USER MANUAL
IP CLOUD CAMERA

ELKRON PRO
The key to security

FOREWORD

Thank you for choosing our IP cameras. This series consists of integrated IP cameras developed for network video surveillance, including box, bullet, dome and PTZ cameras. A powerful SoC (System on a Chip) multimedia processor automatically handles the capture, compression and transmission of audio and video signals. Standard H.264/H.265 encoding algorithms provide clearer, smoother video transmission. The built-in Web server makes real-time monitoring and remote camera control straightforward through a browser. These IP cameras are suitable for medium-sized and large businesses, public-sector projects, shopping centres, supermarket chains, smart buildings, hotels, hospitals, schools and, more generally, any environment requiring remote video monitoring and transmission over a network. The product is simple to install and easy to use.

Introduction:

- In this manual, IP cameras refers to network cameras.
- Click means clicking the left mouse button.
- Double-click means double-clicking the left mouse button.
- By default, the IP camera uses DHCP to obtain an IP address automatically. The default IP address is 192.168.1.168.
- On first use, you must set a password by following the instructions: log in with the username "admin" (lowercase) and configure the password as described in section 4.2.
- The default Web port number is 80. The ONVIF port number is the same as the Web port number.

Note:

Some information in this manual may differ from the actual product. If you encounter a problem that this manual does not resolve, contact technical support or your authorised dealer. This manual is subject to change without notice.

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CHAPTER 1 OVERVIEW

1.1 Applications

With their powerful image processing capabilities, IP cameras can be used in many public places, including shopping centres, supermarkets, schools, factories and workshops, as well as environments requiring high-definition video, such as banks and traffic monitoring systems, as shown in the following figure.



1.2 Product description

The IP camera is a digital network camera that can operate independently thanks to its built-in Web server. It enables real-time monitoring from anywhere in the world through a Web browser or client software. Based on a state-of-the-art digital solution, the IP camera integrates a multimedia processing platform on a single board to capture, compress and transmit audio and video over a network. It complies with the H.264/H.265 High Profile encoding standard. By entering the camera IP address or domain name in a Web browser, any remote user can monitor in real time. This solution is suitable for residential and commercial environments and any location requiring remote video surveillance and transmission over a network. The product is simple to install and easy to use. Multiple users can be configured with different permissions for straightforward management. The IP camera also provides motion detection: when an event occurs, it automatically sends emails, captured images or alarm videos and stores the alarm video on the memory card (microSD) for easy retrieval.

1.3 System requirements

System: Windows XP/Windows 7/Windows 8/Windows 10/Windows 11/macOS 10 or

later **CPU:** Intel i3 or higher
Memory: 2 GB or more

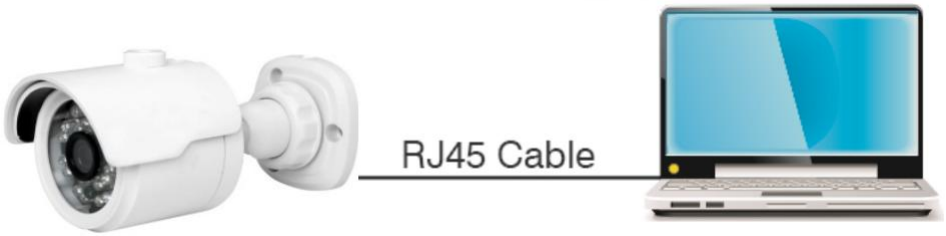
Video memory: 1 GB or more
Display: resolution of 1024 × 768 or higher **Browser:** IE 10 or later, Chrome 57 or later, Firefox 52 or later, Edge 41 or later, Safari 12 or later.

CHAPTER 2
CONNECTING THE DEVICE

The IP camera can be connected in two ways.

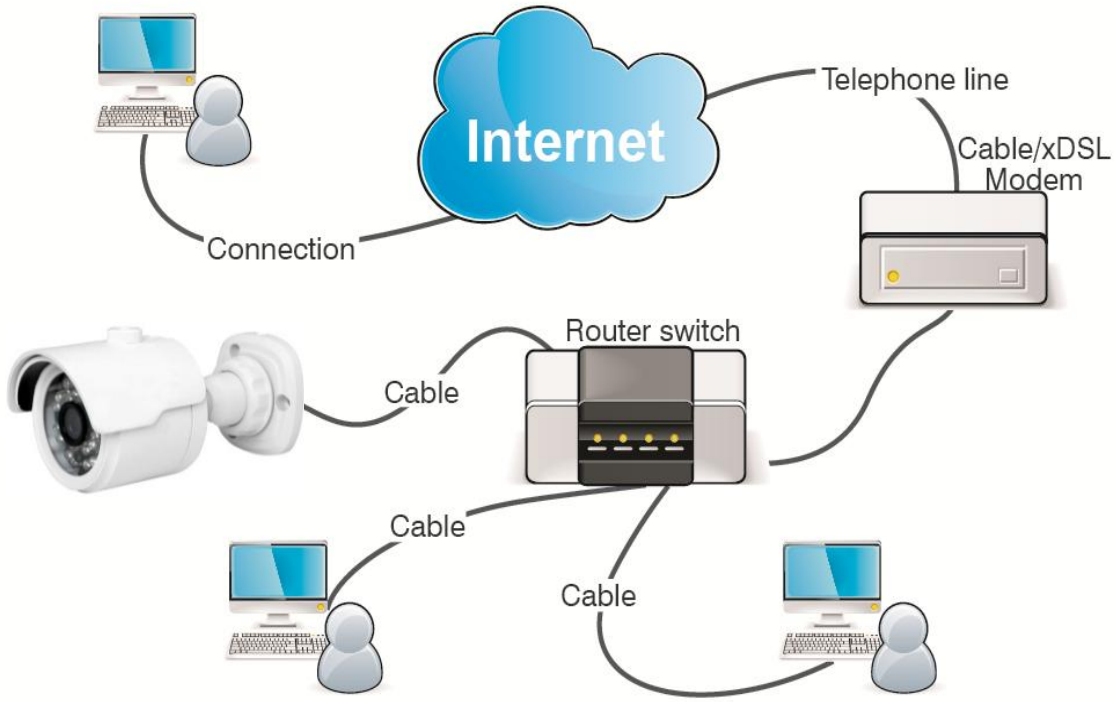
2.1 Connecting to a PC

Connect the IP camera directly to the PC using a network cable, connect its power input to a 12 V DC power supply and set the PC and camera IP addresses to the same network segment. If the network is operating correctly, the camera will communicate with the PC within one minute of being powered on.



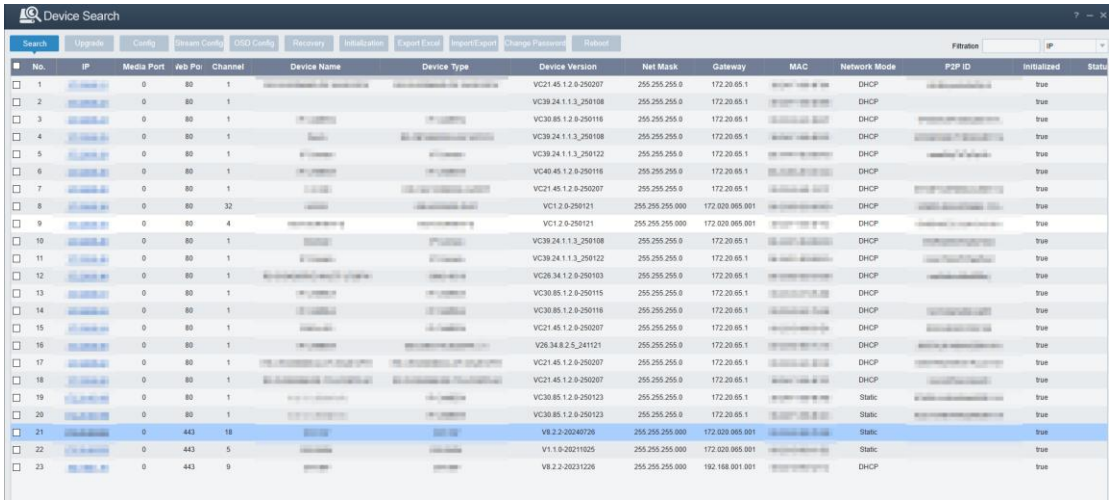
2.2 Connecting through a router/switch

This connection method is used when the IP camera is connected to the Internet: connect the camera and PC to the LAN ports of a router/switch, and set the camera gateway to the router IP address.



CHAPTER 3
CONFIGURING THE CAMERA IP ADDRESS USING DEVICE CONFIG TOOL

Step 1 Start Device Config Tool , click Search to detect the IP cameras on the local network, as shown in the following figure, and identify the required camera by its P2P or MAC address.

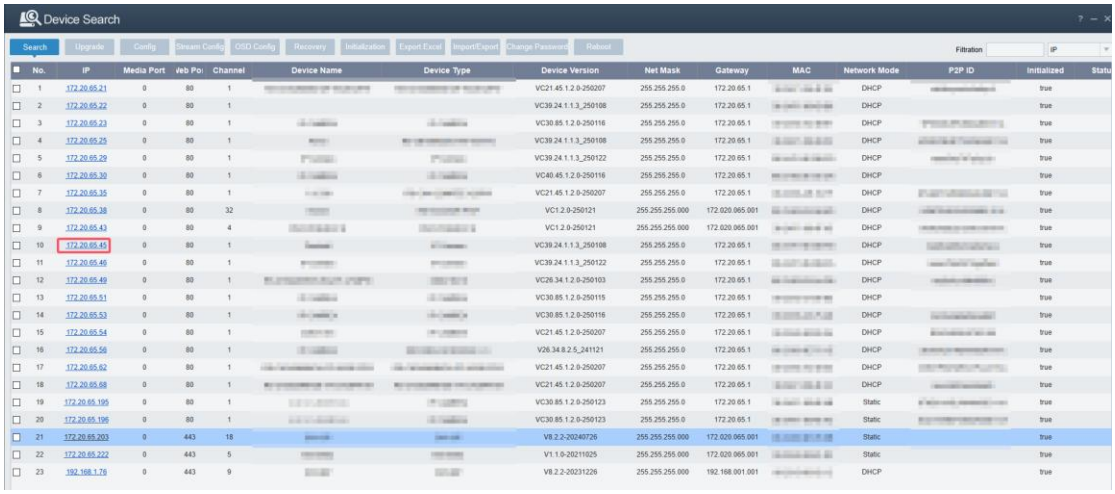


Note: The default camera IP address is 192.168.1.168 and the default username is admin.

CHAPTER 4
ACCESS THROUGH THE WEB CLIENT

4.1 Accessing the camera through the Web client

Use Device Config Tool to detect IP cameras on the network. As shown in the following figure, click an IP address to open the login page for the corresponding camera in the browser.



Alternatively, open the browser and enter **http://IP:Web port** in the address bar. In the example above, the device IP address is 172.20.58.41 and the Web port is 80, so the full URL is **http://172.20.58.41:80.**

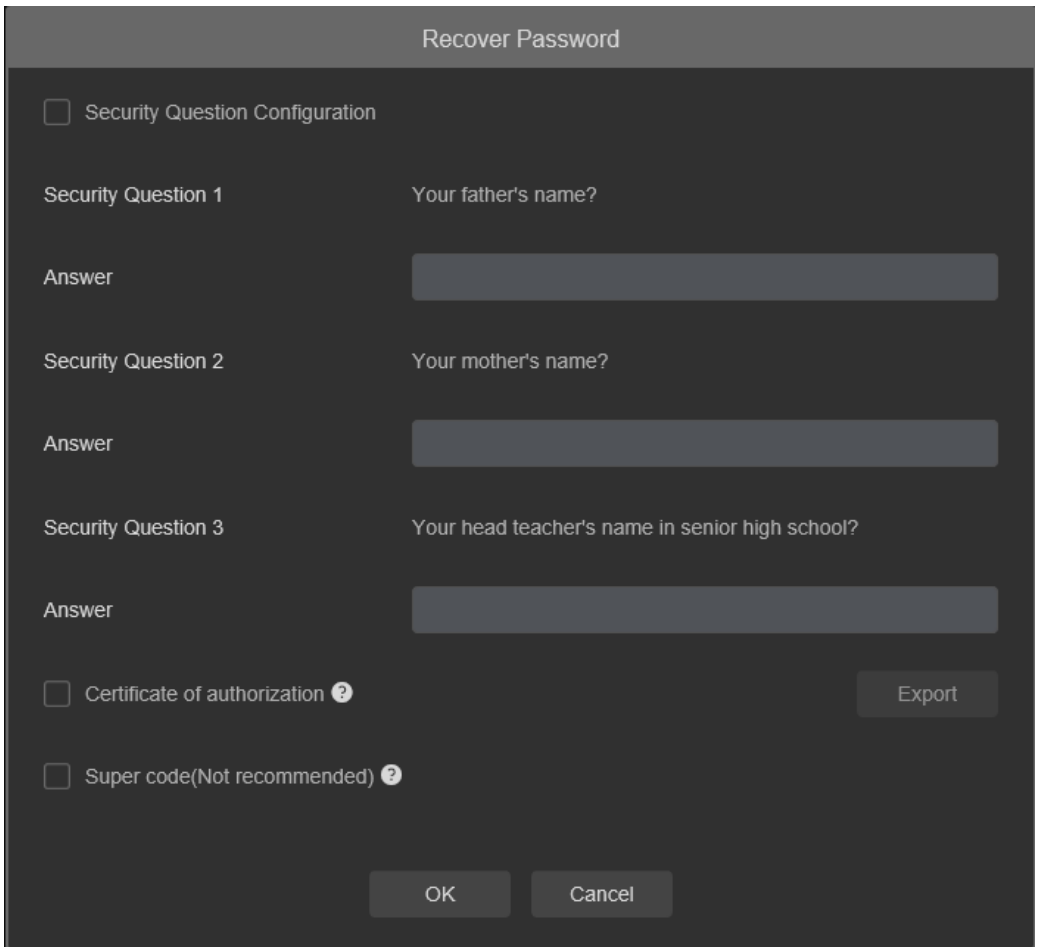
Note: In practice, the default port for HTTP access is 80.

4.2 First login

When you first access the camera through the Web client, you must set a password to complete activation. The Web client displays the screen shown below. Move the pointer over the password entry box to display the requirements: the password must contain 8 to 16 characters and include at least two of the following categories: uppercase letters, lowercase letters, digits and special characters. The password cannot be the same as the username.



Set the new password and click OK to save the change. The Web client displays the screen shown below. Enable password recovery methods by selecting the corresponding checkboxes, or cancel the setup without selecting any checkbox; in this case, password recovery will not be enabled.



① Security question configuration: to reset the password by answering security questions, select Security Question Configuration, choose three of the 15 available questions and enter the answers (up to 64 characters

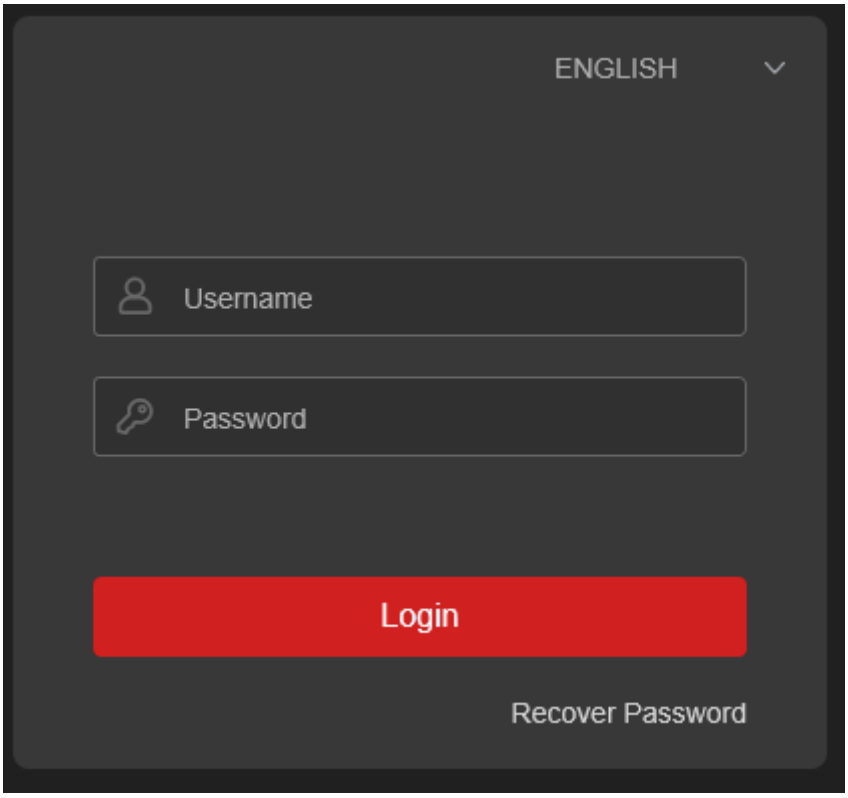
each) to use for password recovery.

② Authorisation certificate: to reset the password using a certificate, select Authorisation Certificate and click Export to download the certificate.txt file.

③ Supercode (not recommended): this method calculates a supercode for resetting the password from the camera MAC address and time. Enabling this function is not recommended: the camera MAC address is broadcast on the network, and its system time can be obtained directly through the Web client, so third parties could use the supercode to change the password. **Note:** if password recovery is enabled, keep the verification information safe.

4.3 Standard login

The Web client displays the login screen shown below. Enter your username and password and click Login to access the operating interface. You can also select your preferred language when logging in.

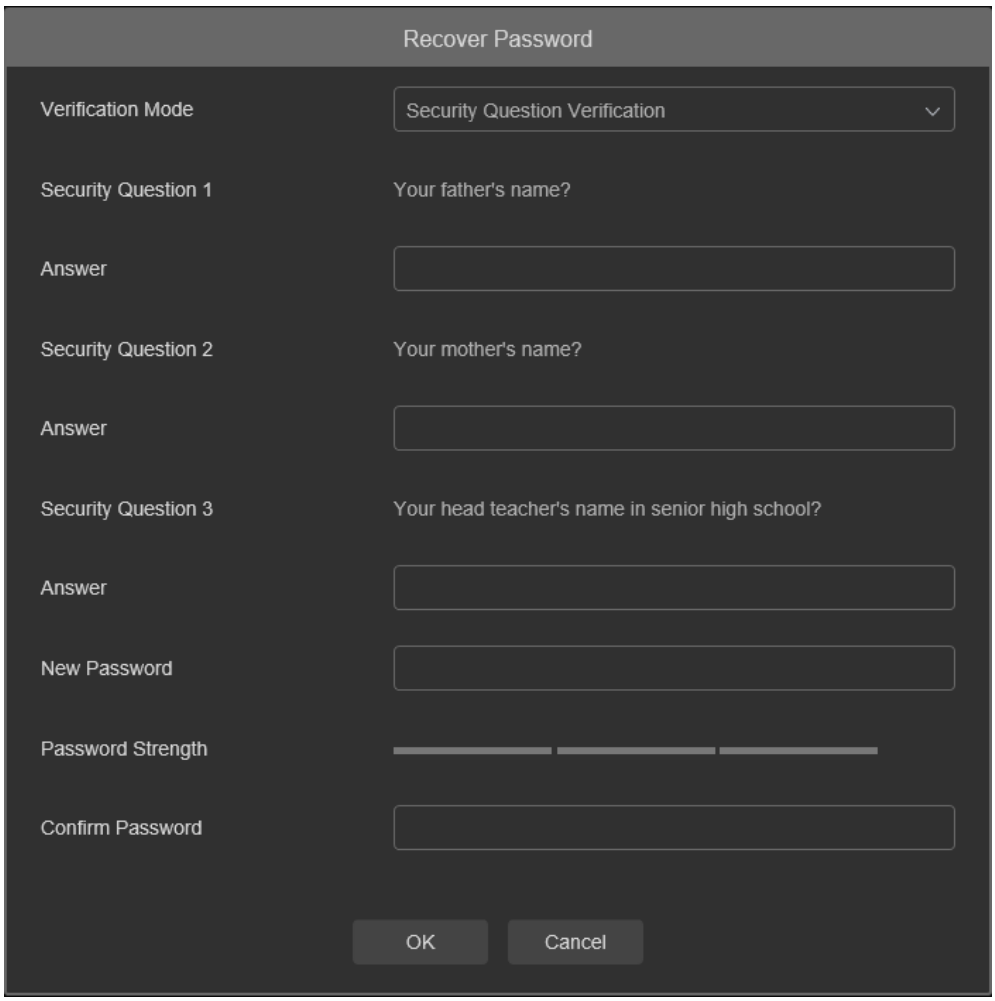


4.4 Password recovery

If password recovery is enabled and you forget your login credentials, click Recover Password to open the password recovery screen. Depending on the settings configured at first login, use security questions, the authorisation certificate or the supercode to recover the password.

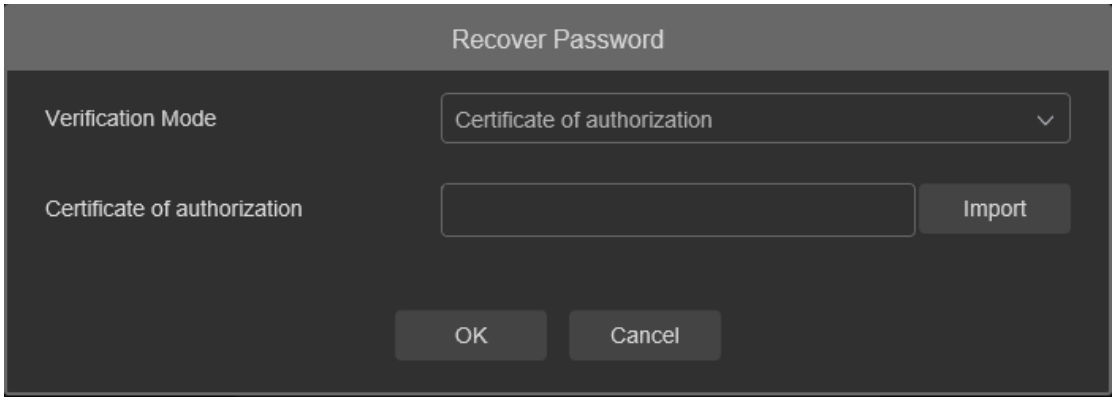
4.4.1 Security question configuration

On the Recover Password screen, reset the password by answering the security questions, as shown below. After entering the answers, you can change the password directly.



4.4.2 Authorisation certificate

If you configured recovery using an authorisation certificate at first login, you were asked to download the certificate.txt file. On the Recover Password screen, select Authorisation Certificate and import certificate.txt to reset the password, as shown below. Click **Import,** select certificate.txt and enter the new password.

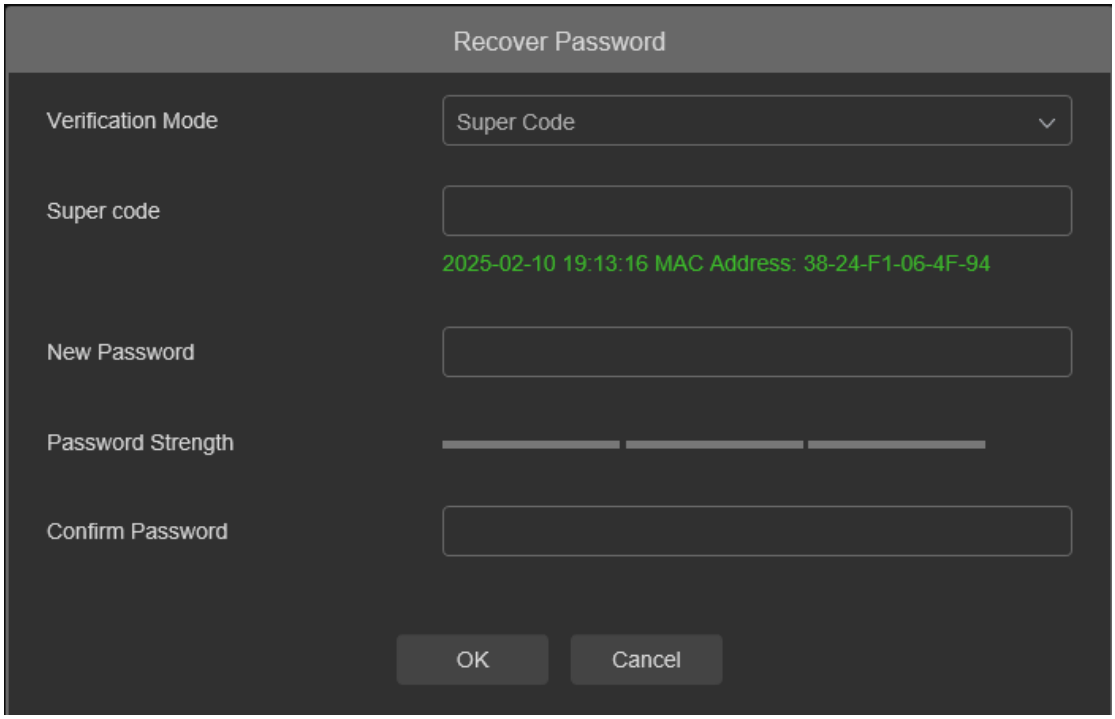


Note: after changing the password using this method, the key file is no longer valid. After login, a pop-up window will ask you to export

the key file again. Unless you export it again, you will no longer be able to change the password using this method. The message is shown below.

4.4.3 Supercode

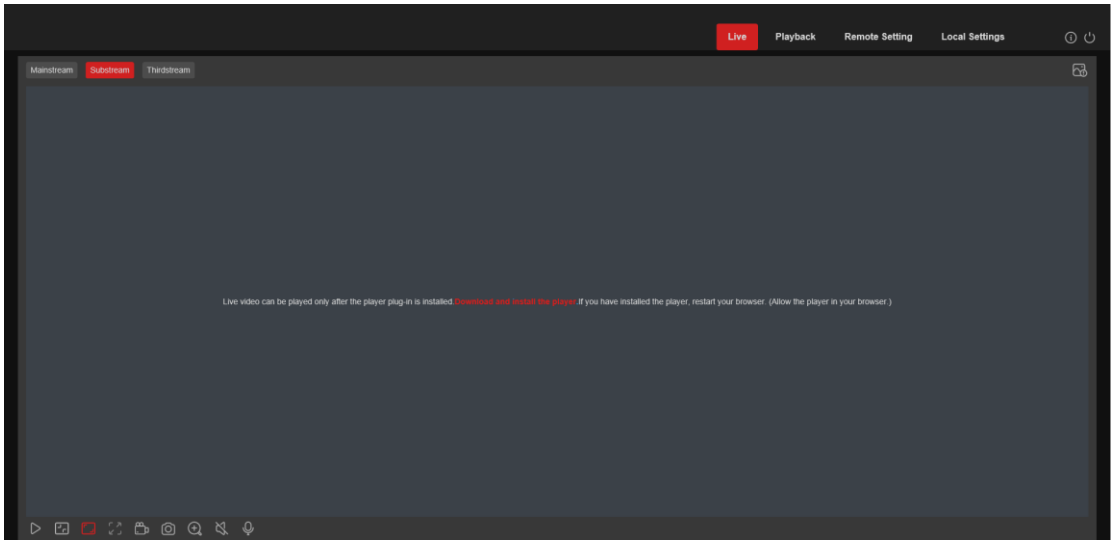
On the login screen, click Recover Password to open the password recovery screen. Select Supercode mode to display the screen shown below. Enter the correct verification code to reset the password (Note: a dedicated tool calculates the verification code from the camera MAC address and the displayed system time).



Note: using the same password for a long period presents a serious security risk. If the password has been in use for more than 90 days, you will be asked to change it when logging in.

CHAPTER 5
INSTALLING THE PLUG-IN

When accessing through Internet Explorer, live images are displayed correctly only after installing the plug-in. Download and install the plug-in by following the on-screen instructions, as shown below.



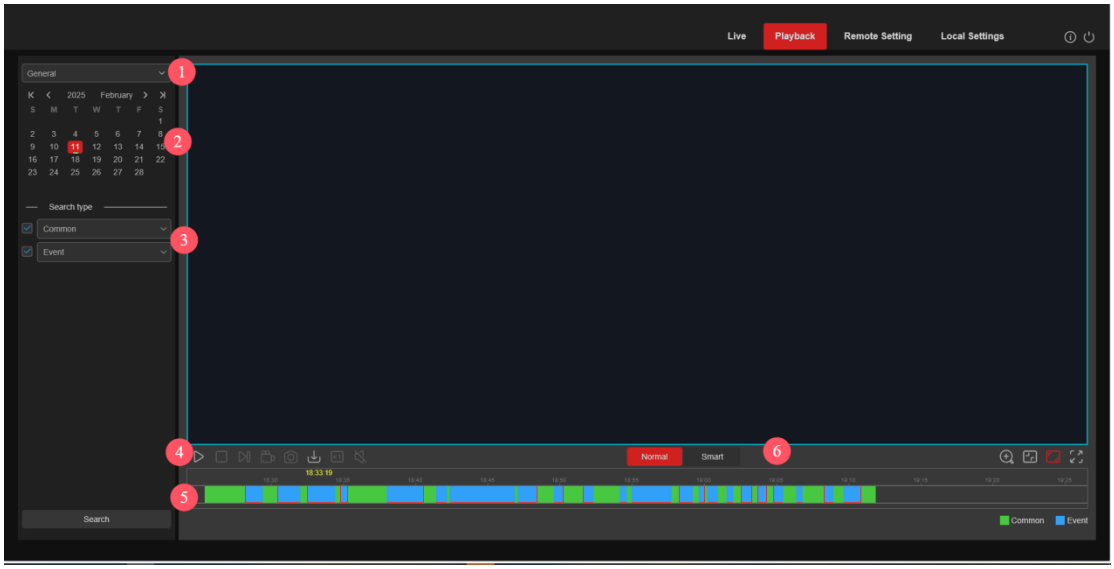
Note: the plug-in is not required when accessing the Web client through Safari 12 or later, Chrome 57 or later, Firefox 52 or later, or Edge 41 or later.

CHAPTER 6 PLAYBACK

Besides displaying live images, the camera stores recordings so that you can retrieve and view them when needed.

6.1 General playback

Playback mainly comprises general video search and AI search. The following figure shows the playback search screen.



1. **Search mode:** switches the search function, as shown above. The default General mode searches for standard recordings. For AI image searches, refer to the following sections of this chapter.

2. **Date:** sets the date for searching recordings. Click Search to highlight the dates with available recordings.
3. **Search type:** displays the search types supported by the camera. You can search a subset of recordings as required.
4. **Playback progress bar:** displays and searches recordings stored on the memory card according to the search parameters.

Pause/Play: pauses/starts stream playback.

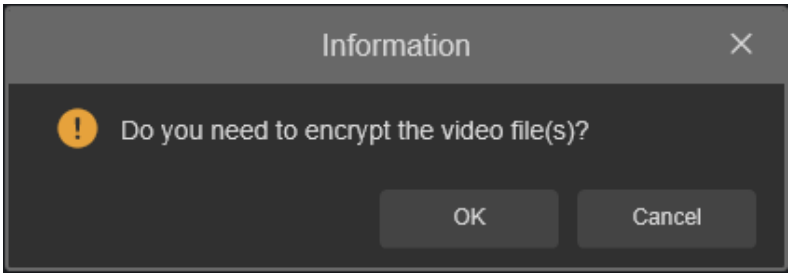
Stop: stops stream playback.

Frame advance: advances one frame per click.

Record: manually records the stream being played.

Capture: manually captures a snapshot of the current stream.

Download: downloads the recording found. **(Note:** when downloading recordings in AVF format, a pop-up asks whether to encrypt them. This pop-up does not appear for .AVI or MP4 files.)



Speed: plays at speeds of 1/8, 1/4, 1/2, 1, X2, X4, X8, X16.

Audio: enables, mutes or adjusts stream audio.

Add default tag: adds a tag with the default name "Tag".

Add tag: adds a custom tag with a user-defined name (1 to 39 characters).

Digital zoom: enlarges a specific area of the stream.

Original aspect ratio: displays the current image at its original aspect ratio.

Stretch: stretches the current image to fill the display area.

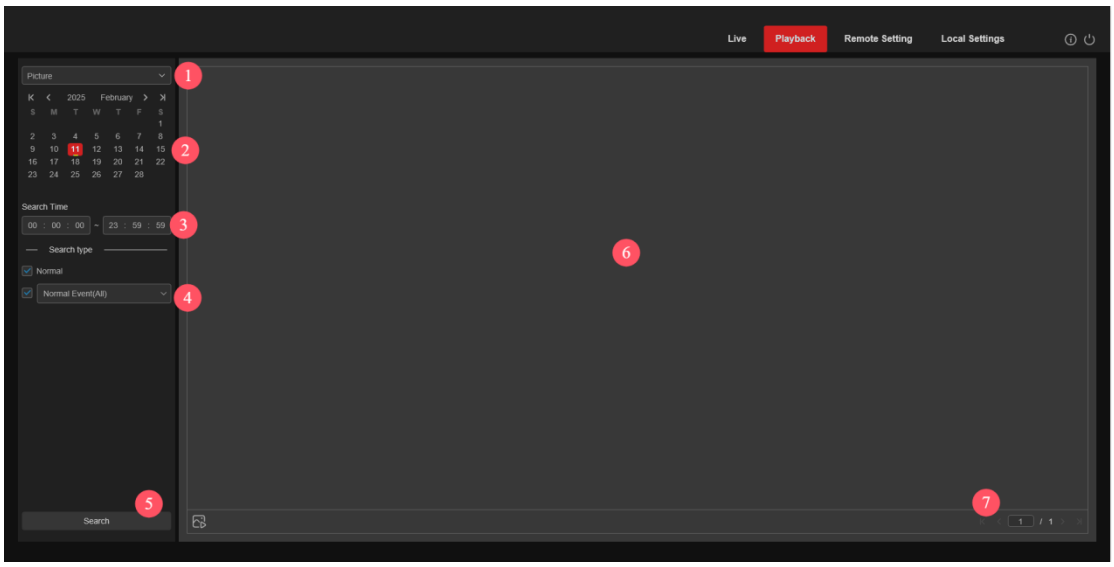
Full screen: displays stream playback in full screen. Double-click the image to enable or disable this function; press Esc to leave full-screen mode.

5. **Search:** displays recordings on the SD card according to the search parameters.

6. **Normal/Smart search:** switches between normal and Smart search. Select Smart search and click the Person and Vehicle buttons at the bottom left: the progress bar highlights in blue the alarm videos triggered by people and vehicles on the selected day. Person and vehicle alarm videos include those detected by Pedestrians and Vehicles, Intrusion, Region Entrance, Region Exiting and Line Crossing.

6.2 Image search

When automatic image capture is enabled on the camera, use this screen to search for and view captured images.



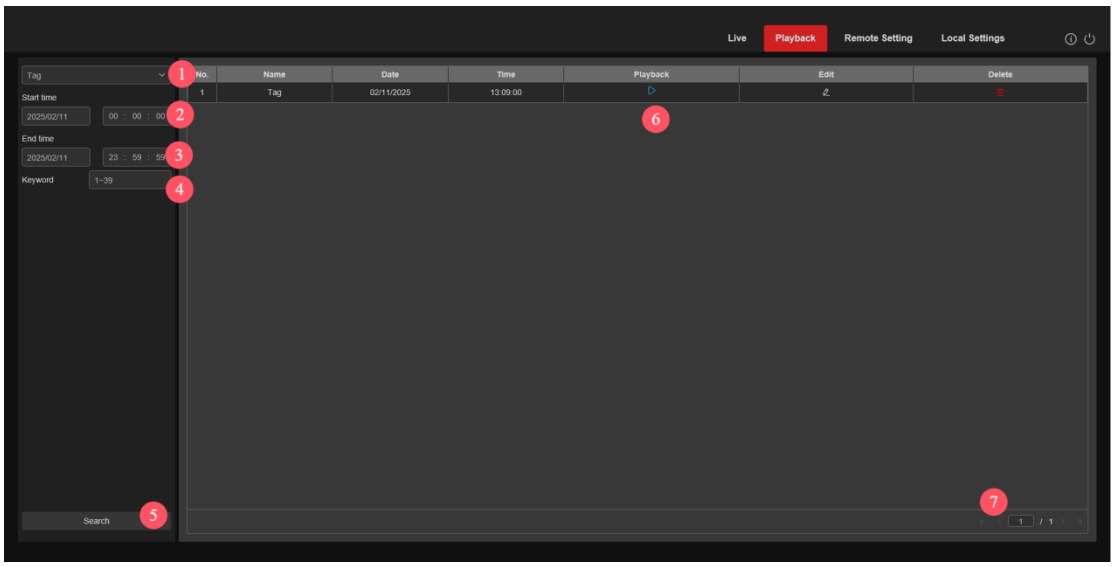
1. **Search mode:** switches the search function; in this case, Image mode is active.

2. **Search date:** sets the date for the image search. Click Search to highlight the dates with available files.
3. **Search time:** defines the search time range so that you can easily find images from a specific period.
4. **Search type:** selects the capture types to include in the search; all types are selected by default.
5. **Search:** click Search to start searching for images.
6. **Results area:** displays the images found. Double-click an image to play the video from immediately before and after that image.

7. **Results pages:** use the controls in the bottom-right corner to browse the results pages.

6.3 Tag playback

This screen displays all previously added tags and lets you edit, play or delete them.



1. **Search mode:** switches the search function; in this case, Tag mode is active.

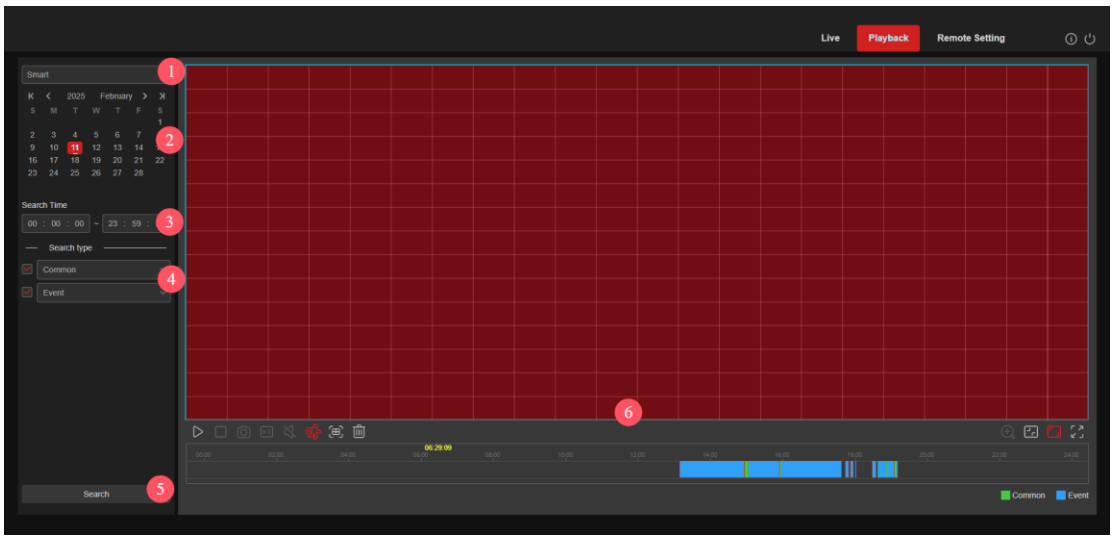
2. **Start time:** sets the start time for the tag search.
3. **End time:** sets the end time for the tag search.
4. **Keyword:** enter the keyword to search for.
5. **Search:** click Search to start searching.
6. **Results area:** displays results that meet the specified search criteria.

Click the button  to play the event. Click the button  to edit the event name. Click Save to display the success message. Click the button  to delete the event.

7. **Results pages:** use the controls in the bottom-right corner to browse the results pages.

6.4 Smart playback

Smart playback is available when using a browser that does not require the plug-in, as shown below.



Smart playback filters video frames containing movement to help you quickly find when an event occurred. This function identifies whether an alarm was triggered by a person; if so, the alarm is highlighted in blue on the playback timeline at the bottom.

1. **Search mode:** switches the search function; in this case, Smart mode is active.

2. **Date:** sets the date for the smart event search. Click Search to highlight the dates with available recordings.
3. **Search time:** sets the time range for the event search.
4. **Search type:** displays the search types supported by the camera. You can search a subset of recordings as required.
5. **Search:** click Search to start searching.
6. **Results area:** displays the search results.

Stop: closes the stream being played.

Capture: manually captures a snapshot of the current stream.

Speed: variable-speed playback: 1/8, 1/4, 1/2, 1, X2, X4, X8, X16.

Audio: enables, mutes and adjusts the audio of the stream being played.

Add default tag: adds a tag with the default name "Tag".

Add tag: adds a custom tag with a user-defined name (1 to 39 characters).

Smart: click to open the smart area settings screen.

All: click All to set the camera's entire field of view as the Smart detection area.

Delete: click Clear All to delete the entire area.

Digital zoom: electronically enlarges a specific area of the stream being played.

Original aspect ratio: displays the current image at its original aspect ratio.

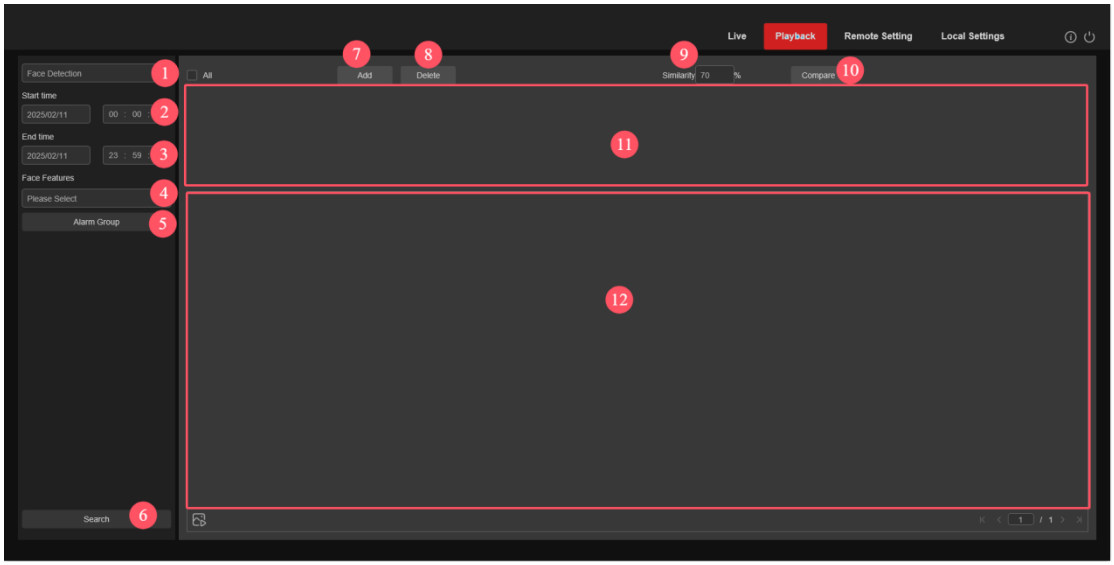
Stretch: stretches the current image to fill the display area.

Full screen: displays stream playback in full screen. Double-click the image to enable or disable this function; when enabled, press **Esc** to leave full-screen mode.

6.5 AI

6.5.1 Face search

The camera detects faces, stores information about captured faces on the memory card (microSD) and saves the corresponding image data. You can quickly retrieve face captures that meet the search criteria and find the corresponding video. The face search and playback screen is shown below.



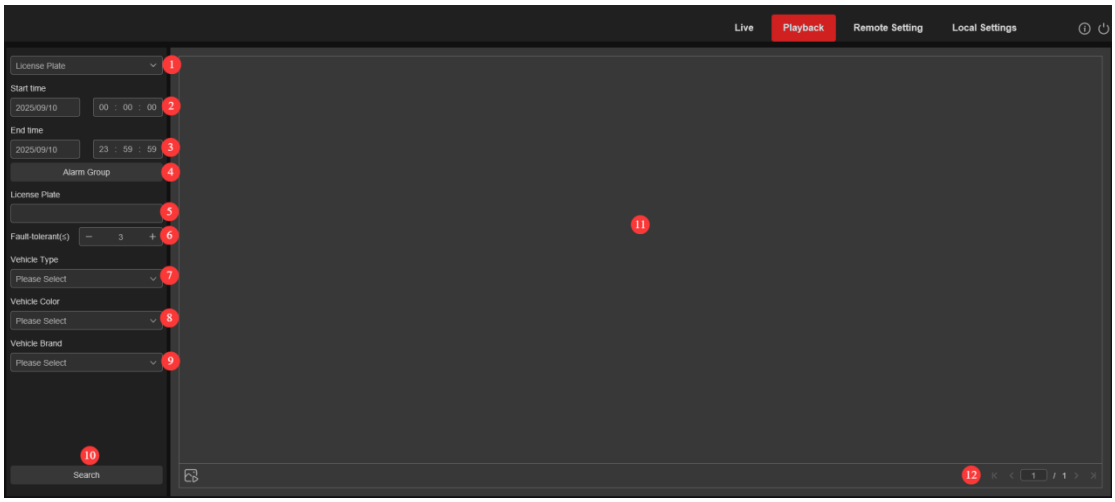
1. **Search mode:** switches the search function; in this case, Face Detection mode is active.
2. **Start time:** sets the start time for searching captured faces.
3. **End time:** sets the end time for searching captured faces.
4. **Face attributes:** the Face Attributes checkbox is cleared by default. Select it to search only images captured with face attribute detection enabled. The firmware recognises five attributes: gender, age, mask, glasses and expression.

5. **Alarm group:** during capture, the camera assigns face images to the corresponding group according to the face database settings. Use this option to search only images from the required groups.
6. **Search:** searches face data according to the settings.
7. **Add:** adds images to the display area for comparison. You can

add local images and captured images.
8. **Delete:** deletes the images currently added.
9. **Similarity:** sets the minimum similarity threshold for considering faces a match when using Compare.
10. **Compare:** searches captured faces according to the specified time range, the image group and the selected reference face image.
11. **Added images area:** displays the images added and available for comparison.
12. **Results area:** images found using Search and Compare appear on the right. Double-click an image to play the video from before and after that image.

6.5.2 Licence plate search

When licence plate detection is enabled on the camera, an alarm is generated for recognised plates and images or videos are recorded for easy retrieval and viewing. The screen is shown below.



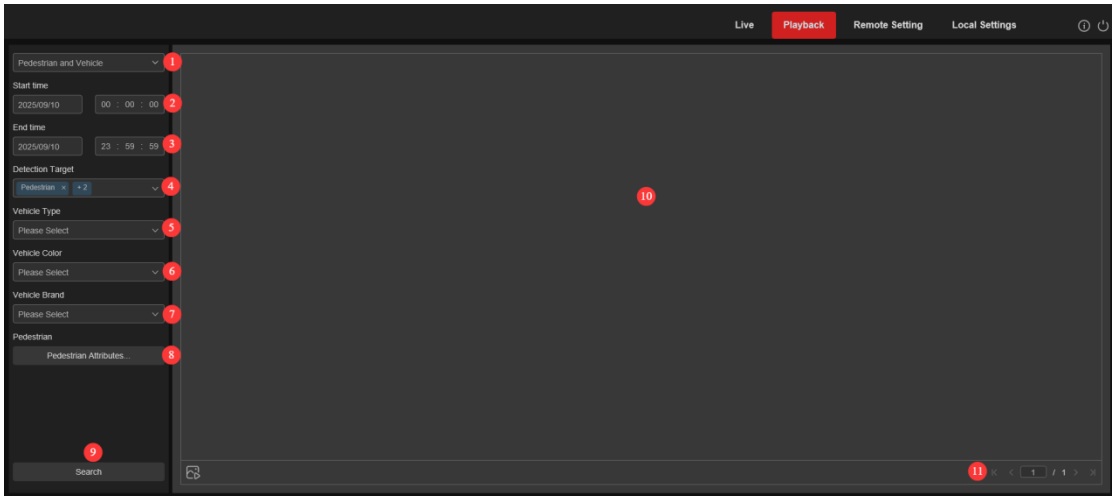
1. **Search mode:** switches the search function; in this case, Licence Plate mode is active.

2. **Start time:** sets the start time for searching captured licence plates.
3. **End time:** sets the end time for searching captured licence plates.
4. **Alarm group:** recognises licence plates according to database groups. Note: if no group limits are set, the search includes all images and applies the similarity setting. If group limits are set, unknown plates are ignored.

5. **Licence plate:** filters and searches licence plates.
6. **Error tolerance:** number of characters that may differ. For example, if the criterion is set to three characters and the group's allowed list contains plate **B594SB,** an alarm is also triggered when a vehicle with plate **B734KB** approaches the monitored area. In other words, a plate is recognised if it differs from a database plate by 0 to 3 characters.
7. **Vehicle type:** filters by vehicle type.
8. **Vehicle colour:** filters by vehicle colour.
9. **Vehicle make:** filters by vehicle make.
10. **Search:** searches captured licence plates according to the settings.
11. **Results area:** displays the search results. Double-click an image to play the video from before and after that image.
12. **Results pages:** use the controls in the bottom-right corner to browse the results.

6.5.3 Pedestrian and vehicle search

As with face capture, the camera can distinguish people from vehicles and record them according to the settings so that you can find the required recordings later. The screen is shown below.



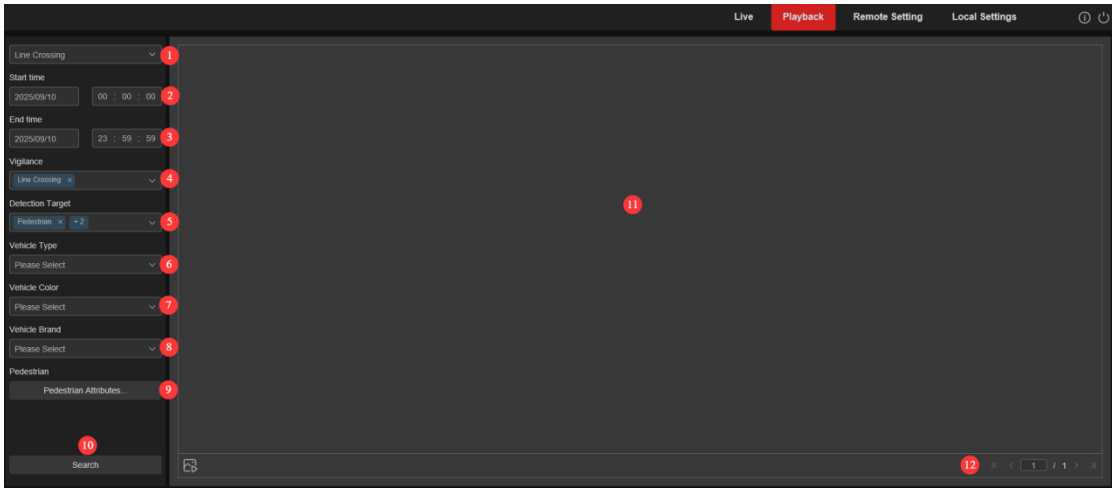
1. **Search mode:** switches the search function; in this case, Pedestrians and Vehicles mode is active.
2. **Start time:** sets the start time for searching pedestrian and vehicle images.
3. **End time:** sets the end time for searching pedestrian and vehicle images.
4. **Detection type:** select images of people, vehicles or both as required.

5. **Vehicle type:** filters by vehicle type.
6. **Vehicle colour:** filters by vehicle colour.
7. **Vehicle make:** filters by vehicle make.
8. **Person attributes:** sets person attribute filters and searches for events matching them. Supported attributes include upper and lower clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack, direction, etc.

9. **Search:** searches pedestrian and vehicle images according to the search parameters.
10. **Results area:** displays the search results. Double-click an image to play the video from before and after that image.
11. **Results pages:** use the controls in the bottom-right corner to browse the results.

6.5.4 Line crossing

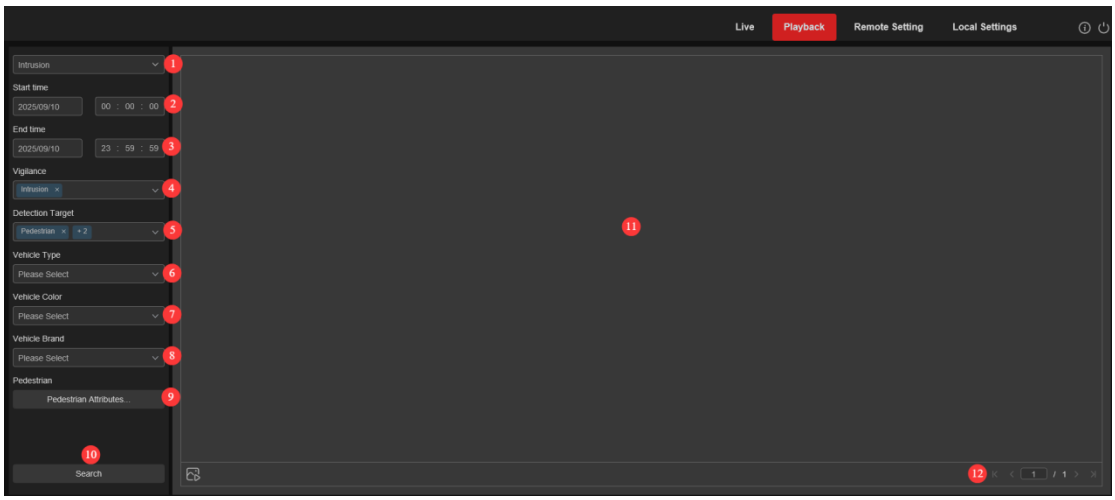
Besides raising an alarm when a subject enters the monitored area, Line Crossing incorporates person and vehicle detection: an alarm is generated only for people or vehicles, and images or videos are recorded for easy retrieval and viewing. The screen is shown below.



1. **Search mode:** switches the search function; in this case, Line Crossing mode is active.
2. **Start time:** sets the start time for searching person and vehicle captures.
3. **End time:** sets the end time for searching person and vehicle captures.
4. **Alert type:** searches captures generated by line crossing alarms; multiple types can be selected at the same time.
5. **Detected subject:** searches images of people, vehicles or both as required.
6. **Vehicle type:** filters by vehicle type.
7. **Vehicle colour:** filters by vehicle colour.
8. **Vehicle make:** filters by vehicle make.
9. **Person attributes:** sets person attribute filters and searches for events matching them. Supported attributes include upper and lower clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack, direction, etc.
10. **Search:** searches person and vehicle captures according to the search parameters.
11. **Results area:** displays the search results. Double-click an image to play a short interval before and after detection.
12. **Results pages:** use the controls in the bottom-right corner to browse the results pages.

6.5.5 Intrusion detection

When Intrusion is enabled on the camera, an alarm is generated for subjects entering the alert area, and videos or images are recorded for easy retrieval and viewing. The screen is shown below.



1. Search mode: switches the search function; in this case, Intrusion mode is active.

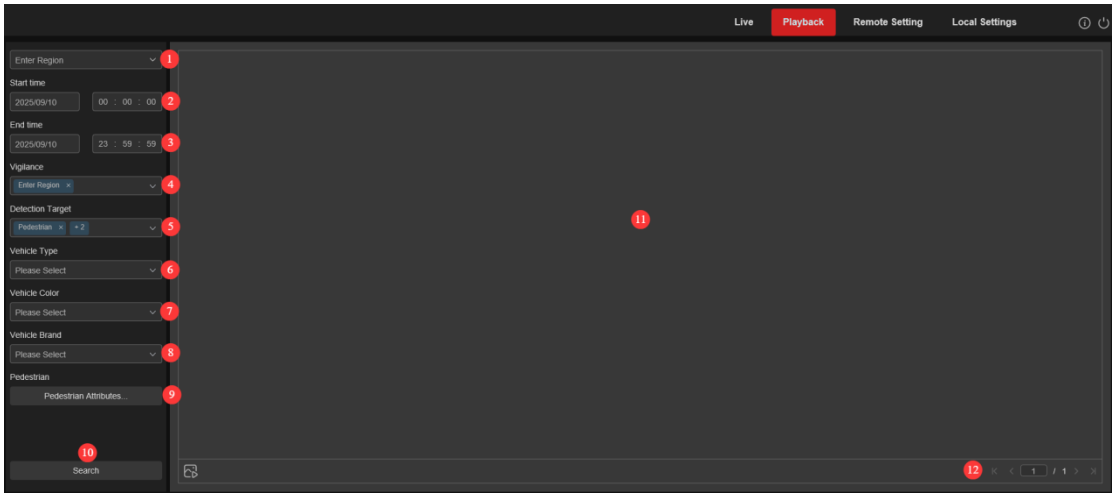
2. Start time: sets the start time for searching intrusion snapshots.
3. End time: sets the end time for searching intrusion snapshots.
4. Alert type: select Intrusion as the capture type.
5. Detected subject: select images of people, vehicles or both as required.

6. Vehicle type: filters by vehicle type.
7. Vehicle colour: filters by vehicle colour.
8. Vehicle make: filters by vehicle make.
9. Person attributes: sets person attribute filters and searches for events matching them. Supported attributes include upper and lower clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack, direction, etc.

10. Search: searches intrusion images according to the search parameters.
11. Results area: displays the search results. Double-click an image to play the video from before and after that image.
12. Results pages: use the controls in the bottom-right corner to browse the results.

6.5.6 Region entrance

When region entrance detection is enabled on the camera, an alarm is generated for detected subjects entering the alert area, and images or videos are recorded for easy retrieval and viewing. The screen is shown below.



1. **Search mode:** switches the search function; in this case, Region Entrance mode is active.
2. **Start time:** sets the start time for searching region entrance captures.
3. **End time:** sets the end time for searching region entrance captures.
4. **Alert type:** searches captures generated by region entrance alarms.

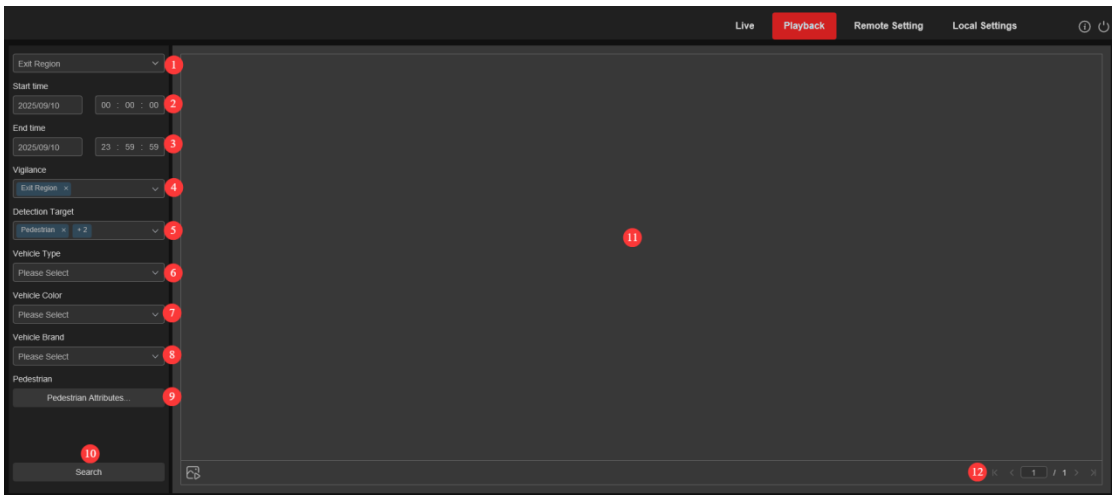
5. **Detected subject:** searches images of people, vehicles or both as required.

6. **Vehicle type:** filters by vehicle type.
7. **Vehicle colour:** filters by vehicle colour.
8. **Vehicle make:** filters by vehicle make.
9. **Person attributes:** sets person attribute filters and searches for events matching them. Supported attributes include upper and lower clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack, direction, etc.

10. **Search:** searches person and vehicle captures according to the search parameters.
11. **Results area:** displays the search results. Double-click an image to play a short interval before and after detection.
12. **Results pages:** use the controls in the bottom-right corner to browse the results pages.

6.5.7 Region exiting

When Region Exiting is enabled on the camera, an alarm is generated for detected subjects leaving the monitored area, and videos or images are recorded for easy retrieval and viewing. The screen is shown below.



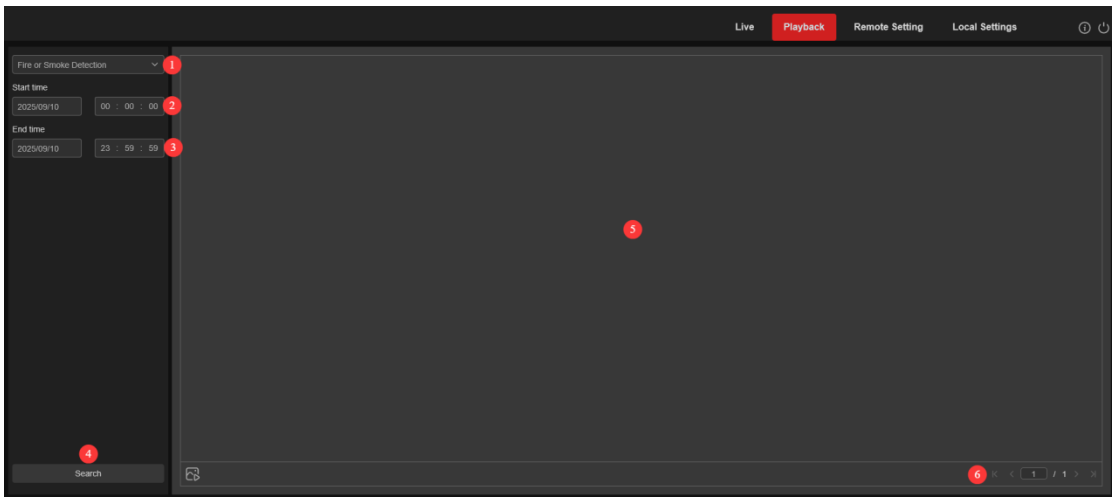
1. **Search mode:** switches the search function; in this case, Region Exiting mode is active.
2. **Start time:** sets the start time for searching region exiting images.
3. **End time:** sets the end time for searching region exiting images.
4. **Alert type:** select Region Exiting as the capture type.
5. **Detected subject:** select images of people, vehicles or both as required.

6. **Vehicle type:** filters by vehicle type.
7. **Vehicle colour:** filters by vehicle colour.
8. **Vehicle make:** filters by vehicle make.
9. **Person attributes:** sets person attribute filters and searches for events matching them. Supported attributes include upper and lower clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack, direction, etc.

10. **Search:** searches region exiting images according to the search parameters.
11. **Results area:** displays the search results. Double-click an image to play the video from before and after that image.
12. **Results pages:** use the controls in the bottom-right corner to browse the results.

6.5.8 Fire and smoke detection

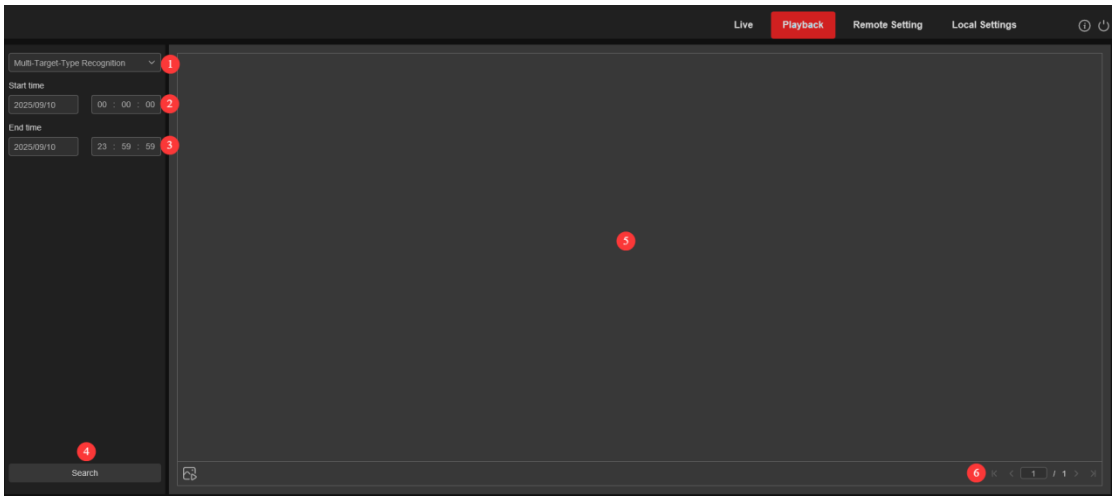
When fire and smoke detection is enabled on the camera, smoke or flames are detected and reported by an alarm, and images or videos are recorded for easy retrieval and viewing. The screen is shown below.



1. **Search mode:** switches the search function; in this case, Fire and Smoke Detection mode is active.
2. **Start time:** sets the start time for searching fire and smoke detection snapshots.
3. **End time:** sets the end time for searching fire and smoke detection snapshots.
4. **Search:** searches fire and smoke detection snapshots according to the search parameters.
5. **Results area:** displays the search results. Double-click an image to play a short interval before and after detection.
6. **Results pages:** use the controls in the bottom-right corner to browse the results pages.

6.5.9 Multi-target recognition (available on some models)

When multi-target recognition is enabled on the camera, a subject is detected and reported by an alarm, and images or videos are recorded for easy retrieval and viewing. The screen is shown below.



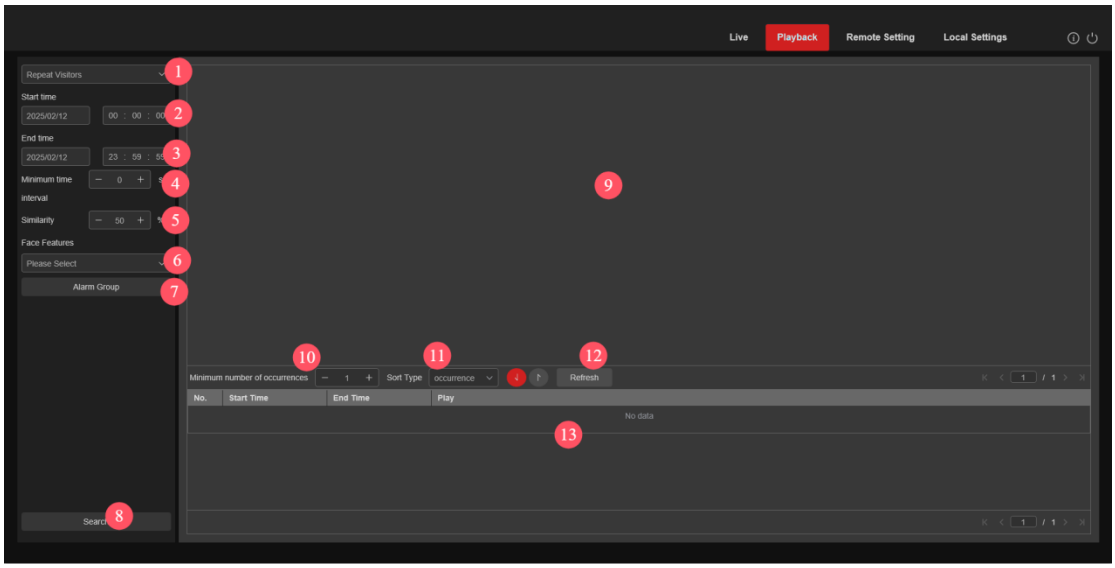
1. **Search mode:** switches the search function; in this case, Multi-target Recognition mode is active.
2. **Start time:** sets the start time for searching snapshots of multi-

target recognition.

3. **End time:** sets the end time for searching snapshots of multi-target recognition.
4. **Search:** searches multi-target recognition snapshots according to the search parameters.
5. **Results area:** displays the search results. Double-click an image to play a short interval before and after detection.
6. **Results pages:** use the controls in the bottom-right corner to browse the results pages.

6.5.10 Repeat visitors

Besides generating real-time alarms, face recognition provides in-depth data analysis to meet customer needs. For example, with a camera installed in a specific area of a shopping centre, Repeat Visitors can check whether a customer repeatedly stops to look at merchandise there. Similarly, it can monitor an area to check whether a suspicious person appears frequently. The function screen is shown below.



1. **Search mode:** switches the search function; in this case, Repeat Visitors mode is active.
2. **Start time:** sets the start time for searching face images.
3. **End time:** sets the end time for searching face images.
4. **Minimum interval:** sets the minimum time between two captures of the same subject to improve search accuracy.
5. **Similarity:** sets the minimum similarity threshold between other images and the reference image for identifying repeat visitors. **Note:** this setting is active only when Alarm Group is not selected for the current function.

6. **Face attributes:** filters the images found by face characteristics. Note: if this option is not set, the search applies to all images; if set, only images captured with Face Attributes enabled are searched.

7. **Alarm group:** identifies repeat visitors according to the database group settings. **Note:** if no group limits are set, the search includes all images and applies the similarity setting. If group limits are set, information

about unknown people is ignored.

8. **Search:** searches captured image information according to the settings.
9. **Results area:** displays grouped results. Double-click a result to list its grouped images below; click an image to switch to its quick playback.

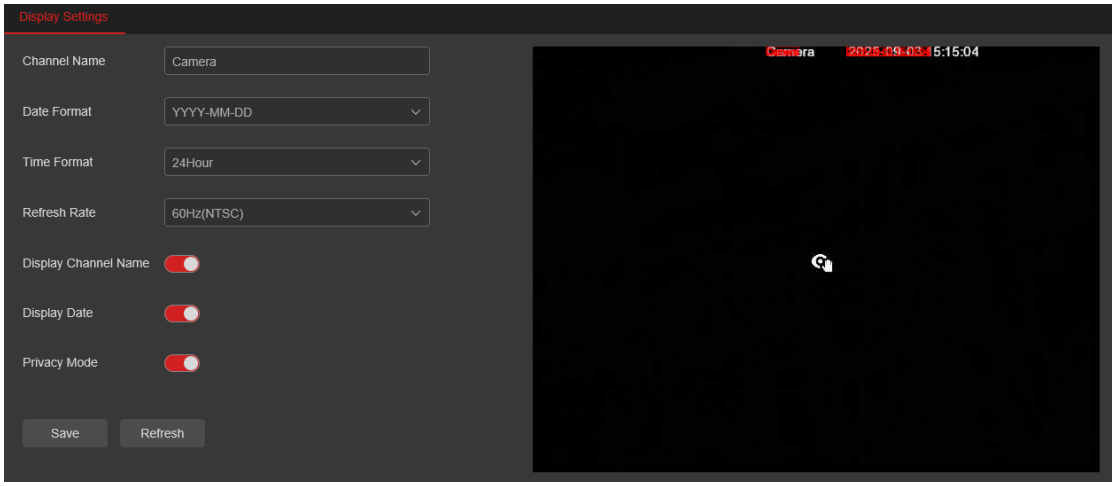
10. **Minimum occurrences:** filters results by the number of occurrences. Click Refresh to update the display.
11. **Sort type:** sorts results chronologically or by capture count, in ascending or descending order. Click Refresh to update the display.

12. **Refresh:** updates the order according to the specified minimum occurrences and sort type.
13. **Secondary results area:** displays captures of the subject selected in the results area as an event list. Click Play to switch to quick playback.

CHAPTER 7 REMOTE SETTINGS

7.1 Display settings

The Live screen lets you set the channel name, device time, smart function statistics (such as cross counting) and the positions of their overlays on the image. The screen is shown below.



Channel name: sets the camera channel name.
Date format: sets the date format in the camera OSD. Three formats are available: MM/DD/YYYY, YYYY-MM-DD and DD/MM/YYYY.
Time format: sets the time format in the camera OSD. Two formats are available: 12-hour and 24-hour.
Refresh rate: sets the camera refresh rate. Two options are available: 60 Hz and 50 Hz, corresponding to NTSC and PAL respectively.

Show channel name: displays the camera channel name in the preview.
Show time: displays the camera time in the preview.
Privacy mode: when privacy mode is enabled, no image is displayed in preview or playback, including the preview on the Settings page.
Channel name position: sets the channel name position by dragging it directly on the image.
Time position: sets the channel time position by dragging it directly on the image.

Alarm statistics position: sets the channel alarm statistics position by dragging them directly on the image. This setting appears only when a function supporting alarm statistics display is enabled.
Save: saves the current changes.
Refresh: reloads the screen's current parameters.

7.2 Image settings

Image control lets you directly change image parameters, including colour/black-and-white switching, WDR (Wide Dynamic Range) and backlight compensation. The screen is shown below.

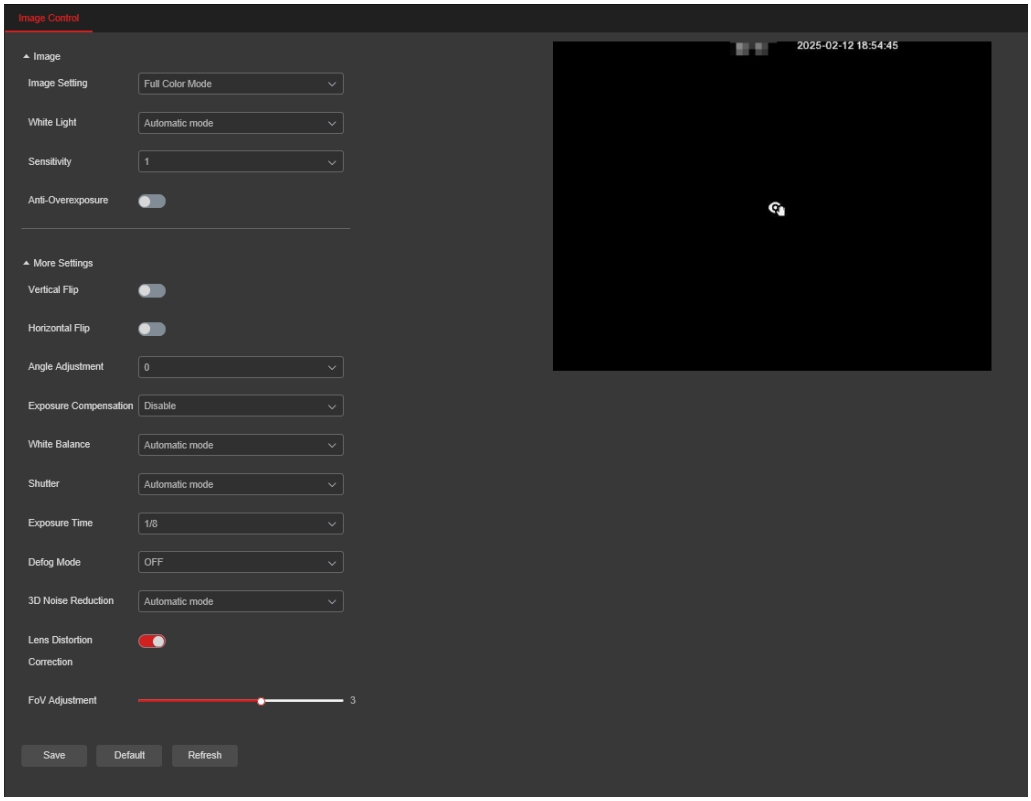


Image setting: sets the camera image mode. There are 3 modes.

Full Color mode: the camera always operates in colour.
Day/Night mode: the camera operates in day/night mode.
Smart illumination: when an alarm is triggered during night vision, the white light switches on to provide supplementary illumination and the image changes to colour. When the alarm ends, the camera returns to night vision.

White light: sets camera white light operation in Full Color mode. There are 4 modes.

Auto: the camera automatically adjusts illumination intensity according to ambient light.
Manual: illuminates the scene at a fixed brightness.

Schedule: automatically switches the white light on/off according to the configured schedule.

OFF: disables the white light.

Sensitivity: 0 to 3; indicates camera sensitivity to ambient light. A higher value means greater sensitivity.

Light intensity: 0 to 100; indicates **white light** brightness in **Manual** mode. A higher value means greater brightness.

IR-CUT mode: sets **day/night** switching in Day/Night mode. There are 5 modes.

Auto/GPIO Auto: automatic switching; image analysis determines the change from colour to black and white, while the light sensor determines the change from black and white to colour.

Day/Color: forces colour mode, without switching to black and white.

Night/Black and White: forces black-and-white mode, without switching to colour.

Image/Image: similar to Auto mode; image analysis determines switching between colour and black and white. **Schedule/Schedule (B/W):** switches between black and white and colour according to the schedule. Set the start and end times for night vision to enable this function.

IR LED control: sets camera IR LED operation during night vision. There are 3 modes.

Smart IR: intelligently controls infrared LED intensity, adjusting it dynamically according to focal length and image overexposure.

Manual: illuminates the scene using the manually configured IR LED intensity.

OFF: no supplementary illumination.

IR LED intensity: manually adjusts IR LED brightness (0 to 100: at 0 the IR LEDs remain off; at 100 brightness is at maximum).

Anti-overexposure: when enabled, this function prevents image overexposure in very bright environments in all image modes.

Corridor mode: rotates the image 90° clockwise (available on some models).

Image angle adjustment: sets image rotation to correct the orientation when the camera is mounted differently from its intended position, for example when a camera designed for inverted installation is used horizontally.

Vertical flip: flips the image vertically (top/bottom).

Horizontal flip: mirrors the image horizontally (left/right).

Exposure compensation: sets camera behaviour in backlit conditions. There are 4 modes:

WDR (Wide Dynamic Range): balances the image evenly according to the setting so that both bright and dark areas are clearly visible (DWDR on some models).

HLC (Highlight Compensation): makes objects in brightly lit areas clearer according to the configured HLC level (not available on some models).

BLC (Backlight Compensation): makes dark areas clearer according to the configured BLC level and area.

Disable: no exposure compensation is applied.

White balance: white balance setting, with two modes.

Auto: adjusts white balance using the default parameters.

Manual: lets you manually set the gain of the red, green and

blue channels.

Shutter: sets the shutter exposure time (some models support iris settings; models without this support offer only automatic and manual modes).

Auto: the camera automatically selects an appropriate exposure time and aperture within the configured exposure time and aperture ranges.

Manual: directly uses the configured exposure time and aperture.

Shutter priority: shutter speed is set manually, and the camera exposure meter determines the aperture.

Aperture priority: aperture is set manually, and the camera exposure meter determines the corresponding shutter speed.

Note: flickerless exposure is unavailable in manual shutter mode and available in automatic mode. When switching back to manual mode, the exposure time automatically changes to 1/100 or 1/120.

Exposure time: sets the camera exposure time, used together with the shutter setting. Long exposure times make the image overexposed; short exposure times make it dark.

Defog mode: when enabled, makes the image clearer in rain or fog.

3D noise reduction: reduces image noise for a clearer picture. Three modes are available:

Auto: the camera automatically selects the noise reduction level using its algorithm.

OFF: noise reduction is disabled.

Manual: applies noise reduction according to the manually configured coefficient.

DIS (Digital Image Stabilisation): software algorithms reduce or eliminate instability and blur caused by vibration, movement or other factors, providing steadier, clearer images according to the configured DIS level (available on some models).

Lens distortion correction: when enabled, reduces image distortion in nearby areas (available on some models).

FoV adjustment: distortion correction intensity, selectable from 0 to 5.

Save: saves the image parameters.

Default: restores default image parameter values.

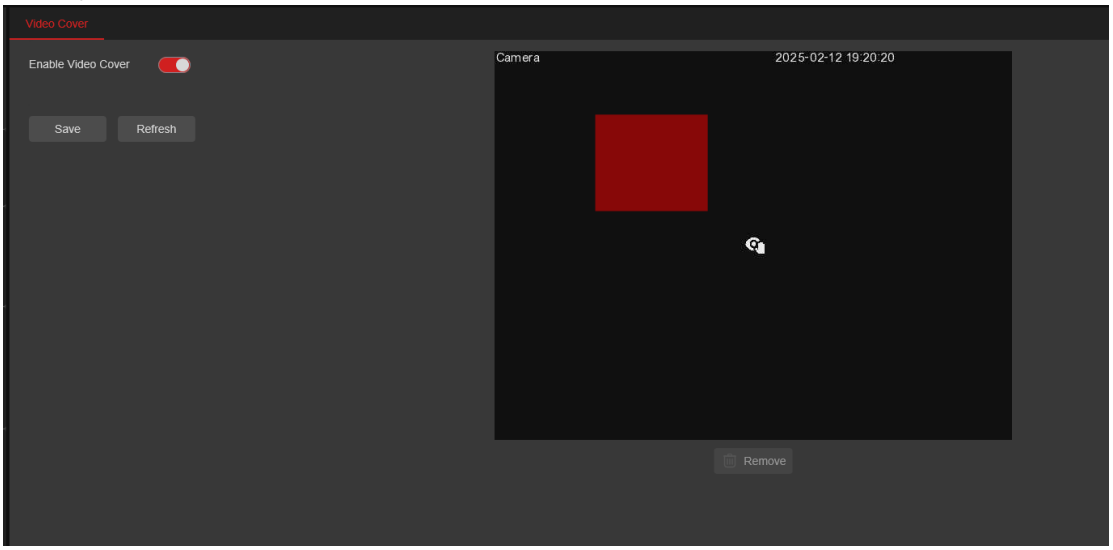
Refresh: reloads the image parameters.

7.3 Video cover (privacy masking)

This function obscures specific parts of the image by creating 4 or 6 privacy zones (6 on some models) of any size and position.

Enable the switch and select the area to mask: the area appears as a "red box". Click and drag the red box border to size the

privacy zone as required.



Enable: enables/disables video cover. **Cover area settings:** sets the areas to obscure in the image. Areas appear red during setup and turn black when applied. Four areas can be set. **Remove:** deletes the selected cover area. **Note:** parts of the image covered by a privacy area are not visible in preview

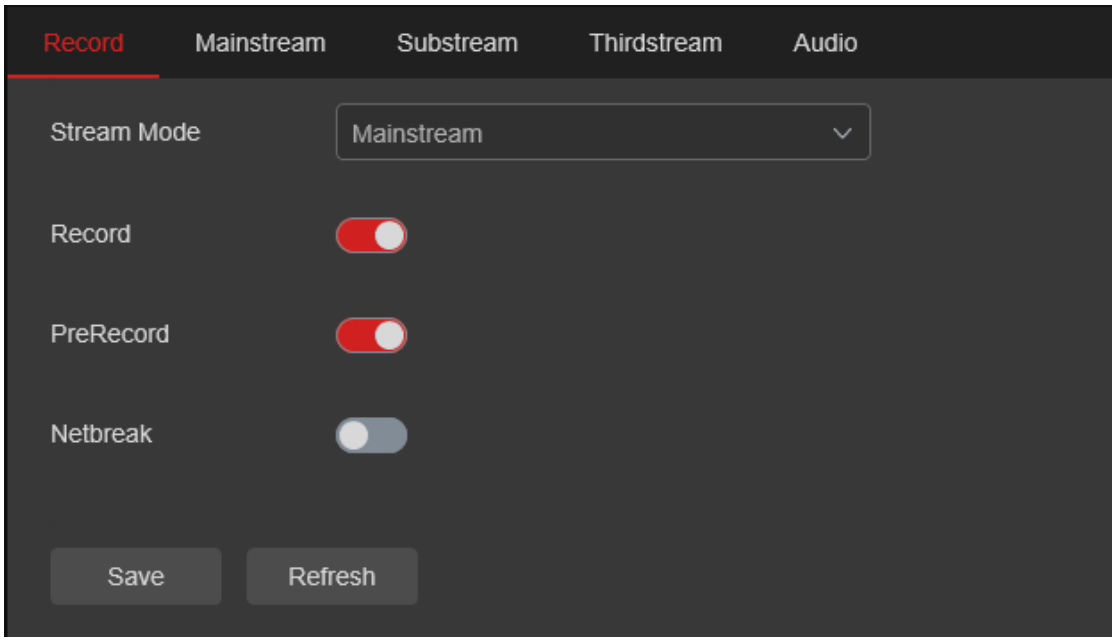
or playback.

7.4 Video parameters

This menu configures preview image parameters and recording parameters.

7.4.1 Recording parameters

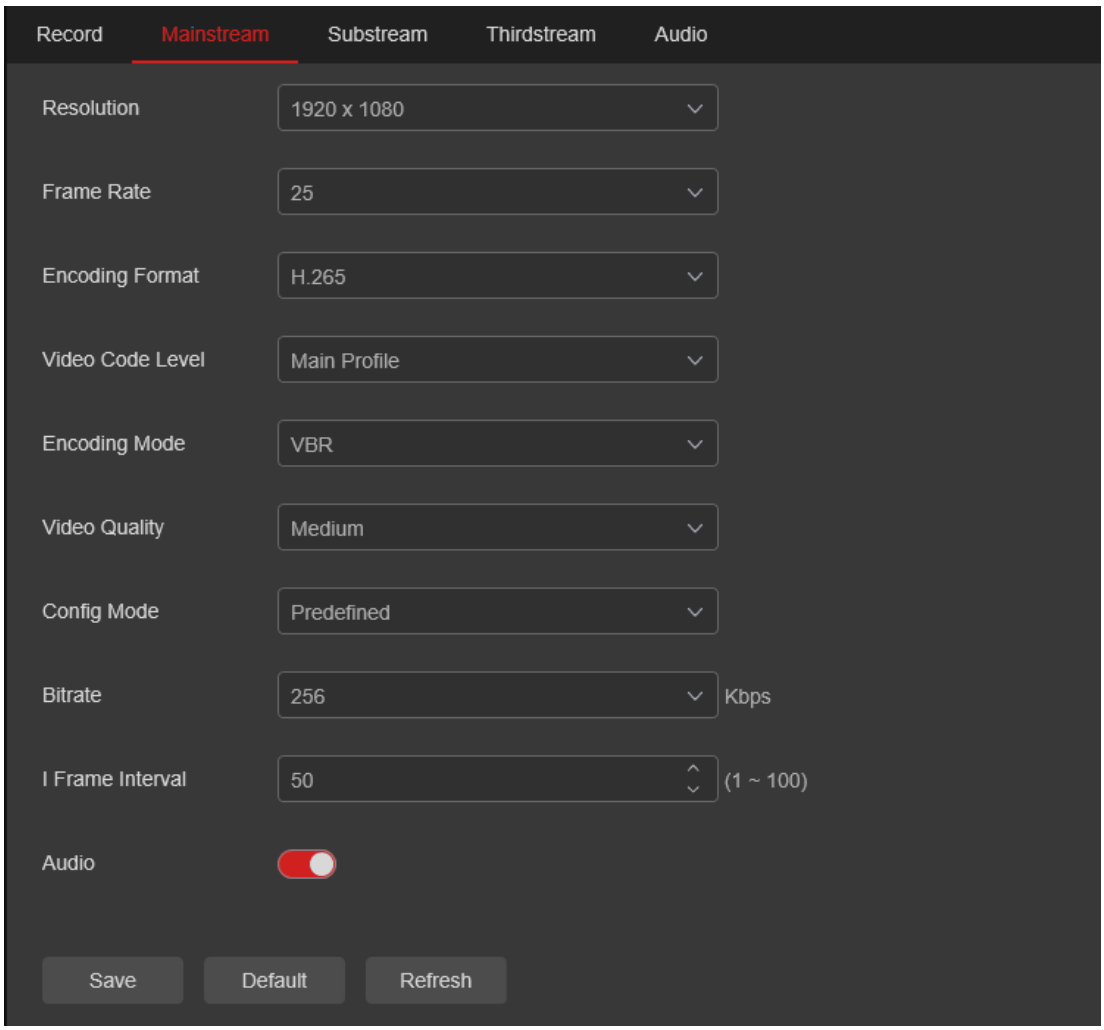
This menu configures recording-related parameters.



Stream mode: selects the video stream to record on the SD card. The default is Mainstream.
Recording: select to enable recording.
Pre-recording: when enabled, the camera starts recording a few seconds before an alarm event occurs. Enabling this option is recommended when recording is mainly based on motion detection or I/O alarms. **Netbreak:** events are recorded even if the network is disconnected or a connection error occurs.

7.4.2 Video parameters

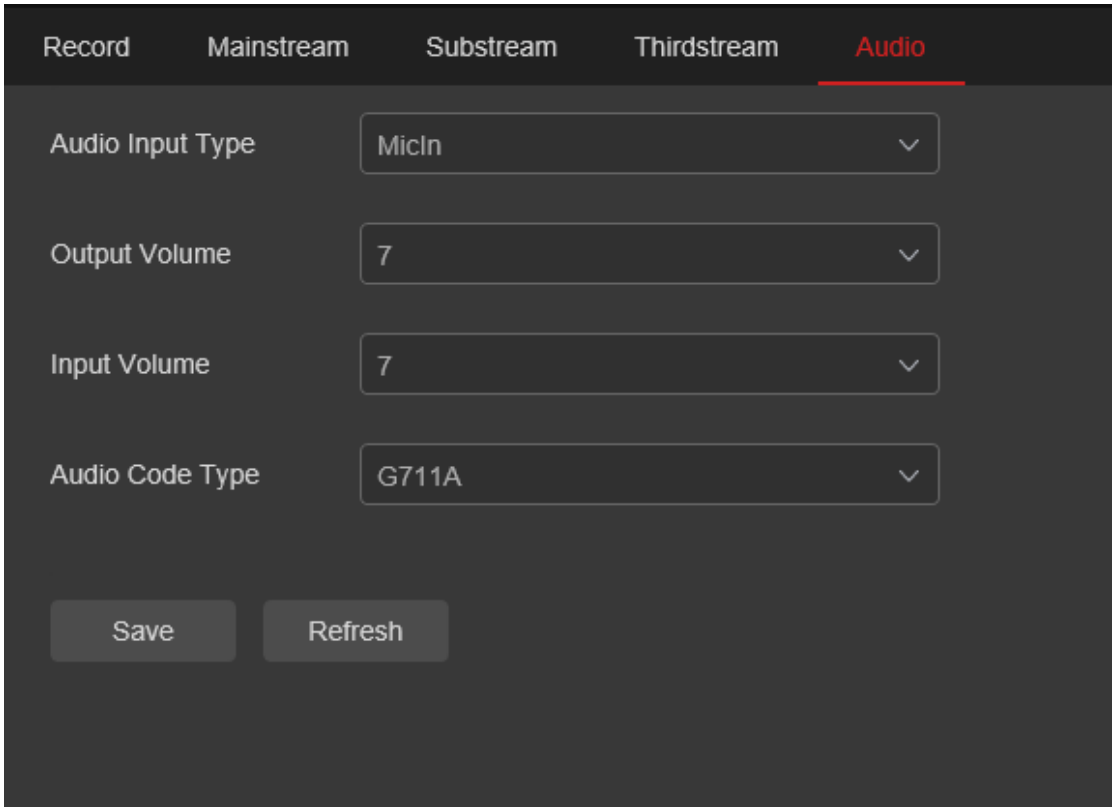
This menu configures image quality parameters for recorded video and network transmission. Generally, the main stream (Mainstream) determines recorded video quality; the secondary stream (Substream) determines remote preview quality (for example through the Web client or VMS). The third stream, which can be disabled, determines remote preview quality on mobile devices.



Resolution: indicates the recorded image resolution.
Frame rate: indicates the number of frames recorded per second by the camera.
Encoding format: channel encoding type: H.264, H.265, H.264+, H.265+ and MJPEG

(MJPEG is available only on the substream).
Video encoding level: video encoding profile: Baseline, Main Profile and High Profile. (Only Main Profile is available with H.265).
Encoding mode: selects the bitrate type. Constant bitrate (CBR) is suitable for simple scenes, such as a grey wall; variable bitrate (VBR) is suitable for more complex scenes, such as a busy street.
Configuration mode: select "User Defined" to set the bitrate manually, or "Default" to use a preset bitrate.
Bitrate: the data transfer rate used by the camera to record video. A higher bitrate provides better video quality.
I-frame interval: sets the interval between camera I-frames.
Audio: enable to record audio and video together, using a microphone connected to the camera or a camera with built-in audio.
Save: saves the video encoding parameters.
Default: restores default video encoding parameter values.
Refresh: reloads the video encoding parameters.

7.4.3 Audio management

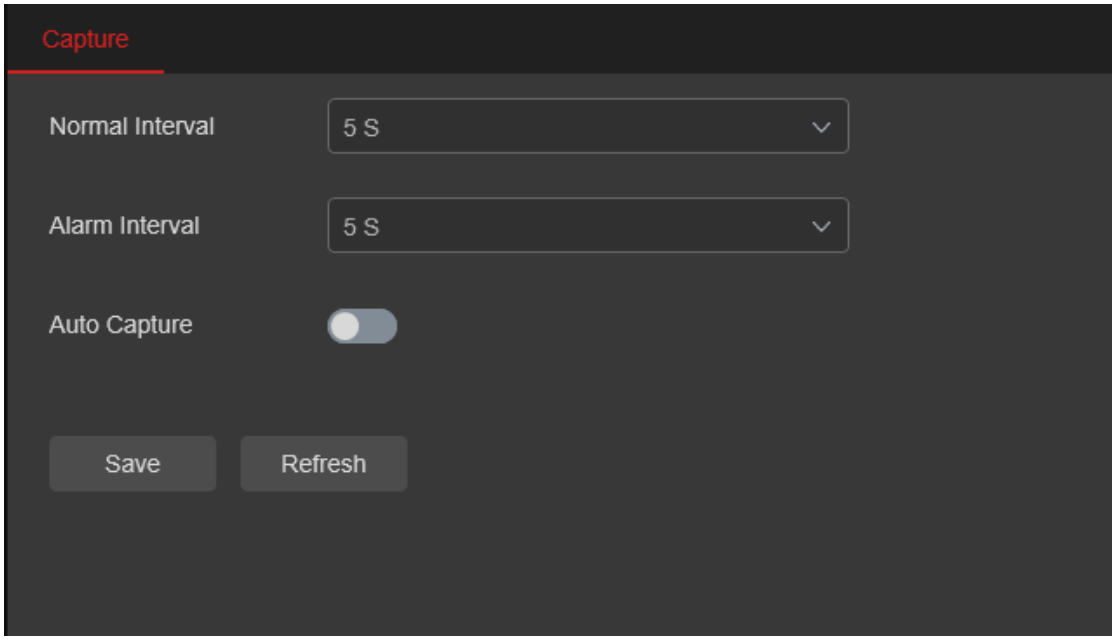


Audio input type: selects MicIn or LineIn. MicIn means audio from the device microphone; LineIn means audio from the device audio input cable (available on some models).
Output volume: sets the audio output volume.
Input volume: sets the audio input volume.
Audio encoding: selects the audio encoding type. G711A and G711U are supported.

Sampling rate: sets the audio sampling rate. 8000 Hz and 16000 Hz are supported (available on some models).

7.5 Capture settings

This menu configures automatic capture parameters.

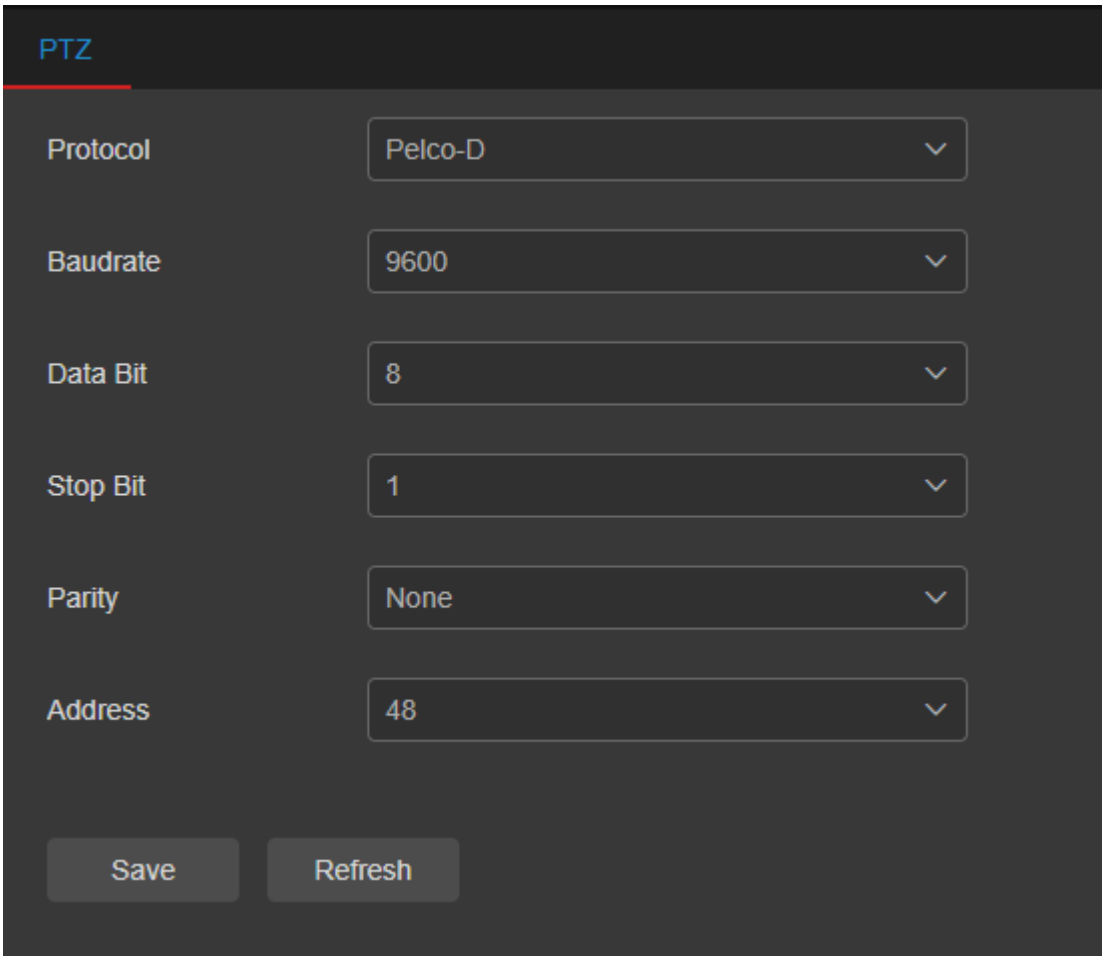


Normal interval: interval between captures during normal recording.
Alarm interval: image capture interval when a motion detection or I/O alarm is triggered.

Automatic capture: enables/disables automatic capture.

7.6 PTZ

This menu configures PTZ unit parameters and controls its rotation through the RS485 interface (available on some models).



Protocol: selects the communication protocol between the PTZ unit and camera.
Baud rate: data transmission speed from the camera to the PTZ unit. Check that it matches the speed configured on the PTZ unit.
Data bits / Stop bits: messages between the camera and PTZ unit are sent in separate packets. Data bits specifies the number of bits sent; stop bits marks the end of a packet and the start of the next one. Data bit values are 8, 7, 6 and 5; the default value of 8 is recommended. Stop bit values are 1 or 2; the default value of 1 is recommended.

Parity: transmission error checking. Refer to the PTZ unit documentation to configure this setting (default parity: None).
Address: address code; if several analogue protocols are configured on the device, address codes must not be duplicated.
Focus mode:
Auto: focuses automatically as the scene changes.

Semi-auto: after PTZ movement or a zoom change, the camera focuses once and does not refocus even if the scene changes. This is the

default.
Manual: the user focuses manually using the focus button on the preview screen. PTZ movement, zoom and scene changes do not trigger focusing.

Zoom status: displays the speed dome lens magnification in the bottom-left corner of the preview screen. Choose whether to display it and for how long.

Pan & Tilt status: displays the speed dome angular position in the bottom-left corner of the preview screen. Choose whether to display horizontal and vertical orientation information and for how long.
Preset status: displays the number of the preset recalled by the speed dome in the bottom-left corner of the preview screen. Choose whether to display it and for how long.

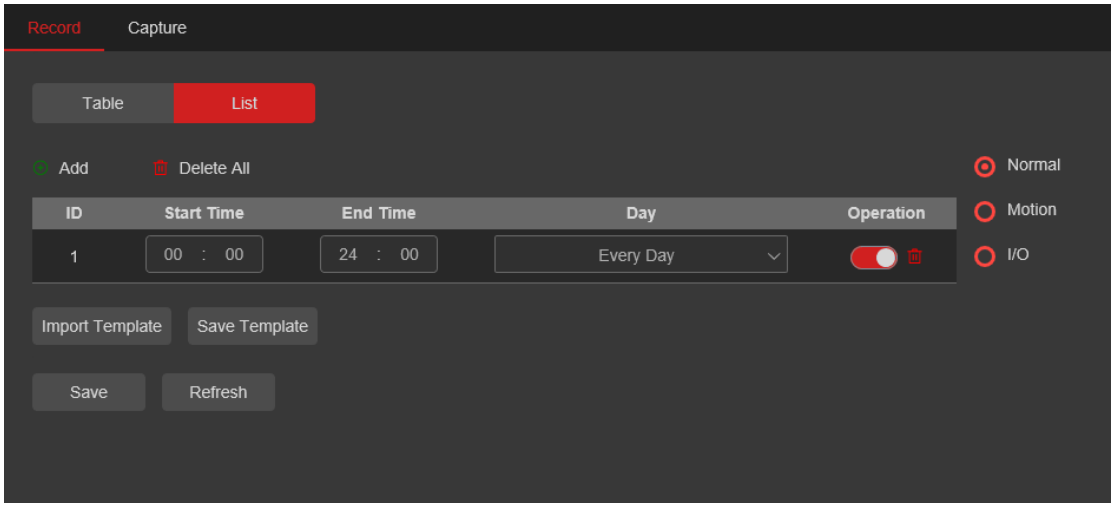
Minimum focus distance: if the distance between the subject and lens is below this value, the lens does not focus on that subject and prioritises objects beyond the configured minimum distance. For example, if the minimum distance is 6 m and an obstruction at 1.5 m covers half the field of view (half distant scene, half close-up), the camera prioritises focusing on the scene beyond 6 m.

7.7 Schedule settings

7.7.1 Recording schedule

Sets the schedule for normal and alarm recording.





Table/List: displays the schedule as a table or list. Click Normal, Motion or I/O on the right to switch between video schedule types.

In Table view, drag the pointer or select the corresponding time slots in the table to set the schedule.
In List view, set the schedule by adding rules manually and entering the start and end times for each time slot.

Add: adds a schedule rule.

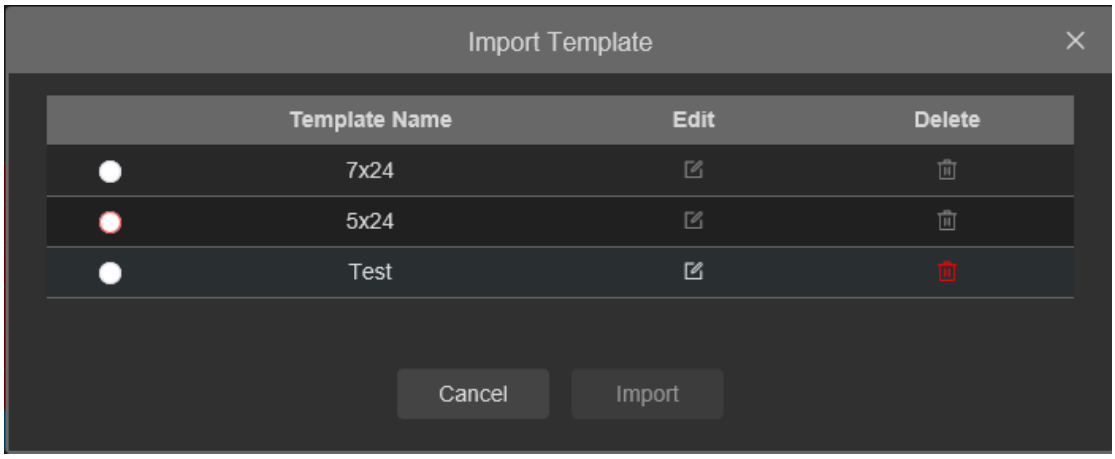
Delete all: deletes all schedule rules.

Start time: sets the schedule rule start time.

End time: sets the schedule rule end time.

Day: sets the days on which the schedule rule applies.

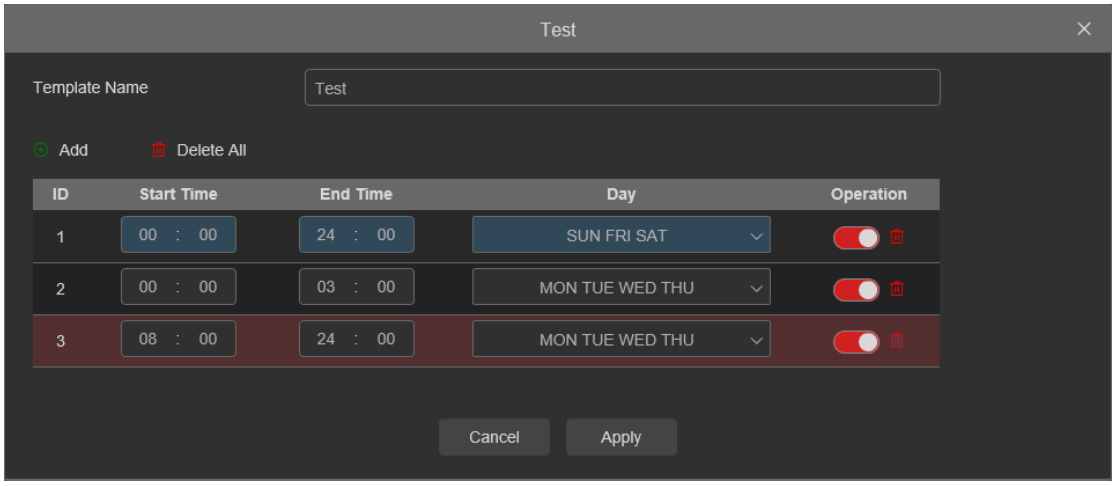
Import template: imports a custom or system default schedule template.



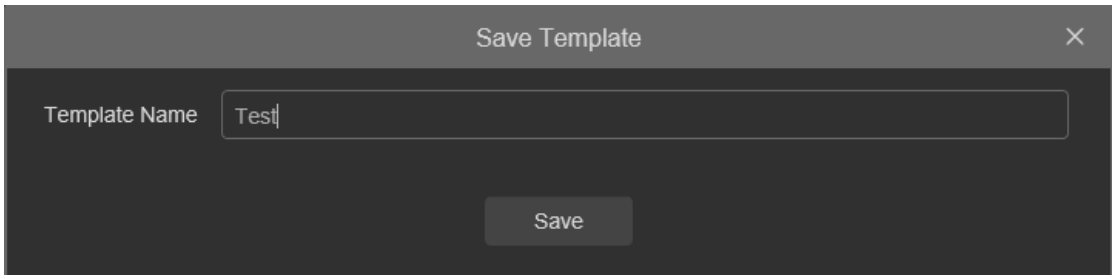
Edit: edits the schedule template (template name and schedule rules).

Delete: deletes the schedule template.

Note: the system includes two default schedule templates, 7x24 and 5x24, which cannot be edited or deleted.



Save template: saves the current schedule rule as a custom template that can be imported on other schedule settings pages.



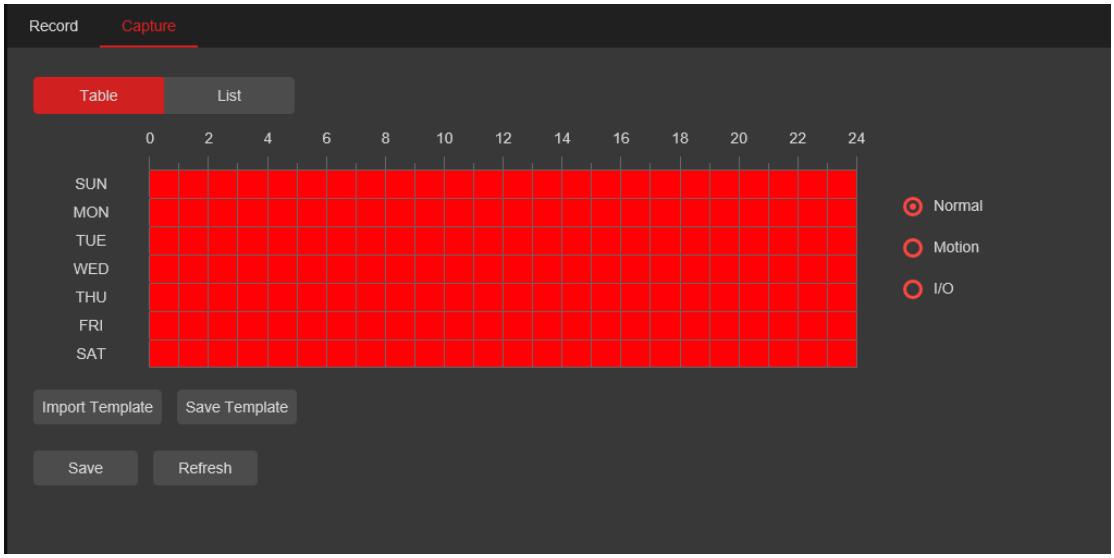
Save: saves the changed parameters.

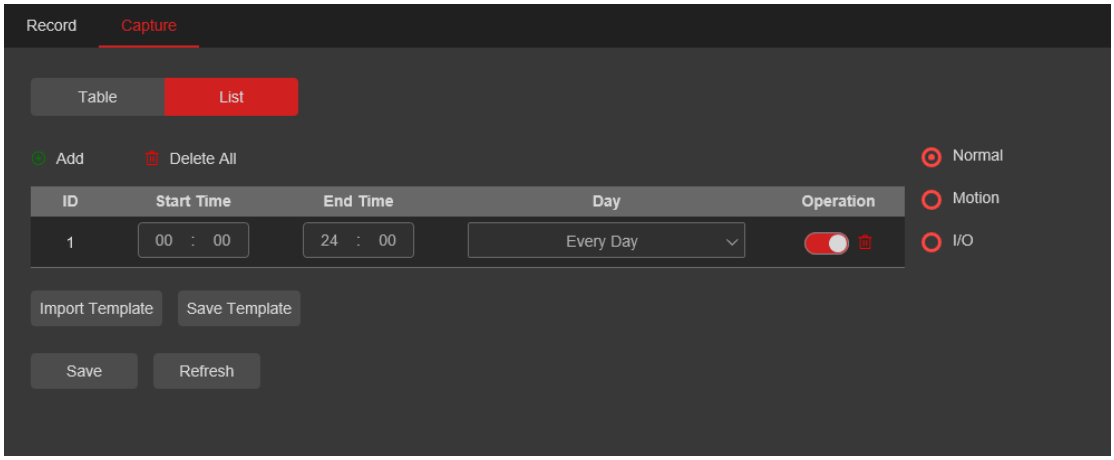
Copy: copies the parameters to other channels.

Refresh: reloads the parameters.

7.7.2 Capture schedule

Sets the schedule for normal and alarm capture, which runs during the configured time slots.

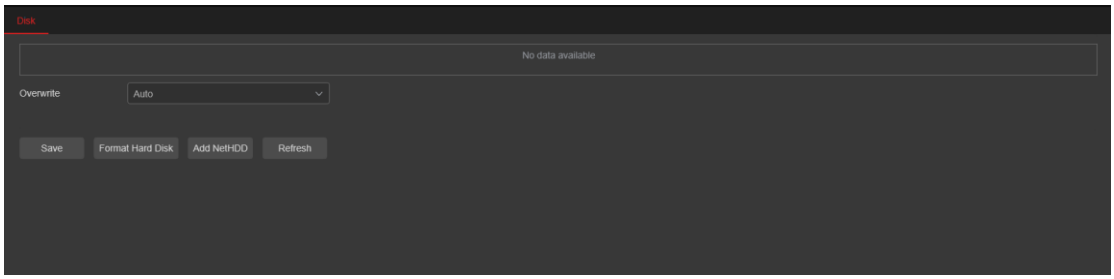




Refer to section 7.7.1 Recording Schedule.

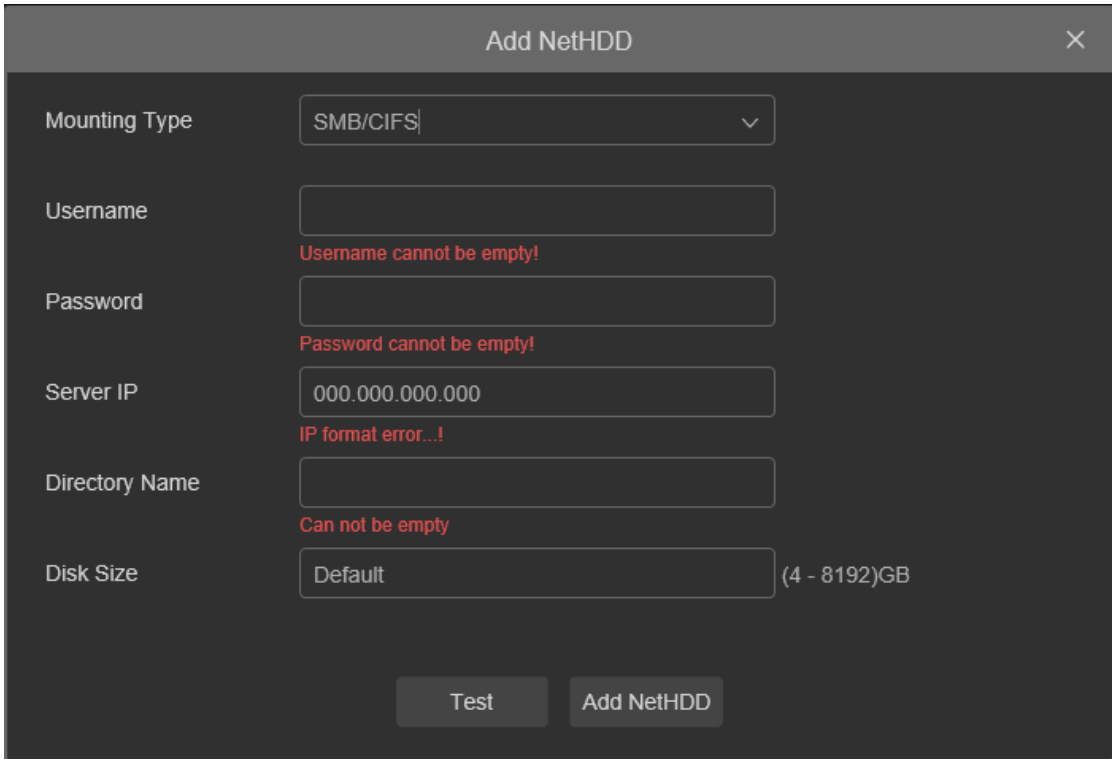
7.8 Disk management

This menu checks and configures the internal memory card (microSD). Formatting is necessary only on first use and when installing a new card.



Format disk: select the SD card to format and click Format SD Card. Enter your username and password and click OK to start formatting.
Overwrite: overwrites the oldest recordings when the SD card is full. Select Auto to overwrite the oldest data automatically when the card is full. Select OFF to retain older videos; in this case, check the SD card status regularly to ensure it is not full.

Add NetHDD: adds a network disk. After configuring a network disk (NAS) and connecting it to the network, you can record channel video or save captured images. The AI face database can be stored only on disk.

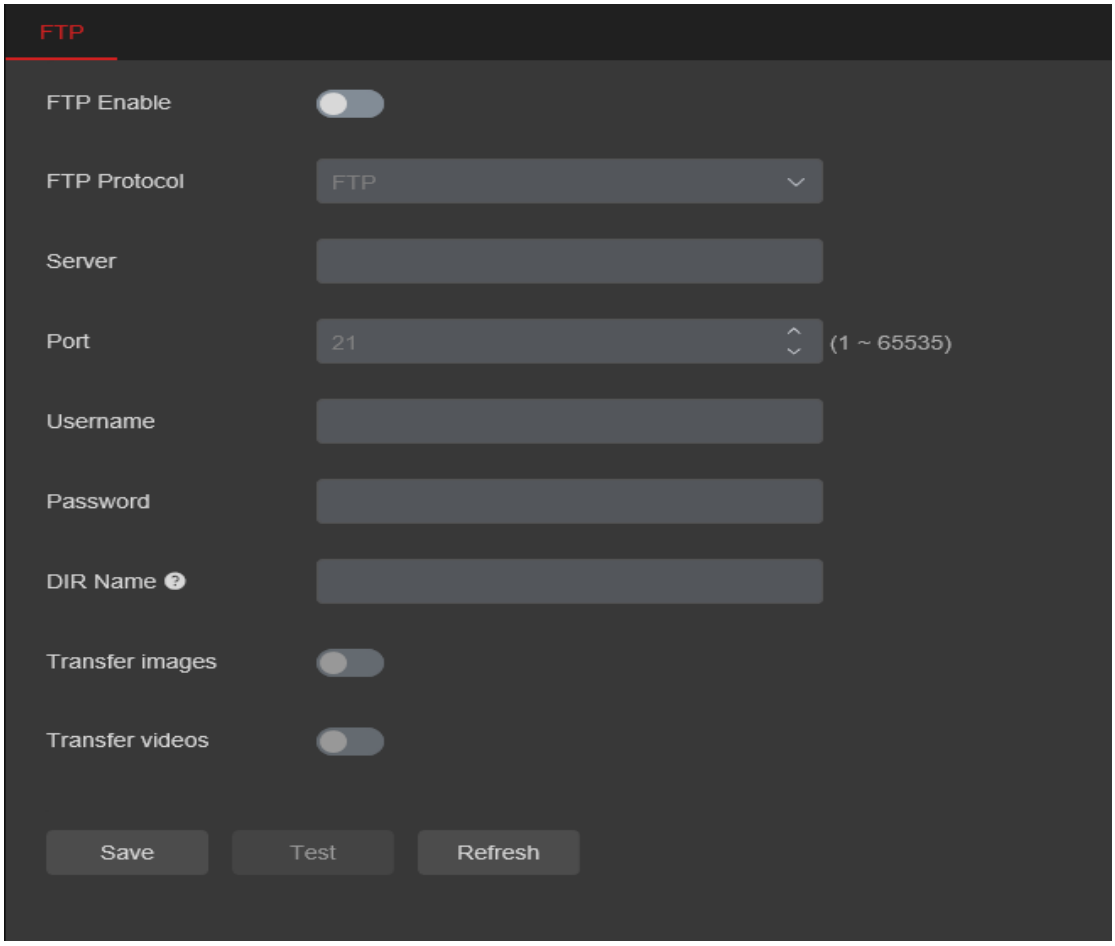


Mount type: two options are available, NFS and SMB/CIFS. NFS does not require a username and password; SMB/CIFS does.
Username: NAS username (unavailable in NFS mode).
Password: NAS password (unavailable in NFS mode).

Server IP: NAS IP address.
Directory name: NAS folder in which to store data.
Disk size: network disk size.
Test: tests the NAS connection.
Add NetHDD: click to add the NAS.

7.9 FTP server settings

This menu enables the camera to upload images and videos to an FTP server for viewing on the server.



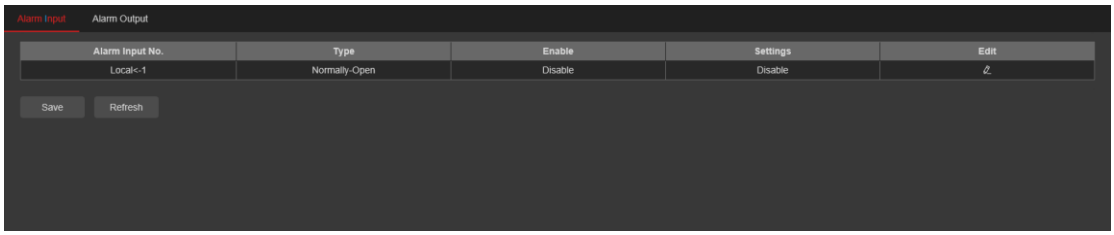
Enable FTP: click to enable FTP.
FTP protocol: selects FTP or SFTP.
Server: enter the FTP server IP address or domain name.
Port: enter the FTP port.
Username/Password: enter the FTP server username and password.
Image transfer: when selected, alarm images are uploaded to the FTP server.

Video transfer: when selected, alarm videos are uploaded to the FTP server.

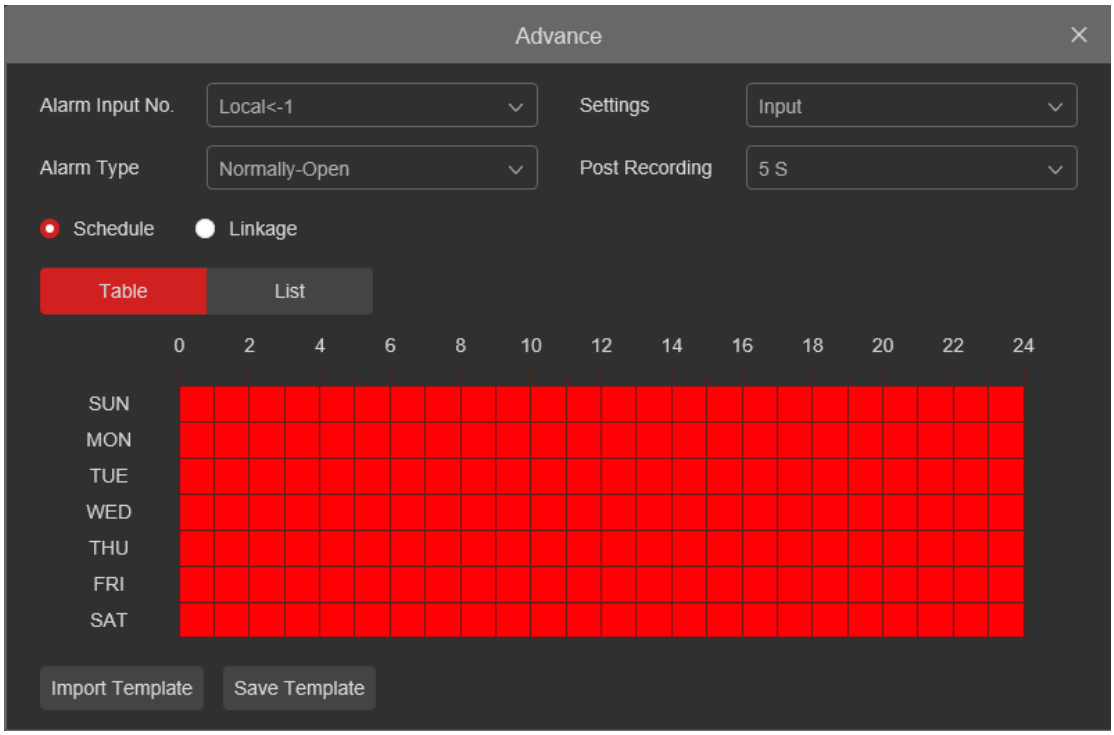
7.10 I/O settings

7.10.1 Alarm input settings

Optional function, available only if the device supports I/O sensors and an external I/O alarm device is connected.



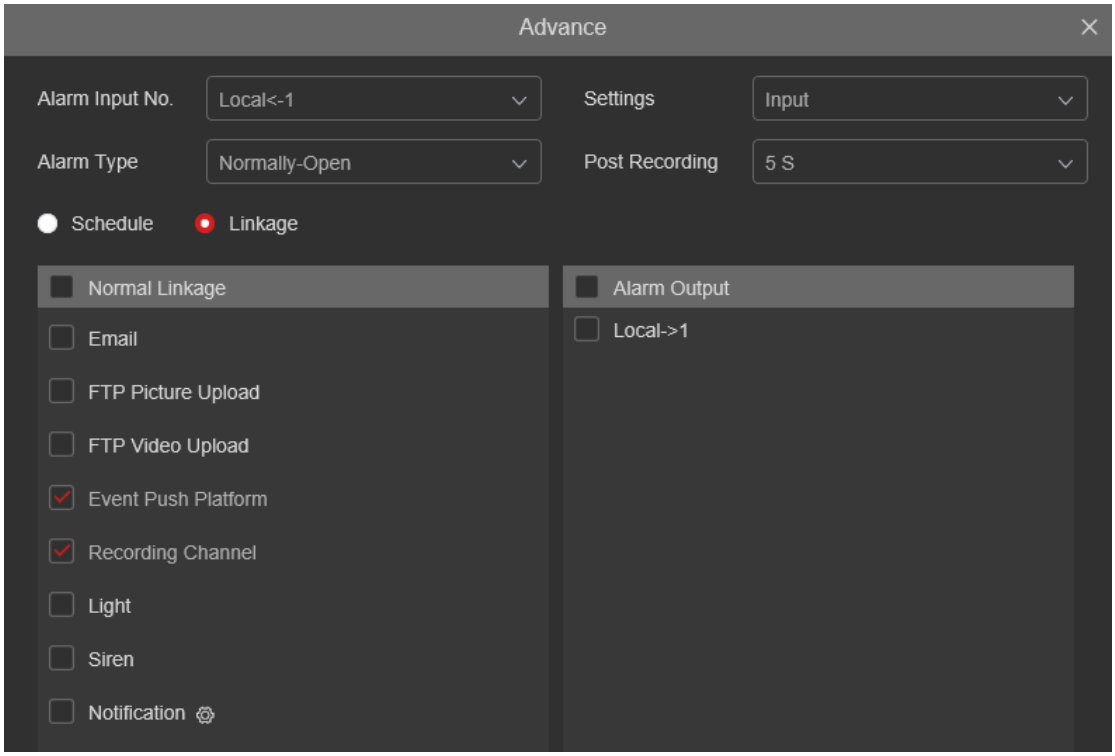
To configure I/O alarm input parameters, click **Edit** to open the settings page.



Alarm input no.: selects the I/O alarm input source.
Settings: enables or disables I/O input alarms.
Alarm type: selects the alarm input type (normally open/normally closed).

Post-recording: sets how long the device continues recording after an alarm is triggered; the default is 5 seconds.
Schedule: sets the schedule during which I/O input alarms are enabled. Refer to section 7.7 Schedule Settings.

Actions: sets the actions associated with the I/O input alarm.



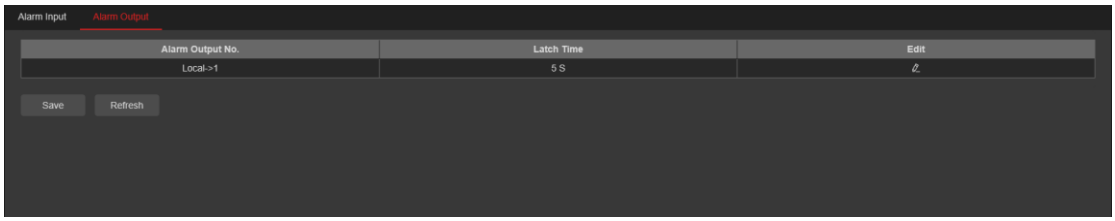
Email: sends an email to the configured mailbox when the alarm is triggered.
FTP image upload: uploads the alarm image to the FTP server when the alarm is triggered.
FTP video upload: uploads the alarm video to the FTP server when the alarm is triggered.
Click Settings to select uploads to the FTP server when an alarm is triggered.

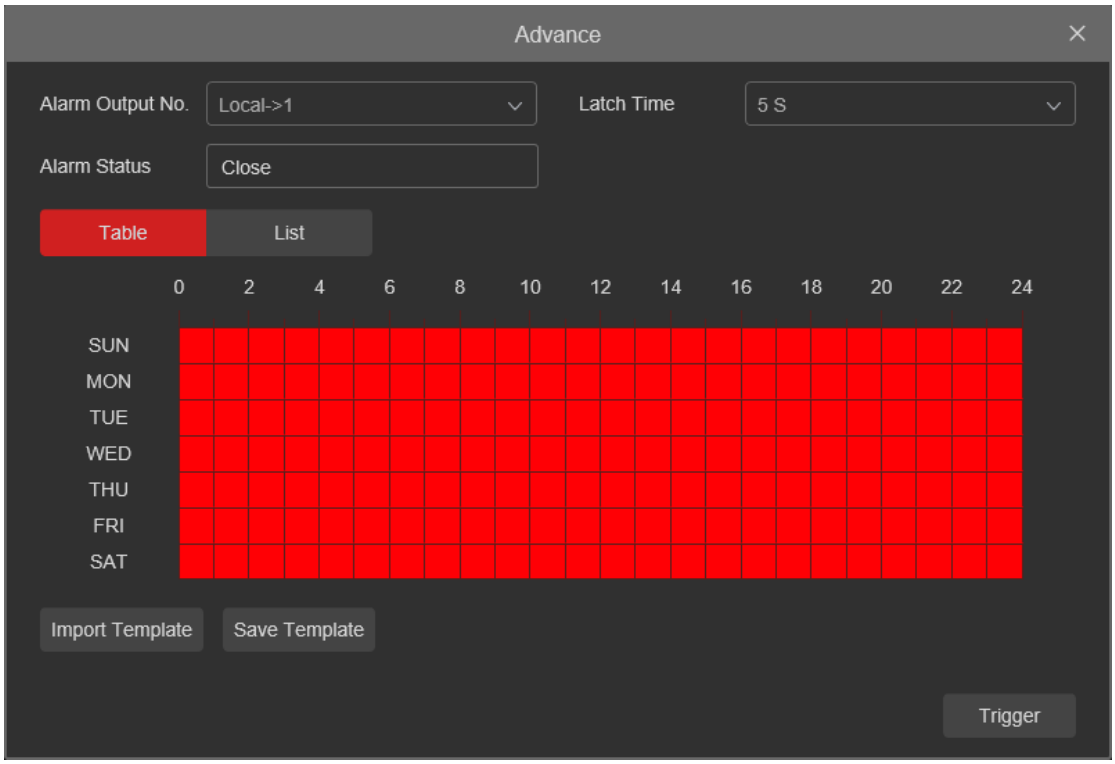
Light: when enabled, the white light switches on to deter intruders when an alarm is triggered.
Warning light: when enabled, the red and blue lights switch on to deter intruders when an alarm is triggered.
Siren: when enabled, the siren sounds to deter intruders when an alarm is triggered.
Notification: custom alarm; for specific settings, refer to section 7.14.21.

Alarm output: select the alarm output. The I/O alarm output is activated when the alarm is triggered. Refer to section 7.10.2 Alarm Output Settings.

7.10.2 Alarm output settings

To configure I/O output parameters associated with alarms, click Edit to open the settings page.



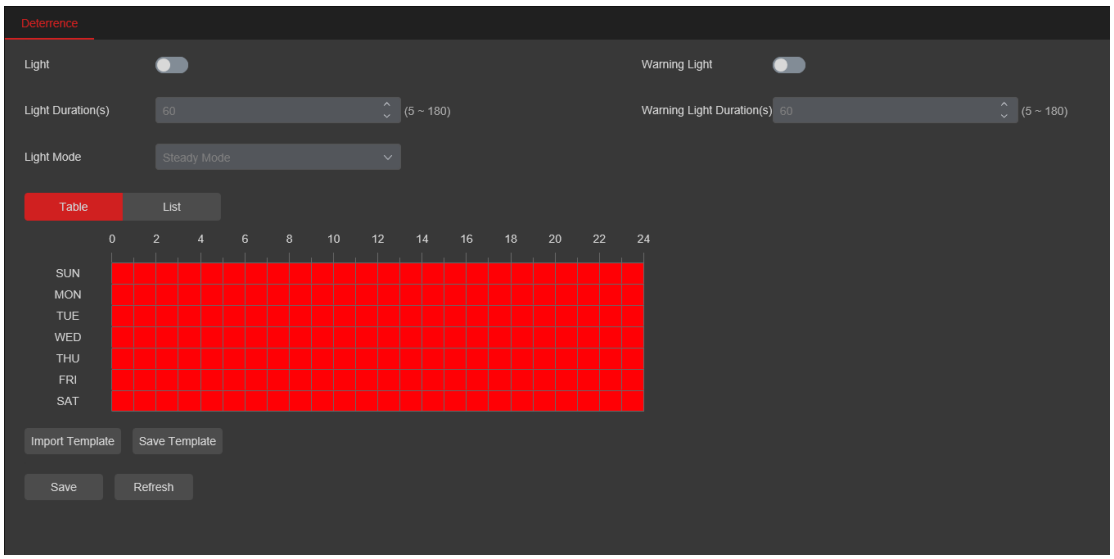


Alarm output no.: selects the I/O output to associate with the alarm.
Activation time: sets how long the I/O output remains active when the alarm occurs.

Schedule: sets the schedule during which alarm-linked I/O output is enabled. Refer to section 7.7 Schedule Settings.

7.11 Deterrence settings

If the camera has white, red and blue lights, use this menu to configure deterrence parameters. When an alarm triggers deterrence, the lights switch on according to the configured parameters. The screen is shown below.



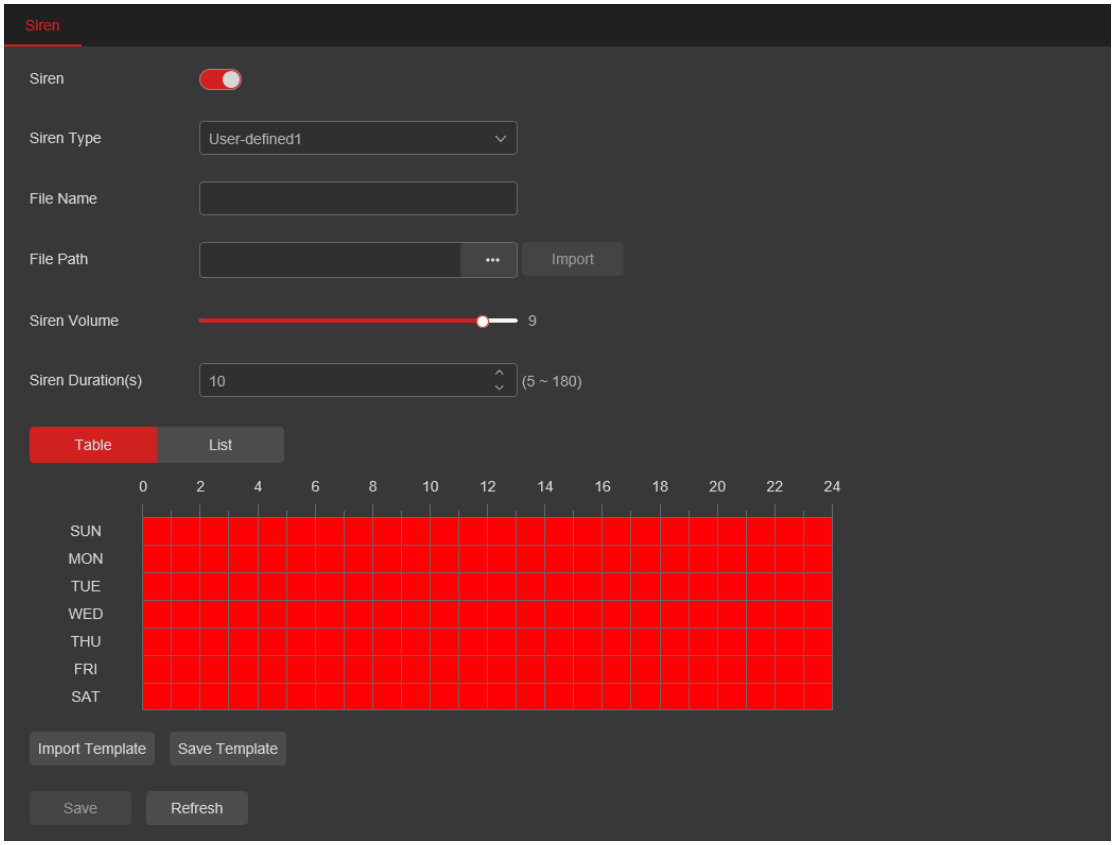
Note: if the camera has a white light and image control is set to Full Color mode, white light parameters (such as Light) are disabled and cannot be configured. These parameters can be configured in Day/Night mode. In Smart Illumination mode, Warning Light is disabled and cannot be configured.

Light: enables/disables the white light.
Light duration (s): how long the white light remains on.
Light mode: sets the white light mode. There are 2 modes.
Steady: the white light remains continuously on during deterrence.
Flashing: the white light flashes at the configured frequency during deterrence.

Warning light: enables and disables the red and blue warning lights.
Warning light duration (s): how long the red and blue lights remain on.
Schedule: sets when the white, red and blue lights are enabled. Refer to section 7.7 Schedule Settings.

7.12 Siren settings

If the camera has a siren, use this menu to configure its parameters. The siren activates automatically when an alarm triggers deterrence. The screen is shown below.

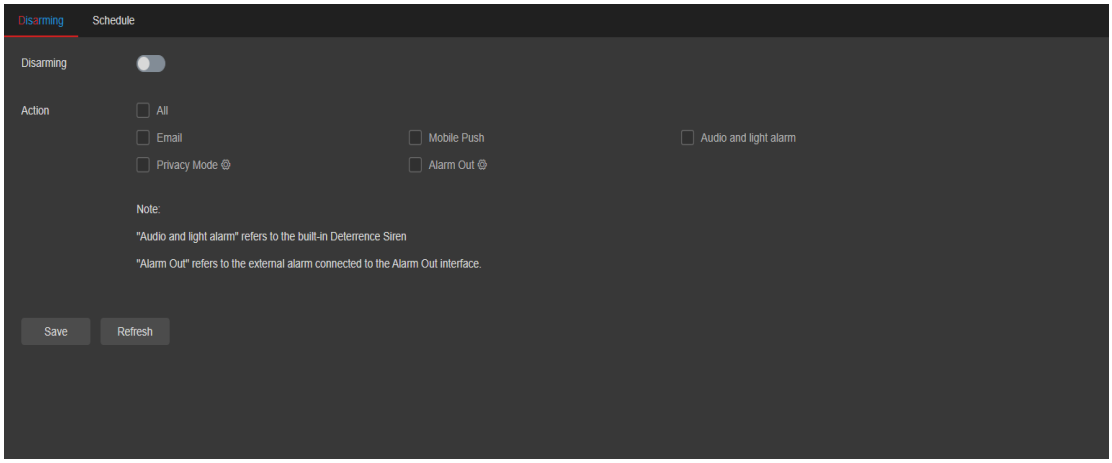


Siren: enables or disables the siren.
Siren type: selects the siren audio file.
Two default audio files are available. You can also import up to three custom audio files in pcm or wav format, with a sampling rate no higher than 8000 Hz and a size no larger than 256 KB. To delete a custom audio file, select it and click Delete on the right **(Note:** available on some models).

Siren volume: siren volume level, adjustable from 1 to 10.
Siren duration (s): how long the siren sounds, adjustable from 5 to 180 seconds.
Schedule: sets when the siren is enabled. Refer to section 7.7 Schedule Settings.

7.13 Disarming

Disarming suspends the device response to selected alarm actions. This menu configures disarming enablement, action types, schedule and other related parameters.



Disarming: enables or disables disarming.
Action: type of local action associated with a camera alarm.
All: selects or clears all types.
Email: with disarming enabled and this option selected, no alarm email is sent when an alarm is triggered.
Push notifications: with disarming enabled and this option selected, the device does not send push notifications to **mobile apps** when an alarm is triggered.
Audio and light alarm: with disarming **enabled** and this option selected, the red and blue lights, white light and siren do not activate when an alarm is triggered.
Privacy mode: with disarming enabled and this option selected, the camera activates privacy mode (per-channel settings are available only on multi-channel devices).

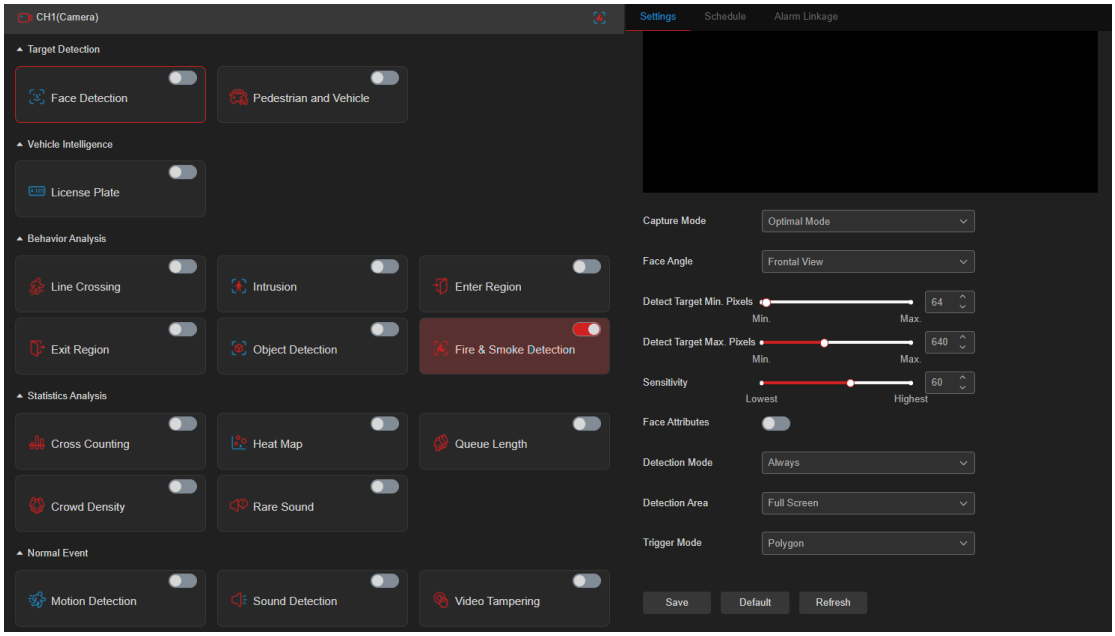
Alarm output: with disarming enabled and this option selected, the external alarm output device does not activate when an alarm is triggered.
Schedule: sets when disarming is enabled. Refer to section 7.7 Schedule Settings.

7.14 Event settings

To use AI smart alarms, first enable the corresponding alarm function in Settings. Each enabled function uses camera processing capacity; performance limits prevent some AI functions from operating simultaneously. Refer to the limitation messages for the specific model.

7.14.1 Face detection

Face detection finds faces through the camera, captures images meeting the requirements, calculates facial biometric data using its dedicated algorithm and compares it with the face database to generate alarms. Face detection must be enabled first.



Face detection: enables face detection. **Capture mode:** sets the snapshot capture mode. You can receive notifications in live view or connect an NVR to check images. Three capture modes are available.

Optimal mode: from the moment a subject is detected until it disappears, the camera sends only one image: the one considered best.
Real-time mode: the camera sends an image immediately when the subject is detected, then sends the best image when the subject disappears.

Capture interval: sets the number of snapshots and the capture/transmission interval. The snapshot count can be 1, 2, 3 or unlimited; the interval ranges from 1 s to 255 s. For example, with a 5 s interval, an image is sent at 5 s, 10 s and 15 s after detection. **Face angle:** filters captured images; only those meeting the angle setting are sent. Three modes are available.

Frontal: sends only frontal images of the subject. **Multi-angle:** also sends face profile images. **Custom:** defines the subject angles for sending images. Selecting this mode enables Roll Range, Pitch Range, Yaw Range and Image Quality, along with the Frontal Default and Multi-angle Default buttons.

Roll range: sets the captured face roll range in the 3D model. If the angle is outside the configured limit, the face is detected but its image is not sent.

Pitch range: sets the captured face pitch range in the 3D model. If the angle is outside the configured limit, the face is detected but its image is not sent.

Yaw range: sets the captured face yaw angle in the 3D model. If the angle is outside the configured limit, the face is detected but its image is not sent.

Image quality: a high quality threshold excludes detected images that do not contain faces.
Frontal default: visible when Custom is selected; sets Roll Range: 30, Pitch Range: 30, Yaw Range: 45 and Image Quality:
100.
Multi-angle default: visible when Custom is selected; sets Roll Range: 180, Pitch Range: 180, Yaw Range: 180 and Image

Quality: 100. **Minimum subject size (pixels):** sets the minimum recognition box; a face must be larger than this size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag the box to resize it. It disappears from the preview 5 seconds after moving the pointer away. **Maximum subject size (pixels):** sets the maximum recognition box; a face must be smaller than this size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag the box to resize it. It disappears 5 seconds after moving the pointer away. **Sensitivity:** increasing sensitivity reduces missed alarms but increases false alarms. **Face enhancement:** improves captures of moving subjects and adjusts brightness based on the face closest to the camera to optimise capture quality (available on some models). **Face attributes:** identifies attributes of detected faces: age, gender, mask, glasses and expression. **Note:** this function must be enabled to use face attribute alarms. **Detection mode:** filters the behaviour of subjects detected by the camera. Two modes are available.

Hybrid mode: detects all faces in the field of view. **Motion mode:** excludes stationary faces, such as portraits and statues. **Detection box:** displays face detection boxes and detection rule lines (available on some models). **Trigger mode:** sets the detection rule type. Two types are available.

Rectangle: detects only faces in the configured area. **Line:** tracks faces only when they cross the configured detection line. **Detection area:** sets the area in which subjects are recognised. Two modes are available.

Full screen: analyses the camera's entire field of view. **User Defined:** analyses only areas outlined by the user. **Rule number:** selects the rule number; up to 4 detection areas can be configured.

Rule enable: each detection rule has an independent enable switch linked to the selected rule number. **Rule type:** available only in line-crossing detection mode; there are two trigger directions: A→B and B→A.

Rule setup area: draw the detection area or trigger line here according to the configured parameters.

Add: adds a default detection rule to the setup area.

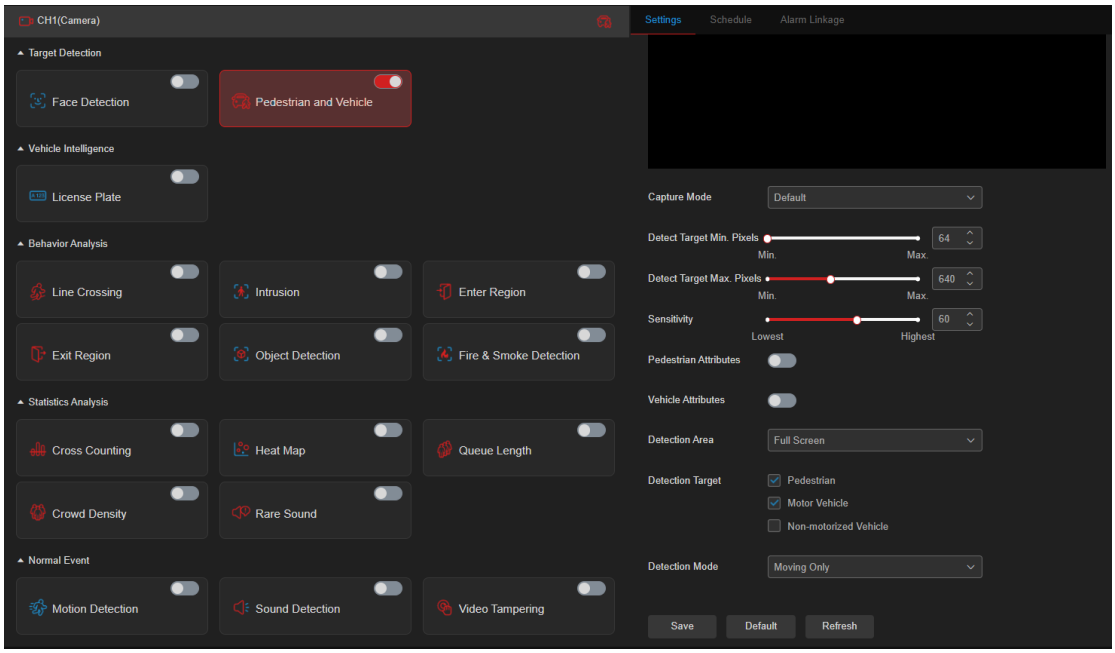
Draw: manually draws a detection rule in the setup area.

Remove: removes a detection rule from the setup area.

Remove all: removes all detection rules from the setup area.

7.14.2 Pedestrians and vehicles

Pedestrian and vehicle detection recognises people and vehicles in the field of view, generates an alarm and records captured images according to the settings.



Pedestrians and vehicles: enables pedestrian and vehicle detection. **Capture mode:** sets the snapshot capture mode. You can receive notifications in live view or connect an NVR to check images. Three capture modes are available.

Default: from detection until the subject disappears, the camera sends only one image of the pedestrian or vehicle.
Real-time mode: the camera sends an image immediately when the subject is detected, then sends another when it disappears.
Interval mode: sends images the configured number of times at the configured transmission interval. Snapshot Count and Capture Interval are available in this mode:
Snapshot count: for the same subject, sends an image 1, 2, 3 or an unlimited number of times at the configured Capture Interval.
Capture interval: sends the image once the configured time has elapsed since the subject appeared or the previous transmission.

Minimum subject size (pixels): sets the minimum recognition box; pedestrians and vehicles must be larger than this size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. The box disappears 5 seconds after moving the pointer away.

Maximum subject size (pixels): sets the maximum recognition box; pedestrians and vehicles must be smaller than the configured size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. The box disappears 5 seconds after moving the pointer away. **Sensitivity:** higher sensitivity makes pedestrians and vehicles easier to detect but increases the likelihood of false alarms. **Person attributes:** identifies detected pedestrians by their attributes: upper and lower clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack and direction. **Detected subject:** available options are pedestrian, motor vehicle, non-

motorised vehicle and all. **Detection mode:** filters subject behaviour in the detection area. Two modes are available.

Hybrid mode: detects all pedestrians and vehicles in the field of view. **Motion mode:** excludes stationary pedestrians and vehicles. **Detection box:** displays detection boxes around pedestrians and vehicles and enables/disables detection rule lines. **Detection area:** detection area setting. Two modes are available.

Full screen: analyses the camera's entire field of view. **User Defined:** analyses only the area outlined by the user. **Rule number:** selects the rule number; up to 4 detection rules can be configured.

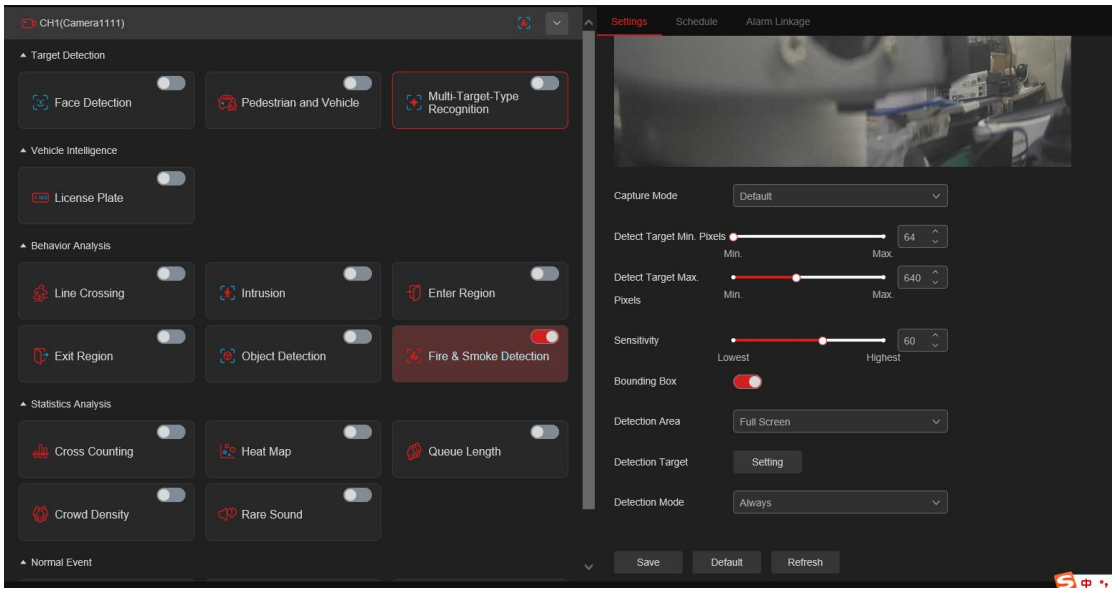
Rule enable: each rule has an independent enable switch linked to the selected rule number. **Rule setup area:** in custom detection area mode, you can configure areas with 3 to 8 sides.

Add: adds a default detection rule to the setup area. **Draw:** manually draws a detection rule in the setup area.

Remove: removes a detection rule from the setup area. **Remove all:** removes all detection rules from the setup area.

7.14.3 Multi-target recognition

This function uses built-in AI algorithms to analyse the video stream in real time and identify several categories of subjects in the image simultaneously.



Multi-target recognition: enables multi-target recognition for all subjects. **Minimum subject size (pixels):** using 1080p resolution as a reference, excludes subjects smaller than the configured size. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. The box disappears after 5 seconds. **Maximum subject size (pixels):** using 1080p resolution as a reference, excludes subjects larger than the configured size. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. The box disappears after 5 seconds. **Sensitivity:** higher sensitivity improves subject detection but also increases false alarm frequency.

Detection mode: filters subject behaviour in the detection area. Two modes are available:

Always: detects all people and vehicles in the field of view. **Moving only:** excludes stationary people and vehicles. **Detection box:** displays a detection box around the subject and enables/disables detection rule lines. **Detected subject:** subjects to detect. Select pedestrian, vehicle, animal, public infrastructure, means of transport, mobile device, kitchen utensils, other, or all. **Detection area:** detection area setting. Two modes are available:

Full screen: analyses the camera's entire field of view. **User Defined:** analyses only the area outlined by the user. **Rule number:** selects the rule number; up to four detection rules can be configured. Different zones can have different detection types: for example, zone 1 can detect people and vehicles, and zone 2 can detect animals.

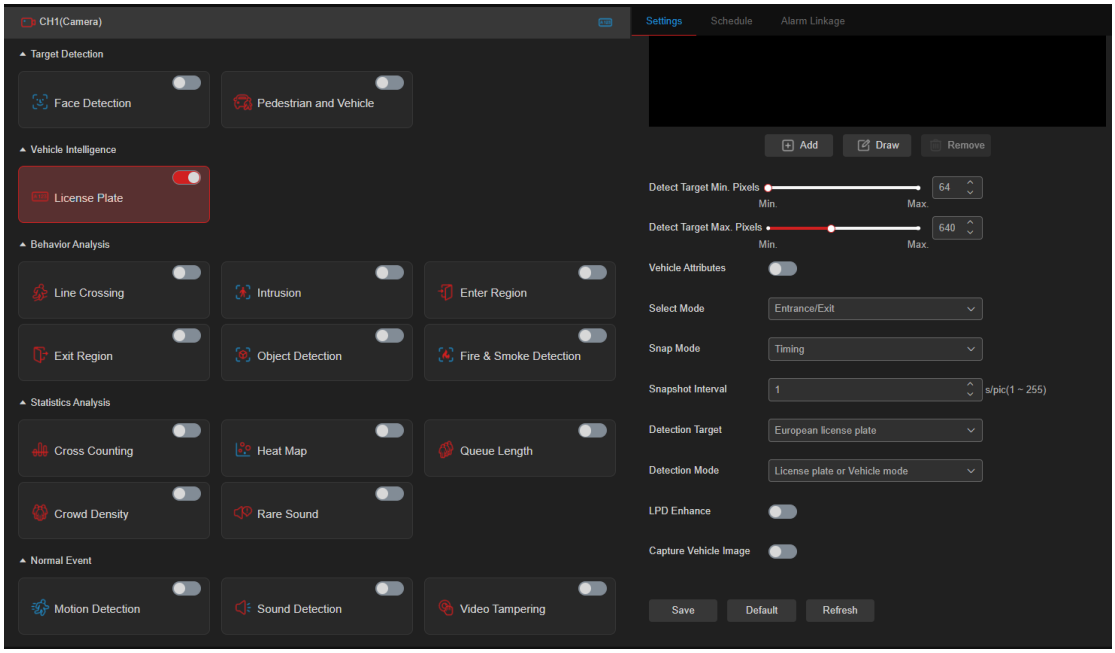
Rule enable: enables or disables the rule. Each rule has an independent enable switch linked to the selected rule number. **Rule setup area:** in custom detection area mode, you can configure zones with 3 to 8 sides.

Add: adds a default detection rule to the setup area. **Draw:** manually draws a detection rule in the setup area.

Remove: deletes the selected detection rule. **Remove all:** deletes all detection rules from the setup area.

7.14.4 Licence plates

Licence plate detection detects passing vehicles' plates and identifies whether the vehicle is unknown or registered in the database, generating the corresponding alarm. Licence plate detection must be enabled first.



Licence plate: enables licence plate detection. **Minimum subject size (pixels):** minimum box; the plate must be larger than the configured minimum size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; the box

can also be dragged to resize it and disappears 5 seconds after moving the pointer away. **Maximum subject size (pixels):** maximum box; the plate must be smaller than the configured maximum size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away. **Detected subject:** type of licence plates to detect. Two options are available.

European plate: plates from Europe. **American plate:** plates from America.
Detection mode: sets the detection mode. Two

modes:

Vehicle priority: the camera detects the vehicle first, then captures its plate for analysis.

Plate or vehicle: the plate is detected and analysed at the same time as the vehicle is detected.

Detection box: displays the detection box and enables/disables detection rule lines.

Detection area: sets the licence plate detection area. Two modes are available:

Full screen: analyses the camera's entire field of view.
User Defined: the user defines the detection area.

Rule setup area: draw the detection area or trigger line here according to the configured parameters.

Add: adds a default detection rule to the setup area.
Draw: manually draws a detection rule in the setup area.

Remove: removes the selected rule from the rule setup area.

Capture mode: different capture modes apply according to the selected application mode.

Application mode: select the mode according to the actual installation location to improve plate capture. Three modes are supported:

Entrance/Exit: supports the following three capture modes:

Entrance: when a vehicle enters the detection area and crosses the detection line, an alarm is generated and a snapshot is captured.

Exit: when a vehicle leaves the detection area and crosses the detection line, an alarm is generated and a snapshot is captured.

Timed: sets the capture interval. When a vehicle passes through the detection area and crosses the detection line, an alarm is generated and snapshots are captured at the specified interval.

Urban road: supports the following three capture modes:

Entrance: when a vehicle or licence plate enters the detection area and crosses the detection line, an alarm is generated and a snapshot is captured.

Exit: when a vehicle or licence plate leaves the detection area and crosses the detection line, an alarm is generated and a snapshot is captured.

Line crossing: when a vehicle or licence plate crosses the detection line, an alarm is generated and a snapshot is captured.

Alarm input: capture is triggered by an I/O signal and requires an external sensor.

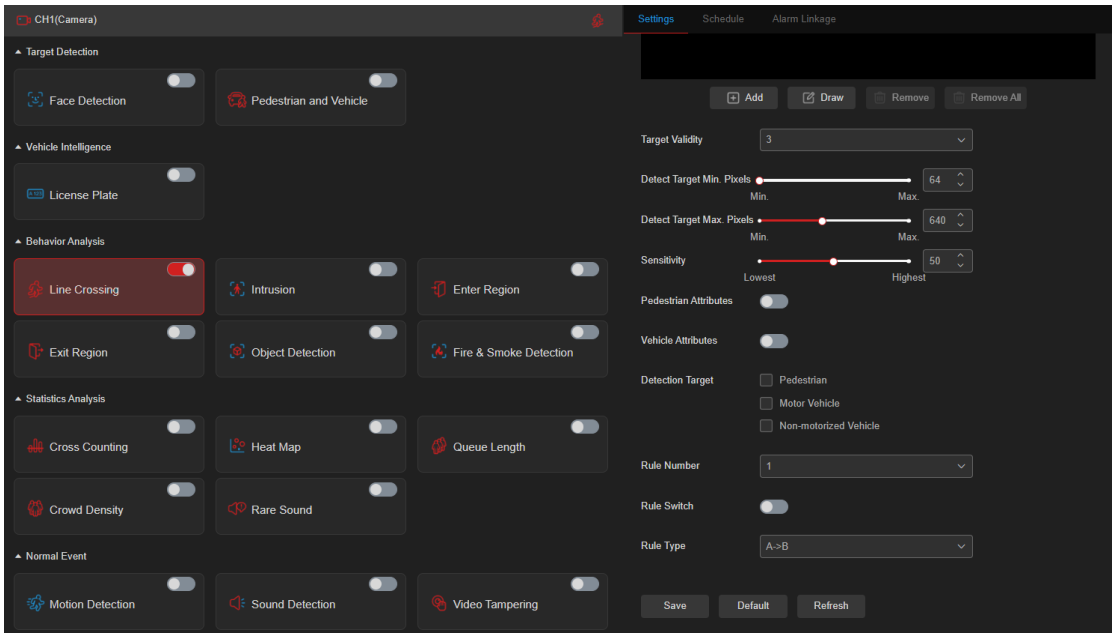
Capture vehicle image: controls vehicle image capture. When enabled, the vehicle image is captured and sent when the alarm is triggered, even if the plate is not recognised. When disabled, the vehicle image is neither captured nor sent in this case.

Plate enhancement: can be enabled only when licence plate detection is enabled. With this option enabled in Day/Night mode, the device automatically switches to Image IR-CUT mode, and Exposure Compensation, Shutter and Exposure Time settings are hidden.

Note: in **Entrance/Exit** and **Urban Road** modes, set the detection line position in the video image: a plate is captured only when it touches the detection line. **Alarm Input** mode does not require a detection line: when the alarm is triggered, the plate in the detection area is captured.

7.14.5 Line crossing

Line crossing detection detects pedestrians and vehicles crossing a configured virtual line. When a specified subject crosses the preset detection line, an alarm signal is generated.



Line crossing: enables line crossing detection. **Subject reliability:** similarity between the detected subject and the configured detection type: 1 means similarity of at least 80%, 2 means 60%, 3 means 40% and 4 means 20%. **Minimum subject size (pixels):** sets the minimum recognition box; the subject must be larger than the configured size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. The box disappears 5 seconds after moving the pointer away. **Maximum subject size (pixels):** sets the maximum recognition box:

the subject must be smaller than the configured size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. The box disappears 5 seconds after moving the pointer away. **Sensitivity:** relates to the portion of the subject that crosses the boundary; a higher value triggers the alarm more easily. For example, at 100%, the alarm triggers as soon as the subject touches the boundary; at 50%, it triggers when 50% of the subject has crossed. **Person attributes:** identifies detected pedestrians by their attributes: upper and lower clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack and direction. **Vehicle attributes:** identifies captured motor vehicles by attributes such as colour, make and type (available on some models). **Detected subject:** sets subjects for perimeter detection.

Pedestrian: line crossing alarms trigger only for pedestrians. **Motor vehicle:** line crossing alarms trigger only for motor vehicles.

Non-motorised vehicle: line crossing alarms trigger only for non-motorised vehicles.

Detection box: displays detection rule lines.

Rule number: selects the rule number; Line Crossing supports up to 4 detection lines.

Rule enable: each rule line has an independent enable switch linked to the selected rule number.

Rule type: crossing direction that triggers the alarm. Three types are available: A→B, B→A and A←→B. The setting is linked to the selected rule number.

Rule setup area: draw the detection area or trigger line here according to the configured parameters.

Add: adds a default detection rule to the setup area.

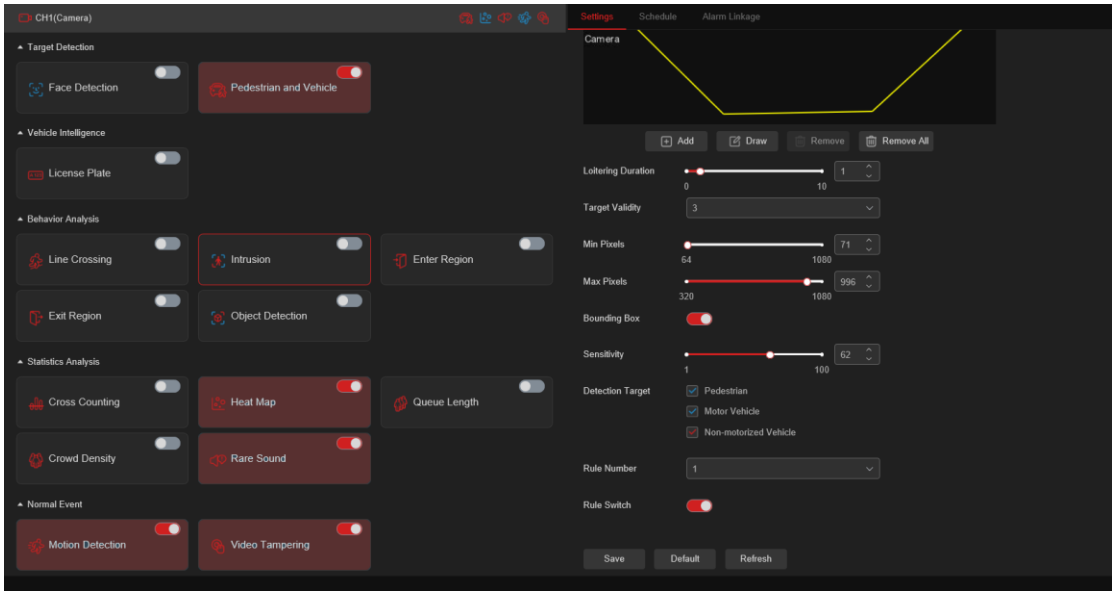
Draw: manually draws a detection rule in the setup area.

Remove: removes the selected rule from the rule setup area.

Remove all: removes all rule lines.

7.14.6 Intrusion

Intrusion detection checks the video for subjects entering the configured restricted area and activates alarm actions accordingly.



Intrusion: enables or disables intrusion detection. **Dwell time:** generates an alarm when a subject enters the alert area and remains there continuously for the configured time. For example, at 1, the alarm triggers after 1 s in the area; the maximum setting is 10 s. **Subject reliability:** similarity between the detected subject and configured detection type: 1 means similarity of at least 80%, 2 means 60%, 3 means 40% and 4 means 20%. **Minimum subject size (pixels):** sets the minimum recognition box; the subject must be larger than the configured size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away. **Maximum subject size (pixels):** sets the maximum recognition box; the subject must be smaller than the configured size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away. **Sensitivity:** sets intrusion detection sensitivity; a higher value triggers the alarm more easily. Sensitivity relates to the portion of the subject entering the area. For example, at 100%, the alarm triggers as soon as the subject touches the area boundary; at 50%, it triggers when 50% of the subject has crossed. **Person attributes:** identifies detected pedestrians by their attributes: upper and lower clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack and direction. **Vehicle attributes:** identifies captured motor vehicles by attributes such as colour, make and type (available on some models). **Detected subject:** sets the subjects for intrusion detection:

Pedestrian: intrusion alarms trigger only for pedestrians. **Motor vehicle:** intrusion alarms trigger only for motor vehicles. **Non-motorised vehicle:** intrusion alarms trigger only for non-

motorised vehicles.

Detection box: displays detection rule lines.

Rule number: selects the rule number; Intrusion supports up to 4 detection rules.

Rule enable: each rule line has an independent enable

switch linked to the selected rule number.

Rule setup area: draw the detection area or trigger line here according to the configured parameters.

Add: adds a default detection rule to the setup area.

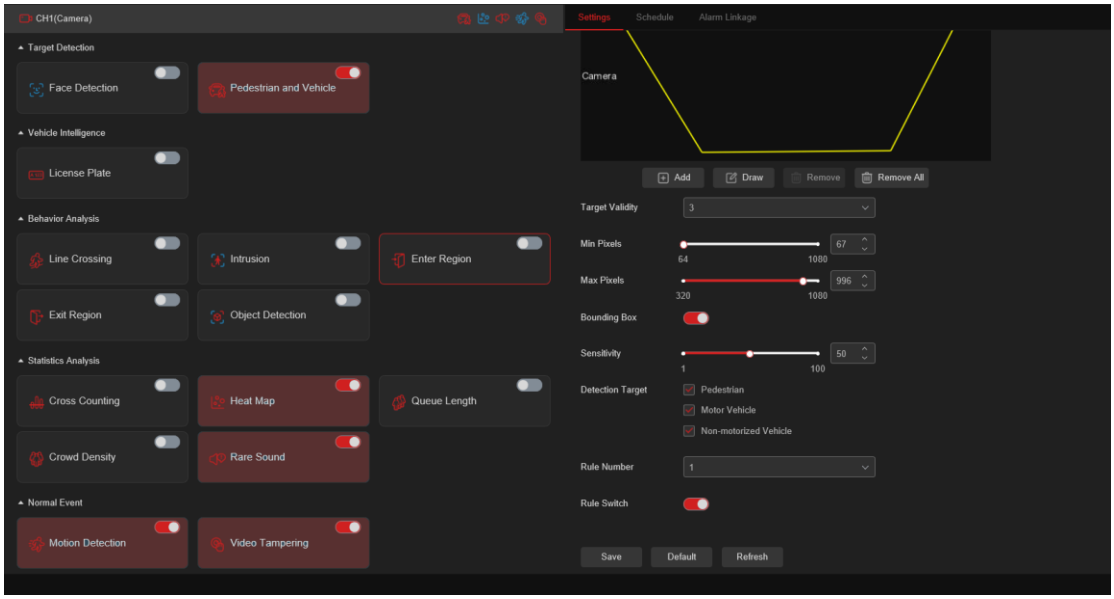
Draw: manually draws a detection rule in the setup area.

Remove: removes the selected rule from the rule setup area.

Remove all: removes all rule lines.

7.14.7 Region entrance

Region entrance detection finds subjects entering an area from outside (subjects already appearing inside do not trigger an alarm) and activates alarm actions accordingly.



Region entrance: enables or disables region entrance detection. **Subject reliability:** similarity between the detected subject and configured detection type: 1 means similarity of at least 80%, 2 means 60%, 3 means 40% and 4 means 20%. **Minimum subject size (pixels):** sets the minimum recognition box; the subject must be larger than the configured size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away. **Maximum subject size (pixels):** sets the maximum recognition box; the subject must be smaller than the configured size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away. **Sensitivity:** sets region entrance sensitivity; a higher value triggers the alarm more easily. Sensitivity relates to the portion of the subject entering the area. For example, at 100%, the alarm triggers as soon as the subject touches the area boundary; at 50%, it triggers when 50% of the subject has crossed. **Person attributes:** identifies detected pedestrians by their attributes: upper and lower

clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack and direction. **Vehicle attributes:** identifies captured motor vehicles by attributes such as colour, make and type (available on some models). **Detected subject:** sets the subjects for region entrance detection.

Pedestrian: region entrance alarms trigger only for pedestrians. **Motor vehicle:** region entrance alarms trigger only for motor vehicles. **Non-motorised vehicle:** region entrance alarms trigger only for non-motorised vehicles.

Detection box: displays detection rule lines.

Rule number: Region Entrance supports up to 4 detection rules.

Rule enable: each rule has an independent enable switch linked to the selected rule number.

Rule setup area: draw the detection area or trigger line here according to the configured parameters.

Add: adds a default detection rule to the setup area.

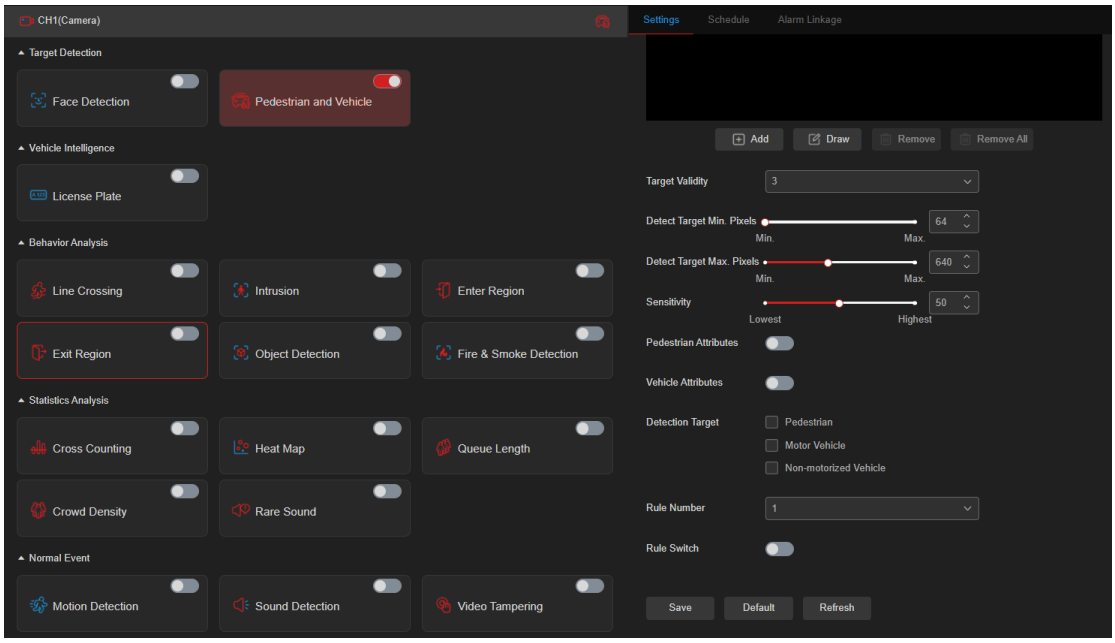
Draw: manually draws a detection rule in the setup area.

Remove: removes the selected rule from the rule setup area.

Remove all: removes all rule lines.

7.14.8 Region exiting

Region exiting detection finds subjects leaving an area (subjects already appearing outside do not trigger an alarm) and activates alarm actions accordingly.



Region exiting: enables or disables region exiting detection. **Subject reliability:** similarity between the detected subject and configured detection type: 1 means similarity of at least 80%, 2 means 60%, 3 means 40% and 4 means 20%.

Minimum subject size (pixels): sets the minimum recognition box; the subject must be larger than the configured size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away. **Maximum subject size (pixels):** sets the maximum recognition box; the subject must be smaller than the configured size to be recognised. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away. **Sensitivity:** sets region exiting sensitivity; a higher value triggers the alarm more easily. Sensitivity relates to the portion of the subject leaving the area. For example, at 100%, the alarm triggers as soon as the subject touches the area boundary; at 50%, it triggers when 50% of the subject has crossed. **Person attributes:** identifies detected pedestrians by their attributes: upper and lower clothing colour, gender, age, hat, glasses, sleeves, trouser type, backpack and direction. **Vehicle attributes:** identifies captured motor vehicles by attributes such as colour, make and type (available on some models). **Detected subject:** sets the subjects for region exiting detection:

Pedestrian: region exiting alarms trigger only for pedestrians. **Motor vehicle:** region exiting alarms trigger only for motor vehicles. **Non-motorised vehicle:** region exiting alarms trigger only for non-

motorised vehicles.

Detection box: displays detection rule lines.

Rule number: Region Exiting supports up to 4 detection rules.

Rule enable: each rule has an independent enable switch linked to the selected rule number.

Rule setup area: draw the detection area or trigger line here according to the configured parameters.

Add: adds a default detection rule to the setup area.

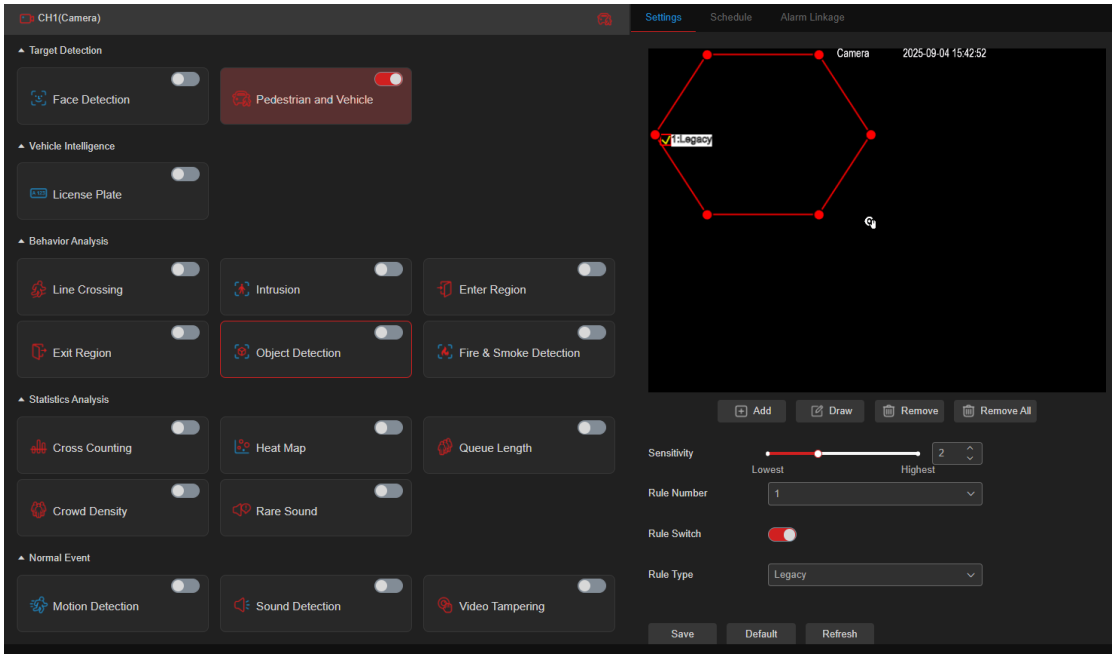
Draw: manually draws a detection rule in the setup area.

Remove: removes the selected rule from the rule setup area.

Remove all: removes all rule lines.

7.14.9 Object detection

Object detection generates an alarm when an abandoned object or a missing object is detected in the monitored scene.



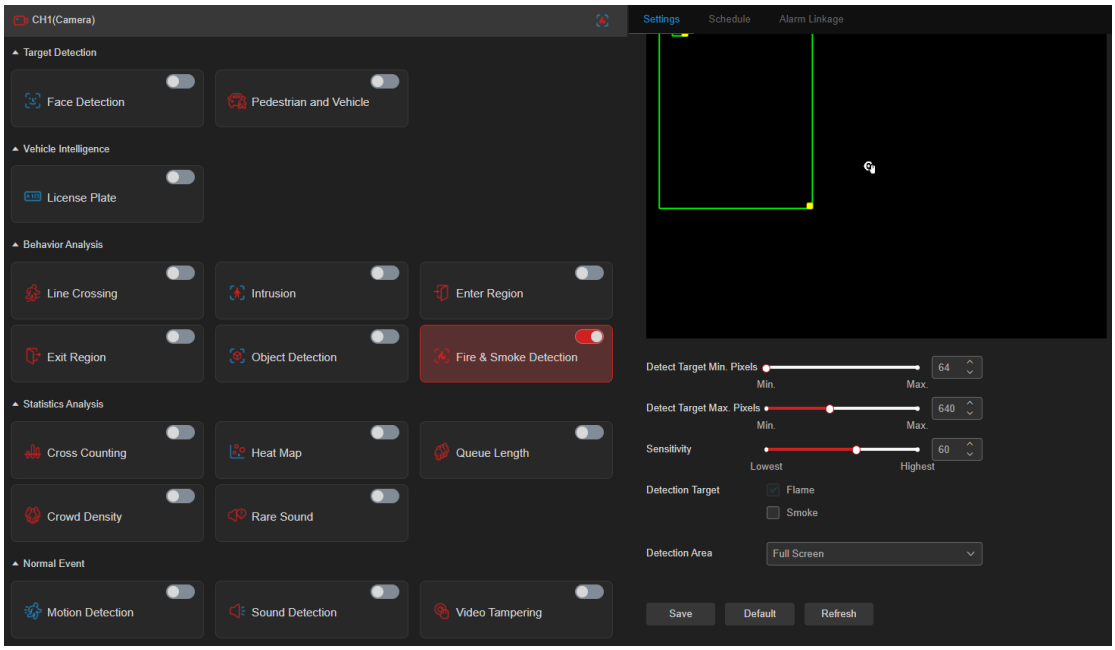
Object detection: enables object detection alarms.
Sensitivity: filters minor disturbances; higher sensitivity allows smaller objects to be detected.
Detection box: displays detection rule lines.
Rule number: up to 4 detection rules can be configured.
Rule enable: each rule has an independent enable switch linked to the selected rule number.
Rule type: sets whether alarms are generated for objects abandoned in or removed from the detection area. Three types are available: Abandoned, Removed, Removed and Abandoned. The setting is linked to the selected rule number.
Rule setup area: configures, edits and displays rules.

Add: adds a default detection rule to the setup area.
Draw: manually draws a detection rule in the setup area.

Remove: removes the selected rule from the rule setup area.
Remove all: removes all rules.

7.14.10 Fire and smoke detection

This function analyses the camera video stream in real time, using image recognition algorithms to detect flames or smoke in the area and generate an alarm.



Fire and smoke detection: enables or disables fire and smoke detection.

Minimum subject size (pixels): sets the minimum pixel size for fire and smoke detection; flames and smoke must be larger than the configured size to be detected. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. The box disappears 5 seconds after moving the pointer away.

Maximum subject size (pixels): sets the maximum pixel size for fire and smoke detection; flames and smoke must be smaller than the configured size to be detected. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. The box disappears 5 seconds after moving the pointer away.

Sensitivity: higher sensitivity improves flame and smoke detection, but false alarms may still occur.

Detected subject: select the subject type for the camera to detect.

Flames: detects open flames.

Smoke: detects smoke.

Detection area: sets the detection area. Two modes are available.

Full screen: analyses the camera's entire field of view.

User Defined: analyses only the area outlined by a custom box.

Rule settings: configures, edits and displays rules. Polygonal detection areas with 3 to 8 sides are supported.

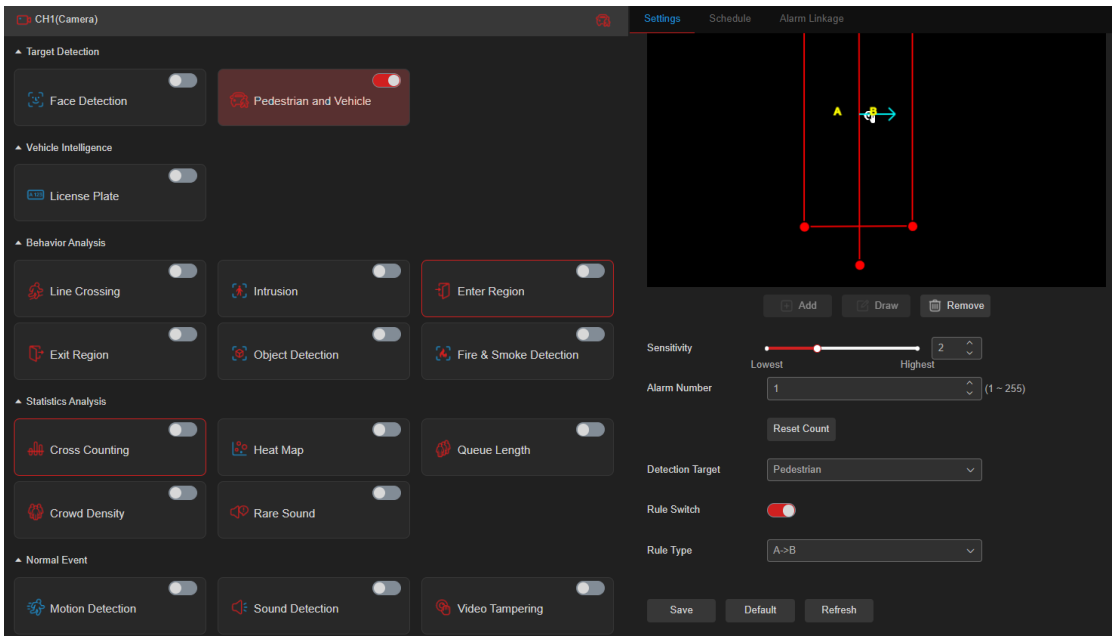
Add: adds a default detection rule to the setup area.

Draw: manually draws a detection rule in the setup area.

Remove: deletes the selected rule from the rule setup area.

7.14.11 Cross counting

Cross counting records specific subjects passing across a line in the monitored area. The configured line separates areas A and B on its two sides. For example, with an A→B line rule, when a subject comes from area A, crosses the detection line and exits into area B, the entry count increases by 1. When a subject comes from area B, crosses the line and exits into area A, the exit count increases by 1. Whenever a count increases, an alarm is generated only if the entry count minus the exit count is greater than or equal to the Alarm Threshold. The screen is shown below.



Cross counting: enables or disables cross counting.
Sensitivity: filters minor disturbances; higher sensitivity allows smaller subjects to be detected and can also detect subjects farther away in the scene.
Detected subject: sets the subject type for cross counting. There are 4 modes; changing the mode and saving resets the current count.

Motion: detects all subjects, including people, cars, boxes and other objects.
Pedestrian: identifies only human-shaped subjects.
Motor vehicle: identifies only motor vehicles.
Non-motorised vehicle: identifies only non-motorised vehicles.

Alarm threshold: sets the alarm trigger condition. The camera generates a cross counting alarm when the count updates and the entry count minus the exit count is greater than or equal to the configured value.
Reset count: resets the displayed count.
Detection box: displays detection rule lines.
Rule enable: enables the rule line corresponding to the current number.
Rule type: sets the direction that increments entry and exit counts.
Two types are available: A→B and B→A. For example, with A→B, the entry

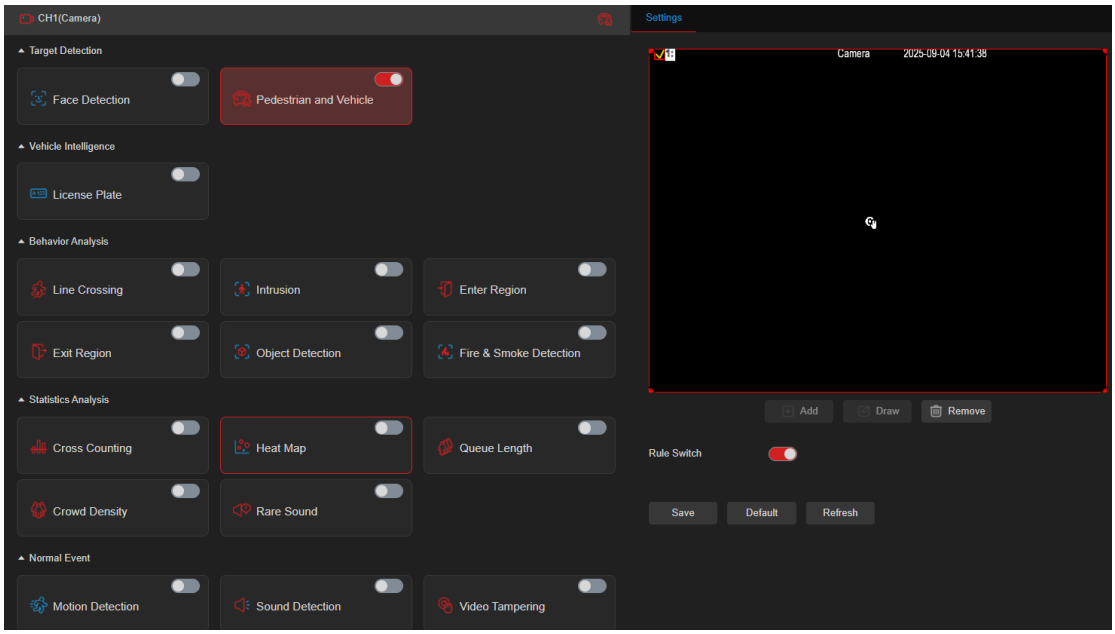
count increases when the subject comes from area A and exits into area B; the exit count increases when the subject comes from area B and exits into area A.
Counting setup area: draw the cross counting rule line in this area.

Add: adds a default detection rule to the setup area.
Draw: manually draws a detection rule in the setup area.

Remove: removes the selected rule line from the setup area.
Count area: displays cross counting statistics. To adjust the display position, refer to section 7.1.

7.14.12 Heat map

Heat map lets you select the entire field of view or specific areas for detecting human activity. Data is saved and uploaded at 10-minute intervals. The heat map report visually shows the distribution of people over time and space, making it easy to assess the activity level in each area of the scene. This function supports data recording only and does not generate alarms.



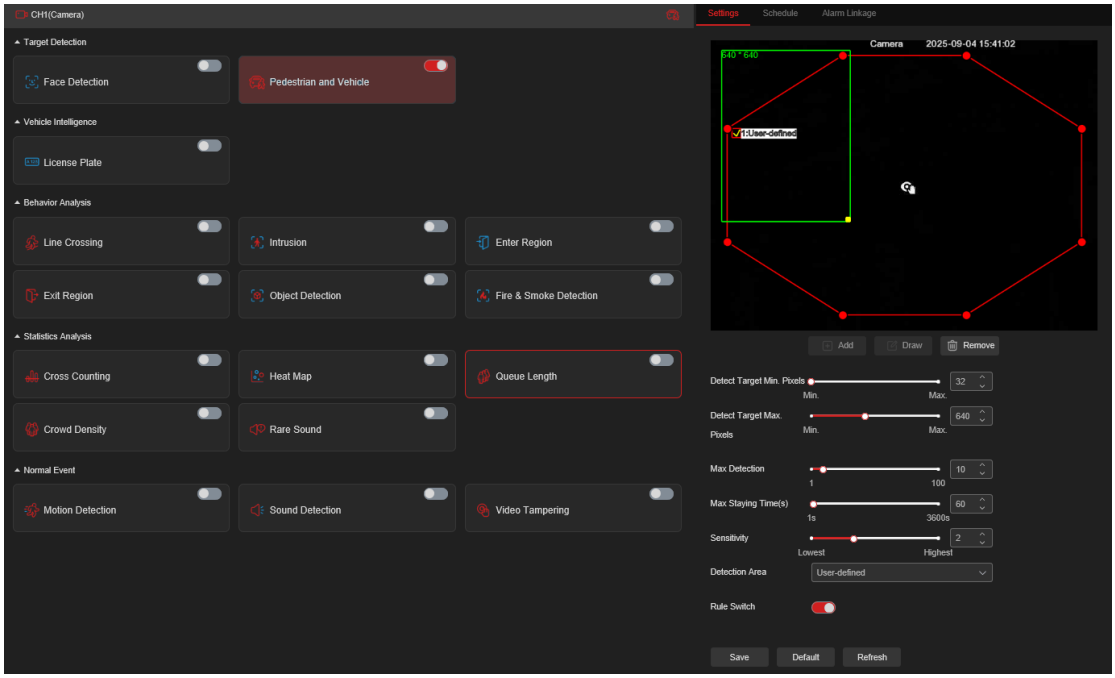
Heat map: enables or disables heat map statistics.
Rule enable: enables the rule corresponding to the current number.
Monitoring area settings: sets the area in which the camera heat map detects activity; the entire area is selected by default.

Add: adds a default detection rule to the setup area.
Draw: manually draws a detection rule in the setup area.

Remove: removes the selected rule from the rule setup area.

7.14.13 Queue length

Queue length detection monitors the number of people queuing in the configured area and their waiting time. It generates an alarm when the queue is too long or the waiting time exceeds the configured limit.



Queue length: enables or disables queue length detection.
Minimum subject size (pixels): using 1080p resolution as a reference, excludes subjects whose heads are smaller than the configured size. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away.

Maximum subject size (pixels): using 1080p resolution as a reference, excludes subjects whose heads are larger than the configured size. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away.

Maximum number: maximum number of heads permitted in the detection area; exceeding it generates an alarm.
Maximum dwell time: maximum time permitted in the detection area. If no one has left the area after this time, an alarm is generated (timing starts when the last person leaves; if no one else has left by the configured time, service is considered delayed and the alarm triggers).

> **Note:** timing restarts only when a subject leaves the detection area; a subject suddenly disappearing within the area is ignored. Timing runs only when a detected subject is present in the area.

Sensitivity: filters minor disturbances; higher sensitivity allows smaller subjects to be detected.

Detection box: displays the detection box and detection rule lines.

Detection area: sets the area analysed by queue length detection. Two modes are available.

Full screen: analyses the camera's entire field of view.

User Defined: the user defines the detection area.

Rule enable: enables the rule corresponding to the current number; displayed when a custom detection area is configured.

Detection area settings: available with a custom detection area; configures areas with 3 to 8 sides.

Add: adds a default detection rule to the setup area.

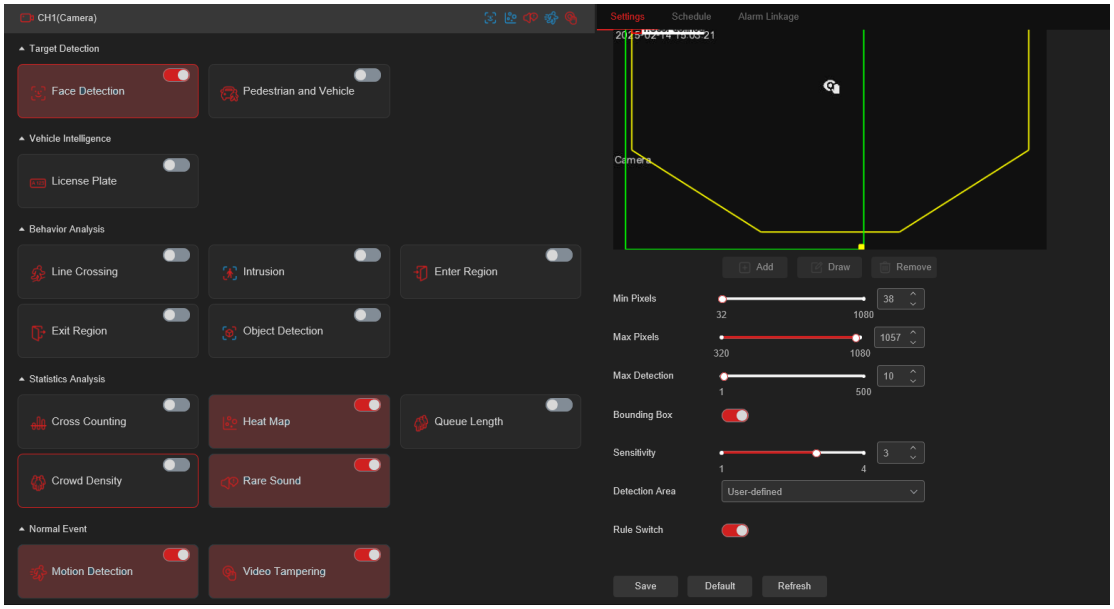
Draw: manually draws a detection rule in the setup area.

Remove: deletes the selected rule from the rule setup area.

Count display area: displays the number of people in the monitored area and the queue waiting time for the current service to finish. To adjust the display position, refer to section 7.1.

7.14.14 Crowd density

Crowd density detection uses head recognition to identify the number of people in the monitored area and generates an alarm when this number exceeds the configured value.



Crowd density: enables crowd density detection.

Minimum subject size (pixels): using 1080p resolution as a reference, excludes subjects whose heads are smaller than the configured size. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. It disappears 5 seconds after moving the pointer away.

Maximum subject size (pixels): using 1080p resolution as a reference, excludes

subjects whose heads are larger than the configured size. Hover over the adjustment bar to show the actual box size in the preview on the right; you can also drag it to resize it. The box disappears 5 seconds after moving the pointer away.
Maximum number: maximum number of heads permitted in the detection area; exceeding it generates an alarm.
Sensitivity: filters minor disturbances; higher sensitivity allows smaller subjects to be detected.
Detection box: displays the detection box and detection rule lines.

Detection area: sets the area analysed by crowd density detection. Two modes are available.

Full screen: analyses the camera's entire field of view.

User Defined: the user defines the detection area.

Rule enable: enables the rule corresponding to the current number; displayed when a custom detection area is configured.
Detection area settings: available with a custom detection area; configures areas with 3 to 8 sides.

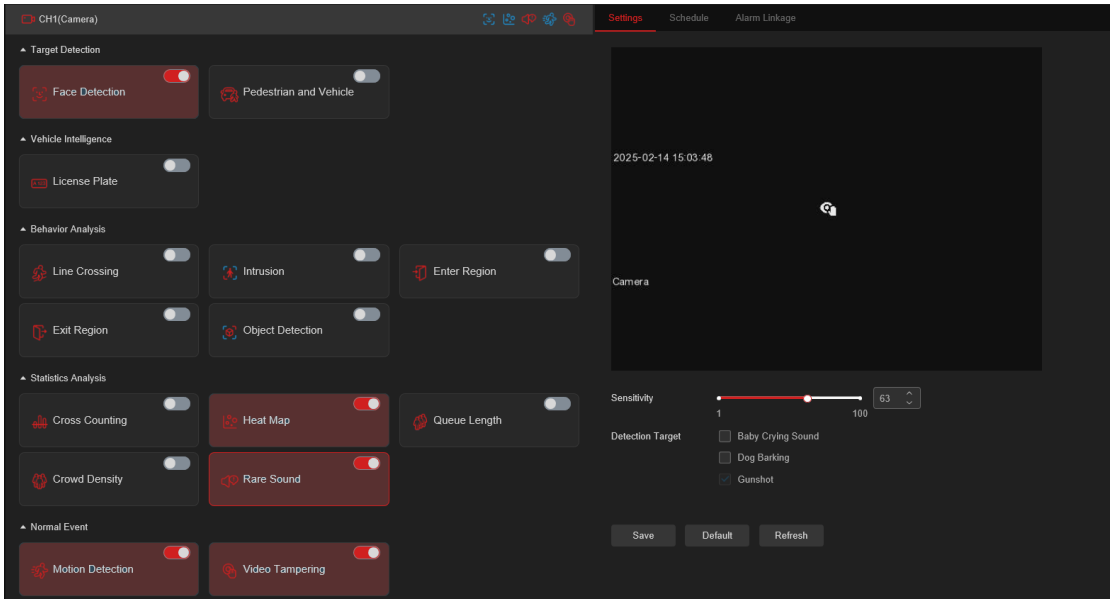
Add: adds a default detection rule to the setup area.

Draw: manually draws a detection rule in the setup area.

Remove: deletes the selected rule from the rule setup area.
Count display area: displays the number of people in the monitored area. To adjust the display position, refer to section 7.1 Display Settings.

7.14.15 Abnormal sound

Abnormal sound detection can be configured for different sound types according to the application, such as a baby crying, gunshots or dogs barking. When the camera detects a configured sound, an alarm is generated.

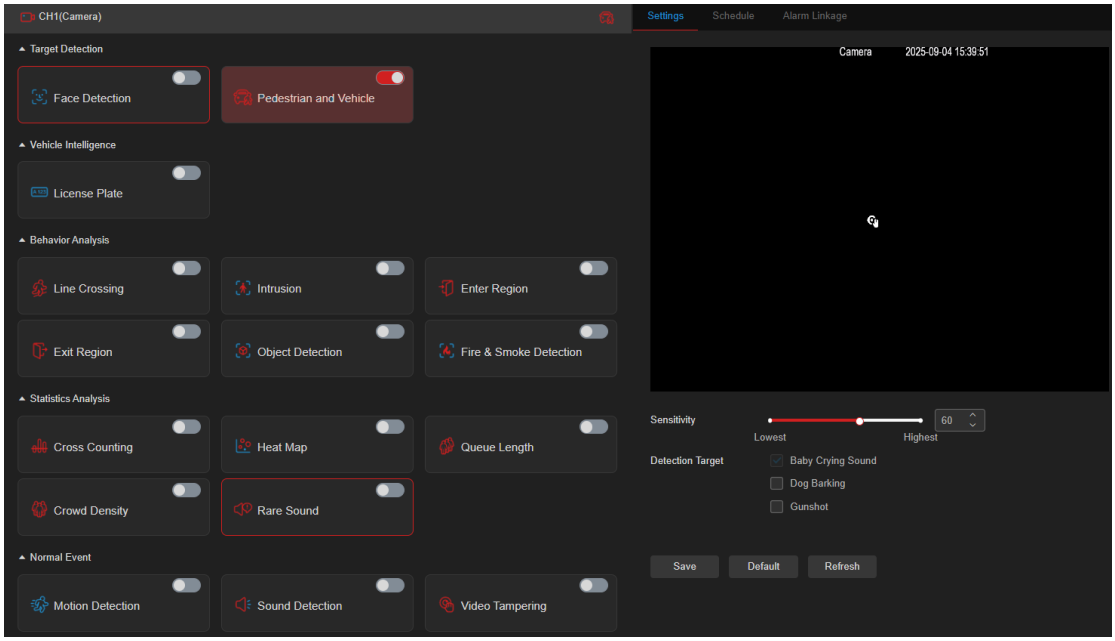


Abnormal sound: enables or disables abnormal sound detection.
Sensitivity: sensitivity, range 1–100.
Detected subject: sound types to detect.

Baby crying: select the checkbox to detect a baby crying.
Dog barking: select the checkbox to detect a dog barking.
Gunshots: select the checkbox to detect the sound of a gunshot.

7.14.16 Motion detection

This page configures motion detection parameters. When the camera detects a moving subject in its field of view, it triggers a series of alarm actions: for example, it sends a warning email to the configured address, including an image from the camera that generated the alarm (if enabled), and a push notification through the mobile app.



Hold down the left mouse button and outline the detection zone in the window on the right. Only movement within this zone triggers the alarm.

Motion detection: enables or disables motion detection.

AI motion: sets the subjects for motion detection.

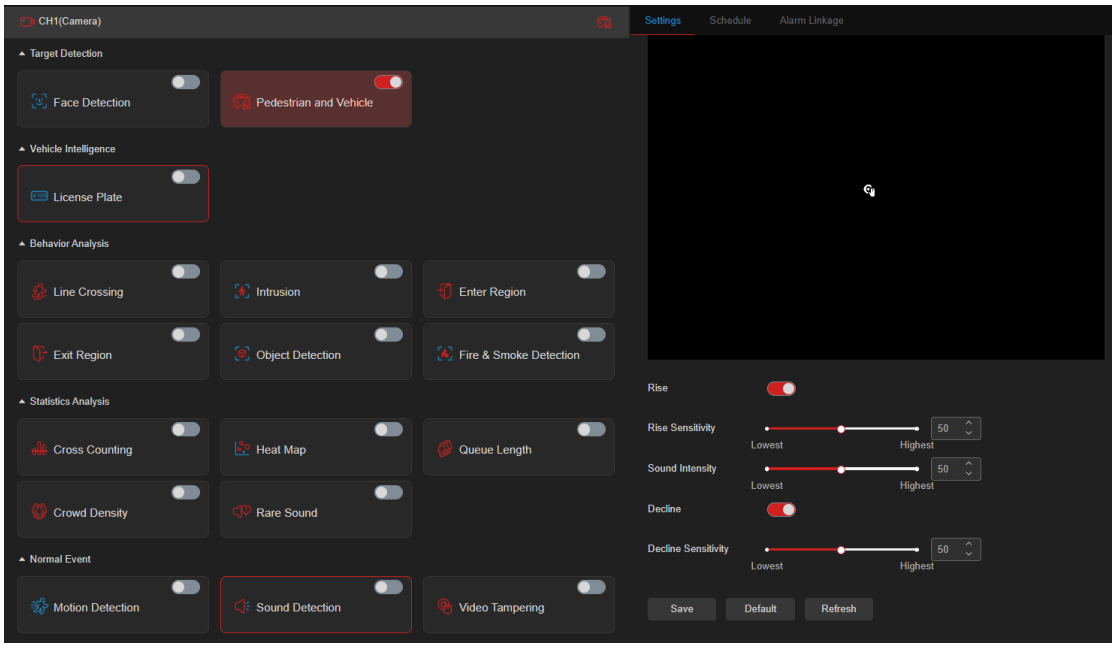
Pedestrian: detects and reports only human-shaped subjects.

Vehicle: detects and reports only vehicle-shaped subjects.

All motion: generates an alarm for any movement in the detection area.

7.14.17 Audio detection

When the camera detects a change in the audio input that meets the configured detection parameters, an alarm is generated.



Audio detection: enables or disables audio detection.

Increase: enables or disables volume increase detection. When enabled, the alarm triggers only for a sudden volume increase.

Increase sensitivity: sensitivity to increasing sound, adjustable from 1 to 100; higher values mean greater sensitivity.

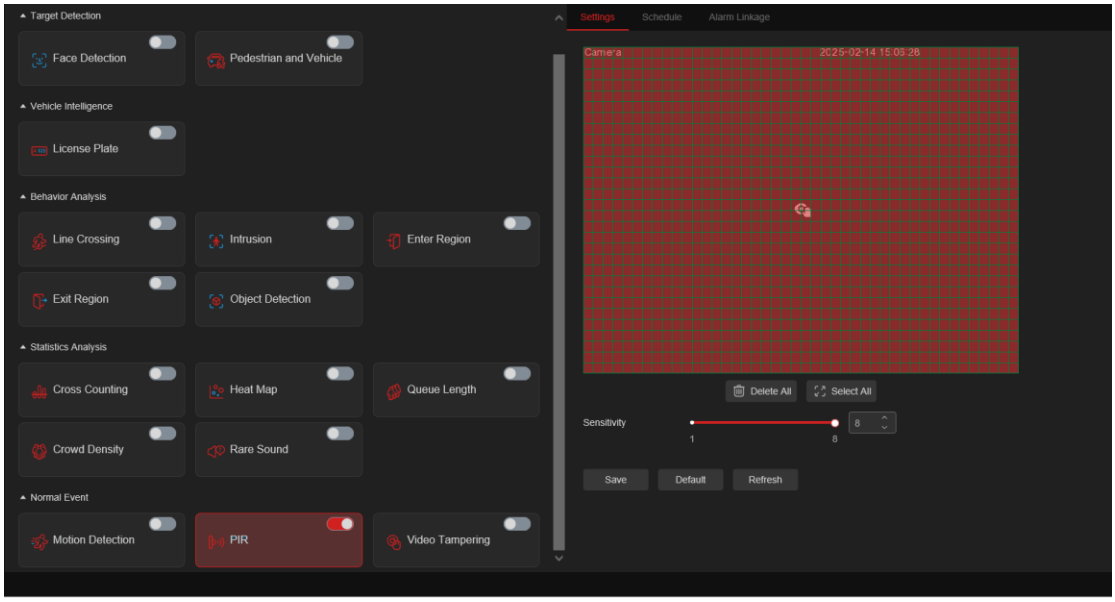
Sound intensity: sets the sound intensity threshold; a higher threshold requires louder sound to trigger the increase alarm (adjustable from 1 to 100).

Decrease: enables or disables volume decrease detection. When enabled, the alarm triggers only for a sudden volume drop.

Decrease sensitivity: sensitivity to decreasing sound, adjustable from 1 to 100; higher values mean greater sensitivity.

7.14.18 PIR

PIR (Passive Infrared) detection senses infrared radiation emitted by the human body or other living beings.



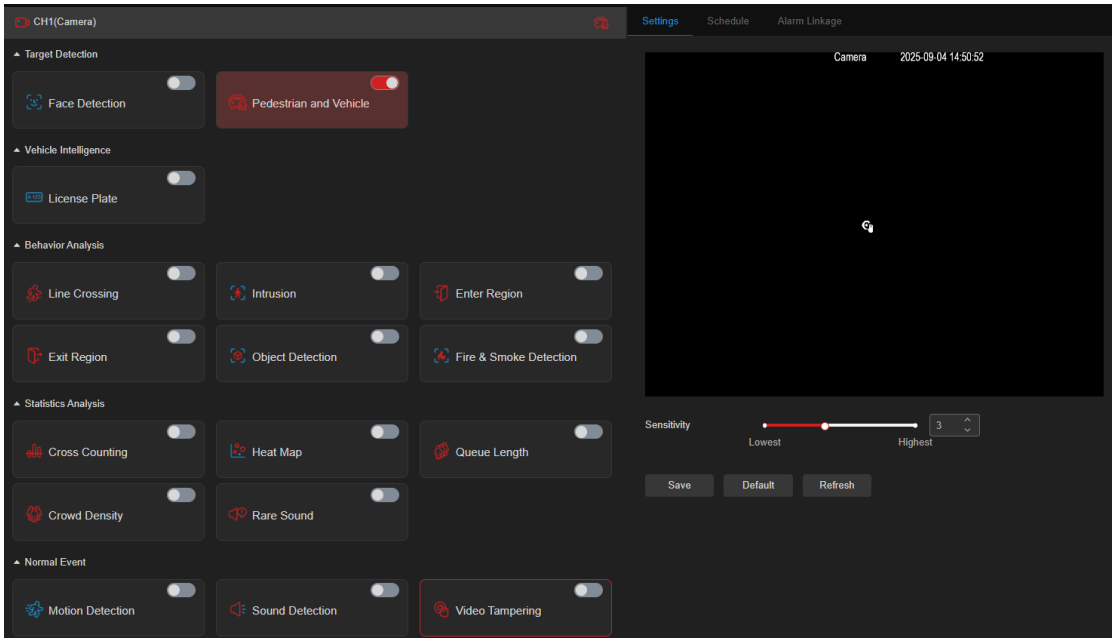
Hold down the left mouse button and outline the detection area in the window on the right. Only movement within this area triggers the alarm.

PIR: enables or disables the PIR sensor.

Sensitivity: sets detection sensitivity; a higher value means greater sensitivity.

7.14.19 Video tampering

Detects image tampering in live view (such as covering the lens) and generates an alarm.

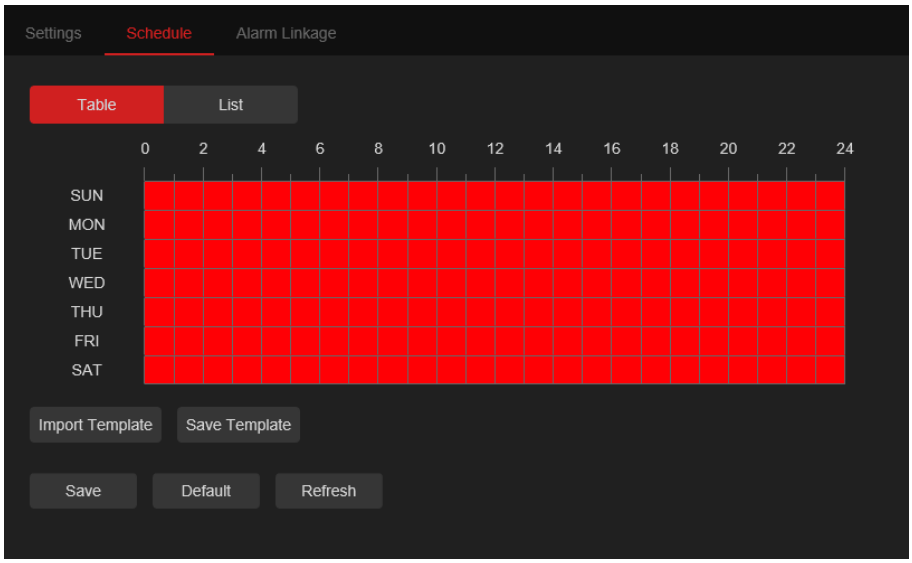


Video tampering: enables camera obstruction detection.

Sensitivity: sets video tampering detection sensitivity; a higher value means greater sensitivity.

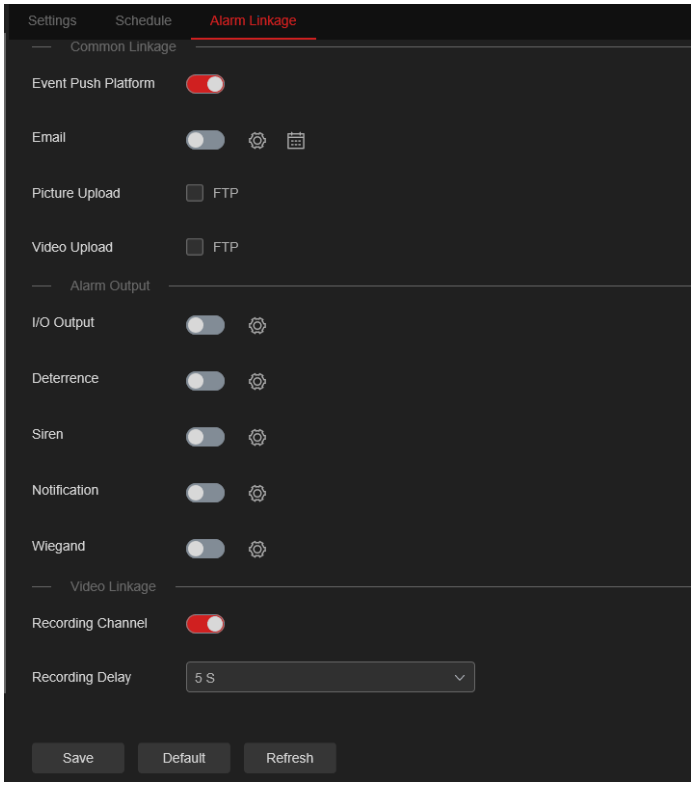
7.14.20 Event schedule

To set when each event is enabled, refer to section 7.7 Schedule Settings.



7.14.21 Alarm action settings

Sets the functions to activate when an event generates an alarm.



Event push platform: sends events to third-party service platforms when an I/O alarm occurs. Selected by default. For detailed settings, refer to section 7.24.2 Event Push Platform.

Email: determines whether the camera sends an email when an event generates an alarm.

Click Settings or Schedule on the right to configure email parameters; see section 7.19 Email Settings.

Image upload: selecting FTP makes the camera send an image to the linked FTP server when an event generates an alarm. Link the FTP server first; refer to section 7.9 FTP Server Settings. Click Settings on the right to select the channel whose alarm images will be uploaded to the FTP server.

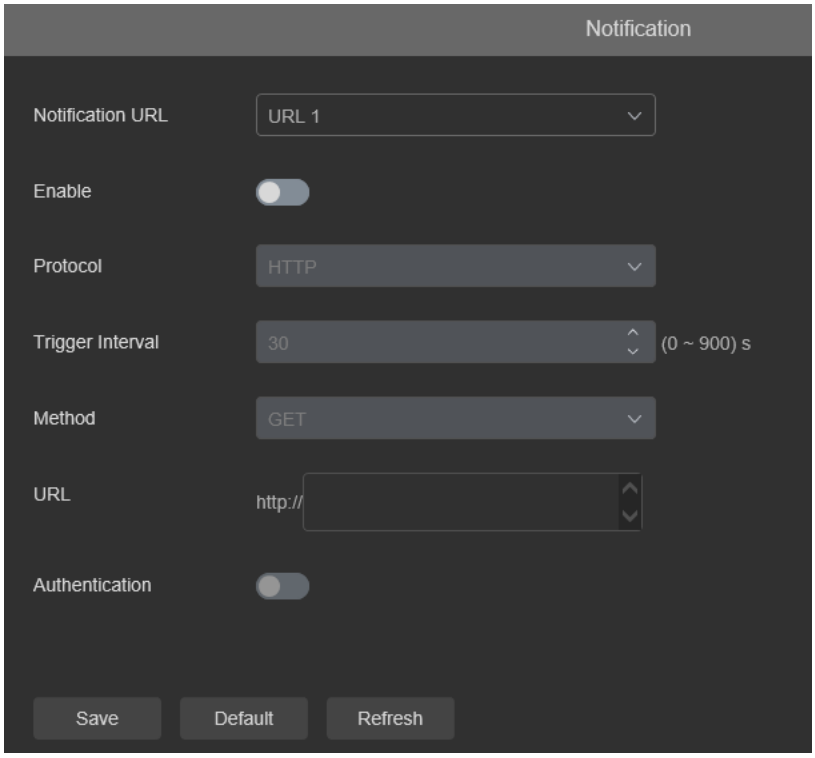
Video upload: selecting FTP makes the camera send video to the linked FTP server when an event generates an alarm. Link the FTP server to the camera first; refer to section 7.9 FTP Server Settings. Click Settings on the right to select the channel to upload to the FTP server.

I/O output: I/O alarm output activated when the camera generates an event alarm. Click Settings on the right to select the I/O alarm output. For output duration and scheduling, refer to section 7.10.2 Alarm Output Settings.

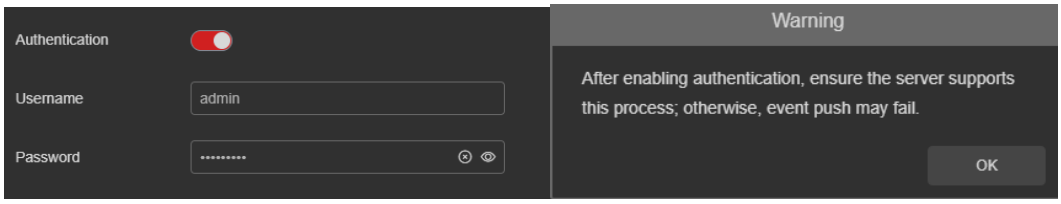
Deterrence: enables light deterrence; when an alarm is triggered, the response follows the white, red and blue light parameters in section 7.11 Deterrence Settings. You can set the parameters directly by clicking Settings on the right.

Siren: enables the siren; when an alarm is triggered, the response follows the parameters in section 7.12 Siren Settings. You can set the parameters directly by clicking Settings on the right.

Notification: custom alarm notifications send device alarm information to several specified servers (the server must already have been integrated and tested with the device). To configure them, click the custom notification settings button  to open the settings page.



Notification URL: server selection; up to three servers are supported, identical or different.
Enable: enables/disables server transmission. When enabled, you can configure server parameters and the device sends alarm information to the server when it generates an alarm. When disabled, the parameters are greyed out and alarm information is not sent (each server has an independent switch).
Protocol: protocol for sending alarm information to the server: HTTP or HTTPS.
Send interval: interval between transmissions, from 0 s to 900 s. The device sends alarm information at the configured interval. For example, if a person moves in front of the camera for a long time, motion detection triggers repeatedly. With a 30-second interval, after sending an alarm the device sends no further alarm for the next 30 seconds, even if the event repeats. If the subject is still present after 30 seconds, a second alarm is sent.
Method: transmission method; POST and GET are supported (only POST supports sending images).
URL: server address; enter the service address and port number according to the selected protocol, in the format "Address:Port/String" (you can freely choose the server and the string to configure, for example: 192.168.1.100:1133/Notification...).



Authentication: enabling the switch displays an authentication message. If the server requires authentication, enable this

switch for custom alarm notifications to work correctly.
Username: username for server authentication.
Password: password for server authentication.
Default: clicking this button restores all default notification settings.

Wiegand: enables Wiegand transmission; when a licence plate is recognised, the information is sent to the control system or data centre through the Wiegand interface (available on some models).
Recording channel: enables linked recording; click Settings on the right to select the channel. When the alarm triggers, the selected channel records the corresponding alarm type.
Recording delay: how long the camera continues recording after the alarm ends.

7.15 List management

7.15.1 Face recognition

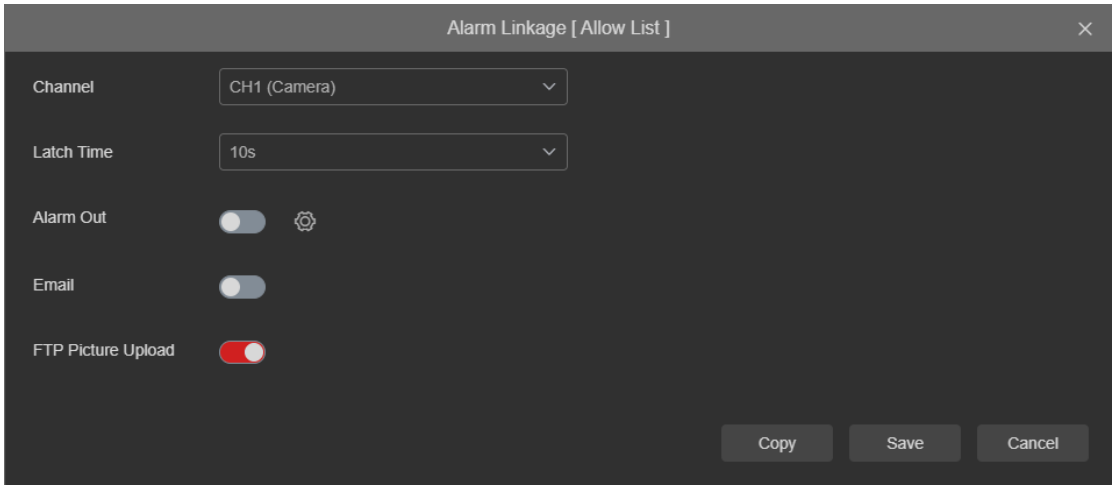
Face recognition identifies the detected subject and requires a reference database for comparison. Database management creates the reference database for comparing faces.

Note: database changes take full effect after a brief system reload.



Alarm policy display: on the camera, this only serves as a policy reminder: green indicates the allowed list (white list), red the blocked list (black list), and no colour the unknown group.
Group name: changes the group name, which appears in the alarm notification.

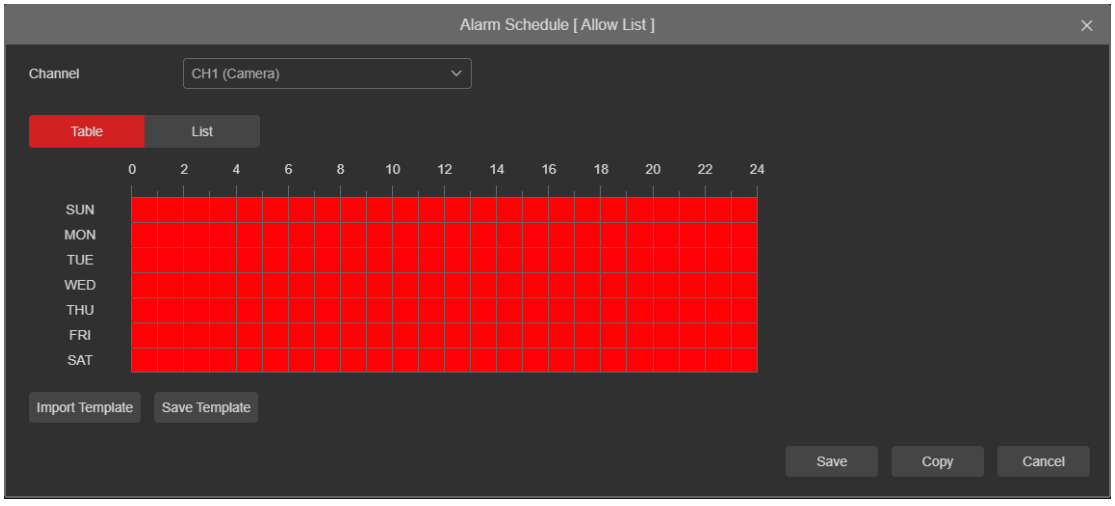
Delete: deletes the group; the first 3 groups cannot be deleted.
Edit: opens reference image management for the group; see the following figure for details.
Enable: face recognition uses the group data for comparison.
Alarm: master enable switch for alarm response.
Policy: alarm policy; the first 3 groups cannot be edited. Other groups can be set to Allow or Deny.
Similarity: during face comparison, an alarm is generated when similarity exceeds the configured value.
Alarm actions: group alarm settings.



Activation time: how long the I/O alarm output remains active when the camera captures an image and finds a match.
Note: the camera must support I/O output; its operating period is controlled by the corresponding schedule.
Alarm output: enable switch.
Email: enables email transmission when a face in the group is successfully recognised.

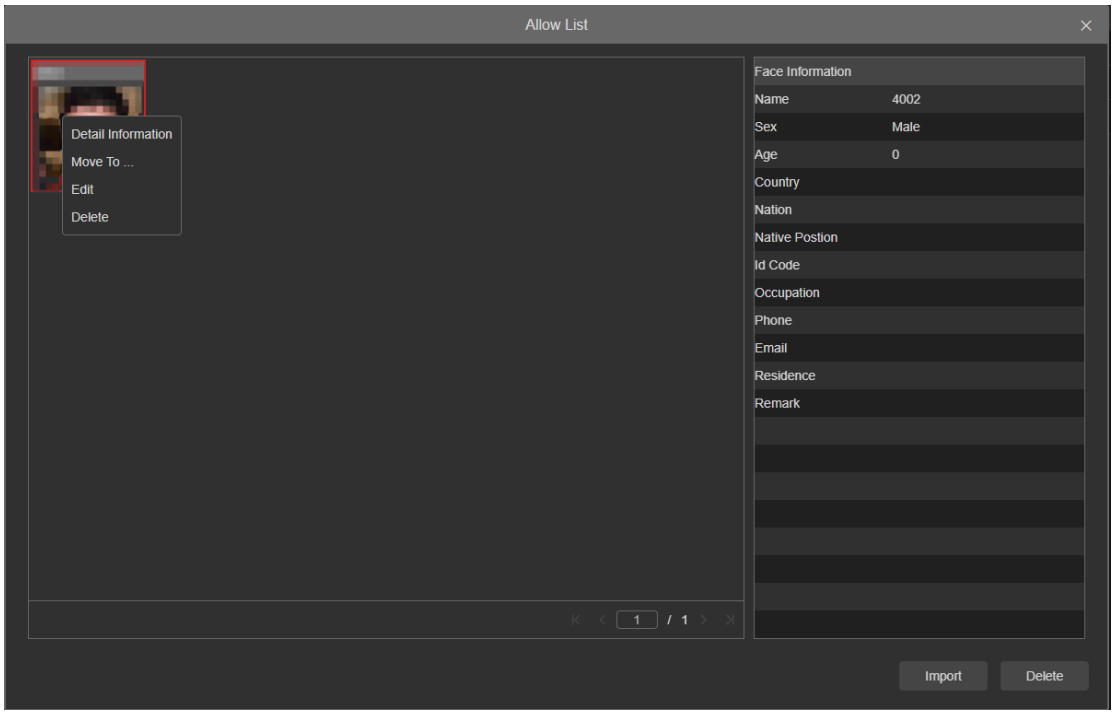
FTP image upload: enables image transmission to the linked FTP server when a face in the group is successfully recognised.
Note: the operating period is also schedule-controlled; link an FTP server first.

Alarm schedule: sets when Alarm Output, Email and FTP Image Upload are enabled for the group alarm; refer to section 7.7 Schedule Settings.



Add group: adds a new group to the database; up to 16 groups are supported.

Click **Edit** to configure reference data for the corresponding group. The screen is shown below.



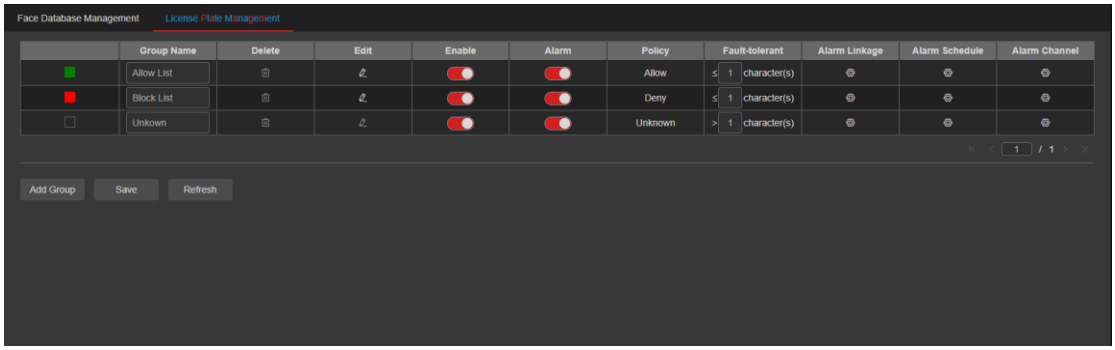
Added images area: displays face database images already added to the group.
Info: displays information about the currently selected image.
Details: displays detailed information about the selected image from the right-click menu.

Move to...: moves the selected image to another group from the right-click menu.

Edit: opens the selected image's editing screen from the right-click menu to change its information.
Delete: deletes the selected image from the right-click menu.
Import: adds new face data to the current group by importing local images or images already captured by the camera.
Delete: deletes multiple face records from the database. Click the command, select the images to delete, then click Delete again.

7.15.2 Licence plate recognition

Licence plate recognition identifies the detected subject and requires a reference database for comparison. Database management creates the reference database for comparing licence plates.
Note: database changes take full effect after a brief system reload.

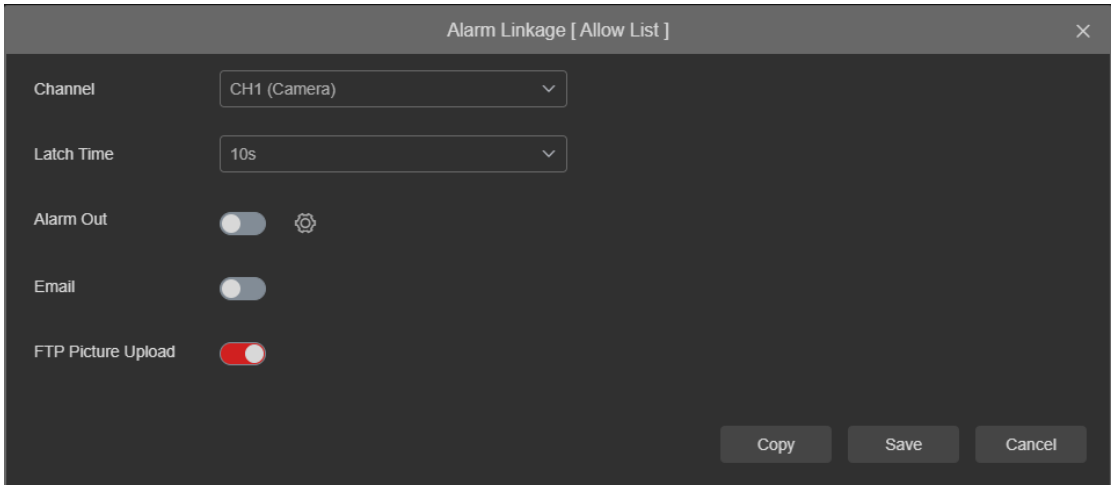


Alarm policy display: on the camera, this only serves as a policy reminder: green indicates the allowed list (white list), red the blocked list (black list), and no colour the unknown plate list.
Group name: changes the group name, which appears in the alarm notification.

Delete: deletes the group; the first 3 groups cannot be deleted.
Edit: opens group reference data management; see the following figure for details.

Enable: licence plate recognition uses the group data for comparison.
Alarm: master enable switch for alarm response.
Policy: alarm policy; the first 3 groups cannot be edited. Other groups can be set to Allow or Deny.
Error tolerance: number of mismatching characters permitted between the detected plate and configured plate; a lower value produces closer matches.
Note: to search for a plate when you know only a few characters, set tolerance to its maximum. Many unrelated plates will also be found, but results are sorted by similarity, with the closest matches first, making the required plate easier to find.

Alarm actions: group alarm settings.

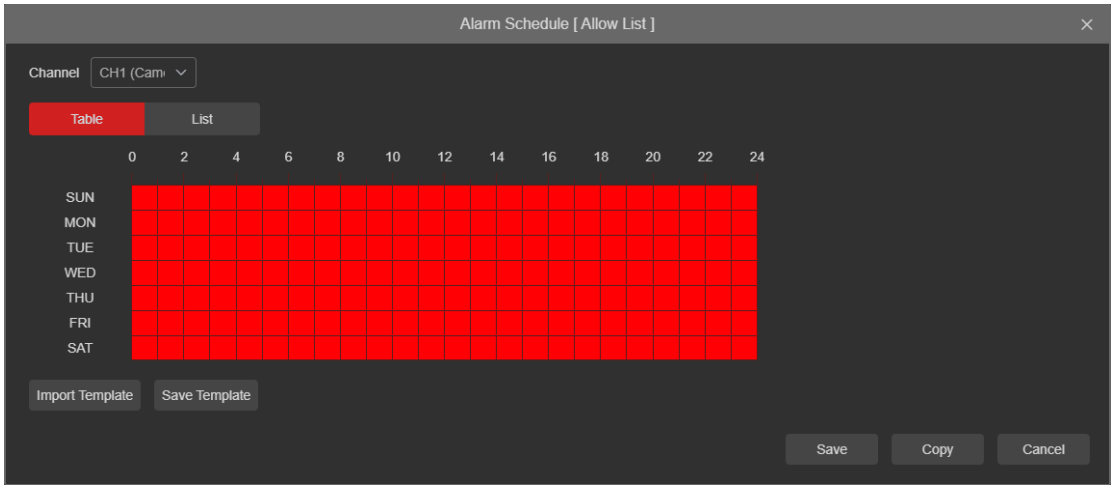


Activation time: how long the I/O alarm output remains active when the camera captures an image and finds a match.
Note: the camera must support I/O output; its operating period is controlled by the corresponding schedule.

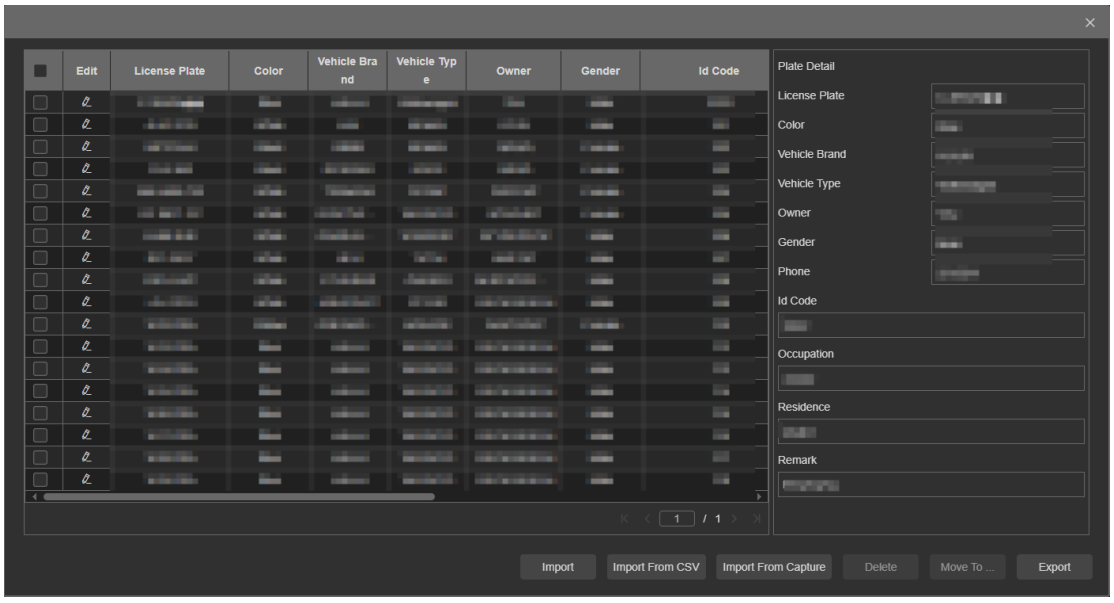
Alarm output: enable switch.
Email: enables email transmission when a face in the group is successfully recognised.

FTP image upload: enables image transmission to the linked FTP server when a face in the group is successfully recognised.
Note: the operating period is also schedule-controlled; link an FTP server first.

Alarm schedule: sets when Alarm Output, Email and FTP Image Upload are enabled for the group alarm; refer to section 7.7 Schedule Settings.



Click **Edit** to configure reference data for the corresponding group. The screen is shown below.



Licence plate information can be added in three ways: Import, Import from CSV and Import from Local Captures. If 5000 records are exceeded, the message "The number of added records has reached the group limit" appears.
1) Click **Import** to add a single plate manually.
2) Click **Import from CSV** to import one or more records from a CSV file,

in the format shown below.



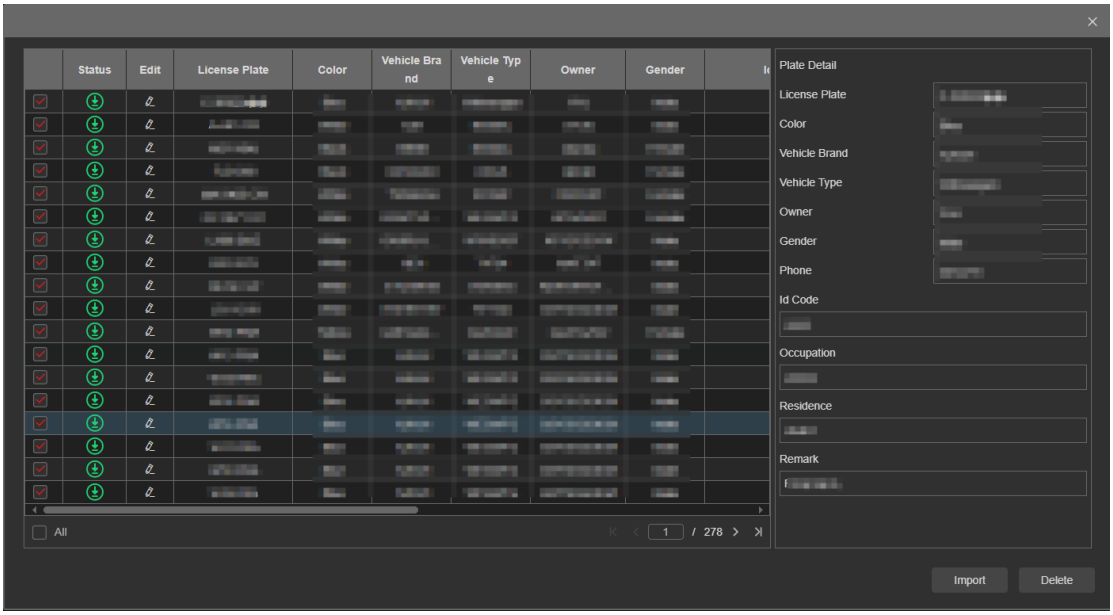
License Plate	Color	Car Brand	Car Type	Owner	Sex	Id Code	Phone	Occupation	Residence	Remark

Select the plate CSV file to import and click Import to add them to the group; use Delete to remove unwanted plates.

3) Click **Import from Captures** to import locally captured licence plate information into the database.

Select Date, Duration and Alarm Group and click **Search** to find all plates saved by all devices during the specified period.

All: selects all licence plate information.



Click a record to edit its plate information; when finished, click **Save.** If the change succeeds, the icon becomes.

4) Select the checkboxes for the required plates and click **Delete** to delete them.

5) **Move to...:** select the checkboxes for the required plates and click the button to move them to another group.

6) Click **Export** to export and save information for the entire group.

Enable: licence plate recognition uses the group data for comparison.

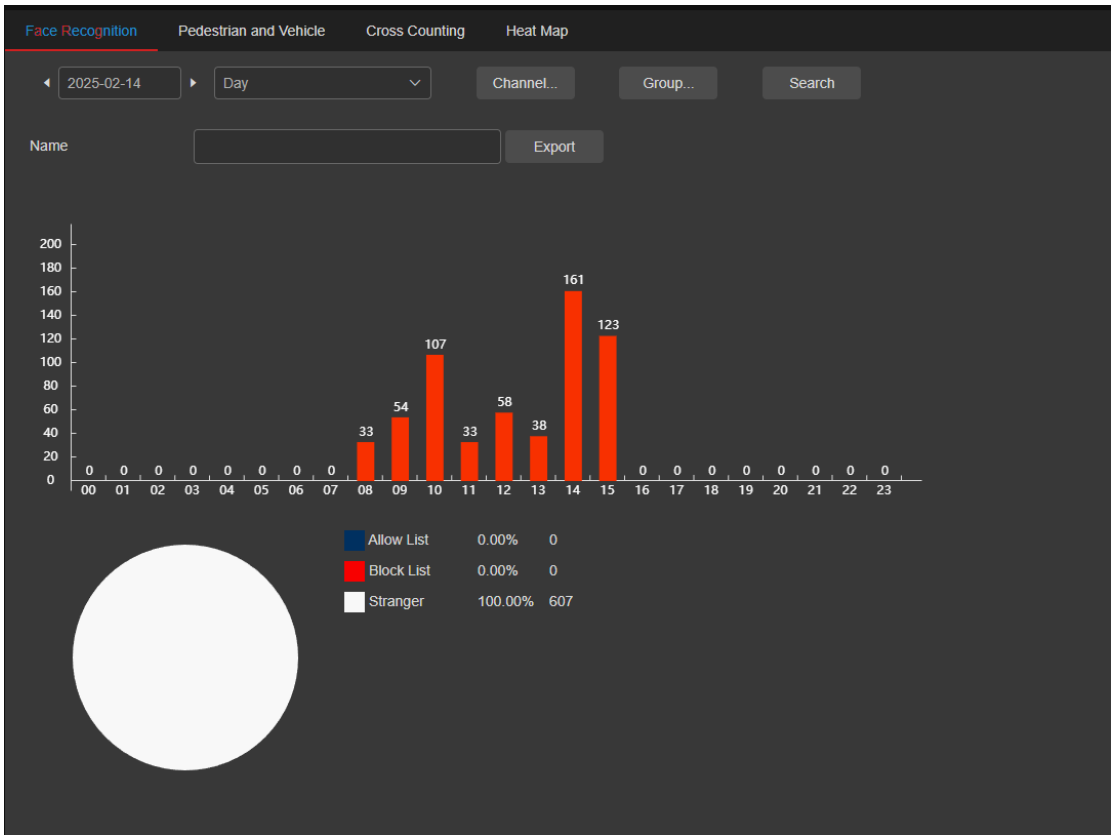
Add group: adds a new group to the database; up to 16 groups are supported.

7.16 Statistics

Statistical analysis of AI data.

7.16.1 Face recognition

Face capture statistics search and count face data saved on the SD card according to the search parameters. The screen is shown below.



Date: reference date for the search mode.
Search mode: supports 5 time ranges: day, week, month, quarter and year.

Group: group to include in the statistics search.
Search: searches again using the current search parameters.
Export: enter an export filename to export the current search data to an Excel file.

Display area: shows current search results as a bar chart and pie chart.

7.16.2 Pedestrians and vehicles

Pedestrian and vehicle statistics, including alarms from Pedestrians and Vehicles, Cross Counting, Intrusion, Region Entrance, Region Exiting, etc. The screen is shown below.



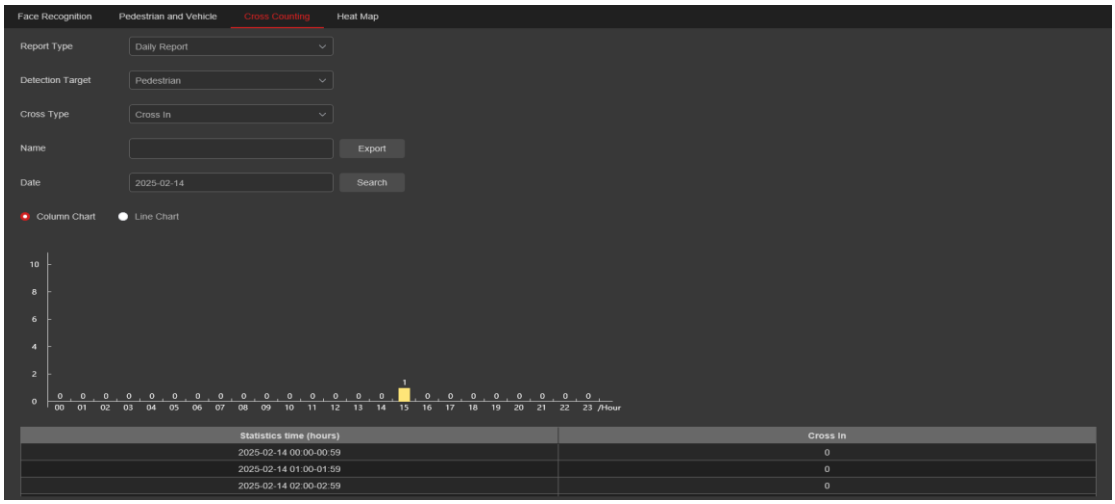
Date: reference date for the search mode.
Search mode: supports 5 time ranges: day, week, month, quarter and year.

Smart: searches by the classification assigned at capture: Pedestrian, Motor Vehicle, Non-motorised Vehicle, Line Crossing [Pedestrian], Line Crossing [Motor Vehicle], Line Crossing [Non-motorised Vehicle], Intrusion [Pedestrian], Intrusion [Motor Vehicle], Intrusion [Non-motorised Vehicle], Region Entrance [Pedestrian], Region Entrance [Motor Vehicle], Region Entrance [Non-motorised Vehicle], Region Exiting [Pedestrian], Region Exiting [Motor Vehicle], Region Exiting [Non-motorised Vehicle], for a total of 18 type groups.
Search: searches again using the current search parameters.
Export: enter an export filename to export the current search data to an Excel file.

Display area: shows current search results as a chart.

7.16.3 Cross counting

This function searches and counts line crossing data. The screen is shown below.



Report type: supports 4 time ranges: daily, **weekly, monthly** and **annual** reports.

Detected subject: sets the subject type for the data search. For example, data generated by Motion cannot be searched using other types. Three types are available: Motion, Person and Vehicle, corresponding to the function settings.
Direction: searches data by crossing direction. Two types are available: In and Out.

Export: enter an export filename to export the current search data to an Excel file.

System time: reference date for the current report type.
Mode: selects a histogram or line chart for the display area.

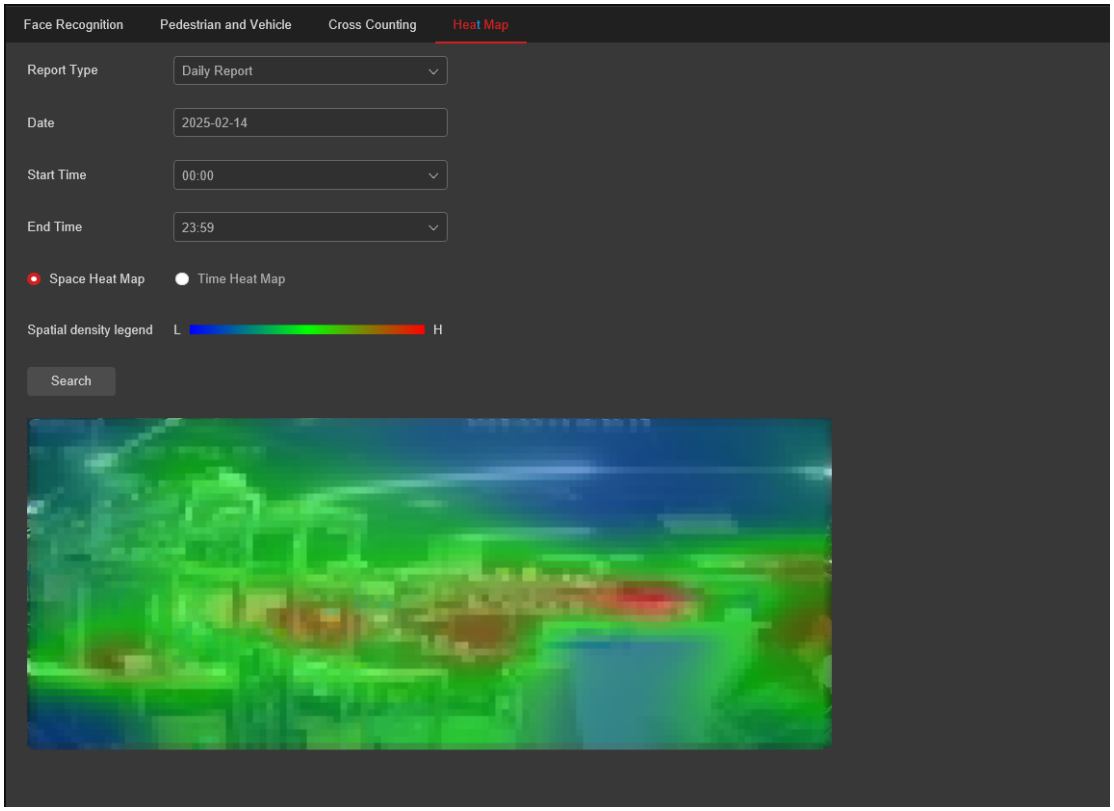
Display area: shows current search results as a chart.
Search: searches data using the current settings.

7.16.4 Heat map

The heat map report displays the distribution of people in two dimensions: **time** or **space.**

Spatial heat map: shows human activity levels in different parts of the image. Red indicates denser, more frequently visited areas; blue indicates less frequently visited areas.
Temporal heat map: shows human activity in the field of view at different times. The vertical axis is an index calculated from the number of people, dwell time and other factors: a higher value means more activity. It does not represent the number of people.

The camera must have a working SD card on which heat map data is stored. The screen is shown in the figure.

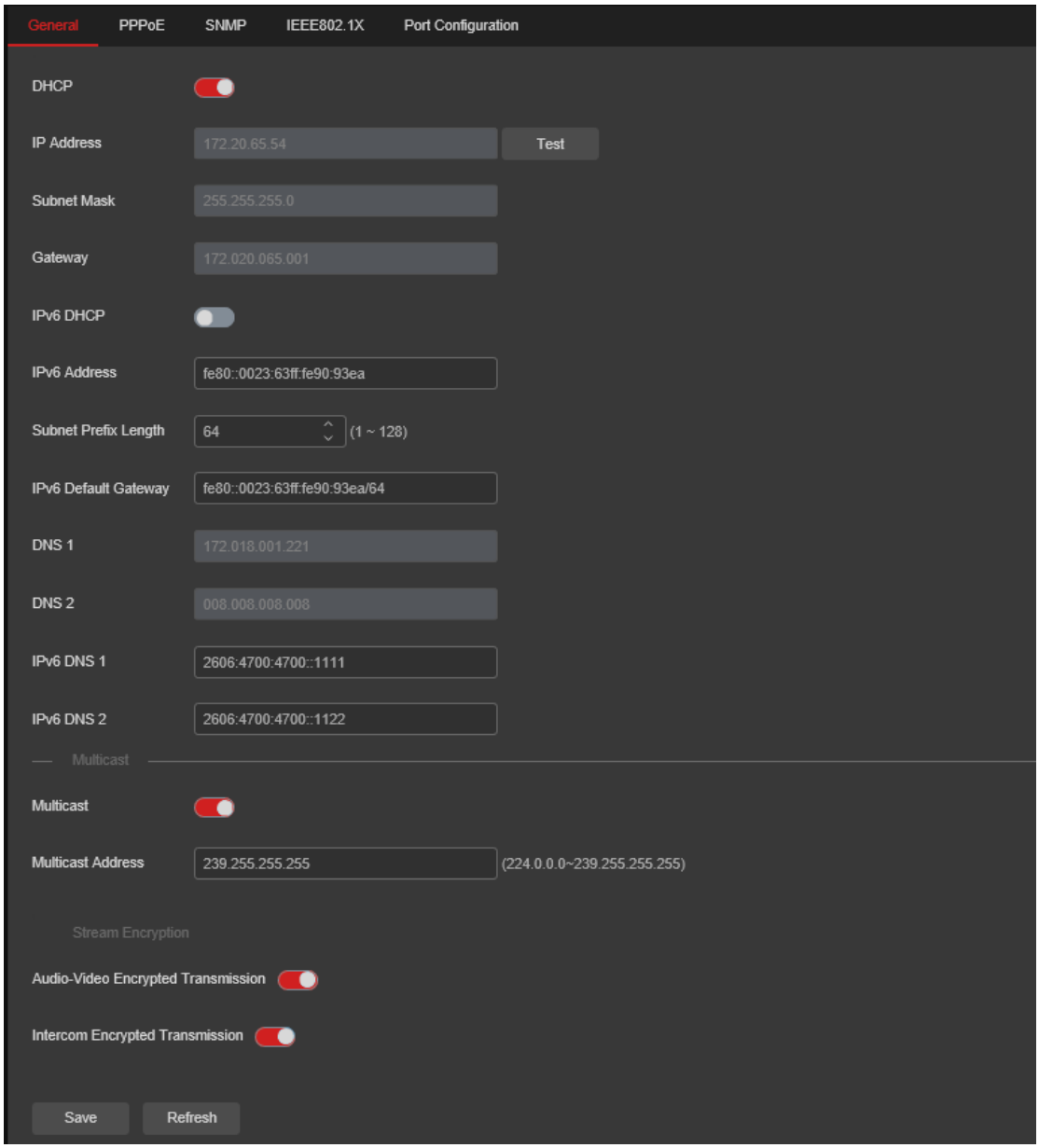


Report type: supports 4 time ranges: daily, weekly, monthly and annual reports.

Date: reference date for the data search.
Start time: displayed only for daily reports; sets the search start time.
End time: displayed only for daily reports; sets the search end time.
Mode: selects chart or table display.
Display area: shows activity trends in the monitored area as a chart or, for different time periods, as a table.
Search: searches data using the current settings.

7.17 Network settings

7.17.1 General settings



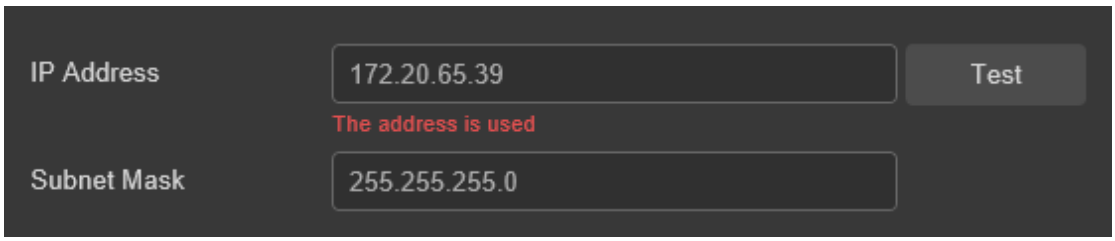
If the device is connected to a DHCP-enabled router, select the DHCP checkbox:
the router will automatically assign all network parameters. Otherwise,
set the following parameters manually. **IP address:** identifies the camera on the network. It consists of four numbers from 0 to 255 separated by dots, for example "192.168.001.100". **Subnet mask:** defines the range of IP addresses usable on the network. If an IP address is like the street where you live, the subnet mask is the neighbourhood. It also consists of four numbers separated by dots, for example

"255.255.000.000".
Gateway: address allowing the camera to access the network. It uses the same format as the IP address, for example "192.168.001.001". **IPv6 address:** the IPv6 address identifies the camera on the network. It consists of eight hexadecimal numbers from 0 to FFFF separated by colons, for example

"ABCD:EF01:2345:6789:ABCD:EF01:2345:6789". **DNS1/DNS2:** DNS1 is the primary DNS server; DNS2 is the secondary DNS server. Normally, entering the DNS1 server address is sufficient. **Main Stream:** when enabled, the main stream can be used for multicast. **Multicast address:** specifies a multicast address. A third-party player can request a multicast media stream from the camera through RTSP. **Encrypted video transmission:** enables encrypted audio and video transmission. The camera can report duplicate IP addresses in the same

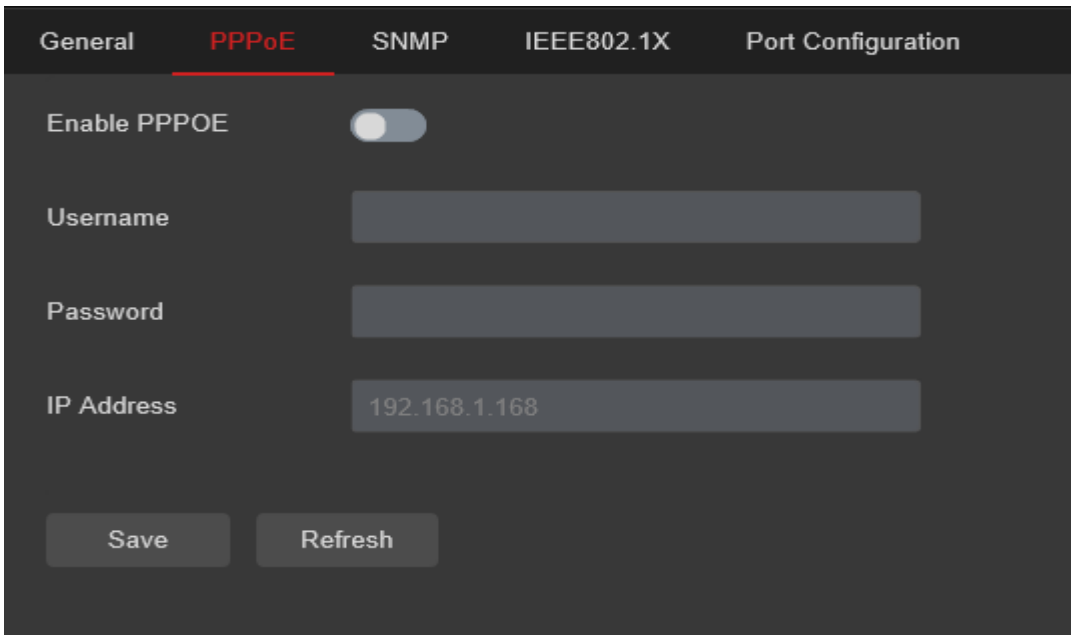
network segment: if the IP address is already in use, clicking the button 

will display the following message.



7.17.2 PPPoE

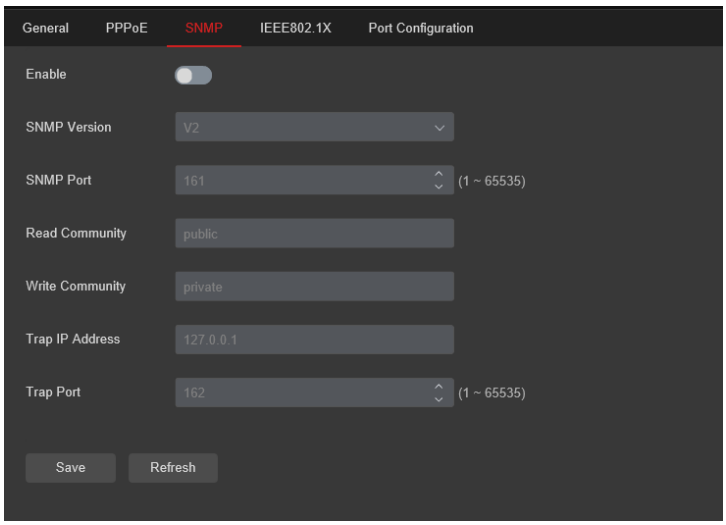
The device supports network connections through PPPoE.



Select "Enable PPPoE" and enter the PPPoE username and password.
Click "Save": the system restarts to activate the PPPoE settings.

7.17.3 SNMP

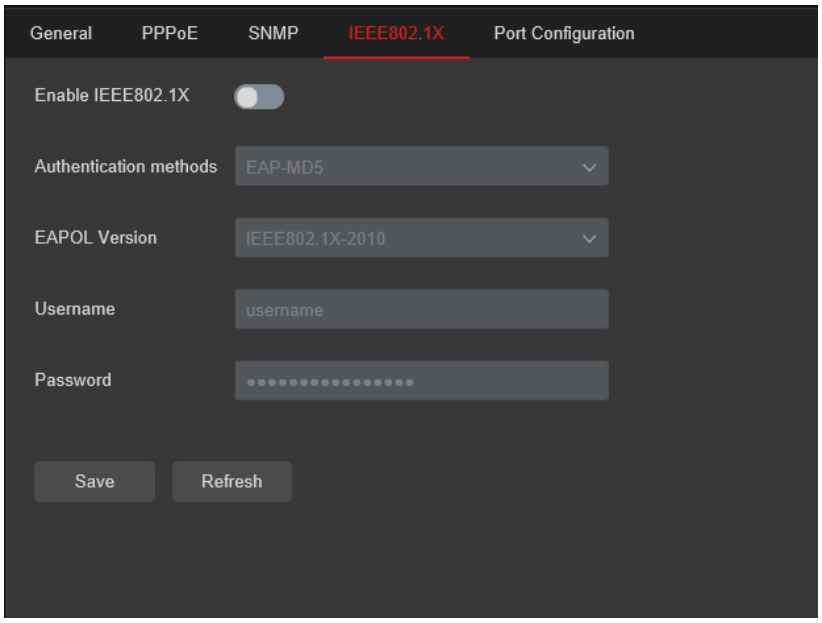
When enabled, SNMP (Simple Network Management Protocol) allows devices to be monitored remotely over the network.



Enable: enables or disables SNMP.
SNMP version: sets the SNMP server version: V1, V2 and V3 are available.
SNMP port: sets the SNMP server port.
Read Community: sets the SNMP server Read Community value.
Write Community: sets the SNMP server Write Community value.
Trap IP address: sets the SNMP server Trap IP address.
Trap port: sets the SNMP server Trap port.

7.17.4 IEEE802.1X

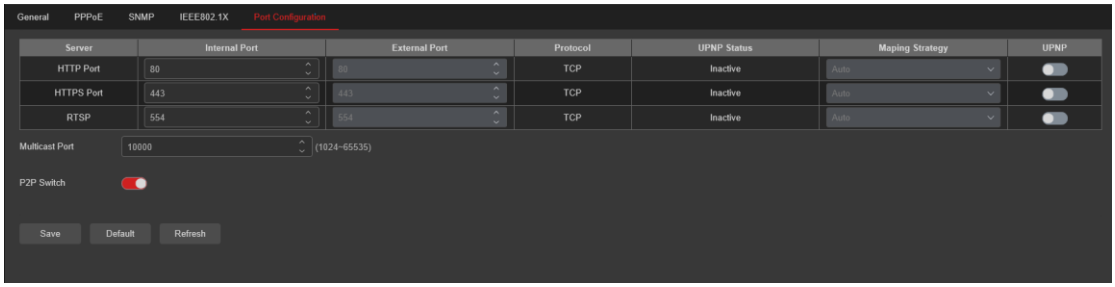
IEEE 802.1X is a port-based network access control protocol, mainly used on local networks to improve security by verifying user identities and controlling port-level access permissions. Devices connected to switch ports can access local network resources only after successful authentication; otherwise, access is denied.



Enable IEEE802.1X: enables or disables IEEE802.1X.
Authentication method: sets the IEEE802.1X authentication method.

Username: sets the username for IEEE802.1X authentication.
Password: sets the password for IEEE802.1X authentication.

7.17.5 Port settings



HTTP port: port used for Web access to the device through HTTP; default 80.

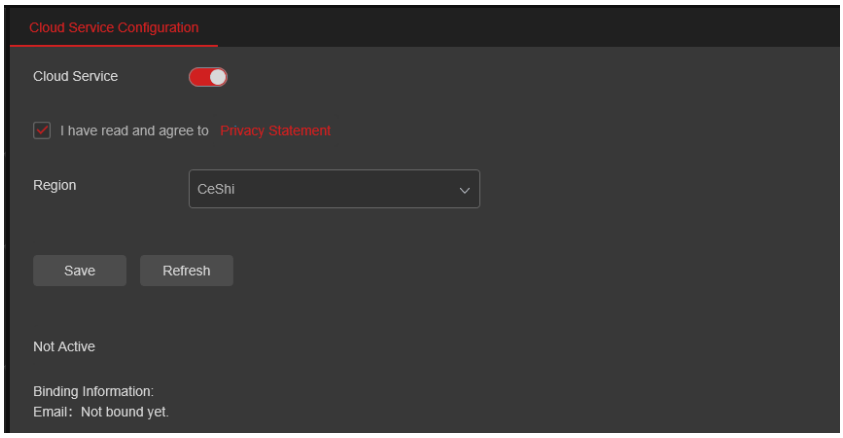
HTTPS port: port used for Web access to the device through HTTPS; default 443.

RTSP port: port used to access the device through RTSP; default 554.

UPnP: remote access through the Web client requires port forwarding on the router. If the router supports UPnP, enable this option to avoid configuring port forwarding manually. If the router does not support UPnP, configure port forwarding manually on the router.
Multicast port: sets the multicast port.
P2P enable: when disabled, P2P is inactive.

7.18 Cloud service configuration (currently unavailable)

Enable Cloud service and set the region to generate a dynamic QR code. Scan it with **Elkron View** to add the device to the app for management.



Cloud service: enables/disables Cloud service.
Privacy statement: read and accept the privacy statement to enable Cloud service.

Region: selects the Cloud service region (must match the registration region in Elkron View).
QR code: after enabling Cloud service and setting the region, a dynamic QR code is generated automatically (valid for 300 s; once expired, a new one must be generated). Scan it with Elkron View to add the camera to the app.

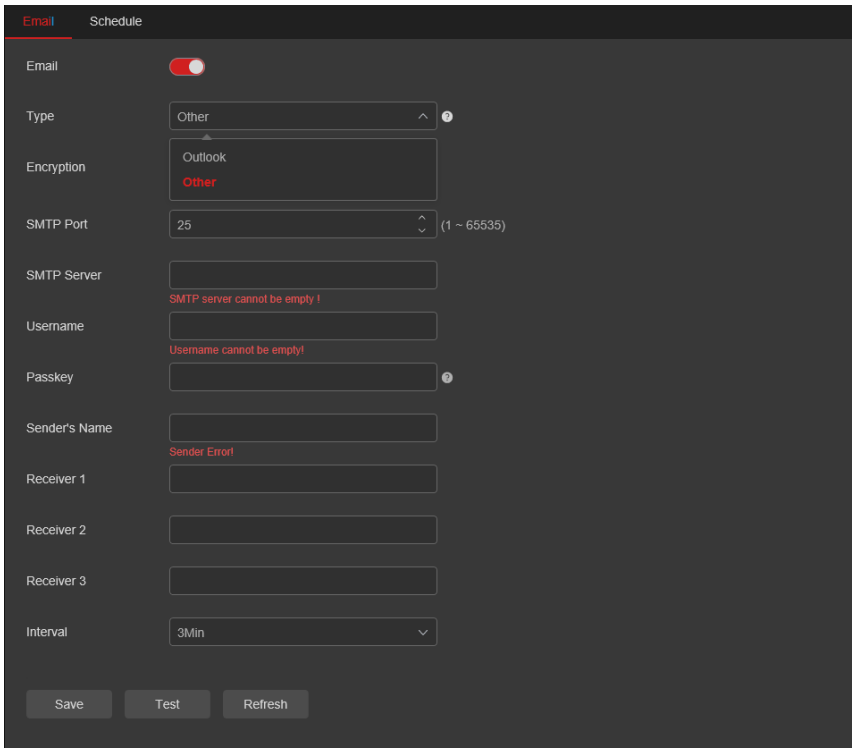
Unbind: click "Unbind" to unlink the camera from the Elkron View account; the device then appears offline and cannot be accessed through the app.

Note: Cloud service requires communication with the cloud server. Ensure the device is connected to the Internet.

7.19 Email settings

7.19.1 Parameter settings

This menu configures the email settings required to receive system notifications for alarms or a full disk.

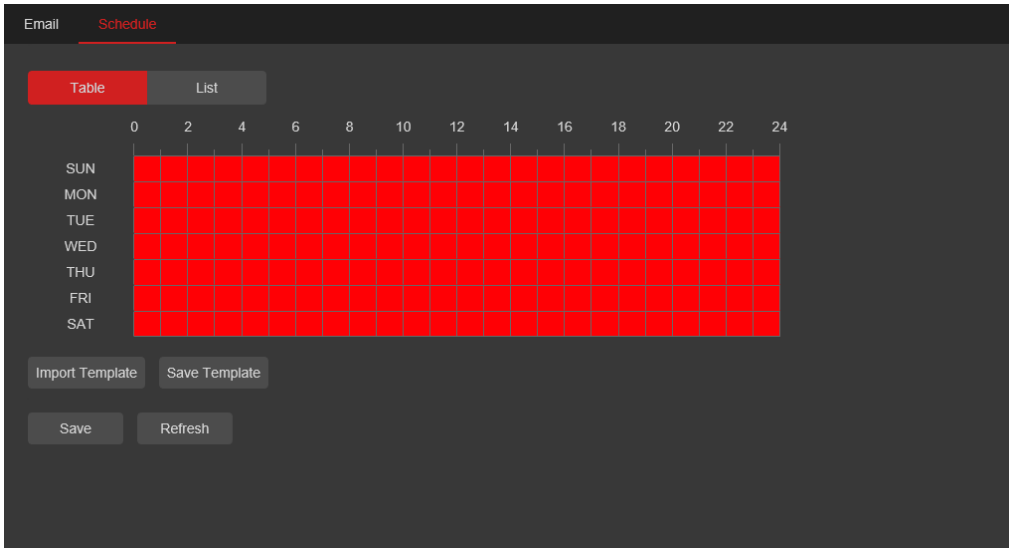


Email: select to enable.
Type: mailbox type: Outlook or Other.
Encryption: enable if the mail server requires SSL or TLS authentication. If unsure, select "Auto".
SMTP port: enter the mail server SMTP port.
SMTP server: enter the mail server SMTP address.
Username: enter the sender's email address.
Password: enter the email account password.
Recipient 1~3: enter email addresses to receive camera event

notifications.
Interval: sets the time between camera notification emails.
To check the settings, click **"Test Email"** to send an email to the mailbox. If it is received, the configuration parameters are correct.

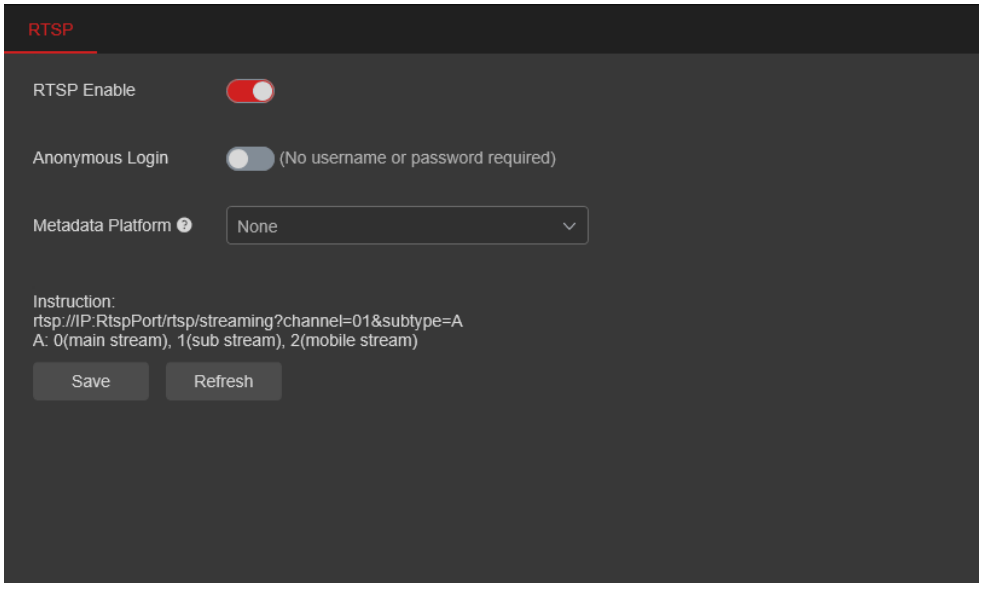
7.19.2 Schedule settings

Sets the email function schedule; email is enabled only during the scheduled time slots. Refer to section 7.7 Schedule Settings.



7.20 RTSP protocol settings

RTSP (Real Time Streaming Protocol): a real-time streaming protocol; RTSP parameters control data stream transmission.



Enable RTSP: select to enable and use the protocol.

Anonymous access: when enabled, the protocol can be used without authentication.
Metadata platform: controls transmission of event alarm data to a third-party monitoring platform connected to the device through ONVIF.

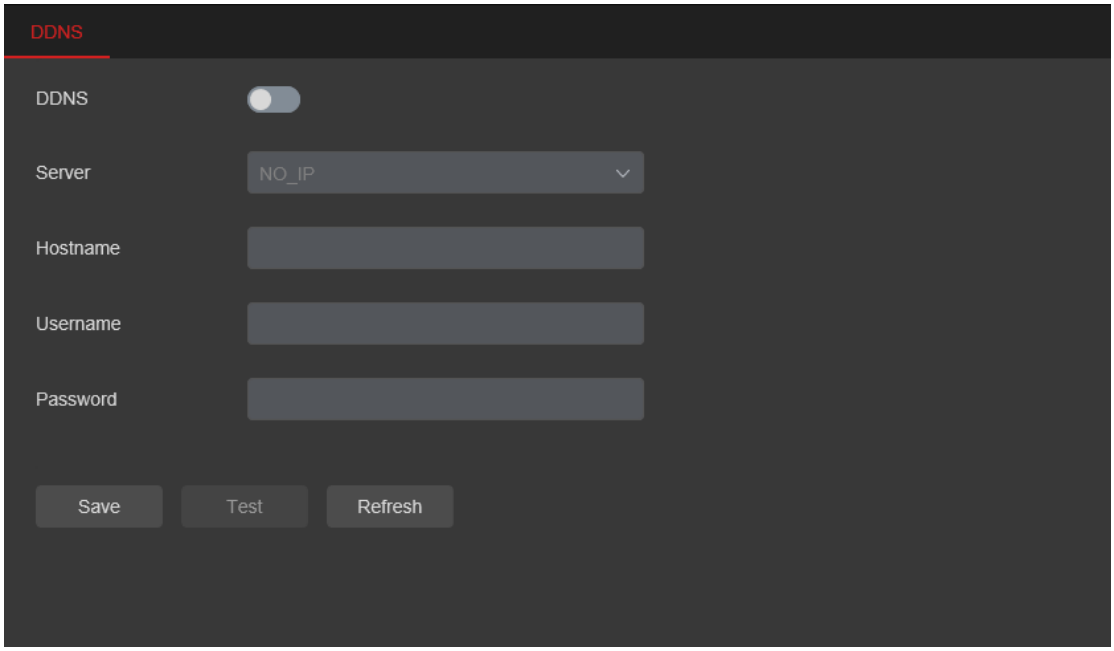
None: no metadata is sent.

General: sends standard-format metadata usable by third-party platforms without special requirements.

Milestone: sends metadata for the Milestone platform.

7.21 DDNS settings (dynamic domain name)

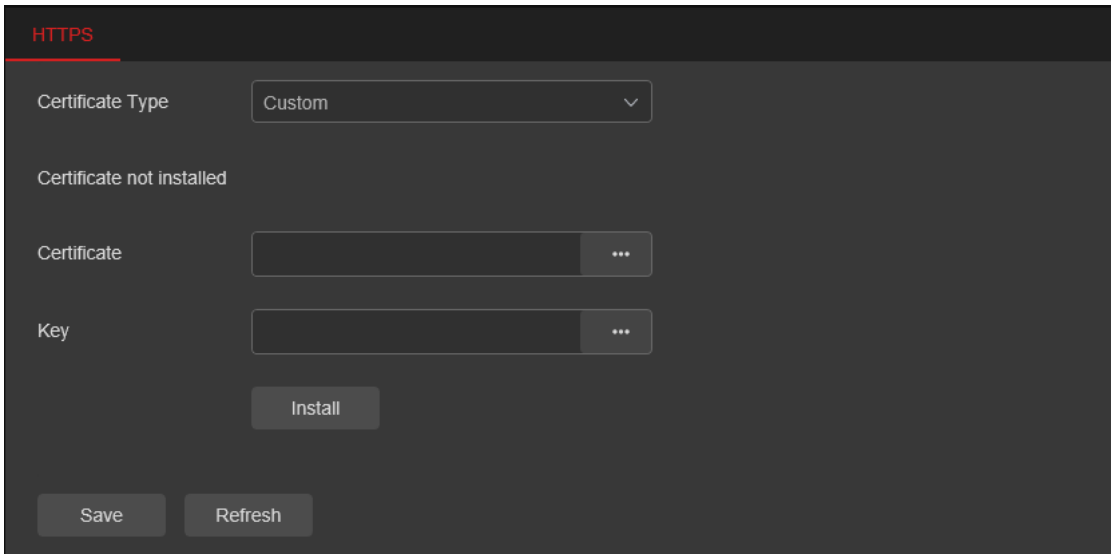
This page configures the registered domain name for accessing the device by domain name.



DDNS: select to enable DDNS.
Server: select the required DDNS server (DYNDNS, NO_IP; partial support for CHANGEIP and DNSEXIT).
Hostname: enter the domain name created on the DDNS provider's website. Enter this address in the browser to connect to the camera remotely from a PC.
User/Password: enter the username and password obtained when creating the account on the DDNS provider's website.
After entering all parameters, click **"Test"** to check the DDNS settings. If the result is "Network unreachable or DNS error", check that the network works correctly and the DDNS details are correct.

7.22 HTTPS protocol settings

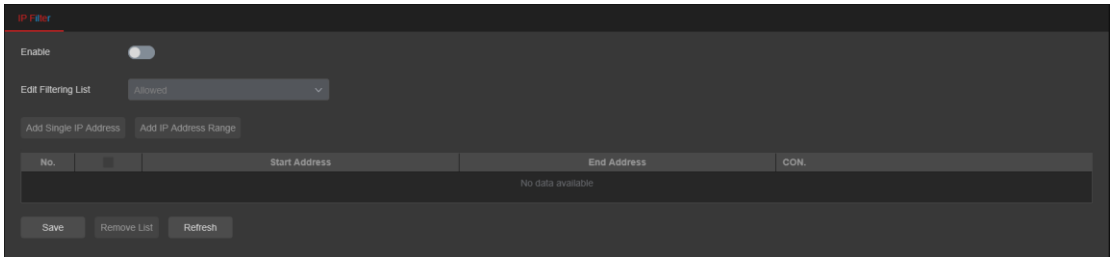
This menu enables device access through HTTPS.



Certificate type: two options are available: Default and Custom. Custom lets you connect to devices using your own certificate. **Certificate:** with Custom selected, choose the custom certificate. **Key:** with Custom selected, choose the custom key file.

7.23 IP filter

IP Filter configures a blocked list (black list) or allowed list (white list) for connecting devices.



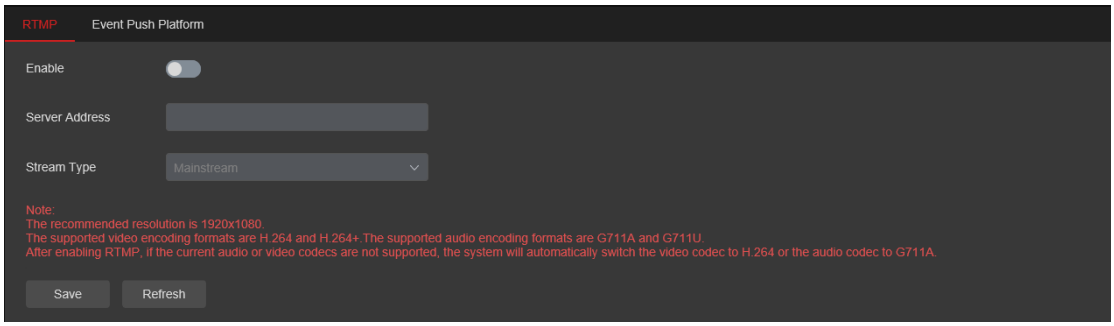
Enable: enables or disables IP filtering. When enabled, choose the blocked or allowed list. **Edit filter list:** select the list to configure (black list or white list).

Add single: adds a single address.
Add network segment: adds an address range.
Start address: enter the start address.
End address: enter the end address.
Delete: removes the added IP address from the black list/white list.

7.24 Platform access

7.24.1 RTMP

On the RTMP page, enable the switch and enter the correct server address to send the device audio/video stream to a live streaming server (such as YouTube).

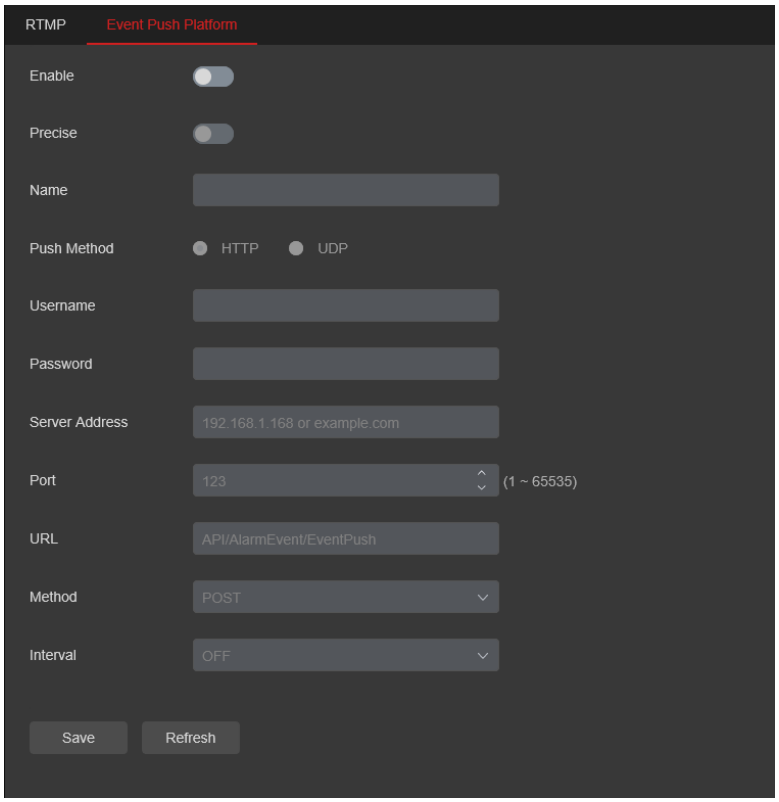


Enable: enables or disables RTMP. **Server address:** address of the server receiving the stream. **Stream type:** selects the video stream to send to the server.

7.24.2 Event push platform

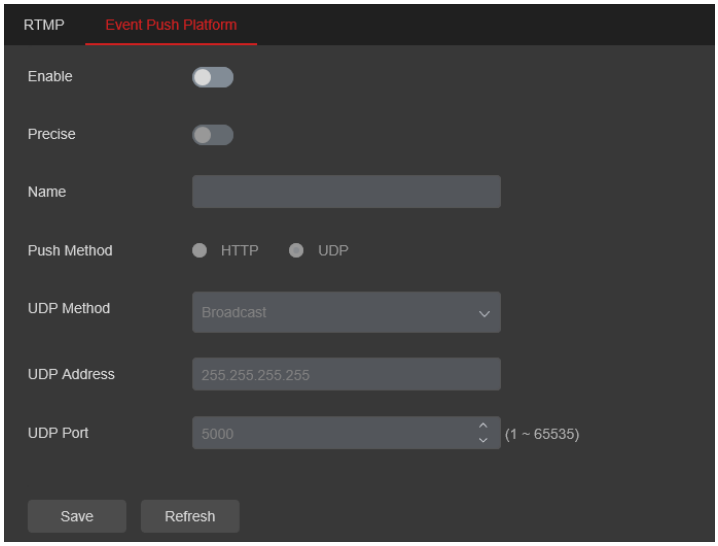
Event push uses HTTP, HTTPS or UDP. HTTP/HTTPS supports POST and GET; UDP supports unicast, multicast and broadcast. (Note: event push is available on some models).

1. HTTP/HTTPS push



Enable: enables or disables event push. **Precise:** enables or disables precise transmission. When enabled, one notification is sent when the alarm starts and another when it ends; when disabled, only one notification is sent when the alarm starts. **Name:** sets the channel name. Chinese characters are not supported. **Push method:** HTTP, HTTPS and UDP are supported. **Username:** sets the username; leave blank (NULL) if not required. **Password:** sets the password; leave blank (NULL) if not required. **Server address:** sets the server address. **Port:** sets the server port (range: 1–65535). **URL:** sets the server API; leave blank (NULL) if not required. **Method:** HTTP/HTTPS transmission type; POST and GET are supported. Only HTTP/HTTPS-POST supports sending images; other methods send messages without images. The alarm type of sent images matches the Web client preview alarm bar. **Interval:** sets the keep-alive interval. Keep-alive periodically notifies the client at the configured interval without affecting normal alarm transmission. Keep-alive is unavailable in UDP mode.

2. UDP push



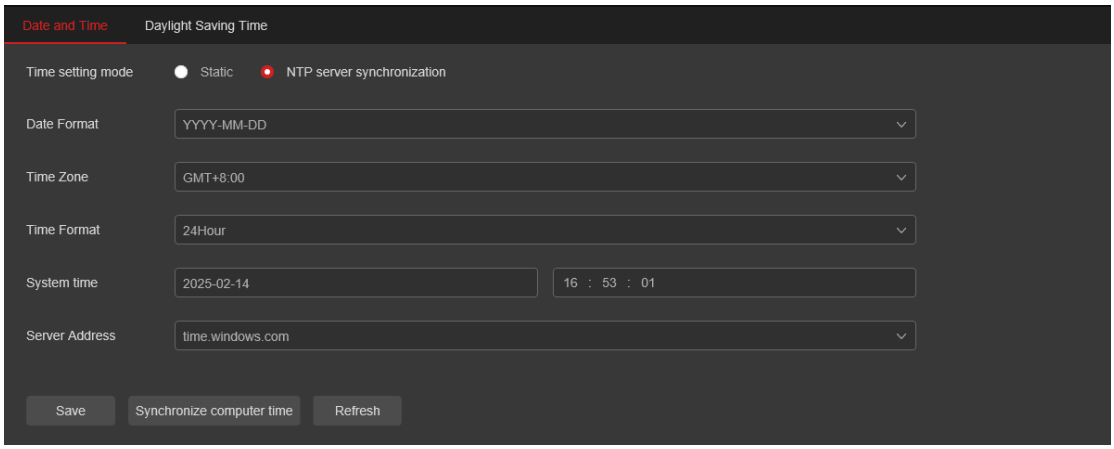
Enable: enables or disables event push.
Precise: enables or disables precise transmission. When enabled, one notification is sent when the alarm starts and another when it ends; when disabled, only one notification is sent when the alarm starts.
Name: channel name; Chinese characters are not supported.
Push method: HTTP and UDP are supported. Select HTTP for HTTP transmission or UDP for UDP transmission.
UDP method: UDP transmission type; Unicast, Multicast and Broadcast are supported:

Unicast: enter the IP address and port of the client UDP server that will receive messages; only this address receives them.
Multicast: messages are received by all client UDP servers on the same network segment using the same UDP address and port; other addresses do not receive them.

Broadcast: messages are received by all UDP servers on the same network segment.
UDP address: UDP server address.
UDP port: UDP server port (range 1–65535).

7.25 General system settings

7.25.1 Date and time

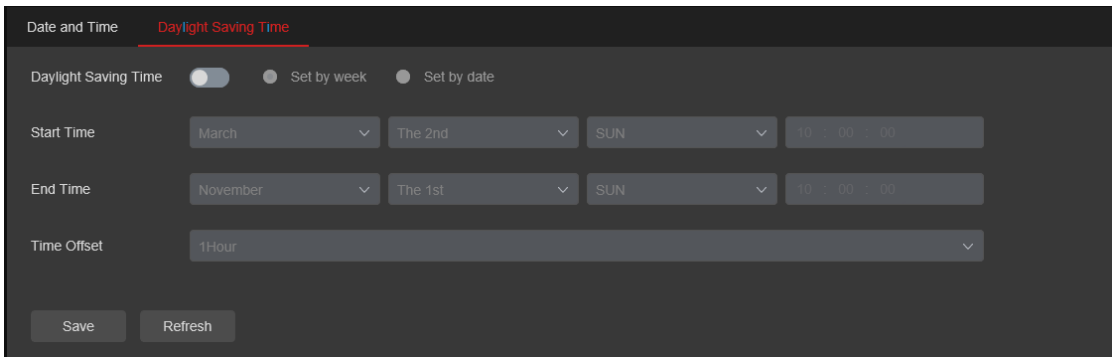


Time setting mode: Static and NTP Synchronisation are available. In Static mode, set the time manually; NTP synchronisation updates it over the network.

Date format: sets the date format.
Time zone: select the time zone for your region or city.
Time format: select the required time format.
System time: click the box to change the date and time.
Synchronise with computer time: synchronises the time with the computer.
When NTP synchronisation is selected, the time cannot be set manually.
Server address: NTP server for automatic time synchronisation.

7.25.2 Daylight saving time

DST (Daylight Saving Time) applies daylight saving time to a specific time zone or region.

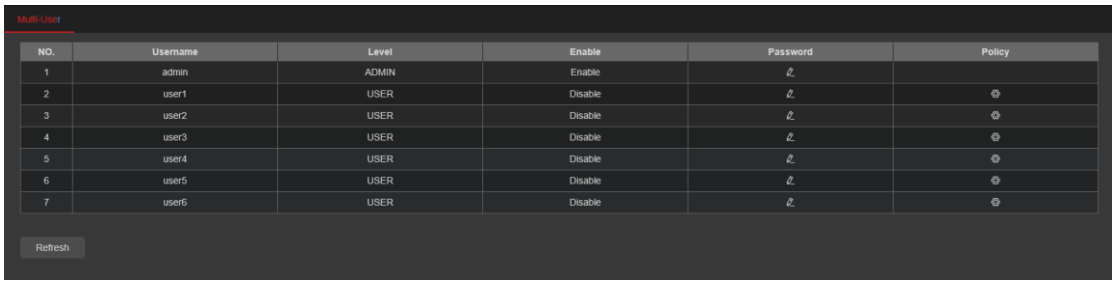


Daylight saving time: enable if daylight saving time is used in your time zone.
Set by week: select the month, weekday and time when daylight saving starts and ends, for example at 2:00 on the first Sunday of a given month.
Set by date: select the dates and times when daylight saving starts and ends.
Start time / End time: sets the daylight saving start and end times.
Time offset: select the amount by which daylight saving shifts your time zone,

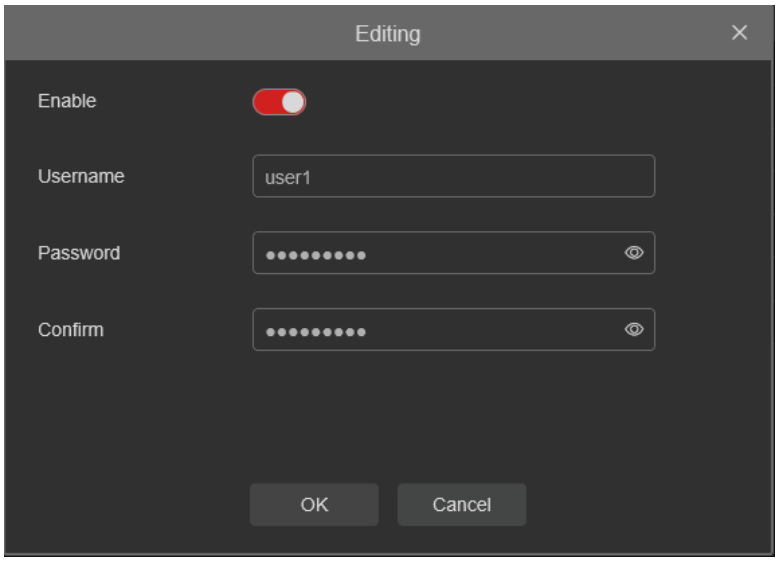
that is, the difference between Coordinated Universal Time (UTC) and local time.

7.26 Multi-user management

This menu configures usernames, passwords and user permissions.
The system supports the following user types.
ADMIN - System administrator: the administrator can configure the entire system, change administrator and user passwords,
and enable/disable password protection.
USER - Standard user: users can access only preview, search, playback and other functions. Multiple users can be created with different system access rights.



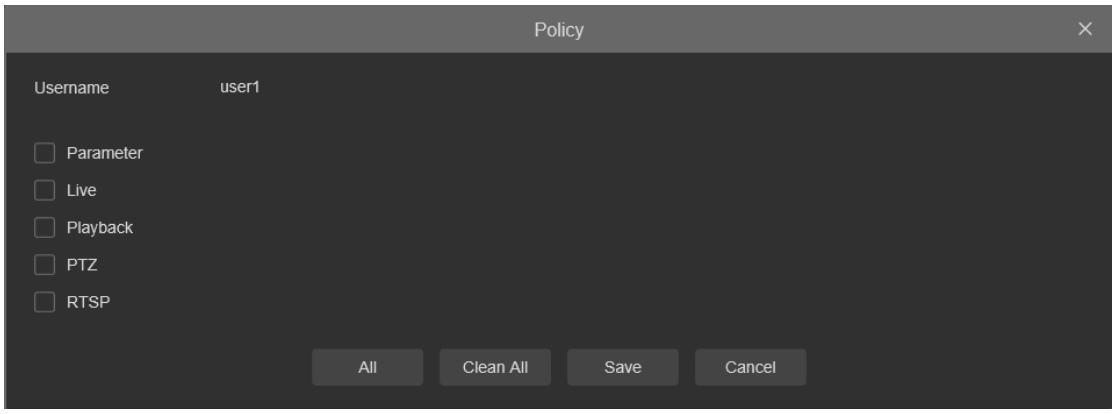
To change an administrator or user password, click **"Change Password".** The password must contain 8 to 16 characters and at least 2 of the following categories: digits, uppercase letters, lowercase letters and special characters. Re-enter the new password to confirm. When saving, the system asks for the old password to authenticate.



1. Select a currently inactive user and click the icon for changing the password.
2. Select **"Enable"** to enable the user.
3. Click **"Username"** to change the username.
4. Click the field next to **Password** to enter the required password.
5. Click the field next to **Confirm** to re-enter the password.

Click **OK.** You will be asked for the administrator password for

authentication.
To configure sub-user permissions, click to open the Policy page and select the checkboxes for functions the sub-user should access. Click **All** to select every checkbox or Clear All to **clear them.**

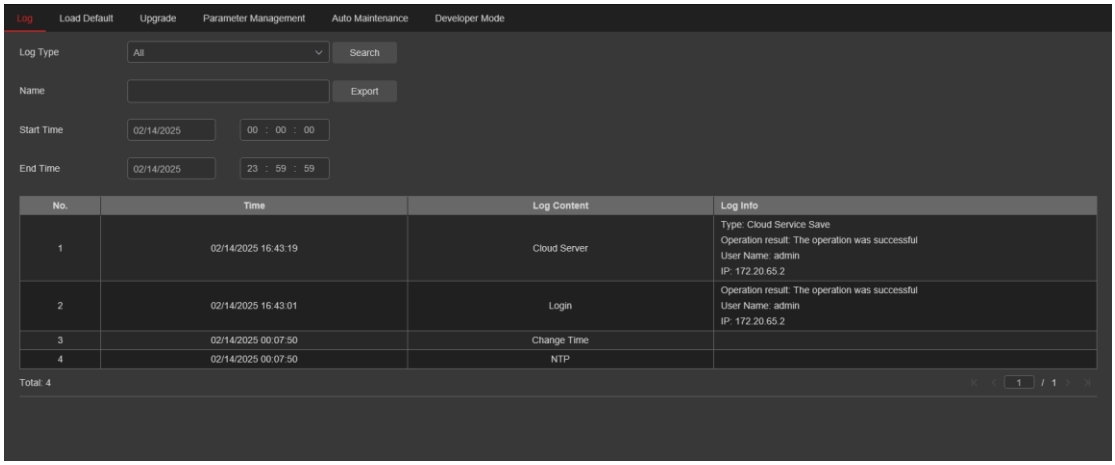


7.27 Maintenance

The system log displays important system events, such as motion alarms and system warnings. You can easily export a backup of the system log for a specific period to your computer.

7.27.1 Log management

The system log displays important system events, such as motion alarms and system warnings. You can easily export a backup of the system log for a specific period to your computer.



Log search and backup.
Select a **log type** from the dropdown next to Log Type, or select **All** to display the entire system log for the selected period. Available types are system, configuration, alarm, account, recording, storage and network logs.

System: system settings, restart, automatic restart, upgrade, time settings and NTP synchronisation.
Configuration: camera live control, privacy zone settings, recording

mode, recording schedule, mainstream, network, substream, email, colour, motion detection, disk, multi-user, NTP, image control, third stream, RTSP, IP filter, restoring factory settings, abnormal sound detection, settings export and import, event push, capture, deterrence, AI, FTP, DDNS, HTTPS, audio, siren, system maintenance, video masking, I/O alarms, Cloud service configuration.

Alarm: start and end of motion detection; start and end of I/O alarms; start and end of video tampering; start and end of line crossing; start and end of object detection; start and end of pedestrian and vehicle detection; start and end of face detection; start and end of cross counting; start and end of crowd density; start and end of queue length; start and end of licence plate detection; start and end of intrusion; start and end of region entrance; start and end of region exiting; start and end of abnormal sound; start and end of audio alarms.

Account: login, logout, lock and user switching.

Recording: search, playback and backup.

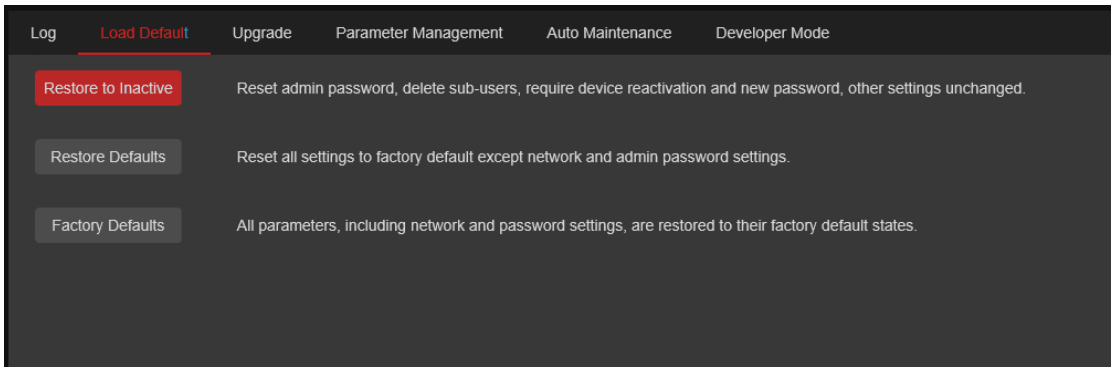
Storage: disk formatting, disk full and disk error.

Network: network disconnected, network connected, network error and network mode change.

1. Select the event type to search from the dropdown next to **Subtype** (if All is selected as the log type, this menu is unavailable).
2. Enter the export filename in the field next to **Name.** Click Export to back up the system log.
3. Click the field next to **Start Time** to select the search start date and time from the calendar.
4. Click the field next to **End Time** to select the search end date and time from the calendar.
5. Click **Search.**
6. View the system log for the selected period:
7. Use the buttons |< < / > >| in the bottom-right corner to browse the pages of system log events.

7.27.2 Restoring factory settings

This page offers different reset methods to restore device configuration parameters to factory settings. Resetting does not format the data on the memory card (microSD).

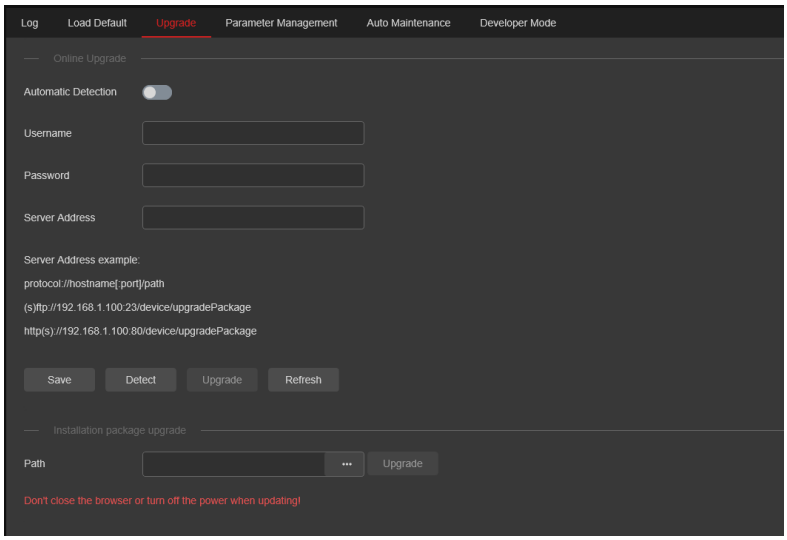


Restore to inactive: resets the administrator password and deletes all sub-users; the camera must be reactivated. Parameters on other pages remain unchanged.

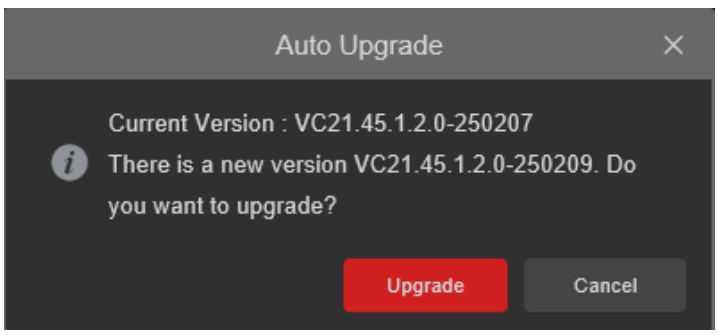
Restore defaults: restores factory settings on all pages except network parameters and the administrator password.
Factory settings: restores all camera parameters to factory settings.

7.27.3 System upgrade

This menu upgrades the device firmware.



Automatic detection: when enabled, the device automatically detects online upgrade files.
Username: server username.
Password: server password.
Server address: enter the online upgrade address (HTTP upgrades do not require a username and password).
Save: click to save the current setting.
Detect: after uploading the upgrade file and setting the upgrade path, click Detect to search for the online upgrade file manually. If a new version is detected, the following message appears:



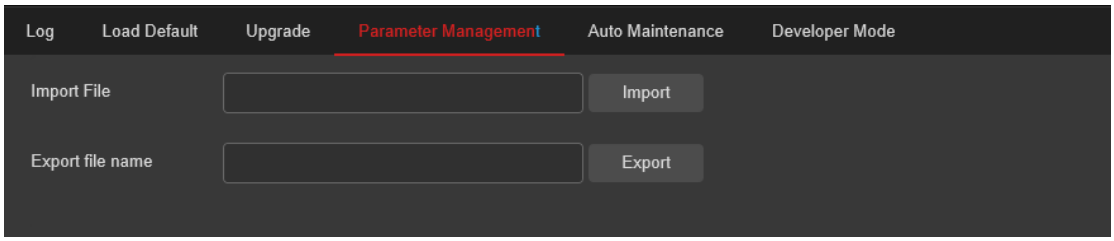
Upgrade: click to start the system upgrade.
Copy the firmware file (.bin file) to the computer disk.
Click "..." next to **"Path"** to select the firmware file on the computer.

Click **Upgrade** to start the system upgrade. It takes approximately 2-3 minutes. Do not switch off the device or close the browser during the firmware upgrade.

Note: to let the device detect the latest firmware version on the cloud server, enable Cloud service to link the device to Elkron View and clear the online upgrade configuration parameters on this page.

7.27.4 Parameter management

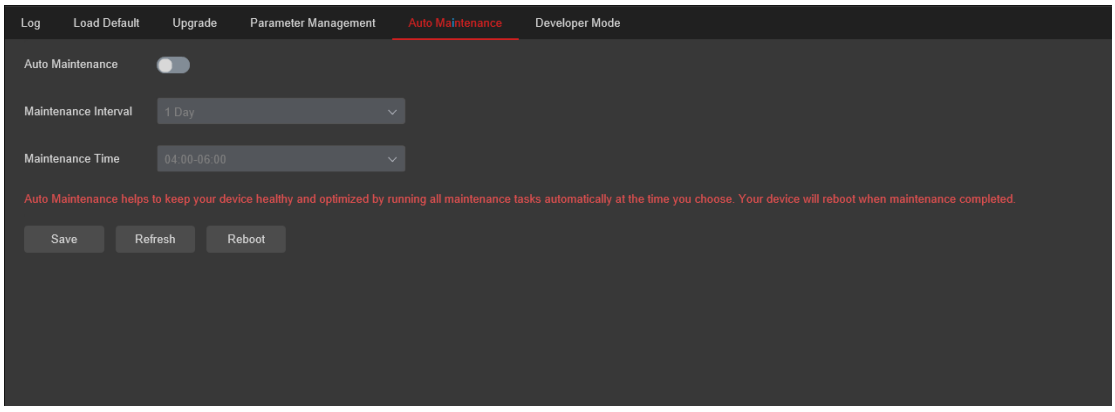
You can export parameters configured in the main menu to your computer, or import a previously exported configuration file into the device.



Import file: click the box to open the selection window, select the parameter file and click Import to start importing.
Export filename: click the box to enter the name of the parameter file to export. Click Export to export the parameters.

7.27.5 Automatic maintenance

This function schedules periodic automatic camera restarts to maintain correct operation over time.

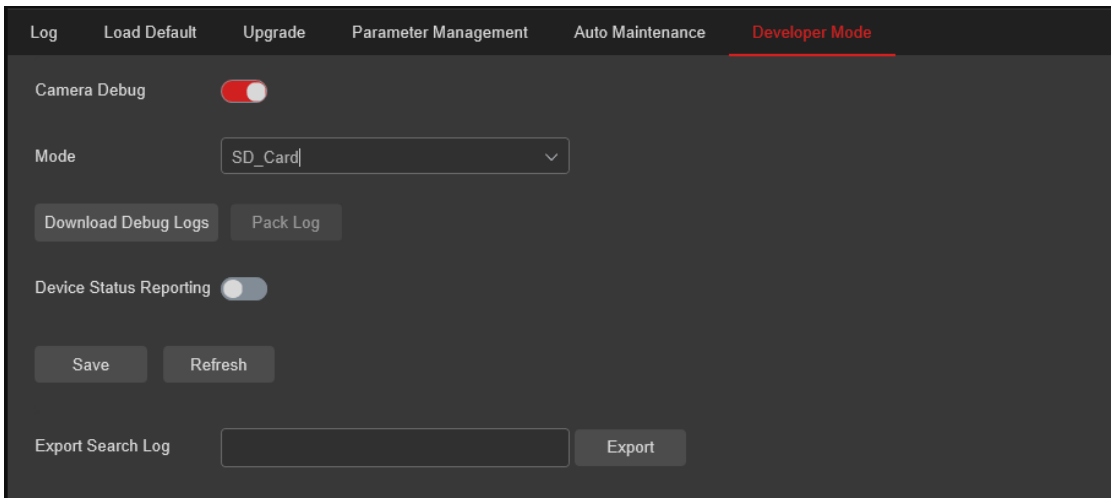


Automatic maintenance: enables or disables automatic maintenance.
Maintenance interval: sets the camera automatic maintenance interval.

Maintenance time: sets the automatic maintenance time slot (Note: the device restarts at a random time within this slot).

7.27.6 Developer mode

This menu enables developer mode to collect and record log information useful for debugging the device.



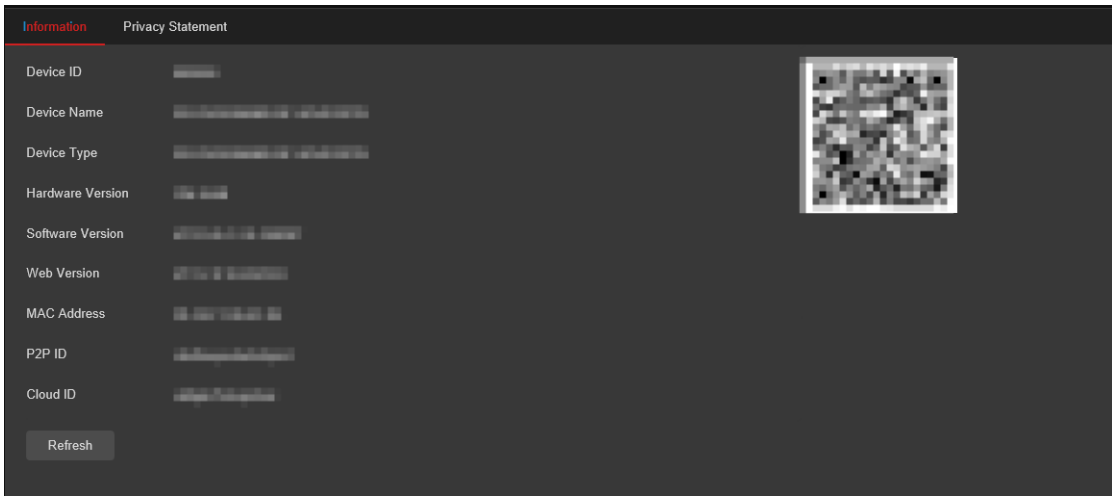
Camera debug: select to enable.
Mode: selects the method for collecting and recording debug information. Three modes are available: NVR, SD_Card and FTP.
Download debug log: exports debug information. In SD_Card mode, click the button and enter the correct password; the device exports debug information to the local computer.

Compress log: in NVR or FTP mode, click this button to upload the log information package to the FTP server.
Device status report: when enabled, sends storage status, channel status and device information to the P2P server.
Export search log: enter the log export filename and click Export to export all log files stored on the device to the local computer.

7.28 System information

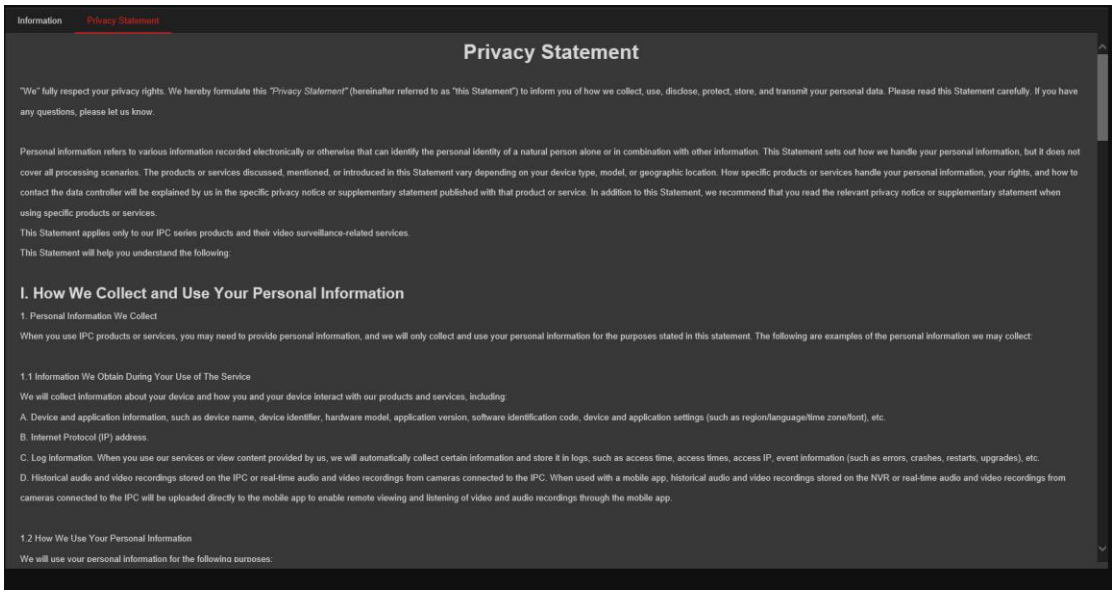
7.28.1 Device information

This menu displays system information, including device ID, model, MAC address and firmware version.



7.28.2 Privacy statement

This page displays the device privacy statement in detail.



CHAPTER 8 LOCAL SETTINGS

This menu sets save paths for recording, download and capture files, along with recording and capture formats. **Note:** this page is visible only when accessing through Internet Explorer.

