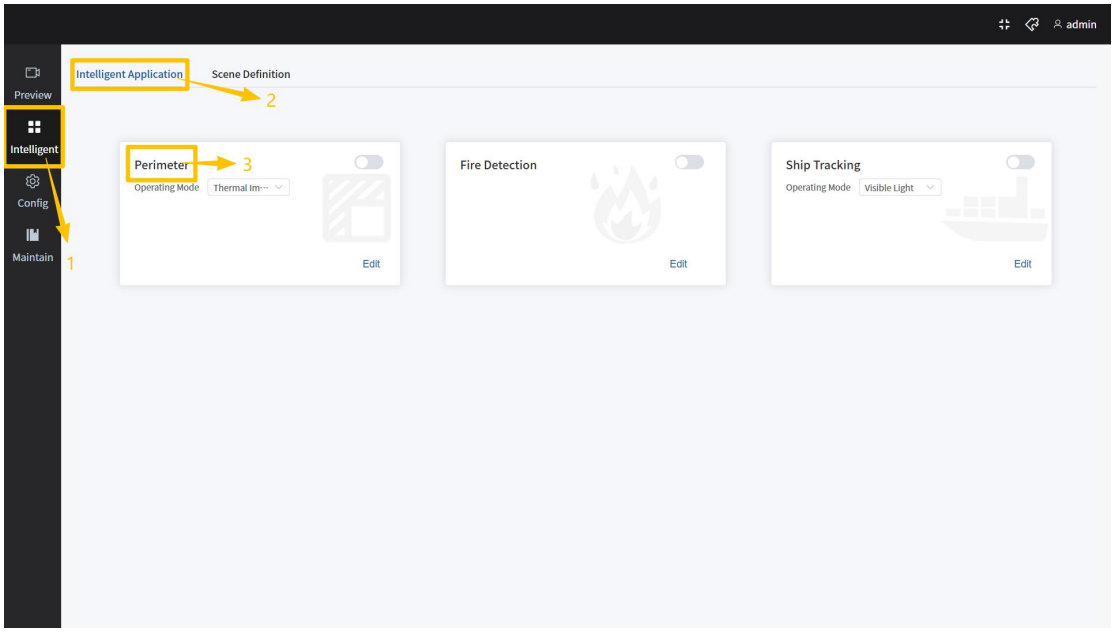
Step 8: Click to enable the intelligent perimeter function.



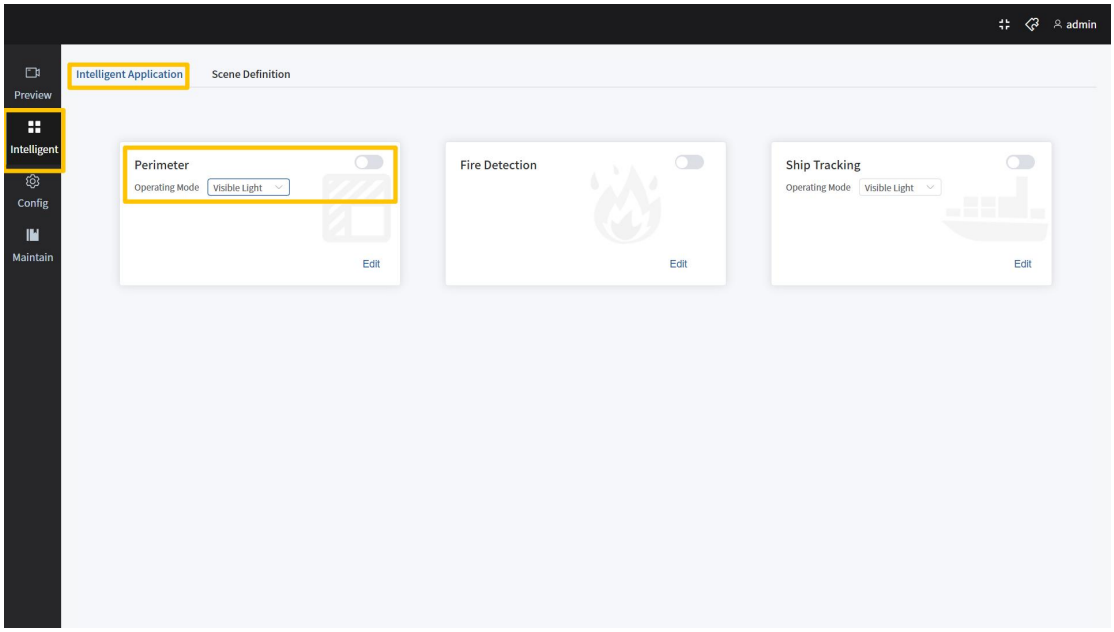
5.1.4 Stay Detection

Stay detection is used to determine whether a target remains within a defined warning area. If a target stays in the area for a duration exceeding the set time threshold, the device triggers linked actions.

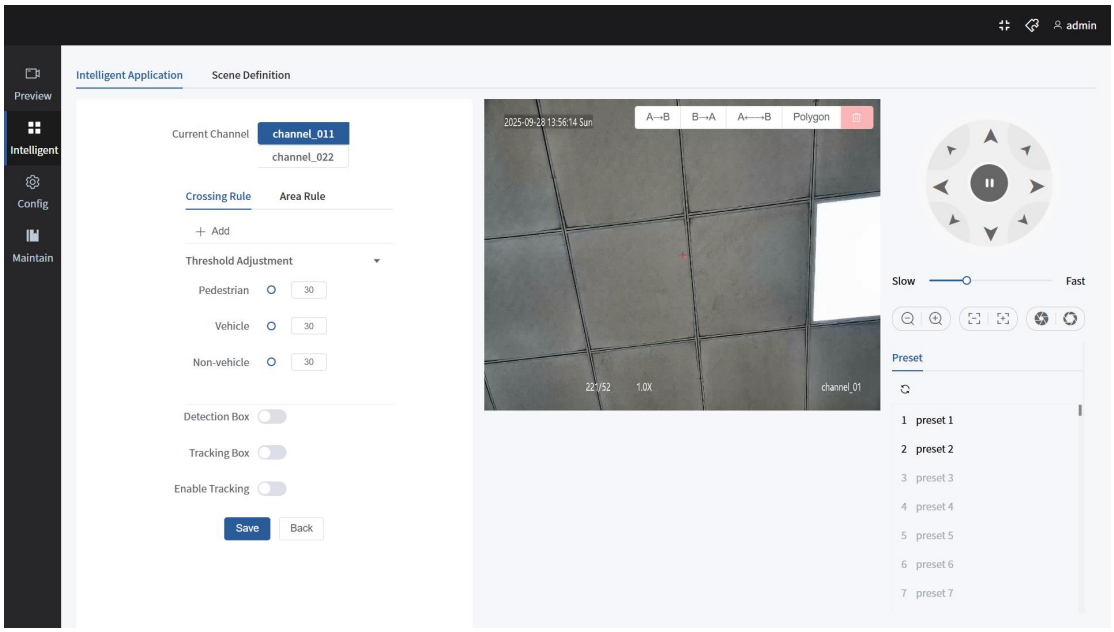
Operation Steps:Step 1: Navigate to “Intelligent > Intelligent Application > Perimeter”.



Step 2: Click the “Operating Mode” drop-down and select “Visible Light”.

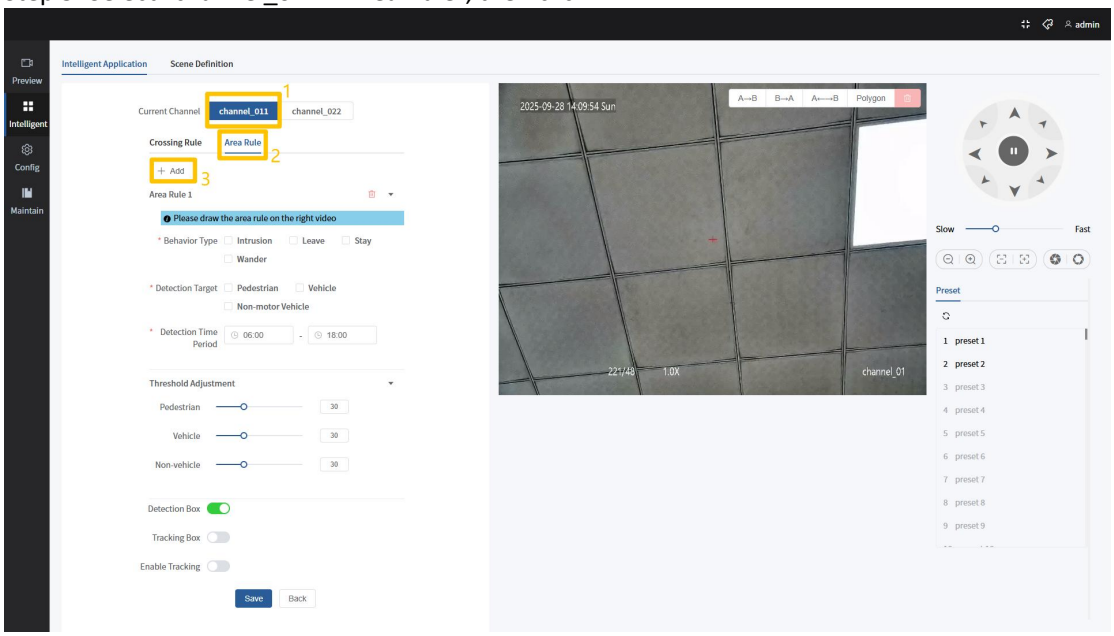


Step 3: Click “Edit” to enter the configuration page.

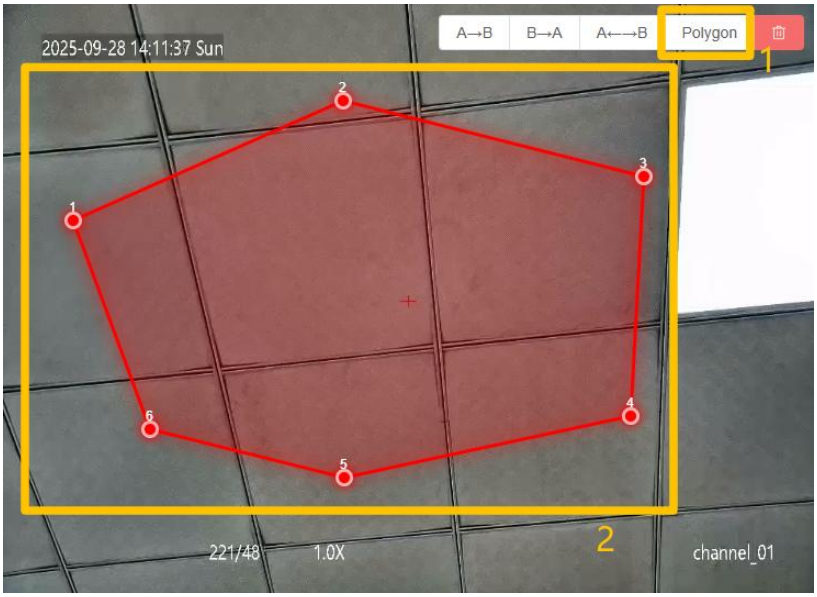


Step 4: Select a warning area and use the PTZ control to adjust it to the desired detection scene.

Step 5: Select “channel_011 > Area Rule”, then click + Add .



Step 6: Draw the rule area in the right-hand screen.



1)Click Polygon.

2)Click the detection area.

3)In the live view, click the left mouse button sequentially to draw the vertices of the polygonal warning area.

4)Click Delete to remove an already drawn area.

Step 7: Set the rule parameters, then click OK to save.

1) Behavior Type: Loitering

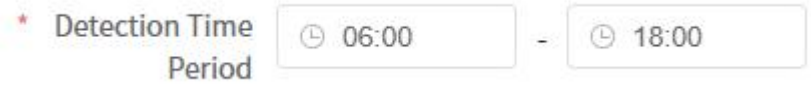
Click , check Intrusion.

2) Detection Target: Used to specify the targets to be detected. The device will monitor and

detect only the selected targets.

Click to select or deselect targets. Multiple selections are allowed.

3) Detection Time Period: Set the start and end times for executing the detection task.



- Set start time

Click 06:00 , scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

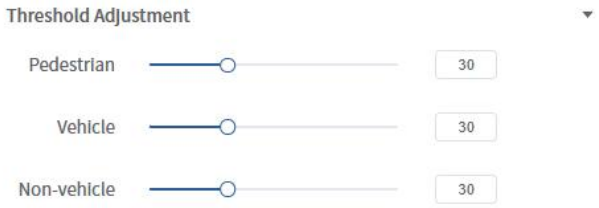
- Set End Time

Click 18:00 , scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

4) Stay Time: Specifies the duration of stay that triggers an alarm.

Click the input box 10 , and enter the duration of stay in seconds.

5) Threshold Adjustment



Slide the progress bar to adjust the detection threshold, or click the input box 30 to enter the desired threshold value.

NOTE

The higher the threshold value, the lower the detection sensitivity, making it less likely to trigger an alarm.

6) Detection Box: Displays the detection target box.

Click to enable or disable the detection box.

7) Tracking Box: Displays the tracking target box.

Click to enable or disable the tracking box.

8) Enable Tracking: Track the detected target.

Click to enable or disable tracking.

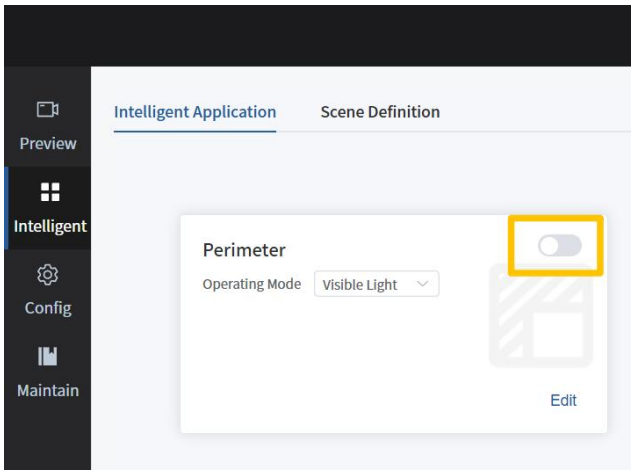
9) Tracking Duration

Click the input box 30 , enter the tracking duration in seconds.

10) Disappear Search Duration

Click the input box 5 , enter the disappear search duration in seconds.

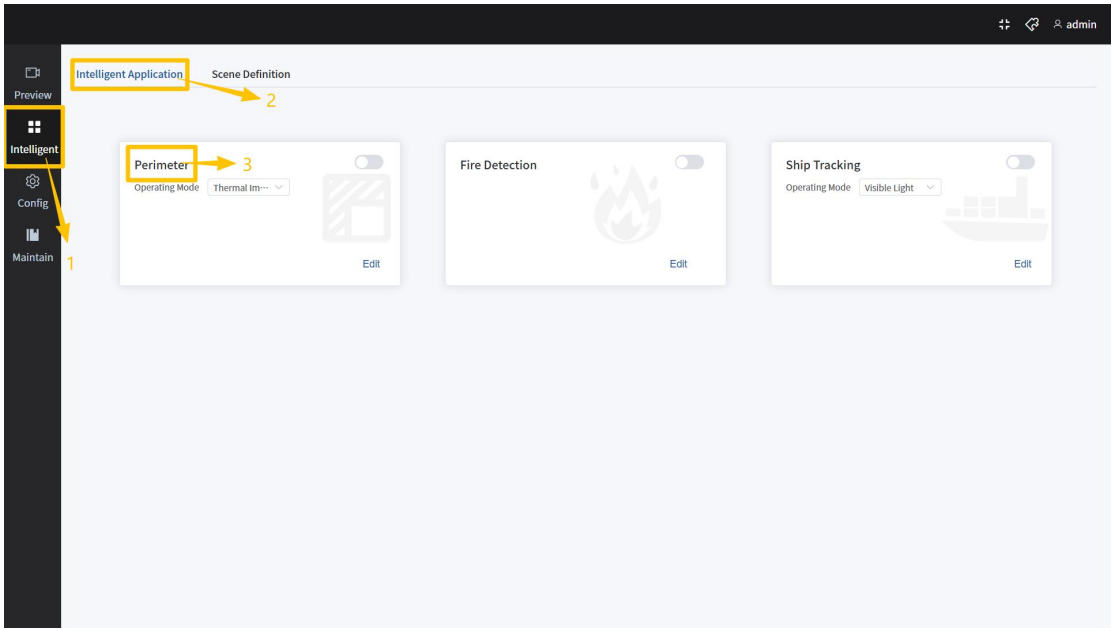
Step 8: Click to enable the intelligent perimeter function.



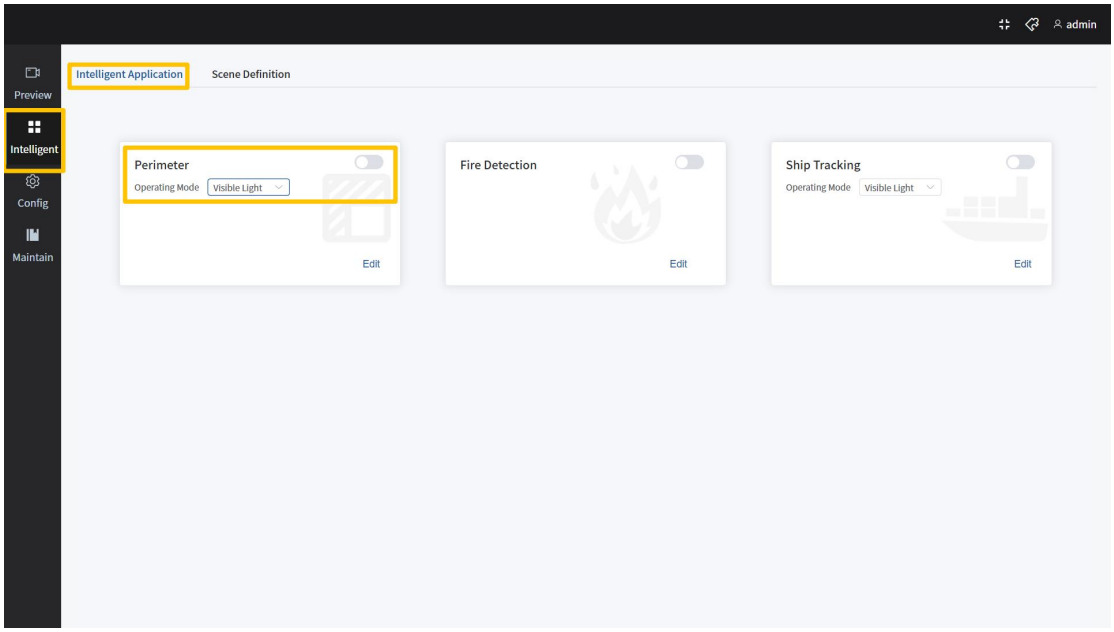
5.1.5 Wander Detection

Wander detection is used to determine whether a target moves around within a defined warning area. If a target wanders in the area for a duration exceeding the set time threshold, the device triggers linked actions.

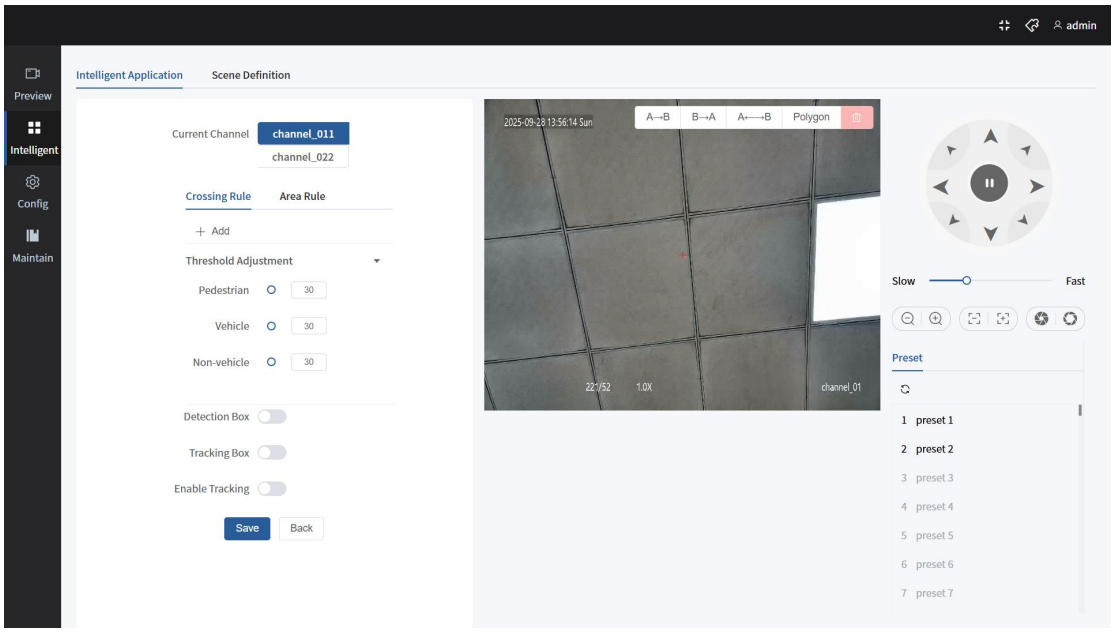
Operation Steps:Step 1: Navigate to “Intelligent > Intelligent Application > Perimeter”.



Step 2: Click the “Operating Mode” drop-down list and select “Visible Light”.

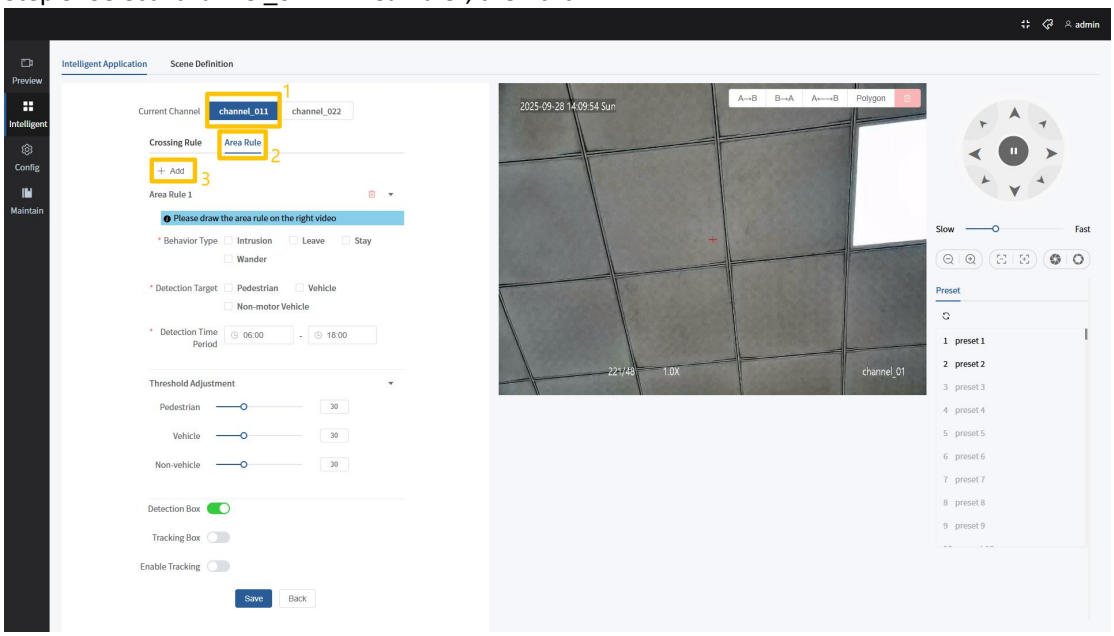


Step 3: Click “Edit” to enter the configuration page.

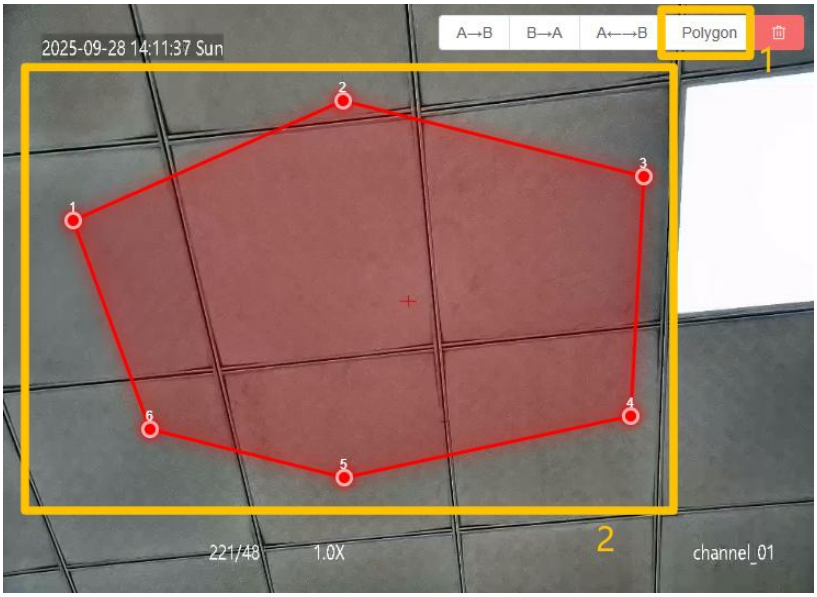


Step 4: Select a warning area and use the PTZ control to adjust it to the desired detection scene.

Step 5: Select “channel_011 > Area Rule”, then click + Add .



Step 6: Draw the rule area in the right-hand screen.



1)Click Polygon.

2)Click the detection area.

3)In the live view, click the left mouse button sequentially to draw the vertices of the polygonal warning area.

4)Click Delete to remove an already drawn area.

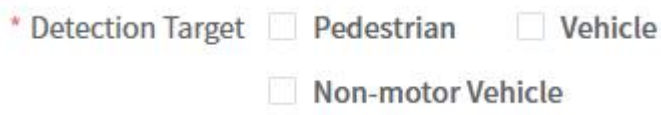
Step 7: Set the rule parameters, then click OK to save.

1) Behavior Type: Wander

Click , check Intrusion.

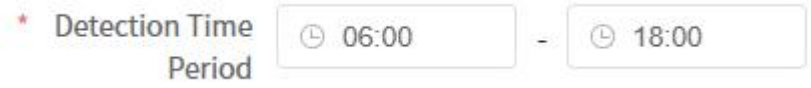
2) Detection Target: Used to specify the targets to be detected. The device will monitor and

detect only the selected targets.



Click to select or deselect targets. Multiple selections are allowed.

3) Detection Time Period: Set the start and end times for executing the detection task.



- Set start time

Click 06:00 , scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

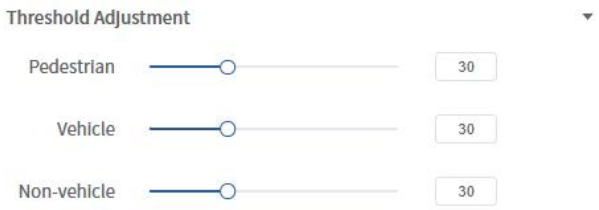
- Set End Time

Click 18:00 , scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

4) Wander Time: Specifies the duration of wander that triggers an alarm.

Click the input box 10 , and enter the duration of wander in seconds.

5) Threshold Adjustment



Slide the progress bar to adjust the detection threshold, or click the input box 30 to enter the desired threshold value.

NOTE

The higher the threshold value, the lower the detection sensitivity, making it less likely to trigger an alarm.

6) Detection Box: Displays the detection target box.

Click to enable or disable the detection box.

7) Tracking Box: Displays the tracking target box.

Click to enable or disable the tracking box.

8) Enable Tracking: Track the detected target.

Click to enable or disable tracking.

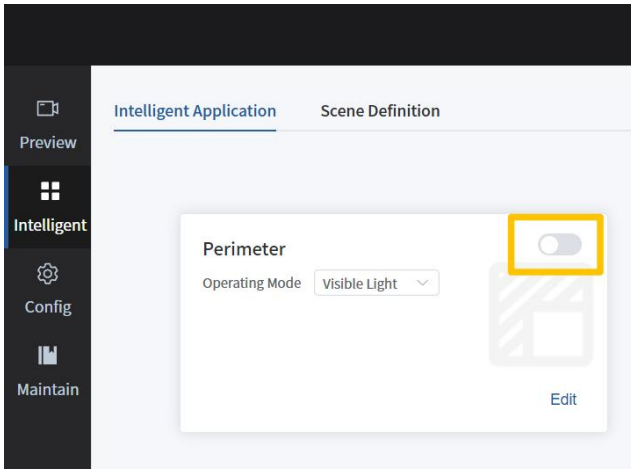
9) Tracking Duration

Click the input box 30 , enter the tracking duration in seconds.

10) Disappear Search Duration

Click the input box 5 , enter the disappear search duration in seconds.

Step 8: Click to enable the intelligent perimeter function.



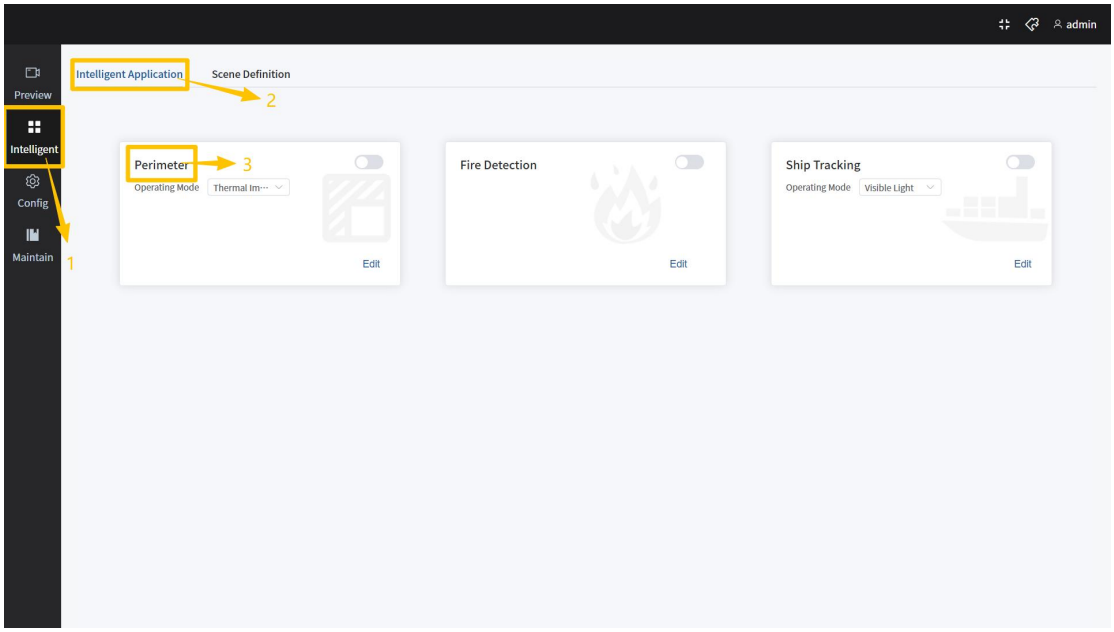
5.1.6 Thermal Imaging Perimeter Intelligent Mode

The configuration of thermal imaging perimeter intelligent applications is similar to that of visible light perimeter applications. Please refer to the *visible light mode configuration instructions*.

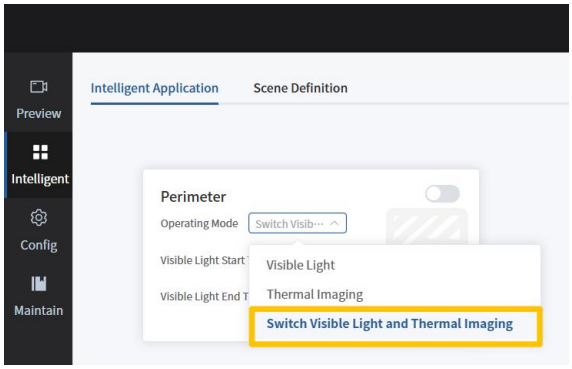
5.1.7 Switch Visible Light and Thermal Imaging

The “switch visible light and thermal imaging” allows switching between visible light detection and thermal imaging detection in two time periods within 24 hours.

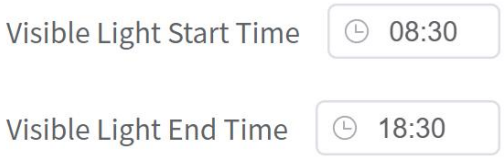
Operation Steps:Step 1: Navigate to “Intelligent > Intelligent Application > Perimeter.”



Step 2: Click the "Operating Mode" drop-down list and select “Switch Visible Light and Thermal Imaging”.



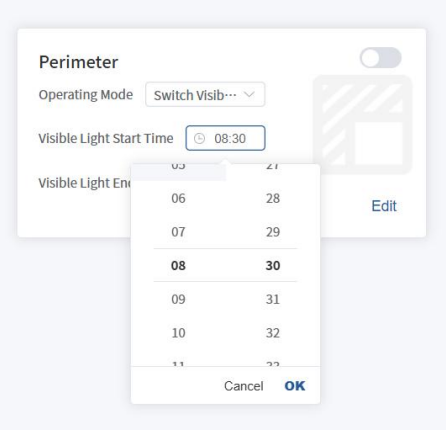
Step 3: Configure the start time and end time for the visible light mode.



- Set Start Time

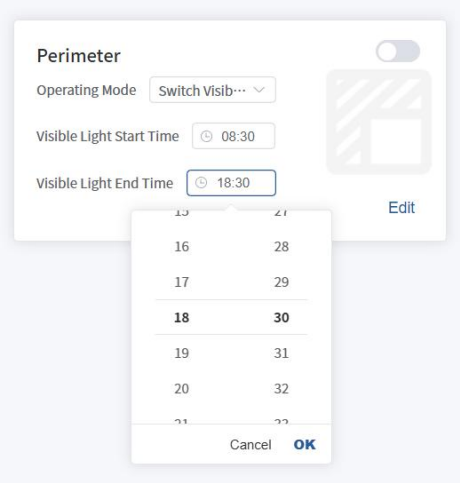
Click 

, scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

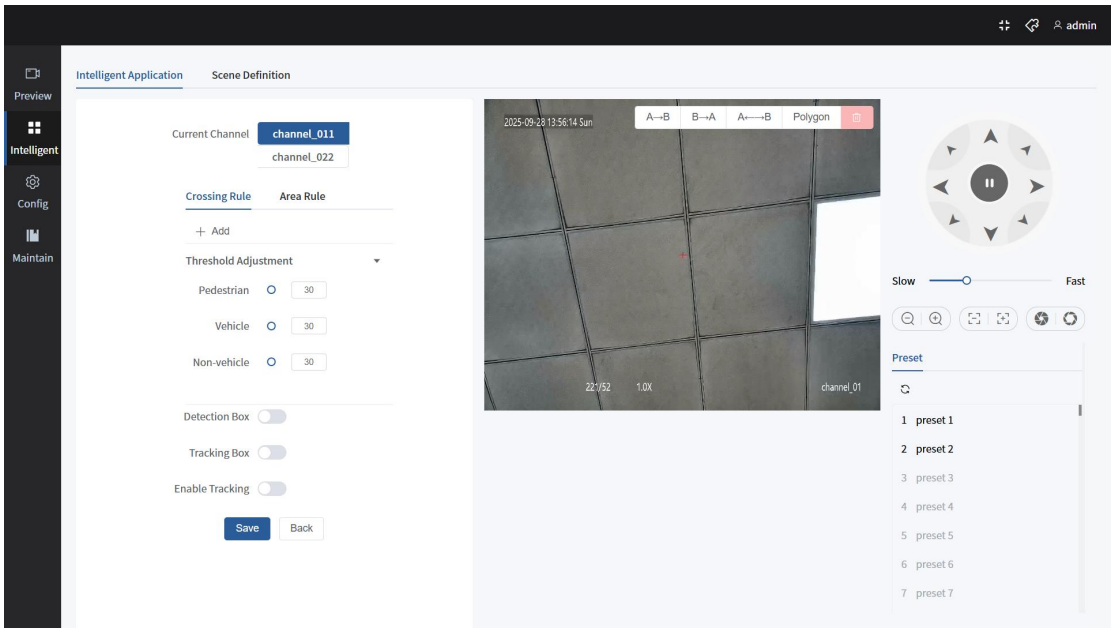


- Set End Time

Click 18:30, scroll the mouse wheel up or down to select the desired time, then click OK to confirm.



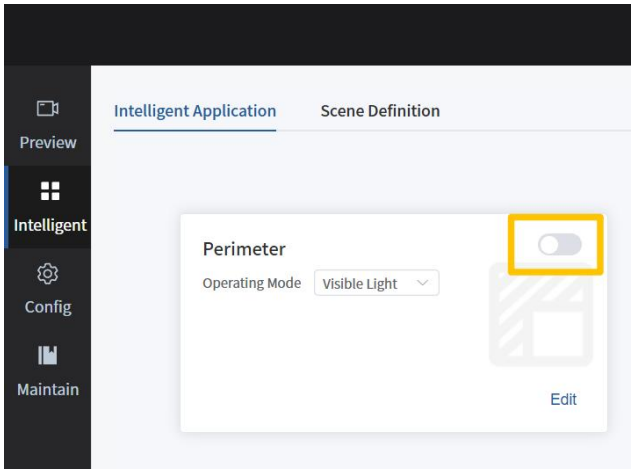
Step 4: Click “Edit” to enter the configuration page.



Step 5: Configure the detection rules and parameters for visible light and thermal imaging

respectively. For detailed configuration steps, please refer to the visible light mode configuration instructions. Click Save to apply the settings.

Step 6: Click to enable the intelligent perimeter function.

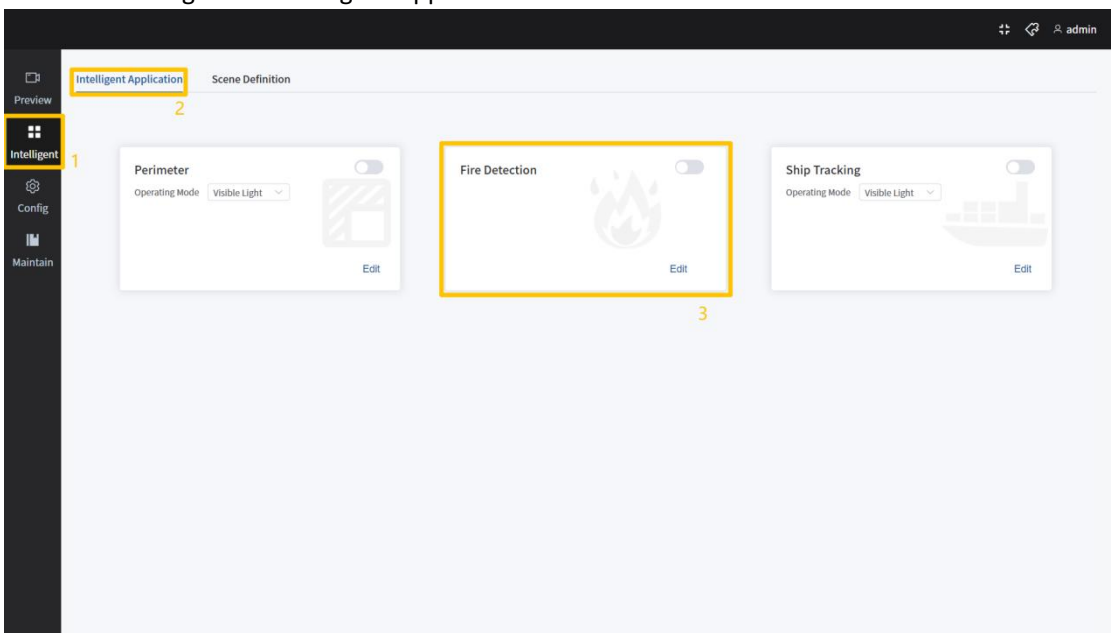


5.2 Fire Detection

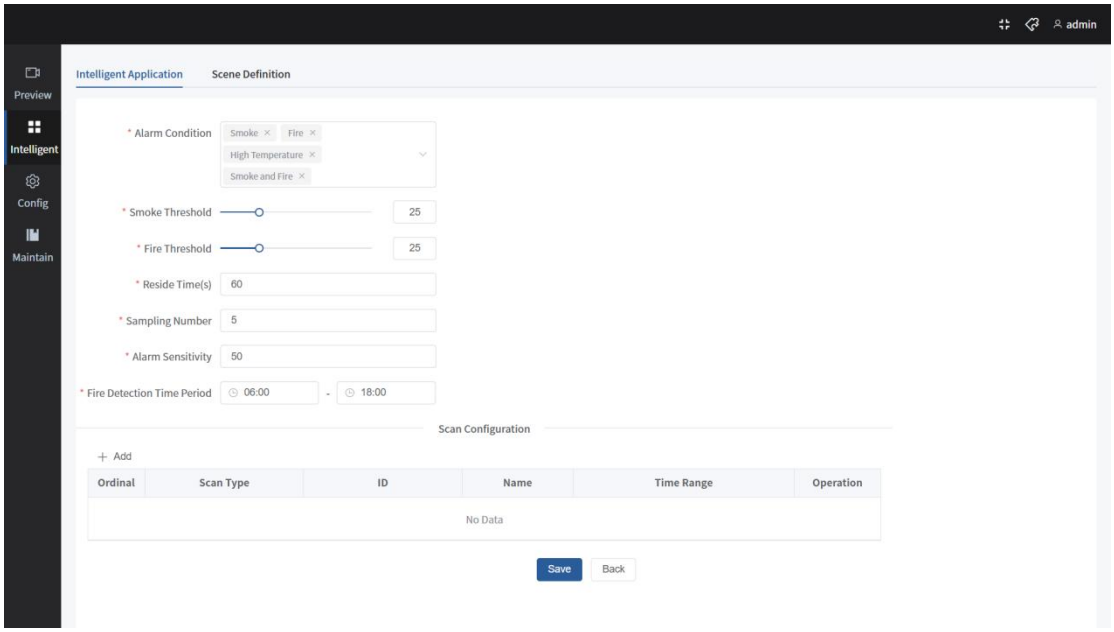
Fire detection uses the device's AI algorithm to automatically identify flames and smoke in the video image. Once detected, the system immediately issues an alarm and triggers the device to execute linkage actions.

Operation Steps:

1: Select "Intelligence > Intelligent Application > Fire Detection".



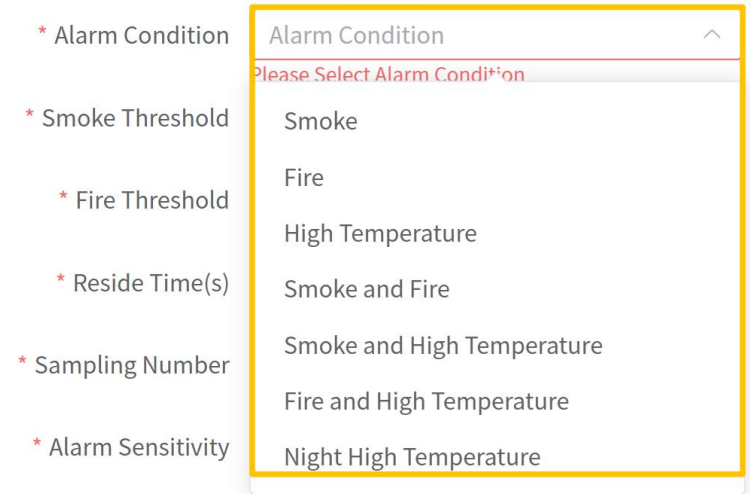
Step 2: Click “Edit” to enter the fire detection parameter configuration page.



1) **Alarm Conditions**: Define the conditions under which the device will trigger an alarm.

Click the alarm condition drop-down menu 

and select one or more conditions. Options include: Smoke, Fire, High Temperature, Smoke and Fire, Smoke and High Temperature, Fire and High Temperature, Night High Temperature. Multiple selections supported.



CAUTION

If High Temperature or Night High Temperature is selected, the prerequisite is that the thermal imaging channel’s video parameters have enabled the fire alarm function and that the threshold has been set.

2) **Smoke Detection Threshold**: Adjust the threshold value according to the specific environment.

NOTE

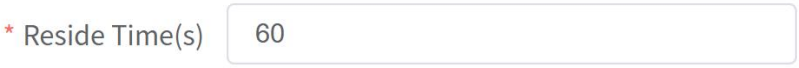
- Threshold Value Range: 1–100.
- The higher the threshold, the lower the sensitivity, making it less likely to trigger an alarm; the lower the threshold, the higher the sensitivity, making it more likely to trigger an alarm.

3) **Fire Detection Threshold**: Set the threshold according to the specific environment.

NOTE

- Threshold Value Range: 1–100.
- The higher the threshold, the lower the sensitivity, making it less likely to trigger an alarm; the lower the threshold, the higher the sensitivity, making it more likely to trigger an alarm.

4) Reside Time: The duration for continuous tracking and detection.



Click input box

, and enter the duration of stay.

NOTE

Range: 0–600 seconds.

5) **Sample Quantity**: The number of features to extract.

Click input box

, and enter the sample quantity.

NOTE

- Range: 5–20
- A higher value means more samples, making alarm condition detection more accurate. A lower value means fewer samples, which may reduce reliability.

6) **Alarm Sensitivity**

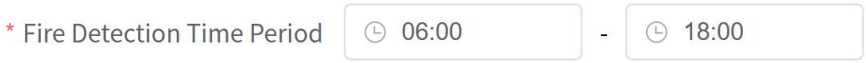
Click the input box

and enter the alarm sensitivity.

NOTE

- Range: 1–100
- The smaller the value, the lower the sensitivity and the less likely an alarm will be triggered. The larger the value, the higher the sensitivity and the more likely an alarm will be triggered.

7) **Fire Detection Time Period**: Set the time period during which the smoke and fire detection task is executed.



- Set Start Time

Click 

, scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

- Set End Time

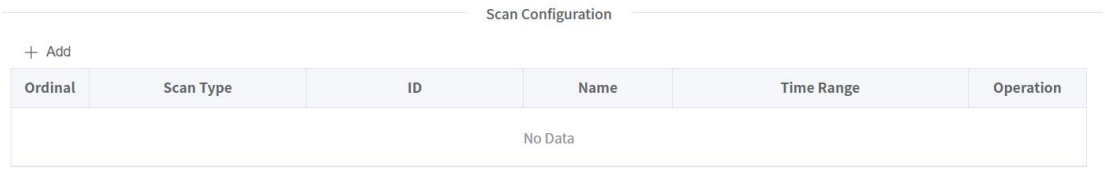
Click 

, scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

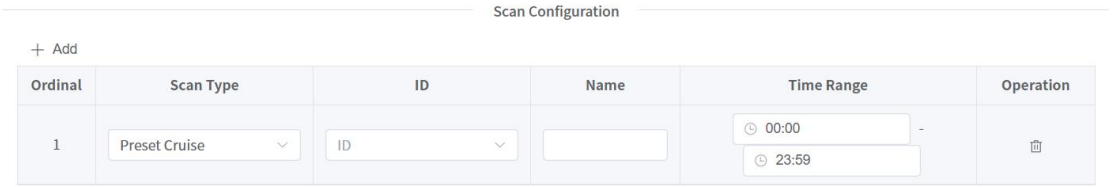
Step: Scan Configuration

The PTZ supports 360° full-area video monitoring through cruise scan or apple peel scan.

Prerequisites: Cruise scan or apple peel scan must be configured. For detailed setup instructions, please refer to the *Cruise Scan or Apple Peel Scan configuration methods*.



- Click + to add scan.



- Scan Type: Select Cruise Scan or Apple Peel Scan.
- ID: Select the ID of the pre-configured cruise or apple peel scan route.
- Name: Set a name for the scan as needed.
- Time Range: Set the start and end time for the scan.

NOTE

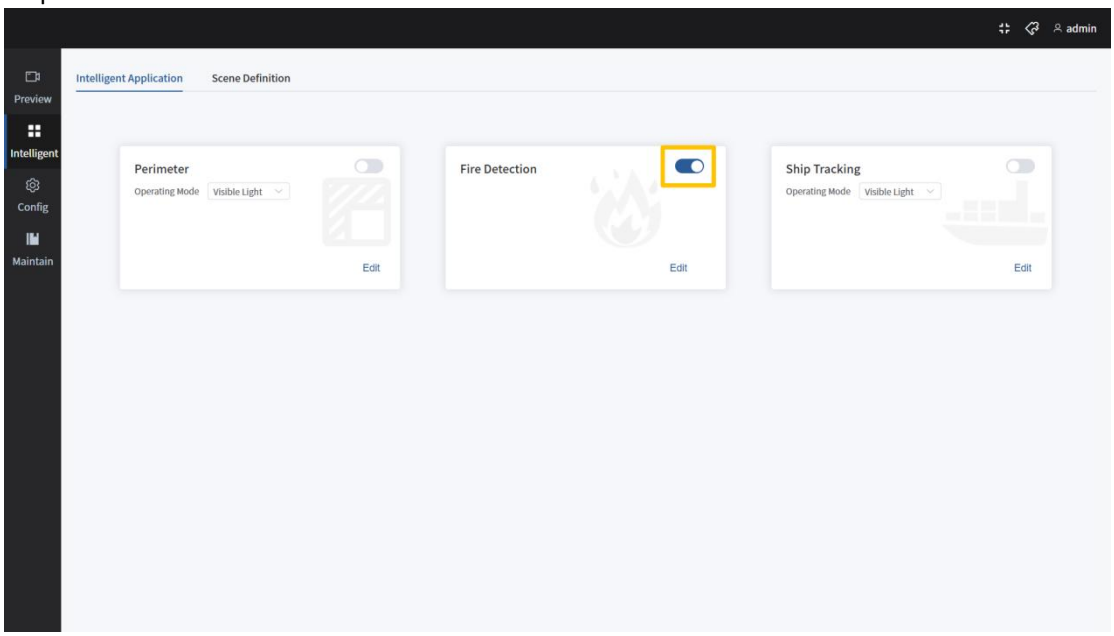
Only one scan action can be executed within the same time period.

- Optional Operation: Click Delete to remove a scan.

CAUTION

After modifying the parameters, it is recommended to click Save to apply the changes.

Step 4: Click to activate the fire detection function.



NOTE

Only one intelligent application—such as Perimeter, Fire Detection, or Ship Tracking—can be enabled at a time. For example, to enable the fire detection application, Perimeter and ship Tracking must be disabled.

5.3 Ship Tracking

Ship Tracking uses the camera's AI algorithm to detect, identify, and continuously track ships on the water in real time.

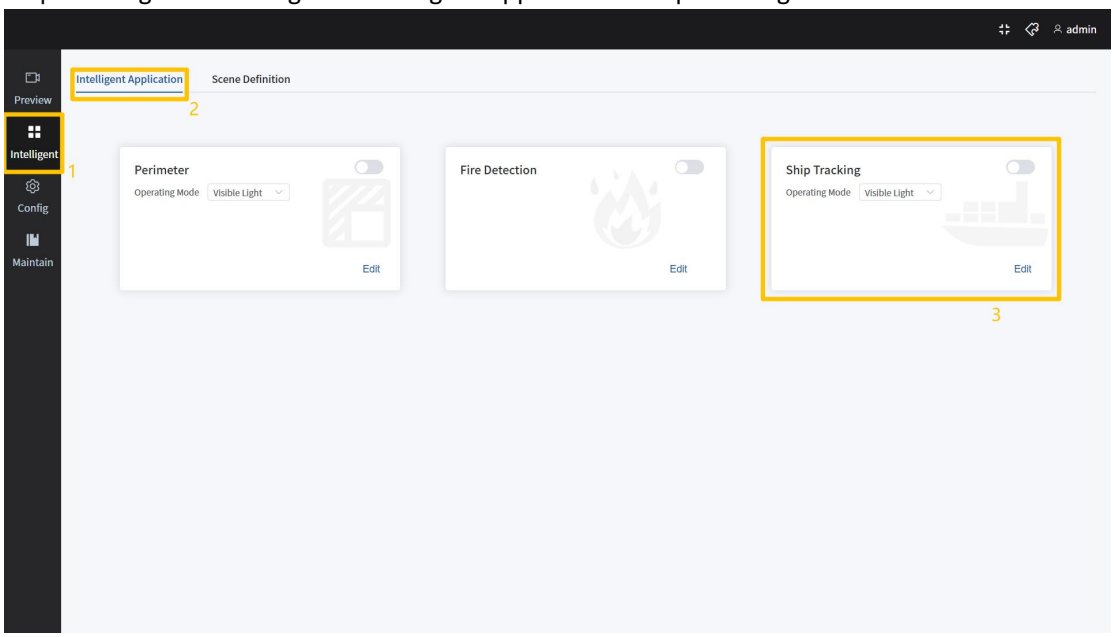
NOTE

Both visible light and thermal imaging support vessel tracking, and their configuration methods are similar. The following instructions use visible light mode as an example. For thermal imaging mode configuration, please *refer to the visible light mode configuration*.

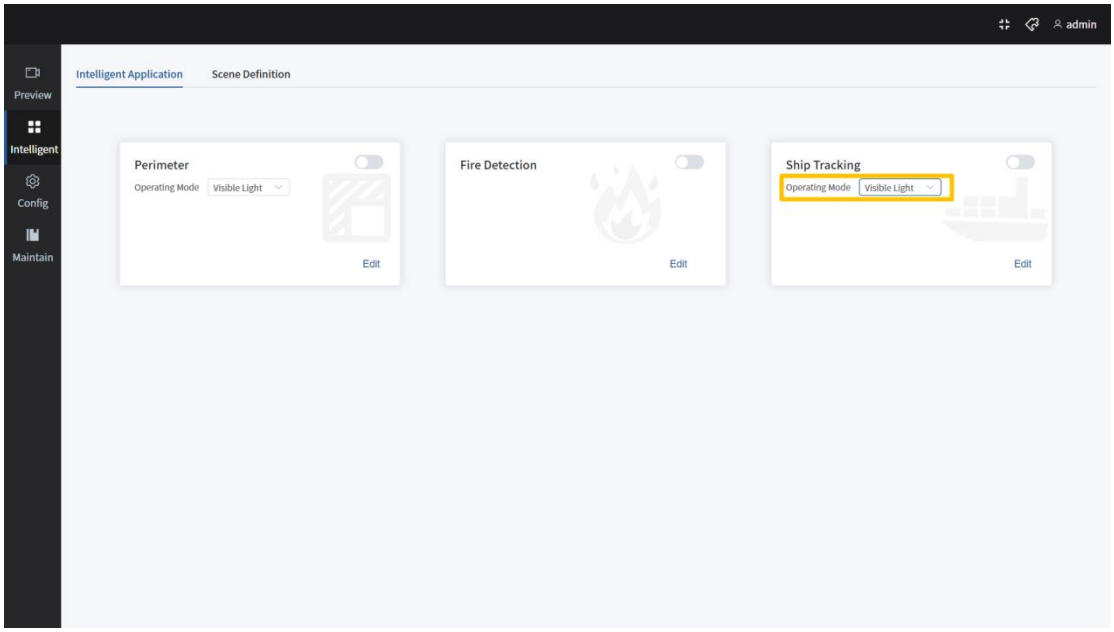
5.3.1 Visible Light Mode Configuration

Operating steps：

Step 1: Navigate to Intelligent > Intelligent Application > Ship Tracking.



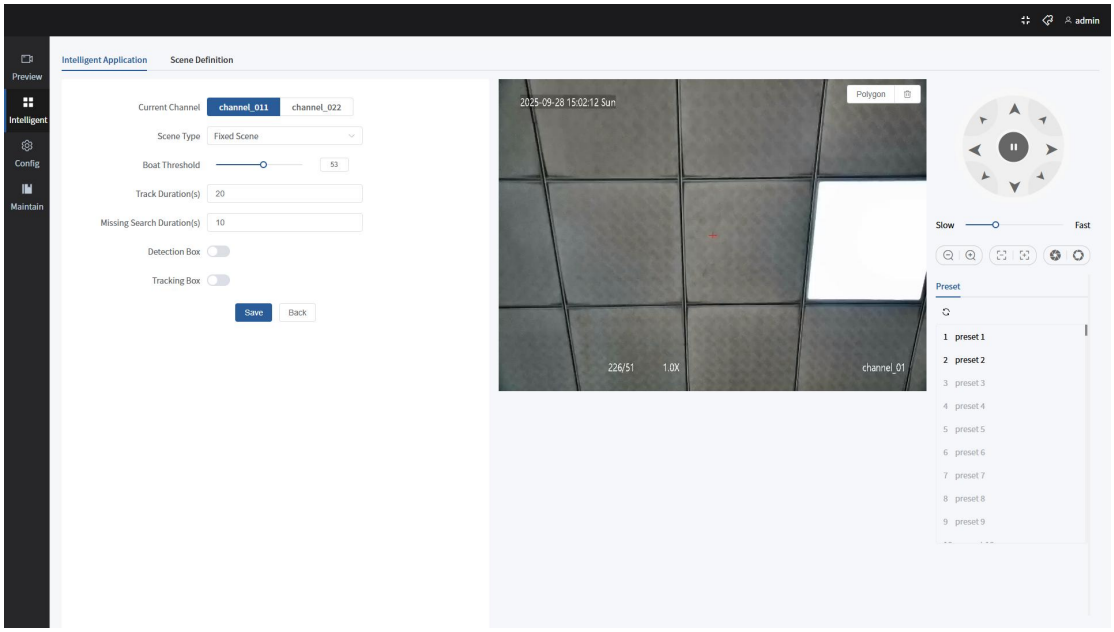
Step 2: Click the “Operating Mode” drop-down list and select **Visible Light.**



NOTE

- Only one intelligent application—such as Perimeter, Fire Detection, or Ship Tracking—can be enabled at a time. For example, to enable Ship Tracking, Perimeter and Fire Detection must be disabled.
- There are three operating mode options: Visible Light, Thermal Imaging, and Switch Visible Light and Thermal Imaging.
- When applying ship tracking, only one detection type—Visible Light or Thermal Imaging—can be selected within a given time period.

Step 3: Click “Edit” to enter the configuration page.



Step 4: Current Channel Selection: channel_011.

Step 5: Parameter Configuration

1) Scene Type: Choose Fixed Scene or Cruise Scene.

2) Fixed Scene: A warning area must be drawn.

Drawing Steps:

① Use the PTZ control to adjust to the desired detection scene.

② Click 

on the right-hand screen to start drawing a polygonal warning area.

③ Click the detection area.

④ In the live view, click the left mouse button sequentially to draw the vertices of the polygonal warning area.

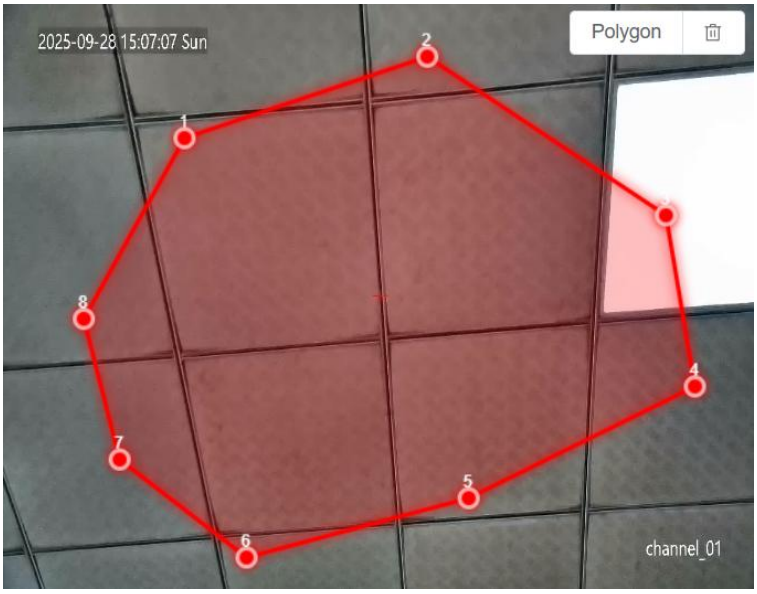
⑤ Click the first vertex to complete the polygon.

⑥ Move the first vertex to the desired position to finalize the warning area.

⑦ Click any vertex to adjust its position.

⑧ Repeat the above steps as needed; up to 4 warning areas can be added.

⑨ Click Delete to remove a warning area.



3) Cruise Scene: Use a scene from a configured cruise route to detect and track ships.

Prerequisites:

- At least one preset must have an electronic fence warning area configured. For electronic fence setup, *refer to 5.4.1 Electronic Fence*.
- At least one cruise scan must be configured. For cruise scan setup, *refer to 4.8 Cruise Scan*.

4) Ship Detection Threshold:

Slide the progress bar to adjust the detection threshold, or click the input box

to enter the desired threshold value.

NOTE

A higher threshold value reduces detection sensitivity, making it less likely to trigger an alarm.

5) Tracking Duration: Duration for continuously tracking the detected target.

Click the input box 

to enter the tracking duration.

6) Disappear Search Duration: Duration for the device to re-search the target after it leaves the detection area.

Click the input box 

to enter the duration.

7) Detection Box: Displays the detection target box

Click  to enable or disable the detection box.

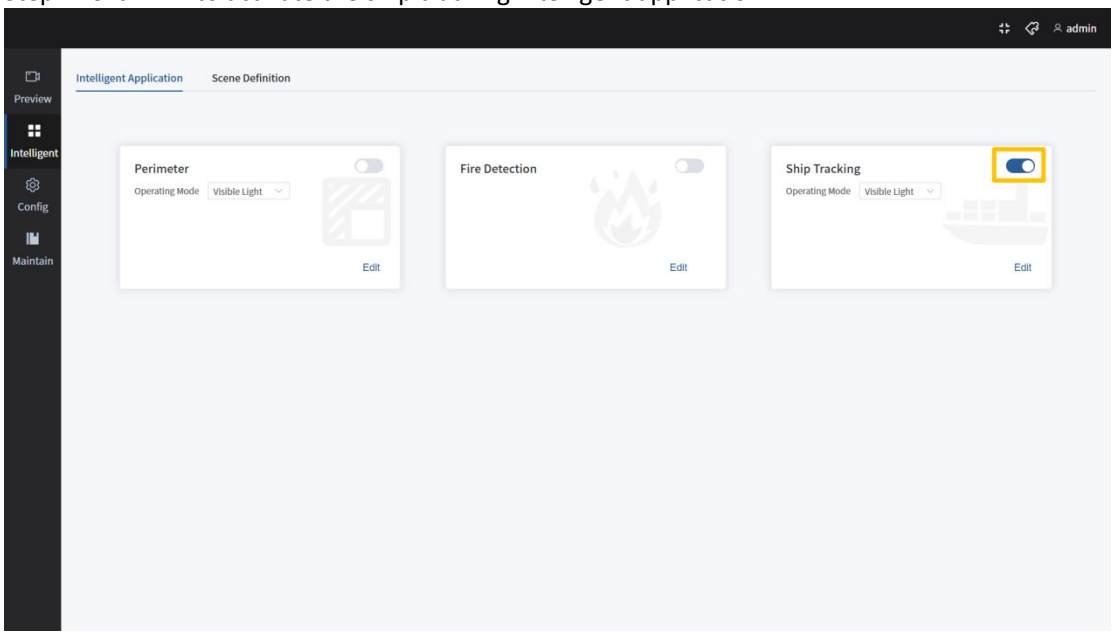
8) Tracking Box: Displays the tracking target box.

Click  to enable or disable the tracking box.

Step 6: Click 

to complete the configuration.

Step 7: Click  to activate the ship tracking intelligent application.



5.3.2 Thermal Imaging Mode Configuration

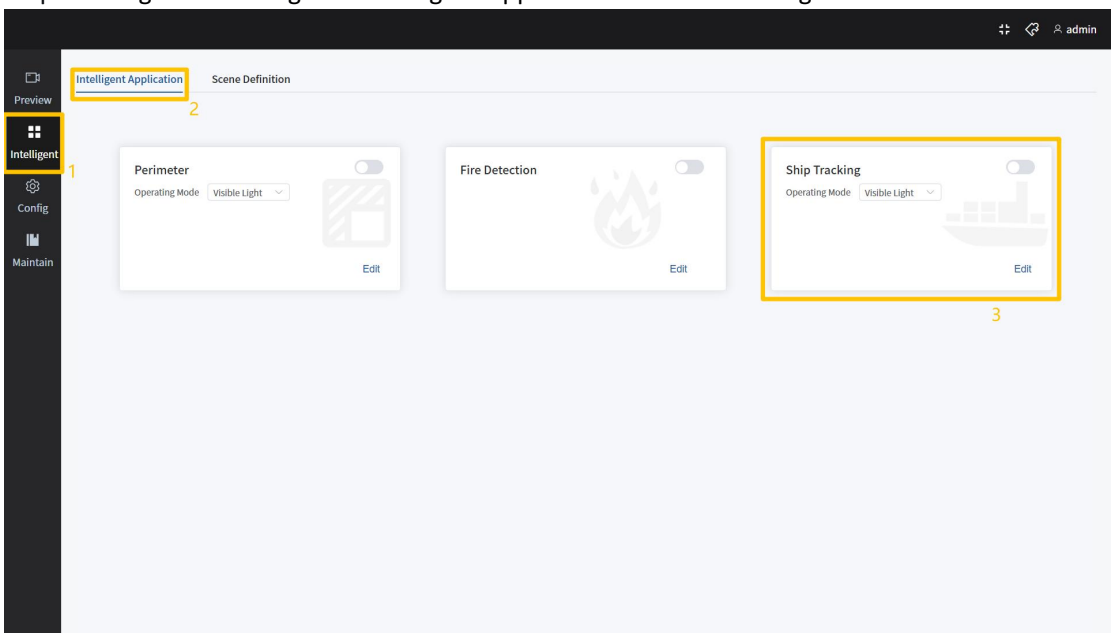
The configuration of ship tracking in thermal imaging mode is similar to that of visible light mode. Please *refer to the visible light mode configuration*.

5.3.3 Switch Visible Light and Thermal Imaging Mode Configuration

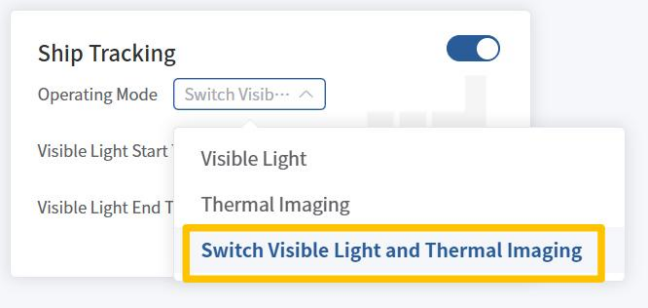
The “Switch visible light and thermal imaging” allows switching between visible light detection and thermal imaging detection in two time periods within 24 hours.

Operating steps：

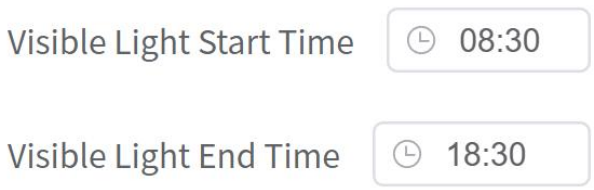
Step 1: Navigate to Intelligent > Intelligent Application > Vessel Tracking.



Step 2: Click the “Operating Mode” drop-down list and select “Switch Visible Light and Thermal Imaging”



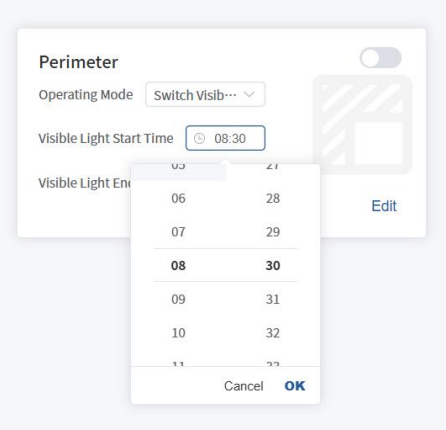
Step 3: Set the start time and end time for the visible light.



- Set Start Time

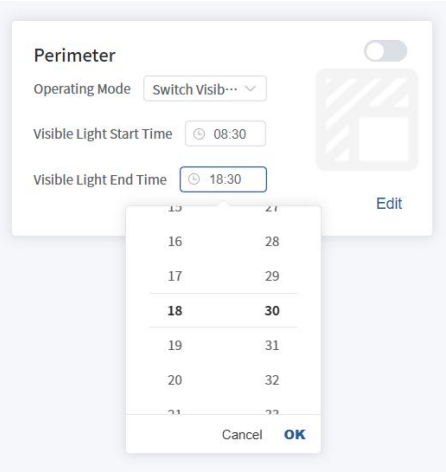
Click 

, scroll the mouse wheel up or down to select the desired time, then click OK to confirm.

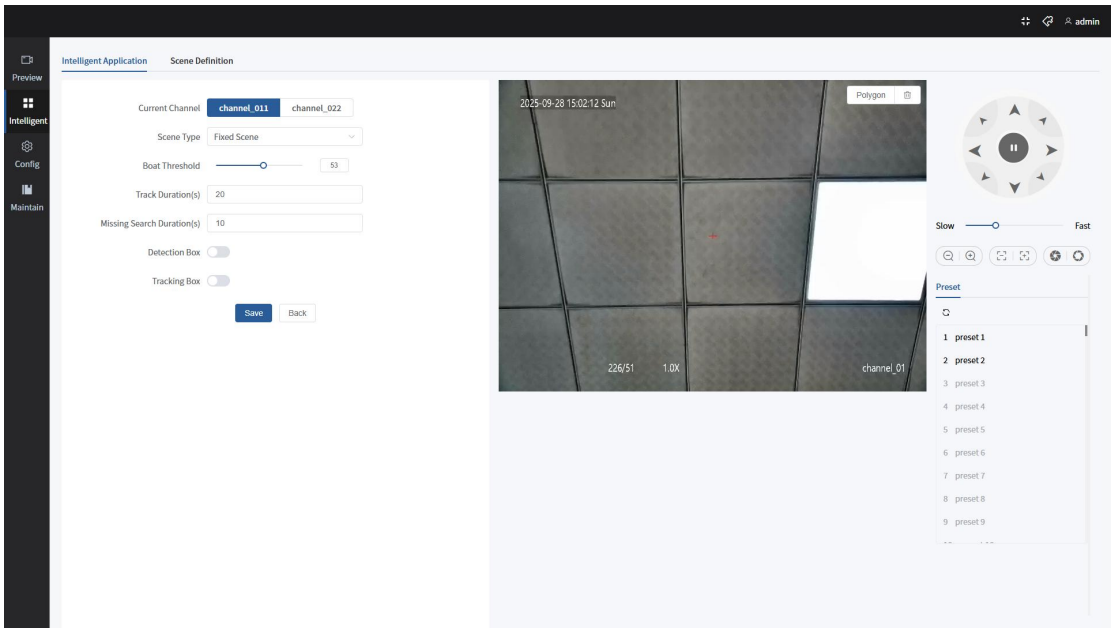


- Set End Time

Click 18:30, scroll the mouse wheel up or down to select the desired time, then click OK to confirm.



Step 4: Click “Edit” to enter the configuration page.



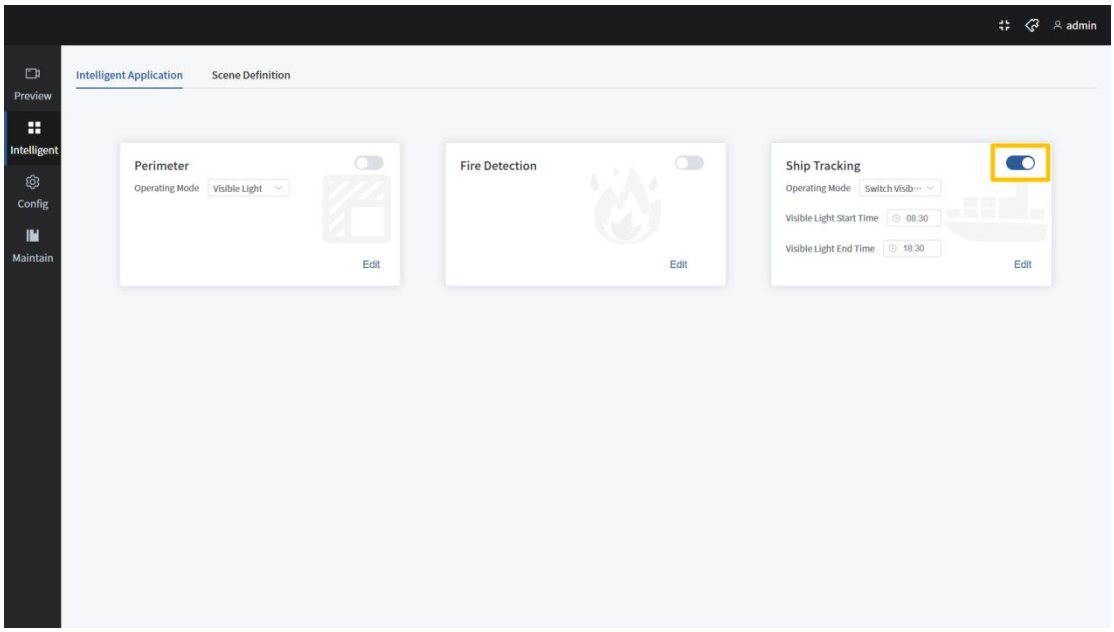
Step 5: Configure channel_01 and channel_02 separately. For detailed configuration, please *refer*

to 5.3.1 Visible Light Mode Configuration.

CAUTION

After configuring channel_01 or channel_02, be sure to click Save to apply the settings.

Step 6: Click to activate the ship tracking function.



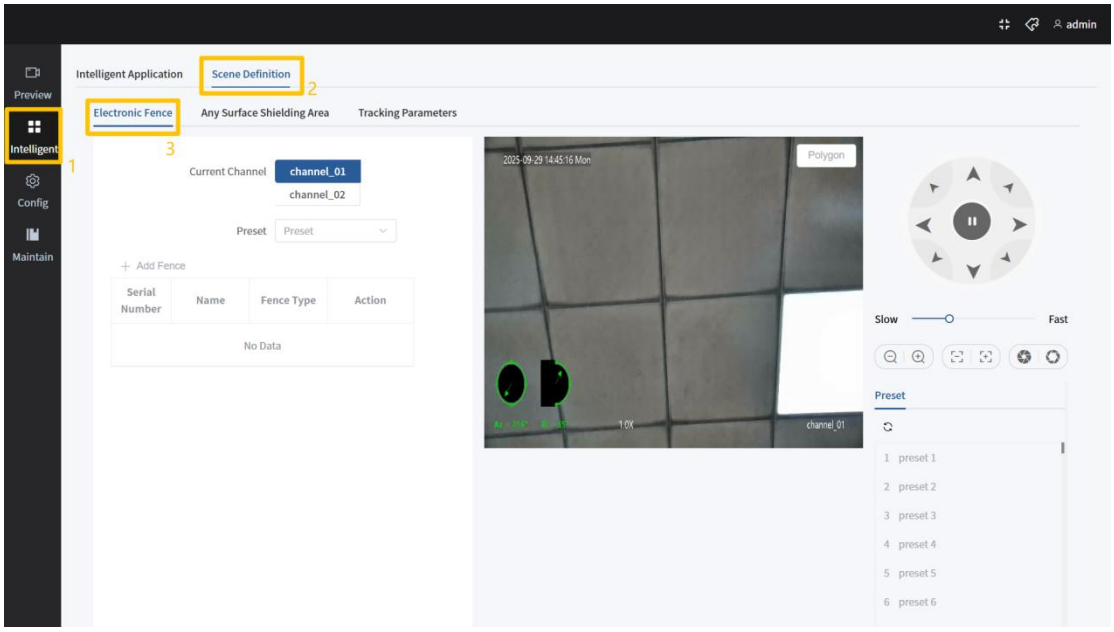
5.4 Scene Definition

Scene definition allows you to define functional areas according to customer requirements.

5.4.1 Electronic Fence

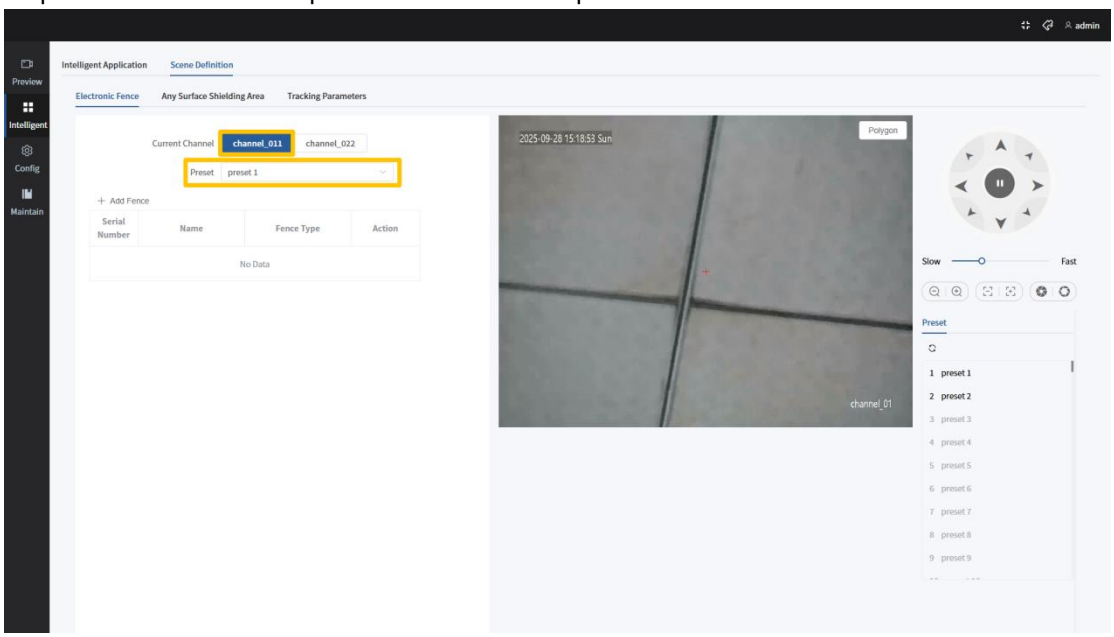
An electronic fence is a virtual protective boundary based on video intelligent analysis. You can freely draw a custom-shaped area on the live video screen. When a target enters, leaves, or appears within this virtual area, the camera can automatically detect it and trigger an alarm, or Shielding the area.

Operation Steps:Step 1: Navigate to Intelligent > Scene Definition > Electronic Fence.

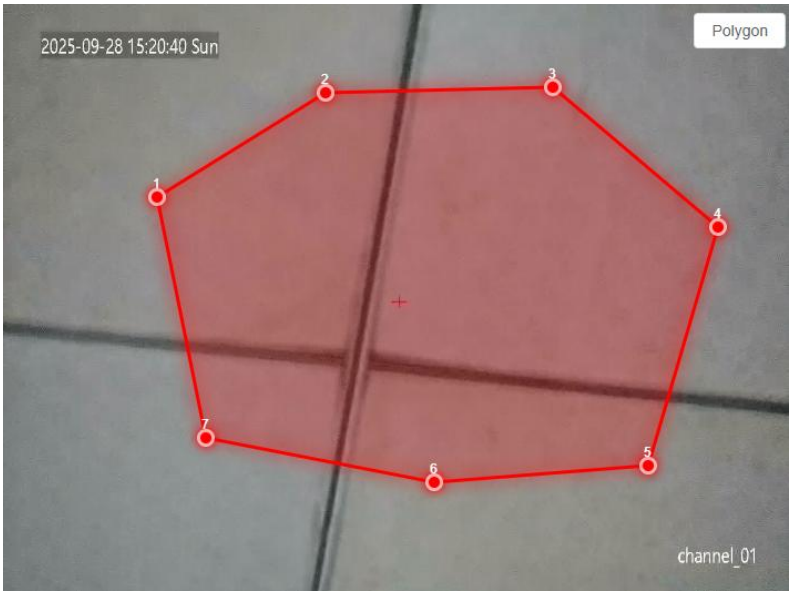


Step 2: Current Channel Selection: Choose the visible light channel, channel_01. Use the PTZ control keys to move the device to the desired scene and set a preset position *(refer to 4.7 Preset Position Setup*), e.g., set preset 1.

Step 3: Click the Preset drop-down list and select “preset 1”.



Step 4: Draw Polygon Area



1) Click + Add Fence to add fence.
2) Click the detection area.
3) In the live view, click the left mouse button sequentially to draw the vertices of the polygonal warning area; the system will automatically connect the points in order.
4) Click the first vertex to complete the polygon.
5) Move the first vertex to the desired position to finalize the electronic fence.
6) Repeat the above steps to add multiple electronic fences.

NOTE

- When drawing a polygonal area, a maximum of 8 vertices is allowed.
- Up to 4 electronic fences can be added per preset.

Step 5: Enter the fence name and fence type.

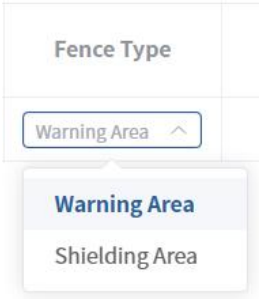
Serial Number	Name	Fence Type	Action
1	1	Warning Area	

- **Name**

Click the input box 1 and enter the desired fence name, then click on a blank area to save.

- **Fence Type**

Click the drop-down list Warning Area to select the fence type: Warning Area or Shielding Area. Once selected, the system saves automatically.



- **Delete the fence**

Click to delete the corresponding fence.

CAUTION

After completing the polygonal electronic fence, be sure to enter the fence name, otherwise it cannot be saved.

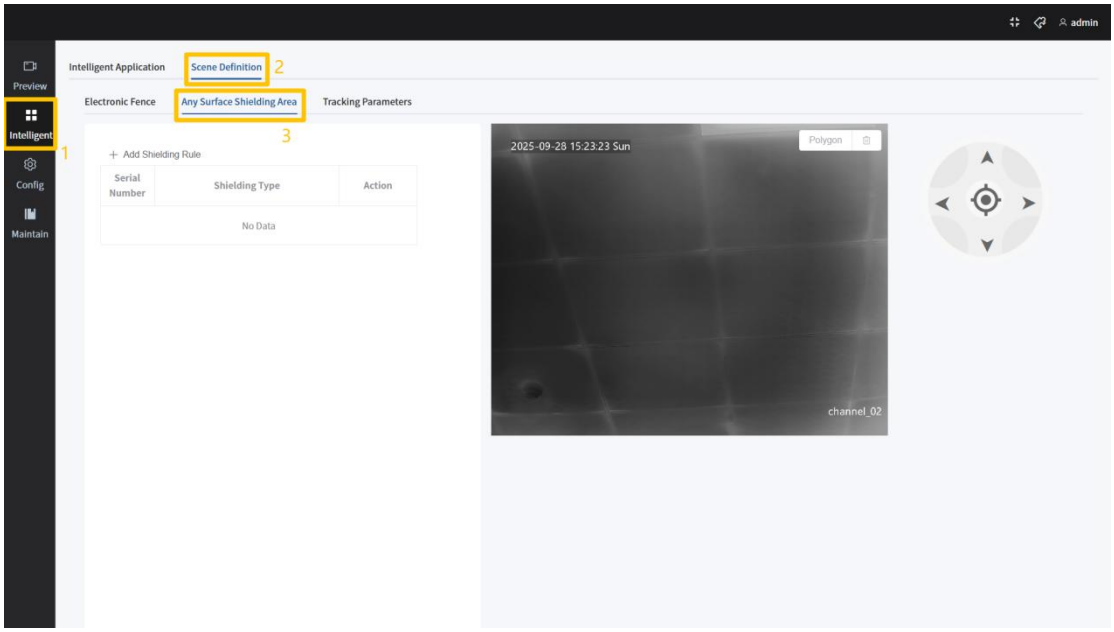
Step 6: The setup method for thermal imaging electronic fences is similar to that of visible light electronic fences. Please refer to the visible light electronic fence setup instructions.

5.4.2 Any Surface Shielding Area

NOTE

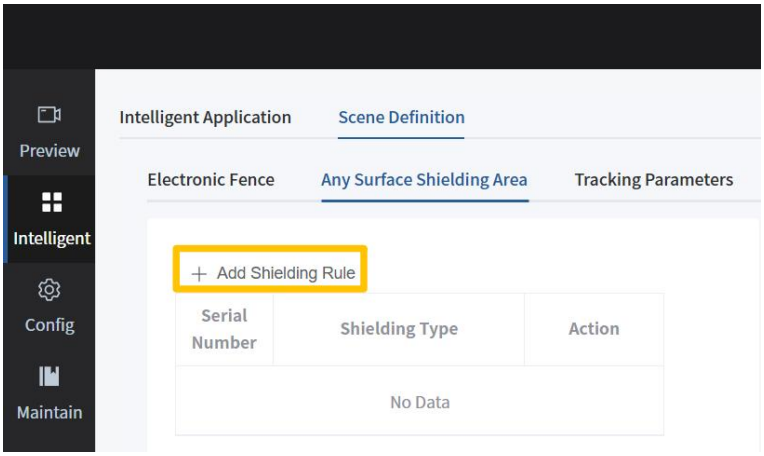
The Any Surface Shielding Area applies only to thermal imaging video.

Operation Steps:Step 1: Navigate to Intelligent > Scene Definition > Any Surface Shielding Area.



Step 2: Use the PTZ controls to adjust to the desired scene.

Step 3: Click + to add shielding rule.



Step 4: Select Shielding Type

Click the drop-down list to choose the shielding type.

NOTE

- Full Shielding: Shield the entire current scene; polygon drawing is disabled.
- Block Shielding: Allows drawing polygonal Shielding areas.

Step 5: Draw Shielding Area

Prerequisite: Shielding Type set to Block Shielding

1) Click Polygon to add Shielding Block.
2) Click on the live view screen.
3) In the live view, click the left mouse button sequentially to draw the vertices of the polygonal Shielding block; the system will automatically connect the points in order.
4) Click the first vertex to complete the polygon.
5) Move the first vertex to the desired position to finalize the Shielding block.
6) Repeat the above steps to add multiple Shielding blocks.
7) Click to remove a Shielding block.

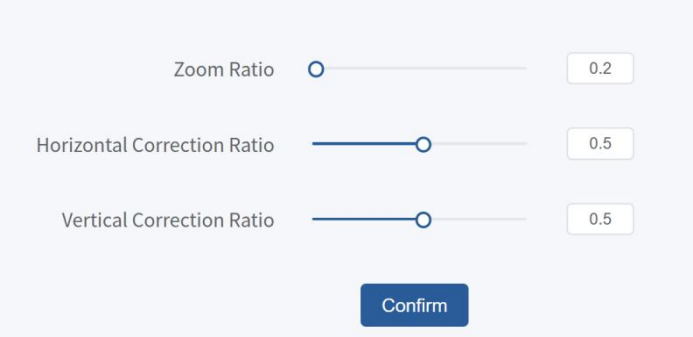
NOTE

A maximum of 8 Shielding areas can be added per scene.

Step 6: Delete Shielding Rule for Current Scene:

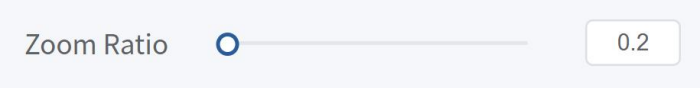
Click to remove the Shielding rule for the current scene.

5.4.3 Tracking Parameters



Prerequisite: The intelligent application's tracking function must be enabled.

- **Zoom Ratio Coefficient**:



Slide the progress bar or enter the desired value in the input box to adjust the zoom ratio coefficient.

NOTE

Zoom Ratio Coefficient Range: 0.2–0.9. A higher value results in a greater zoom focal length.

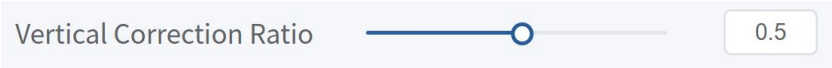
- **Horizontal Correction Ratio Coefficient**:

Slide the progress bar or enter the desired value in the input box to adjust the horizontal correction ratio coefficient.

NOTE

Horizontal Correction Ratio Coefficient Range: 0.2–0.8. A higher value results in a larger adjustment range.

- **Vertical Correction Ratio Coefficient**:



Slide the progress bar or enter the desired value in the input box to adjust the vertical correction ratio coefficient.

NOTE

Vertical Correction Ratio Coefficient Range: 0.2–0.8. A higher value results in a larger adjustment range.

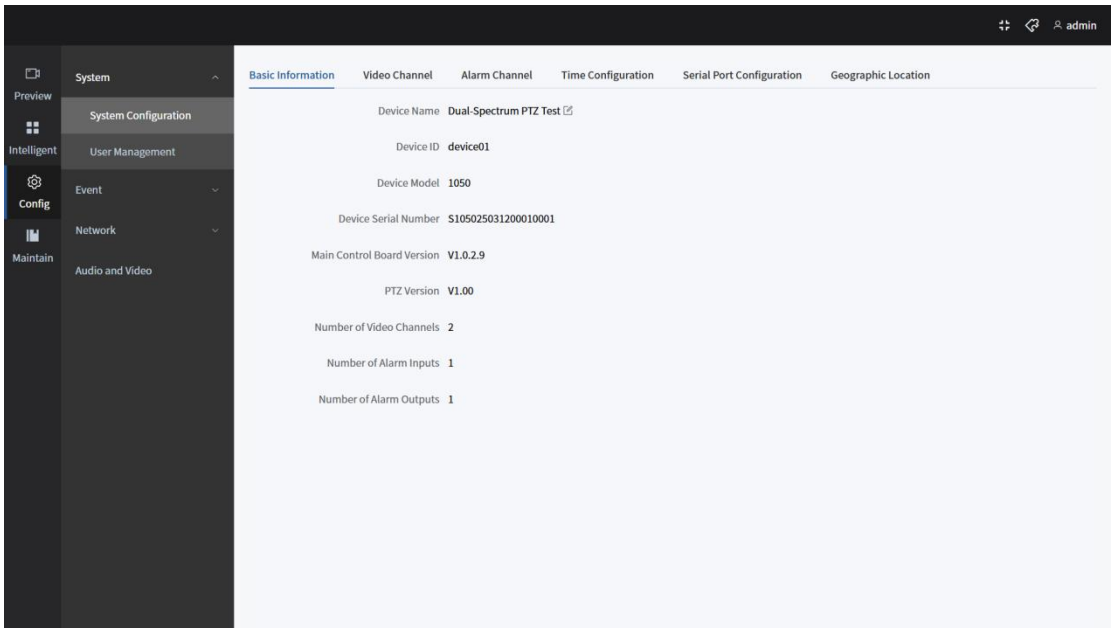
Chapter 6 System Configuration

This section introduces the device's system information, system configuration, user management, and related parameter settings.

6.1 System Basic Information

Used to view device information such as device code, model, serial number, and software version.

Operation Steps:Step 1: Navigate to Configuration > System > System Configuration > Basic Information.



Step 2: Optional operation: Click  to modify the device name.

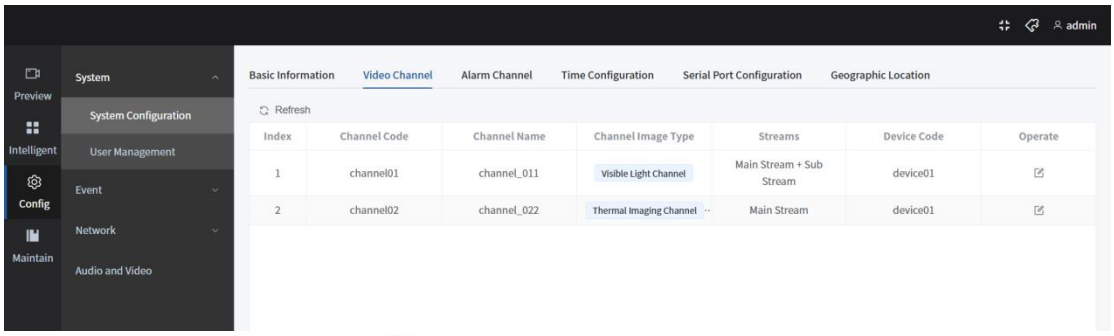
NOTE

The device name can be customized as needed.

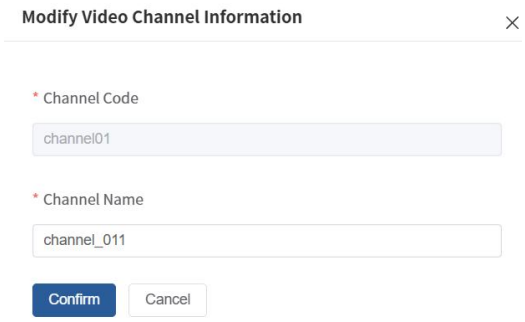
6.2 Video Channel Information

Used to view video channel information such as channel code, channel name, image type, and video stream type.

Operation Steps:Step 1: Navigate to Configuration > System > System Configuration > Video Channel.



Step 2: Optional operation: Click to modify the channel name, then click Confirm to save.



NOTE

The channel name can be customized as needed.

6.3 Alarm Channel Information and Configuration

Used to view alarm input and output channel information and configuration parameters.

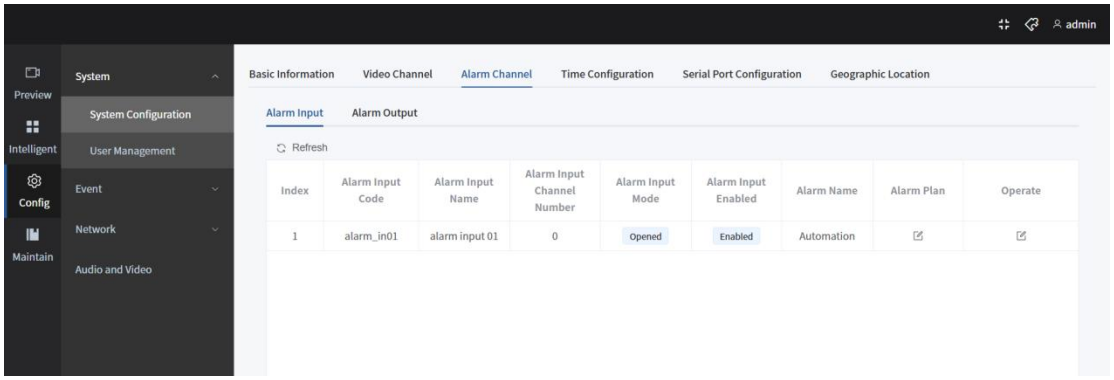
6.3.1 Alarm Input

Used to view alarm input channel information, including: alarm input code, alarm input name, channel number, input mode, input enable status, alarm name, and associated schedule configuration.

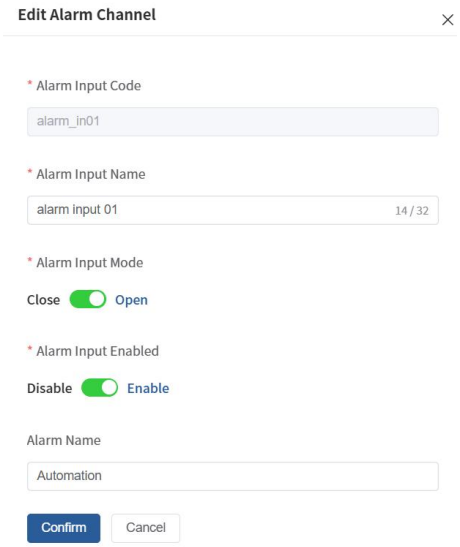
NOTE

Alarm input here refers to the alarm input ports on the cable terminal.

Operation Steps:Step 1: Navigate to Configuration > System > System Configuration > Alarm Channel > Alarm Input.

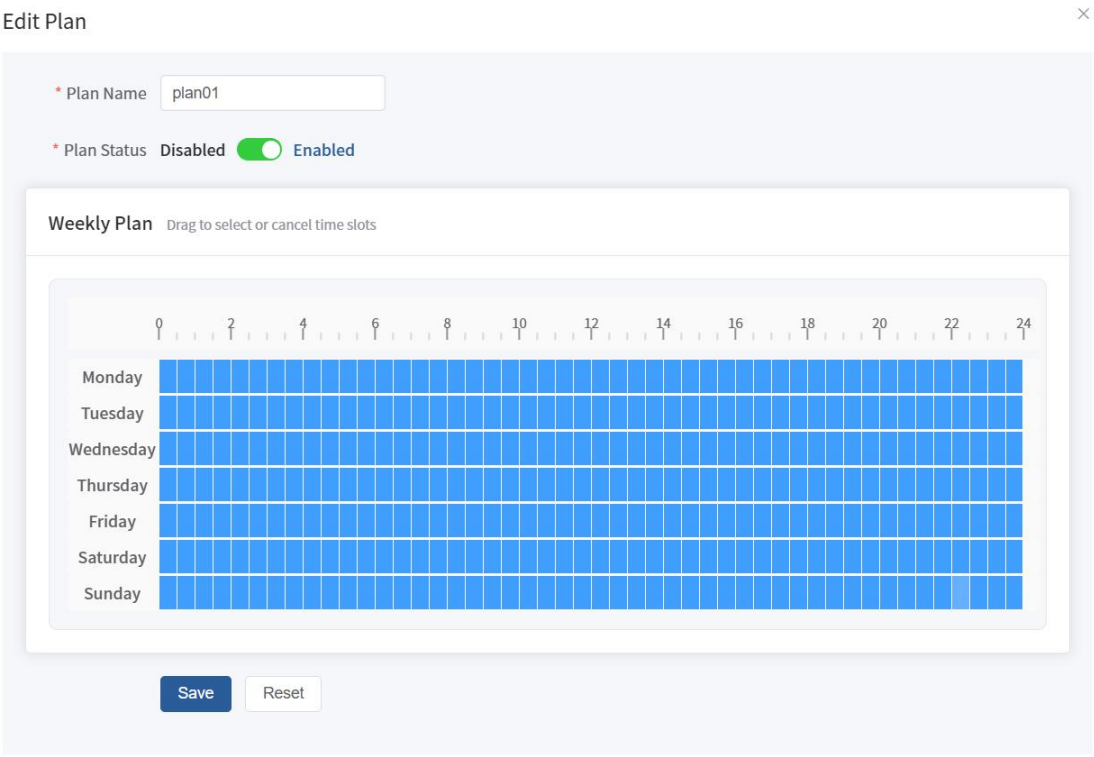


Step 2: Click to modify the alarm channel information, then click Confirm to save.



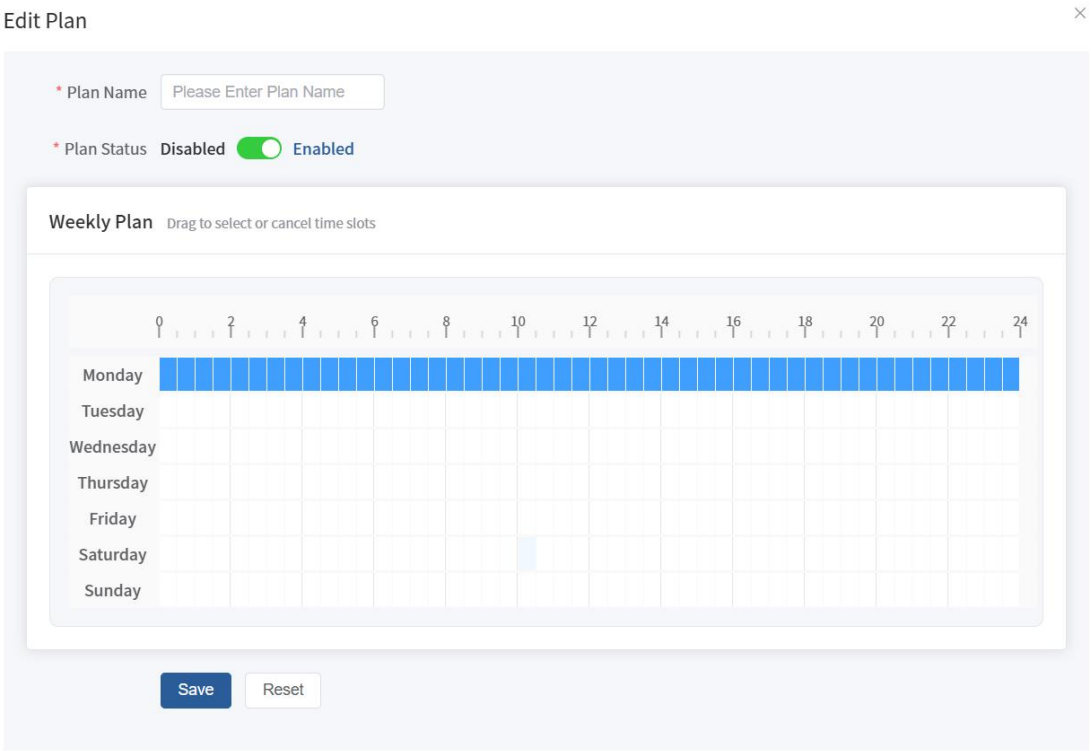
- Alarm Input Code: Fixed by the system, cannot be modified.
- Alarm Input Name: Can be customized as needed.
- Alarm Input Mode: Click to select Normally Closed (NC) or Normally Open (NO). Choosing NC triggers an alarm when the circuit is disconnected; choosing NO triggers an alarm when the circuit is closed.
- Alarm Input Enable: Click to enable or disable the input.
- Alarm Name: Can be customized, e.g., to specify alarm type, location, etc.

Step 3: Click Arming Schedule to edit the plan.



- Plan Name: Click the input box plan01 to customize the name as needed.
- Status: Click to enable or disable the schedule. If enabled, a weekly plan must be set.
- Weekly Plan: Set the repeating schedule for Monday through Sunday.

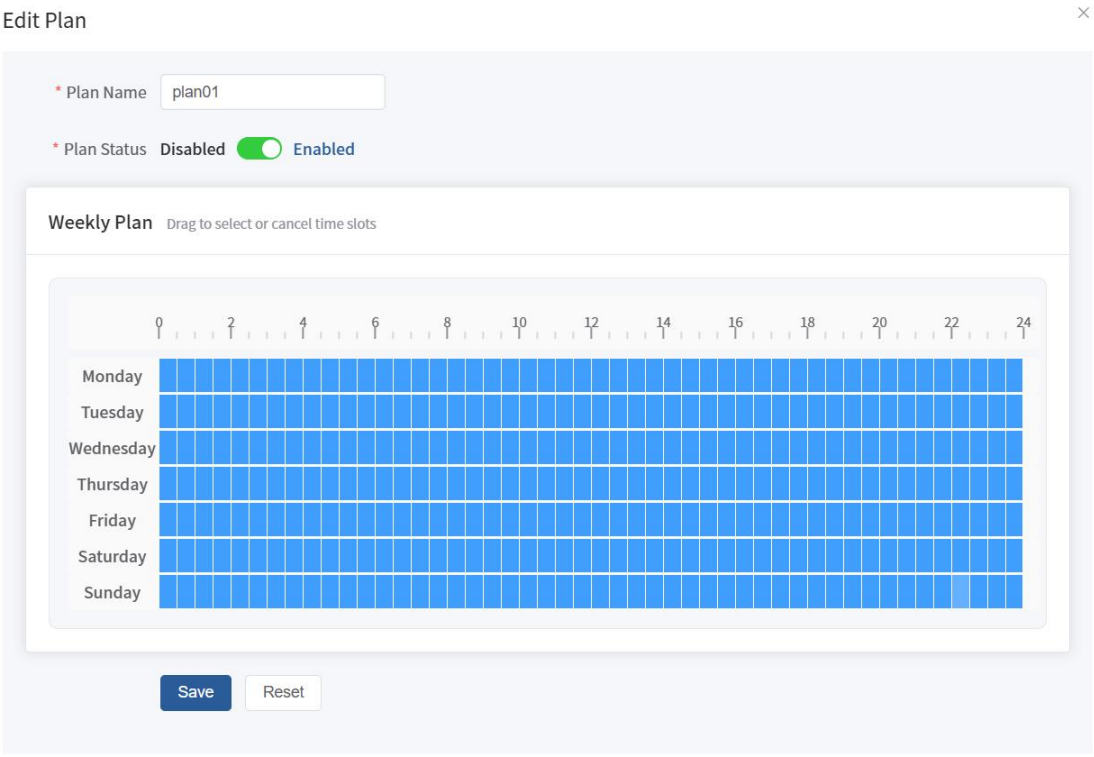
1) Select the Monday timeline and click the white boxes sequentially to turn them blue, indicating the active time periods.



NOTE

Multiple time periods can be set on the timeline.

2) Repeat the above steps to set the schedule for Tuesday through Sunday.



3) Click Save, then click × to leave the plan editing interface.

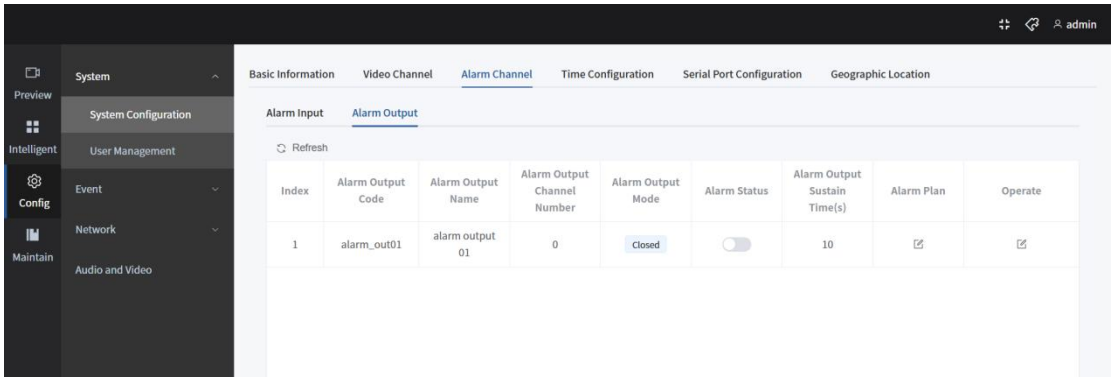
6.3.2 Alarm Output

Used to view alarm output channel information, including: alarm output code, alarm output name, channel number, output mode, output hold time, and associated arming schedule, as well as configuration options.

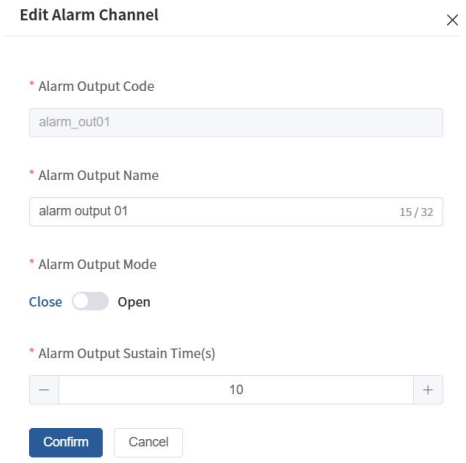
NOTE

Alarm output here refers to the alarm output ports on the cable terminal.

1) Operation Steps:Navigate to Configuration > System > System Configuration > Alarm Channel > Alarm Output.



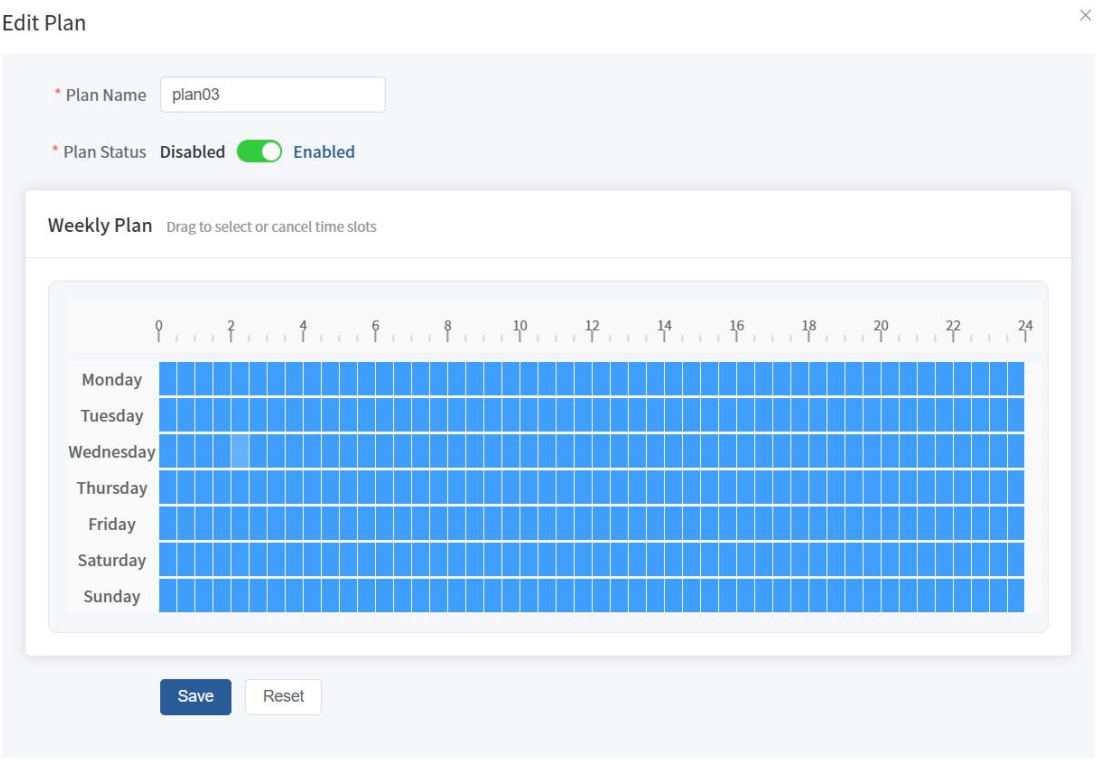
Step 2: Click Edit to modify the alarm output channel information, then click Confirm to save.



- Alarm Output Code: Locked by the system, cannot be modified.
- Alarm Output Name: Can be customized as needed.
- Alarm Output Mode: Click to select Normally Closed (NC) or Normally Open (NO). NC means the output disconnects when an alarm is triggered; NO means the output closes when an alarm is triggered.
- Alarm Output Hold Time (s): The duration for which the alarm output remains open or closed.

Click or to decrease or increase the alarm output hold time, or click the input box to manually enter the value.

Step 3: Set Arming Schedule: Click Arming Plan to edit the active time periods for alarm output.



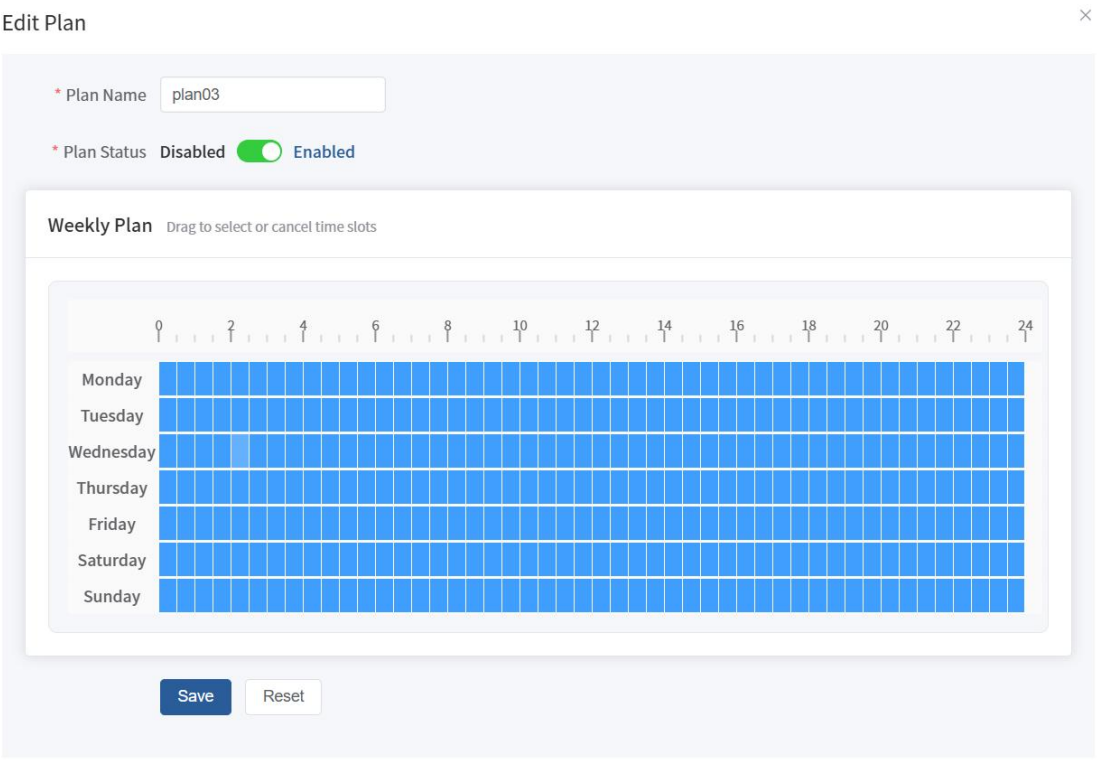
- Plan Name: Click the input boxto customize the name as needed.
- Status: Clickto enable or disable the schedule. If enabled, a weekly plan must be set.
- Weekly Plan: Set the repeating schedule for Monday through Sunday.

1) Select the Monday timeline and click the white boxes sequentially to turn them blue, indicating the active time periods.

NOTE

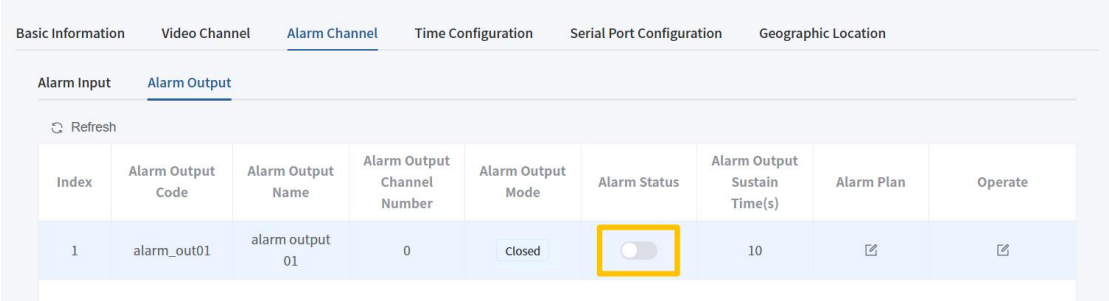
Multiple time periods can be set on the timeline.

2) Repeat the above steps to set the schedule for Tuesday through Sunday.



3) Click, then clickto leave the plan editing interface.

Step 4: Optional Operation: Click the Alarm Status Switch to enable or disable the alarm status output.

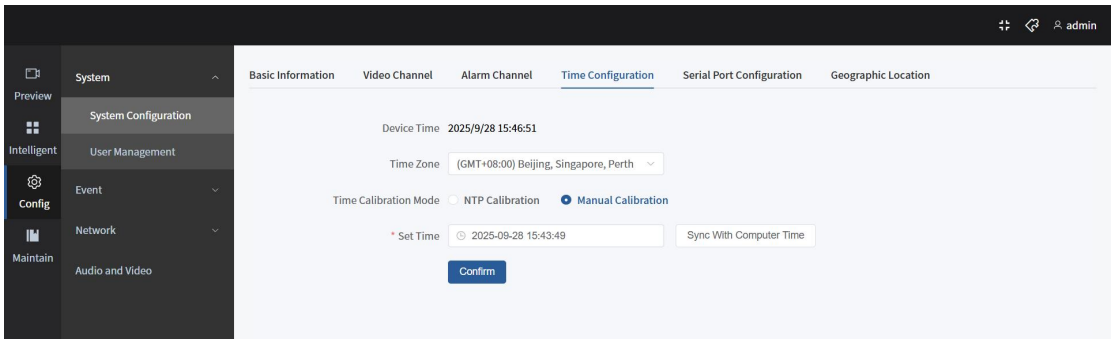


6.4 Time Settings

You can configure the device time by setting the time zone and synchronization method. The system supports two synchronization methods: manual synchronization and NTP synchronization.

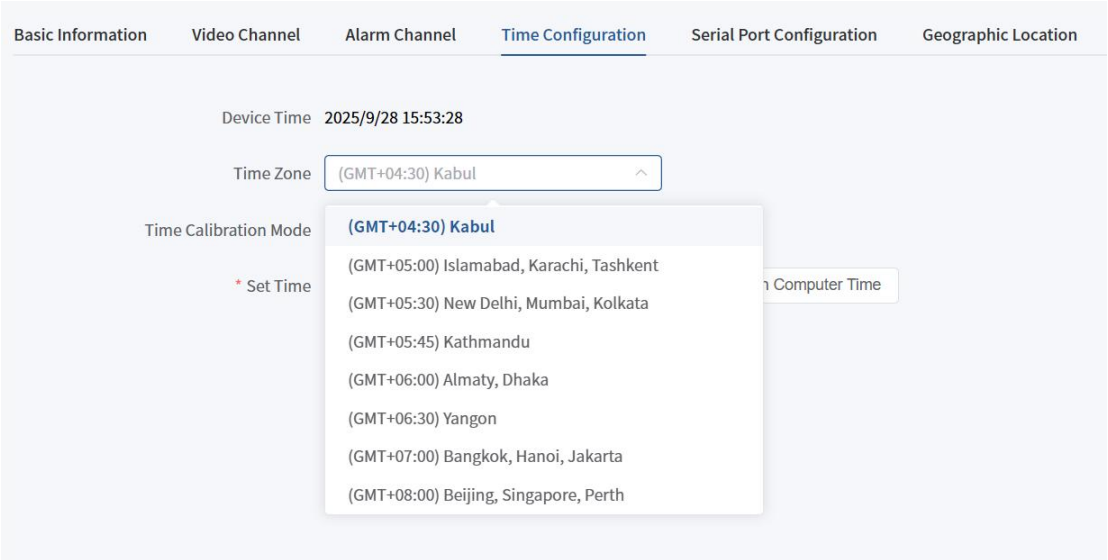
6.4.1 Manual Synchronization

Operation Steps:Step 1: Navigate to “Configuration > System > System Configuration> Time Configuration.”

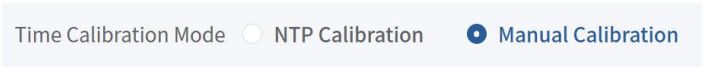


Step 2: Click the Time Zone drop-down list 

and select the appropriate time zone.

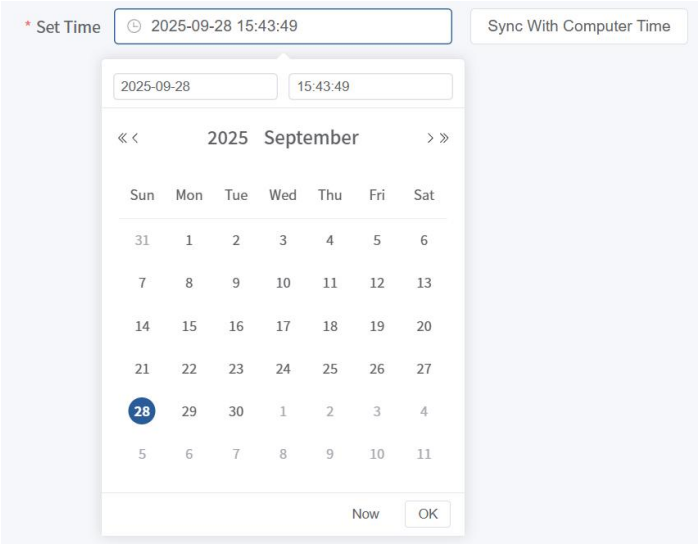


Step 3: Set the Calibration Mode to Manual Calibration.



Step 4: Choose the synchronization method:

- Set Time: Manually enter the time or select from the calendar, then click OK.



- Sync with Computer Time: Keep the device time consistent with the local computer time.

Step 5: Click OK to save the settings.

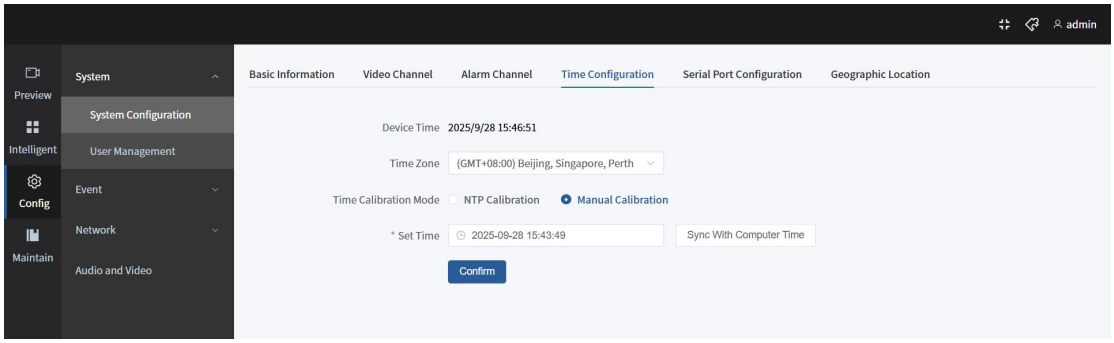
6.4.2 NTP Synchronization

If you need to use an accurate and reliable time source, NTP synchronization can be used.

Prerequisite:

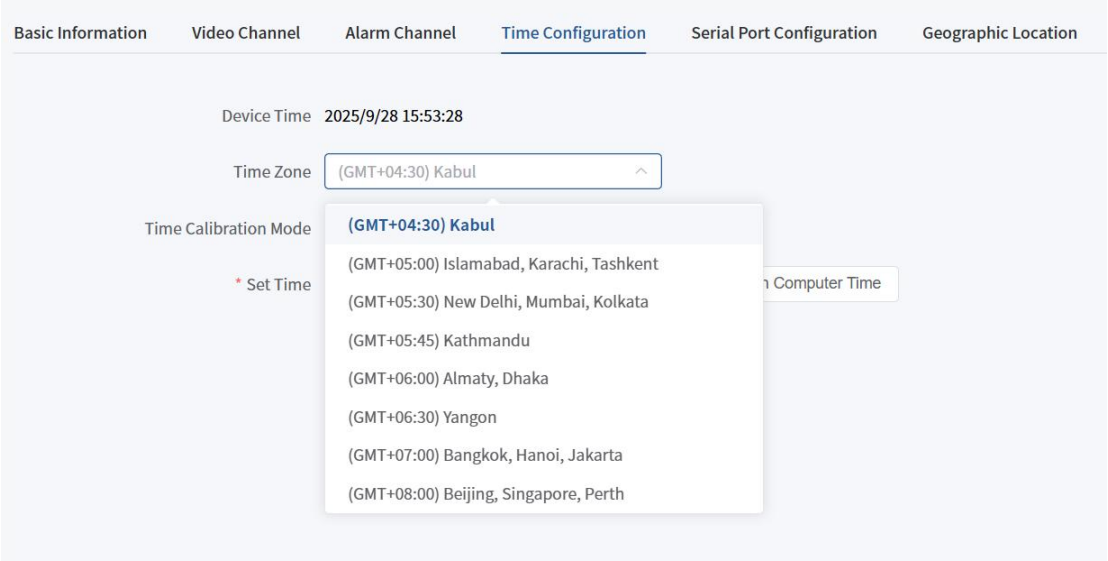
Ensure that an NTP server is set up or that you have the NTP server information.

Operation Steps:Step 1: Navigate to “Configuration > System > System Configuration > Time Configuration.”

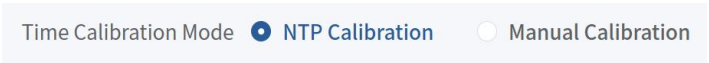


Step 2: Click the Time Zone drop-down list 

and select the appropriate time zone.



Step 3: Set the Calibration Mode to NTP Calibration.



Step 4: Enter the Server Address, NTP Port, and Synchronization Interval.

NOTE

Server Address: Enter the IP address of the NTP server.

Step 5: Click OK to save the settings.

6.5 Serial Port Configuration

Currently, serial port configuration is not available to users.

6.6 Geographic Location

Currently, only manual input of latitude and longitude information is supported.

6.7 User Management

This section explains how to manage device users.

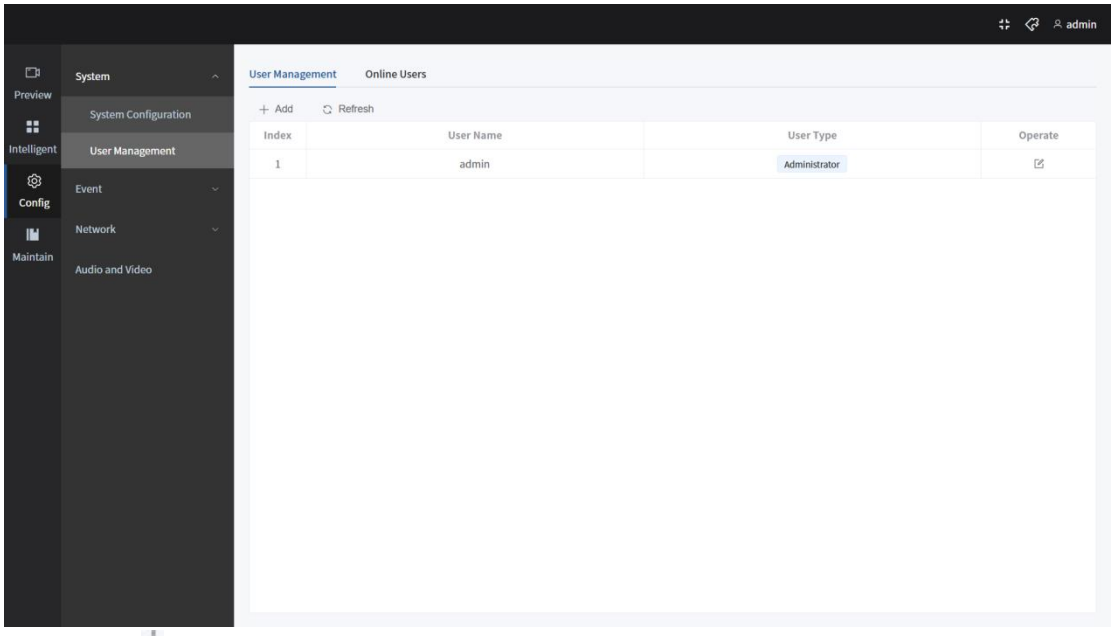
6.7.1 Setting User Accounts and Permissions

Covers adding, modifying, deleting users, and assigning user permissions.

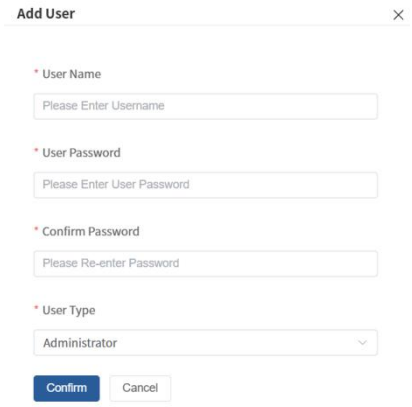
CAUTION

To enhance network security, it is recommended to regularly change user passwords. Update every 3 months under normal conditions. In high-security environments, update monthly or weekly.

Operation Steps:Step 1: Navigate to “Configuration > System > User Management > User Management”.



Step 2: Click +, enter the Username, Password, and Confirm Password, assign remote permissions according to usage requirements, and click Confirm to save.



NOTE

- Administrator

Has full access and can add regular users and operators.

- Regular Users and Operators

Do not have permission to create users.

Step 3: Optional operations:

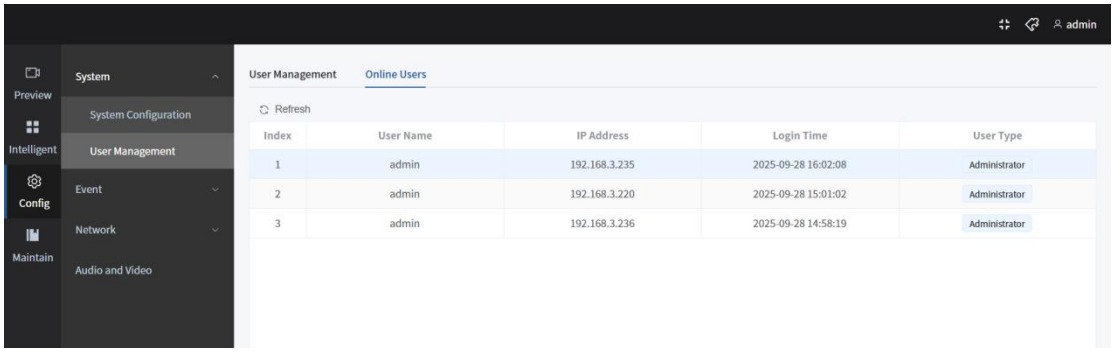
Select a user and click to change the user's password;

Select a user and click to remove the selected user.

6.7.2 Viewing Online Users

Displays information of users currently online.

Navigate to "Configuration > System > User Management > Online Users to view the current online user information".


admin
Preview
Intelligent
Config
Maintain
System
System Configuration
User Management
Event
Network
Audio and Video
User Management
Online Users
Refresh
Index
User Name
IP Address
Login Time
User Type
1
admin
192.168.3.235
2025-09-28 16:02:08
Administrator
2
admin
192.168.3.220
2025-09-28 15:01:02
Administrator
3
admin
192.168.3.236
2025-09-28 14:58:19
Administrator

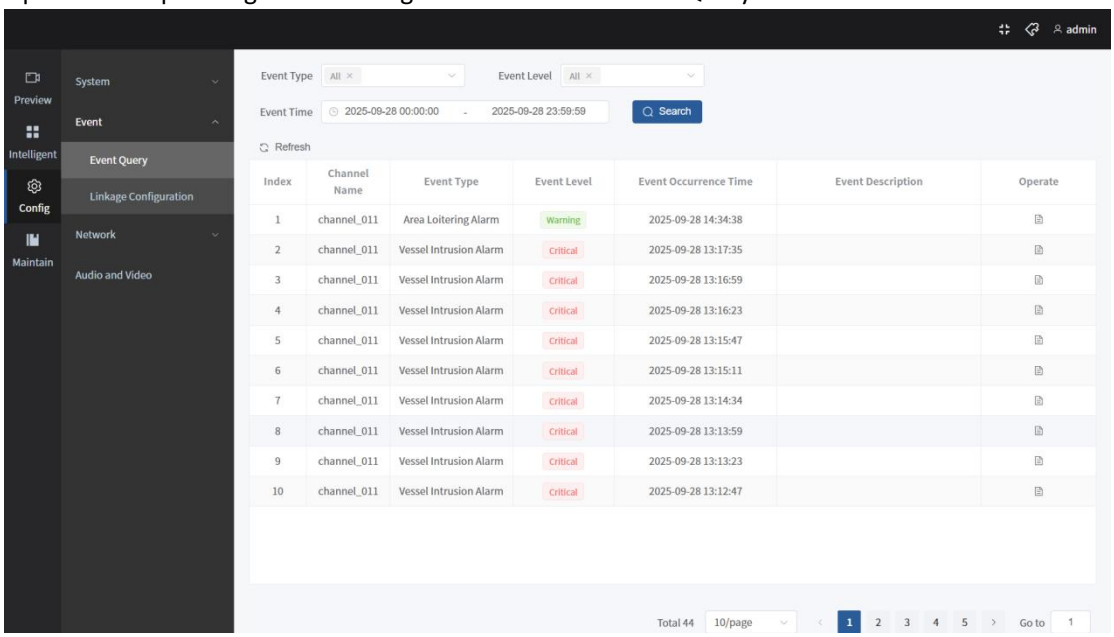
Chapter 7 Event

Introduces the configuration of various events supported by the device. Configure the corresponding events as needed to trigger device linkage actions.

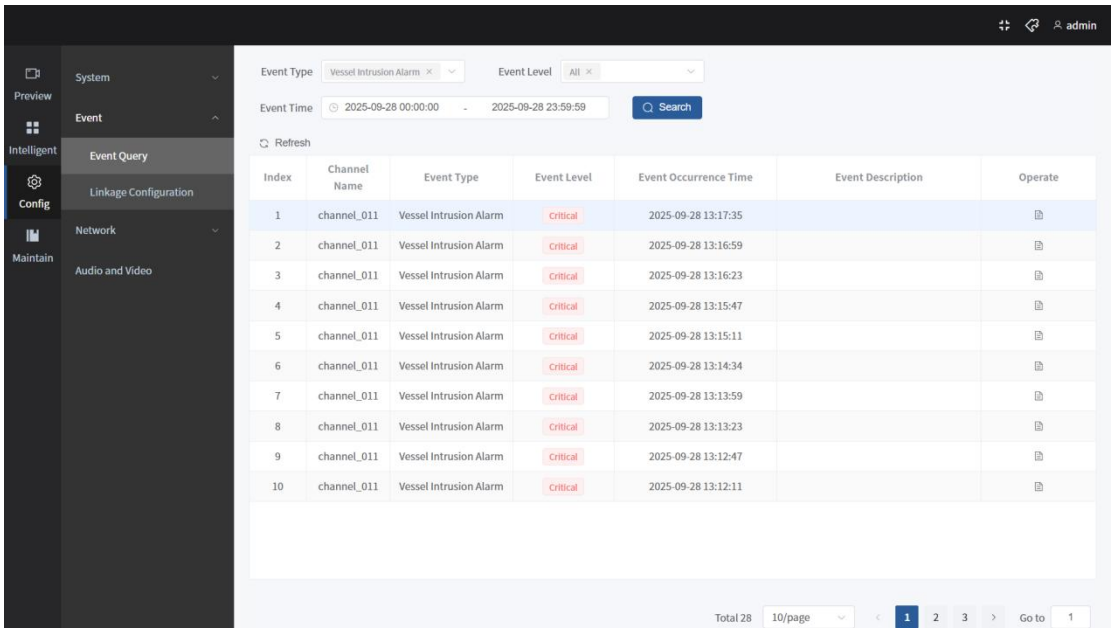
7.1 Event Query

Used to query records of various events that occurred within a specified time period.

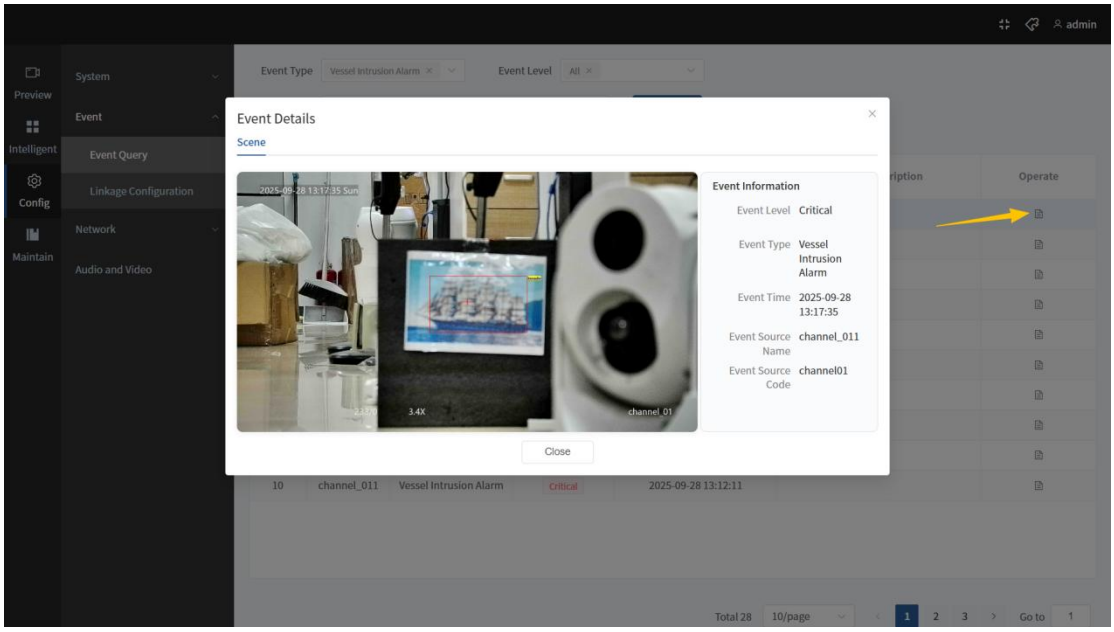
Operation Steps:Navigate to “Configuration > Event > Event Query”.



Step 2: Select the event type, event level, and event occurrence time you want to query, then click Search.



Step 3: Click View Details to see the event information.



NOTE

Detailed information can only be viewed for events that are classified as intelligent event alarms.

7.2 Event Linkage Configuration

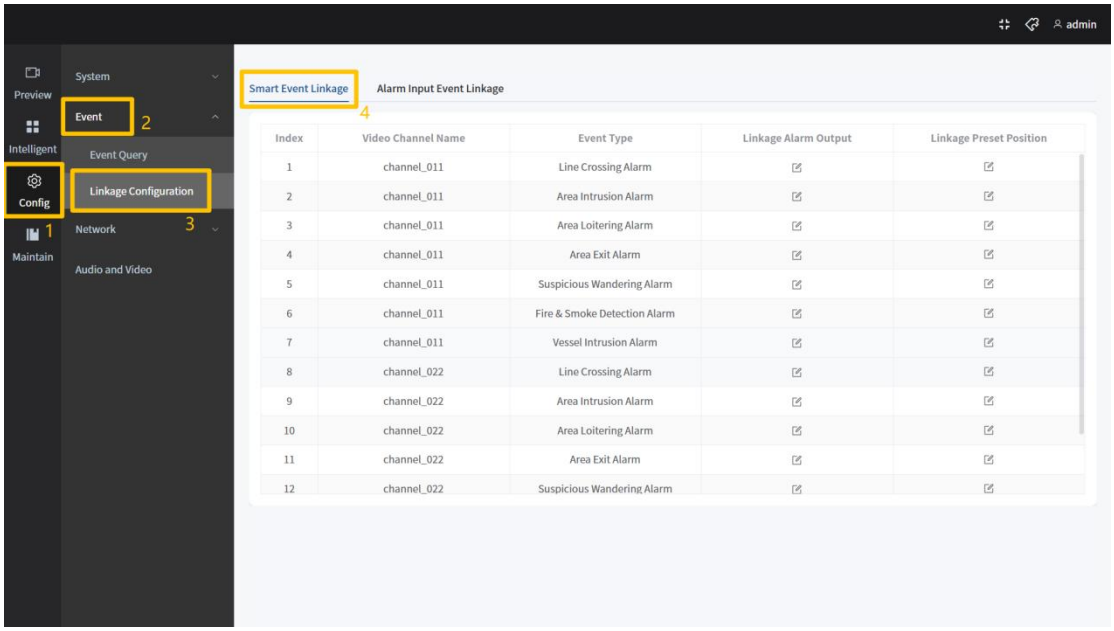
Used to configure linkage actions for intelligent events and alarm input events.

7.2.1 Intelligent Event Linkage

Used to set up linkage actions for intelligent events.

Operation Steps:

Step 1: Navigate to “Configuration > Event > Linkage Configuration > Intelligent Event Linkage”.



Step 2: Click , select the linkage Alarm Output, then click any blank area to save.

Step 3: Click , select the linkage Preset Position, then click any blank area to save.

NOTE

Prerequisite: Preset positions must be configured.

Step 4: Repeat the above steps to configure alarm linkage for other types of intelligent events.

7.2.2 Alarm Input Event Linkage

Used for configuring wired alarm input event linkage.

Setup method: Please *refer to the steps in Intelligent Event Linkage configuration*.

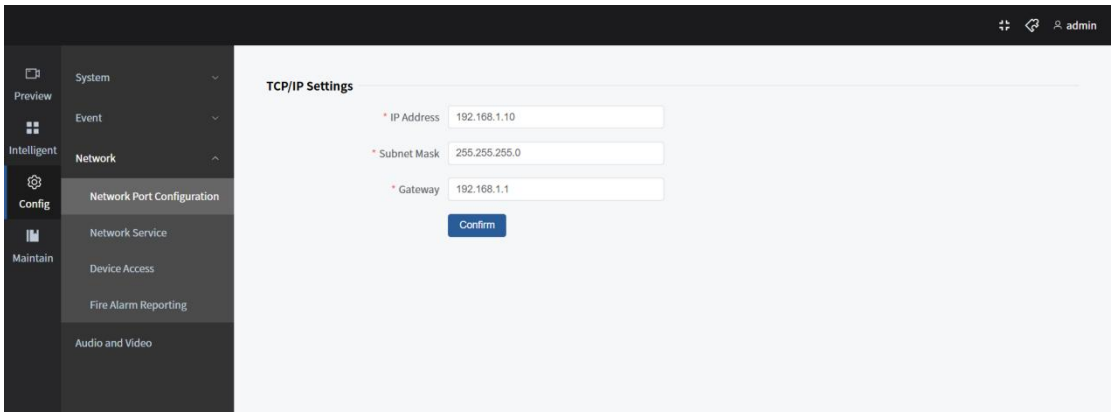
Chapter 8 Network Settings

This section introduces how to configure network parameters.

8.1 TCP/IP Configuration

Configure the device's TCP/IP settings to ensure it functions properly in the network.

Navigate to "Configuration > Network > Port Settings > TCP/IP Configuration". Set the device's basic network parameters. Click Confirm to save the settings.



NOTE

- When configuring the IP, the IP address and gateway must be in the same subnet. For example, if the IP address is 192.168.1.10, the gateway should be 192.168.1.1.
- After configuring the IP, the device will automatically restart.

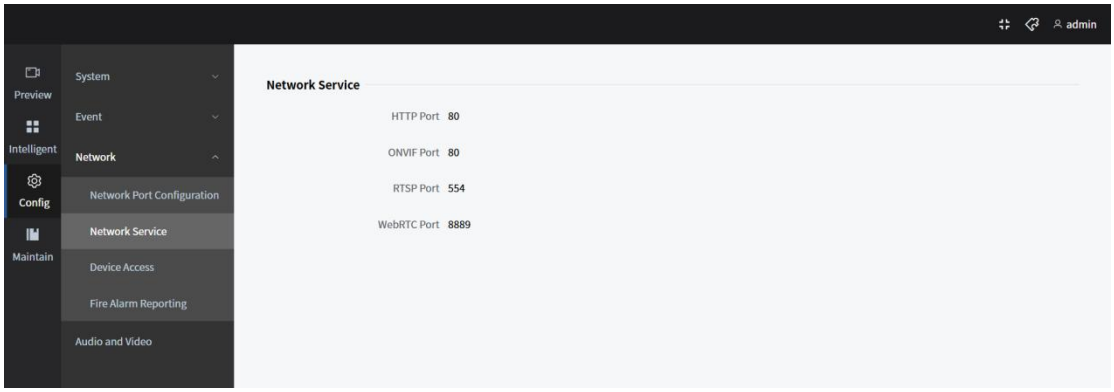
- Once the IP is configured, the web page will automatically redirect to the new IP address.

8.2 Network Service Ports

NOTE

Currently, only the port numbers for HTTP, ONVIF, RTSP, and WebRTC are supported for viewing.

Navigate to "Configuration > Network > Network Services > Network Services" to view the HTTP, ONVIF, RTSP, and WebRTC port numbers.



8.3 Device Access

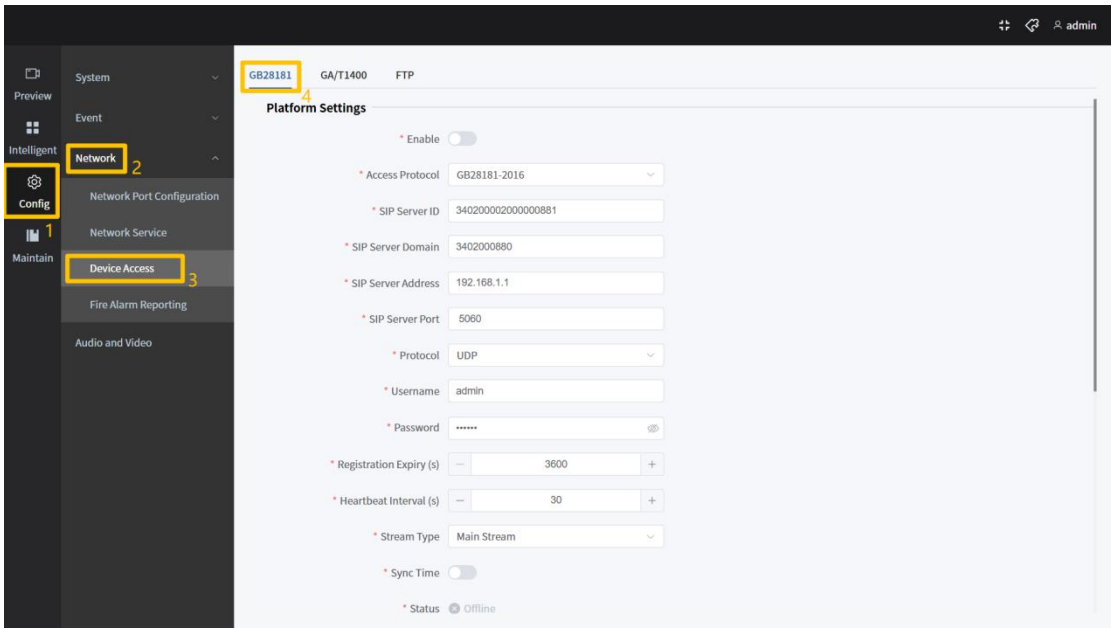
Used for connecting the device to a platform server and configuring related parameters.

8.3.1 GB28181 Configuration

Following the GB/T28181 standard, the device can be registered to a national standard (GB) server platform to achieve remote real-time monitoring and device management.

Operation Steps:

Step 1: Navigate to “Configuration > Network > Device Access > GB28181”.

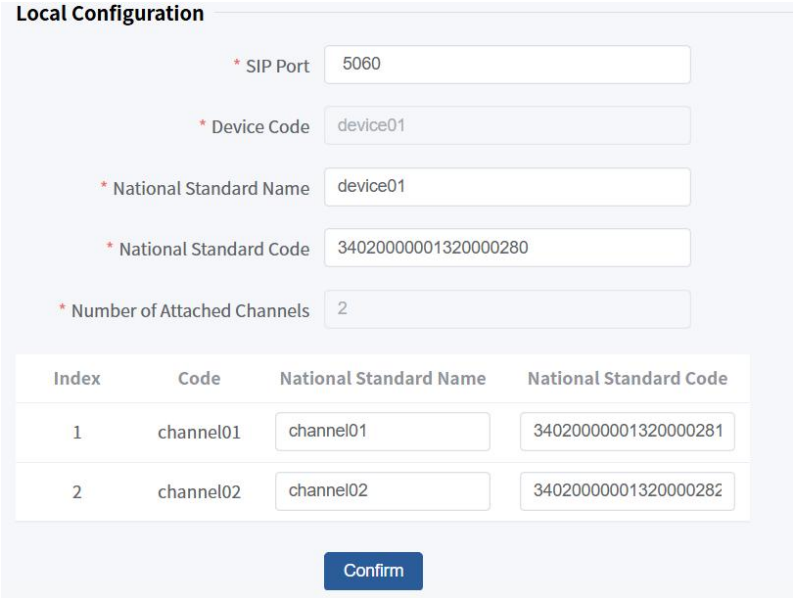


Step 2: Platform Configuration – Configure the relevant platform server parameters and click OK to save.

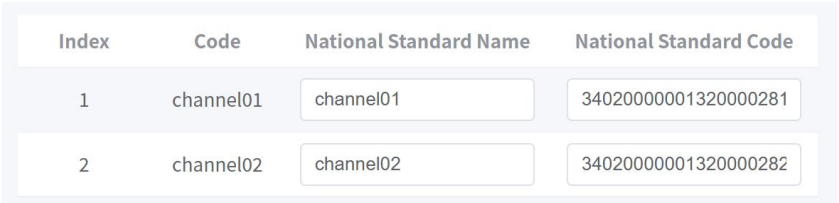
1) Click to enable Platform Configuration. * Enable represents activation.
2) Access Protocol: Select the corresponding GB28181 protocol version for the platform.
3) SIP Server ID: ID of the platform server, provided by the platform vendor.
4) SIP Server Domain: Domain of the platform server, provided by the platform vendor.
5) SIP Server Address: IP address of the server, provided by the platform vendor.

6) SIP Server Port: Port number of the server, provided by the platform vendor.
7) Protocol: Choose either UDP or TCP.
8) Username and Password: Provided by the platform vendor.
9) Registration Validity: Validity period for each device registration; can be customized as needed.
10) Heartbeat Interval: Keep-alive interval between the device and server.
11) Stream: Choose main stream or sub stream.
12) Time Synchronization: Click to enable or disable the device time synchronization via the platform.
13) Online Status: Displays whether the device is online or offline.

Step 3: Local Configuration: Configure device-specific parameters and click Confirm to save.



1) SIP Port: The device default is 5060.
2) Device ID: The device default is device01.
3) Device GB Name: The GB (national standard) name used when the device registers to the platform.
4) Device GB Code: The GB device ID, usually assigned by the platform vendor.
5) Number of Sub-Channels: 2, including one visible-light and one thermal imaging video stream.
6) Channel Codes: Includes codes for both the visible-light and thermal imaging channels (2 channels in total).



NOTE

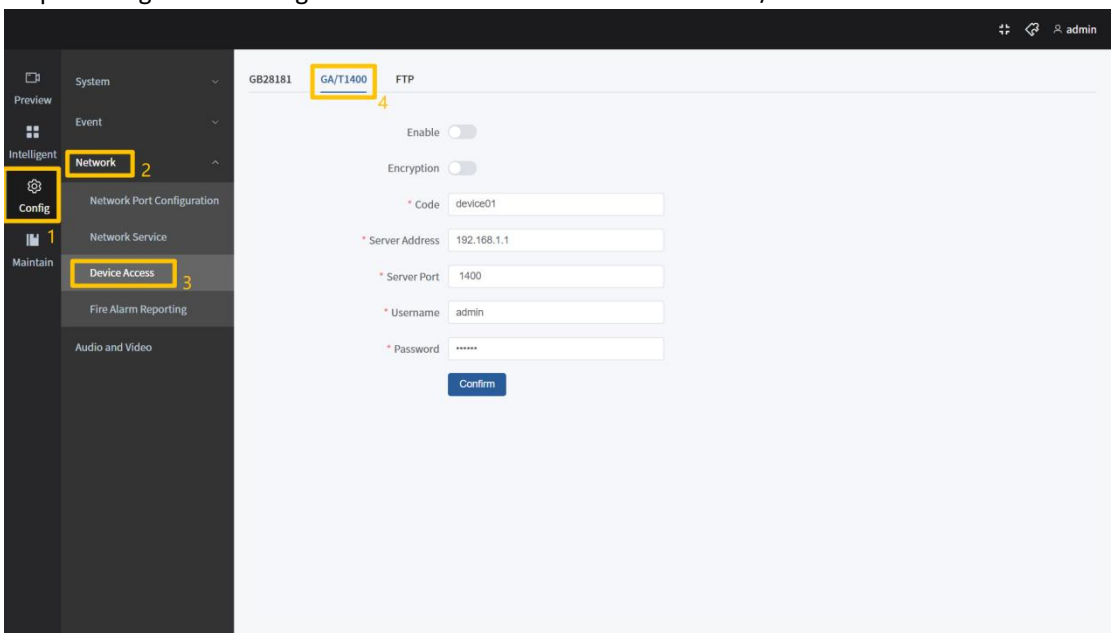
The parameter settings on this page should be filled in according to the information provided by the platform during actual use. All parameters must be set correctly; otherwise, device registration may fail or certain functions may not respond properly.

8.3.2 GA/T1400

The device supports the GA/T1400 protocol, allowing it to register with the image library platform for remote image uploading and related functions.

Operation Steps:

Step 1: Navigate to “Configuration > Network > Device Access > GA/T1400”.



Step 2: Configure the relevant GA/T1400 parameters and click OK to save.

1) Click to enable the GA/T1400 function.
2) Click to enable or disable the encryption protocol.
3) Encoding: The device ID code, generally provided by the platform.
4) Server Address: The IP address of the image library platform, provided by the platform.
5) Server Port: The port number of the image library platform, provided by the platform.
6) Username and Password: Authentication credentials for the image library platform, provided by the platform.

NOTE

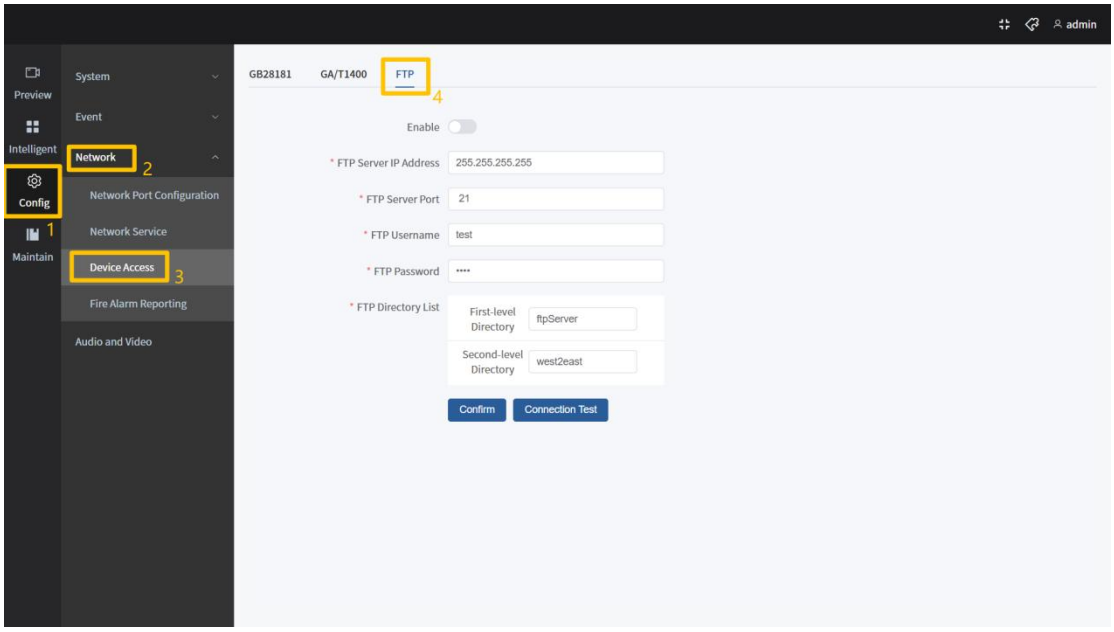
The parameters on this page should be filled in according to the information provided by the platform during actual use. All parameters must be set correctly; otherwise, device registration may fail or certain functions may not respond properly.

8.3.3 FTP

Images captured by snapshots or event linkage can be uploaded and stored on a designated FTP server.

Operation Steps:

Step 1: Navigate to “Configuration > Network > Device Access > FTP”.



Step 2: Configure the relevant FTP parameters and click OK to save.

1) Click to enable the FTP function.
2) FTP Server IP Address and Port: Enter the FTP server address and the corresponding port number.
3) FTP Username and Password: Enter a username and password with upload permissions.
4) FTP Directory List: Two-level directory structure representing the storage path of files on the FTP server.

NOTE

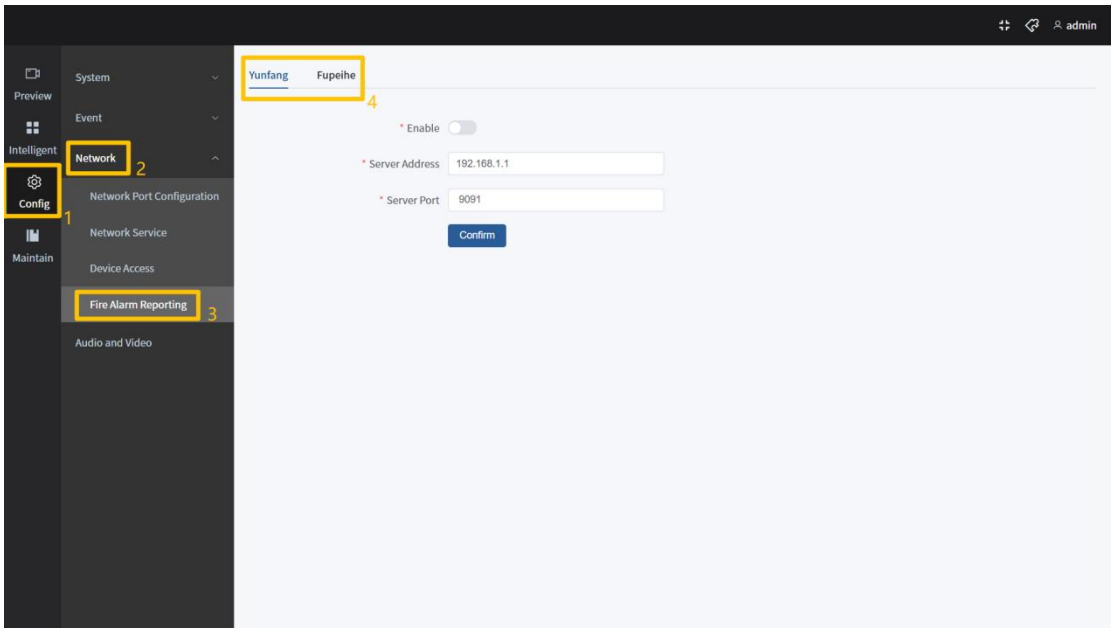
The parameters on this page should be filled in according to the information provided by the platform during actual use. All parameters must be set correctly; otherwise, some functions may not respond properly.

8.4 Fire Alarm Reporting

When a fire alarm occurs, the device reports the alarm information to the platform to trigger downstream linkage actions.

Operation Steps:

Step 1: Navigate to “Configuration > Network > Fire Alarm Reporting > Yunfang/FuPeihe”.



Step 2: Configure the relevant platform parameters and click OK to save.

1) Click to enable the fire alarm reporting function.
2) Server Address and Port: Enter the IP address and port number of the platform server.

NOTE

The parameters on this page should be filled in according to the information provided by the platform during actual use. All parameters must be set correctly; otherwise, some functions may not respond properly.

Chapter 9 Audio and Video

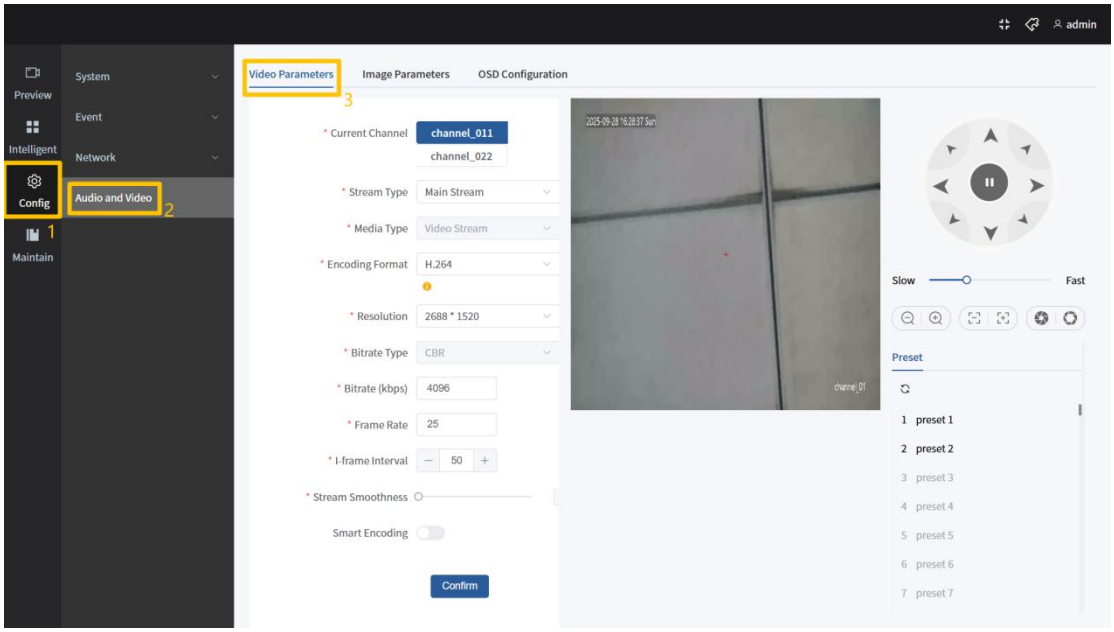
9.1 Video Settings

Used to configure the device's video parameters such as stream type, encoding format, and resolution.

9.1.1 Configure Visible Light Channel

Operation Steps:

Step 1: Navigate to "Configuration > Audio & Video > Video Parameters".



Step 2: Configure the relevant video parameters and click OK to save.

1) Current Channel: Click to select the visible light or thermal imaging channel.
2) Stream Type: Choose according to usage requirements.

- Main Stream: Large bandwidth, high clarity, suitable for local storage.
- Sub Stream: Smaller bandwidth, smoother image, suitable for low-bandwidth network transmission or standard definition storage.

3) Media Type: Currently only video stream is supported.
4) Encoding Format: Supports H.264 and H.265.
5) H.264: High-performance video code with high compression ratio, flexible processing, ultra-low bit rate, saves network bandwidth and storage space.
6) H.265: High-performance video code with higher compression efficiency than H.264, ultra-low bit rate, further saving bandwidth and storage space.
7) Resolution: Automatically obtained from the camera module, cannot be modified.
8) Bit rate Type: Constant bit rate.
9) Bit rate: Can be customized according to network conditions.
10) Frame Rate: Number of frames per second. Higher frame rate results in smoother video but requires more bandwidth and storage; set according to actual network conditions.
11) I-Frame Interval: Number of frames between two key frames. Larger interval reduces stream

size but lowers image quality; smaller interval increases stream size and improves image quality.

12) Stream Smoothing: Cannot be modified.
13) Smart Encoding: Cannot be modified.

9.1.2 Configure Thermal Imaging Channel

The thermal imaging channel video parameters are similar to the visible light channel. Please *refer to the visible light channel configuration*.

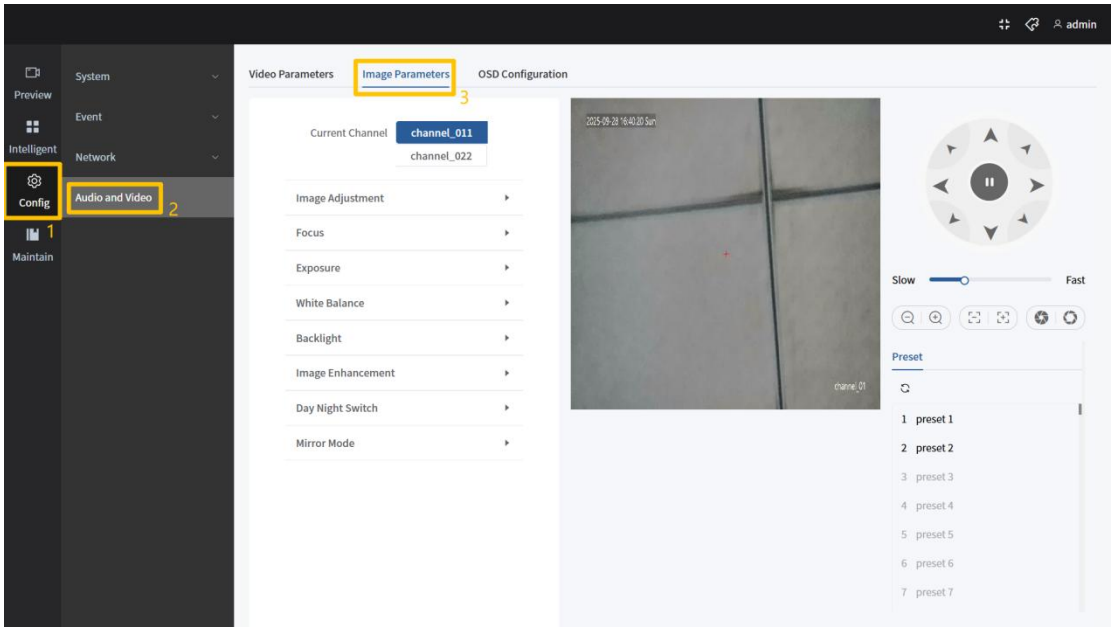
9.2 Image Parameter Settings

Used to adjust the image quality of the live video.

9.2.1 Configure Visible Light Channel

Operation Steps:

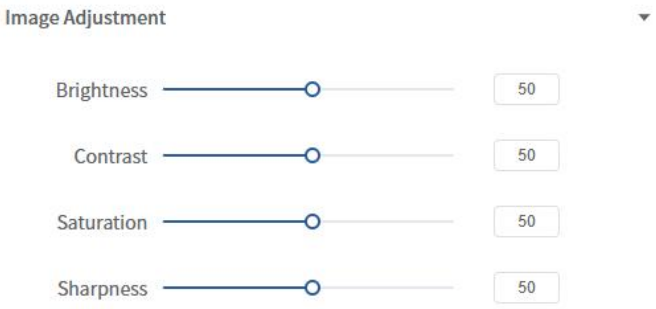
Step 1: Navigate to “Configuration > Audio and Video > Image Parameters”.



Step 2: Configure the relevant image parameters.

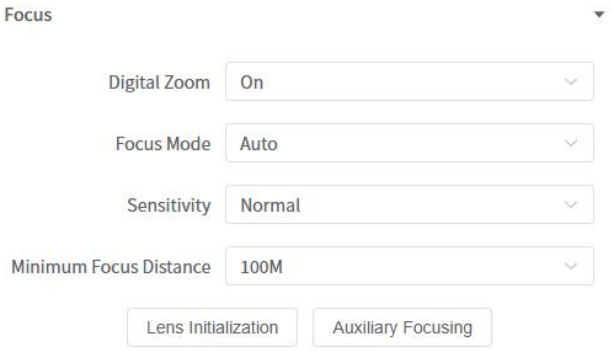
1) Current Channel: Click to select the visible light or thermal imaging channel. Currently, channel_011 (visible light channel) is selected.

2) Image Adjustment: Adjust image brightness, hue, saturation, contrast, and sharpness to achieve the optimal display effect. You can drag the slider or input numeric values for adjustments.



- Brightness: Adjusts the overall brightness of the image. In general, the default value can be kept. The larger the value, the brighter the image.
- Contrast: Adjusts the difference between light and dark areas of the image. Useful when the image appears flat or unclear. A higher value increases contrast, making bright areas brighter and dark areas darker. If set too high, dark areas may become too dark, and bright areas may be overexposed.
- Saturation: Adjusts the intensity of colors without affecting the overall brightness of the image.
- Sharpness: Adjusts the edge clarity of all objects in the image, enhancing detail. Higher values make edges more pronounced.

3) Focus: Focusing is the process by which the device adjusts to obtain a clear focal point, ensuring that the recorded image is sharp and clear.



- Digital Zoom: Click the drop-down list to enable or disable digital zoom. Selecting “Enable” allows digital zoom. When optical zoom reaches its maximum, digital zoom can continue to magnify the image.
- Focus Mode: Choose the focus mode based on different shooting requirements. Click the focus mode drop-down list to select Auto, Semi-Auto, or Manual.
- Auto: The camera automatically adjusts focus based on changes in the scene. If the image is blurry in auto mode, reduce the lighting in the scene and avoid flickering lights. Proper zoom adjustments can help reduce the effect of strong lights.
- Semi-Auto: Focuses once after PTZ or lens zoom adjustment. Once focus is achieved, it does not change even if the scene changes.
- Manual: Focus is adjusted manually through the live view image to achieve clarity.

NOTE

Supported when using Auto or Semi-Auto mode. Adjusts how quickly the camera responds to

scene changes for focusing.

- Minimum Focusing Distance: The camera can achieve clear focus only when the subject is farther than this set distance from the lens.

4) Exposure: Exposure is controlled by a combination of aperture, shutter speed, and gain. You can adjust the image effect by configuring exposure parameters. In Manual mode, exposure time, gain, and low-light electronic shutter need to be set manually.

Exposure Mode: Options include Auto, Aperture Priority, Shutter Priority, and Manual.

- Auto: Automatically adjusts image brightness according to the environment.
- Shutter Priority: Within the normal exposure range, the device prioritizes the preset shutter value based on scene brightness. If image brightness is insufficient and the shutter reaches its limit, the device adjusts the gain to achieve optimal brightness.
- Aperture Priority: Aperture is fixed at the set value, and the device automatically adjusts shutter speed. If image brightness is insufficient and the shutter reaches its limit, the device adjusts the gain to achieve optimal brightness.
- Manual: Manually set gain and shutter values to control image brightness.

 NOTE

Normally, Auto mode is sufficient. Use Manual mode only for lens adjustments or device troubleshooting.

5) White Balance: Corrects color deviation caused by different lighting conditions. Choose the appropriate white balance mode based on the environment. Normally, Auto White Balance is recommended.

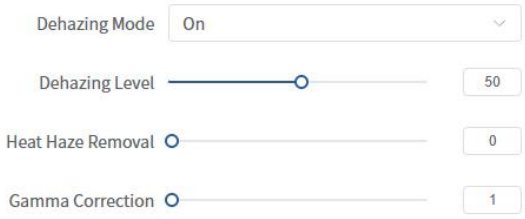
- Auto: The system automatically compensates for different color temperatures to produce natural colors.
- Manual: Manually set red and blue gain values; the system compensates based on these settings.
- Outdoor: Automatically compensates for most outdoor scenes with natural and artificial light.
- Sodium Lamp: Automatically compensates for sodium lamp lighting.
- Fluorescent Lamp: Automatically compensates for fluorescent lamp lighting.
- Incandescent Lamp: Automatically compensates for incandescent lighting.

6) Backlight: Includes backlight compensation, strong light suppression, and wide dynamic range (WDR).

- Backlight Compensation: Corrects dark subjects in backlit environments. Users can select the region to be compensated based on the scene.
- Strong Light Suppression: Reduces overexposure in bright areas and enhances dark areas. Adjust the level using the slider or input box.
- Wide Dynamic (WDR): Suitable for scenes with high contrast lighting. Balances bright and dark areas in the image to reveal more details. Use the drop-down to enable or disable.

7) Image Enhancement: Improves visual quality, highlights key details, suppresses irrelevant information, and enhances overall image quality.

- Electronic Image Stabilization (EIS): Uses image difference algorithms to reduce camera shake. Options: Off, Low, Medium, High. Default: Off.
- Digital Noise Reduction (DNR): Reduces noise for smoother images. Options: Off, On, 3D DNR. Default: Off.
- Temporal Noise Reduction: Removes temporal (3D) noise. Higher values improve noise reduction but may cause motion blur in moving objects.
- Spatial Noise Reduction: Removes spatial (2D) noise. Higher values reduce noise but may blur details.
- Defog Mode: Improves image clarity in foggy or hazy conditions. Options: Off, On, Auto, Smart. Default: Off.



① Use the slider or enter a value in the input box to adjust the corresponding parameter.

② Heat Haze Removal: Reduces or eliminates video distortion and blur caused by heat waves from air turbulence.

③ Gamma Correction: Adjusts image brightness and contrast non-linearly. Higher values make the image brighter, lower values make it darker.

NOTE

Some devices support optical defogging; when enabled, the image turns black and white, providing higher clarity and visibility.

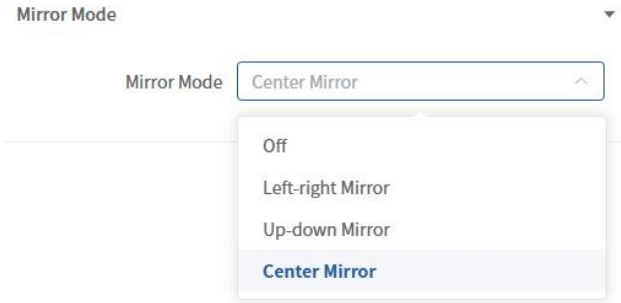
8) Day/Night Switching: Controls the device's color and black-and-white image modes. Can be set to Automatic, Day, Night, or Scheduled Switching.

- Scheduled Switching Mode: Requires setting the start and end times for the Day mode.
- Day Mode: Forces the device to display daytime images, ignoring the actual scene lighting.
- Night Mode: Forces the device to display nighttime images, ignoring the actual scene lighting.
- Automatic Mode: The device automatically switches between day and night images based on the scene.

NOTE

Day/Night Switching (Automatic Mode): When set to automatic, you can adjust the sensitivity. A higher sensitivity makes the day/night switching more responsive.

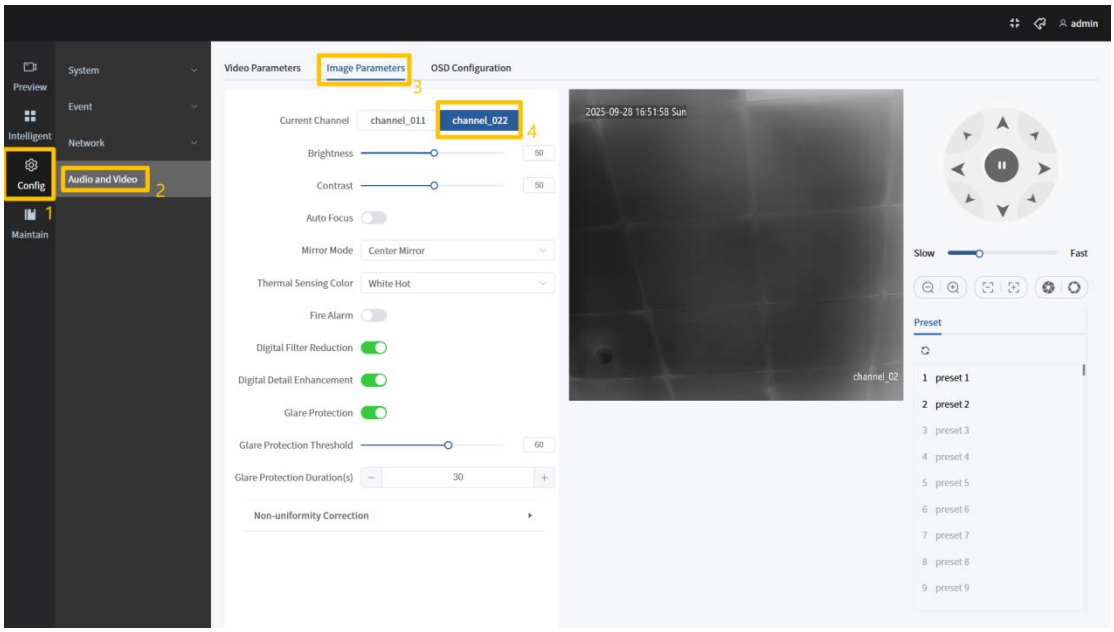
9) Mirror Mode: Use this when the video image is flipped relative to the actual scene. From the drop-down menu, you can choose Off, Horizontal Mirror, Vertical Mirror, or Center Mirror to correct the viewing angle.



9.2.2 Configuring the Thermal Imaging Channel

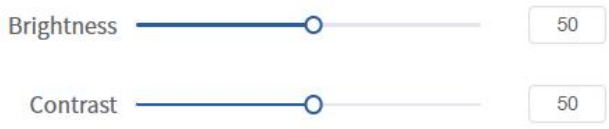
Operation Steps:

Step 1: Navigate to “Configuration > Audio and Video > Image Parameters”. Select the current channel as channel_022 (Thermal Imaging Channel).



Step 2: Configure the relevant parameters:

1) Brightness and Contrast



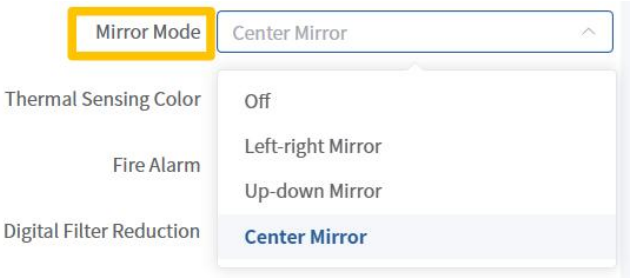
- Brightness: Adjusts the overall brightness of the image. Normally, keep the default value. Higher values make the image brighter.
- Contrast: Adjusts the contrast when the grayscale distribution is unclear or the image appears blurry. Higher values increase brightness and contrast. Setting it too high may cause dark areas to become too dark and bright areas to overexpose.

2) Auto Focus: Click to enable or disable the auto-focus function.

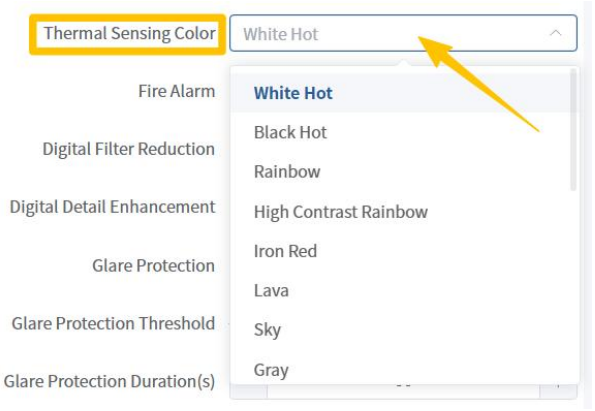
CAUTION

Enabling auto-focus may affect the lifespan of the thermal imaging module. Please turn off this function as soon as possible after use.

3) Mirror Mode: If the video image is flipped relative to the actual scene, you can adjust it to the correct view using mirror mode. Click the drop-down menu to select: Off, Horizontal Mirror, Vertical Mirror, or Center Mirror.



4) Thermal Color Palette: Applies color to the thermal image to indicate temperature differences. The default is White Hot. Click the drop-down menu to select the desired thermal color palette.



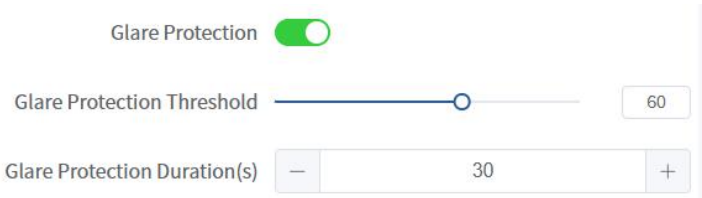
5) Fire Alarm: Click to enable or disable the fire alarm function. When enabled, adjust the fire detection threshold using the slider or by entering a value in the input box. Lower values increase sensitivity and trigger alarms more easily; higher values decrease sensitivity.

CAUTION

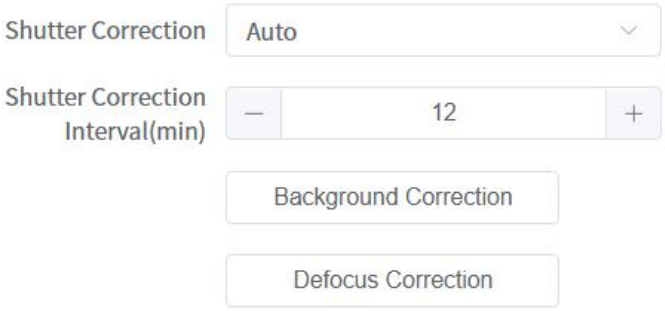
If the Intelligent Fire & Smoke Detection application is enabled, the Fire Alarm must also be enabled.

6) Digital Noise Reduction & Detail Noise Reduction: Click to enable or disable these functions.

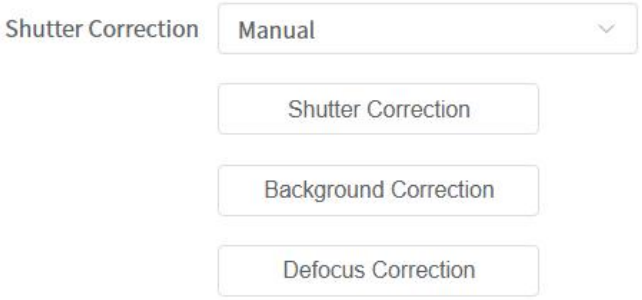
7) High-Temperature Protection: Protects the camera from damage caused by extreme heat sources. Click to enable or disable.



8) Shutter Calibration: Click the drop-down menu to select Manual or Automatic mode.



- Automatic Mode: Sets the shutter calibration interval in minutes. Range: 1–240 minutes.
- Manual Mode: Click Shutter Calibration and Background Calibration sequentially.



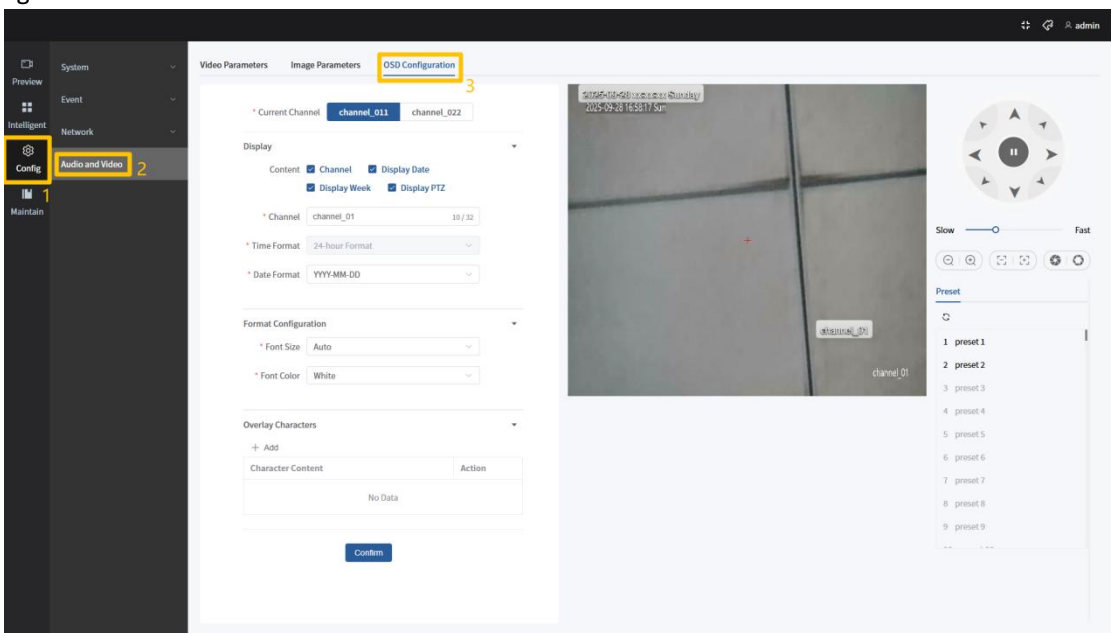
9.3 OSD Settings

This section introduces how to display information on the preview image and adjust it. It includes setting the name, date, and other OSD information, configuring OSD color, font, and other attributes, as well as overlaying text information on the image.

9.3.1 Visible Light OSD Configuration

Operation Steps:

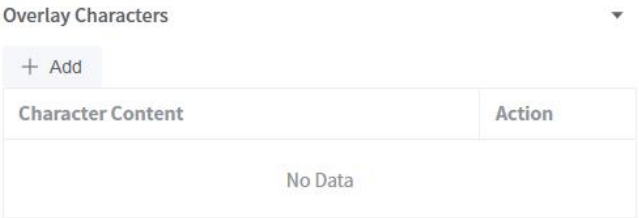
Step 1: Navigate to “Configuration > Audio and Video > OSD”, and select the channel_011 visible light channel.



Step 2: Configure OSD Information

1) Display Content: You can check or uncheck to show or hide the corresponding content. Click OK to save.

2) Channel Name: Customize the visible light channel name. Click OK to save.
3) Time Format: Default is 24-hour format.
4) Date Format: Click the drop-down menu to select the desired date format. Click OK to save.
5) Font Size and Color: Click the drop-down menu to select an appropriate font size and color.
6) Text Overlay: Overlay custom text on the live video as needed.



Click Add Text to insert characters. You can add up to 2 lines, with each line supporting a maximum of 32 characters (Chinese, numbers, or English).

9.3.2 Thermal Imaging OSD Configuration

Please *refer to the Visible Light OSD Configuration*.

Chapter 10 System Routine Maintenance

This section introduces system configuration file management, system reboot, upgrade maintenance, and log query functions.

10.1 Configuration Management

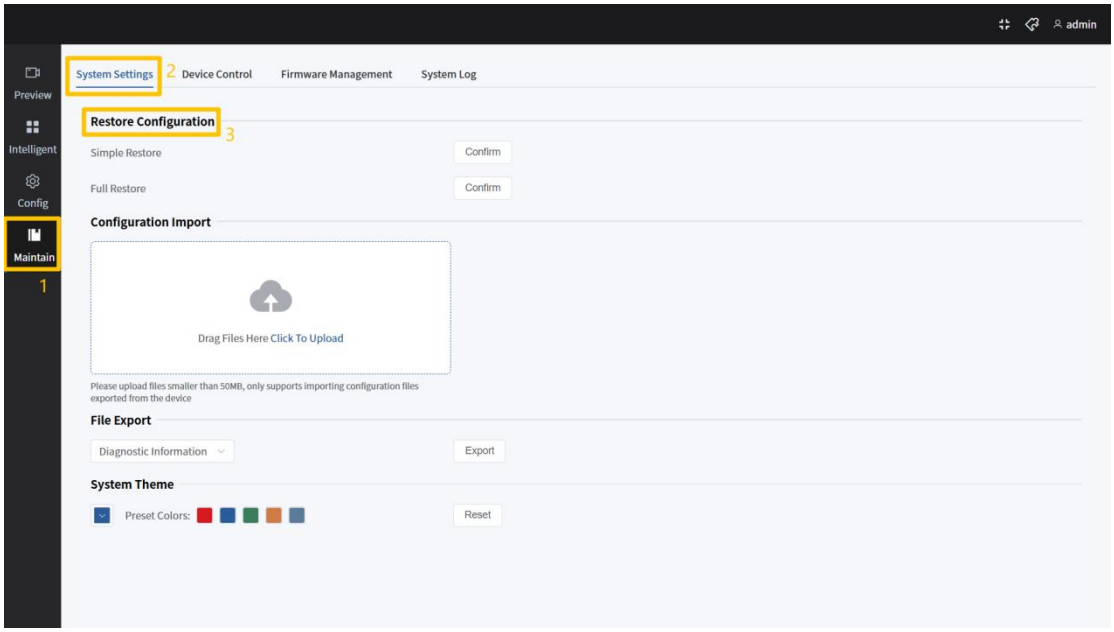
10.1.1 Restore Configuration

⚠ CAUTION

Restoring configuration will clear all device-related information

Operation Steps:

Step 1: Navigate to “Maintenance > System Settings > Restore Configuration”.

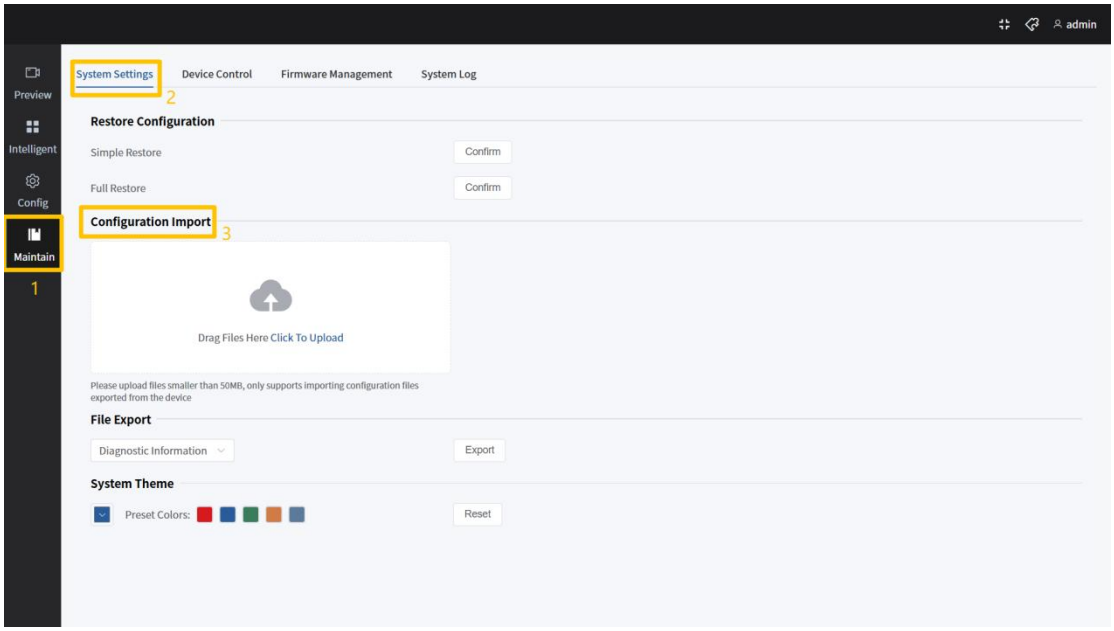


- Simple Restore: Restores device parameters except for IP address, subnet mask, and gateway. All other parameters are reset to factory defaults. Click Confirm to restore.
- Full Restore: Completely restores all device parameters to factory defaults.

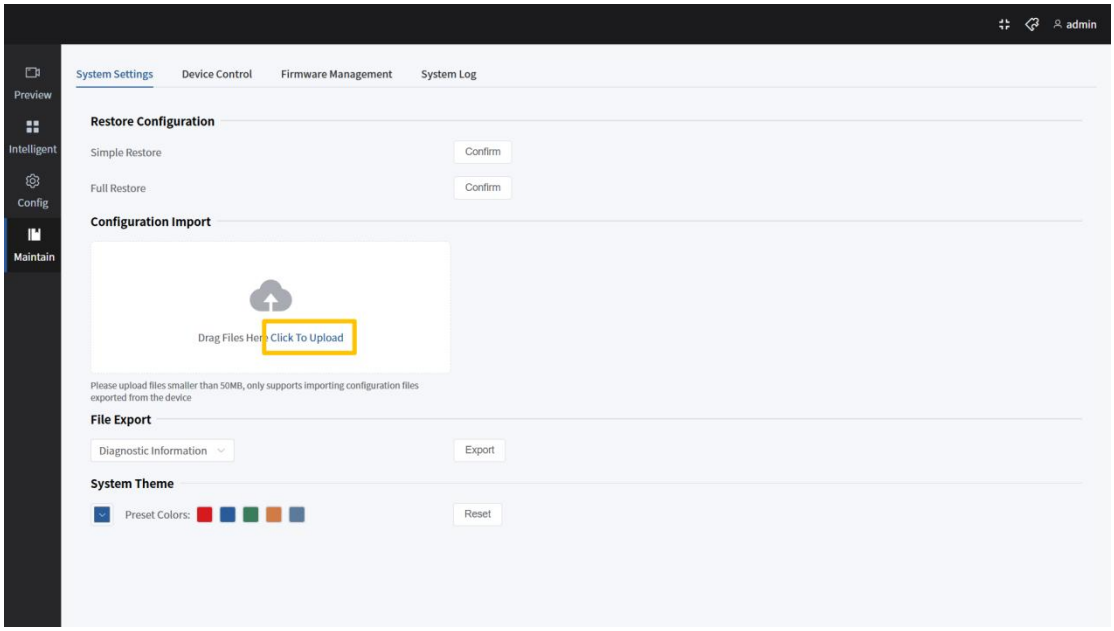
10.1.2 Input Configuration

Operation Steps:

Step 1: Navigate to “Maintenance > System Settings > Configuration Import”.



Step 2: Click “Click To Upload” and select the configuration file to complete the import.

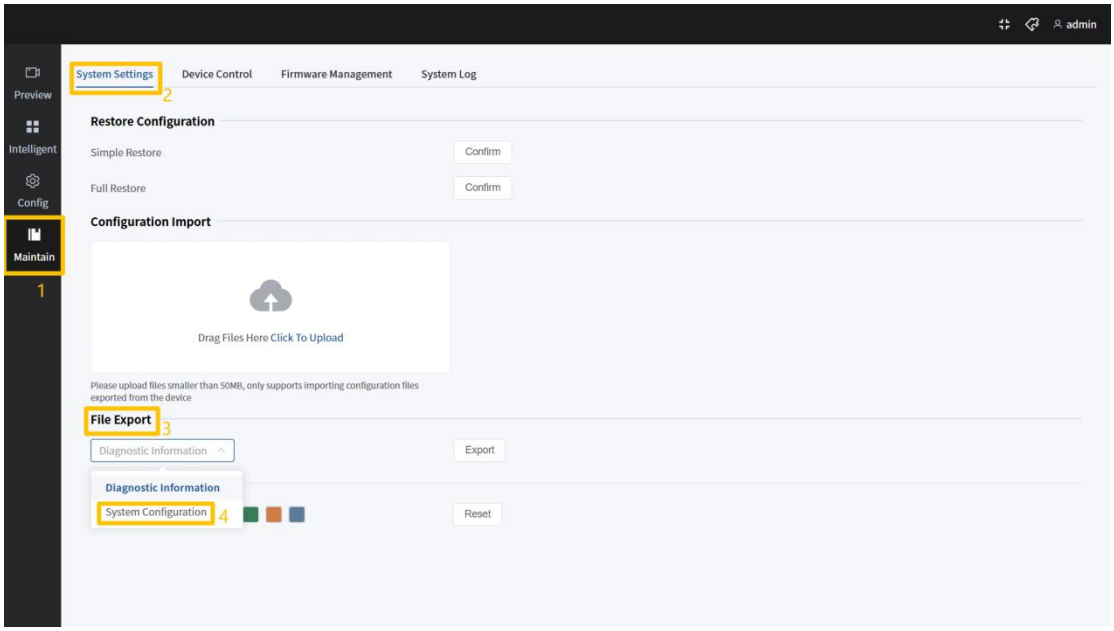


10.1.3 Export Configuration

By exporting the device’s configuration file, you can obtain the device’s configuration parameters, making it easier to apply the same settings to other devices.

Operating Steps:

Step 1: Navigate to “Maintenance > System Settings > File Export”, and select “System Configuration” from the drop-down list.



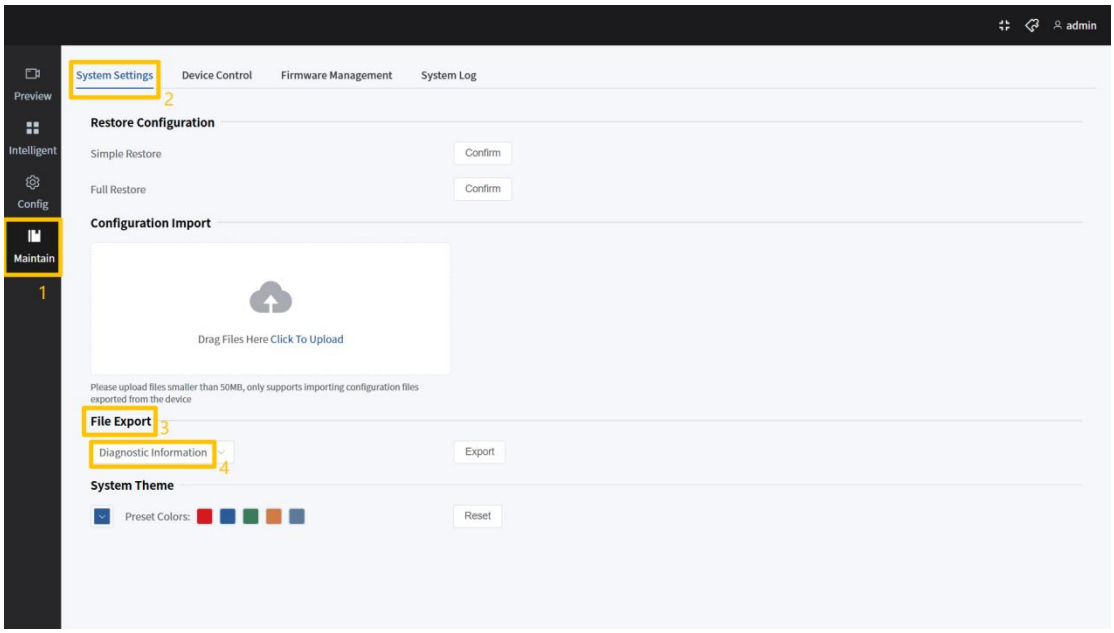
Step 2: Click Export and save the system configuration file.

10.1.4 Export Diagnostic Information

Export the device's operational diagnostic information.

Operating Steps:

Step 1: Navigate to "Maintenance > system Settings > File Export", and select "Diagnostic Information" from the drop-down list.



2: Click Export and save the diagnostic information file.

10.2 Device Control Management

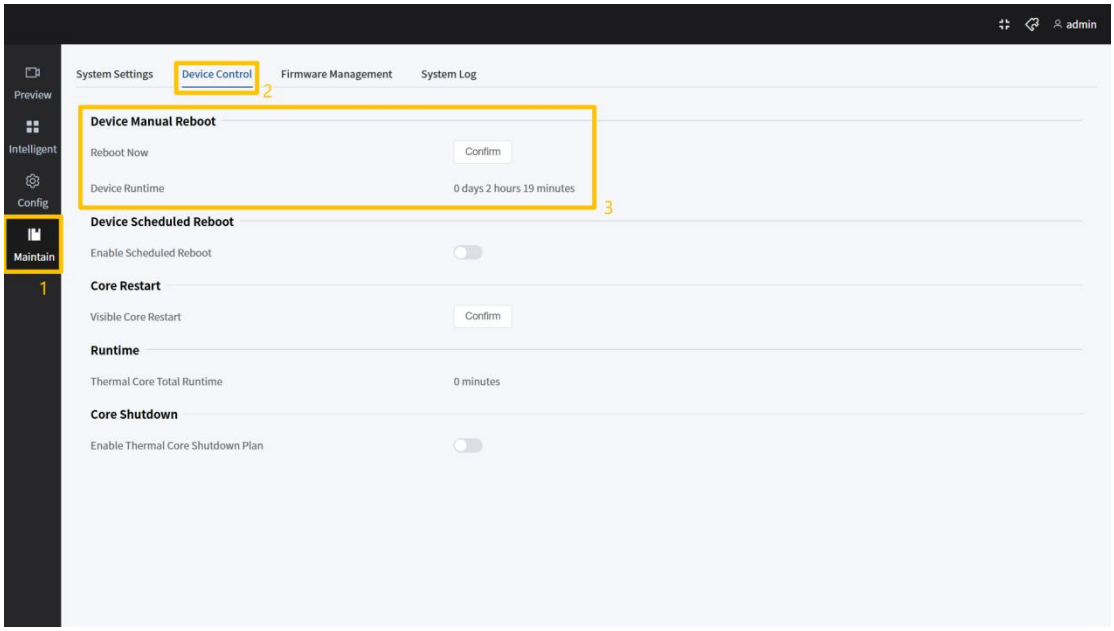
Used for managing device restart.

10.2.1 Device Manual Reboot

The device supports immediate manual restart.

Operating Steps:

Step 1: Navigate to “Maintenance > Device Control > Device Manual Device Reboot”.



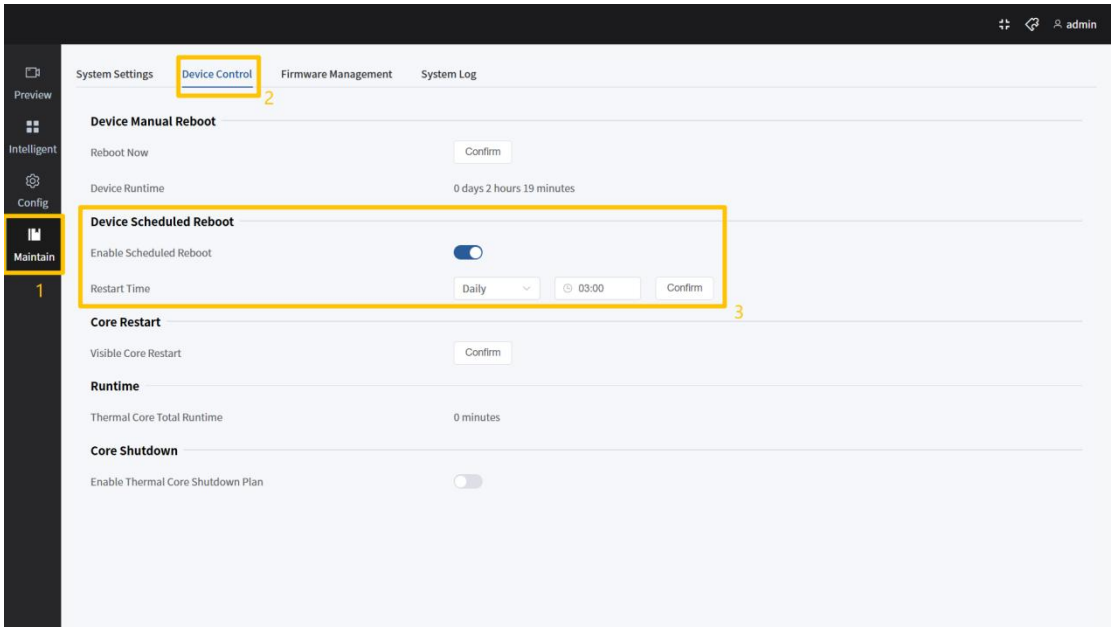
Step 2: Click Confirm, and the device will restart immediately.

10.2.2 Device Scheduled Reboot

Used to set up a scheduled restart for the device.

Operating Steps:

Step 1: Navigate to “Maintenance > Device Control > Device Scheduled Reboot”.



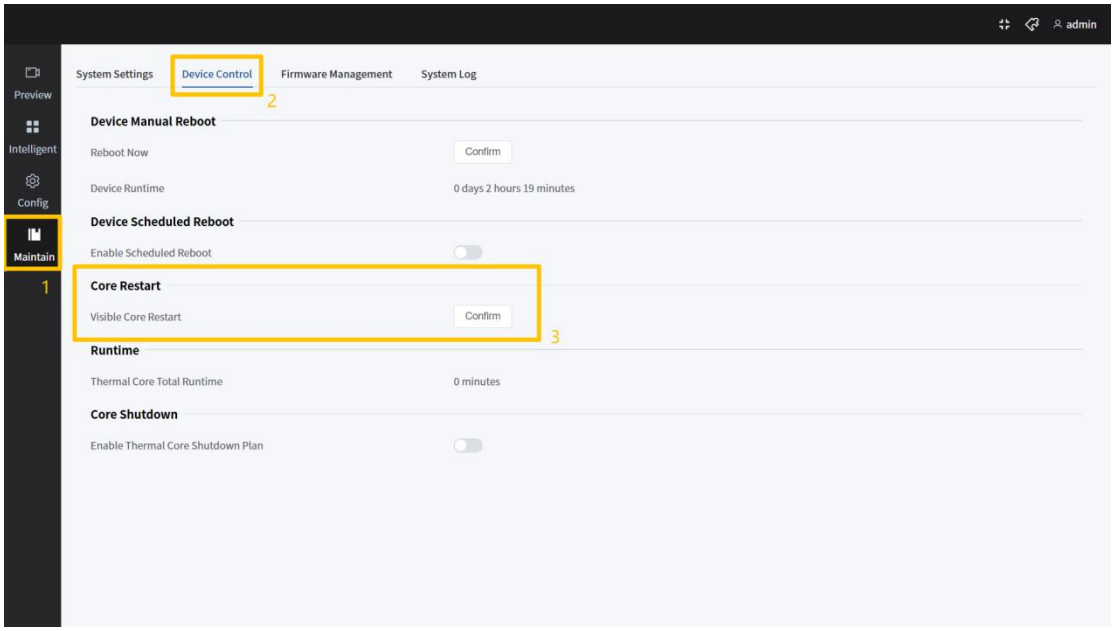
Step 2: Click to enable scheduled reboot, set the restart time, and click Confirm to save.

10.2.3 Core Restart

Only supports restarting the visible core.

Operating Steps:

Step 1: Navigate to “Maintenance > Device Control > Visible Core Restart”.



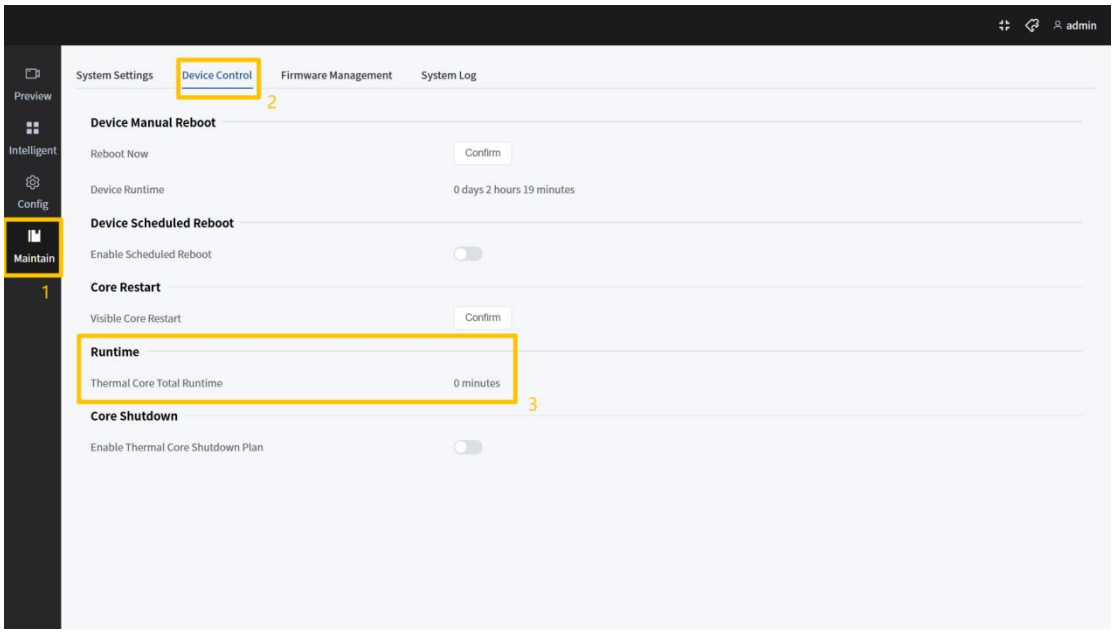
Step 2: Click Confirm to restart the visible core.

10.2.4 Runtime

Used only to view the cumulative operating time of the visible and thermal imaging modules.

Operation Steps:

Step 1: Navigate to “Maintenance > Device Control > Runtime” to display the thermal core total runtime.



10.2.5 Thermal Core Shutdown Plan

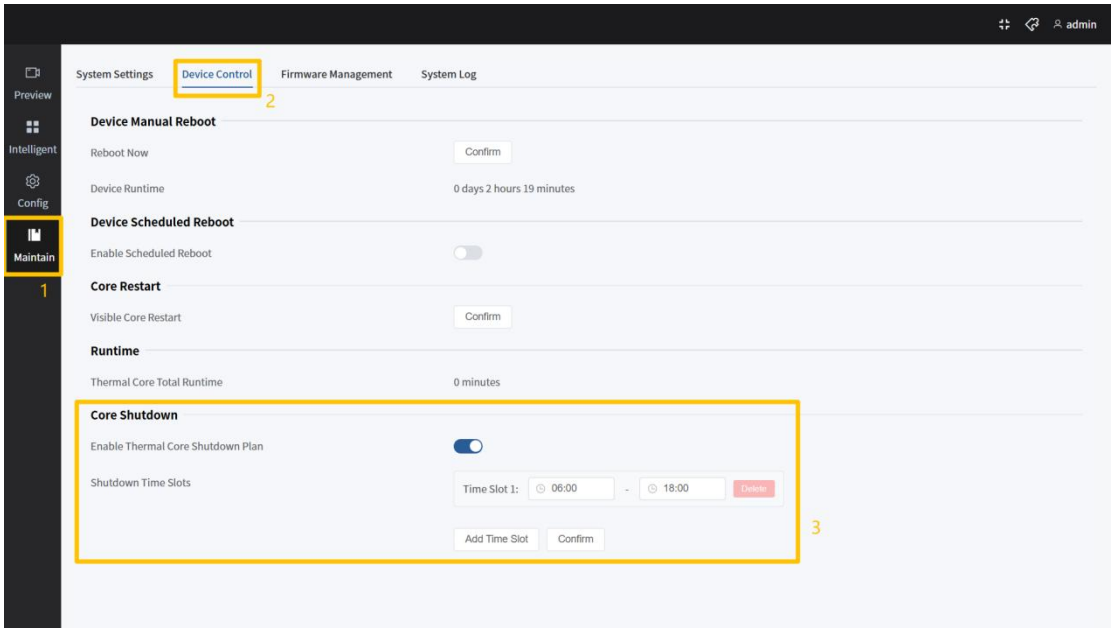
Used to set a timed power on/off schedule for the thermal imaging core.

NOTE

This function is only valid for cooled thermal imaging cores.

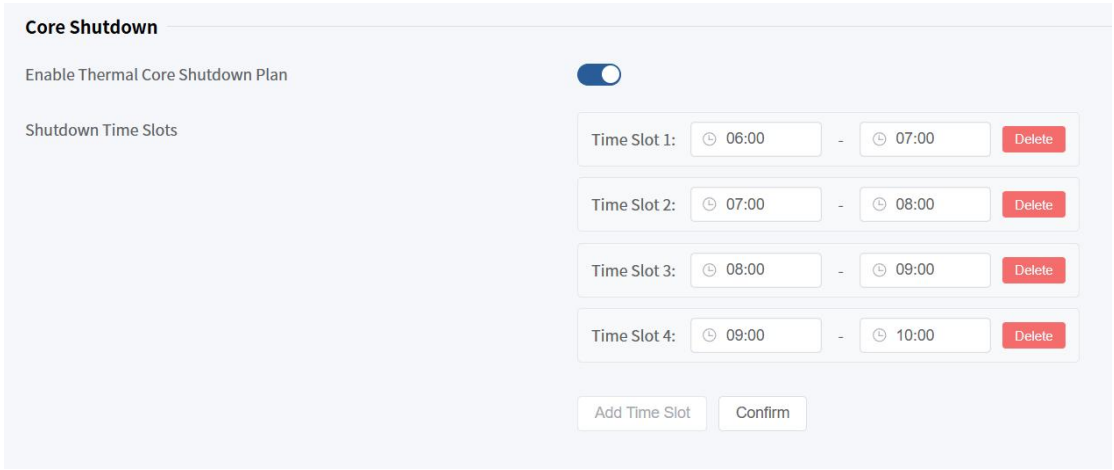
Operation Steps:

Step 1: Navigate to “Maintenance > Device Control > Core Shutdown”.



Step 2: Click to enable the thermal imaging module shutdown schedule.

Step 3: Set the thermal imaging shutdown time periods. You can add up to 4 time periods. Click OK to save.



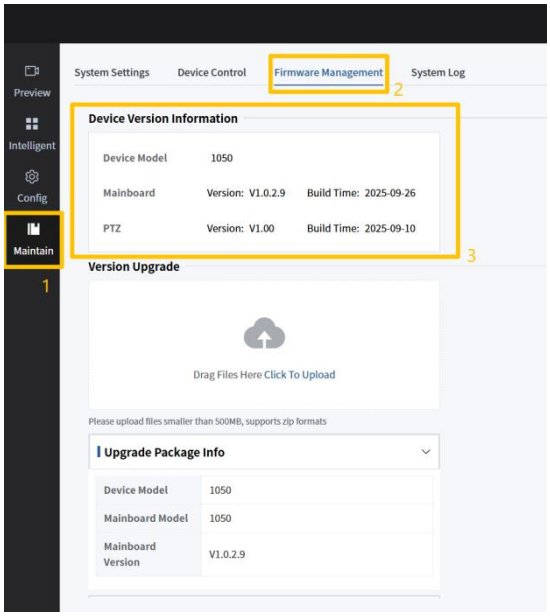
10.3 Upgrade Management

Used to enhance device functionality and improve stability through system upgrades.

10.3.1 Device Version Information

Used to view the device model, software version, and other related information.

Navigate to “Maintenance > Firmware Management > Device Version Information”.

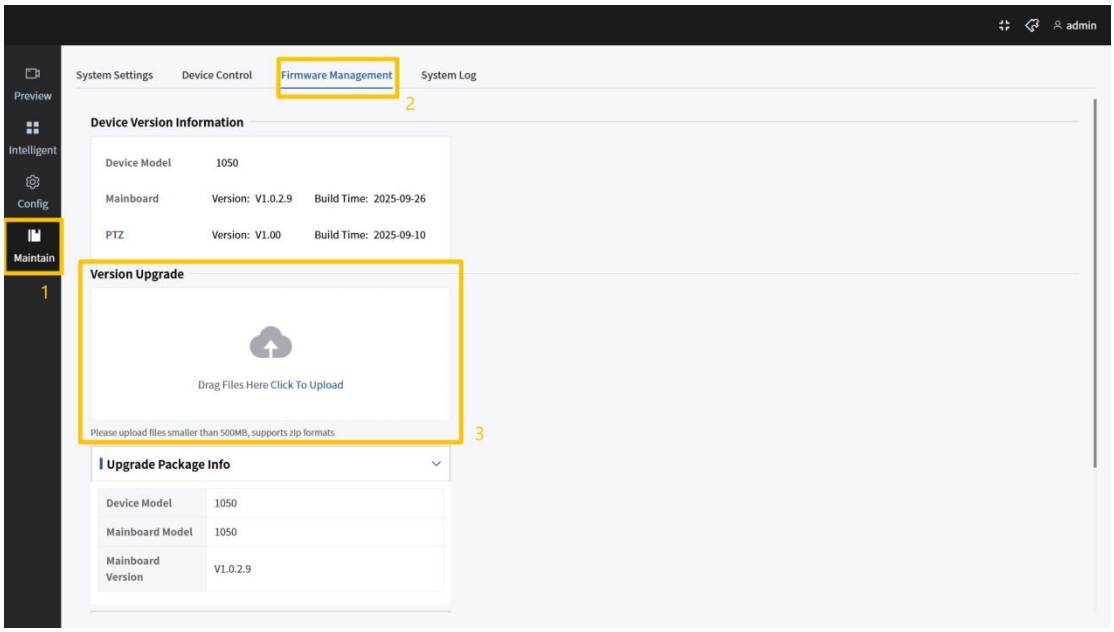


10.3.2 Version Upgrade

Prerequisite: Obtain the correct upgrade package and store it on the computer.

Operation Steps:

Step 1: Navigate to “Maintenance > Firmware Management > Version Upgrade”.

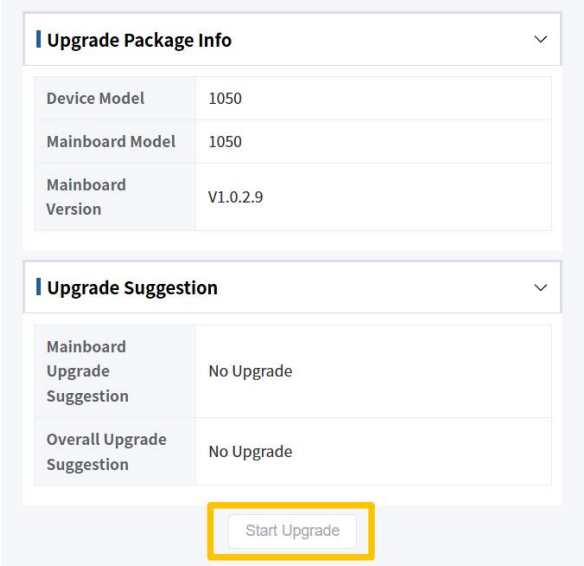


Step 2: Click “Click to Upload”, select and open the upgrade package to complete the upload.

NOTE

The upgrade package file must be in ZIP format.

Step 3: Click “Start Upgrade”, wait for the upgrade to complete, and the device will automatically restart.

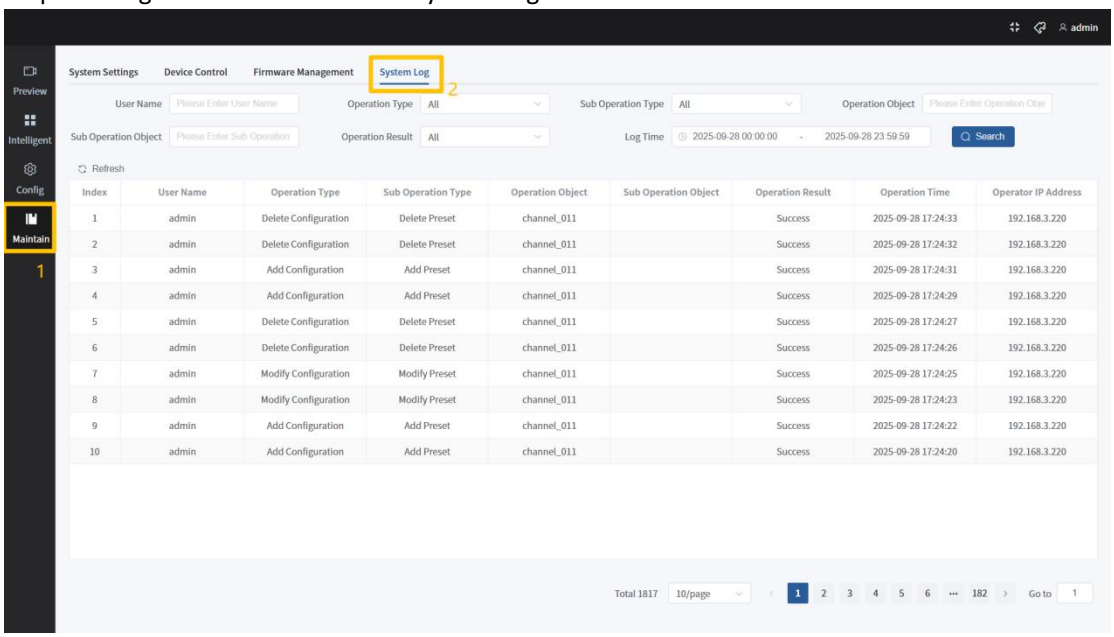


10.4 System Log Query

When the system encounters an unknown fault, logs can be referenced to quickly locate and troubleshoot the issue.

Operation Steps:

Step 1: Navigate to “Maintenance > System Log”.



Step 2: Choose the Username, Operation Type, Start Time, and End Time.

Step 3: Click the “Search” button.

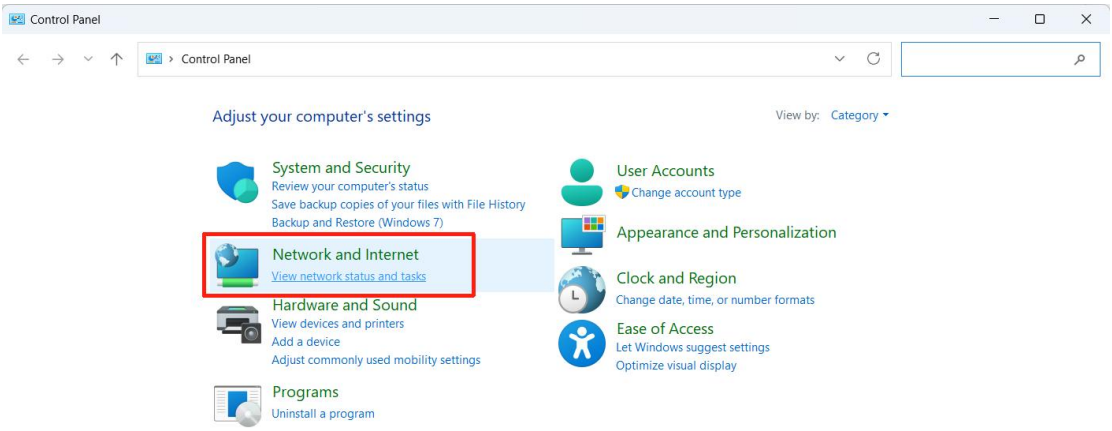
The log list will display all log entries that match the query criteria.

Appendix 1 Setting the Computer's IP Address

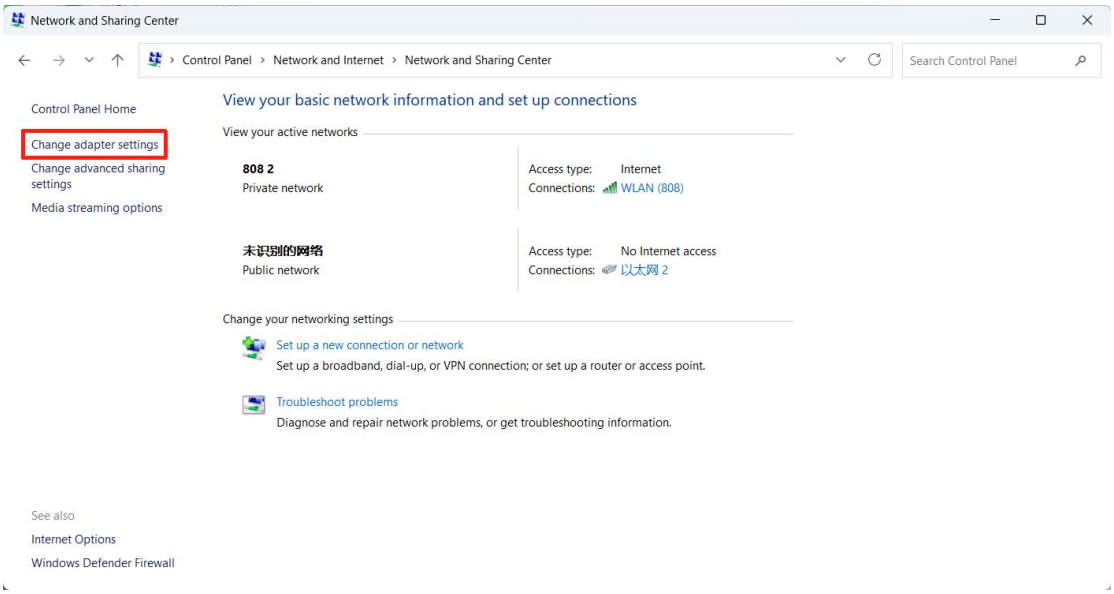
Set your computer's IP address in the same subnet as the device (default device IP: 192.168.1.10, subnet Shielding: 255.255.255.0, gateway: 192.168.1.1). The steps below are based on Windows 11:

Step 1: In the search box next to Start on the taskbar, type control panel. Select Control Panel from the list of results.

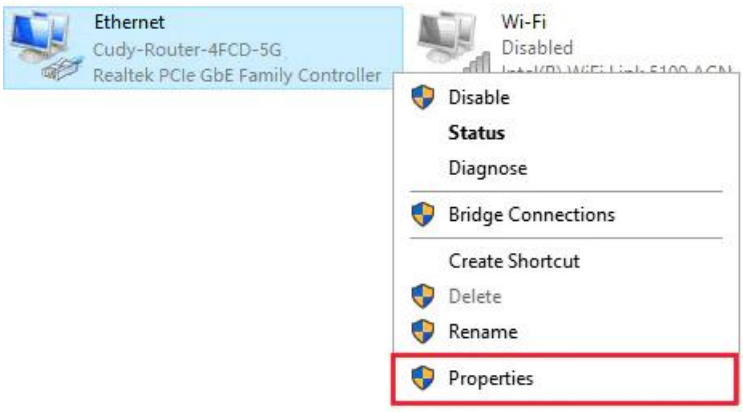
Step 2: Click on Network and Internet -> Network and Sharing Center



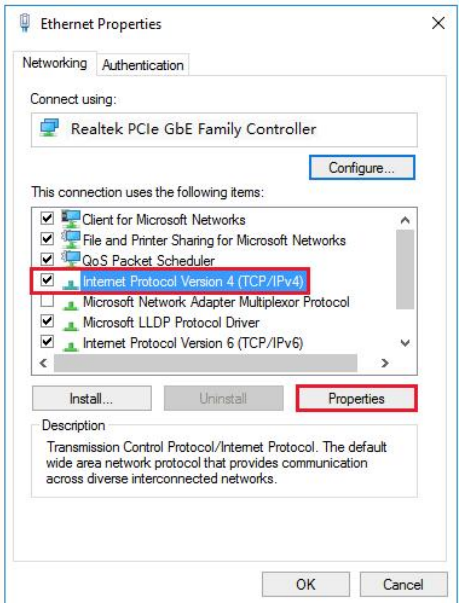
Step 3: Click on "Change adapter settings" on the left side.



Step 4: Highlight and right-click on "Ethernet", go to "Properties".

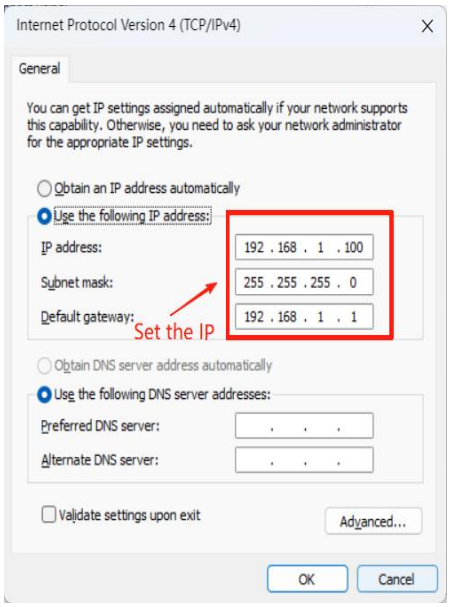


Step 5: Select “Internet Protocol Version 4 (TCP/IPv4)” and click “Properties”.

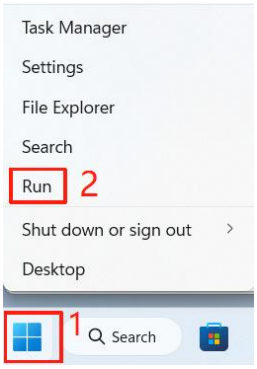


Step 6: In the pop-up dialog box, configure the computer’s IP address.

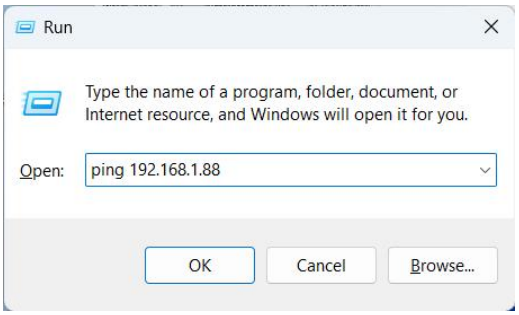
- If the device’s DHCP function is enabled, you may choose to obtain an IP address automatically, or manually configure an address in the same subnet as the device (default: 192.168.1.10).
- If DHCP is disabled, you must manually assign a computer IP address in the same subnet as the device. After entering the IP settings, click “OK” to return to the “Ethernet Properties” window, then click “OK” again.



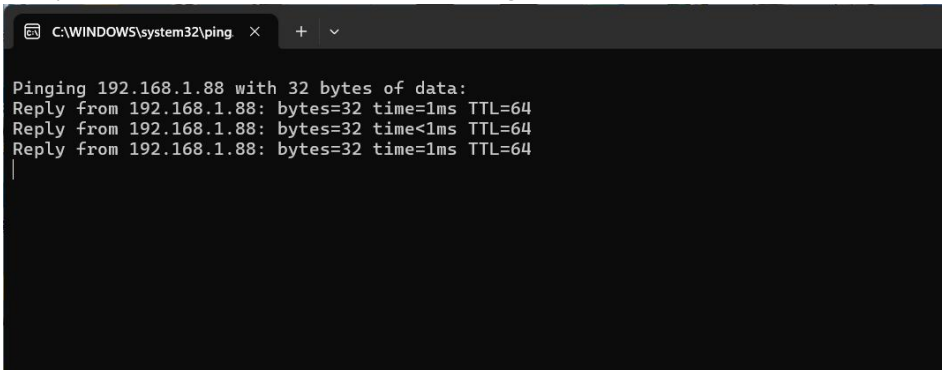
Step 7: Right-click the Windows icon, select “Run” to open the Run dialog.



Step 8: In the Run dialog, enter the device’s default IP: 192.168.1.10, and click “OK”.



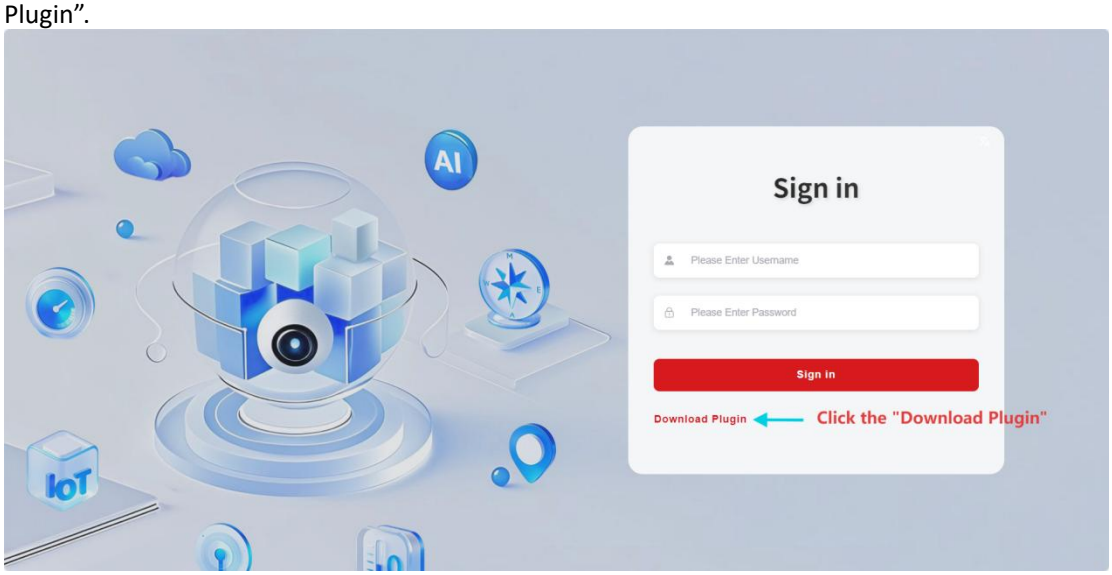
Step 9: If a response is returned from the device, it indicates a successful network connection. If not, please check the network cable or configuration.



Appendix 2 Installing the Web Plugin

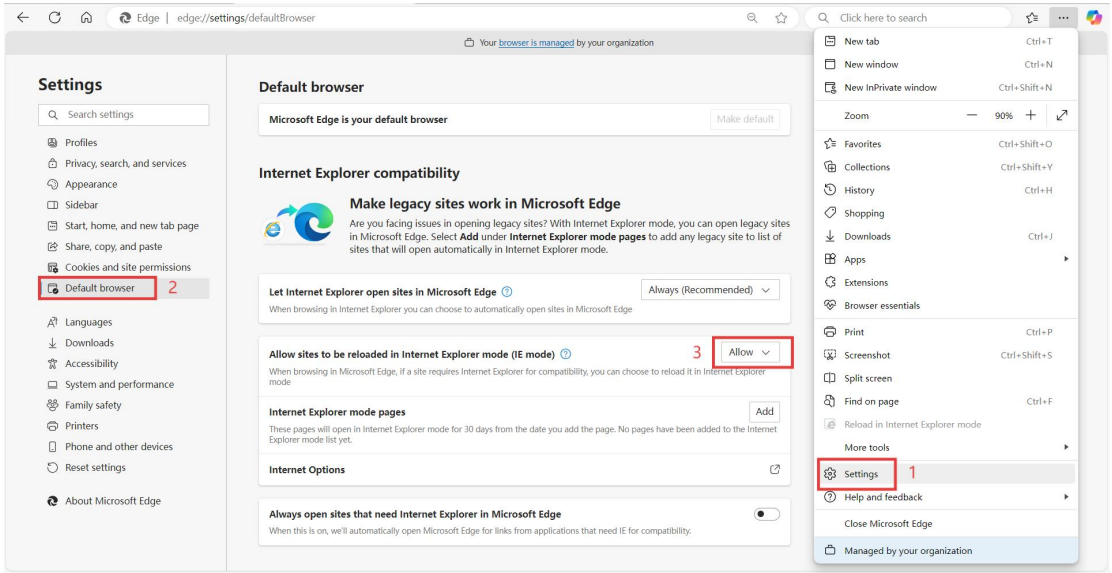
If this is your first time using the device, please download and install the web plugin; otherwise, the device may not function properly.

Step 1: Open the Edge browser, enter the IP address of the PTZ camera, and select “Download Plugin”.

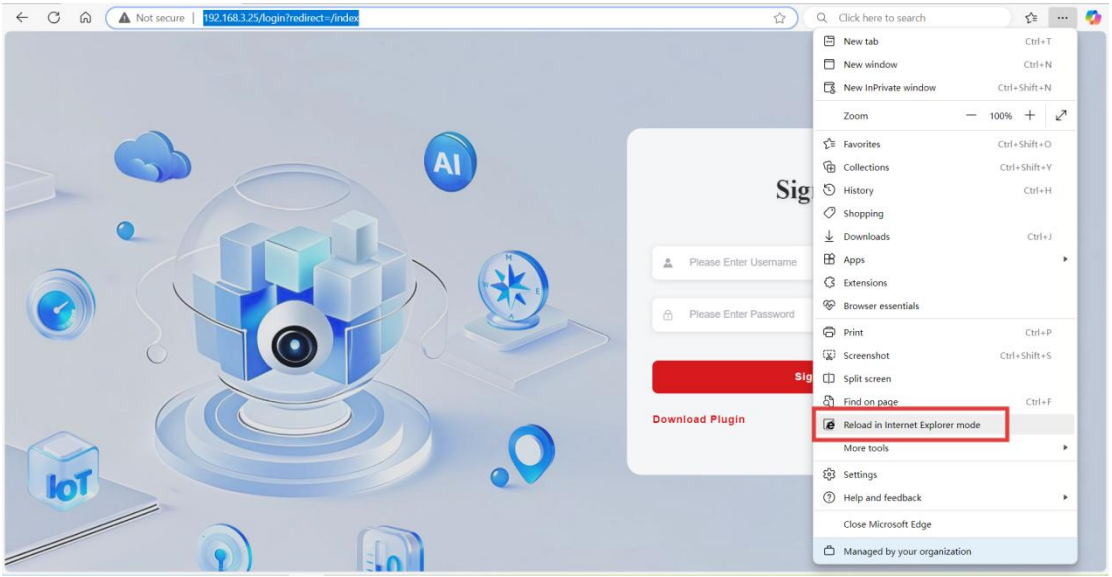


Step 2: After the download is complete, close the browser and run the plugin installer. The installation interface will close automatically once completed.

Step 3: Open Edge settings, and in the default browser section, change “Allow sites to be reloaded in Internet Explorer mode (IE mode)” to “Allow”.



Step 4: In Edge settings, select the option to reload pages in IE mode.



Step 5: On some Windows computers, Edge may not support IE mode, or launching the system's Internet Explorer may automatically redirect to Edge. You can disable this redirection using the following method: