



Full Manual

IP Camera

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INFORMATION

About this Document

In this document you will find a comprehensive description of a specific series of units, which has been prepared with great care and accuracy to give you a detailed insight into the general functions and features that characterise this series of units.

Please note, however, that the detailed characterisation in this document refers to the general product line. The individual scope of functions of individual models or versions within this series may vary depending on the configuration.

These variations may be reflected in an extended or restricted range of functions and features, so that the actual specifications of individual products may differ in some respects from the designs presented in this document.

For this reason, it is strongly recommended to carefully read the specific data sheet for the respective product. The data sheet contains specific and detailed information tailored to the particular model. It is the primary reference document that provides the most authentic and accurate information about the individual functions and features of each specific product in our appliance series.

We thank you for your understanding and willingness to invest time to gain accurate knowledge about your selected product of our appliance series. Please do not hesitate to contact us if you have any further questions or require additional information.

Note

If you encounter any problems that cannot be resolved using this manual, please contact our technical support or an authorised representative.

This manual is subject to change without notice due to firmware updates or other reasons.

Notes within the document are presented as follows:



Warning!

Here is a warning notice.



Note!

Here is some information.



Example

Here is an example.

Open Source Software License Information

The software components provided with eneo products may contain copyrighted software that is licensed under various open source software licenses.

For detailed information about the contained open source software packages, the used package versions, license information and complete license terms, please refer to...

- the open source information included in your products user interface,
- the product detail pages on the eneo website (www.eneo-security.com),
- the eneo download portal (<https://datacloud.videor.com/s/eneodownloadportal>). In case that previous link is broken, the latest link to the eneo download portal can be found on the respective eneo product page at www.eneo-security.com.
- the download package of your firmware. The complete open source software license information of your product is included in the corresponding software download package that can be found in our download portal.

If you are missing any information, please contact opensource@eneo-security.com, we will of course be happy to provide you with the missing information and will also make the missing information available to the public.

If you want to get access to the open source components (source codes) used in our products, please contact opensource@eneo-security.com.

SAFETY INSTRUCTIONS

General

Manuals

- Keep the quick Installation guide and the full manual for the entire service life of the device and ensure that both are accessible to installation and service personnel at the place of use at all times. Safety-related requirements for installation, operation, cleaning, and disposal can only be correctly observed if the information is available.

Small parts and packaging

- Keep packaging material, plastic film, and small parts (e.g., screws, cable ties) out of the reach of children and do not allow children to use the device without supervision. Small parts must not be swallowed; plastic film must be kept away from children.

Use

- Use the device only for its intended purpose and only in the environment for which it is designed (e.g., indoor/outdoor use, temperature and humidity range), and do not make any unauthorized changes or modifications. Products that are not designed for use in humid, vapor-filled, chemically contaminated, or potentially explosive areas must not be operated in such areas.

Installation

- Only allow qualified personnel to perform installation, commissioning, and maintenance; conduct a risk assessment prior to installation and instruct the operating personnel. Professionally planned and executed work takes electrical, mechanical, and organizational protective measures into account.

Installation location

- Carefully select the installation location and ensure that it is suitable for the specific product (e.g., no direct water ingress, no heavy steam, no corrosive gases, no hazardous areas). Pay particular attention to the specified protection class (IP code) when using products outdoors.

Defective devices

- Do not use devices that have been damaged during transport, have visible defects, or exhibit unclear malfunctions. Contact customer service instead. Only service personnel are authorized to open the device.

Storage

- Store and transport the products in a dry place, protected from shock and vibration, and within the permissible temperature and humidity ranges; ESD protection must be used when handling open electronic components. Avoid condensation (e.g., after transport from cold to warm conditions) by allowing the product to acclimatize before switching it on.

Cleaning

- Clean devices, housings, and displays exclusively with mild cleaning agents and soft, non-abrasive cloths. Do not use aggressive or solvent-based agents (e.g., thinners, gasoline, alcohol-based cleaners for painted surfaces), and always disconnect the device from the power supply before cleaning.

Disposal

- Dispose of old devices, batteries/rechargeable batteries, and packaging in accordance with local regulations; do not dispose of old electrical devices in household waste and take advantage of take-back offers. Remove batteries before disposing of the device, if possible.

Electrical devices

Protection class

- Observe the specified protection class of the device and connect the protective earth conductor (PE) correctly for devices in protection class I; ensure that the mains plug is freely accessible at all times as a disconnecting device. Only use undamaged power cables and never pull on the cable to disconnect it, but only on the plug.

Opening the device

- Do not open the device unless this is expressly specified in the instructions (e.g., hard disk replacement in recorders). Only perform permitted interventions when the device is de-energized and ESD-protected, and restore the original protective and cover conditions completely after completion.

Ventilation

- Ensure adequate ventilation at all times and do not cover ventilation openings; observe the installation distances, especially for recorders, switches, and active speakers. Avoid installation in closed, unventilated cabinets or near heat sources.

Cables and wires

- Lay all cables so that they are tension-free, with correct strain relief and in compliance with the minimum bending radii, and so that they cannot be kinked, crushed or damaged by sharp edges; avoid trip hazards and provide suitable strain relief. Protect cables against moisture ingress and keep them away from moving parts. Additionally, protect outdoor cables against overvoltage (PoE, I/O, alarm inputs).

Power supply

- Before connecting, check the mains voltage and only use the power adapters and cables supplied or approved; ensure that 230 V/50 Hz and the fuse protection of the socket are correct. Use earthed safety sockets, do not modify mains plugs, and immediately take damaged supply cables out of service.

PoE

- Use external power supplies (e.g., 12 V DC) and Power over Ethernet exclusively in accordance with the manufacturer's specifications; only use IEEE-compliant PoE (802.3af/at/bt) and avoid so-called "passive PoE" solutions without power negotiation. Ensure correct polarity, output power, and PoE power class.

Surge and lightning protection

- Use appropriate surge and lightning protection measures (power supply, signal, PoE) for outdoor installations and long cable runs. Use coordinated surge protection devices (SPD) and uniform grounding/equipotential bonding concepts.

In the event of malfunctions

- Switch off the device immediately and disconnect the power plug if smoke, unusual odors, noises, or malfunctions occur; also disconnect the device from the power supply before maintenance work or prolonged breaks in operation. Always pull the plug by the handle and never by the cable sheath.

Interference

- Plan and install in accordance with EMC standards by separating power and data cables, correctly grounding shielded cables, and avoiding sources of interference. Adhere to the cable lengths and types specified by the manufacturer.

Outdoor installation

- For outdoor sockets and installations, use a residual current device ($RCD \leq 30 \text{ mA}$) and suitable protection against moisture. Only operate 230 V circuits outdoors with appropriate moisture protection.

Batteries and rechargeable batteries

- Handle built-in or replaceable batteries/rechargeable batteries (especially lithium systems) with care, avoid short circuits, crushing or puncturing, and dispose of them separately from household waste. Only charge and operate batteries within the specified temperature ranges.

Wireless transmissions

- Operate radio components (e.g., WLAN/Bluetooth) exclusively with compliant antennas and within the permitted frequency bands and transmission powers; observe national approvals and the configurations approved by the manufacturer.

Product-specific

Cameras

Alignment

- Avoid direct sunlight on the lens and do not point cameras at very strong light sources for long periods of time. The concentrated radiation can cause thermal damage to the image sensor, aperture mechanisms or surrounding materials.

Privacy

- Protect privacy: Position cameras so that unauthorised areas (e.g. neighbouring properties, private interiors) are not captured, inform those affected by clearly visible signs and comply with information requirements. Check the legal basis for processing (e.g. legitimate interest) and minimise data collection.

Moisture

- Never immerse the camera completely in water and only use devices and accessories with a suitable protection class (e.g. IP66/67) outdoors. Feed cables through weatherproof cable glands and ensure that the seals are correctly fitted.

Cleaning

- Clean the lens and housing regularly with suitable, non-abrasive cloths and mild cleaning agents, without applying pressure to optical surfaces. Disconnect the power supply before cleaning.

Eye protection

- Do not point IR LEDs or other integrated light sources directly at the eyes at close range and avoid prolonged exposure at close range. Observe the minimum distances specified by the manufacturer.

PTZ / Moving parts

- Keep away from moving parts on PTZ cameras. Do not carry out any work while the camera is in motion.

1 – OVERVIEW

1.1 – Product description

An IP camera is a digital network surveillance camera that can operate independently with an integrated web server and can be used from anywhere in the world with a web browser or client software for real-time monitoring.

Based on state-of-the-art digital technology, the IP camera is an integrated media processing platform for audio/video capture, compression and network transmission on a single board. It complies with the H.264/H.265 High Profile encoding standard.

By entering the IP address or domain name of the IP camera in a web browser, any user can monitor the camera in real time. The IP camera solution is suitable for residential and business environments, as well as a variety of locations where network-based video surveillance and transmission is required. The product is easy to install and user-friendly.

The software allows multiple users with different permissions to be set up for easy management.

The camera has a motion detection function and actively sends emails, recorded images or alarm videos when an event occurs, and stores the alarm video on the inserted memory card for easy retrieval.

1.2 – Operating requirements

System: Windows 10 / 11

CPU: Intel i3 or higher

Memory: 8 GB or more

Display: 1024 x 768 or higher

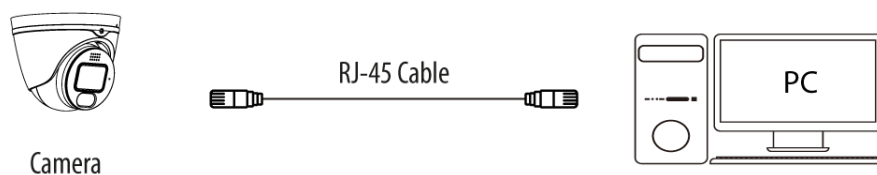
Browser: latest version of Chrome, Firefox, Edge or Safari

2 – DEVICE CONNECTION

2.1 – to a PC

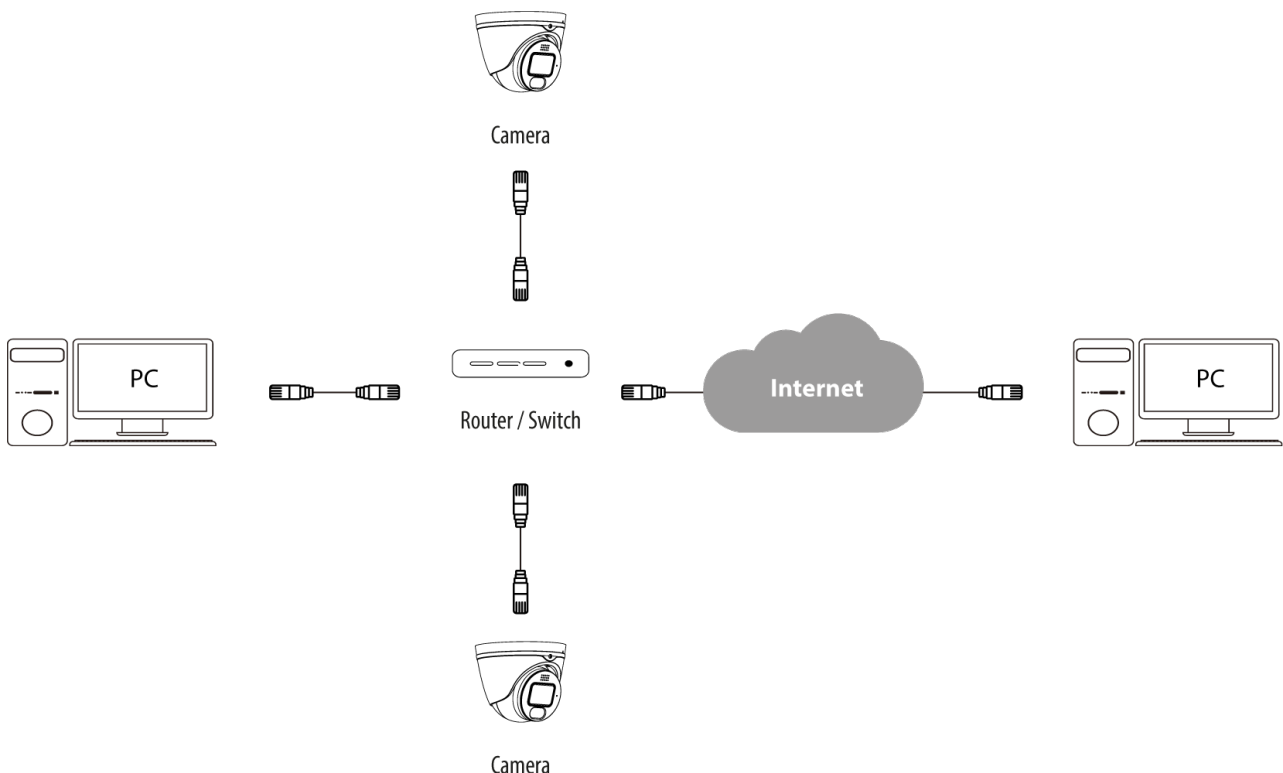
Connect an IP camera directly to a PC using a network cable, connect the power input to the 12 V DC adapter, and set the IP addresses of the PC and IP camera to the same network segment.

If the network is functioning properly, the IP camera will communicate with the PC within one minute after being turned on.



2.2 – to a Router/Switch

This connection method is used when an IP camera needs to be connected to the Internet, whereby the IP camera and the PC are connected to the LAN ports of a router/switch and the camera's gateway is set to the IP address of the router.



3 - CAMERA ACCESS

3.1 – eneo Site Manager

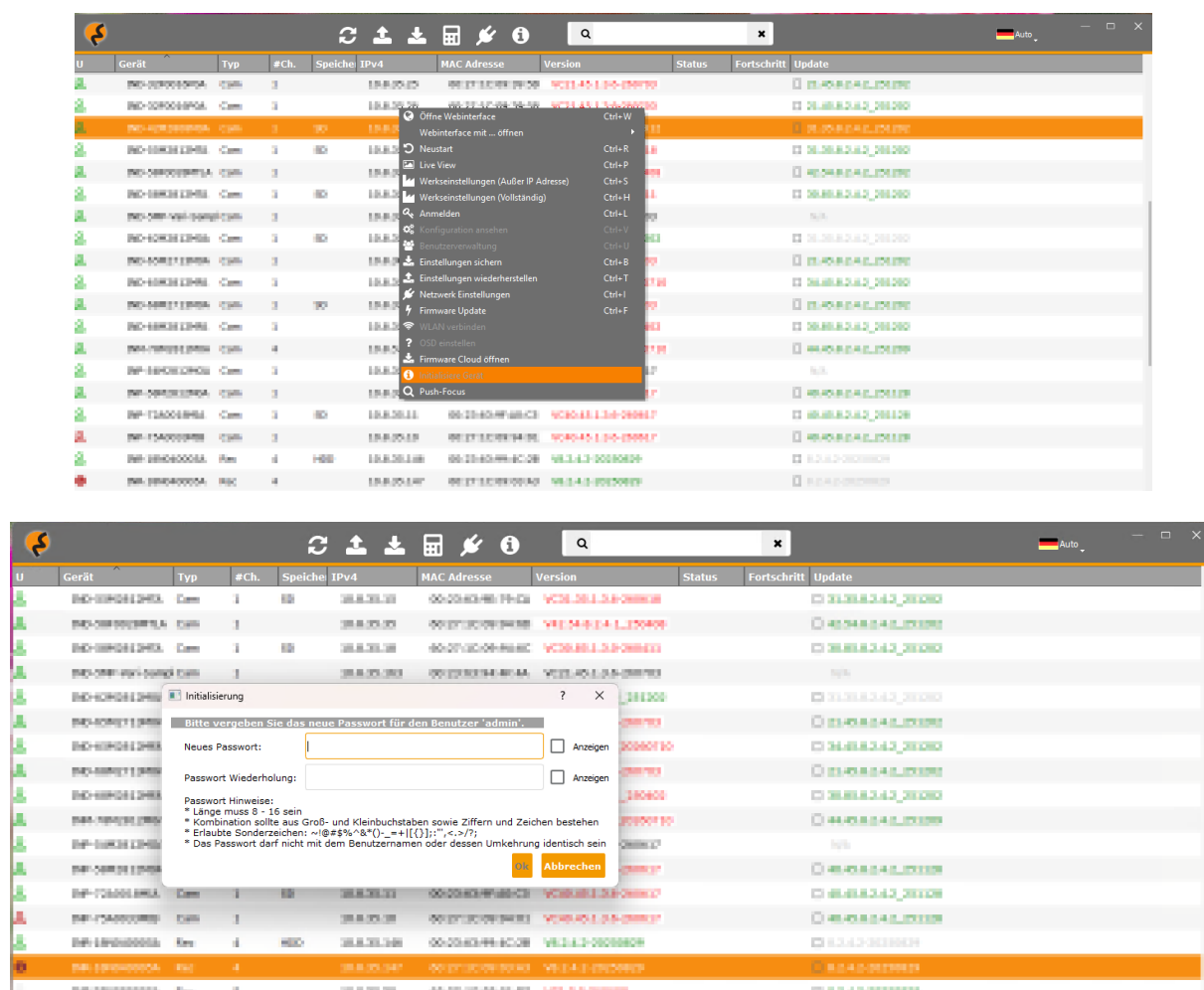
Download and install the eneo Site Manager app.

You can find it at: <https://eneo-security.com/en/eneo-site-manager.html>

3.1.1 – Use

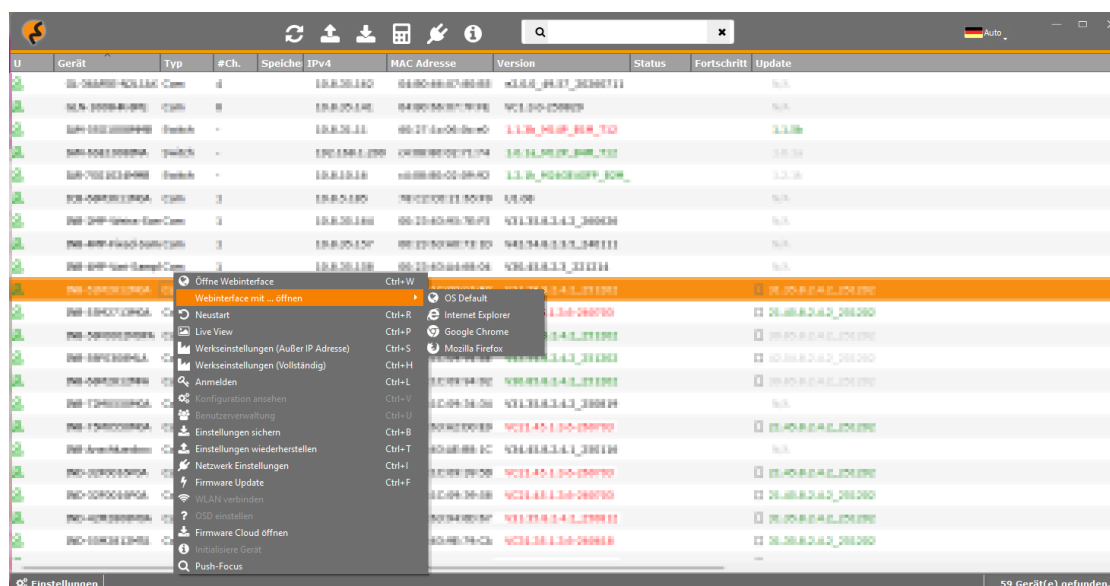
If the device is on the same network as the computer on which the app was installed, the new device will be detected immediately. You can access the device from here.

1. Right-click on the device in the list to open the context menu.
2. Select Initialise device to assign a new password.



3.2 – Web Client

Alternatively, you can open the device via the context menu in your browser and change the password via the web interface. You can then access the remaining functions.

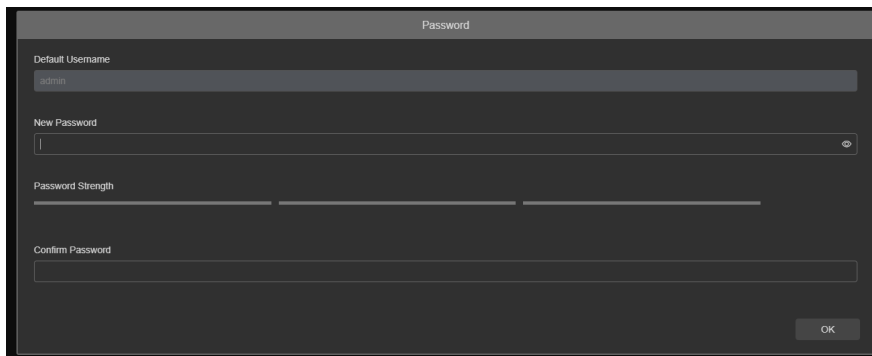


Once you have updated the password, you can log in to the device.

Here you can configure the device settings according to your preferences and view the various device streams.

3.3 – Password

Since the camera's default password is easy to guess, the program displays the screen shown below and prompts you to set a more complex password.



The screenshot shows a 'Password' dialog box with the following fields: 'Default Username' (containing 'admin'), 'New Password' (with a strength indicator icon), 'Password Strength' (a progress bar), and 'Confirm Password'. An 'OK' button is located at the bottom right.

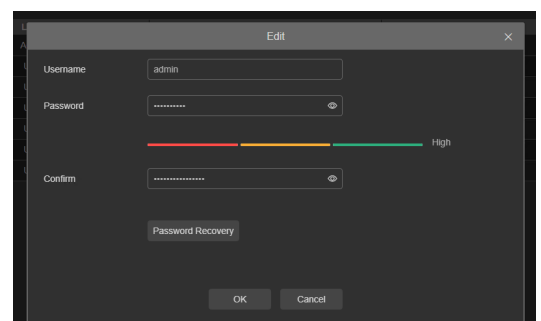
3.3.1 – Rules

- A password **must** be between 8 and 15 characters long and contain letters, numbers and special characters.
- The password and username **must not** be identical.

3.3.2 – Password change

We recommend that you change your password regularly, especially in high-security systems. To better protect your products, the system records when you have changed your password. After 90 days, the system will prompt you to change your password.

1. Go to **User Management**
2. Open **Password Management**
3. Enter a new password and confirm it in the next line
4. Click **OK** to save.



The screenshot shows an 'Edit' dialog box with the following fields: 'Username' (containing 'admin'), 'Password' (with a strength indicator showing 'High'), and 'Confirm' (with a strength indicator). There is a 'Password Recovery' button and 'OK' and 'Cancel' buttons at the bottom.

3.3.3 – Security

For security reasons, we recommend that you add an extra step to change your password. You can choose between **security questions** and an **authorisation certificate**.

3.3.3.1 – Security questions

Please select **three** of the 15 security questions provided and answer them using a maximum of 64 characters. Please ensure that you use the correct spelling when changing your password in future to avoid malfunctions.

3.3.3.2 – Certificate of authorisation

To use the authorisation certificate for future password changes, please select **Export** and save the file named **certificate.txt** in a secure location on your computer for future password changes.

3.3.3.3 – Password recovery

If a user has forgotten their password and the password recovery feature is enabled for that user, the password can be reset using the previously selected security questions or the authorisation certificate.

Please click on **Reset password** to open a window where you can choose between security questions and authorisation certificate.

Security questions

Enter the appropriate answers to the security questions, assign a new password and confirm by clicking **OK**.

Certificate of authorisation

Import the saved authorisation certificate **certificate.txt**, assign a new password and confirm by clicking **OK**.

4 – LIVE - VIEW



Note!

The view may vary depending on the camera model.

1. Stream switch

Mainstream: HD image, but higher bandwidth and PC performance requirements.

Substream: Lower image quality, but moderate requirements.

Mobile stream: Lowest picture quality, but lowest requirements.

2. View switch

Live: The current view.

Playback: View of recordings and recordings.

Remote settings: View of settings.

3. Info

Information: Displays information about the active user and the web version, for example.

Exit: Log out.

4. Live functions

Manual/Al alarm: Opens the alarm push bar.

Colour: Adjusts the current image settings.

PTZ control: Opens the PTZ control.

5. Livestream

6. Live control

Recording & Alarm Status: Displays the alarm and recording status of the camera.

Pause/Play: Allows you to pause and play the preview of the current stream.

Original Proportions: Displays the current live view in its original proportions.

Stretch: Displays the current live view so that the display area is stretched.

Full screen: Displays the live view in full screen. You can double-click the screen to enable or disable this feature and press Esc to exit full screen mode.

Record: Allows you to manually record the stream in the preview.

Capture: Allows you to manually capture the image of the current stream.

Digital zoom: Allows you to zoom in on a specific area of the screen.

Audio: Used to turn the sound in the preview on or off or to adjust it.

Voice control: Allows you to communicate with the camera.

Warning light: Used to manually turn the white light on and off.

Siren: Used to manually turn the siren on and off.

Pixel counter: Used to select an area to check the pixel size in the stream.

Pop-up info: Displays the current alarm level in the lower right corner.

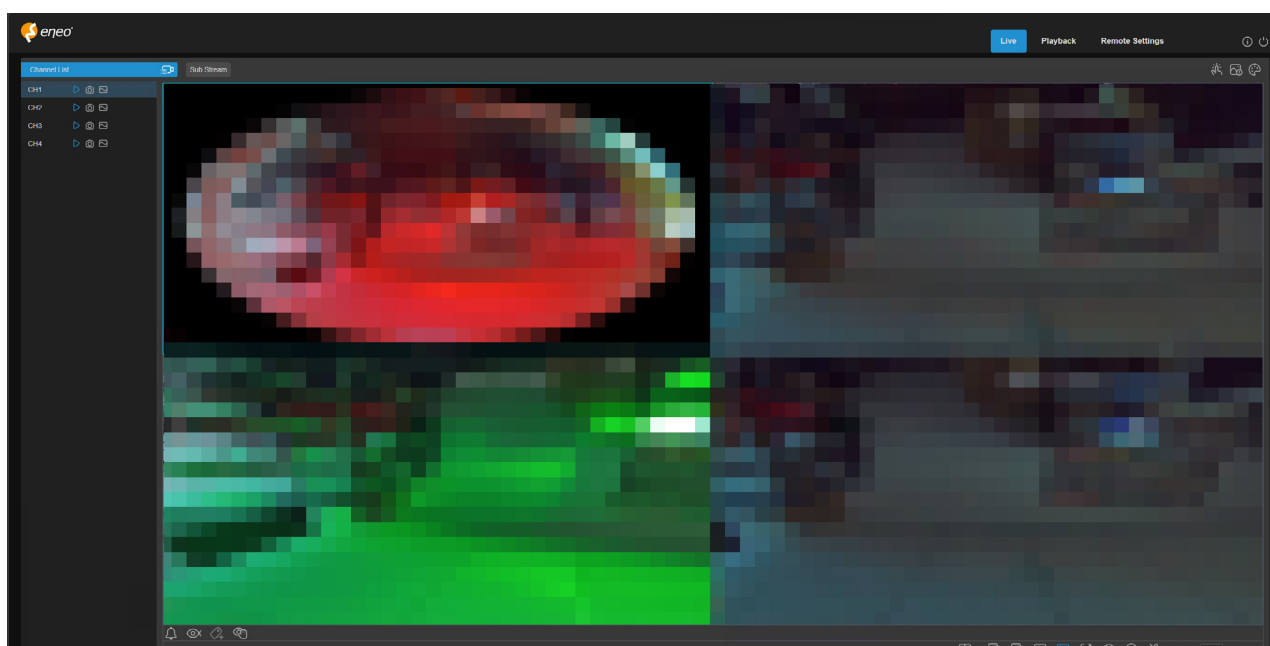
Fisheye: Enter/exit fisheye mode.

Privacy Mode: Enable/disable the privacy mode. When it is enabled, the other options in the menu bar will be grayed out.

Regional Focus: Click this button and use the mouse to select an area on the preview screen to allow the device to automatically focus on the selected area (Only supported by varifocals cameras).

4.1 – Channel list

For special cameras, such as **multi-sensor** or **thermal** cameras, you can show or hide the channel list and switch between the different channels to view them or adjust settings.



4.2 – Recording status

The recording status provides a simple overview of the current alarm status on the web client and indicates whether the recording is running properly. It is possible to save multiple alarms simultaneously.

No symbol	Memory card OK, no recording.
R (red)	The camera is recording normally.
H (red)	Memory card faulty. Please check.
M (green)	Active motion alarm, no recording.
M (red)	Active motion alarm, recording in progress.
I (green)	Active I/O alarm, no recording.
I (red)	Active I/O alarm, recording in progress.
PIR (green)	Active PIR alarm, no recording.
PIR (red)	Active PIR alarm, recording in progress.
S (green)	Active intelligent alarm, no recording.
S (red)	Active intelligent alarm, recording in progress.

4.3 – PTZ

4.3.1 – Power-On Self-Test

Upon powering on, a PTZ camera initiates its Power-On Self-Test (POST):

It rotates horizontally in a clockwise direction at a steady speed until it detects the zero point.

The PTZ camera rotates vertically, settling into a position with a precise 45° vertical angle. Its lens aligns perfectly with the ID marked on the camera enclosure. Note that some PTZ models may return to their pre-power-off positions instead, this behavior depends entirely on the specific camera model.

Lens actions: The lens is pulled to the near end, pushed to the farthest point, and then pulled back to the near end from the far end to complete the camera self-test.

4.3.2 – Basic functions

Cruise function: the PTZ camera offers preset point configuration, precise watch positioning, dynamic track cruising, comprehensive pattern scanning, and efficient line scanning.

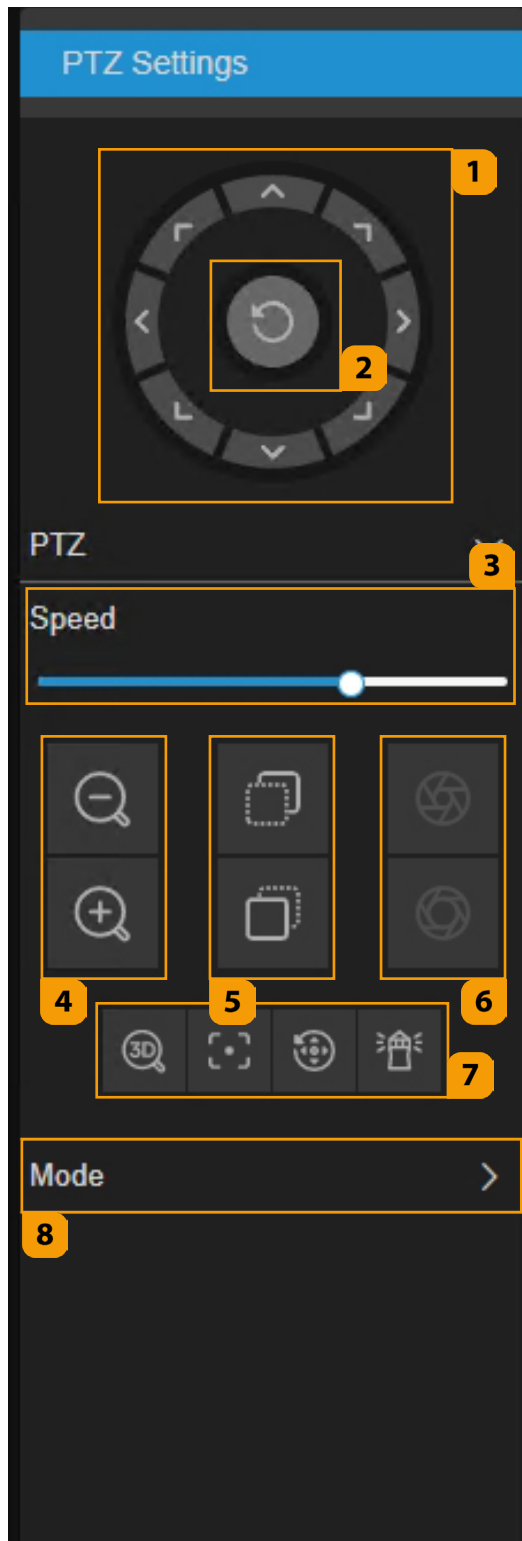
Automatic zoom ratio adjustment: When altering the PTZ camera's zoom ratio, its horizontal and vertical movement speeds automatically adjust accordingly. As the zoom ratio increases, the camera's movement consequently decelerates. Conversely, a decrease in zoom ratio causes the camera to accelerate. This dynamic adjustment contributes significantly to enhanced object tracking effectiveness.

Power-off memory: If a PTZ camera loses power while performing a cruise operation, upon restoration it completes its self-test and then resumes its cruise operation. However, some PTZ cameras may instead return to their pre-power-off position. This behavior depends entirely on the specific model.

Click in the top right corner of the live view screen to call or hide the PTZ control GUI. This page opens by default every time you log in.

4.3.3 – PTZ Control

4.3.3.1 – Buttons



1. You can use the **direction buttons** to pan and tilt the device horizontally and vertically.
2. By clicking in the **center**, you can rotate the camera horizontally. Clicking again stops the rotation and the icon turns dark blue again.
3. The **speed** of the pan/tilt movement can be adjusted using a slider on a scale of 10 levels, with higher values representing higher speeds.
4. The buttons on the left are used to **zoom** in and out. Press and hold the lower button to retract the lens and enlarge the scene. Press and hold the upper button to extend the lens and reduce the scene.
5. The buttons in the middle **focus** the lens. Press and hold the upper button to focus the lens on the near side. The nearby object becomes sharp, while distant objects gradually become blurred. Press and hold the lower button to bring distant objects into focus, while nearby objects gradually become blurred.
6. The buttons on the right correspond to the 'Iris' and 'Iris+' functions. If the screen content is relatively dark, you can press and hold the lower button to increase the **aperture**. Otherwise, you can press and hold the upper button to decrease the aperture.
7. Help functions (3D position, autofocus, PTZ reset, observer mode)
8. Mode

3D-Position

You can activate or deactivate this function by pressing the button for 3D position.

The function is activated when the button has a light blue background. The following options are available:

1. Click anywhere on the preview screen. The camera will focus on that point as the center of the video.
2. Drag a rectangular area from left to right (up or down) with the mouse, and the camera will focus on that area and zoom in.
3. Drag a rectangular area from right to left (up or down) with the mouse, and the camera will focus on that area and zoom out.

Auxiliary Focus

Click this button to make the PTZ camera automatically focus.

One-click reset

Click this button to make the PTZ camera clear the preset points and cruise path.

Lens initialization

Click this button to initialize the lens. This function depends on the actual model, and the actual GUI shall prevail.

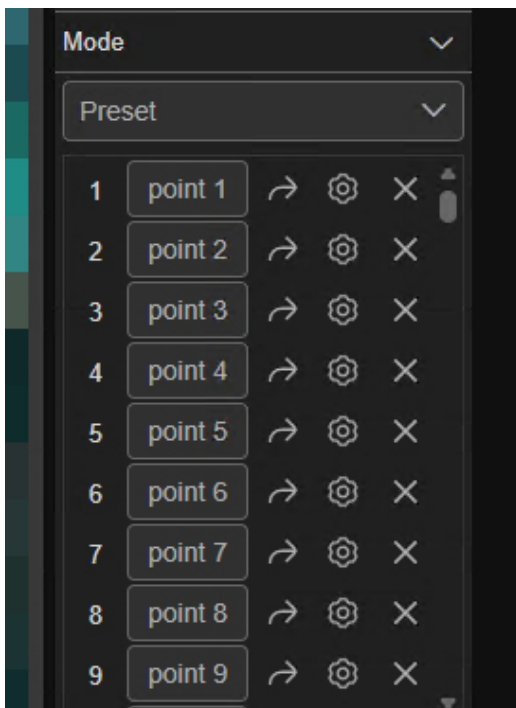
One-click watch

Click this button to perform one-click watch. This function depends on the actual model, and the actual GUI shall prevail.

4.3.3.2 – Mode

There are various modes available, each with different functions and different ways of use.

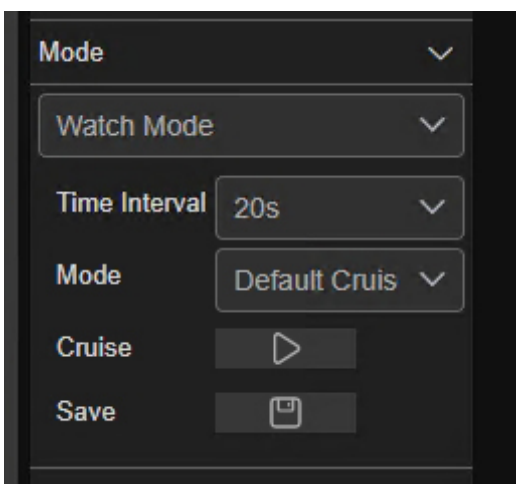
Preset



A preset refers to a predefined image position. You can create a tour using several preset positions.

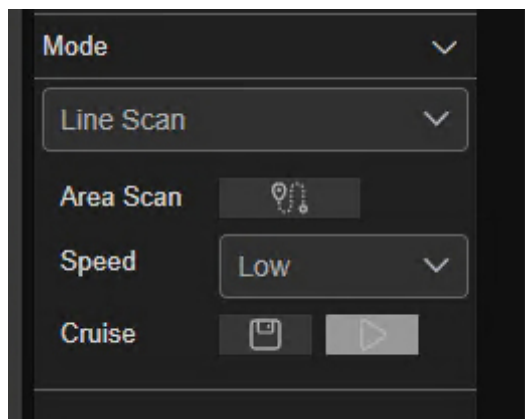
1. Use the PTZ control buttons to move the lens to the desired position.
2. Click on the gear icon (Add Preset) to define a position (maximum 255).
3. Click on point 1 to edit the name of the position.
4. Click on the arrow (Go to) to call up the position. The camera will move to this position.
5. Click on the X to delete the position.

Observation mode



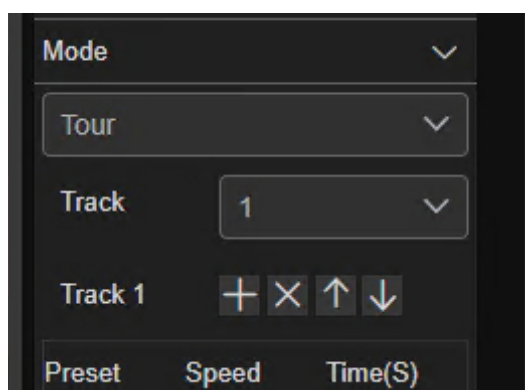
1. Select the observation mode (only one mode can be selected at a time).
2. Select the desired time interval between 15 s and 240 s.
3. Then select the mode. The options available are Standard Tour, Set Observation Point, Line Scan, Tour and Pattern Scan.
4. Clicking on the corresponding mode starts the tour. If Default Tour is selected, the camera starts a 360° tour counterclockwise at a constant speed.

Line Scan



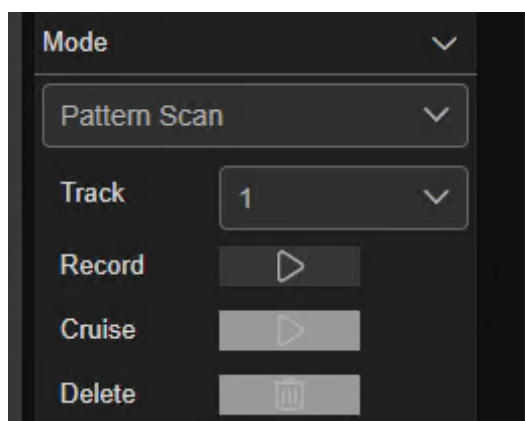
1. Use the direction buttons to align the device.
2. Click the Start button to set the starting position.
3. Use the direction buttons to align the device.
4. Click the End button to set the end position.
5. Click Start Tour. The camera moves back and forth between the start and end positions at a constant speed.

Tour



1. Select the course. You can set up to 32 presets for up to four courses.
2. Set the time interval for each preset.
3. Use the course functions to add, delete or change the order of presets.
4. Click Start tour. The camera will follow the set sequence of presets at the set time intervals.

Pattern scan

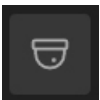
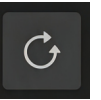
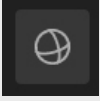
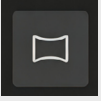
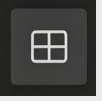
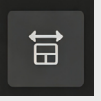
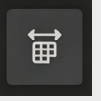
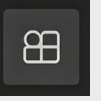
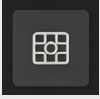
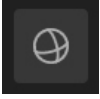
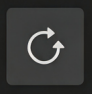
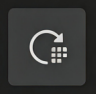
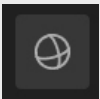
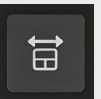
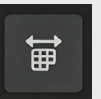
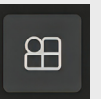


1. Select the course. You can set up to four courses.
2. Click Record to start recording the search pattern.
3. During recording, you can perform any PTZ operations.
4. Click Record again to stop recording.
5. Click Start Tour to start the recorded search pattern. The camera will follow the recorded search pattern.

4.4 – Fisheye

4.4.1 – Installation Method

The Fisheye software dewarping feature supports ceiling-, wall-, desktop- and tilted installations. Select different installation methods to choose different display options.

Installation Method		Display Method
Ceiling		           
Wall		      
Desktop		          
Tilted		      

4.4.2 – Display Mode

Preview images from fisheye cameras can be created using fisheye, panoramic and PTZ images.

- **Fisheye origin image:** A fisheye IP camera captures full-angle or wide-angle images through a fisheye lens.
- **Panoramic image:** This is a corrected fisheye image that has been transformed into a rectangular image.

The fisheye camera's preview display modes are shown in the table below.

Icon	Description	Icon	Description	Icon	Description
	Display fisheye origin image		Display panoramic image		Display 360-degree panoramic images and 3 PTZ images
	Display 2 PTZ images		Display panoramic images and 8 PTZ images		Display 360-degree panoramic images and 8 PTZ images
	Display 180-degree panoramic image		Display single-channel 4 PTZ images		Display fish-eye images and 8 PTZ images
	Display 360-degree panoramic images and one PTZ image		Display 3D cylindrical image		Display panoramic images and 3 PTZ images
	Display 360-degree panoramic images and 6 PTZ images		Display 4 PTZ images		Display 180 dual-channel panoramic images
	Display fish-eye images and 3 PTZ images		Display 360-degree panoramic images		

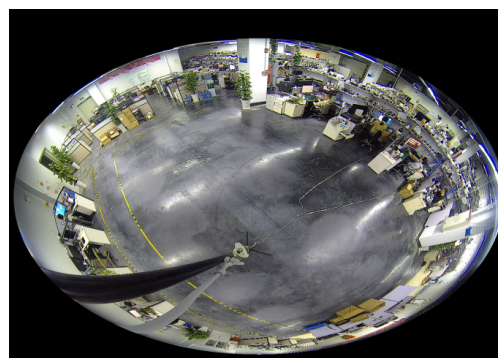
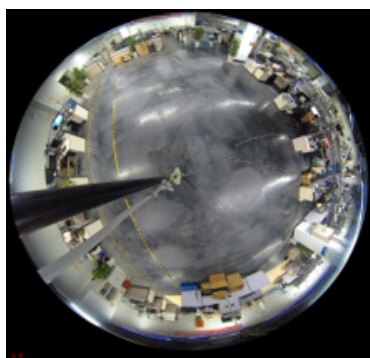
This section demonstrates how fisheye cameras are installed via ceiling mounting in real-world scenarios, with the preview interface selecting this installation method. It explains how different display modes under software and hardware solutions can produce distinct image effects.

4.4.3 – Software dewarp

Software dewarping involves correcting the distortion in raw footage using computer software. In dewarp decoding mode, the fisheye camera offers several preview display options. Clicking the icon changes its colour to blue.

4.4.3.1 – VR

In VR display mode, use the mouse to drag and drop to change the viewing angle. Use the scroll wheel to gradually enlarge the image.

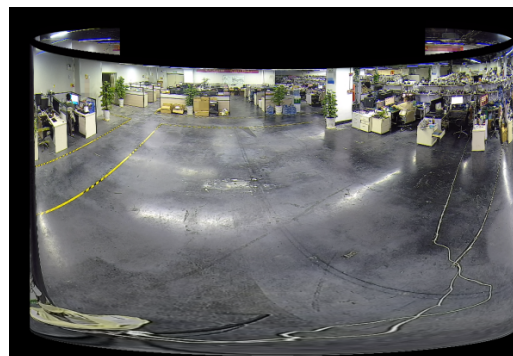


When you select a certain area with the mouse, double-click the left button to roam to the corresponding area and present the PTZ image of the region.



4.4.3.2 – Cylinder

3D column display mode.



4.4.3.3 – 2 PTZ



Two areas of the corrected close-up image display mode.

4.4.3.4 – 4 PTZ



Four areas of the corrected close-up image display mode.

4.4.3.5 – 180° Panorama



180-degree panorama image display mode.

4.4.3.6 – 360° Panorama



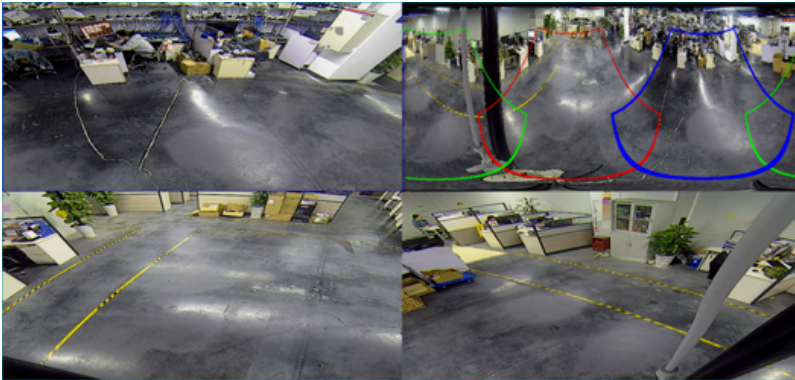
360-degree panorama image display mode.

4.4.3.7 – 360° Panorama & PTZ



360-degree panorama image + a regionally corrected close-up image, different color areas represent different PTZ viewing angle range, select the corresponding PTZ drawing line range, also drag the reverse to change the position of its view.

4.4.3.8 – 360° Panorama & 3 PTZ



360-degree panoramic images + three areas of corrected close-up images, different color areas represent different PTZ viewing angle range, select the corresponding PTZ drawing line range, also drag the reverse to change the position of its perspective.

4.4.3.9 – 360° Panorama & 6 PTZ



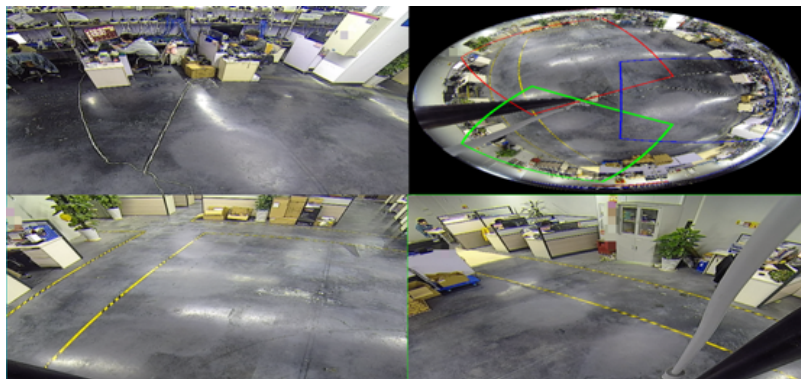
360-degree panoramic images + six areas of corrected close-up images, different color areas represents a different PTZ view angle range, select the corresponding PTZ drawing line range, also drag the reverse to change the position of its perspective.

4.4.3.10 – 360° Panorama & 8 PTZ



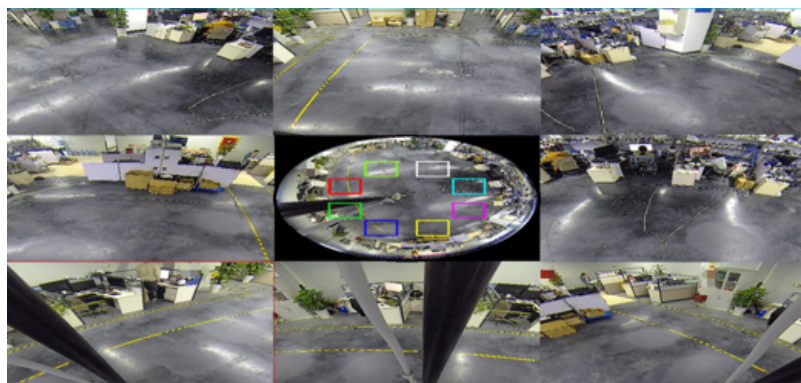
360-degree panoramic images + eight areas of corrected close-up images, different color areas represent different PTZ view angle range, select the corresponding PTZ line range, also drag the reverse to change the position of its perspective.

4.4.3.11 – Fisheye & 3 PTZ



Fisheye image + three areas of correction close-up image, different color areas represent different PTZ viewing angle range, select the corresponding PTZ drawing line range, also drag the reverse to change the position of its perspective.

4.4.3.12 – Fisheye & 8 PTZ



Fisheye image + eight areas of correction close-up image, different color areas represent different PTZ viewing angle range, select the corresponding PTZ drawing line range, also drag the reverse to change the position of its perspective.

5 – PLAYBACK

The camera must not only be able to show us images in real time, but also store the image information so that we can retrieve it when needed.

5.1 – General

The playback function mainly includes general video search and AI search.



1. Search mode selection

2. Filter

Date: Set the date for the search.

Search type: Displays the search types supported by the camera.
If necessary, you can search for a specific part of the recorded files.

Channel list: Select the relevant channel

Search: Displays the recordings stored on the memory card according to the search settings.

3. Playback window

- 4. View control:** You can control playback as you would with a video player. You can also download recordings that have already been made, take snapshots and use other functions.

5. Playback timeline

Progress: By default, the timeline shows the progress within 24 hours. You can jump to the corresponding playback position more accurately by zooming in or out of the progress bar with the mouse wheel.

5.2 – Picture

When automatic recording is enabled, you can search for and play back images using this user interface.



1. Search mode selection

2. Filter

Date: Set the date for the search.

Search time: Set the time period for the search.

Search type: Displays the search types supported by the camera.
If necessary, you can search for a specific part of the recorded files.

Channel list: Select the respective channel

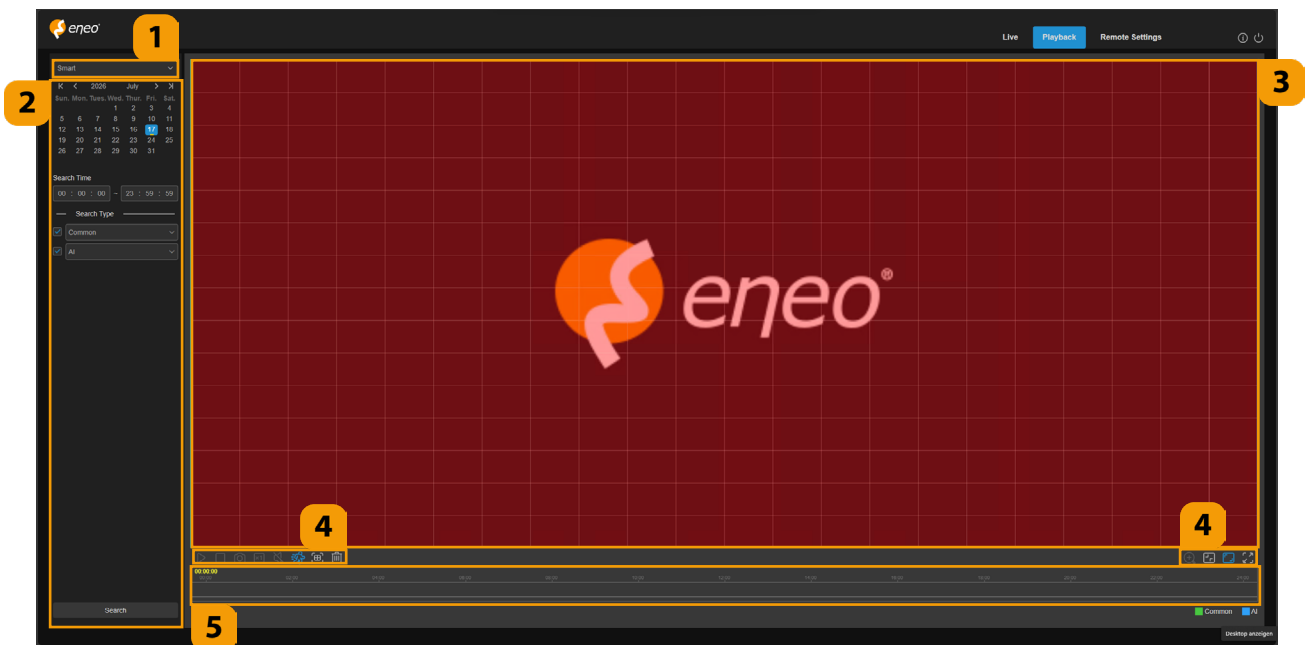
Search: Displays the recordings stored on the memory card according to the search settings.

3. Search results

4. View control: Scroll between pages.

5.3 – Smart

This feature is used to detect whether an alarm was triggered by a person during everyday use. If this happens, the alarm is displayed in blue in the playback timeline at the bottom.



1. Search mode selection

2. Filter

Date: Set the date for the search.

Search type: Displays the search types supported by the camera. If necessary, you can search for a specific part of the recorded files.

Channel list: Select the relevant channel

Search: Displays the recordings stored on the memory card according to the search settings.

3. Playback window

4. View control:

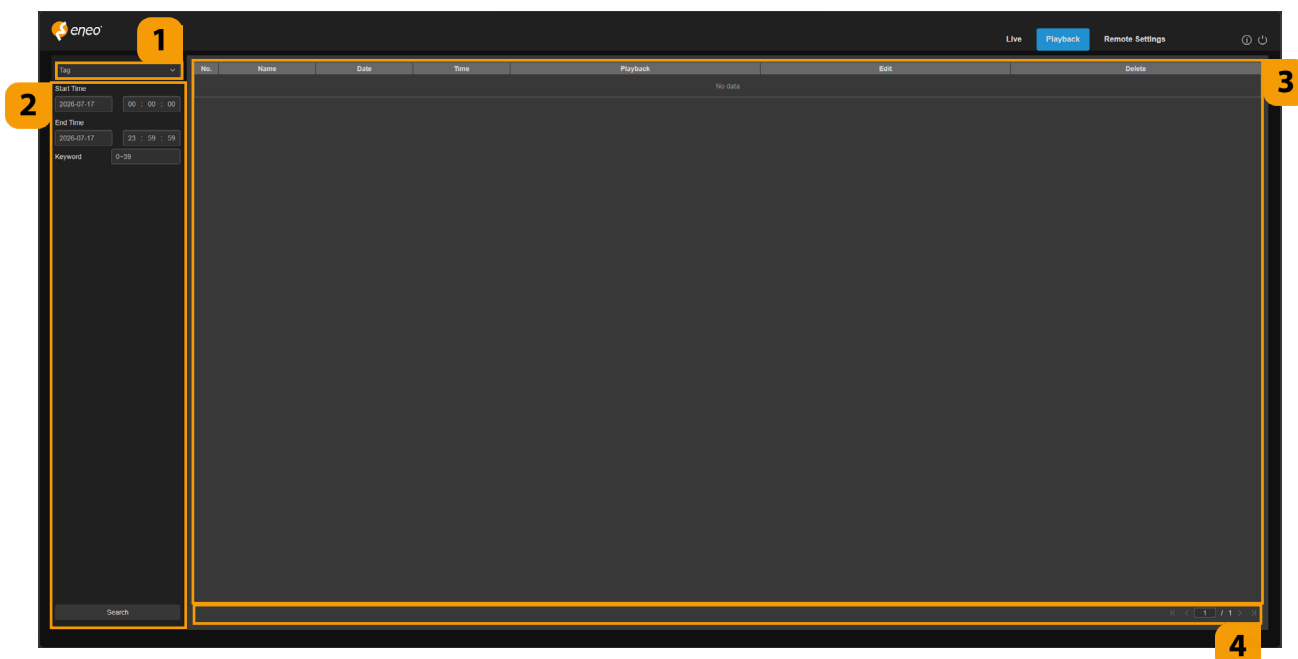
You can control playback as you would with a video player. You can also download recordings that have already been made, take snapshots and use other functions.

5. Timeline for playback

Progress: By default, the timeline shows the progress within 24 hours. You can jump more precisely to the corresponding playback position by zooming in or out of the progress bar with the mouse wheel.

5.4 – Tag

On this screen, you can view, edit, play back or delete all previously added markers.



1. Search mode selection

2. Filter

Start time / End time: Here you can set the time period for the search.

Keyword: This function allows you to search for markers using previously defined keywords.

Channel list: Select the respective channel

Search: Displays the recordings stored on the memory card according to the search settings.

3. Search results

4. View control: Scroll between pages.

5.5 – AI

Various filters are available for displaying the different AI functions; some of these can be applied to all functions, whilst others can only be applied to individual functions.

Below is an overview of the structure of the display page, along with the filter options

1. Search mode selection

2. Filter

Start time / End time: Here you can set the time period for the search.

Alarm Group: The camera assigns images to groups in the database when recorded. This setting allows searching for images from specific groups.

Detection Target: Here you can select people, vehicles or both, depending on your requirements.

License Plate: Filter and query licence plates.

Fault-tolerance: By default, this is set to 3, meaning that three characters have been defined as the tolerance rate.

This means that a licence plate differing by up to three characters from the licence plate in the database is recognised.

Vehicle Type: Filter by vehicle type.

Vehicle Color: Filter by vehicle color.

Vehicle Brand: Filter by vehicle brand.

Face Features: This function is disabled by default. If you select one or more attributes, the search will be filtered according to the selected details.

Human Attributes: Set human attribute filtering conditions and search for events based on the filtering conditions.

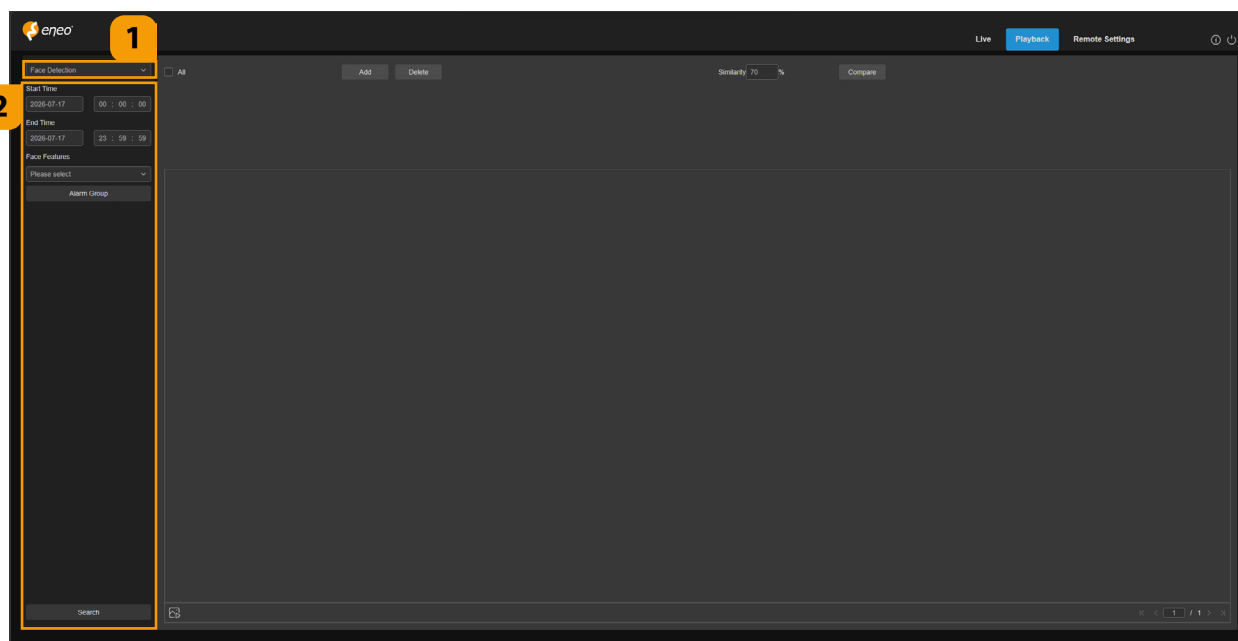
Minimum time interval: The search accuracy can be increased by adjusting the time interval between detections of the same object.

Similarity: Here you can set the similarity to the reference image. Please note that the similarity specified describes the lowest level for comparison

Search: Displays the recordings stored on the memory card according to the search settings.

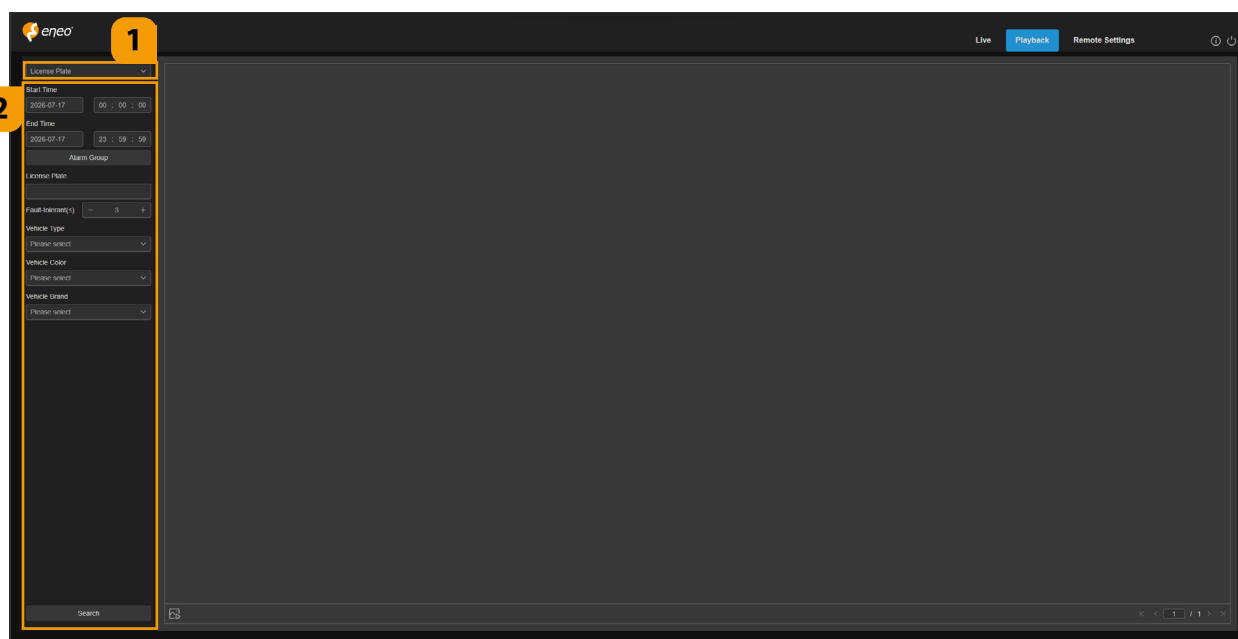
5.5.1 – Face Detection

The camera performs face recognition and stores the information it acquires on the SD card. Faces that meet the user's criteria can be quickly retrieved, and the associated videos can easily be found.



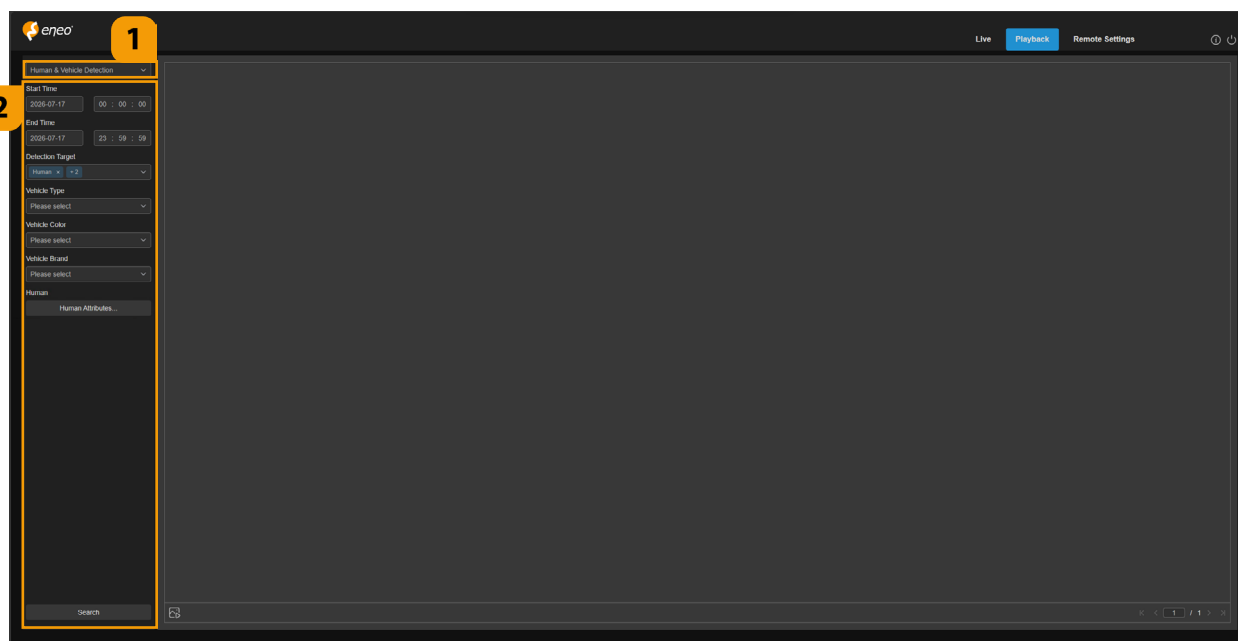
5.5.2 – License Plates

When license plate recognition is enabled, the camera triggers an alarm as soon as it detects a license plate. Images or videos are also recorded to facilitate searching and display.



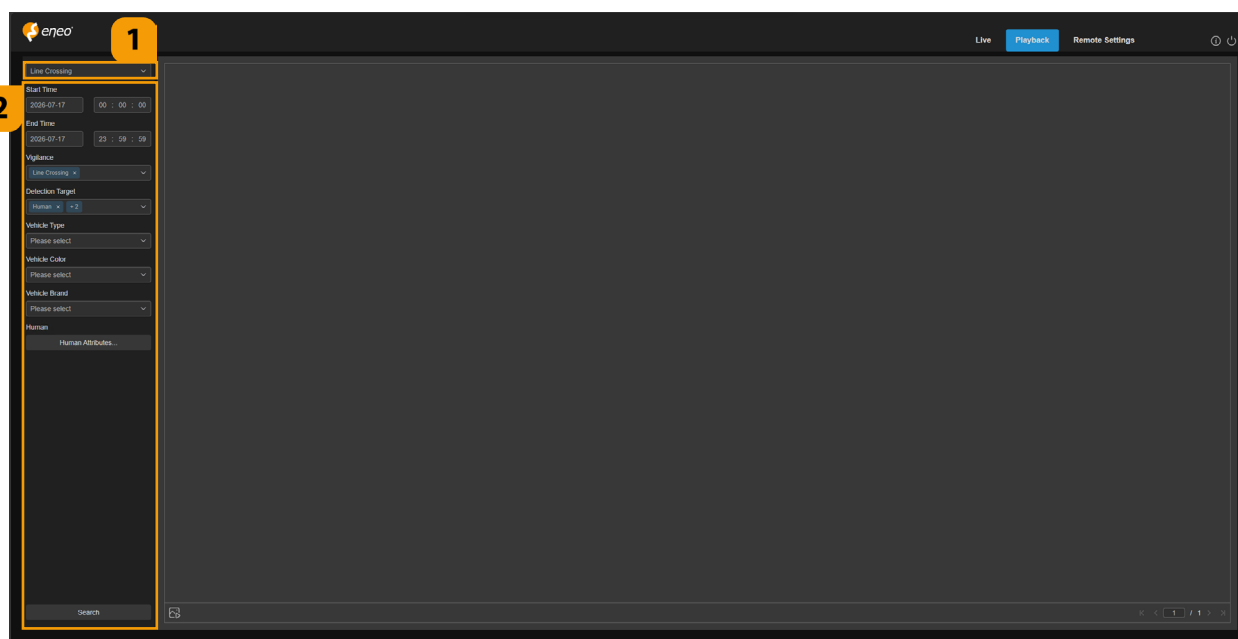
5.5.3 – Human & Vehicle Detection

Similar to face detection, the camera can distinguish between people and vehicles and record them according to your requirements.



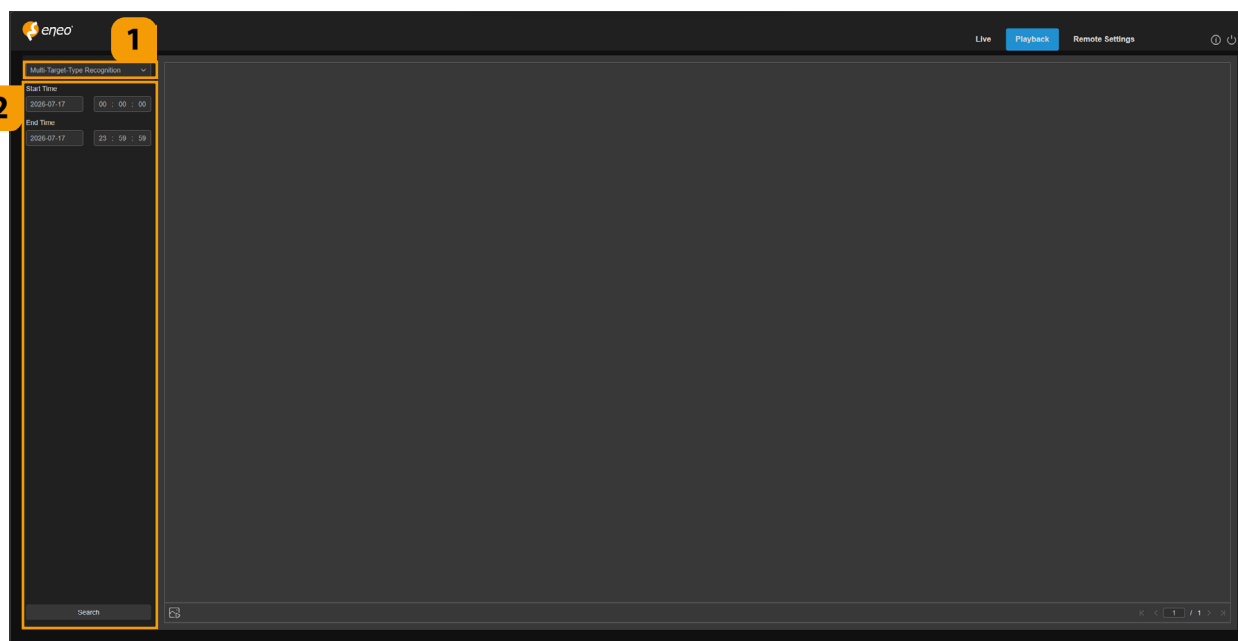
5.5.4 – Line Crossing

With technological advancements, Line Crossing now detects people and vehicles, and records images and video for easy searching and viewing. The interface is shown below.



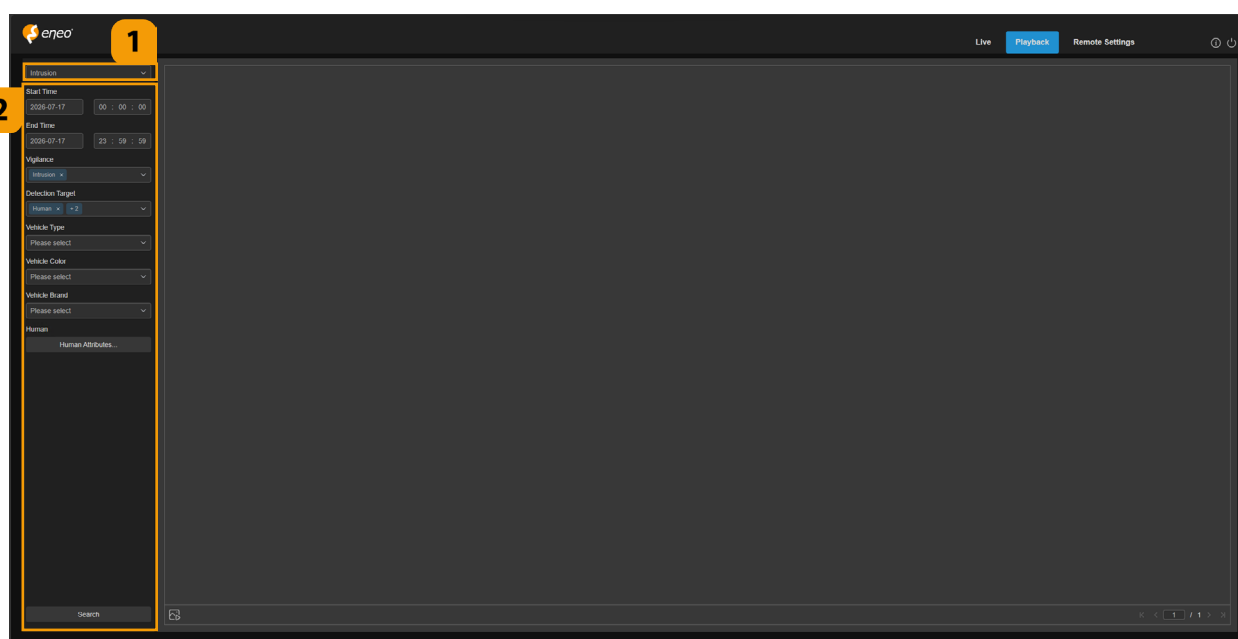
5.5.5 – Multi-Target-Type Recognition

After turning on the Multi-Target-Type Recognition function, the camera will detect the target, issue an alarm, and record pictures or video for easy searching and viewing.



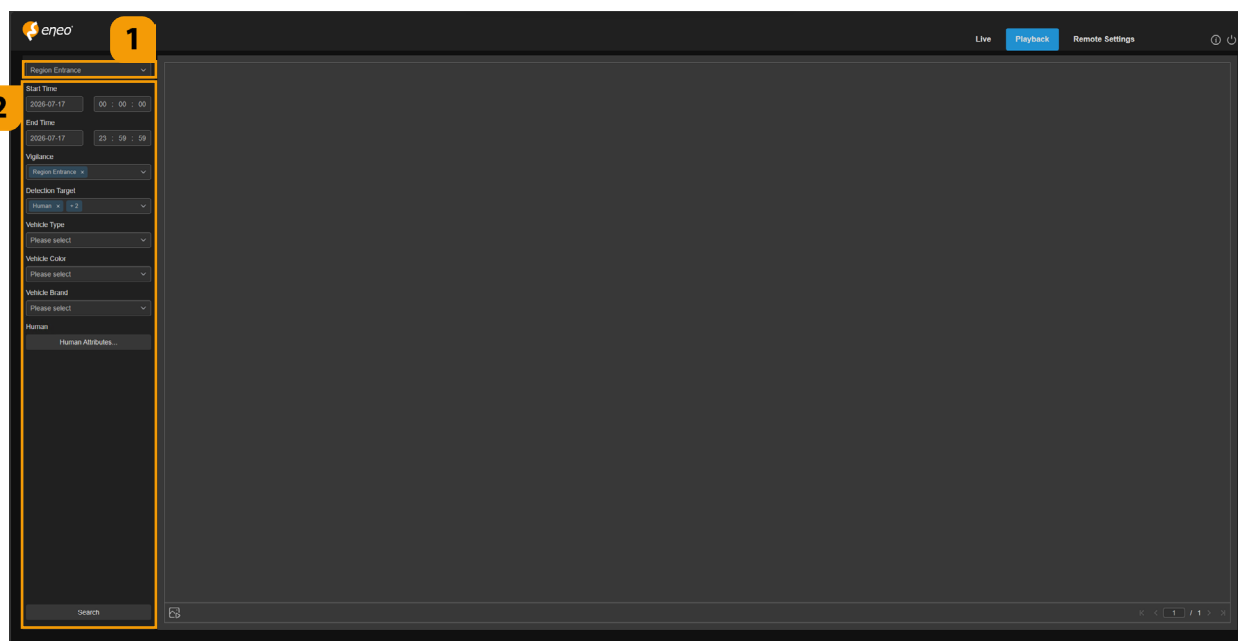
5.5.6 – Intrusion

When the camera's intrusion detection feature is enabled, an alarm is triggered as soon as an intrusion into the preset area is detected. Images and videos are also recorded to facilitate search and display.



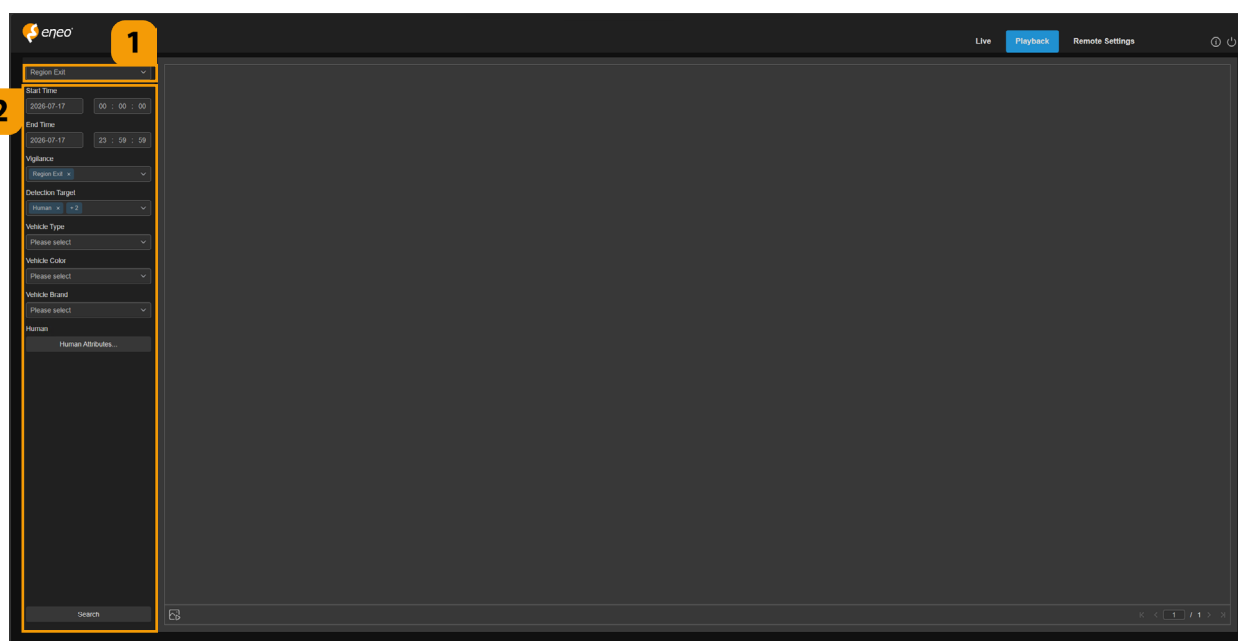
5.5.7 – Region Entrance

When the camera's enter region function is activated, an alarm is triggered as soon as someone enters the preset area. Images and videos are also recorded to facilitate searching and viewing.



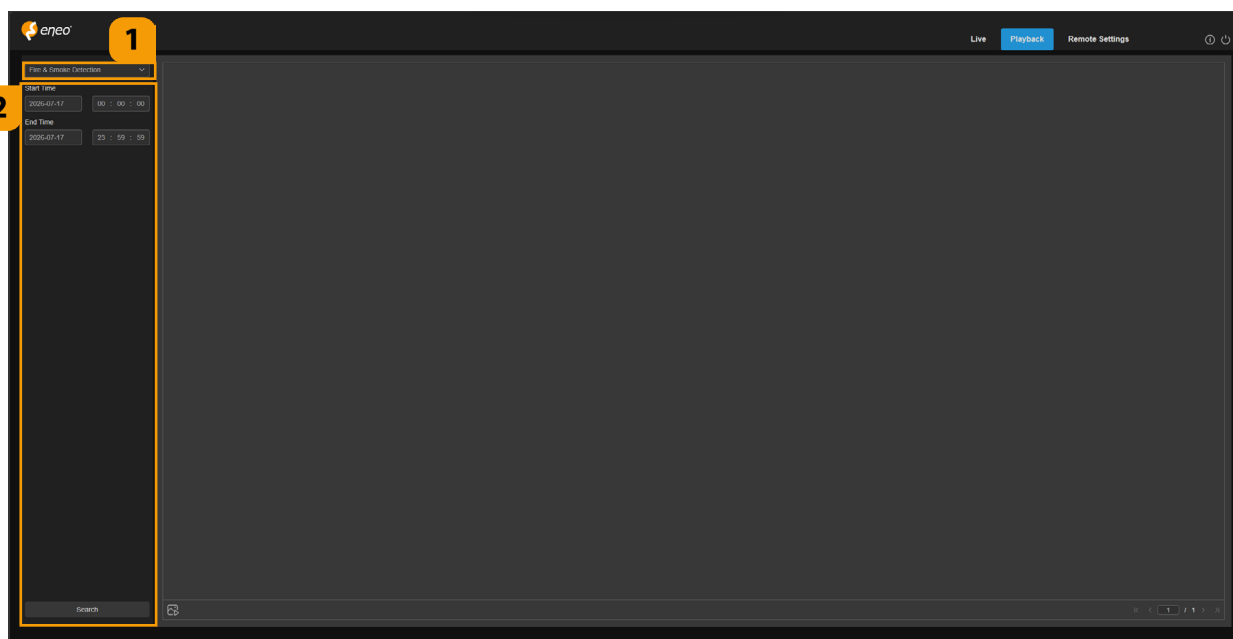
5.5.8 – Region Exit

When the Region Exiting function is enabled, an alarm is triggered when a departure from the preset region is detected. Additionally, images and videos are recorded to facilitate searching and display.



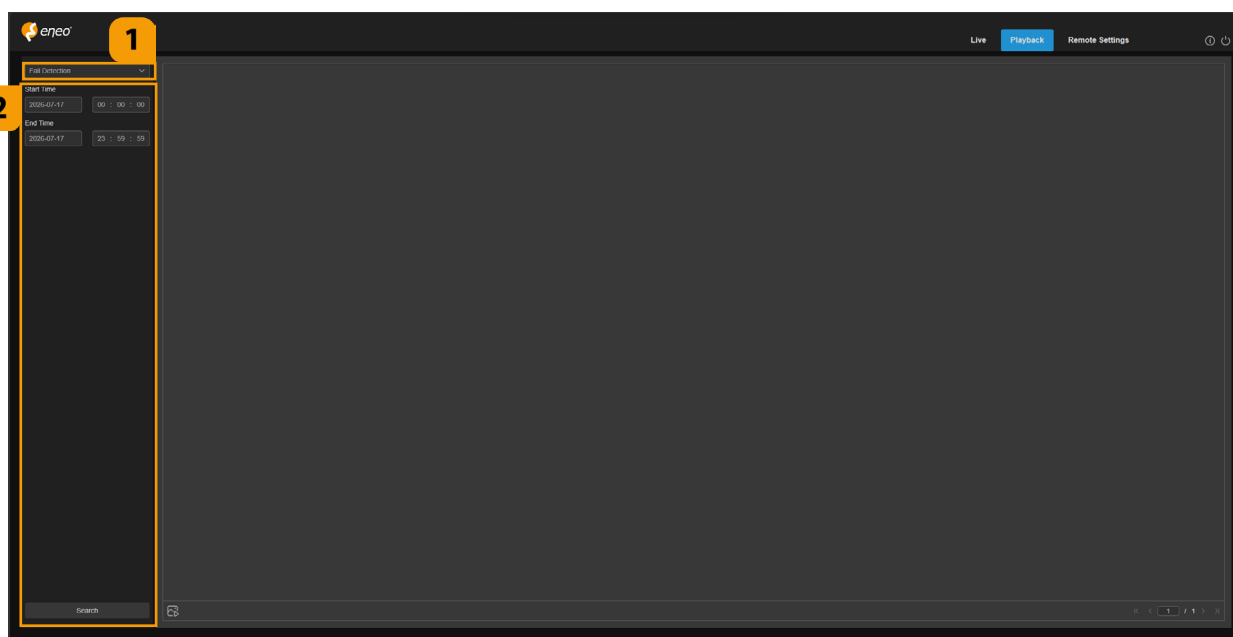
5.5.9 – Fire & Smoke Detection

Once the camera's fire and smoke detection function is activated, it will detect smoke and fire, issue an alarm, and record pictures or video for easy searching and viewing.



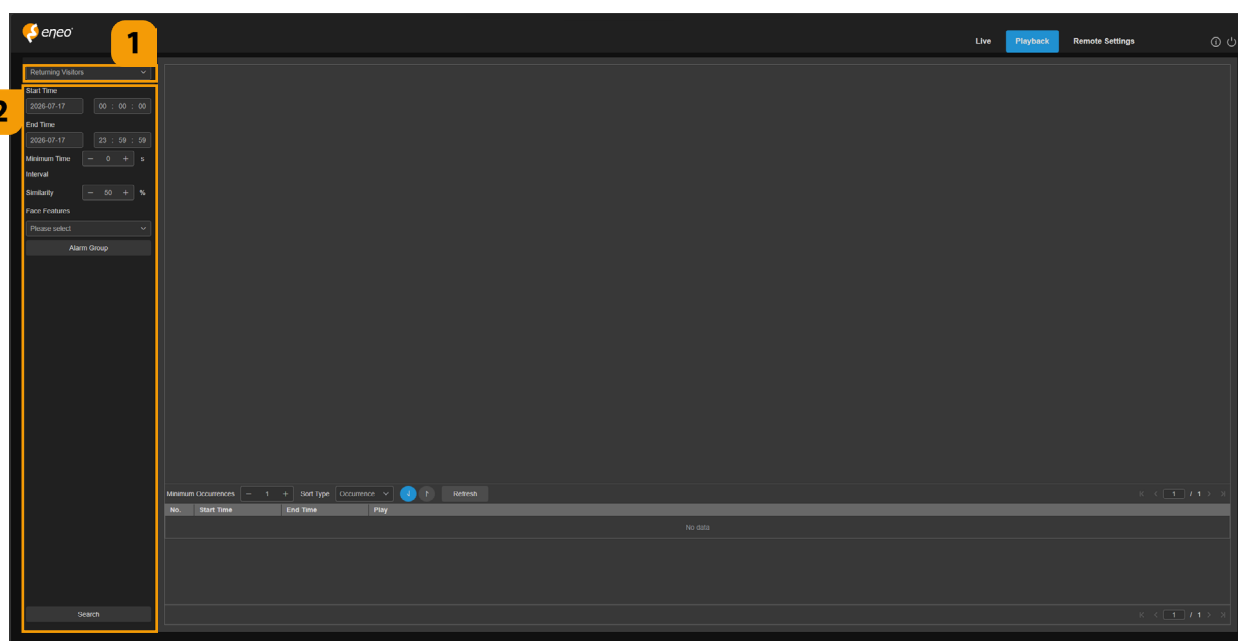
5.5.10 – Fall Detection

After enabling the fall detection function, the camera will trigger an alarm and record images or video footage if someone falls. This makes it easy to search and review the footage.



5.5.11 – Returning Visitors

The face recognition function provides real-time alarms and can deeply analyze data to meet customer needs. For example, if a camera is installed in a certain area of a mall, the Returning Visitors function can check if a customer stops to look at goods in that area. It can also monitor an area to see if a suspected target is frequently seen there.

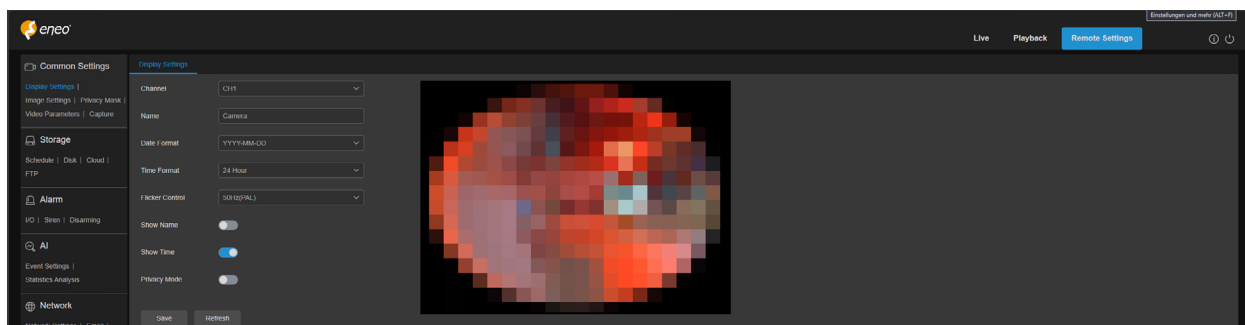


6 – REMOTE SETTING

6.1 – Common Settings

6.1.1 – Display

You can change basic camera settings in the channel's live settings.



Channel: Set the camera channel

Name: Set the camera name

Date Format: Set the date format displayed by the camera OSD.

Time Format: Set the time format of the camera's OSD display.

Flicker Control: Set the refresh rate of the camera.

Show Name: The preview shows the camera channel name. Set the position where the channel name is displayed by dragging the channel name on the image.

Show Time: The preview shows the camera time. Set the position of the channel time display by dragging the channel time on the image.

Privacy Mode: When privacy mode is enabled, images will be hidden during both preview and playback, and the preview image will not appear on the settings page.

Display Alarm Statistics Position: Set the position of the channel alarm statistics display by dragging the channel alarm statistics on the image. This setting is only displayed when the function that supports alarm statistics display is turned on.

Save: Save the current changes.

Refresh: Retrieve the current interface parameters.

6.1.2 – Image Settings

The image settings allow you to directly modify graphic parameters such as switching from full color to B/W mode, WDR, and backlight supplement.

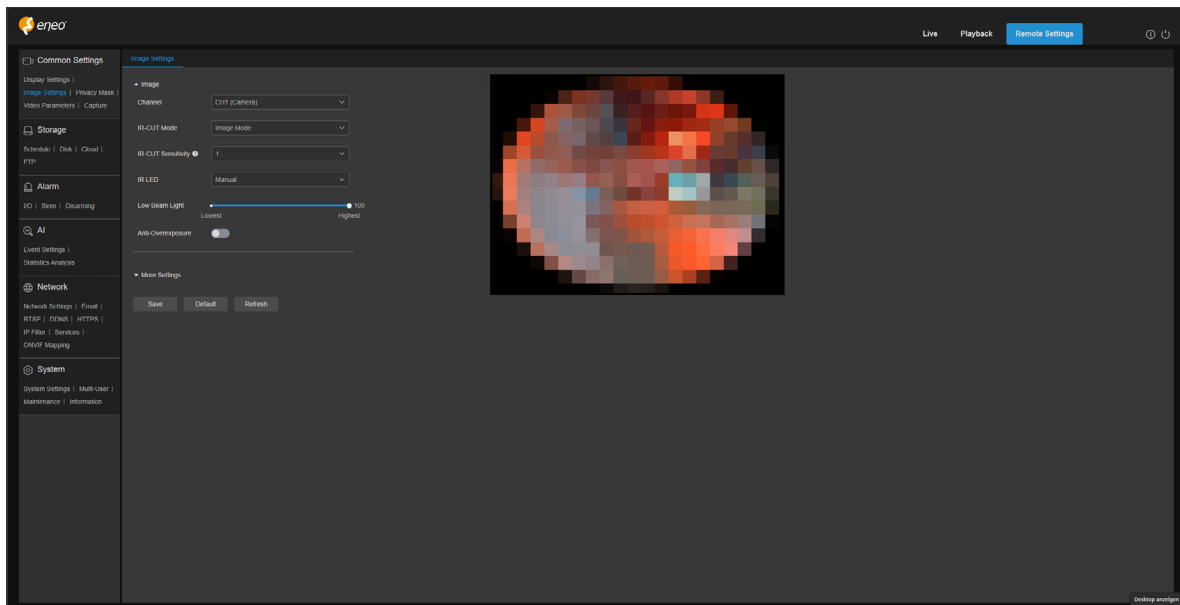


Image settings: Set the camera mode.

Full Colour Mode: The camera operates in full colour mode.

Day/Night Mode: The camera works in day/night mode.

Smart Illumination: When the camera triggers an alarm in night vision mode, it links with the warm light to provide additional illumination, resulting in a colour image. The camera will return to night mode after the alarm ends.

White light: Set the fill-in light to white in Full Colour Mode.

Automatic: In this mode, the camera automatically adjusts the intensity of the fill-in light according to the surrounding light levels.

Manual: In this mode, the fill-in light is applied to the environment with a fixed brightness value.

Schedule: In this mode, the white light is switched on and off automatically for fill-in lighting at scheduled times.

OFF: Disables the white light.

Sensitivity: Sensitivity 0-3. The degree to which the camera is sensitive to ambient light. The higher the value is, the higher the sensitivity is.

Anti-Overexposure: When enabled in all image modes, this function prevents images from becoming overexposed in a bright environment.

Light distance: This ranges from 0 to 100 and is used to adjust the brightness of the fill-in light. The higher the value, the brighter the light.

IR-CUT mode: Use this to set the day/night switching mode of the camera.

Auto: Automatically controls the switching mode. The switch from colour to black and white is judged by image analysis, and the switch from black and white to colour is judged by light sensitivity to ambient light.

Color Mode: The forced colour mode will not switch to black and white.

Black & White Mode: The forced B/W mode will not switch to colour.

Image Mode: Similar to Auto Mode, colour to black and black to colour are judged by images (for non-photosensitive models).

Schedule: Switch between black and white and colour as scheduled. If this function is enabled, the start and end times for night vision must be set.

IR-LED: Use the IR light to set the fill-in light effect for night vision.

Smart IR: This intelligently controls the fill-in light intensity of the IR light according to the focal length and overexposure conditions.

Manual: The fill-in light is applied at the set brightness of the IR light.

OFF: No fill-in light is applied.

Low/High Beam light: Manually adjust the brightness of the first group of IR lights (from 0 to 100; 0 indicates that the IR lights are off, and 100 indicates the highest brightness). (only supported by varifocal cameras).

Corridor Mode: The image is rotated 90 degrees clockwise.

Angle adjustment: Image rotation setting. In some usage scenarios, the camera is reversed from the presetting. For example, although the camera is designed to be hung upside down, it is usually used horizontally. Set this value to adjust the image.

Image Flip: Use the mirror mode to adjust the picture effect.

Disable: Disable the mirror mode.

Vertical: Set the mirror mode to interact with the image in the vertical direction (up and down).

Horizontal: Set the mirror mode horizontally to flip the image left and right.

All: Enable both vertical and horizontal at the same time. This has a similar effect to 180° rotation, but the implementation principle is different.

Backlight: Configure the camera's backlight behaviour

WDR: Wide Dynamic Range in which the picture is uniformly balanced based on the setting and both light and dark areas can be clearly distinguished. (DWDR in some models).

HLC: Strong light rejection function, which makes objects in the high light area clearer in the picture according to the set HLC Level value. (Not supported by some models).

BLC: Backlight compensation, in which objects in dark areas are clearer.

Disable: The image will not be optimised with backlight compensation enabled.

White Balance: White balance is a measure of how accurately white is produced by mixing red, green and blue.

Automatic: The white light is adjusted using default parameters.

Manual: Set the synthetic white light using red, green and blue.

Shutter: Set the shutter exposure time.

Automatic mode: The camera automatically selects the correct exposure time according to the exposure time setting.

Manual: Use the time exposure setting directly.



Note!

In shutter manual mode, deselect the flicker-less option of the exposure time and select it in shutter auto mode. When you switch to manual shutter mode, the exposure time automatically switches to 1/100 or 1/120.

Long Exposure: Set the camera's exposure time and use this parameter in combination with shutter speed. If the exposure time is too long, the image may be overexposed. If the exposure time is too short, the picture may be dark.

Defog Mode: Foggy conditions can lead to deteriorated image quality. The Defog function optimises image rendering on foggy days.

OFF: Disables the defog function.

Automatic mode: In this mode, the camera automatically judges the defog effect.

Manual: Allows you to set the defog value manually.

3D Noise Reduction: Set this parameter to reduce image noise and obtain a clearer picture.

Automatic mode: In this mode, the camera automatically selects the noise reduction effect according to algorithms.

OFF: Disables the noise reduction function.

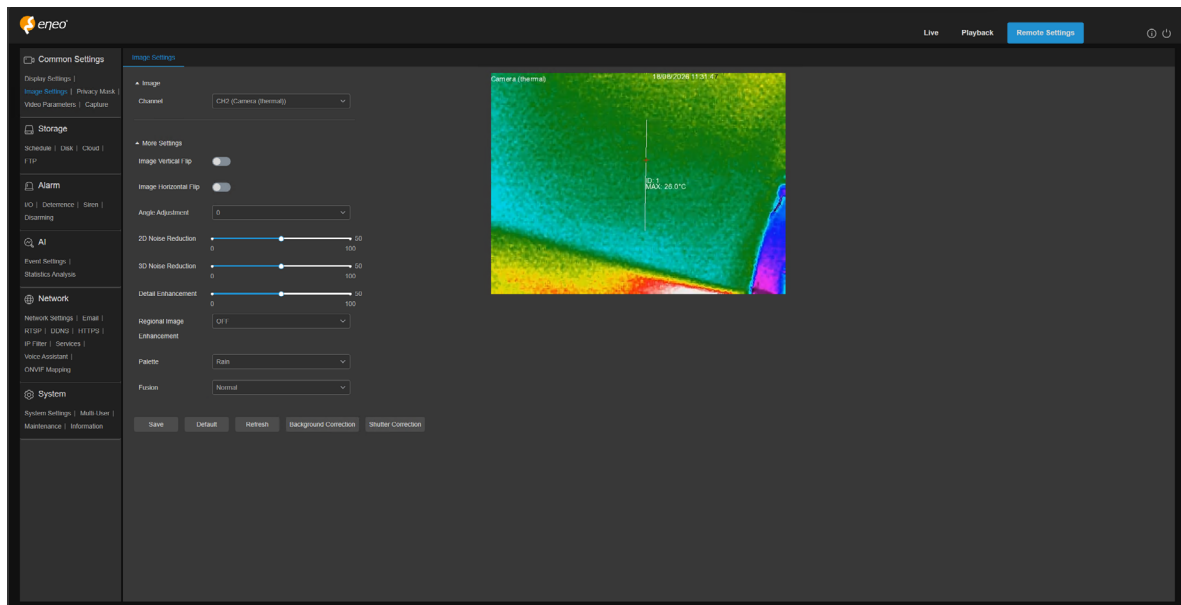
Manual: Allows you to manually adjust the noise reduction coefficient to reduce image noise.

Save: Save the changes made to the image parameters.

Default: Restores the image parameters to their default settings.

Refresh: Refresh the image parameters.

6.1.2.1 – Thermal Image Control



2D Noise Reduction: Reduces noise in the thermal channel screen according to manually set noise reduction parameters. The larger the parameter value, the clearer the image and the more obvious the noise reduction effect.

3D Noise Reduction: Reduces noise in the thermal channel. The larger the parameter value, the more obvious the noise reduction effect and the clearer the image.

Detail enhancement: According to the manually set parameters, details in the thermal channel are enhanced. The larger the parameter value, the clearer the image and the more obvious the enhancement effect.

Enhance Regional Image: Select an area or customise one to enhance the corresponding area of the thermal channel screen and make it brighter.

Palette: Set the colour pseudo-colour mode of the thermal channel to display temperature differences using different colours.

Fusion: Choose whether to merge and superimpose the optical channel image onto the thermal channel image.

Normal: The optical and thermal channel images are displayed independently and are not integrated.

Details Overlay: The optical channel image is fused and superimposed onto the thermal channel image, allowing more details of the optical image to be seen in the thermal channel image.

Image Fusion Ratio: The ratio of the optical channel screen to the thermal imaging channel screen. A larger value of the parameter indicates a larger ratio of the optical channel screen and a closer fused image effect to that of the optical channel. Conversely, a smaller value indicates a closer resemblance to the image effect of the thermal imaging channel before fusion.

Edge Fusion Ratio: The larger the parameter value, the clearer the objects in the fused image will be. Otherwise, the image becomes blurrier.

Fusion distance: The distance between the optical and thermal channel images.

Horizontal trim: Adjusts the horizontal position of the optical channel image relative to the thermal channel image in the fused image.

Vertical trim: Vertical adjustment: adjusts the vertical position of the optical channel image relative to the thermal channel image in the fusion image.

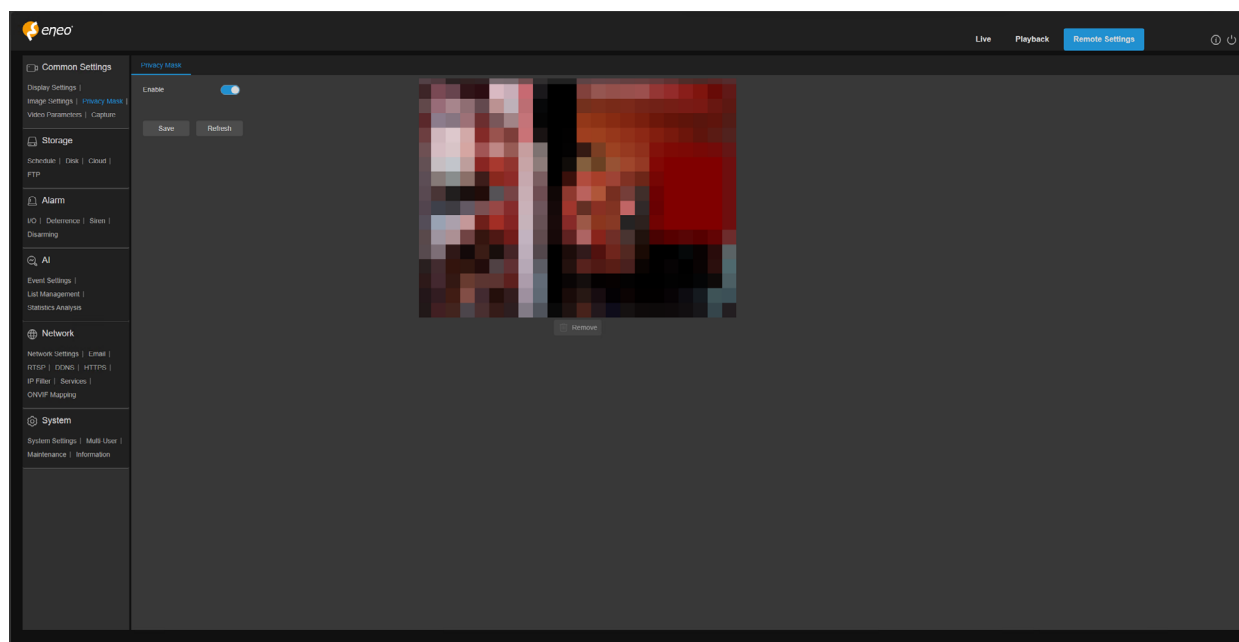
Background correction: Background correction to optimise the effect of the thermal channel image. Place a uniform barrier in front of the lens to completely block the thermal lens, such as uniform foam or cardboard. The device will then optimise the image based on this uniform barrier.

Shutter correction: Manual correction to optimise the thermal channel image effect.

6.1.3 – Privacy Mask

This function is used to hide areas that are visible to the camera but are not to be monitored or recorded.

Depending on the camera model, this function can be used to create up to 6 privacy zones of any size and position.



Activate: Activates the function.

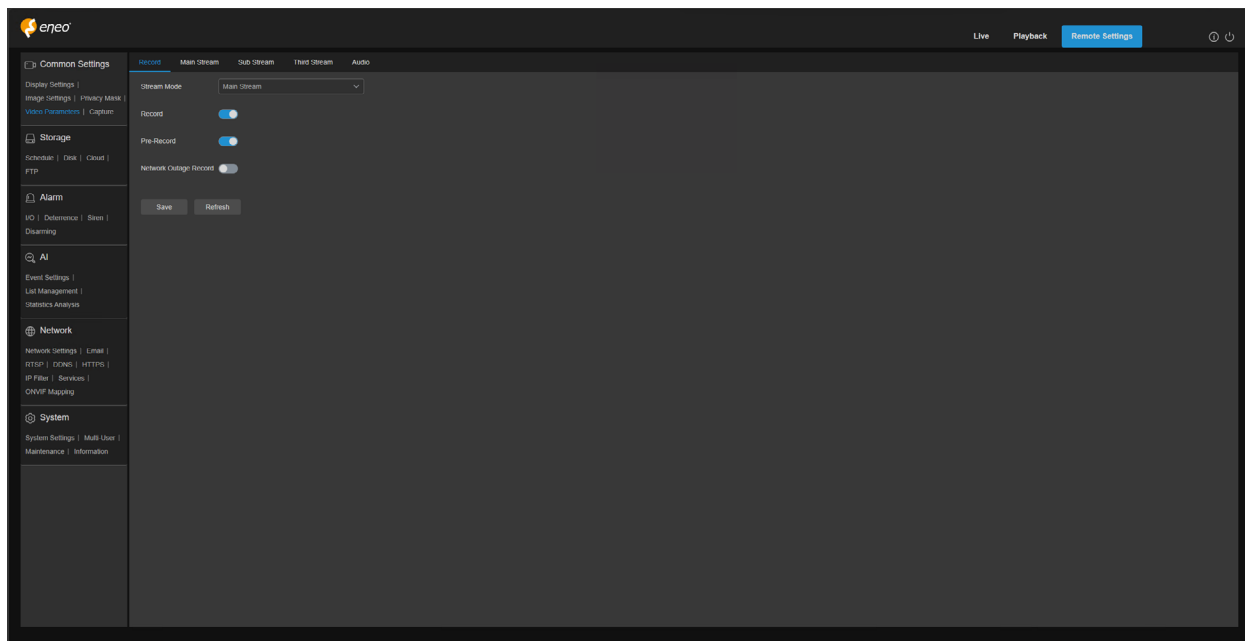
Setting private zones: Define the areas on the monitoring screen that are not to be monitored. The protected areas are displayed in red during setup and black after activation.

Remove: Delete selected private zones.

6.1.4 – Video Parameters

This menu allows you to configure the screen preview and recording parameters.

6.1.4.1 – Record



Stream Mode: Select Recording Mode. The video stream is saved to the SD card. The default setting is Mainstream.

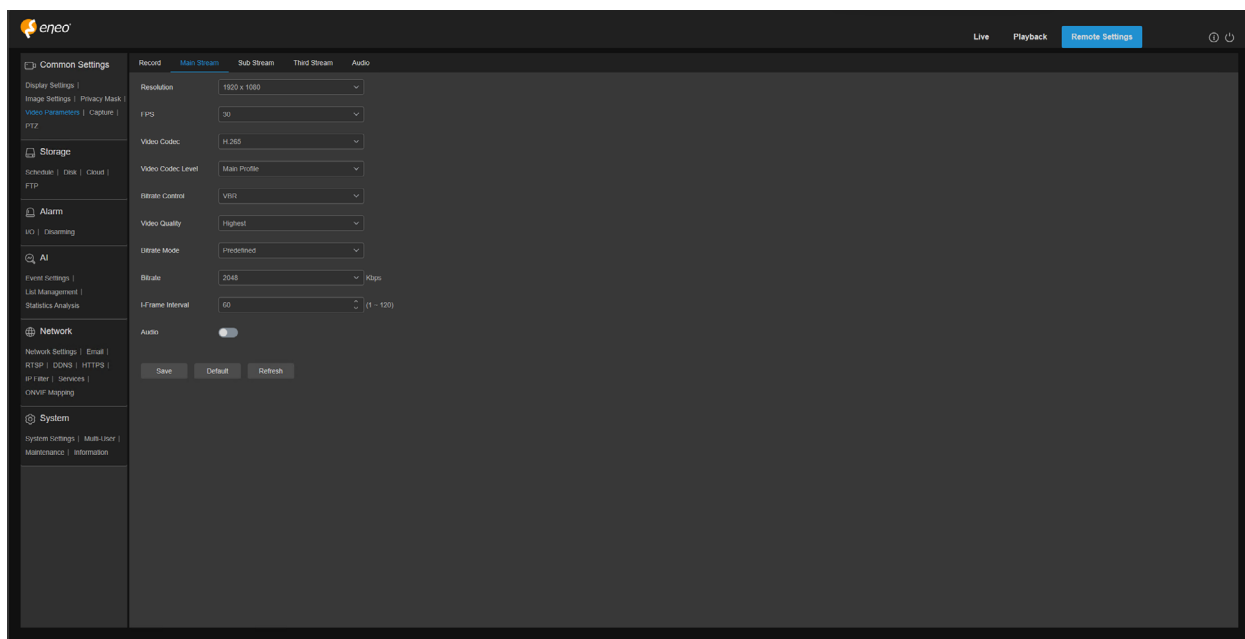
Record: Check this box to enable recording.

Pre-Record: Enable this option to activate it. The camera will start recording a few seconds before an alarm event occurs. This option is recommended for users whose main type of recording is based on motion detection or I/O alarms.

Network Outage Record: Event recording is also performed when the network is disconnected or the connection fails.

6.1.4.2 – Encode

This menu allows you to configure the image quality parameters for recorded video or network transmission. The main stream typically refers to the quality of the recorded video that will be saved to an SD card. The sub-stream defines the quality of the preview video accessed remotely (e.g., by web clients and VMS). The mobile stream can be optionally disabled and defines the quality of the preview viewed via remote access using a mobile device.



Resolution: This parameter indicates the resolution of the recorded image.

Frame Rate: This parameter indicates the number of frames recorded by the camera.

Video Codec: Channel decoding type.

Video Codec Level: Video quality level.

Bitrate Control: Select the bitrate level. For simple scenes, such as a grey wall, Constant Bit Rate (CBR) is appropriate. For more complex scenes, such as busy streets, Variable Bit Rate (VBR) is appropriate.

Video Quality: If you want to set the bitrate yourself, select 'User Defined' mode. If you want to select a preset bitrate, select 'Preset Mode'.

Bitrate: This parameter corresponds to the data transfer speed that the camera uses to record the video. Higher bitrate videos will have better quality.

I-Frame Interval: Set the I frame interval of the camera.

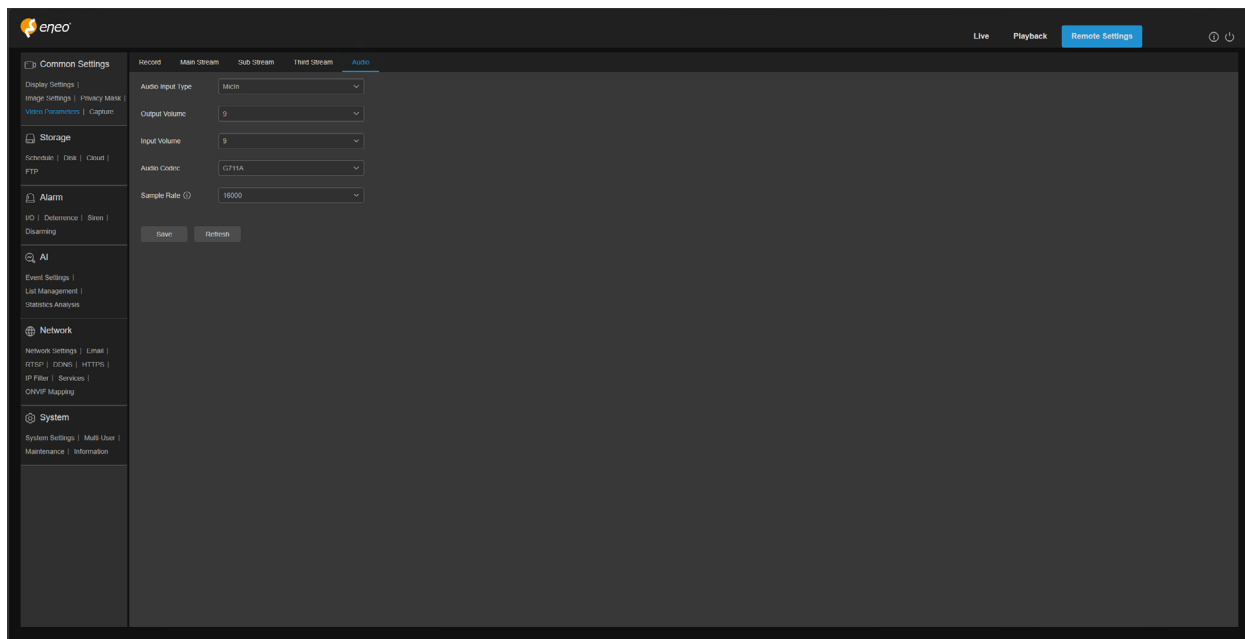
Audio: Enable this option if the user wants to record audio and video at the same time and connect a microphone to the camera or use a camera with audio capabilities.

Save: Save the parameters of the video encoding.

Default: Restore the video encoding parameters to the default.

Refresh: Refresh the video encoding parameters.

6.1.4.3 – Audio



Audio Input Type: Select either MicIn or Lineln.

„MicIn“ means the audio is input through the device’s microphone.

„Lineln“ means the audio is input through the tail line of the device, which is supported by some models.

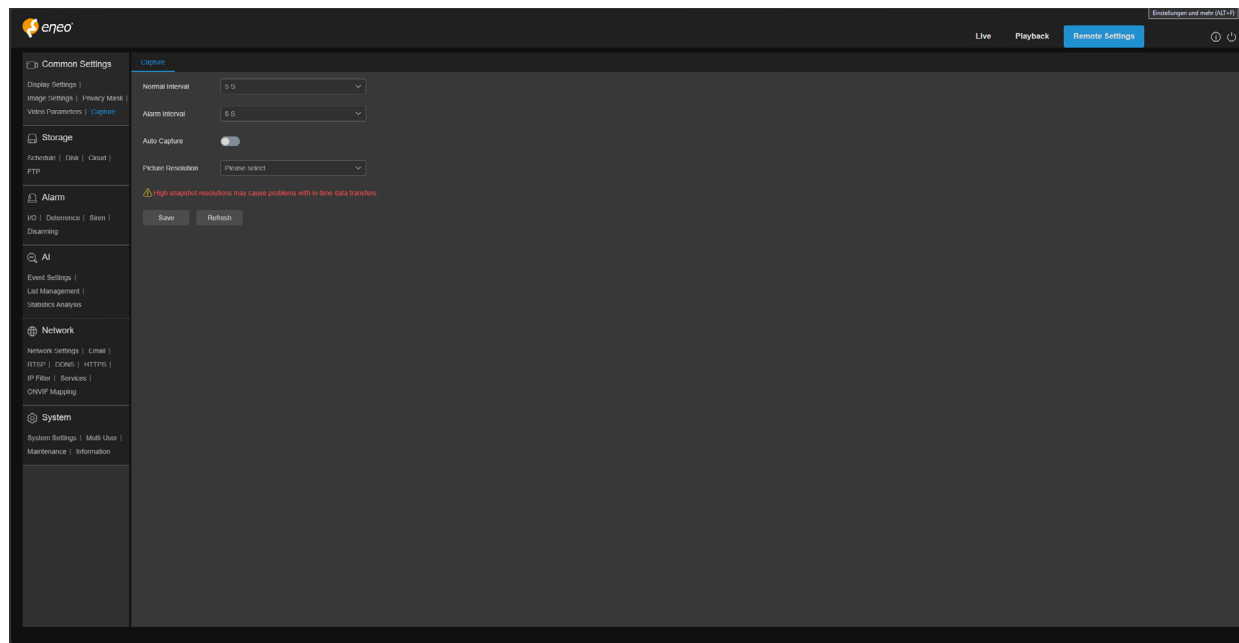
Output Volume: Set the volume of the output audio.

Input Volume: Set the volume of the input audio.

Audio Codec: Select the type of audio decoding.

6.1.5 – Capture

This menu is allowed to configure the parameters related to the auto capture function.



Normal interval: The interval between captures during normal recording.

Alarm Interval: The capture interval for images when motion detection or IO alarms are triggered.

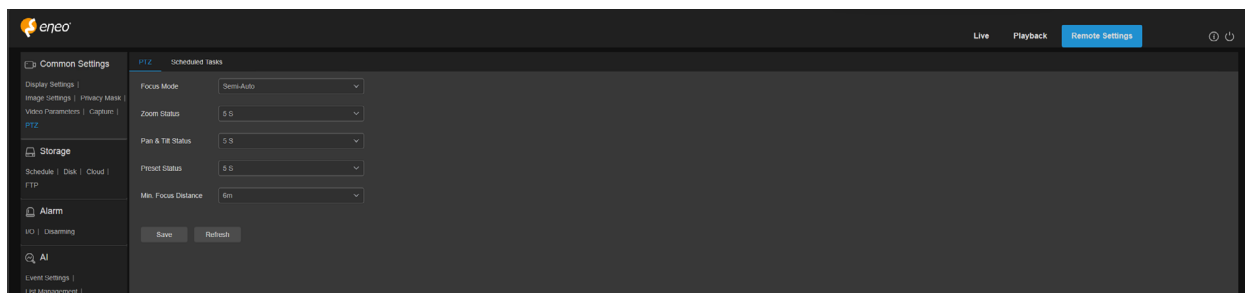
Auto Capture: Enable or disable auto capture.

Picture Resolution: Select the resolution of the captured picture.

6.1.6 – PTZ

6.1.6.1 – PTZ

This menu is allowed to configure the PTZ parameters of the PTZ and control the rotation of the PTZ through the RS485 interface.



Focus mode: Used to set the focus mode.

Auto: The PTZ camera automatically adjusts the focus when the scene changes.

Semi-automatic: Once the PTZ camera has been brought into focus by operating the PTZ functions or changing the zoom ratio, it will not refocus even if the scene changes.

Manual: The PTZ camera is focused manually on the live view screen. Operating the PTZ camera, changing the zoom ratio or scene changes do not trigger refocusing.

Zoom status: The magnification of the dome lens is displayed in the bottom left-hand corner of the preview screen. Select whether and for how long this should be displayed.

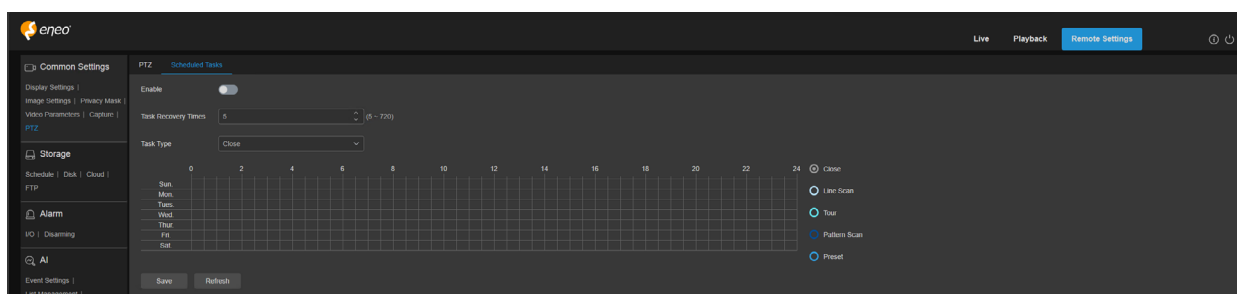
Pan and tilt status: The camera's azimuth values in the horizontal and vertical directions are displayed in the bottom left-hand corner of the preview screen. Select whether these should be displayed and for how long.

Preset status: The number of the preset position called up by the PTZ camera is displayed in the bottom left-hand corner of the preview screen. Select whether this should be displayed and for how long.

Min. Focus Distance: If the distance from the object in the scene to the lens is less than the minimum focus distance, the lens will not adjust its focus on that object and will prioritise focusing on the object that is larger than the 'Min. Focus Distance' parameter. For example, if the minimum focus distance is set to 6 m, you can position a baffle 1.5 m away to cover part of the lens's field of view, with half of the field of view comprising the far view and the other half the near view; the dome will then prioritise focusing on the far view from 6 m onwards.

6.1.6.2 – Scheduled Tasks

Click the 'Scheduled Tasks' tab to set up the high-speed dome camera task schedule, as shown in the picture below. Users can set the camera to perform different cruise tasks automatically at different times.



Enable: Enable or disable the PTZ schedule task function. If the number of times the high-speed dome camera cruises reaches the limit, a prompt will appear on the right of the switch.

Task recovery times: When the PTZ executes tasks according to the schedule, manual operation will interrupt the cruising tasks. Once the recovery time has expired, the PTZ will automatically resume the corresponding cruise tasks according to the schedule.

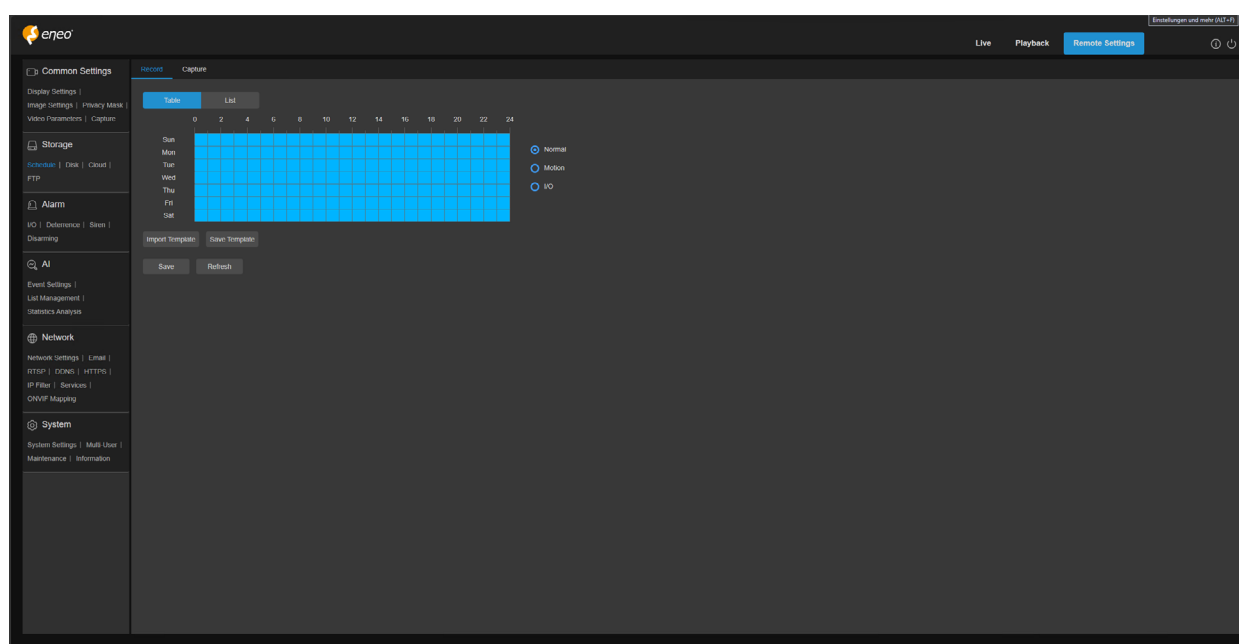
Task type: The schedule task types are Close, Linear Scan, Track Cruise, Pattern Scan, and Preset Point. Track Cruise and Pattern Scan can have up to four different paths set up, and the Preset Point task can have up to eight preset points set up, numbered from 1 to 8.

6.2 – Storage

6.2.1 – Schedule

Set up normal and event recording schedule for a set period of time.

6.2.1.1 – Record



Table/List: The schedule is presented in table form or list form. Click on Normal, Motion or I/O on the right side to switch between different types of video schedules.

Select Table and drag or tick the corresponding time period in the table to set the corresponding rable

Select List to set the corresponding time schedule by manually adding rules and entering the start and end time periods.

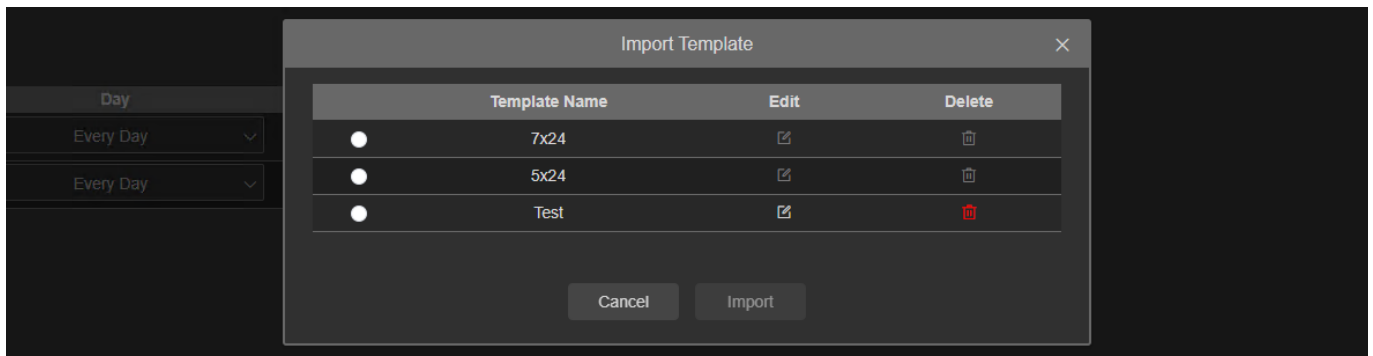
Add: Add a schedule rule.

Delete All: Delete all schedule rules.

Start Time: Set the schedule rule start time.

End Time: Set the end time of the schedule rule.

Day: Set the period for the schedule rule to take effect.



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

Edit: Edit this schedule template to modify the template name and specific schedule rules.

Delete: Delete this schedule template.



Note!

The system comes with two default schedule templates, 7x24 and 5x24, that cannot be edited or deleted.

Save Template: Save the schedule template, save the currently set schedule rule as a custom template, and import the template in other schedule setting pages.

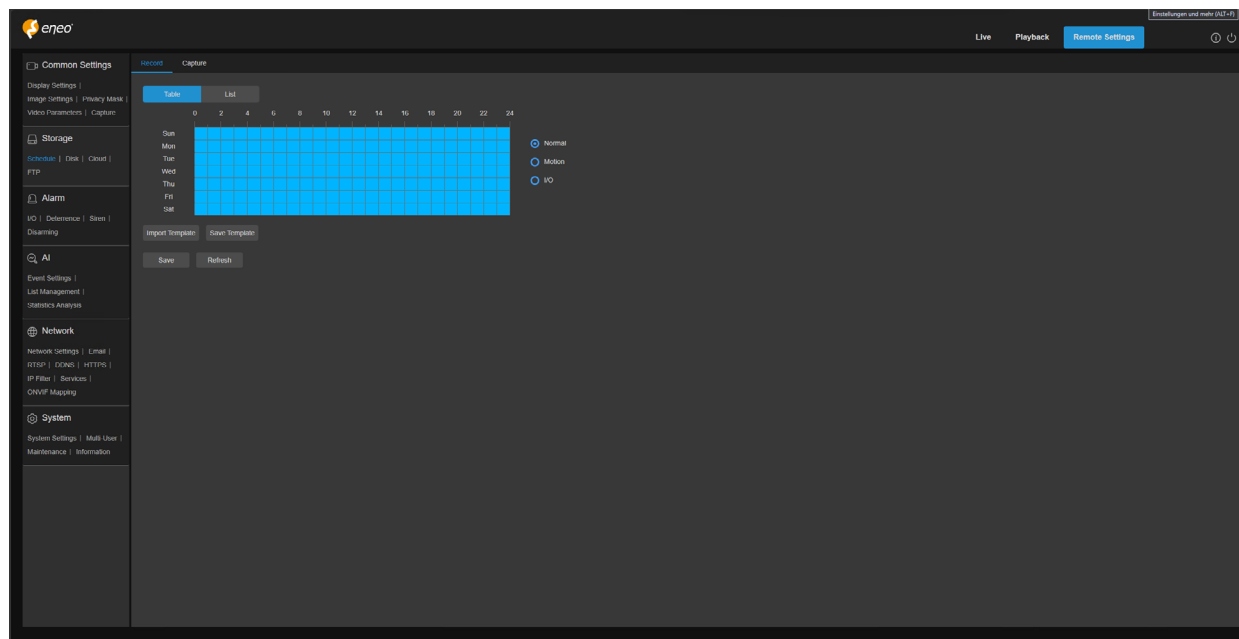
Save: Save the edited parameters.

Copy: Copy the parameters to other channels.

Refresh: Retrieve the parameter.

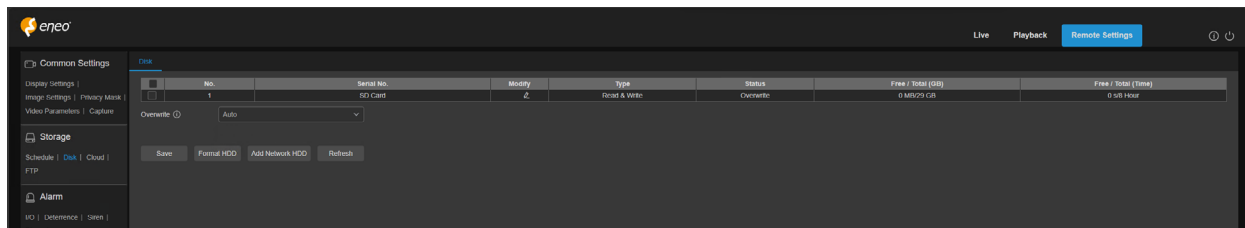
6.2.1.2 – Capture

Set up normal and event-capture schedules to perform capture actions during specific time periods.



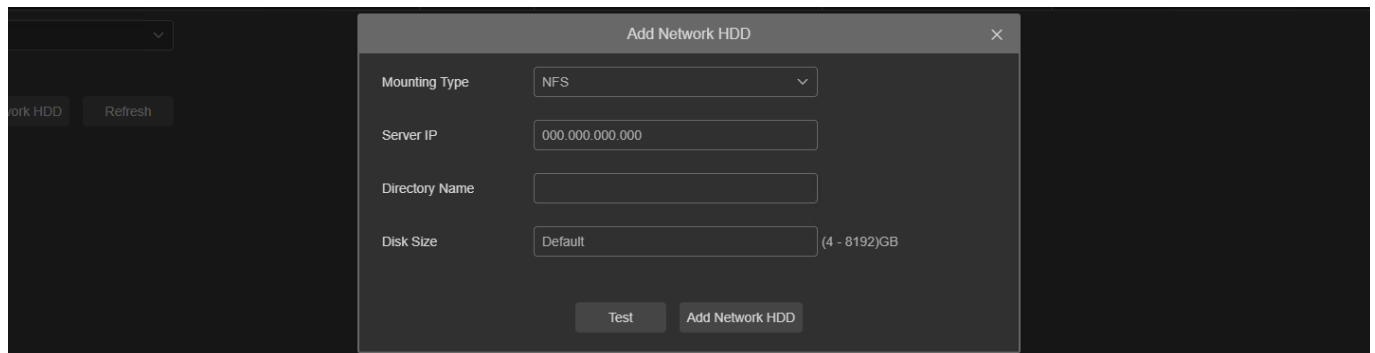
6.2.2 – Disk

This menu allows you to check and configure the internal SD card. Formatting is only necessary when first accessing the card or replacing it with a new one.



Format HDD: Select the HDD card you want to format, and then click “Format HDD.” Enter your username and password to start formatting, and then click OK.

Overwrite: This option overwrites old records on the SD card when it’s full. If “Auto,” oldest data is overwritten automatically. Select “OFF” if you don’t want old videos overwritten. Disable this function to check the SD card status periodically to ensure it’s not full.



ADD Network HDD: This function allows you to add a network HDD. After configuring a NAS, connect it to the internet to record videos or capture images. The AI face database must be stored on the HDD.

Mounting Type: There are two options, including NFS and SMB V1/V2/V3. Among them, NFS does not need username and password, but SMB needs.

User Name: Specifies the username of NAS (unavailable in NFS mode).

Password: Specifies the password of NAS (unavailable in NFS mode).

Server IP: Specifies the IP address of NAS.

Directory Name: Specifies the folder where you want to store data in the NAS.

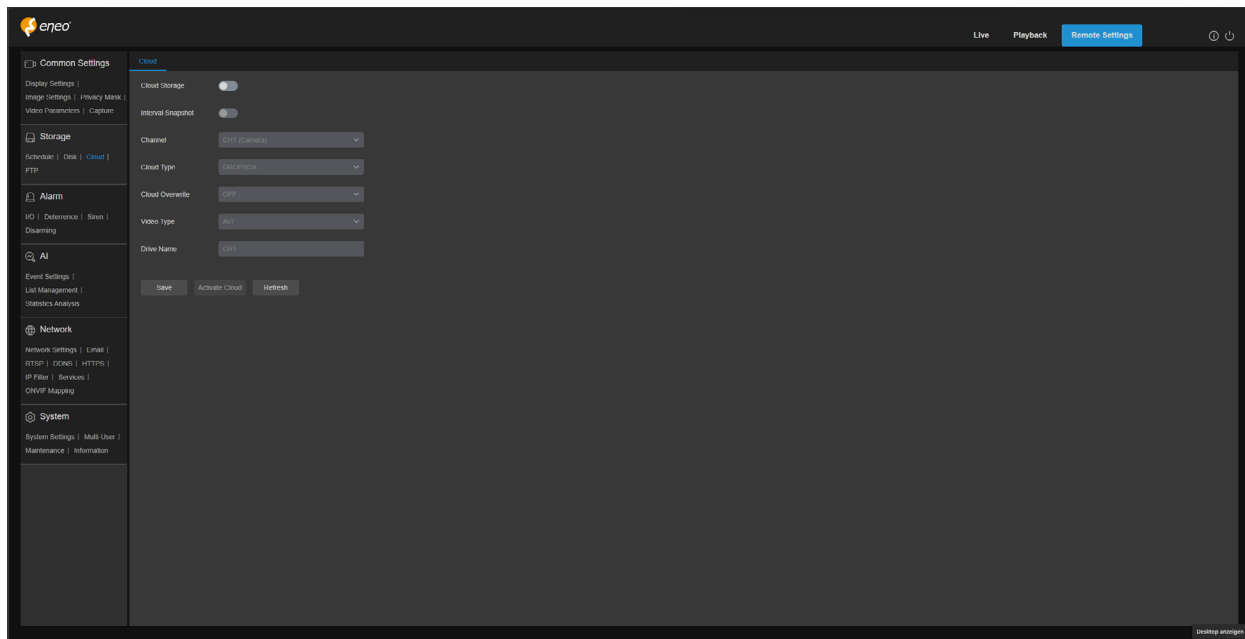
Disk Size: Specifies the size of the network HDD.

Test: Test the connectivity of NAS.

Add Network HDD: Click this option to add NAS.

6.2.3 – Cloud

The camera seamlessly uploads photos and videos to the cloud via Dropbox, a free platform that allows you to easily store and share your pictures.



We recommend creating a Dropbox account with an email address and secure password before enabling the cloud storage function. Once your account is created, visit www.dropbox.com, enter your credentials, agree to the terms, and click the “Login” button.

Cloud Storage: Simply click to unlock this functionality.

Interval Snap: Simply click to unlock this functionality.

Cloud Type: Select your preferred cloud storage type, at the moment only Dropbox is available.

Cloud Overwrite: Select your preferred cloud overwrite.

Video Type: Set up uploading video types, including .AVF, .AVI, .MP4.

Drive Name: Enter the name of the folder created by your IPC in cloud storage

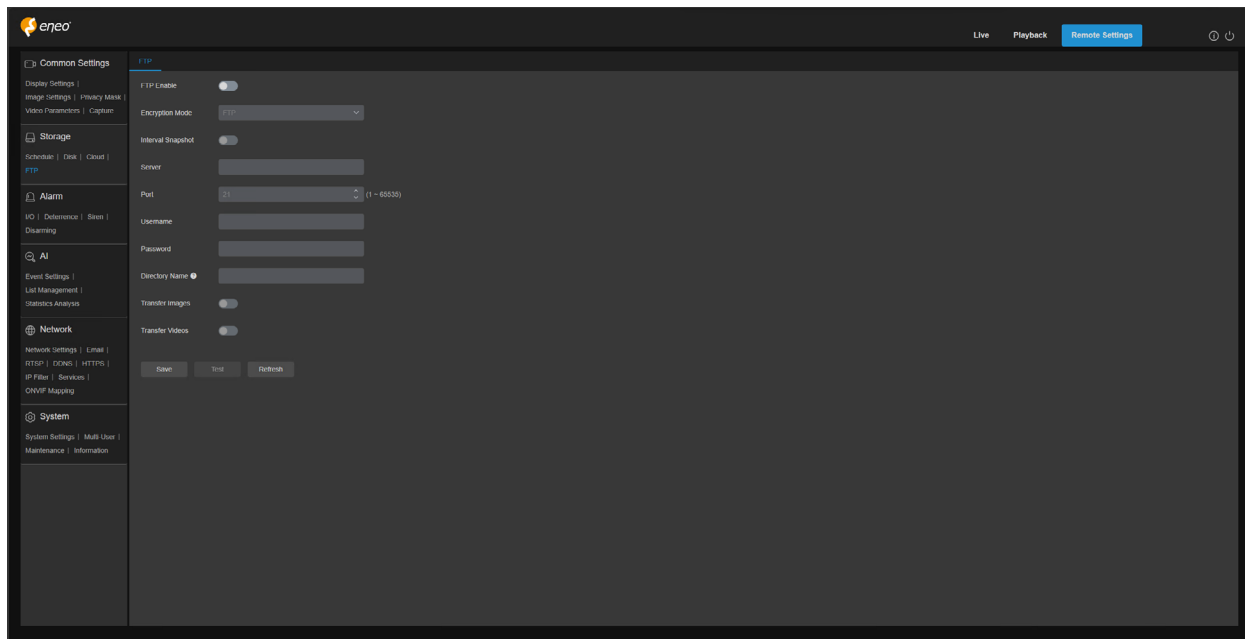
Activate Cloud: Click to activate this function. After a while, the web page will automatically jump to the associated link of Dropbox. Enter the correct username and password to associate.

Save: Click to save all changes.

Refresh: Retrieve the parameter.

6.2.4 – FTP

This menu is allowed to enable the FTP server in order to view pictures and videos uploaded from the camera to FTP on the FTP server.



FTP Enable: Click to enable the FTP function.

Encryption Mode: Select FTP or SFTP protocol.

Interval Snapshot: Enable to upload snap picture interval.

Server: Enter the IP address or domain name of the user's FTP server.

Port: Enter the FTP port.

Username/ Password: Enter the user's FTP server username and password.

Directory Name: Customize to create upload directory.

Transfer Images: When checked, the alarm images will be uploaded to the FTP server.

Transfer Videos: When this option is turned on, alarm videos will be uploaded to the FTP server.

6.3 – Alarm

This is an optional feature that is only available if the user's device supports I/O sensors and an external I/O alarm device is connected.

6.3.1 – I/O

6.3.1.1 – Alarm Input

Set the I/O input alarm parameters. Click the Edit icon to access the settings page.

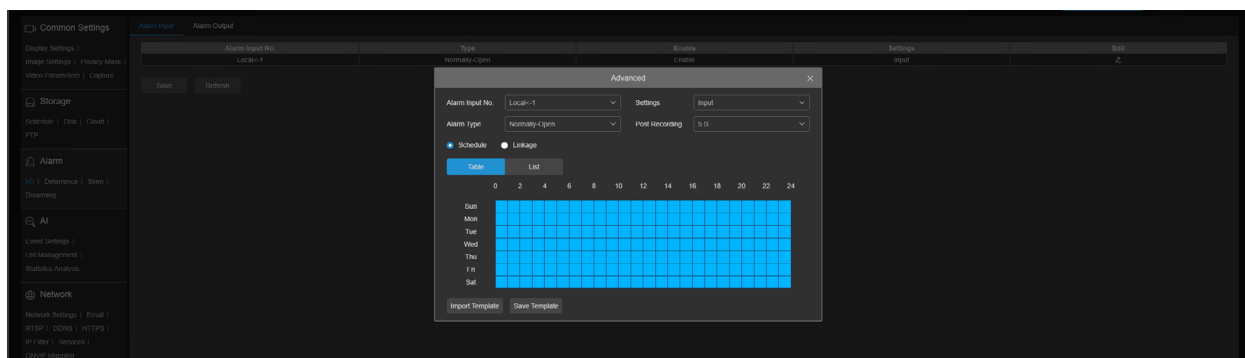
Alarm Input No.: Select the input source for I/O alarm.

Settings: Enable or disable the I/O input alarm function.

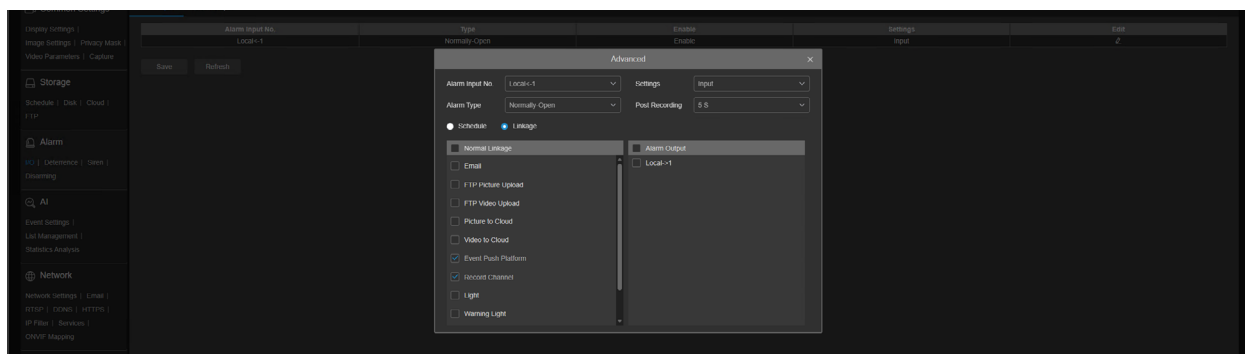
Alarm Type: Select the input alarm type.

Post Recording: Set the length of time that the device will continue to record after an alarm is triggered. The default setting is five seconds.

Schedule: Set the schedule for the I/O input alarm function.



Linkage: Set the I/O input alarm linkage function.



Email: Send an email to the configured mailbox when an alert is triggered.

FTP Picture Upload: Upload the alarm picture to the FTP server after the alarm is triggered.

FTP Video Upload: Upload the alarm video to the FTP server after the alarm is triggered. Click on the settings button, next it gives the option to upload to FTP server after alarm is triggered.

Event Push Platform: After an I/O alarm occurs, the event is pushed to a third-party service platform with default selection enabled.

Light: When white light is enabled, white light will illuminate for white light deterrence when an alarm is triggered.

Warning Light: When warning light is enabled, warning light will be illuminated as a deterrent when an alarm is triggered.

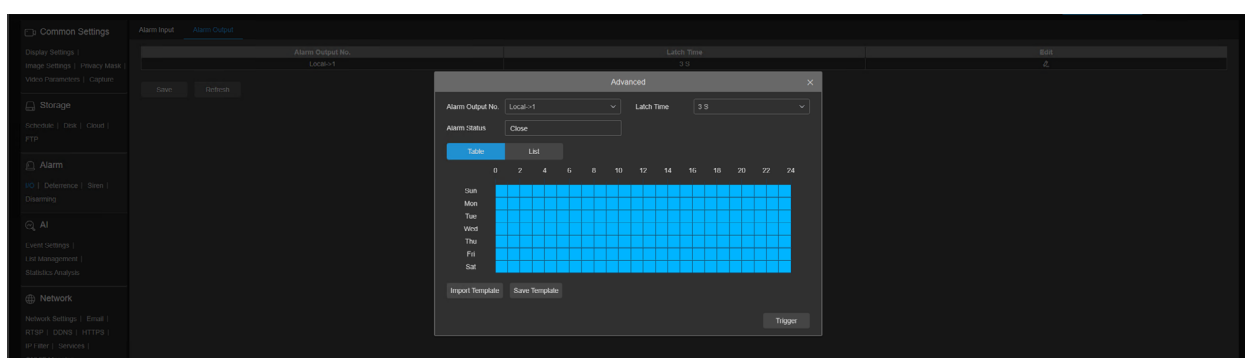
Siren: When enabled, alarm will sound for deterrence when triggered.

Trigger Alarm Out: Check the alarm output source, the I/O alarm output will be performed when the alarm is triggered.

6.3.1.2 – Alarm Output

To set the alarm linkage I/O output parameters, click Edit to enter the setting page

Alarm Output No.: Select the I/O output source for alarm linkage.

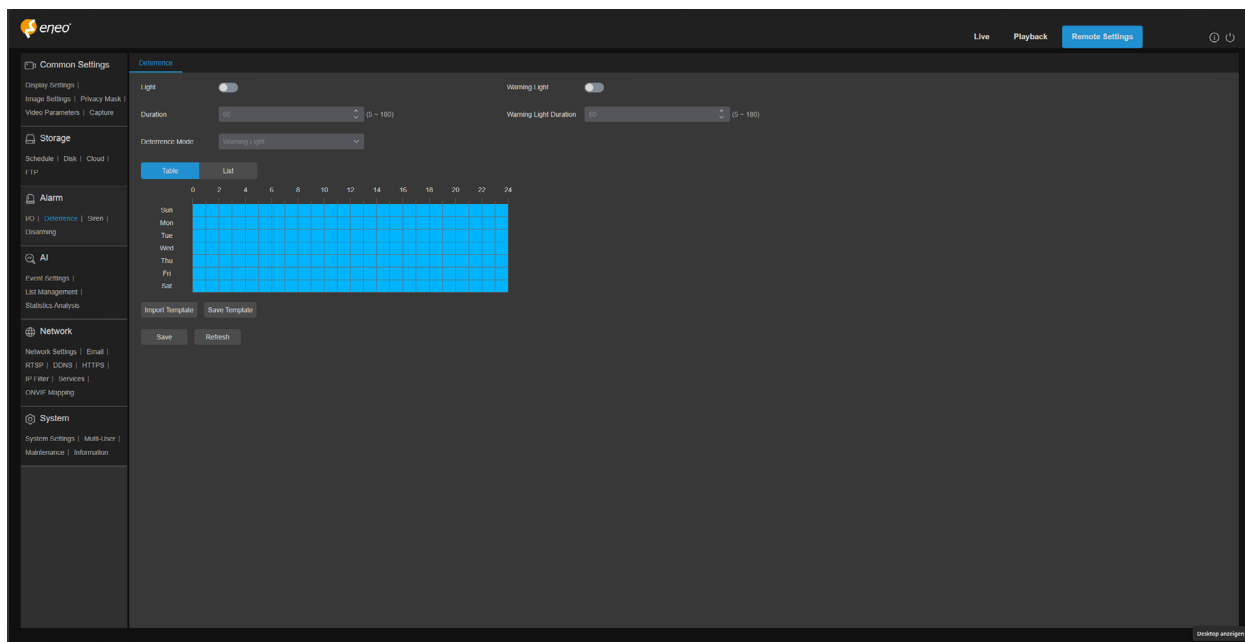


Latch Time: Set the duration of I/O linkage output when the alarm is triggered.

Schedule: Set the schedule for the alarm linkage I/O output function to take effect.

6.3.2 – Deterrence

In this menu, you can configure the parameters for automatic capture.



Note!

The white light parameters are grayed out when the camera supports white light and the image control is set to full color mode. This parameter is available in day/night mode and when the image control is set to Smart Night Light mode.

Light: Enable/disable the white light.

Duration (s): The duration of the white light.

Deterrence Mode: Set the white light mode, there are 2 modes.

Steady Mode: Always on mode, the white light is always on when deterring.

Flashing Mode: Flashing mode, the white light flashes at a set frequency during deterrence.

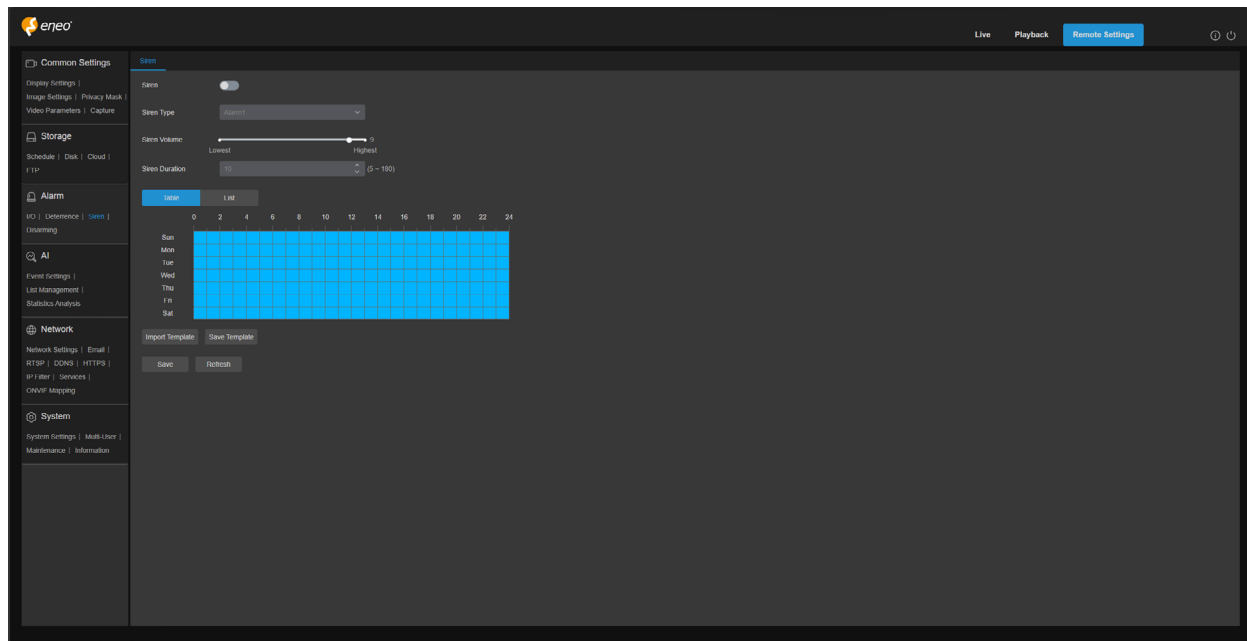
Warning Light: Turn the warning warning lights on and off.

Warning Light Duration (s): The duration of the warning lights.

Schedule: Setting up the schedule for when the warm-up and warning lights will take effect.

6.3.3 – Siren

When the camera supports siren, this menu is allowed to configure alarm-related parameters. when the alarm is triggered by the linkage deterrent, the alarm will be turned on for deterrence automatically.



Siren: Enable or disable the siren switch.

Siren Type: Change the audio file of the siren.

Default provides two audio files, in addition to support the import of three custom .pcm and .wav audio file types, the imported file audio sampling rate can not exceed 8000HZ, the file size can not exceed 256k. selected custom imported audio file on the right side of the Delete button, click on the current audio file can be deleted.

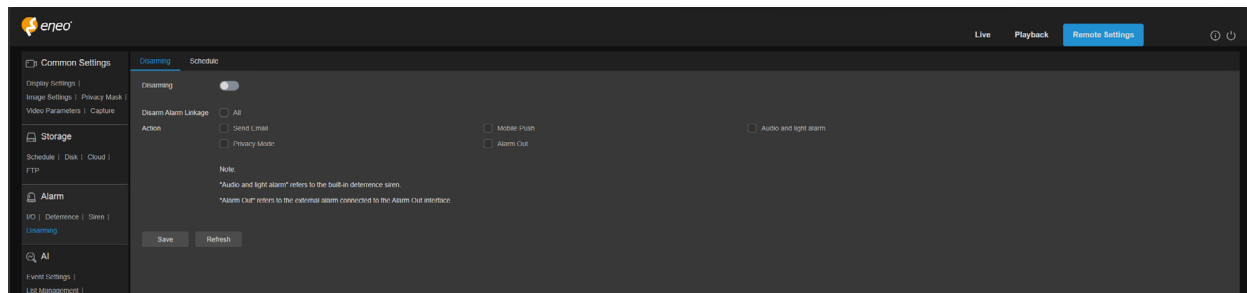
Siren Volume: Alarm sound volume level, supports 1 to 10 adjustable levels.

Siren Duration(s): The duration of the alarm sound, support 5~180 seconds adjustable.

Schedule: Set the schedule of the effective time of the alarm.

6.3.4 – Disarming

Enabling the disarm function can revoke the response of the device to all kinds of alarm linkage, this menu can set the disarm switch, type, schedule and other related parameters.



Disarming: Enable or disable the disarming function.

Disarm Alarm Linkage Action: IPC local alarm linkage type.

All: Select or clear all types.

Send Email: When disarming function is enabled, tick the mailbox alarm to trigger the alarm without sending alarm email.

Mobile Push: When disarming function is enabled, tick Mobile Push to trigger the alarm, the device will not push the alarm message to APP.

Audio and light alarm: When disarming function is enabled, the alarm is triggered when this option is ticked, and the warning lights, warm-up light and siren do not respond.

Privacy Mode: When disarming function is enabled, tick Privacy Mode and IPC will enable privacy mode (Only multi-lens cameras support channel setting).

Alarm Out: When disarming function is enabled, check Alarm Out to trigger alarm, external alarm output device is not effective.

Schedule: Set the schedule for the effective time of disarming.

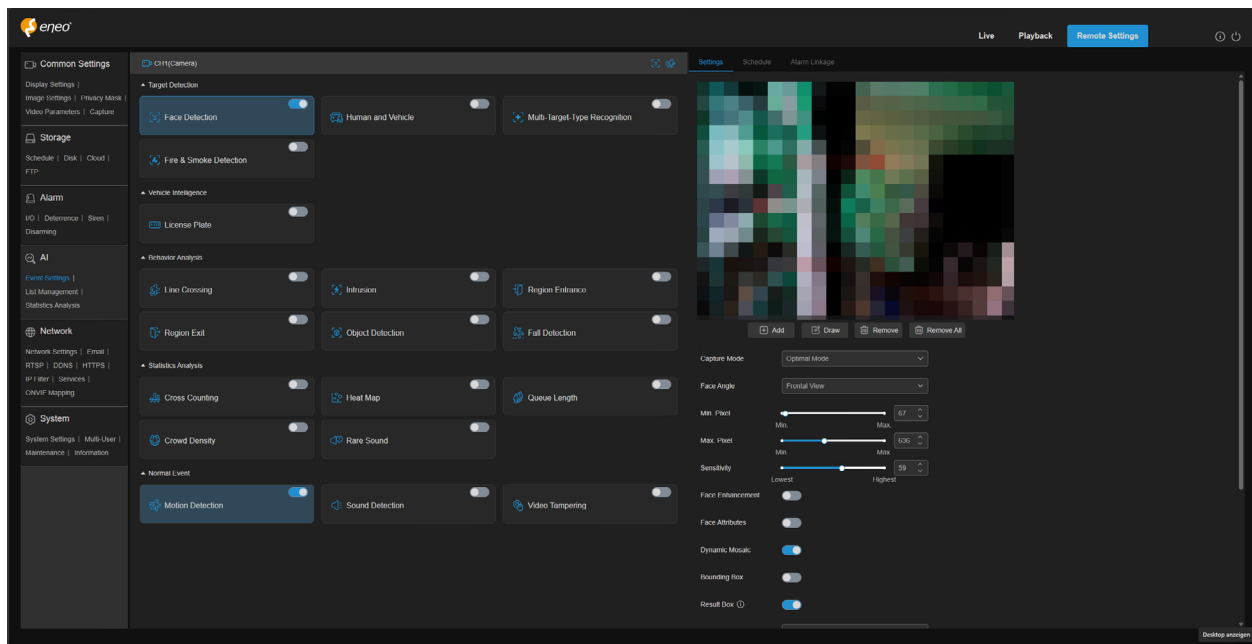
6.4 – AI

6.4.1 – Event Settings

6.4.1.1 – Target Detection

Face Detection

The face detection function detects a face target through the camera, captures an image, and calculates face feature data using a face model algorithm. It then compares the image with a face database to trigger an alarm. First, enable the face detection function.



Face Detection: Enable Face Detection function.

Capture Mode: Set the snap mode. receive push notifications in live view or connect an NVR to check the image effect. The program supports three Snap Modes.

Optimal Mode: The camera only pushes an image that it considers best from detecting an object until the object disappears.

Realtime Mode: When detecting an object, the camera immediately pushes an image, and then pushes the best image when the object disappears.

Capture Interval: Set the snap number and the snap and push interval as required. The options for Snap Num include 1, 2, 3, and unlimited. The Snap Frequency ranges from 1s to 255s. For example, when the snap frequency is set to 5s, an image is pushed at 5s, 10s and 15s when the object is detected.

Face Angle: Screen the captured images. That is, only the captured images that meet angle setting will be pushed. There are three mode options.

Frontal View: Only the frontal view of an object is pushed.

Multi Angle: Choose to push images containing only side faces.

Customize: Customize the angle of an object for which images can be pushed. If this function is enabled, Roll Range, Pitch Range, Yaw Range, and Picture Quality options, as well as Frontal Default and Multi Default buttons will be available.

Roll Range: Set the roll range of the captured face image in the 3D model. When the angle does not meet the setting limit, face detection can be carried out but the image will not be pushed.

Pitch Range: Set the pitch range of the captured face image in the 3D model. When the angle does not meet the setting limit, face detection can be carried out but the image will not be pushed.

Yaw Range: Set the yaw angle of the captured face image in the 3D model. When the angle does not meet the setting limit, face detection can be carried out but the image will not be pushed.

Picture Quality: High quality images are good for filtering out detected non-face images.

Frontal Default Apply Mode: Selecting Customize displays the control, setting the values for Push Angle to Range: 30, Pitch Range: 30, Yaw Range: 45, and Picture Quality: 100.

Multi Default Apply Mode: Selecting Customize displays the control, setting the values for Push Angle to Range: 180, Pitch Range: 180, Yaw Range: 180, and Picture Quality: 100.

Min. Pixel: Set the minimum recognition pixel frame. The face has to be larger than the set pixel to be recognition. When the mouse moves to the progress bar, the image preview on the right side will show the actual size of the pixel frame, and drag the pixel frame to set it at the same time, and the pixel frame in the image preview disappears when the mouse moves away for 5 seconds.

Max. Pixel: Set the maximum recognition pixel frame. The face has to be smaller than the set pixel to be recognition. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame, and drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame disappears in the image preview.

Sensitivity: The higher the sensitivity, the missed alarms will decrease, but the false alarms will increase.

Face Enhance: Face Enhance switch to increase the capture effect on moving targets. It also adjusts the brightness according to the face closest to the camera to optimize the capture effect (supported by some models).

Face Attributes: Identify the attributes of the detected faces, including age, gender, mask, glasses, and expression. Note: You need to open this function to use Face Features alarm.

Detection Mode: Filter the performance of detected objects in the camera. There are two mode options.

Hybrid Mode: Allow to face detection for all objects in the view.

Motion Mode: Allow to filter out Motionless faces, such as such as portraits and statues in the scene.

Detection Area: Setting options are changed when the detection area is used to recognize objects by default. There are two modes.

Full Screen: All areas that can be monitored by the camera are detected.

User-defined: Only user-defined boxed areas are detected.

Enable Rule: Rule enable switch, each detection rule has an independent enable switch, associated with the currently selected Rule Number.

Trigger Mode: Set the detection rule line type. There are two rule types.

Polygon: Allow to detect only face objects in the set area.

Line: Face objects are tracked only when the detection line is crossed according to settings. The setting item is available only when using the over-line detection mode, and there are two detection trigger modes: A→B and B→A.

Rule Line Setting Area: According to the parameter setting, set the detection area or detection trigger line in this area.

Add: Add a default detection rule in the setting area.

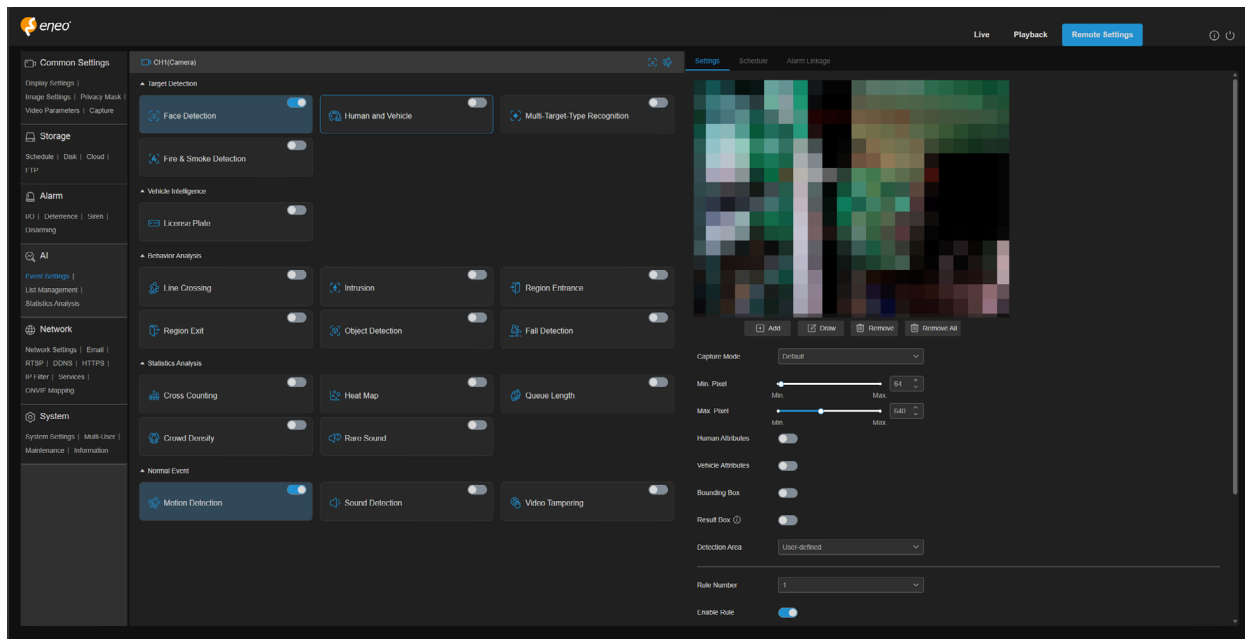
Draw: Manually draw a detection rule in the setting area.

Remove: Remove a detection rule from the setting area.

Remove All: Remove all detection rules in the setting area.

Human & Vehicle

Human and vehicle detection function, used to recognize pedestrian or vehicles in the view, generate an alarm, and record capture images, according function settings.



Human & Vehicle: Enable Human & Vehicle detection function.

Capture Mode: Set the snap mode to receive push notifications in live view, or connect the NVR to check the image quality.

Default: The camera pushes only one pedestrian or vehicle image from detecting an object until the object disappears.

Realtime Mode: When detecting an object, the camera immediately pushes one image, and then pushes another image when the object disappears.

Interval Mode: Push pictures for a set number of times according to the set push interval. When using Snapshot Mode as Interval Mode, there are Snapshot Qty and Capture Interval settings:

Snapshot Qty: according to the interval set by Capture Interval, push the image 1, 2, 3, infinite times for the camera thinks it is the same target.

Capture Interval: Push the image according to the set time, either from the last push time or the target appearance.

Min. Pixel: Set the minimum recognition pixel frame. The Human & Vehicle has to be larger than the set pixel to be recognition. When the mouse moves to the progress bar, the image preview on the right side will show the actual size of the pixel frame, and drag the pixel frame to set it at the same time, and the pixel frame in the image preview will disappear after the mouse moves away for 5 seconds.

Max. Pixel: Set the maximum recognition pixel frame. The Human & Vehicle has to be smaller than the set pixel to be recognition. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame, and drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview disappears.

Sensitivity: With higher detection sensitivity, pedestrian or vehicle objects can be detected easier, but false alarms may be easily generated.

Human Attributes: Identify the detected pedestrians based on their attributes, including top and bottom clothing color, gender, age, hat/glasses/whether they are wearing, sleeves, bottoms, backpacks and direction.

Vehicle Attributes: Identify the detected motor vehicle images by attributes such as color, brand, and type.

Detection Target: Select the targets to be detected.

Detection Mode: Filter object behaviors in the detection area. There are two mode options.

Hybrid Mode: Allow to detect all pedestrians or vehicles in the view.

Motion Mode: Allow to filter out static pedestrians or vehicles.

Detection Area: Detection area setting, there are two modes.

Full Screen: All areas that can be monitored by the camera are detected.

User-defined: Detect only the area selected by user-defined box.

Rule Number: Rule Number selection, supports setting 4 detection rules.

Enable Rule: Rule Enable Switch, each rule has its own enable switch, associated with the currently selected Rule Number.

Rule Line Setting Area: When using the custom detection area mode, setting the detection area of 3-8 sides is supported.

Add: Add a default detection rule in the setting area.

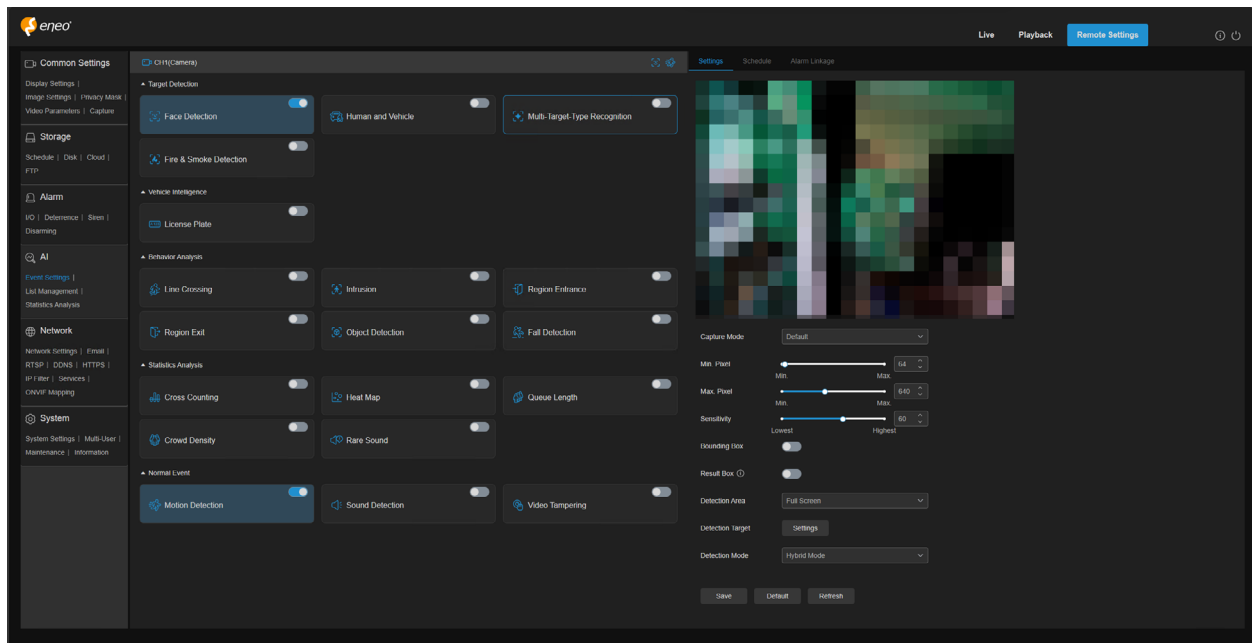
Draw: Manually draw a detection rule in the setting area.

Remove: Removes a detection rule from the setting area.

Remove All: Remove all detection rules in the setting area.

Multi-Target-Type Recognition

This function uses built-in AI algorithms to analyze video streams in real time. It can identify multiple categories of targets simultaneously.



Multi-Target-Type Recognition: Enable the Multi-Target-Type Recognition function for all objects.

Detect Target Min.Pixels: Based on a 1080p resolution, filter out images with heads that are smaller than the set target size. Hovering your mouse over the progress bar will display the actual size of the pixel frame in the image preview on the right. You can also drag the pixel frame to adjust its size. After five seconds, the pixel frame will disappear from the image preview.

Detect Target Max.Pixels: Based on a 1080p resolution, filter out images with heads larger than the set target size. Hovering your mouse over the progress bar will display the actual size of the pixel frame in the image preview on the right. You can also drag the pixel frame to adjust its size. After five seconds, the pixel frame will disappear from the image preview.

Sensitivity: Although higher detection sensitivity results in better target detection, it also results in higher false alarm rates.

Detection Mode: Filter target behavior within the detection area.

Always: Detect all people and vehicles in the frame.

Moving Only: Filter out stationary people or vehicles.

Bounding Box: Display a detection bounding box around the target and enable or disable detection rule lines.

Result Box: Up to 32 result boxes are displayed when the target is detected upon opening.

Detection Mode: Filter target behavior within the detection area.

Always: Detect everyone and everything in the frame.

Moving Only: Filter out stationary people or vehicles.

Bounding Box: Display a detection bounding box around the target and enable or disable detection rule lines.

Detection Target: You can select from the following options: pedestrian, vehicle, animal, public facility, transportation vehicle, mobile equipment, kitchen utensil, or other. You can also select all.

Detection Area: Detection area settings.

Full Screen: Detects the entire monitorable area of the camera.

User-defined: Only detects the area defined by a user-defined bounding box.

Rule Number: Select the rule number. Up to four detection rules can be set. Different detection zones can have different detection types. For example, Detection Zone 1 can be set for human and vehicle detection. Zone 2 can be set for animal detection.

Rule Switch: Enable or disable the rule. Each rule has a separate enable switch associated with the currently selected rule number.

Rule Line Setting Area: When using custom detection zone mode, you can set up zones with 3-8 sides.

Add: Add a default detection rule to the setting area.

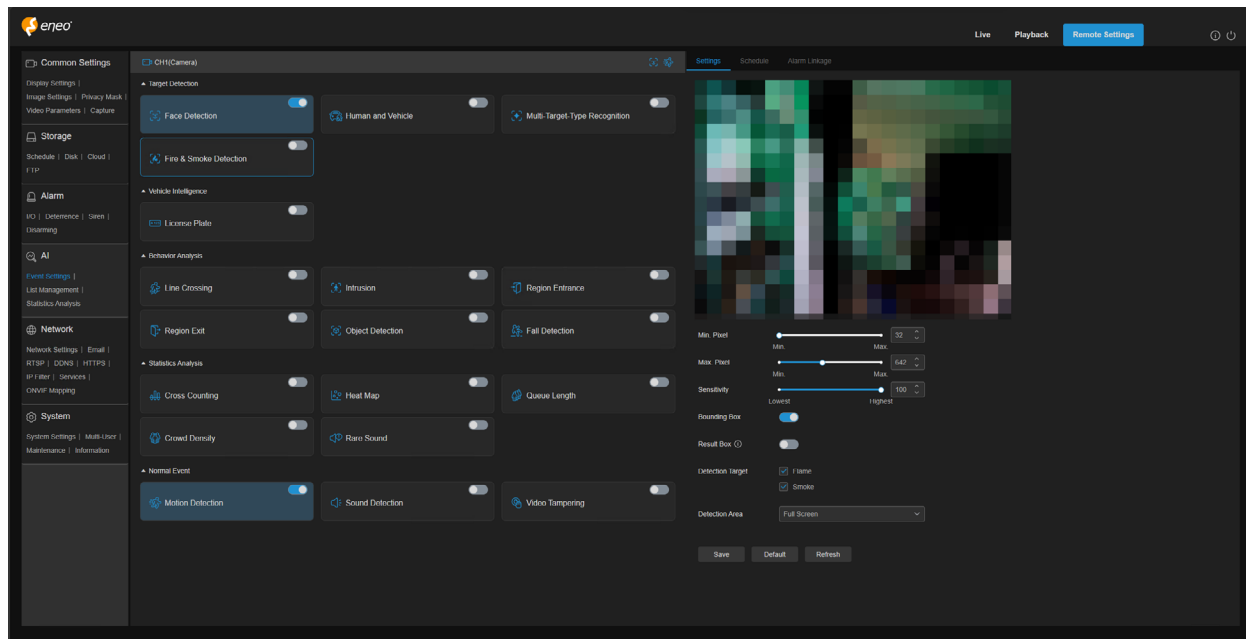
Draw: Manually draw a detection rule in the setting area.

Remove: Delete the selected detection rule.

Remove All: Delete all detection rules in the settings area.

Fire & Smoke Detection

This function analyzes the real-time video stream of the camera and uses image recognition algorithms to detect whether there is flame or smoke in the area and issue an alarm.



Fire & Smoke Detection: Enable or disable Fire&Smoke detection function.

Min.Pixels: Set the minimum pixel size for fire and smoke detection. Fire and smoke targets must be larger than the set pixel size to be detected. When you hover your mouse over the progress bar, the image preview on the right will display the actual pixel size also drag the pixel size to adjust the size. After 5 seconds, the pixel size in the image preview will disappear after you move your mouse away.

Max.Pixels: Set the maximum pixel size for fire and smoke detection. Fire and smoke targets must be smaller than the set pixel size to be detected. When you hover your mouse over the progress bar, the image preview on the right will display the actual pixel size. You can also drag the pixel size to adjust the size. After 5 seconds, the pixel size in the image preview will disappear after you move your mouse away.

Sensitivity: Higher sensitivity setting increases flame and smoke detection sensitivity, but there's still a chance of false alarms.

Detection Target: Select the specific target type you want the camera to detect.

Flame: Detect flames.

Smoke: Detect smoke.

Detection Area: Set the detection area, with two modes.

Full Screen: Detects the entire camera's monitor area.

User-defined: Detects only the area selected with a custom detection box.

Rule Settings: Set, modify, and display edited rules. Detection areas with 3-8 polygons are supported.

Add: Adds a default detection rule to the settings area.

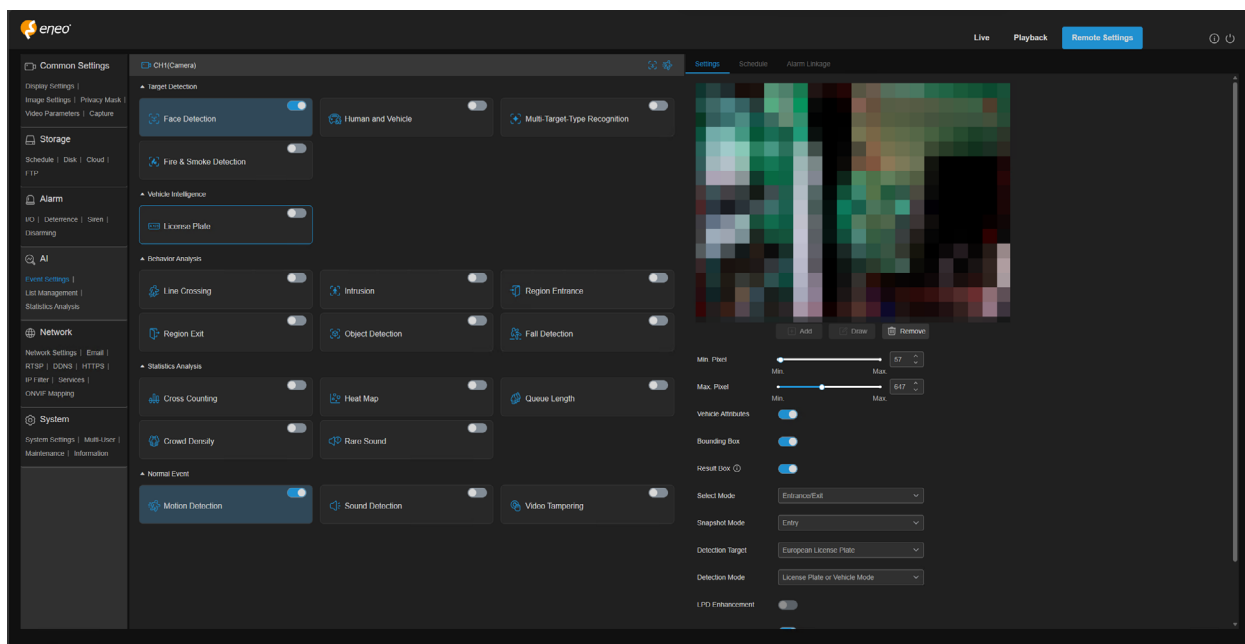
Draw: Manually draws a detection rule in the settings area.

Remove: Delete the selected rule in the rule settings area.

6.4.1.2 – Vehicle Intelligence

License Plate

The license plate detection function scans passing vehicles' plates to determine if they are unrecognized or already in the database, triggering an alarm accordingly. Therefore, activating this number plate detection feature is essential first.



License Plate: Enable or disable License Plate detection.

Min. Pixel: The minimum pixel box, the license plate must be larger than the set minimum pixel to be recognition. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame, and drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview will disappear.

Max. Pixel: Maximum pixel frame, the license plate has to be smaller than the set maximum pixel in order to be recognition. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame, and drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview will disappear.

Detection Target: Type of license plates to be detected.

European license plate: License plates in European region.

American license plate: License plates in American region.

Detection Mode: Set the detection mode options

Vehicle priority mode: Vehicle priority mode will detect the vehicle first, and then capture the license plate for analysis.

License plate or Vehicle mode: The license plate will be detected and analysis at the same time when the vehicle is detected.

Detection Area: Set the area for license plate detection, there are two kinds as below:

Full Screen: Detect the whole area monitored by the camera.

User-defined: custom set the detection area.

Rule Line Setting Area: According to the parameter setting, set the detection area or detection trigger line in this area.

Add: Add a default detection rule in the setting area.

Draw: Manually draw a detection rule in the setting area.

Remove: Removes the rule selected in the Rule Settings area.

Snap Mode: Depending on the selected application mode, different snap modes are applied.

Select Mode: Select the application mode based on the actual installation location to improve license plate capture performance. There are three supported modes:

Entrance/Exit: This supports the following three snap modes:

Entrance: When a vehicle enters the detection area and crosses the detection line, an alarm is triggered and a snap is taken.

Exit: When a vehicle leaves the detection area and crosses the detection line, an alarm is triggered and a snap is taken.

Timing: Set the snap interval. When vehicle passes through the detection area and crosses the detection line, an alarm is triggered and a snap is taken at the specified interval.

City Street: This mode supports the following three capture modes:

Entrance: When a vehicle or license plate enters the detection area and crosses the detection line, an alarm is triggered and a capture is taken.

Exit: When a vehicle or license plate leaves the detection area and crosses the detection line, an alarm is triggered and a capture is taken.

Line Crossing: When a vehicle or license plate crosses the detection line, an alarm is triggered and a capture is taken.

Alarm Input: This mode triggers an I/O signal and requires an external sensor for use.

Capture Vehicle Image: This mode controls the vehicle image capture. If this switch is on, even if an alarm is triggered and the license plate cannot be recognized, the vehicle image will be captured and pushed. If this switch is off, even if an alarm is triggered and the license plate cannot be recognized, the vehicle image will not be captured and pushed.

LPD Enhancement: License Plate enhancement can only be switched on when the License Plate Detection function is enabled. When License Plate Enhance is on, the unit will automatically switch to IR-CUT image mode in Day/Night mode, and the settings for Exposure Compensation, Shutter and Exposure Time will be hidden.



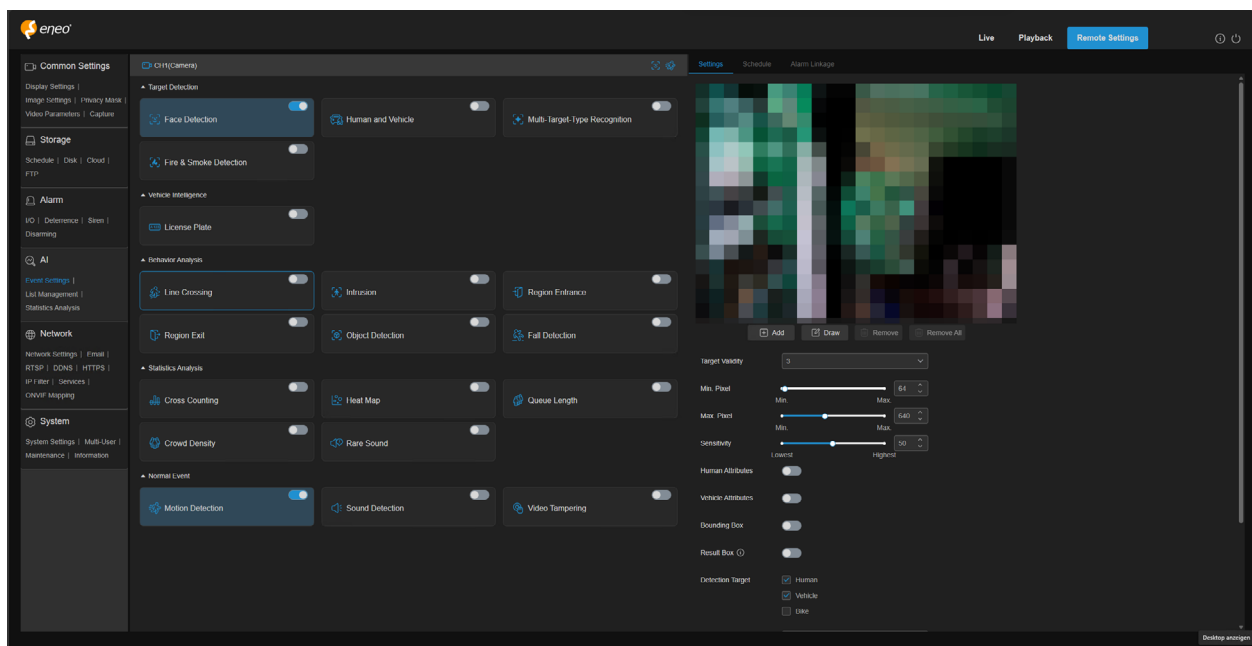
Note!

When selecting Entrance/Exit and City Street mode, you need to set the detection line position in the video image. The license plate will be captured only when it touches the detection line. When selecting Alarm Input mode, you do not need to set the detection line. When the alarm is triggered, the license plate in the detection area will be captured.

6.4.1.3 – Behavior Analysis

The line crossing detection function detects humans and vehicles that cross the set virtual line. An alarm signal is generated when a specific target passes through the preset detection line.

Line Crossing



Line Crossing: Enable or disable Line Crossing detection.

Target Validity: The similarity level between the detection target and the designated detection type:

- 1 signifies a similarity of 80% or higher,
- 2 signifies a similarity of 60% or higher,
- 3 signifies a similarity of 40% or higher,
- and 4 signifies a similarity of 20% or higher.

Min. Pixel: Set the minimum recognition pixel box, the target has to be larger than the set pixel to be recognition. When the mouse moves to the progress bar, the image preview on the right side will show the actual size of the pixel frame, and drag the pixel frame to set it, and the pixel frame disappears in the image preview after the mouse moves away for 5 seconds.

Max. Pixel: Set the maximum pixel frame to be recognition, the target has to be smaller than the set pixel to be recognition. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame and drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview disappears.

Sensitivity: The sensitivity is related to the proportion of the detection target entering the area, the larger the sensitivity setting is for crossing the line, the easier it is to trigger the alarm. For example, if it is set to 100%, the alarm will be triggered when the detection target just touches the boundary of the set area. If it is set to 50%, the alarm will be triggered after 50% of the detection target has crossed the boundary of the set area.

Human Attributes: Identify the detected pedestrians based on their attributes, including top and bottom clothing color, gender, age, hat/glasses/whether they are wearing, sleeves, bottoms, backpacks, and direction.

Vehicle Attributes: Identify the detected motor vehicle images by attributes such as color, brand, and type (supported by some models)

Detection Target: Set objects for perimeter intrusion detection.

Human: Line crossing alarm is only triggered for pedestrians.

Vehicle: Line crossing alarm is only triggered for motor vehicles.

Bike: Line crossing alarm is only triggered for non-motorized vehicles.

Rule Number: Rule number selection, Line Crossing function supports to set 4 inspection rule lines.

Enable Rule: Enable switch for rule line, each rule line has its own enable switch, which is related to the currently selected Rule Number.

Rule Type: The rule to be triggered by the rule line, there are three kinds of crossing rules: $A \rightarrow B$, $B \rightarrow A$ and $A \leftrightarrow B$. The setting is related to the currently selected Rule Number.

Rule Line Setting Area: According to the parameter setting, set the detection area or detection trigger line in this area.

Add: Add a default detection rule in the setting area.

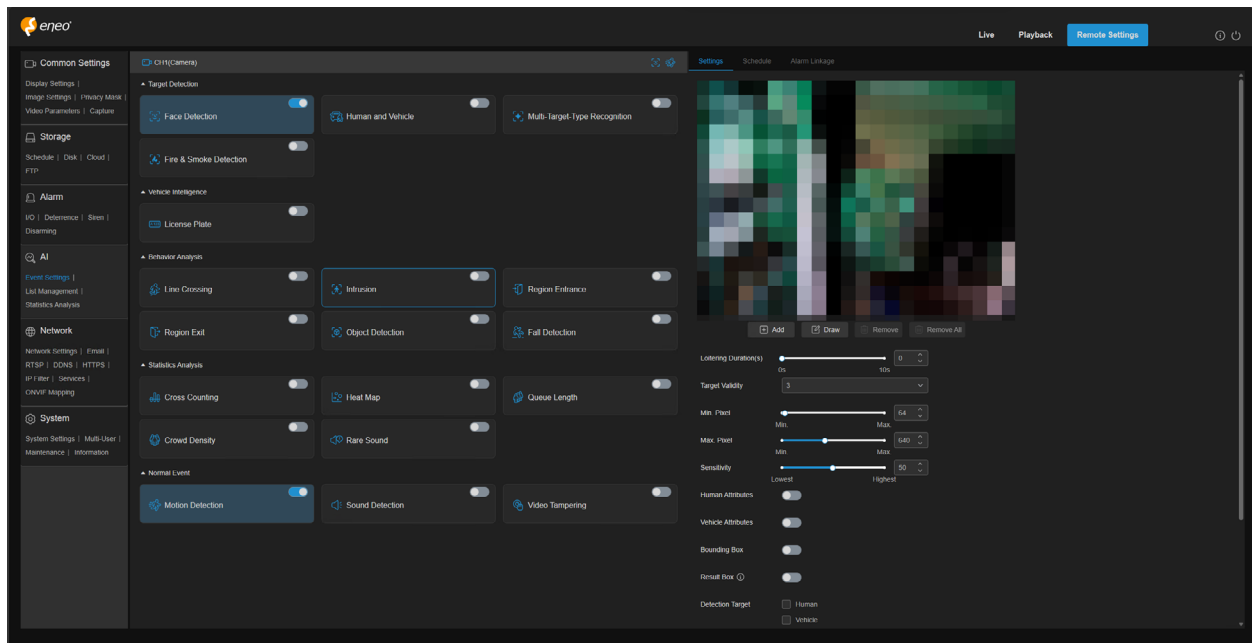
Draw: Manually draw a detection rule in the setting area.

Remove: Removes the rule selected in the Rule Settings area.

Remove All: Remove all rule lines.

Intrusion

Intrusion detection can detect whether there are objects in the video invade the set restricted area, according to the judgement result linkage alarm.



Intrusion: Enable or disable Intrusion detection function.

Loitering Duration(s): Indicates that the alarm is generated after the target enters the alert area and stays there continuously for that amount of time. For example, if it is set to 1, the alarm will be triggered immediately after the target has invaded the area for 1s, and the maximum length of time can be set to 10s.

Target Validity: The similarity level between the detection target and the designated detection type:
 1 signifies a similarity of 80% or higher,
 2 signifies a similarity of 60% or higher,
 3 signifies a similarity of 40% or higher,
 and 4 signifies a similarity of 20% or higher.

Min. Pixel: Set the minimum recognition pixel box, the target has to be larger than the set pixel to be recognition. When the mouse moves to the progress bar, the image preview on the right side will show the actual size of the pixel frame, and drag the pixel frame to set it, and the pixel frame disappears in the image preview after the mouse moves away for 5 seconds.

Max. Pixel: Set the maximum pixel frame to be recognition, the target has to be smaller than the set pixel to be recognition. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame, and drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview disappears.

Sensitivity: Trigger the sensitivity setting for area intrusion detection, the larger the sensitivity setting, the easier it is to trigger the alarm. The larger the sensitivity setting, the more likely the alarm will be triggered. The sensitivity is related to the percentage of the detection target entering the area. For example, if it is set to 100%, the alarm will be triggered when the target just touches the boundary of the set area. If it is set to 50%, the alarm will be triggered after 50% of the target has already passed the boundary of the set area.

Human Attributes: Identify the detected pedestrians based on their attributes, including top and bottom clothing color, gender, age, hat/glasses/whether they are wearing, sleeves, bottoms, backpacks, and direction.

Vehicle Attributes: Identify the detected motor vehicle images by attributes such as color, brand, and type (supported by some models)

Detection Target: Set objects for perimeter intrusion detection:

Human: Intrusion alarm is only triggered for pedestrians.

Vehicle: Intrusion alarm is only triggered for motor vehicles.

Bike: Intrusion alarm is only triggered for non-motorized vehicles.

Bounding Box: Display the detection rule line switch(supported by some models).

Result Box: The result box displays when the target is detected upon opening (up to 32 result boxes, supported by some models).

Rule Number: Rule number selection, intrusion function supports setting 4 detection rules.

Enable Rule: Enable switch for rule line, each rule line has its own enable switch, which is related to the currently selected Rule Number.

Rule Line Setting Area: According to the parameter setting, set the detection area or detection trigger line in this area.

Add: Add a default detection rule in the setting area.

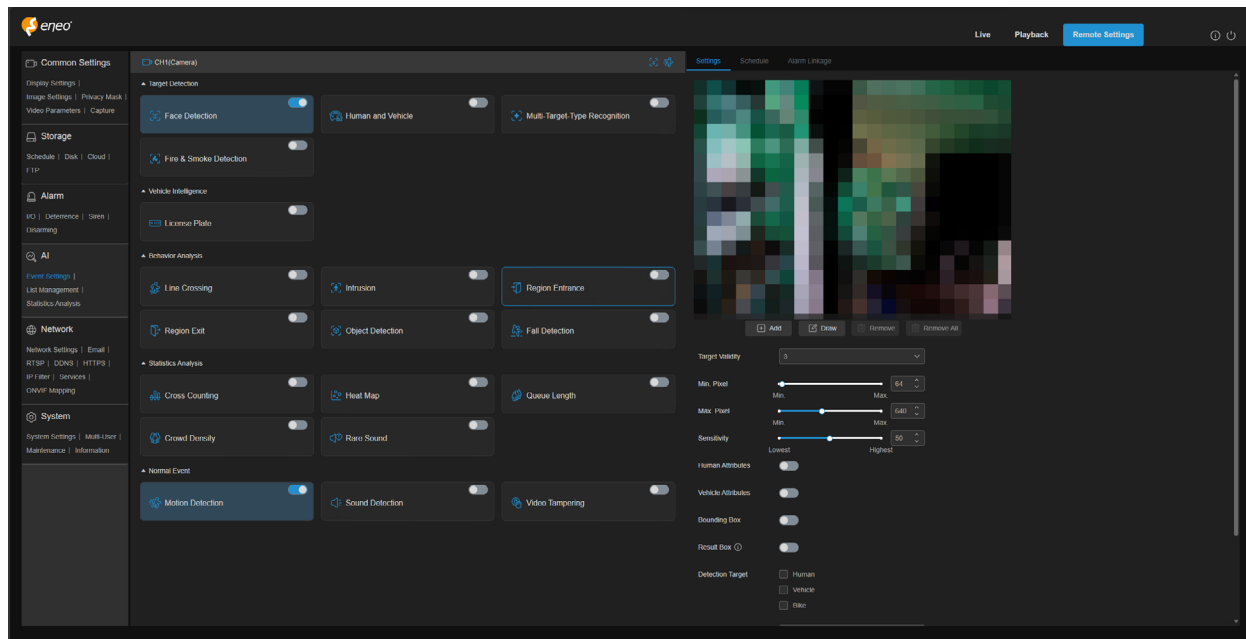
Draw: Manually draw a detection rule in the setting area.

Remove: Remove the rule selected in the Rule Settings area.

Remove All: Remove all rule lines.

Region Entrance

Region Entrance detection, can detect the target from outside the area into the area, the target generated in the area will not generate alarm, according to the result of the judgement linkage alarm.



Region Entrance: Enable or disable Region Entrance detection function.

Target Validity: The similarity level between the detection target and the designated detection type:

1 signifies a similarity of 80% or higher,
2 signifies a similarity of 60% or higher,
3 signifies a similarity of 40% or higher,
and 4 signifies a similarity of 20% or higher.

Min. Pixel: Set the minimum recognition pixel box, the target must be larger than the set pixels to be recognition. When the mouse moves to the progress bar, the image preview on the right side will show the actual size of the pixel box, and drag the pixel box to set it at the same time, and the pixel box in the image preview will disappear after the mouse moves away for 5 seconds.

Max. Pixel: Set the maximum pixel frame to be recognition, the target has to be smaller than the set pixels to be recognition. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame, and drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview disappears.

Sensitivity: Trigger the sensitivity setting for area entry detection, the larger the sensitivity setting, the more likely to trigger the alarm. The sensitivity is related to the percentage of the detection target entering the area, For example, if it is set to 100%, the alarm will be triggered when the detection target just touches the boundary of the set area. If it is set to 50%, the alarm will be triggered after 50% of the target has already passed the boundary of the set area.

Human Attributes: Identify the detected pedestrians based on their attributes, including top and bottom clothing color, gender, age, hat/glasses/whether they are wearing, sleeves, bottoms, backpacks, and direction.

Vehicle Attributes: Identify the detected motor vehicle images by attributes such as color, brand, and type (supported by some models).

Detection Target: Set objects for Region Entrance detection.

Human: Region Entrance alarm is only triggered for pedestrians.

Vehicle: Region Entrance alarm is only triggered for motor vehicles.

Bike: Region Entrance alarm is only triggered for non-motorized vehicle.

Rule Number: Region Entrance function supports setting 4 detection rules.

Enable Rule: Each rule line has its own enable switch, which is related to the currently selected Rule Number.

Rule Line Setting Area: According to the parameter setting, set the detection area or detection trigger line in this area.

Add: Add a default detection rule in the setting area.

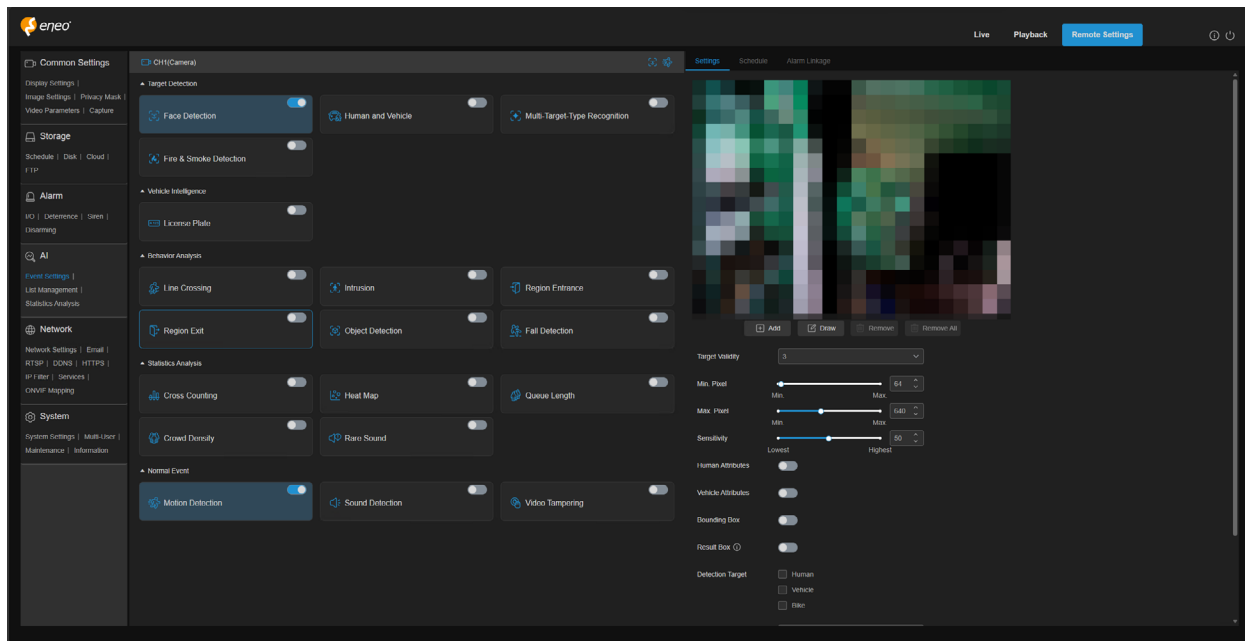
Draw: Manually draw a detection rule in the setting area.

Remove: Removes the rule selected in the Rule Settings area.

Remove All: Remove all rule lines.

Region Exit

Region Exit detection can detect the target from the area to go outside the area, the target generated outside the area will not generate alarm, according to the result of the judgement linkage alarm.



Region Exit: Enable or disable Region Exit detection function.

Target Validity: The similarity level between the detection target and the designated detection type:

- 1 signifies a similarity of 80% or higher,
- 2 signifies a similarity of 60% or higher,
- 3 signifies a similarity of 40% or higher,
- and 4 signifies a similarity of 20% or higher.

Min. Pixel: Set the minimum recognition pixel box, the target must be larger than the set pixels to be recognition. When the mouse moves to the progress bar, the image preview on the right side will show the actual size of the pixel box, and drag the pixel box to set it at the same time, and the pixel box in the image preview will disappear after the mouse moves away for 5 seconds.

Max. Pixel: Set the maximum pixel frame to be recognition, the target has to be smaller than the set pixels in order to be recognition. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame and drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview disappears.

Sensitivity: Trigger the sensitivity setting of area region exiting, the larger the sensitivity setting, the more likely to trigger the alarm. Sensitivity correlates with the proportion of the detection target that exits the area. For example, if it is set to 100%, the alarm will be triggered when the detected target has just touched the boundary of the set area. If it is set to 50%, the alarm will be triggered after 50% of the target has already passed the boundary of the set area.

Human Attributes: Identify the detected pedestrians based on their attributes, including top and bottom clothing color, gender, age, hat/glasses/whether they are wearing, sleeves, bottoms, backpacks, and direction.

Vehicle Attributes: Identify the detected motor vehicle images by attributes such as color, brand, and type (supported by some models).

Detection Target: Set objects for perimeter region exiting detection:

Human: Region Exit alarm is only triggered for pedestrians.

Vehicle: Region Exit alarm is only triggered for motor vehicles.

Bike: Region Exit alarm is only triggered for non-motorized vehicles.

Rule Number: Intrusion function supports setting 4 detection rules.

Enable Rule: Each rule line has its own enable switch, which is related to the currently selected Rule Number.

Rule Line Setting Area: According to the parameter setting, set the detection area or detection trigger line in this area.

Add: Add a default detection rule in the setting area.

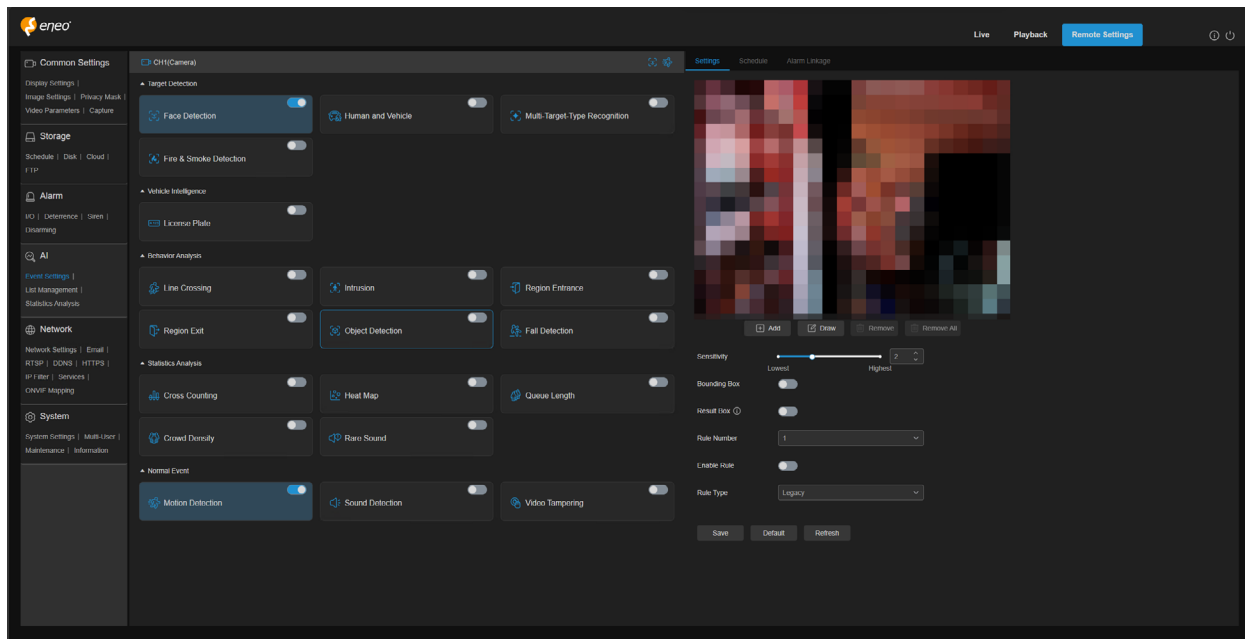
Draw: Manually draw a detection rule in the setting area.

Remove: Remove the rule selected in the Rule Settings area.

Remove All: Remove all rule lines.

Object Detection

Object Detection, generating an alarm when an object is found to have been left behind in a supervised scene or when an object is lost.



Object Detection: Enable Object Detection alarm function switch.

Sensitivity: Filter small interference target settings, the higher the sensitivity, the smaller the detectable object.

Bounding Box: Detection rule line switch.

Rule Number: Support to set 4 detection rules.

Enable Rule: Each rule has an independent enable switch, associated with the currently selected Rule No.

Rule Type: Set the detection area to be left or lost items to generate an alarm, there are three kinds of rules, Legacy, Lost, Lost & Legacy, and the settings are related to the currently selected Rule Number.

Rule Setting Area: Set, modify and display edited rules.

Add: Add a default detection rule to the setting area.

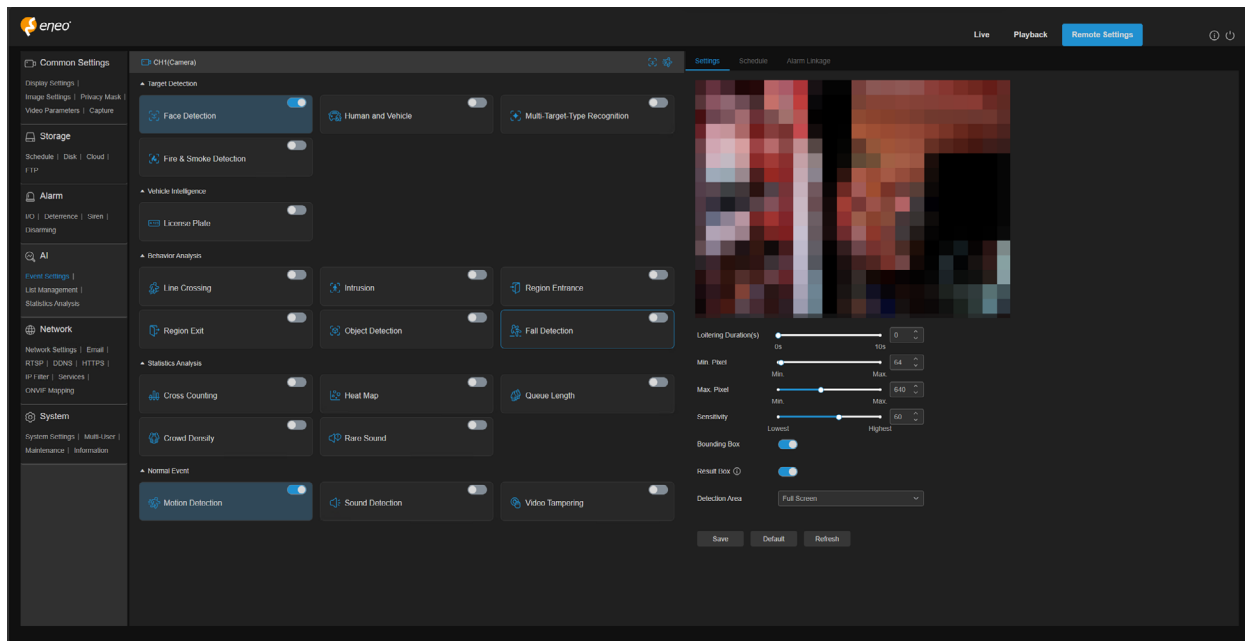
Draw: Manually draw an inspection rule in the setting area.

Remove: Removes the rule selected in the rule setup area.

Remove All: Remove all rules.

Fall Detection

It detects human figures in the frame and determines if their posture indicates a fall. Then, it triggers an alarm if the predefined parameter conditions are met.



Loitering Duration(s): The threshold indicates how long the target state must persist before triggering an alarm, subject to additional conditions. For instance, setting the threshold to five seconds would trigger an alarm if a person fell within the frame and remained there for five seconds or longer while meeting other criteria.

Detect Target Min.Pixels: Set the minimum pixel box for recognition. The target must be larger than the set pixels for recognition. When the mouse moves to the progress bar, the image preview on the right will show the actual size of the pixel box. Drag the pixel box to adjust it. The pixel box in the image preview will disappear after the mouse moves away for five seconds.

Detect Target Max.Pixels: In order for the target to be recognized, it has to be smaller than the set number of pixels. When the mouse moves to the progress bar, the right image preview shows the actual size of the pixel frame. Drag the pixel frame to adjust it. When the mouse moves away for five seconds, the pixel frame in the image preview disappears.

Sensitivity: The higher the target detection sensitivity, the easier it is to detect the target, but the more false detections there will be.

Bounding Box: Display the line switch for the detection rule.

Result Box: Up to 32 result boxes are displayed when the target is detected upon opening.

Detection Area: There are two modes for setting the detection area.

Full Screen: This mode detects the entire monitorable area of the camera.

User-defined: Only detects the area selected with a custom detection box.

Rule Settings: Set, modify, and display edited rules. Supported detection areas have 3-8 polygons.

Add: Adds a default detection rule to the settings area.

Draw: Manually draws a detection rule in the settings area.

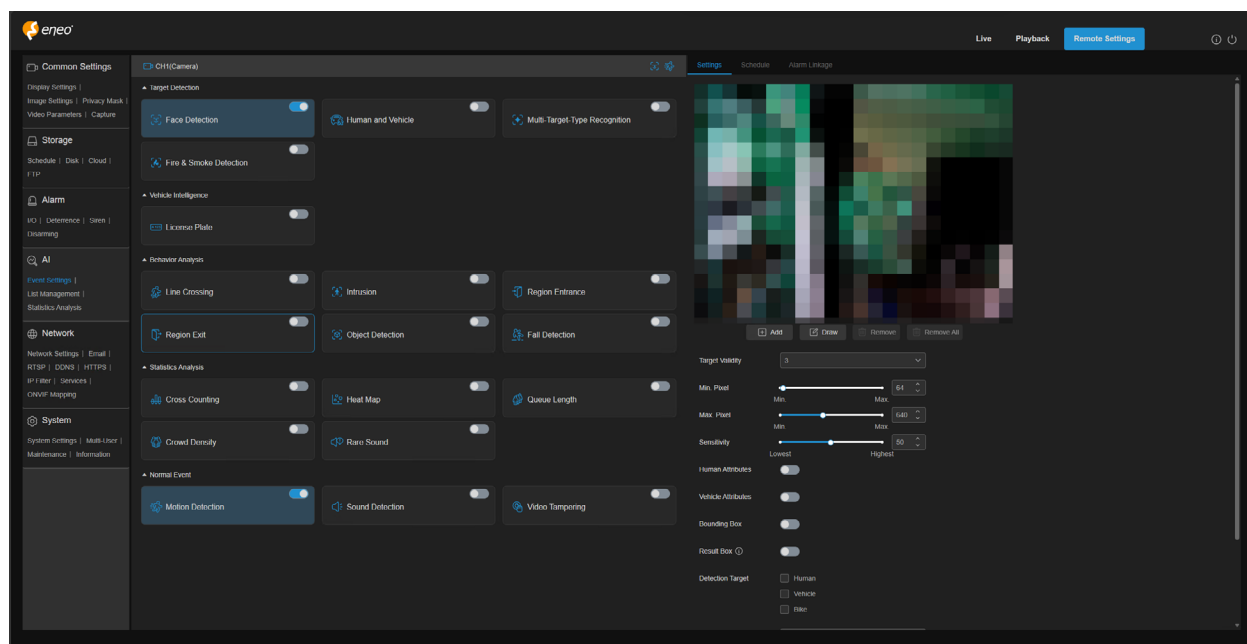
Remove: Deletes the selected rule in the rule settings area.

6.4.1.4 – Statistics Analysis

Cross Counting

Use the Cross Counting function to create a record of the number of specific objects crossing a line in the monitoring area. Set the crossing line with two areas, A and B, on both sides of the set line. For example, if the trigger rule is A→B, then when an object enters from area A, passes through the detection line, and leaves area B, the in count increases by 1. Likewise, when an object enters from area B, passes through the detection line, and leaves area A, the out count increases by 1.

In the case of triggering an increase in the count, an alarm will be generated only when the in count minus the out count is greater than or equal to the alarm number in the setup. The interface is shown in the picture below.



Cross Counting: Enable or disable Cross Counting function.

Sensitivity: Filter small interference target settings, the higher the sensitivity, the smaller the detectable object, can also be used to detect more distant targets in the scene.

Alarm threshold: Set the conditions for triggering the alarm. The camera will trigger the Cross Counting alarm when the trigger count is updated and the in count minus the out count is greater than or equal to the current setting. Range 1~255 seconds.

Reset Count: Reset the current threshold time.

Detection Target: Set the type of target to be recognition by Cross Counting over the line detection, there are 4 modes, switching to save will clear the current count.

Motion: Detect all objects, including people, cars and other objects.

Human: Only identify the target in human form.

Vehicle: Only motor vehicles are identified.

Bike: Only identify non-motorized vehicles.

Enable Rule: Enable the switch for the current numbered rule line.

Rule Type: Set the direction to increase the trigger count of in and out counts, there are two kinds: A→B and B→A. For example, if A→B is selected, the in count will be increased when the monitoring target enters the region A and leaves the region B, and the out count will be increased when the target enters the region B and leaves the region A.

Reset Mode: Set the reset cycle.

Reset Time: Set the time to clear current displayed count numbers.

Reset Switch: Enable / disable reset switch.

Initial counter: Set the initial value of the counter. Range from 0 to 1000.

Cross Counting Area Setting: Set the rule line for Cross Counting detection in this area.

Add: Add a default detection rule in the setting area.

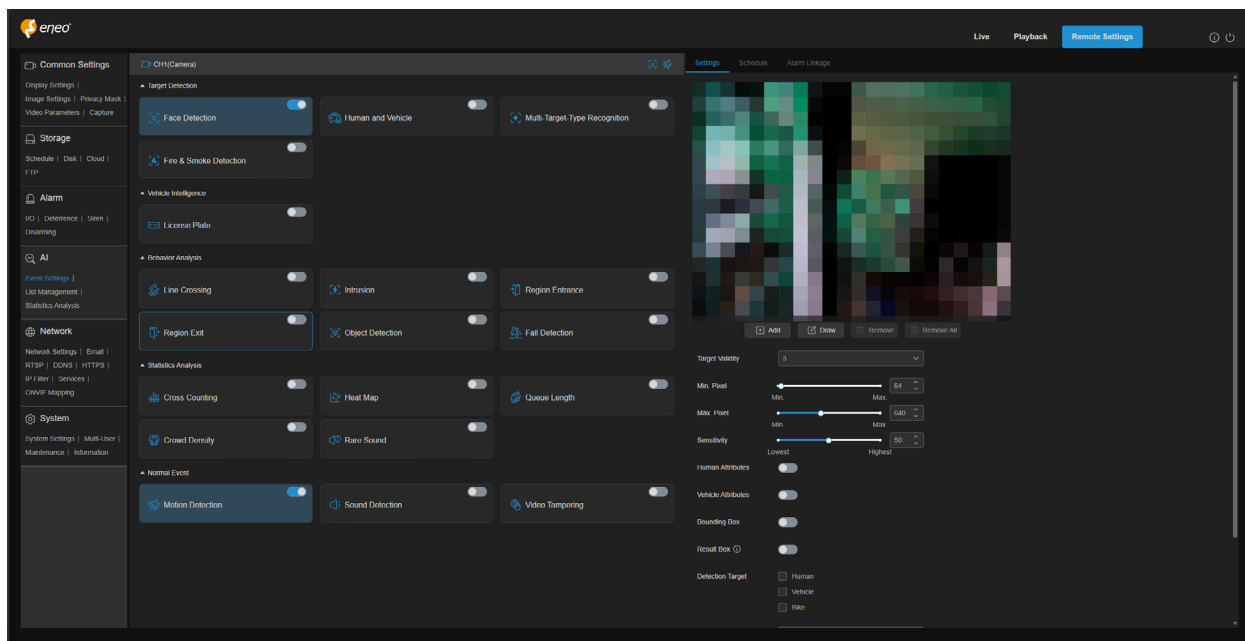
Draw: Draw a detection rule manually in the setting area.

Remove: Removes the rule line selected in the Rule Line Setup area.

Count Area: Display the Cross Counting statistics.

Heat Map

The heat map allows the user to set all or specific areas to detect personnel activity in the specified area. Changes will be saved and uploaded at 10-minute intervals. The heat map report visually presents the distribution of personnel in both time and space dimensions, making it easy to understand the activity level of each area. Note that this function only supports video recording and not event alarms.



Heat Map: Enable or disable Heat Map statistics function.

Enable Rule: Enable the rule switch for the current number.

Monitoring Area Settings: Set the area where the camera's Heat Map function will count the heat, by default all areas are checked.

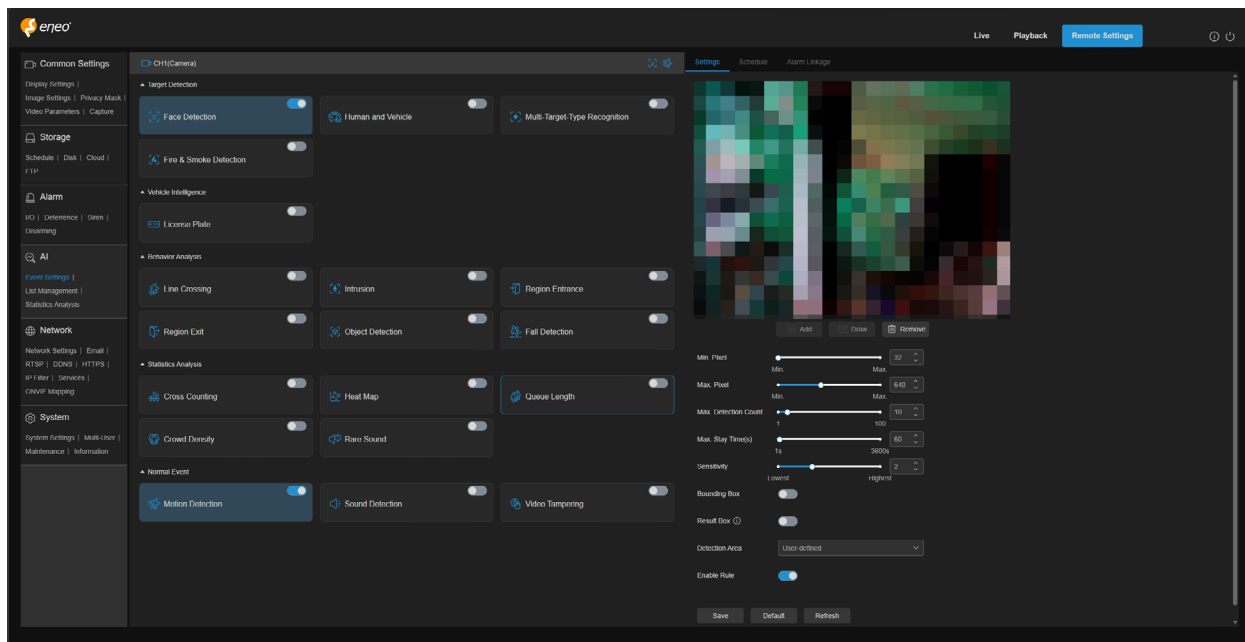
Add: Add a default detection rule to the setting area.

Draw: Manually draw a detection rule in the setting area.

Remove: Remove the rule selected in the rule settings area.

Queue Length

The Queue Length Detection function monitors the number of people in the designated queue area and the waiting time. It generates an alarm when the queue is too long or the waiting time exceeds the set limit.



Queue Length: Enable or disable Queue Length detection function.

Min. Pixel: Based on the resolution of 1080P, filter out the targets with head smaller than the setting in the screen. When the mouse moves to the progress bar, the image preview on the right side will show the actual size of the pixel frame, and drag the pixel frame to set it at the same time, and the pixel frame in the image preview will disappear after the mouse moves away for 5 seconds.

Max. Pixel: Based on the resolution of 1080P, filter out the targets with head larger than the setting in the screen. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame, and at the same time, drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview disappears.

Max. Detection Count: Maximum value of heads allowed to be detected in the detection area, exceeding this value generates an alarm.

Max Stay Time(s): The maximum allowable time to stay in the detection area is set. If more time elapses than is set, an alarm will be triggered. The time starts when the last person leaves the region and stops when the set time has elapsed and there is still personnel in the region. If the set time elapses and there is still personnel in the region, it will be considered a processing timeout and an alarm will be triggered.



Note!

*Counting resumes only when a target leaves the detection area.
Any abrupt disappearance within the region is ignored. Targets are
only counted when they are detected within the region.*

Sensitivity: Filter the smaller interference target settings, the higher the sensitivity, the smaller the target can be detected.

Detection Area: Set the area to be detected by the Queue Length detection function.

Full Screen: Detect the whole area monitored by the camera.

User-defined: Custom the detection area.

Enable Rule: Enable switch for the current numbered rule, displayed when setting the custom detection area.

Detection area: Open the setting when opening the custom detection area, support to set the detection area of 3-8 sides.

Add: Add a default detection rule to the setting area.

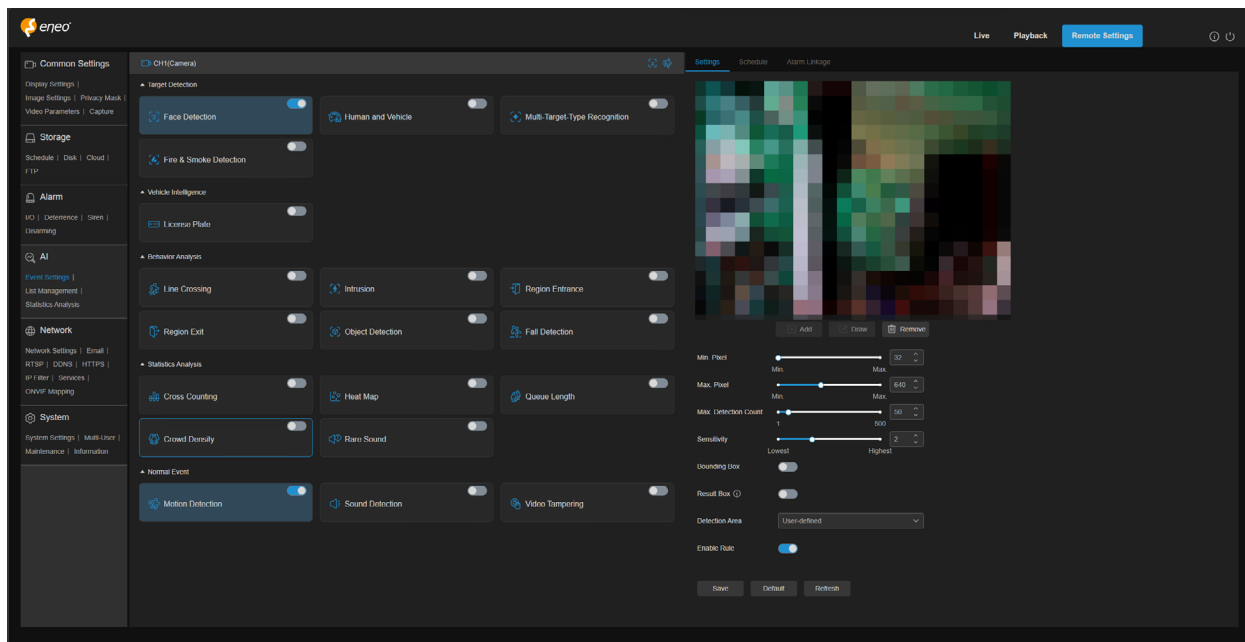
Draw: Manually draw an inspection rule in the setting area.

Remove: Delete the selected rule in the rule setting area.

Count Display Area: Display the number of people in the current monitoring area and the time the queue is waiting for the person who is serving to finish the service.

Crowd Density

The crowd density detection function uses the human figure recognition function to identify the position of the human head and count the number of people in the monitoring area. When the number of people exceeds the preset value, an alarm is produced.



Crowd Density: Enable or disable Crowd Density detection function.

Min. Pixel: Based on the resolution of 1080P, filter out the targets with head smaller than the setting in the screen. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame, and drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview will disappear.

Max. Pixel: Based on the resolution of 1080P, filter out the targets with head larger than the setting in the screen. When the mouse moves to the progress bar, the right image preview will show the actual size of the pixel frame, and at the same time, drag the pixel frame to set it, when the mouse moves away for 5 seconds, the pixel frame in the image preview disappears.

Max. Detection Count: The maximum value of head detection allowed in the detection area, exceeding this value generates an alarm.

Sensitivity: Filtering smaller interference target settings, the higher the sensitivity, the smaller the target can be detected

Detection Area: Set the detection area of crowd density detection function, there are two modes.

Full Screen: Detect the whole area monitored by the camera.

User-defined: Custom the detection area.

Enable Rule: The current numbered Rule Enable switch, displayed when setting the custom detection area.

Detection Area: Open the setting when opening the custom detection area, support to set the detection area with 3-8 sides.

Add: Add a default detection rule in the setting area.

Draw: Manually draw a detection rule in the setting area.

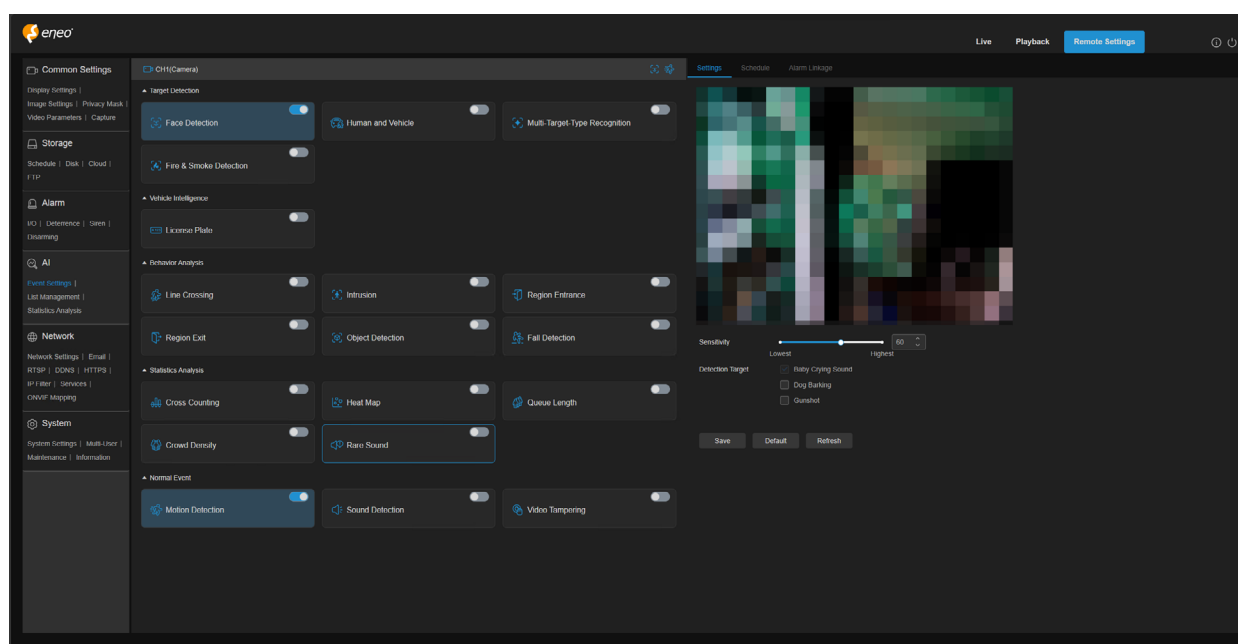
Remove: Remove the rule selected in the Rule Settings area.

Remove All: Remove all rule lines.

Count Display Area: Display the number of people in the current monitoring area.

Rare Sound

Rare Sound detection, according to the need of application scene can be set to different detection types, such as baby crying, gunshots, dog barking, etc. When the camera detects the set sound alarm.



Rare Sound: Enable or disable Rare Sound detection function.

Sensitivity: Sensitivity, range 1~100.

Detection Target: Detection types.

Baby Crying Sound: Check the box to detect baby crying sound.

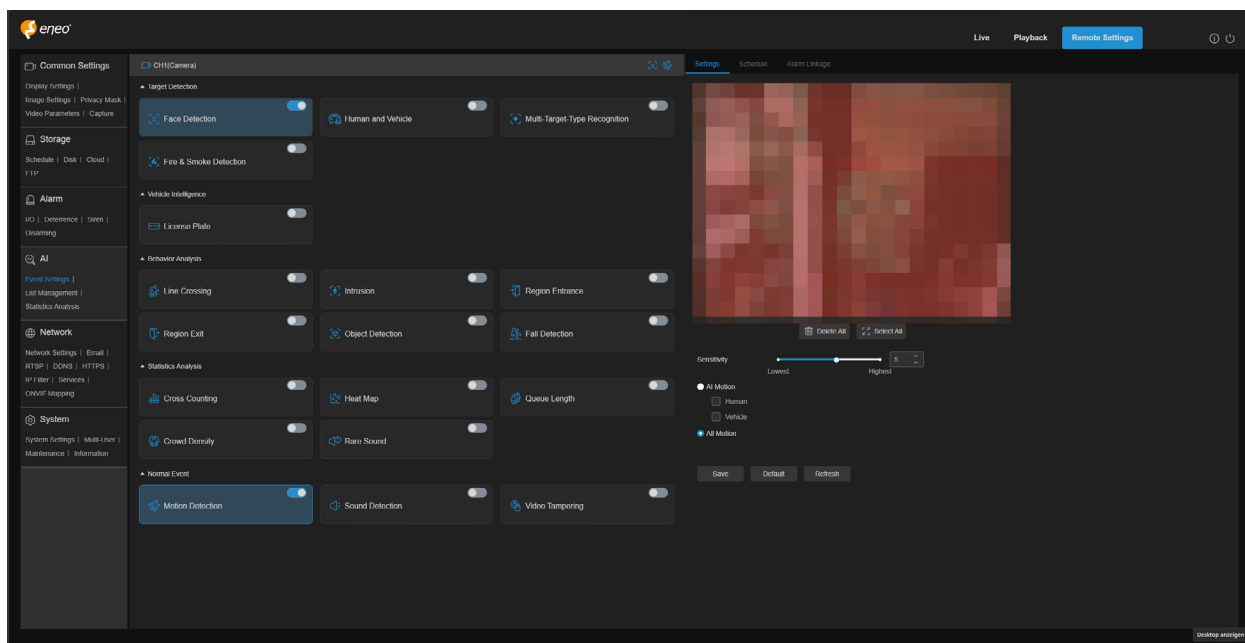
Dog Barking: Check the box to detect dog barking sound.

Gunshot: Check the box to detect gunshot sound.

6.4.1.5 – Normal Event

Motion Detection

Configure the motion detection parameters on this page. When the camera detects motion of a target within the frame, it will trigger a series of alarms. For example, it will send an email alert containing an additional image of the triggering camera to a user-specified email address (if this option is enabled), as well as a push notification via the mobile application.



Drag the left mouse button to delineate the detection zone in the right viewport. Only movements within the zone will trigger the alarm.

Motion Detection: Activate or deactivate Motion detection.

Sensitivity: Set up the motion detection trigger sensitivity. From left to right the sensitivity is lowest to highest. The higher level means motion more easier to be triggered.

AI Motion: Set the target for Motion detection.

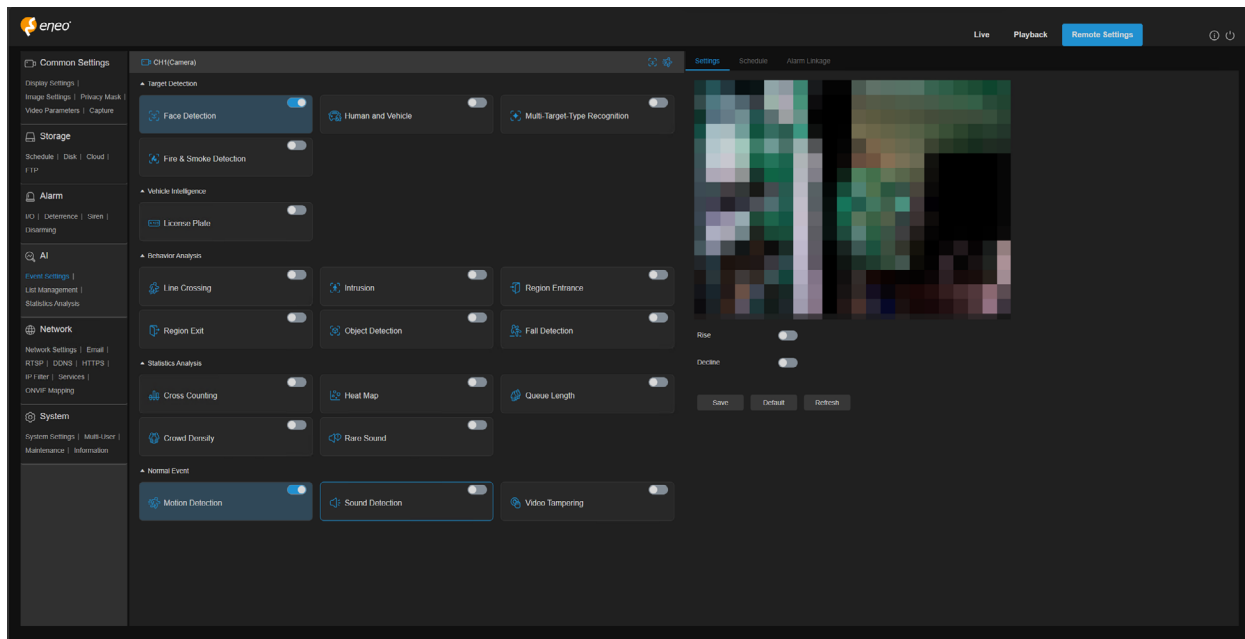
Human: Detect and alarm only for human objects.

Vehicle: Detect and alarm only for vehicle-shaped objects.

All Motion: Trigger an alarm based on Motion within the detection area..

Sound Detection

When the camera detects a change in the audio input that meets the requirements of the alarm detection settings, an alarm will be triggered.



Sound Detection: Enable or disable audio detection.

Rise: Enable or disable volume detection. When enabled, the alarm is only triggered when the volume rises suddenly.

Rise Sensitivity: Trigger the sensitivity level for sound rises. The sensitivity can be set from 1 to 100, with higher values indicating a higher sensitivity to rising sounds.

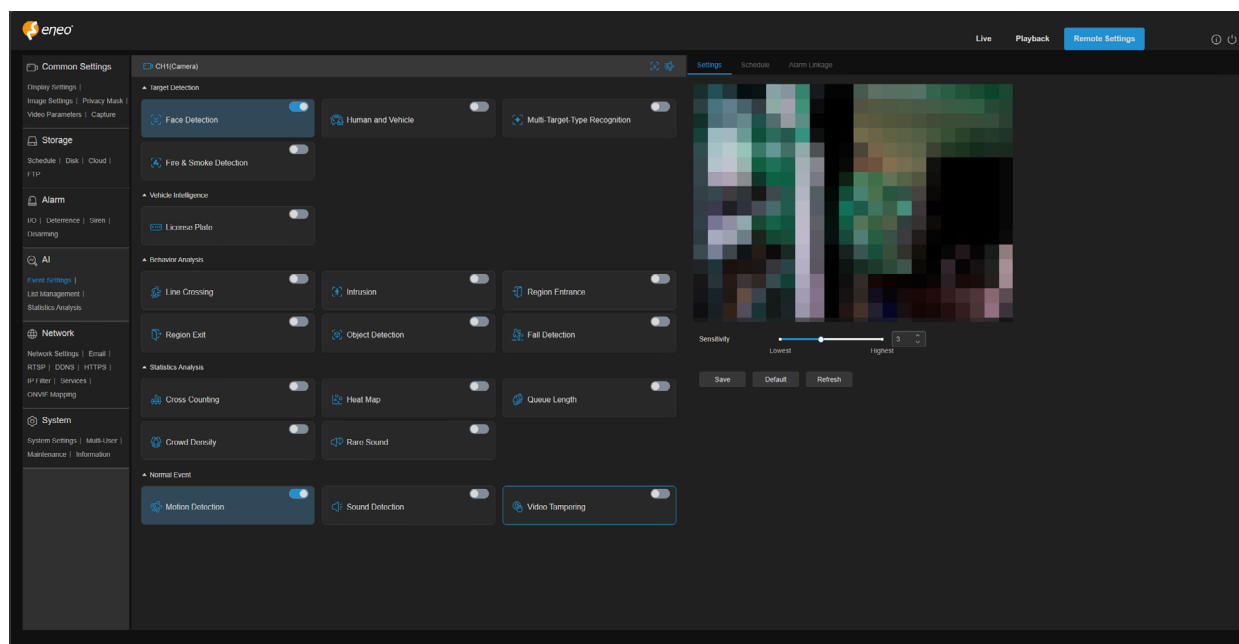
Sound Intensity: Set the sound intensity threshold. A higher threshold requires a louder sound to trigger the rise alarm (can be set from 1 to 100).

Decline: Enable or disable volume drop. When enabled, the alarm is only triggered when the volume drops suddenly.

Decline Sensitivity: Trigger the sensitivity level for sound drops. The sensitivity can be set from 1 to 100, with higher values indicating a higher sensitivity to falling sound.

Video Tampering

Detect live view screen video tampering and trigger alarm.



Video Tampering: Enable or disable camera video tampering detection.

Sensitivity: Set the sensitivity of video tampering detection, the larger the value the more sensitive.

6.4.2 – List Management

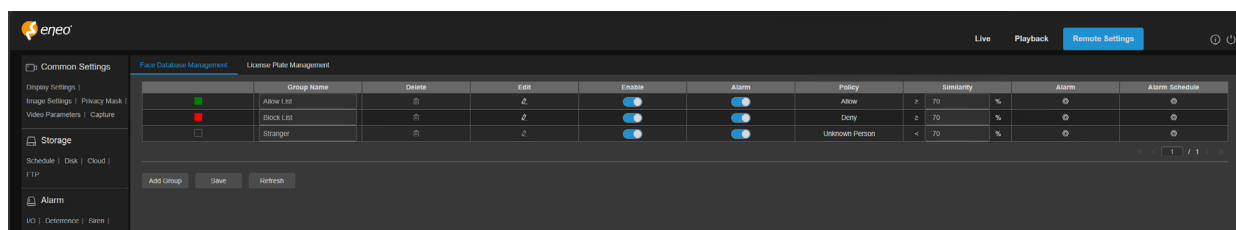
6.4.2.1 – Face Database Management

The face recognition function, which focuses on identifying the identity of the detection target, requires basic data for comparison. The program establishes the database base for face matching through the database management function.



Note!

Modifications to the database require a small period of system reloading to take full effect.



Alarm Policy Display: In the camera, it only serves as a policy prompt. Green represents white list, red represents black list, and no color represents stranger group.

Group Name: Edit and modify the current group name, the specific group name will be prompted when the alarm is pushed.

Delete: Delete the group, the first 3 groups are not allowed to delete.

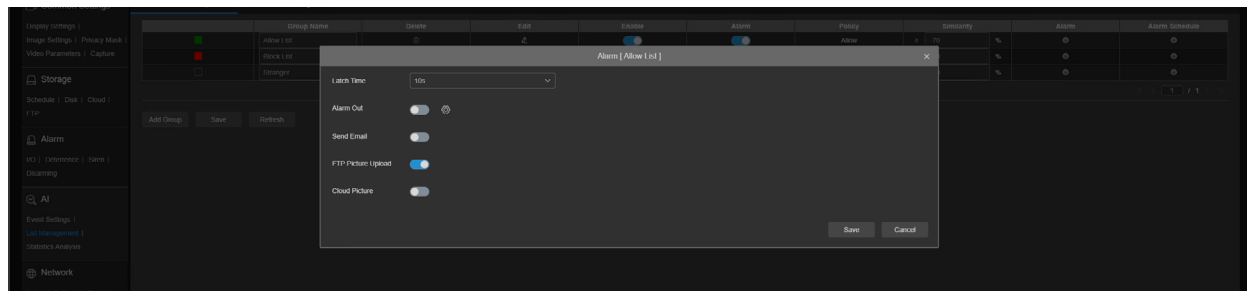
Edit: Open the picture setting of group reference.

Enable: Face recognition uses grouped data for comparison.

Alarm: Enable alarm response setting master switch.

Police: Alarm policy, the first 3 groups can not be modified, other groups can be custom as Allow, Deny.

Similarity: When face matching, the similarity is greater than the setting to generate an alarm.



Alarm Linkage: Group alarm setting.

Latch Time: The time that the I/O alarm tail line continues to alarm when the camera acquires a picture and matches it successfully.



Note!

The camera must support the I/O output function, and its operating time is controlled by the corresponding schedule.

Alarm Out: Set the Enable switch.

Email: Switch to send an email when the grouped face recognition matches are successful.

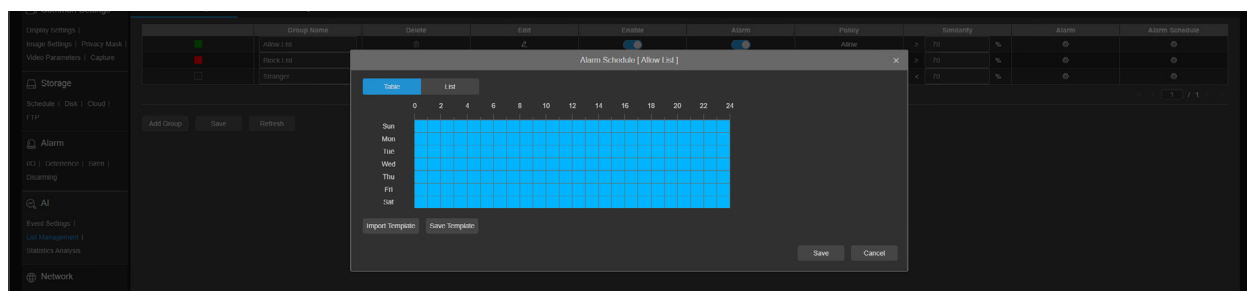
FTP Picture Upload: Switch to send the picture to the associated FTP server when the group face recognition match is successful.



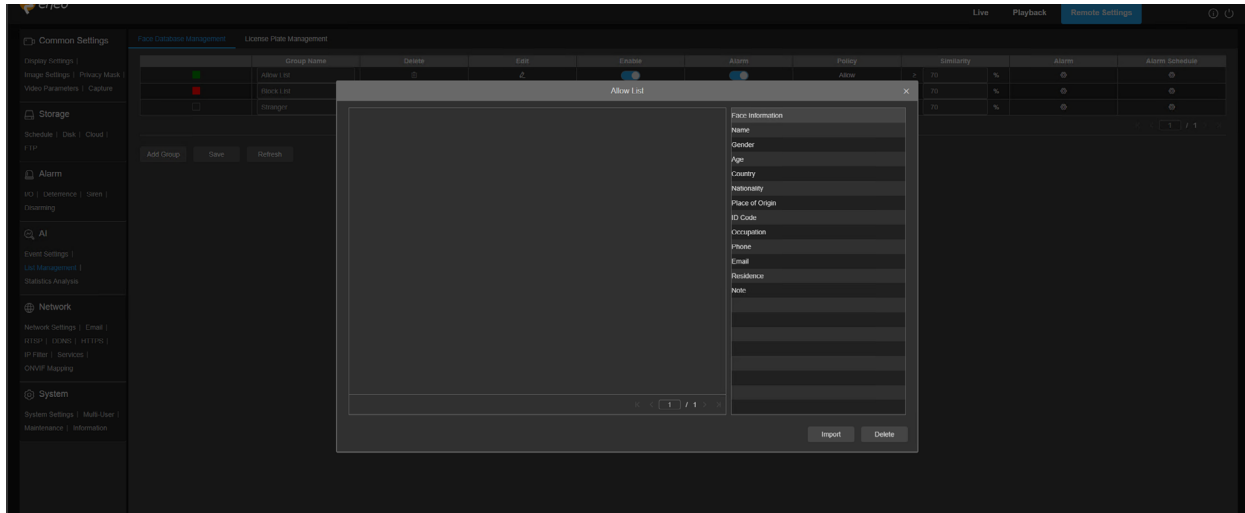
Note!

At the same time, according to the schedule, the effective time needs to be associated with the FTP server first.

Alarm schedule: Set the effective time of Alarm Out, Email and FTP Picture Upload for group alarm.



Add Group: Add a new database group, support up to 16 database groups. Click Edit icon, set the specific reference data of the corresponding group.



Added Picture Display Area: Display the current face database pictures that have been added to the group.

Info: Display the editing information of the currently selected picture.

Detail Information: Right mouse button event to view the detail information of the currently selected picture.

Move To ... : Right mouse button event, move the currently selected image to other group.

Edit: Right mouse button event, open the editing interface of the currently selected picture, re-edit the information.

Delete: Right mouse button event, delete the currently selected picture.

Import: Add new face data to the current group, import local pictures or pictures already captured by the camera.

Delete: Delete face data from the database in a batch, click on the control, then select the pictures to be deleted and click Delete again.

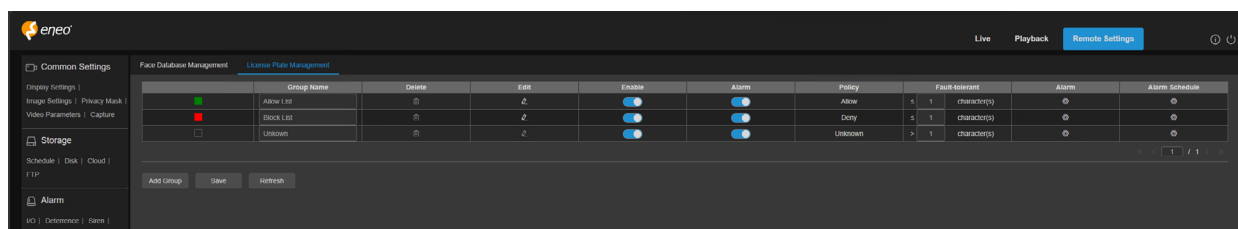
6.4.2.2 – License Plate Database Management

The license plate recognition function focuses on identifying the target vehicle and requires basic data for comparison. The program creates a database for license plate matching using the database management function.



Note!

Modifications to the database require a small period of system reloading to take full effect.



Alarm strategy display: In the camera, it only serves as a strategy reminder. Green for white list, red for black list, colourless for unfamiliar license plate list.

Group Name: Edit and modify to show the current group name, the specific group name will be prompted when the alarm is pushed.

Delete: Group delete function, the first 3 groups are not allowed to delete.

Edit: Open the picture settings of the grouping reference, for more information, please continue with the content of the below picture.

Enable: License plate recognition using grouped data for comparison.

Alarm: Enable alarm response setting master switch.

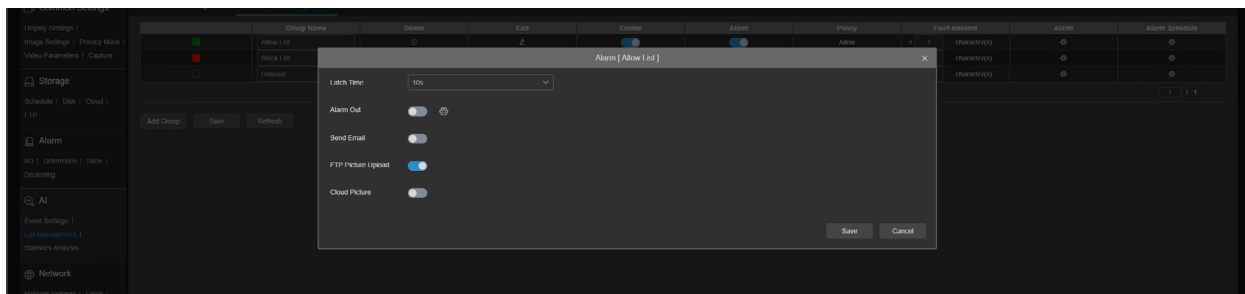
Police: Alarm policy, the first 3 groups can not be modified, other groups can be customized as Allow, Deny.

Fault-tolerant: Fault-tolerant characters, allows the search result to display the number of inconsistent characters between the license plate number and the set number of characters, the lower the setting, the higher the match of the search result.

**Note!**

If you want to search for a license plate with only a few characters, set the error tolerance rate to the maximum. Many irrelevant license plates will be searched, but the results are sorted by similarity. License plates with a high level of similarity appear at the top of the list, making it easier to find the desired plate.

Alarm Linkage: Group alarm setting.



Latch Time: The time that the IO alarm tail line continues to alarm when the camera acquires a picture and matches it successfully.

**Note!**

The camera must support the IO output function and the working time is controlled by the corresponding schedule.

Alarm Out: Set the Enable switch.

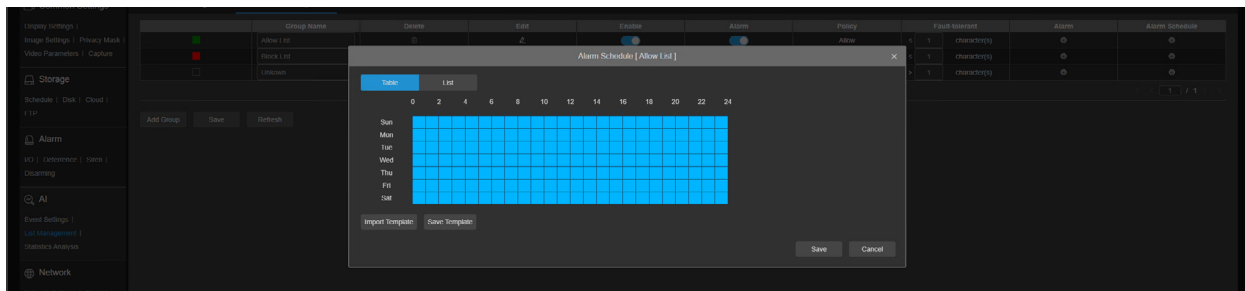
Email: Switch to send an email when the grouped face recognition matches are successful.

FTP Picture Upload: Switch to send the picture to the associated FTP server when the group face recognition match is successful.

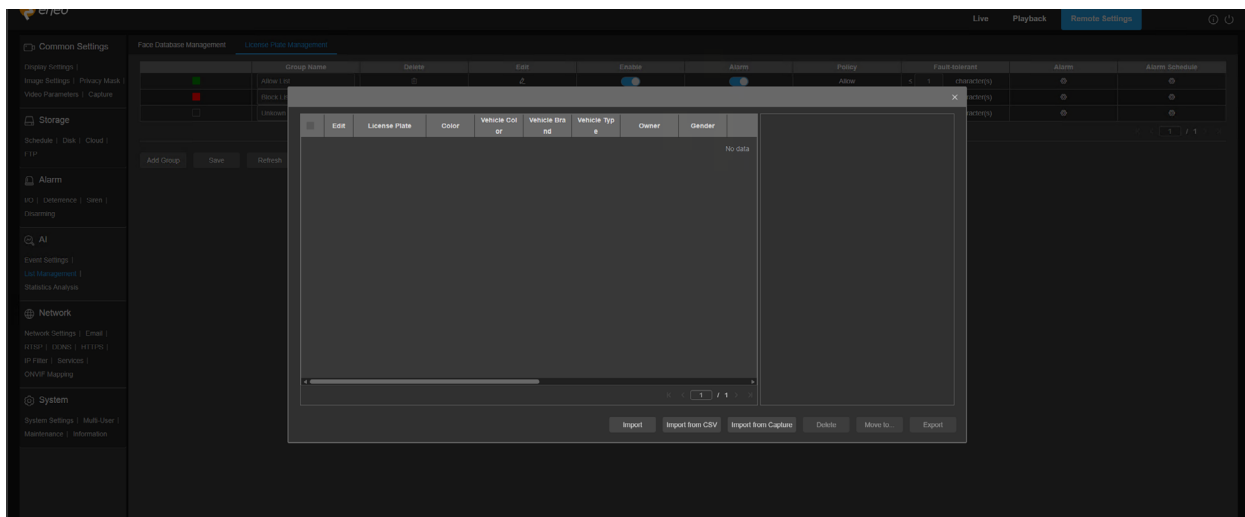
**Note!**

At the same time by the schedule control effective time, you need to associate FTP server first.

Alarm schedule: Set the effective time of Alarm Out, Email and FTP Picture Upload for group alarm.



Click Edit icon to set the specific reference data of the corresponding group. The interface is shown in the below picture.



There are three ways to add license plate information: Import, Import from CSV, or Import from Local Capture. When you add more than 5,000 pieces of data, a pop-up box will appear with the message, "The number of data added has reached the group limit."

1. Click **Import** button to manually add a single license plate.
2. Click **Import From CSV** button to import single or multiple data from CVS form.
Select the license plate file of CSV you want to import, click import button to add to the group, Delete button to delete the unwanted license plate information.
3. Click **Import From Capture** button to import license plate information from local to database.
Select Date, Duration and Alarm Group and click Search, it will search all the license plates saved by all devices in this period.

All: Select all the license plate information.

Click on a piece of data to edit the information for this license plate. After editing, click the Save button. If the modification was successful, the status icon will change.

4. **Delete:** Check the checkbox of the license plate information and click the button to delete the license plate information.
5. **Move to...:** Tick the checkbox of the license plate information and then click the button to move the license plate information to other groups.
6. Click **Export** button to export and save the information of the whole group.

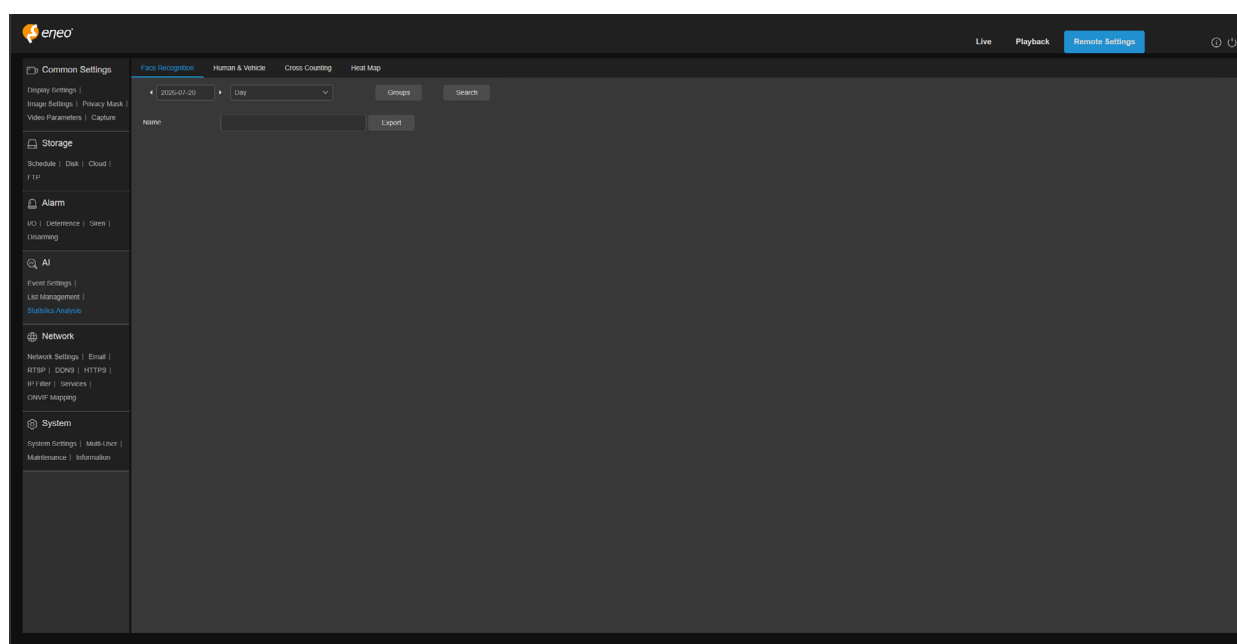
Enable: The license plate recognition uses grouped data for comparison.

Add Group: Add a new database group, support up to 16 database groups.

6.4.3 – Statistics Analysis

6.4.3.1 – Face Recognition

The face capture data statistics analysis function searches and counts the face data saved in the SD card according to the search settings, and its interface is shown in the below picture.



Time: Reference time for search mode.

Search Mode: The data search supports 5 time ranges: Day, Week, Month, Quarter, Year.

Groups: The group for searching when searching statistics.

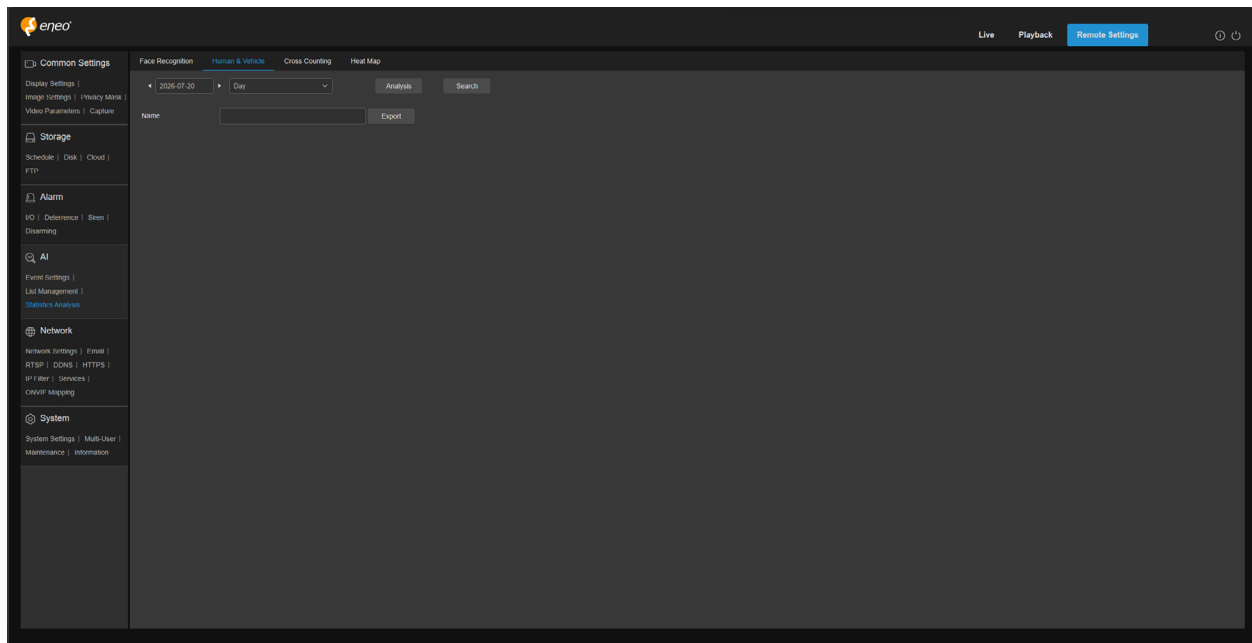
Search: Re-search the data according to the current search settings.

Export: You need to add an export file name to export the current search data using an Excel document.

Display Area: Display the current search result in the form of charts and fan charts below.

6.4.3.2 – Human & Vehicle

Human & Vehicle data statistics. Including alarm for Human & Vehicle, Cross Counting, Intrusion, Entrance Region, Region Exit, etc.



Time: The reference time for the search pattern.

Search Mode: Data search supports 5 time ranges: Day, Week, Month, Quarter, Year.

Analysis: Search according to the type of marker at the time of capture, Pedestrian, Motor Vehicle, Non-motorized Vehicle, Line Crossing [Pedestrian], Line Crossing [Motor Vehicle], Line Crossing [Non-motorized Vehicle], Intrusion [Pedestrian], Intrusion [Motor Vehicle], Intrusion [Non-motorized Vehicle], Region Entrance [Pedestrian], Region Entrance [Motor Vehicle], Region Entrance [Non-motorized Vehicle], Region Exit [Pedestrian], Region Exit [Motor Vehicle], Region Exit [Non-motorized Vehicle] and a total of 18 type groups.

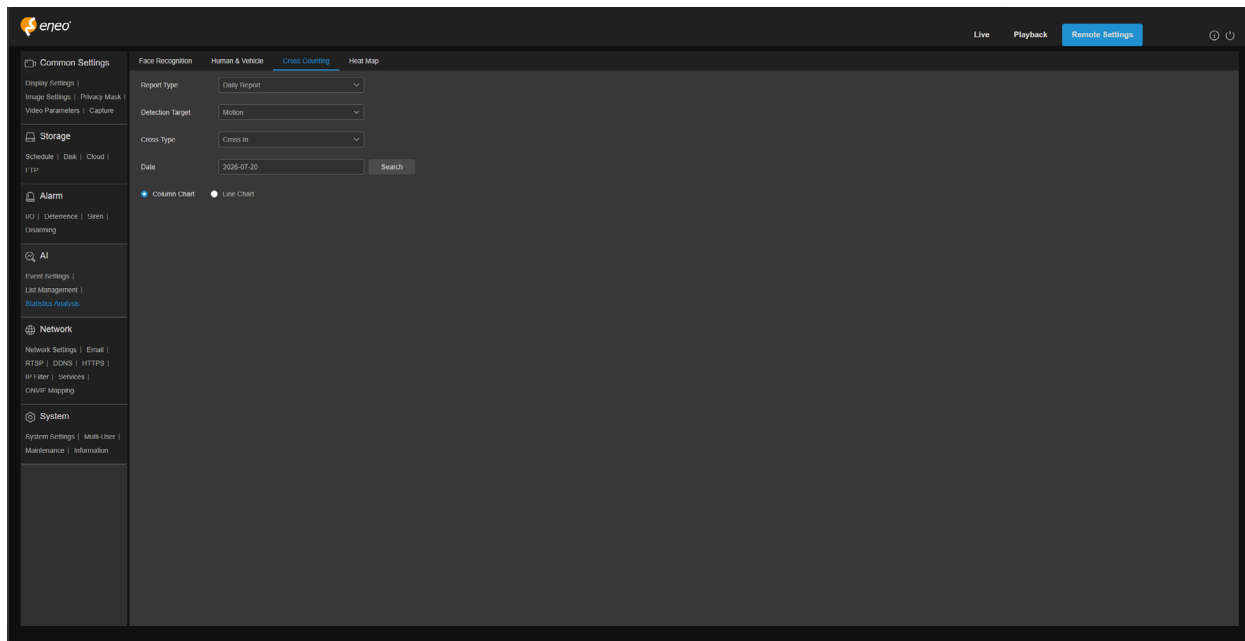
Search: Re-search the data based on the current search settings.

Export: You need to add an export file name to export the current search data using an Excel document.

Display Area: Show the current search result in the form of charts.

6.4.3.3 – Cross Counting

Cross Counting is function of searching and counting the data across the line, and its function interface is shown in the below picture.



Report Type: The data search supports 4 types of time ranges: Daily report, Weekly report, Monthly report and Annual report.

Detection Target: Set the corresponding alarm model that the data needs, for example, the data triggered by Motion cannot be searched by other types. For example, Motion triggered data cannot be searched by other types. There are three types of models, Motion, Person and Vehicle, corresponding to the function settings.

Cross Type: Search data according to the crossing statistics, there are two types of models: Cross In and Cross Out.

Export: You need to add export file name to export the current search data using Excel file.

System time: The reference time of current Report Type.

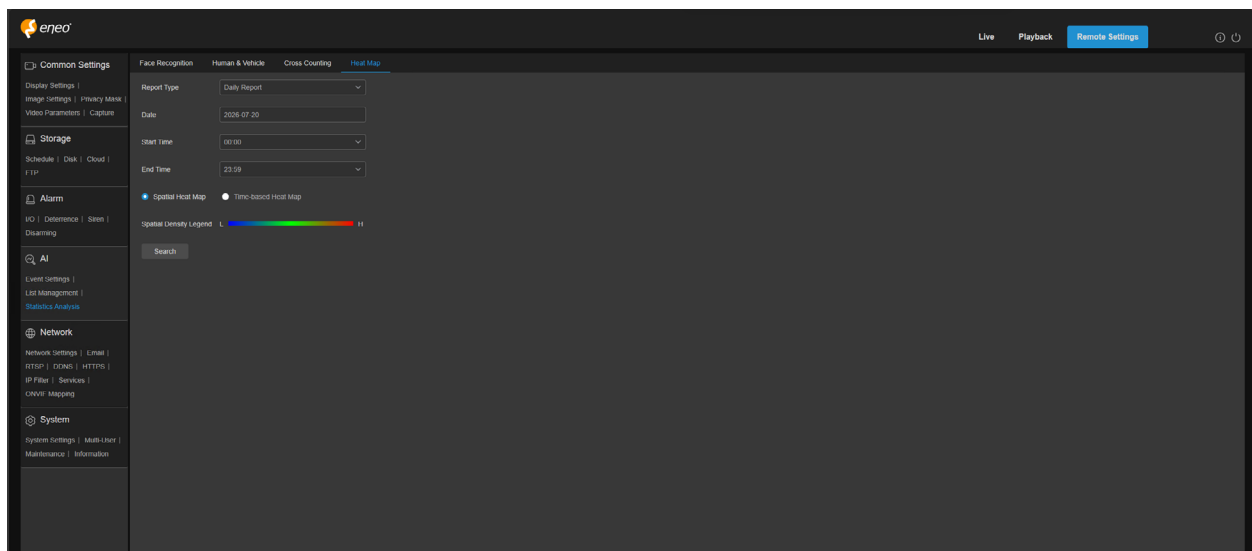
Mode: Whether the chart in the icon display area is displayed as a bar chart or a line chart.

Display Area: Show the current search result in the form of charts.

Search: Search data according to the current settings.

6.4.3.4 – Heat Map

The heat map report allows you to visual the distribution of people in two dimensions, space or time.



Space heat map: The different areas in the screen of the personnel active situation. The red color is the densest area, i.e. the most active, and the blue color is the least densely populated area.

Time heat map: People's activity at different times in the screen. The vertical coordinate value is the index calculated according to the number of people, stay time and other comprehensive calculation, the larger the value the higher the activity, does not represent the number of people. The camera must be equipped with a usable SD card, the heat map information will be stored in the SD card, the interface effect is shown in the figure.

Report Type: The data search supports the search of Daily report, Weekly report, Monthly report and Annual report in 4 time ranges.

Date: The date to which the data search refers.

Start Time: Only shown in Daily report setting, set the specific hour to start the search.

End Time: Displayed only when setting up a daily report, sets the specific hour at which the search ends.

Mode: Set the way to display the data when searching, there are two ways: graph and table.

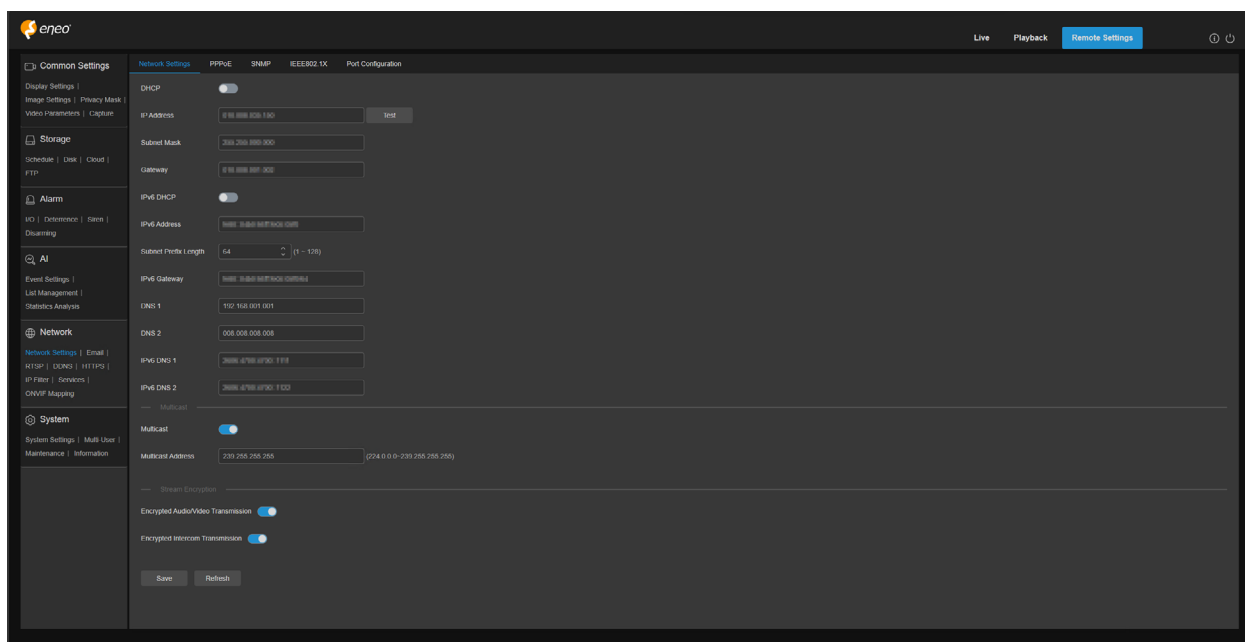
Display Area: Display the frequency of changes in the monitoring area in the form of a graph, and display the frequency of changes in the monitoring area in the form of a table for different time periods.

Search: Search data according to the current settings.

6.5 – Network

6.5.1 – Network Settings

6.5.1.1 – Network Settings



If you are connecting to a router that allows DHCP, check the box next to “DHCP”. The router will then automatically assign all network parameters to the device. This will only happen unless the following parameters are set manually for the network.

IP Address: The IP address identifies the IP camera on the network. It consists of four numbers between 0 and 255, separated by periods. For example, it could be 192.168.001.100.

Subnet Mask: A subnet mask is a network parameter that defines the range of IP addresses available on a network. If an IP address is like a street address, then a subnet mask is like a community. A subnet address consists of four numbers separated by periods. For example, a subnet address might be “255.255.000.000”.

Gateway: This address enables the IP Camera to access the network. The format of a gateway address is the same as an IP address; for example, it could be written as “192.168.001.001”.

IPv6 Address: The IPv6 address identifies the IP Camera on the network. It consists of eight sets of numbers between 0 and FFFF separated by colons. For example: ‘ABCD:EF01:2345:6789’. ABCD:EF01:2345:6789”.

DNS1/DNS2: DNS1 is the active DNS server and DNS2 is the standby DNS server. Usually you just need to enter the DNS1 server address.

IPv6 DNS1/DNS2: The IPv6 DNS1 server is active, and the DNS2 server is standby. Typically, only the address of the DNS1 server needs to be entered.

Multicast: If this option is enabled, the main stream can be used for multicast.

Multicast Address: Specify a multicast address. Through the RTSP protocol, a third-party player can request that the camera send a multicast media stream.

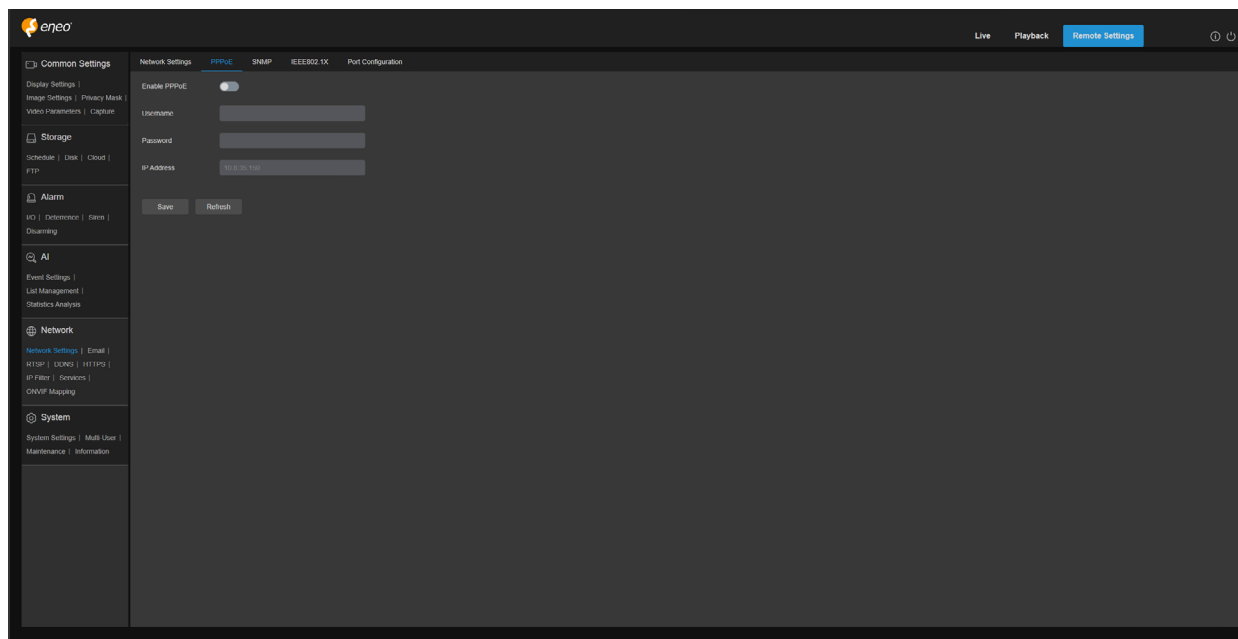
Encryption Audio/Video Transmission: Indicates audio/video encryption transmission.

Encryption Intercom Transmission: Indicates intercom encryption transmission.

If the IPC is capable of warning you about repeated IP addresses in the same network segment, the message "The address is used" will pop up when you click the button if IP addresses are repeatedly used.

6.5.1.2 – PPPoE

The device supports networking communication via PPPoE dial-up.

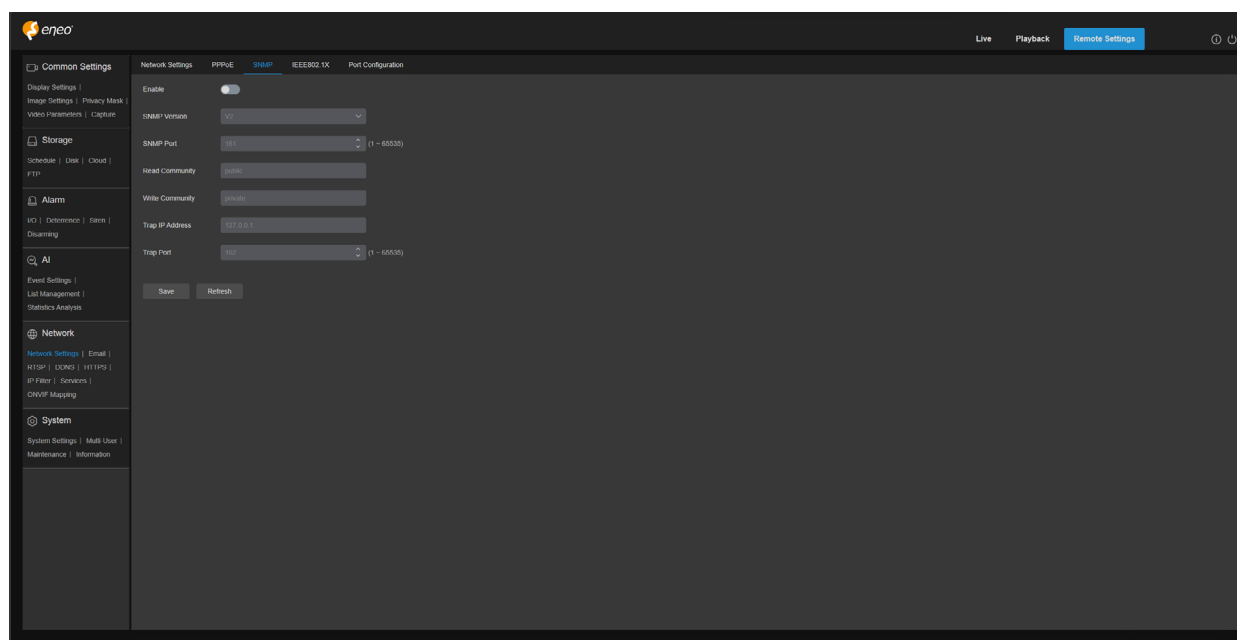


Check the “Enable PPPoE” box, then enter the PPPoE username and password.

Then, click “Save” to save the settings and reboot the system.

6.5.1.3 – SNMP

The Simple Network Management Protocol (SNMP) enables remote monitoring of devices through the network.



Enable: Enable or disable SNMP.

SNMP Version: Select the SNMP server version. V1, V2, and V3 are available.

SNMP Port: Set the SNMP server port.

Read Community: Set the SNMP server's read community value.

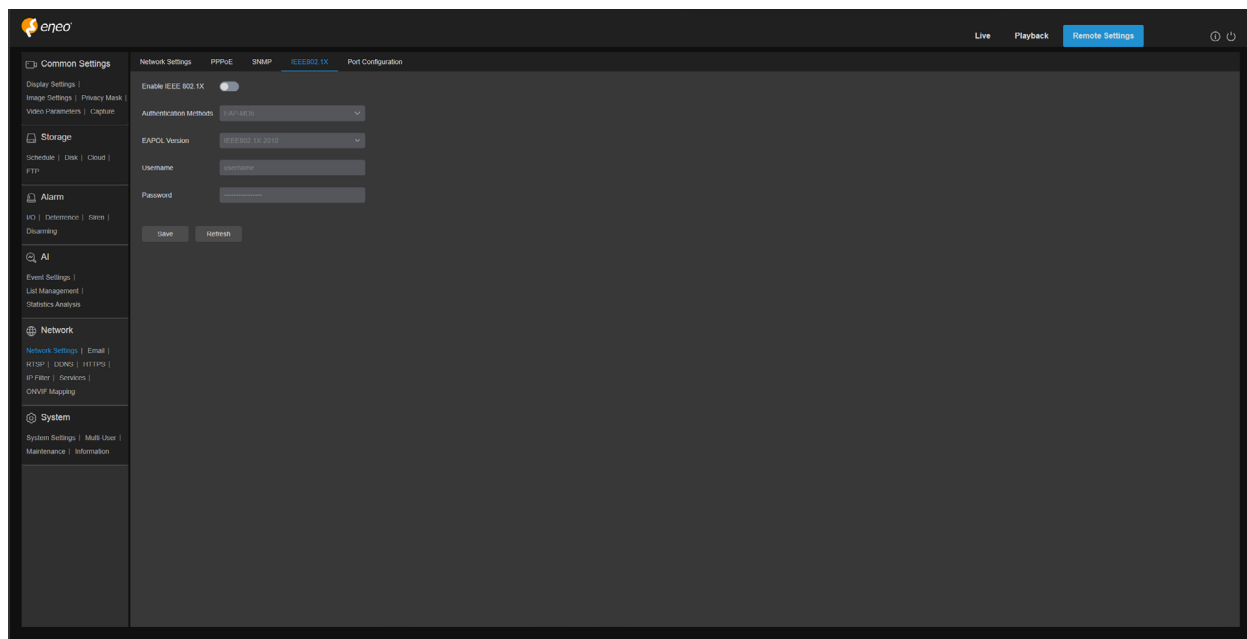
Write Community: Set the SNMP server's Write Community value.

Trap IP Address: Set the SNMP server trap IP address.

Trap Port: Set the SNMP server trap port.

6.5.1.4 – IEEE802.1X

IEEE 802.1X is a network access control protocol primarily used in local area networks to enhance security by verifying user identity and controlling access permissions at the port level. Network devices connected to switch ports can access local area network resources through authentication. If authentication fails, the user cannot access the network's resources.



Enable/Disable IEEE 802.1X: Enable or disable IEEE 802.1X.

Authentication Methods: Set the IEEE 802.1X authentication methods.

There are five methods: EAP-MD5, EAP-MSCHAPV2, EAP-PEAP/MSCHAPv2, EAP-TTLS/EAP-MD5-Challenge, and EAP-TLS.

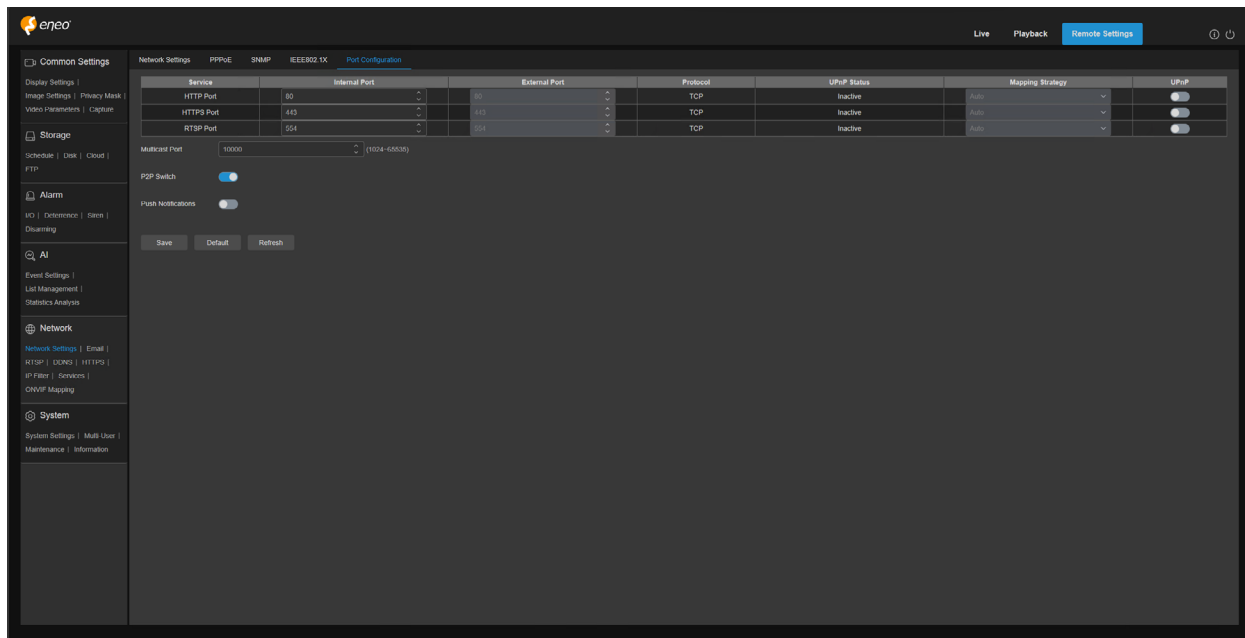
EAPOL Version: Includes IEEE 802.1X-2001, IEEE 802.1X-2004, and IEEE 802.1X-2010.

Username: Set the IEEE 802.1X authentication username.

Password: Set the IEEE 802.1X authentication password.

When using the EAP-TLS authentication method, export the CA Cert/Client Cert/Client Private Key file from the authentication server. Then, import these files into the camera and install them. Then, when the camera is inserted into a router or switch that has the IEEE 802.1X function enabled, it will only be granted a network connection.

6.5.1.5 – Port Configuration



HTTP Port: Use the web to access the device through the HTTP protocol, which has a default port of 80.

HTTPS Port: Use the web to access the device's port via the HTTPS protocol with a default of 443.

RTSP Port: The RTSP port is the port used to access devices via the RTSP protocol. The default is 554.

UPnP: If you want to log in to the device remotely using the Web Client, you need to set up port forwarding in your router. If your router supports UPnP, enable this option. In this case, users do not need to manually configure port forwarding in the router. If the router does not support UPnP, manually configure port forwarding in the router.

Multicast Port: Allows you to set the multicast port.

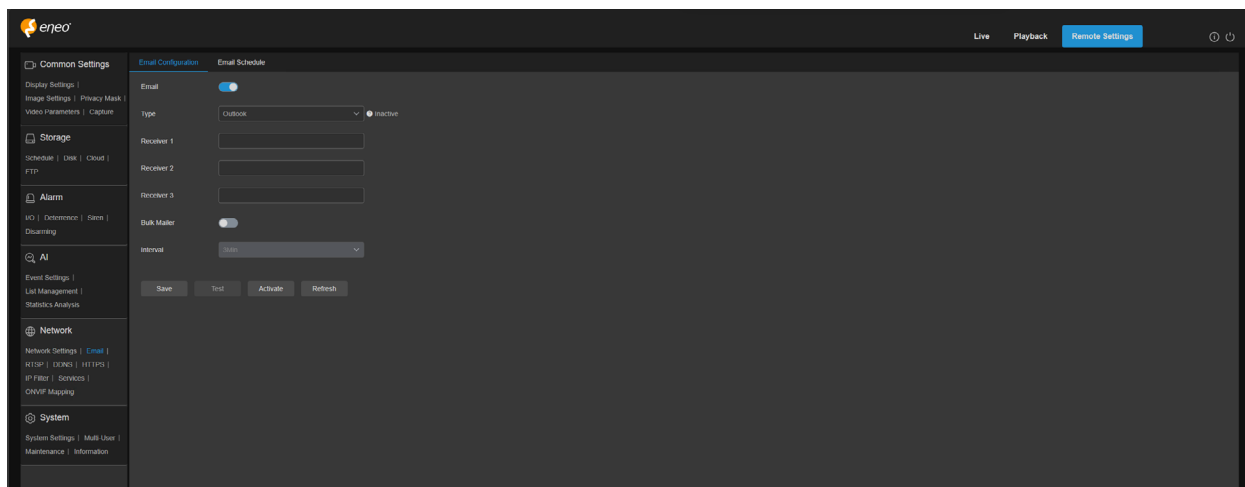
P2P Switch: P2P will not take effect when disabled.

Push Notifications Switch: The mobile push notification function is ineffective if this switch is disabled.

6.5.2 – E-Mail

6.5.2.1 – Configuration

This menu allows you to configure email settings. Complete these settings to receive system notifications via email when an alarm is triggered or the hard disk is full.



Email: Tick to enable.

Type: There are two types. Outlook and Other.

Encryption: Enable this option if the user's email server requires SSL or TLS authentication. If you are unsure, select "Auto."

SMTP Port: Enter the SMTP port of the email server.

SMTP Server: Enter the address of the SMTP server.

User Name: Enter the user's email address.

Password: Enter the email password.

Receiver 1-3: Enter the email addresses where the user wants to receive event notifications from the camera.

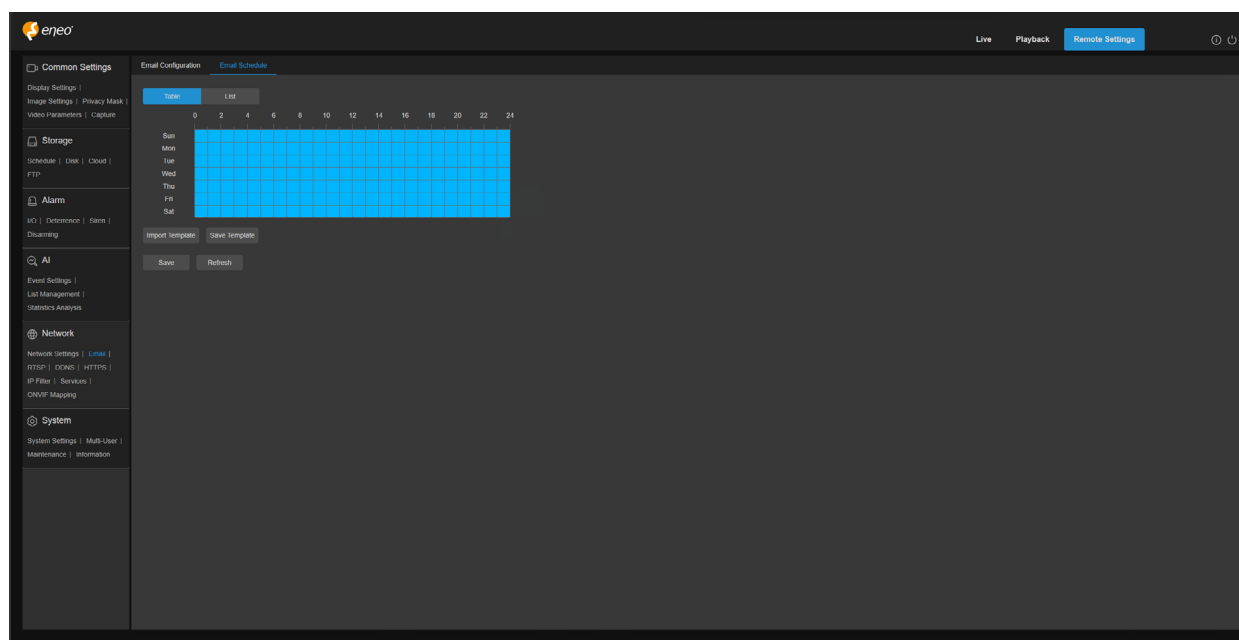
Bulk Mailer: Tick to enable the bulk mailer.

Interval: Configure the time interval between the camera's notification emails.

To ensure that all settings are correct, click "Test Email." An email will be sent to the user's inbox. If the user receives the test email, then the configuration parameters are correct.

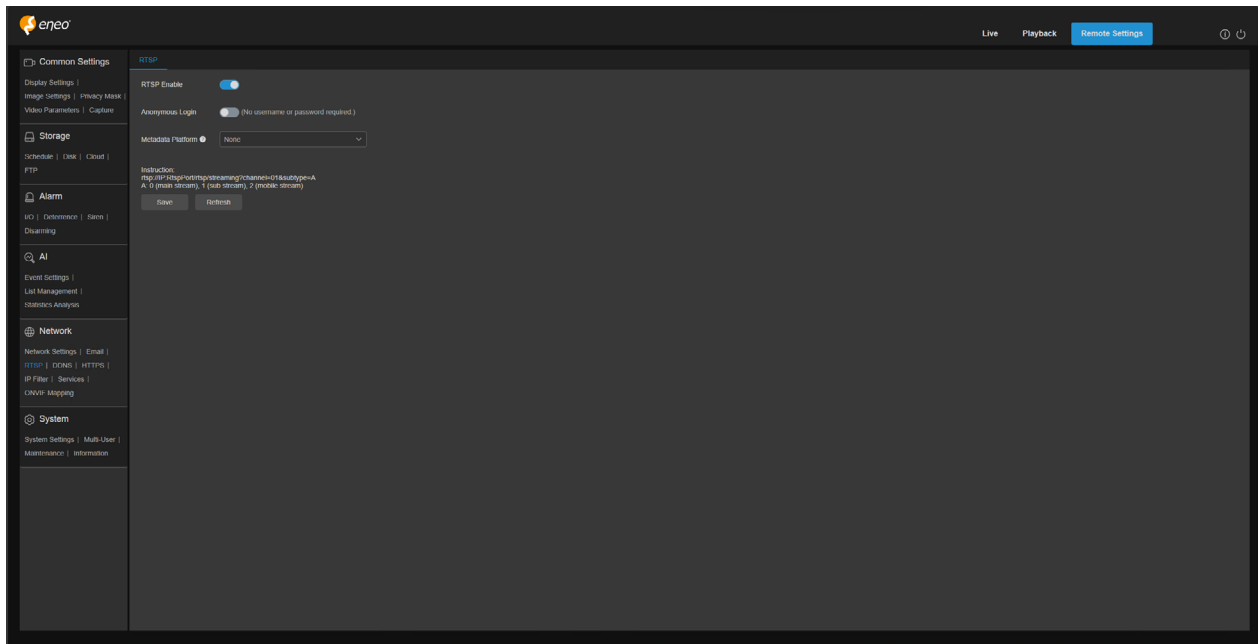
6.5.2.2 – Schedule

Set the schedule for the mail function to take effect only during the specified time period.



6.5.3 – RTSP

The Real Time Streaming Protocol (RTSP) controls the transmission of data streams by setting parameters.



RTSP Enable: RTSP Switch. Check this box to enable the protocol.

Anonymous login: Anonymous login. When this is enabled, no authentication is required to use the protocol.

Metadata Platform: Enable or disable metadata push when the camera requests to connect to the third-party VMS. There are three models: None, General, and Milestone.

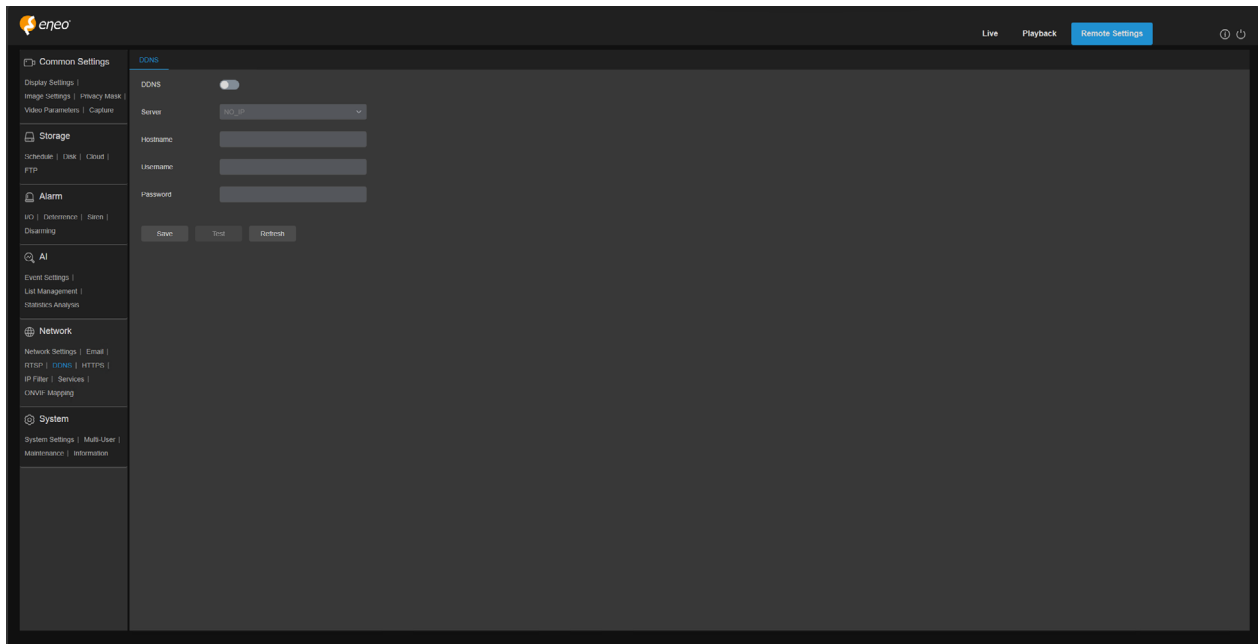
None: RTSP stream without metadata.

General: RTSP stream with metadata suitable for most integrated VMS.

Milestone: RTSP stream with metadata suitable for Milestone VMS.

6.5.4 – DDNS

This menu allows you to configure DDNS settings. DDNS provides a static address to simplify remote connection to the IP camera. To use DDNS, you must first set up an account on the DDNS service provider's website.



DDNS: DDNS Switch: Check to enable DDNS.

Server: Select the preferred DDNS server (DYNDNS, NO-IP, or CHANGEIP and DNSEXIT with partial support).

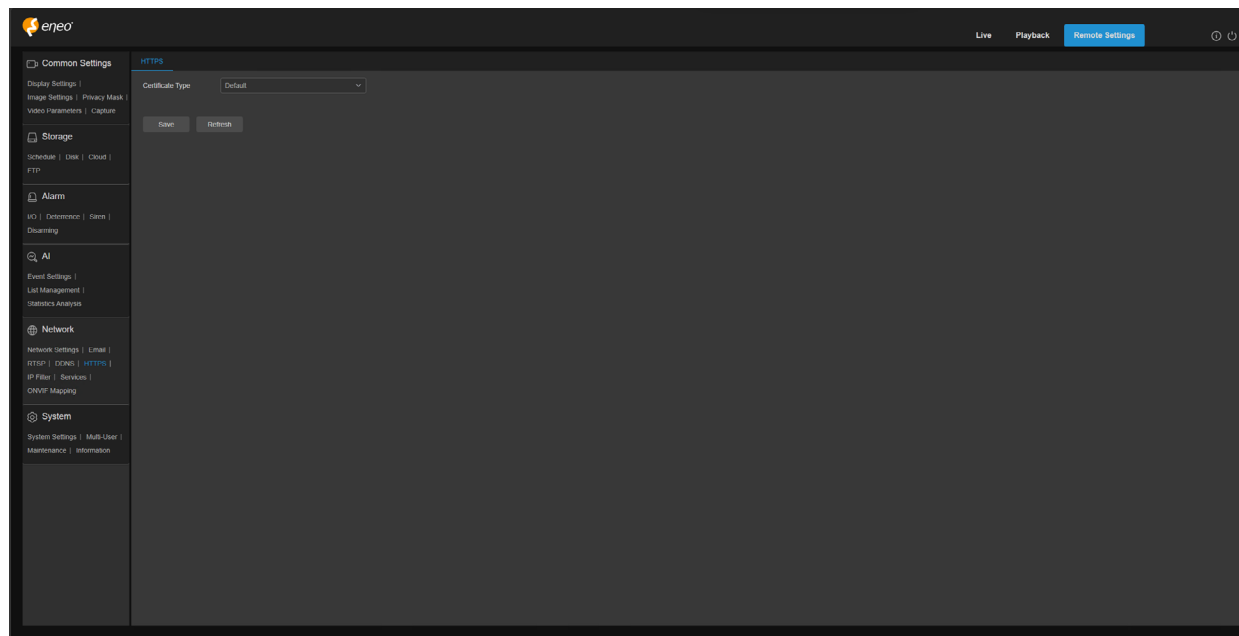
Hostname: Enter the domain name created by the user on the DDNS service provider's website. This is the address that users type into the URL box when they want to connect to the camera remotely via PC.

Uername/Password: Enter the username and password obtained when creating an account on the DDNS service provider's website.

After entering all parameters, click "Test" to test the DDNS settings. If the result of the test is "Network unreachable or DNS error," check that the network is functioning properly and that the DDNS information is correct.

6.5.5 – HTTPS

This menu provides access to the device via the HTTPS protocol.



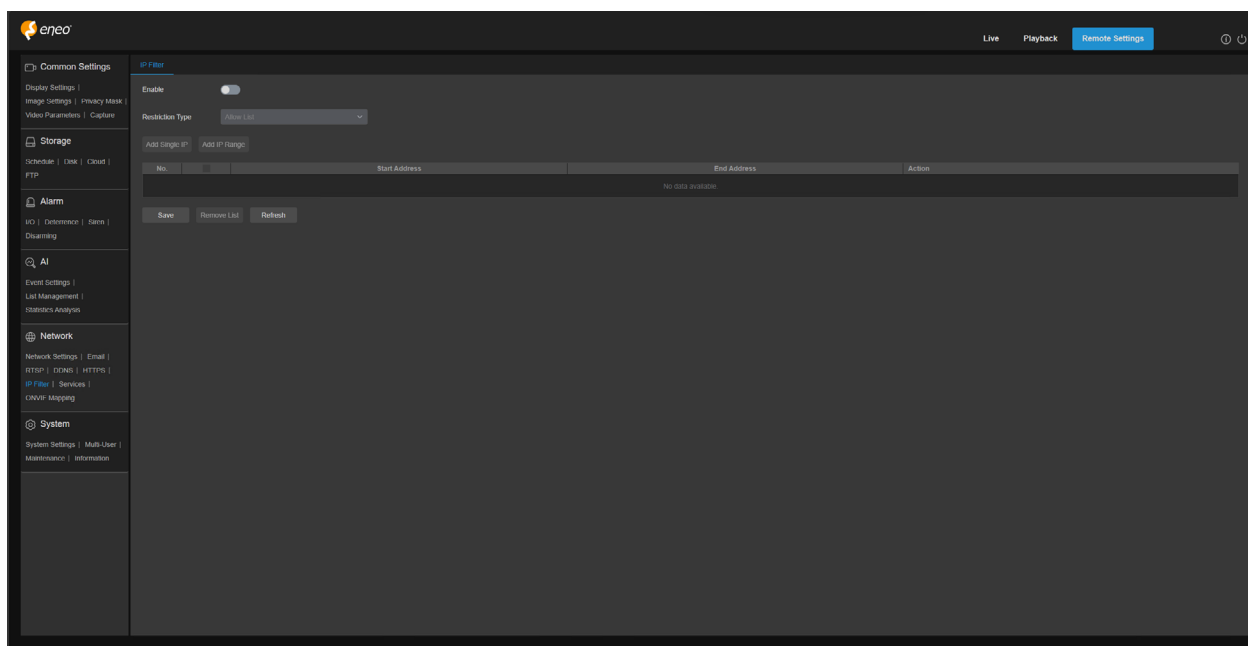
Certificate Type: There are two options: default and custom. The custom option allows you to connect devices using your own certificate.

Certificate: Select a custom certificate when the custom option is selected.

Key: Select a custom key file when the “Custom” option is selected.

6.5.6 – IP Filter

With the IP Filter function, you can create a blacklist or whitelist of connected devices.



Enable: Turn the IP filter on or off. If this option is turned on, choose to enable the block list or allow list.

Restriction Type: Select the list you want to set up (allow or block).

Single Add: Add a single IP address.

Network Segment Add: Network segment add.

Start Address: Enter the start address.

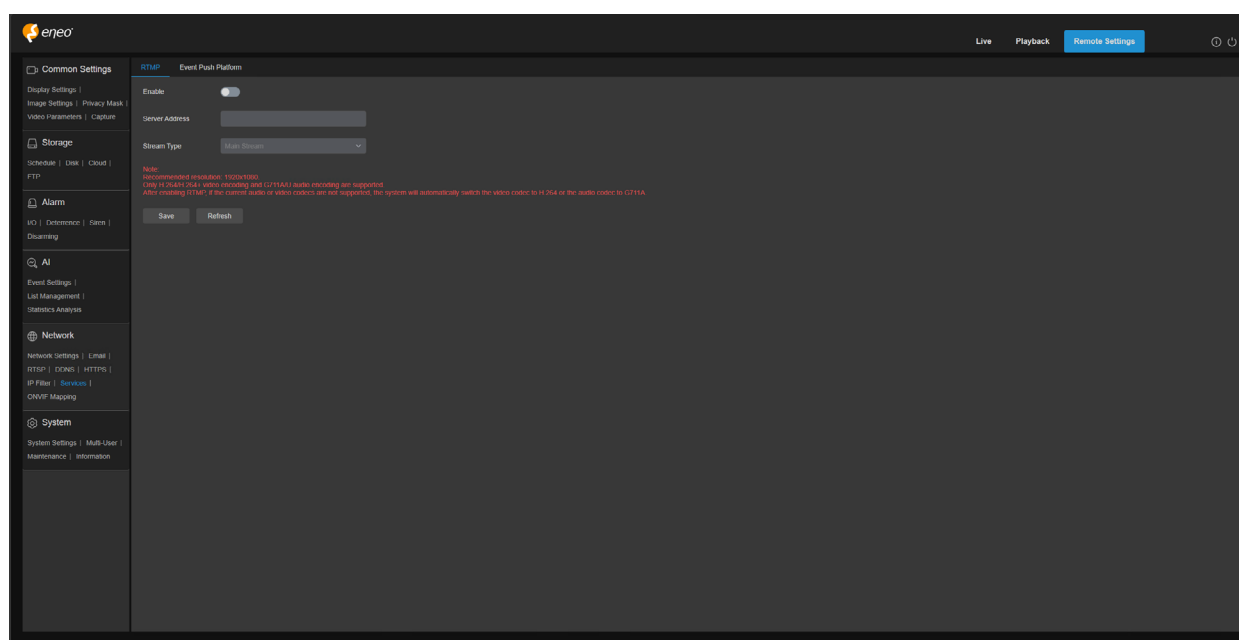
End Address: Enter the end address.

Remove List: Delete the added user IP address from the allow/block list.

6.5.7 – Services

6.5.7.1 – RTMP

The RTMP function page allows you to push the audio and video stream of the device to the YouTube live server by turning on the enable switch and filling in the correct server address.



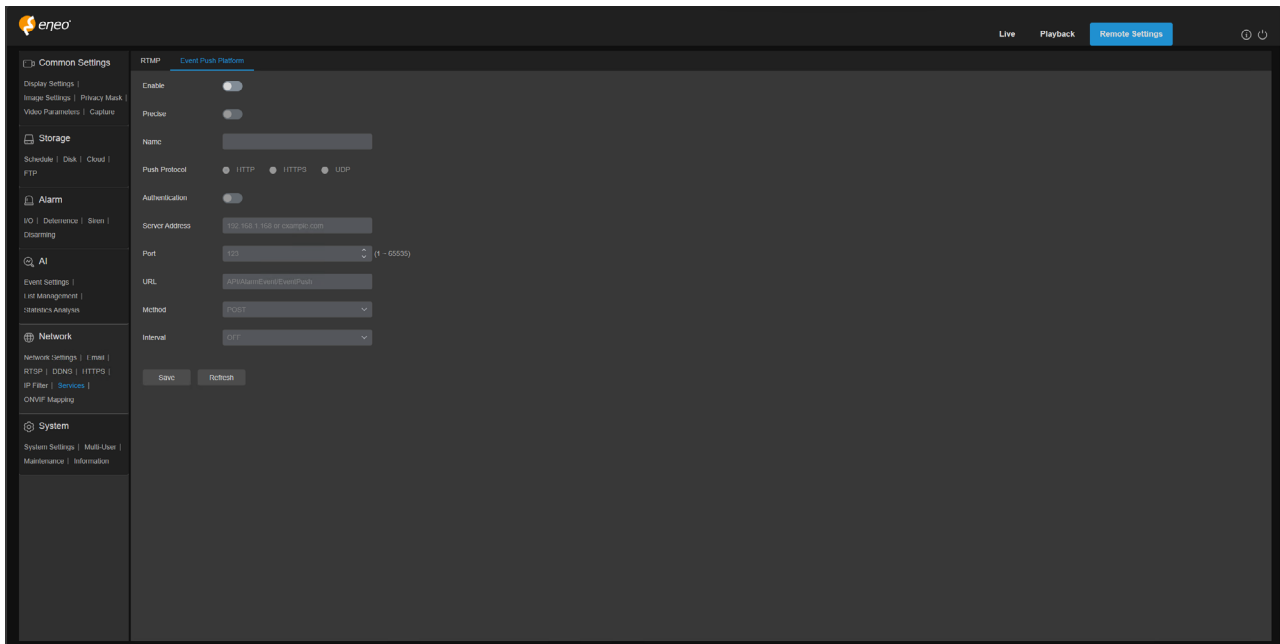
Enable: Enable or disable the RTMP function.

Server Address: The address of the server to which the stream will be pushed.

Stream Type: Select the audio and/or video stream to be pushed to the server.

6.5.7.2 – Event Push Platform

Event push can be divided into three methods: HTTP push, HTTPS push, and UDP push. The HTTP/HTTPS method includes the POST and GET methods. The UDP method has three options: unicast, multicast, and broadcast.



HTTP/HTTPS Push

Enable: Enable or disable the Event Push function.

Precise: Enable or disable the Precise function. When enabled, it pushes once when an alarm is triggered and again when the alarm ends. When disabled, it only pushes once when an alarm is triggered.

Name: Set the channel name.

Push Way: Supports HTTP push, HTTPS push, and UDP push methods.

Authentication: Enable to activate encryption verification.

Username: Set the username. It can be set to NULL if there is none.

Password: Set the password. It can be set to NULL if there is not one.

Server Address: Enter the server address.

Port: Set the server port. The port number range is 1–65535.

URL: Set the server API. Leave this field blank if there is no URL.

Method: HTTP/HTTPS push type. Supports POST and GET methods. Only the HTTP/HTTPS POST method supports pushing graphs; the others only push messages without accompanying graphs. The push image alarm type should be consistent with the preview alarm bar on the web end.

Interval: Set the keep-alive interval. The keep-alive mechanism periodically pushes notifications to the client according to the preset time, while normal alarm pushes are unaffected. There is no keep-alive mechanism in UDP mode.

UDP Push

Enable: Enable or disable the event push function.

Precise: Enable or disable precise push. When it is on, the push notification will be sent once when the alarm is triggered and again when the alarm is over. When it is off, push will only occur when the alarm is triggered.

Name: Channel name. Does not support Chinese display.

Push method: Supports the HTTP and UDP push methods. Select HTTP for the HTTP push method and UDP for the UDP push method.

UDP method: UDP push type. Supports unicast, multicast, and broadcast methods.

Unicast: Enter the IP address and port of the client's UDP server to receive push messages. Only this address can receive messages.

Multicast: Multiple client UDP servers on the same network segment that use the same UDP address and port can receive the message. Other non-UDP addresses will not receive it.

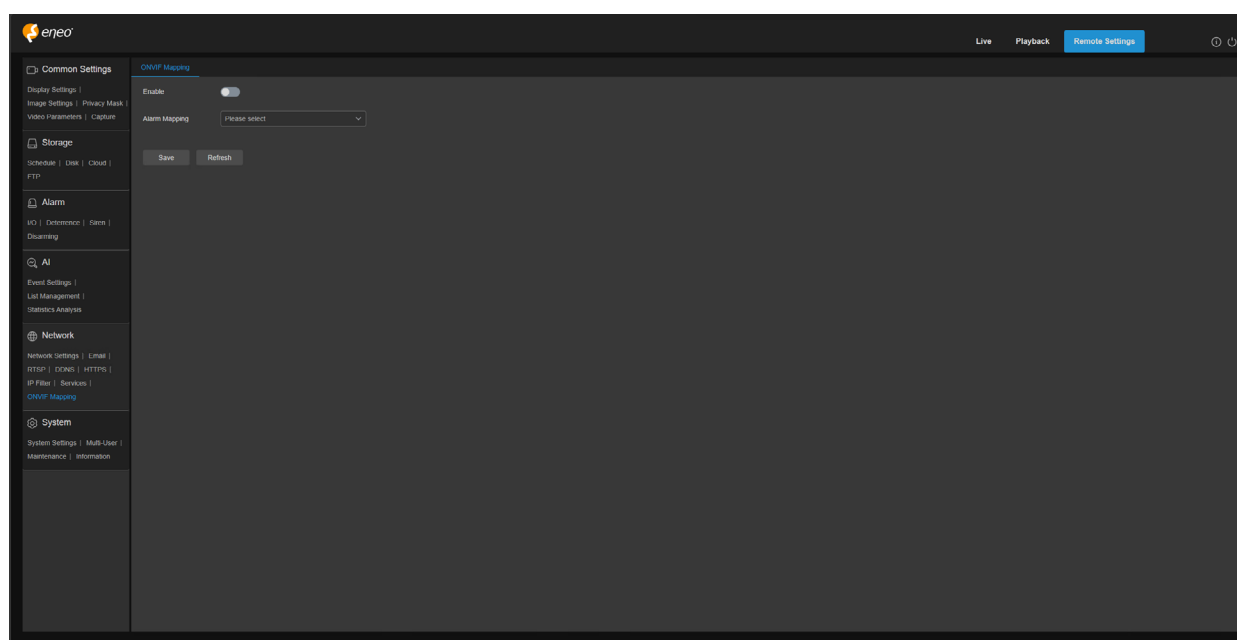
Broadcast: All UDP servers on the same network segment can receive the message.

UDP Address: UDP server address.

UDP Port: The UDP server port (range 1-65535).

6.5.8 – ONVIF Mapping

This function translates diverse system events into ONVIF motion alarms. VMS platforms generally struggle to receive AI and other external alarms, but Motion Detection typically operates reliably. To address this issue, the system provides a flexible menu with checkboxes that allow you to selectively enable or disable specific features.



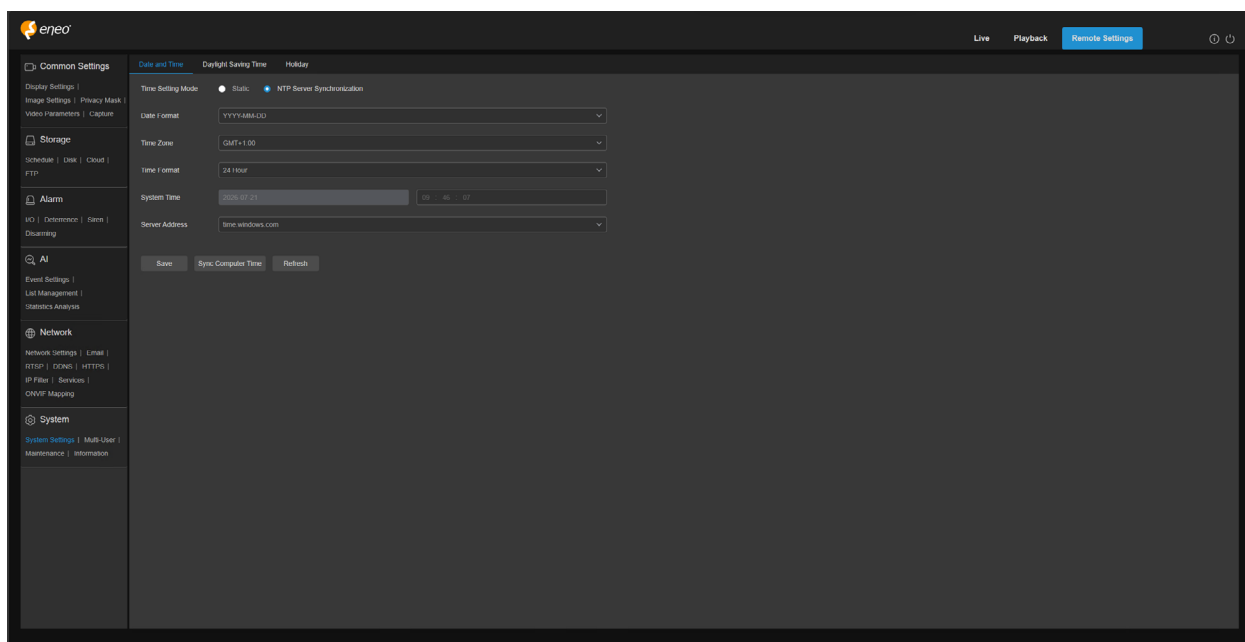
Enable: Enable or disable the ONVIF mapping function.

Alarm Mapping: Includes a total of 13 types of events: Human & Vehicle, Face Detection, Cross Counting, Object Detection, Line Crossing, Video Tampering, Sound Detection, Crowd Density, Queue Length, Rare Sound, Intrusion, Region Entrance, and Region Exit.

6.6 – System

6.6.1 – System Settings

6.6.1.1 – Date and Time



Time Settings Mode: There are static and NTP sync options. In static mode, you must set the time manually, while NTP sync calibrates over the network.

Date format: Set the date format.

Time Zone: Select the time zone associated with the user's region or city.

Time format: Select the preferred time format.

System Time: Click the box to change the date and time.

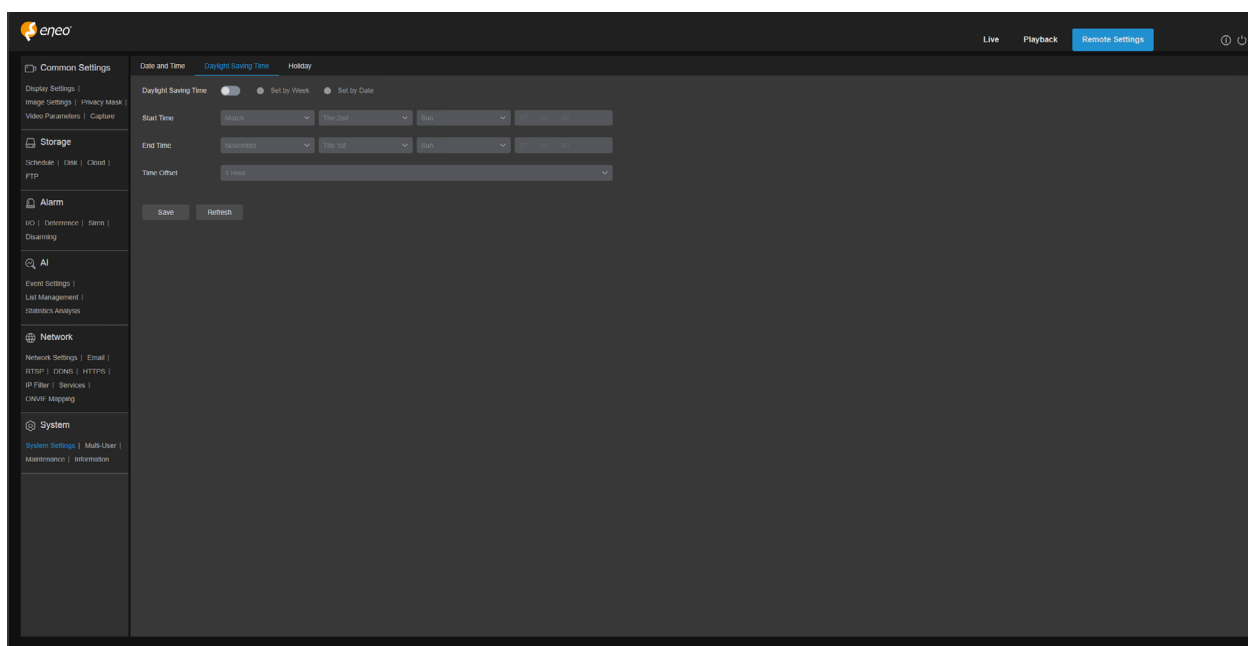
Synchronize computer time: Sync the time to the computer's time.

If you select the NTP calibration mode, you will not be able to set the time manually.

Server Address: Optional automatic timekeeping site.

6.6.1.2 – Daylight Saving Time

The DST (daylight saving time) feature allows users to add daylight saving time to a specific time zone or region.



Daylight Saving Time: Select this option if the user's time zone observes daylight saving time.

Set by week: Select the month, day of the week, and time when Daylight Saving Time begins and ends. For example, 2:00 a.m. on the first Sunday of a particular month.

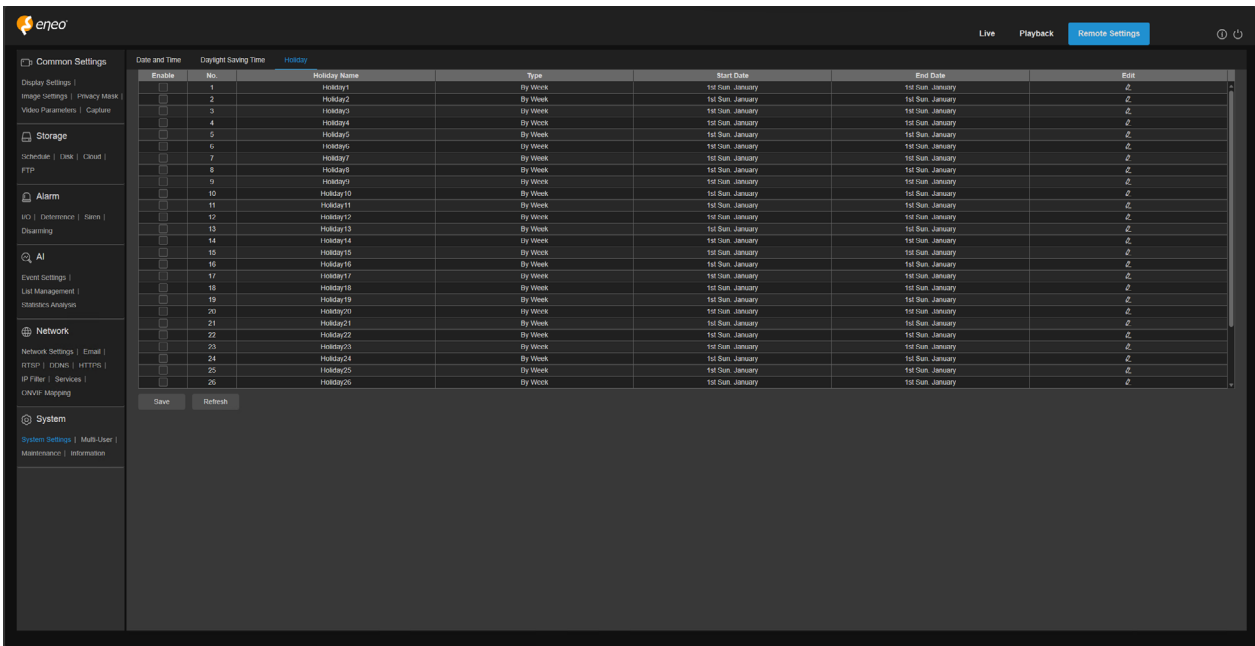
Set by Date: Select the date and time when Daylight Saving Time begins and ends.

Start Time/End Time: Set the start and end times for daylight saving time.

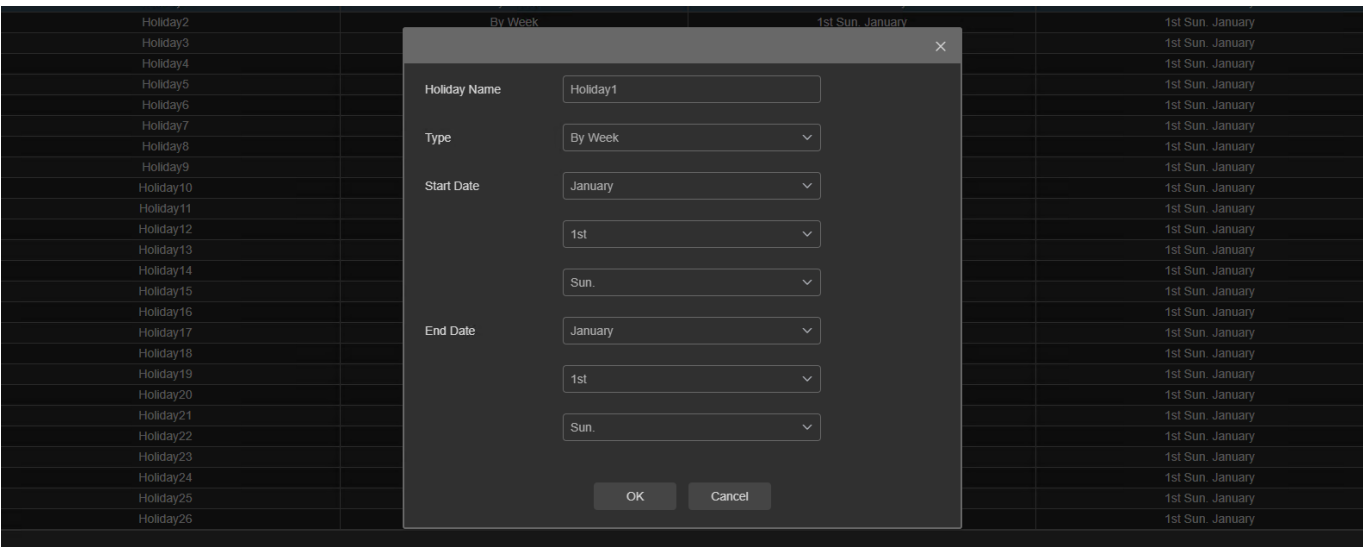
Time Offset: Select the amount of time that Daylight Saving Time adds to the user's time zone. This is the difference between Coordinated Universal Time (UTC) and local time.

Holiday

Users can customize the holiday schedule for recording. Up to 32 holidays are supported. The holiday function supports creating by date and week type. This function has a higher priority than the record schedule option.

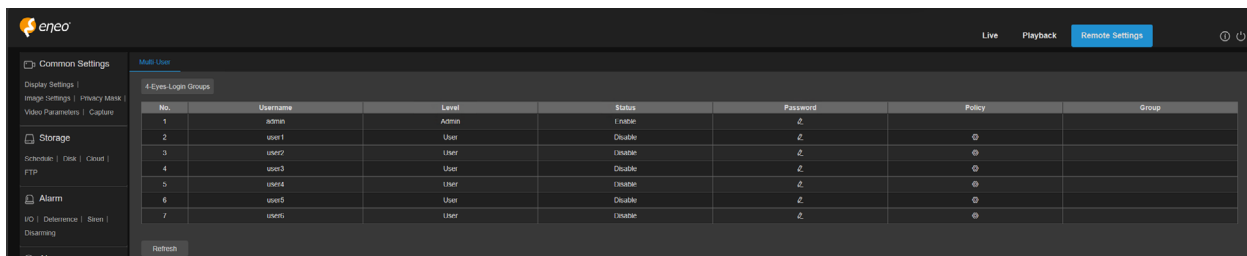


When you click on “Customize Holiday Schedule,” the “Record Schedule” or “AI Schedule” will appear with the “Holiday” option. Users can set custom recording schedules, AI schedules, etc.



6.6.2 – Multi-User

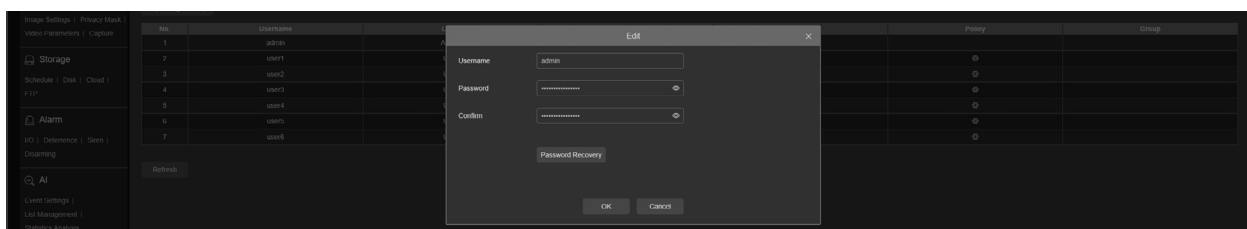
This menu can be configured by the user with a username, password, and user rights.



The system supports the following user types:

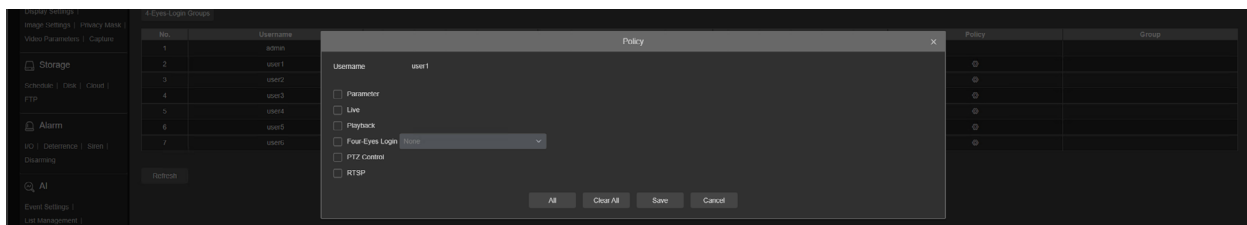
ADMIN: System Administrator. This user type can fully configure the system, change administrator and user passwords, they can also enable or disable password protection.

USER: Normal user. This user type can only access preview, search, playback, and other functions. Administrators can set up multiple users with different system access rights.



To change the password for administrator or user, click the 'Password Edit' icon on administrator line. The password must be 8-16 digits and at least 2 combinations of numbers, uppercase letters, lowercase letters and special characters. Enter the new password again to confirm.

Recover Password: After clicking the button, the password input field appears. Enter the correct password, and the password recovery option page will display, allowing you to choose either a security question or export certificate for authorization to restore your password.



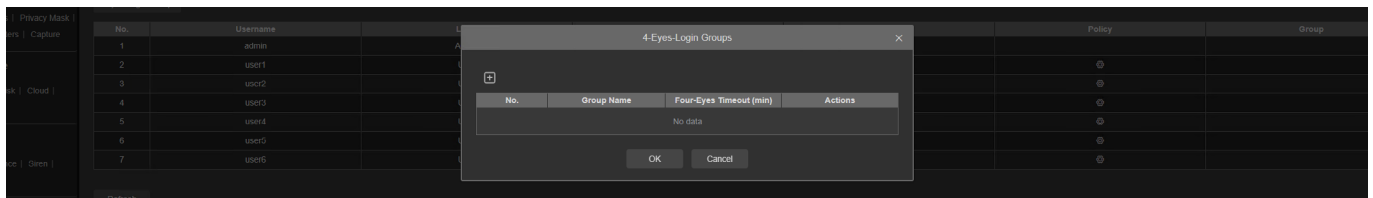
To set permissions for sub-users: Click on the Policy page, then check the box next to the function to enable the sub user's permissions in that area. Click „All“ to select all boxes, or „Clear“ to deselect all boxes.

4-Eyes-Login

Groups

When creating four-eyes login groups with an administrator account, ensure that at least two sub-user accounts are enabled and assigned to different groups. Once sub-user permissions are enabled, you can select the 4-Eyes-Login option.

This feature is a critical security mechanism that requires at least two users to collaborate in the verification process. This option is specifically applied to the playback function within the monitoring system.



4-Eyes Login Timeout: When the device executes a 4-Eyes-Login playback via the eneo Insight software or web interface, the playback session requires a manual exit. To ensure the security of the 4-Eyes-Login, a logout timer must be configured. After a period of inactivity, the device will automatically log out of the playback interface.

Use

The 4-eyes principle serves to protect personal data and prevent misuse in connection with video surveillance. Access to live camera feeds, recorded footage, as well as the review, extraction, or disclosure of video recordings, shall only be permitted with the involvement, authorization, or verification of a second authorized person. This measure ensures transparency, accountability, and traceability of all access activities and supports compliance with applicable data protection regulations and internal company policies.

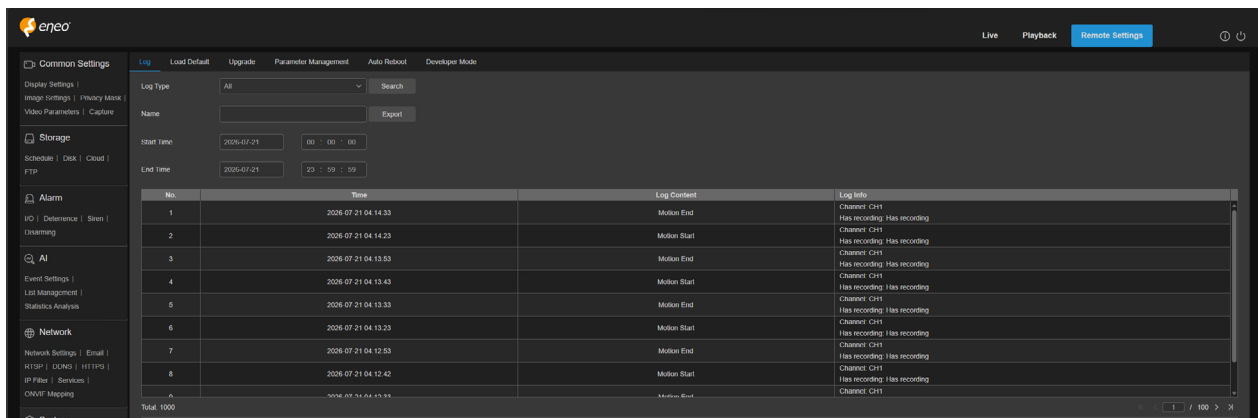
6.6.3 – Maintenance

The system log displays important events, such as motion alarms and system warnings. Users can easily import a backup of the log for a set period of time to their computer.

6.6.3.1 – Log



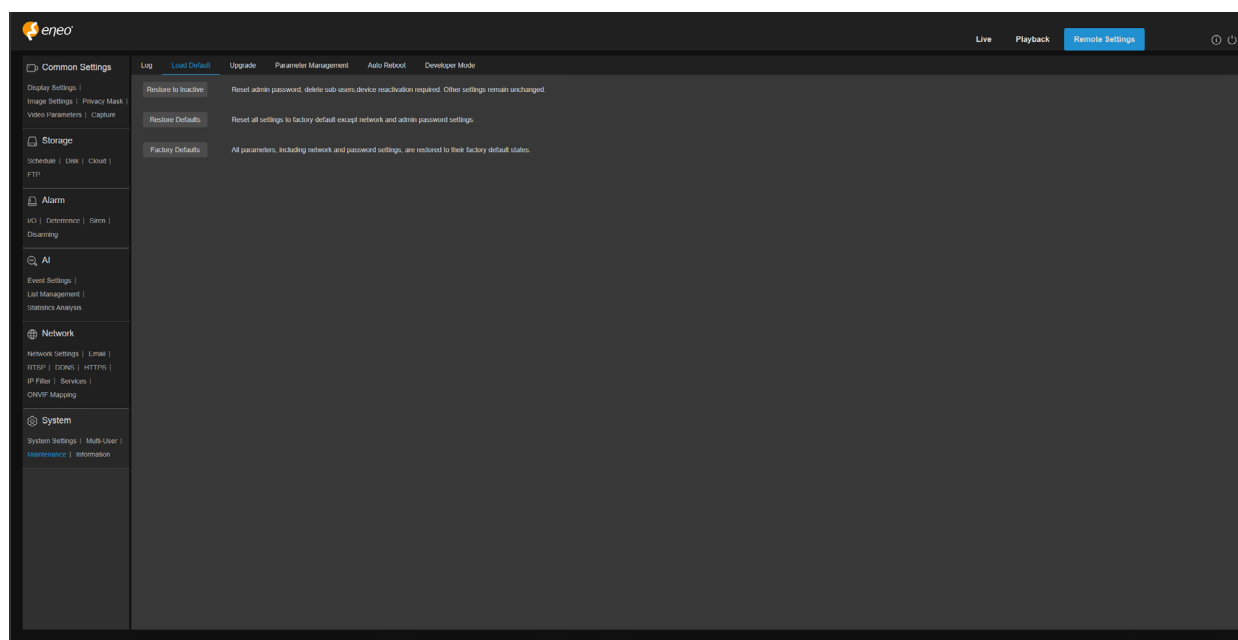
From the drop-down list next to “Log Type,” select the type of event you want to search for. To view the entire system log for the selected time period, select “All.” Each log type has different subtypes to choose from.



Once you have created the log, you can export it by entering a name and clicking the ‘Export’ button directly next to the name field.

6.6.3.2 – Load Default

On this page, users can select different reset methods to restore the device's configuration parameters to their factory settings. Note that restoring the factory settings will not format the SD card's data.



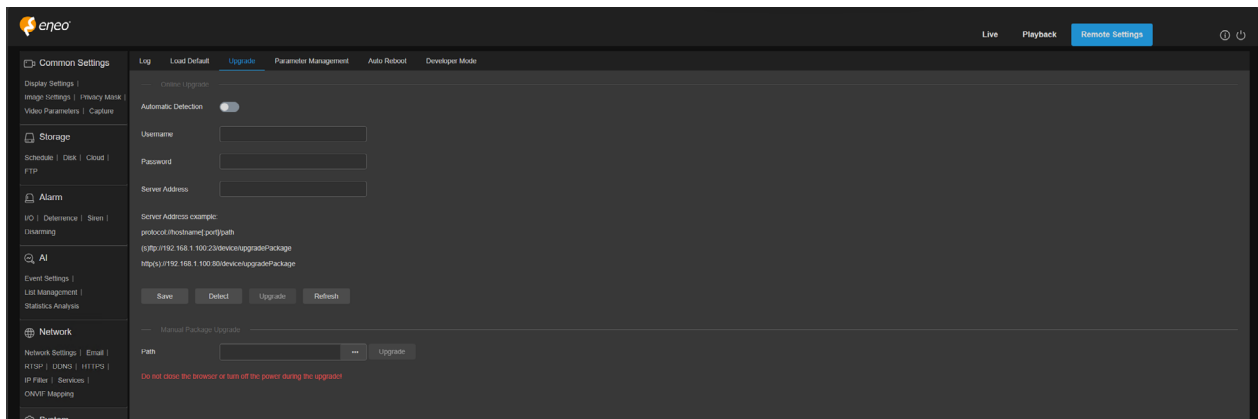
Restore to inactive: This resets the administrator password and deletes all sub-users. The camera needs to be reactivated, but the parameters of the other pages remain unchanged.

Restore Defaults: All other pages are restored to the factory settings except for the network and administrator password.

Factory Defaults: All camera parameters are restored to the factory settings.

6.6.3.3 – Upgrade

This menu can be used to update the firmware



Automatic Detection: Turn this button on to automatically detect online upgrade files.

Username: Server username.

Password: Server password.

Server Address: Enter the online upgrade address. (HTTP upgrade does not require a username or password.)

Save: Click this button to save the current settings.

Detect: After uploading the upgrade file and setting the upgrade path, click „Detect“ to manually locate the online upgrade file. A prompt will pop up when a new version is detected.

Upgrade: Click this button to start the system upgrade.

1. Place the firmware (.bin) file on your computer's hard drive.
2. Click „...“ next to „Path“ to select the file.
3. Click the Upgrade button to begin the upgrade process. The upgrade will take about 2-3 minutes. Do not power off the device or close Internet Explorer during the process.

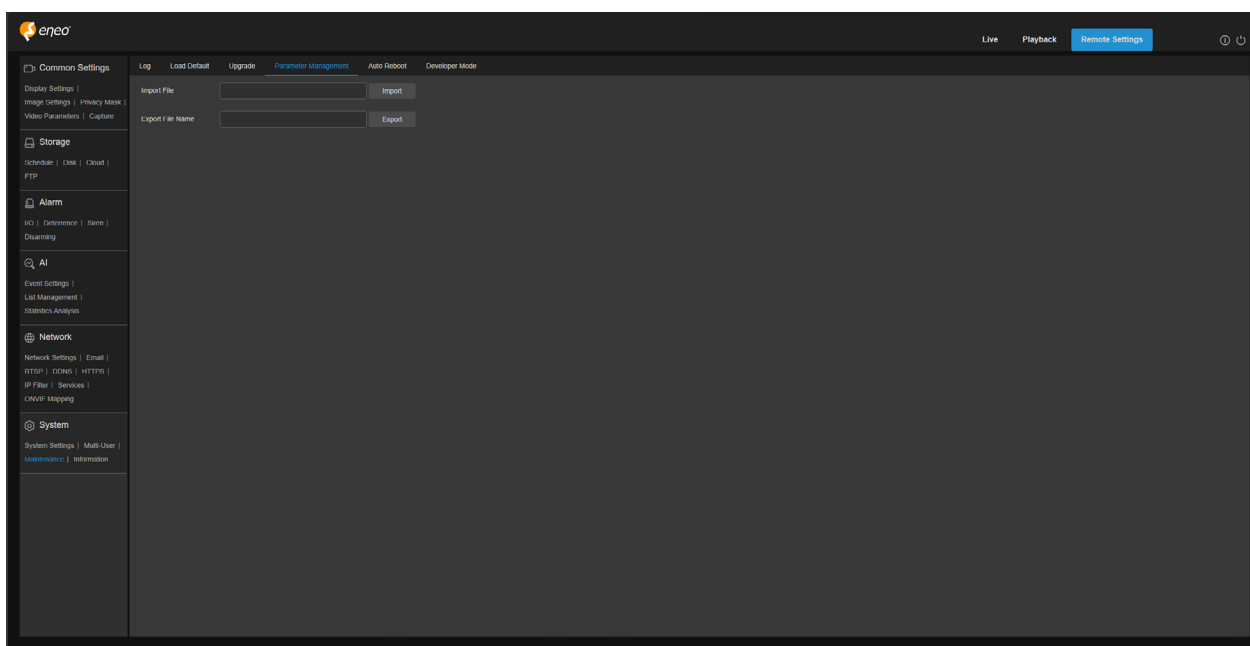


Note!

To detect the latest firmware version of the cloud server, turn on the cloud service, switch on the eneo Insight mobile APP, and clear the configuration parameters of online upgrade on the page.

6.6.3.4 – Parameter Management

Users can export the main menu parameters they have configured to a computer, and then import the exported setup file from the computer to the device.

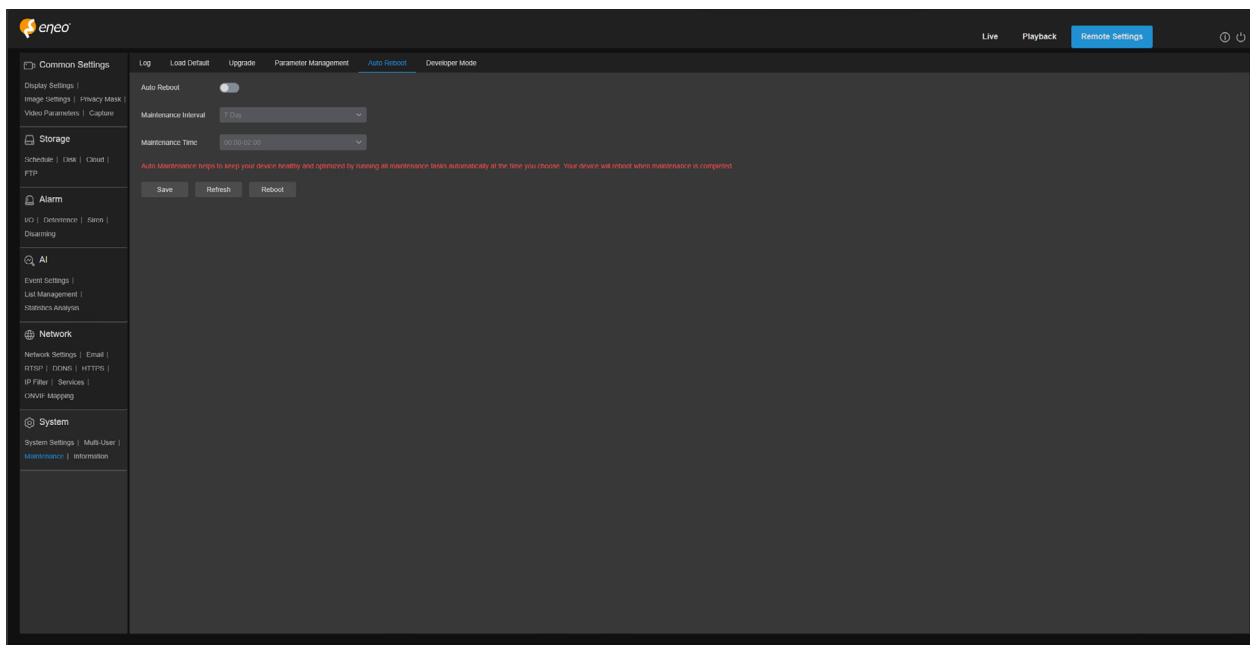


Import File: Click the box to open the Path window. Select the parameter file and click Import to begin importing parameters.

Export File Name: Enter the file name of the exported parameters in the Export File Name box. Click Export to export the parameters.

6.6.3.5 – Auto Reboot

Users can export the main menu parameters they have configured to a computer, or import an exported setup file from a computer to a device.



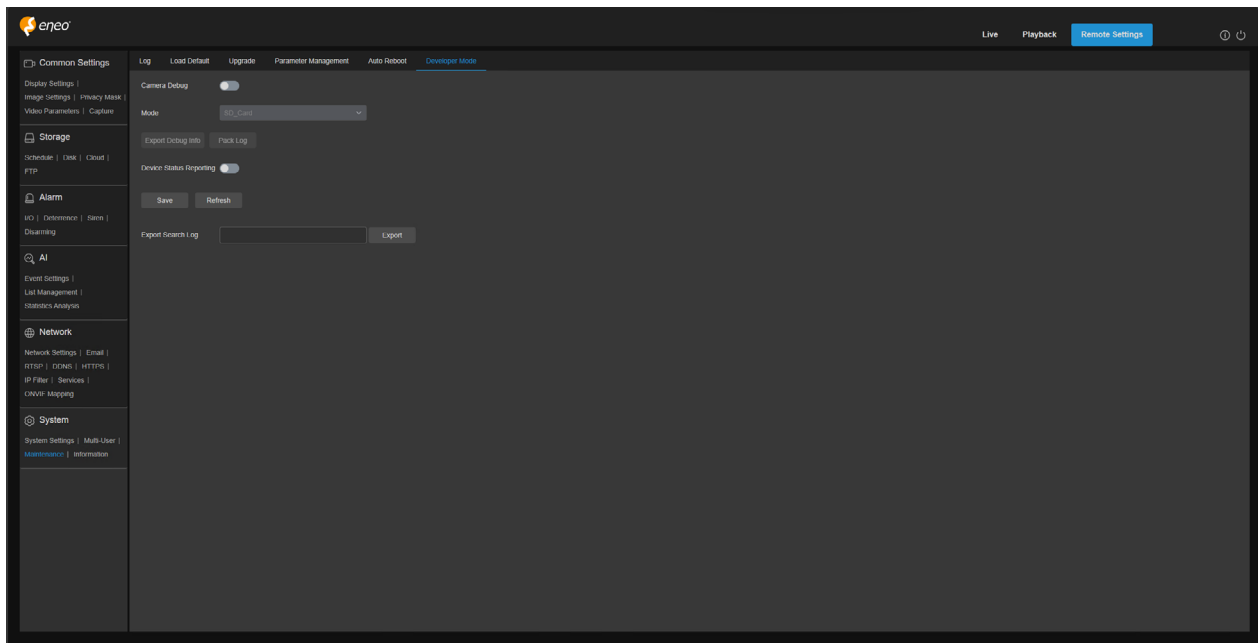
Auto Reboot: Enable or disable the automatic maintenance feature.

Maintenance Interval: Set the camera's automatic maintenance interval.

Maintenance Time: Set the time period for automatic camera maintenance.

6.6.3.6 – Developer Mode

This menu enables developer mode, which is convenient for developers to collect and record log information for device debugging.



Camera Debug: Tick to enable.

Mode: Select the mode for collecting and logging debugging information.

Download Debug Logs: Export debug information. Select SD Card mode, click the button, and enter the correct password. The device will then export the debug information to the local computer.

Pack Log: Select NVR or FTP mode and click the button. The device will then upload the packed log information to the FTP server.

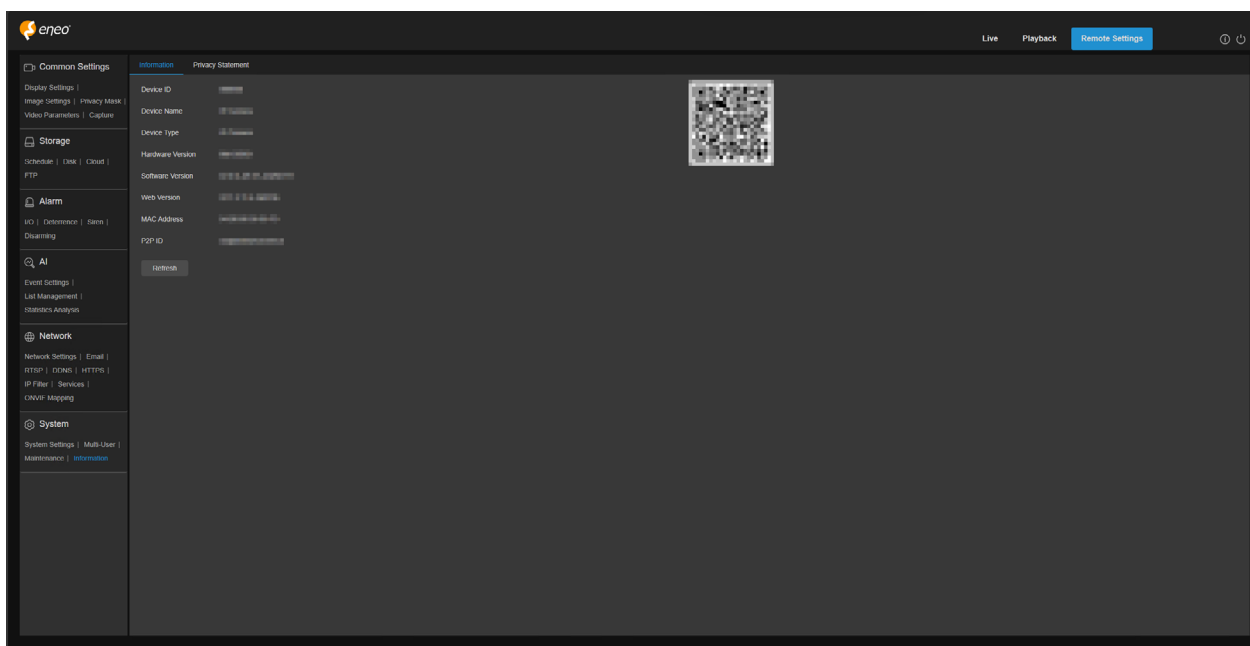
Device Status Reporting: Enable this function to upload storage and channel statuses, as well as device information, to the P2P server.

Export Search Log: Export the search log. Enter the file name of the log to be exported, then click Export to send all the log files stored on the device to your local PC.

6.6.3.7 – Information

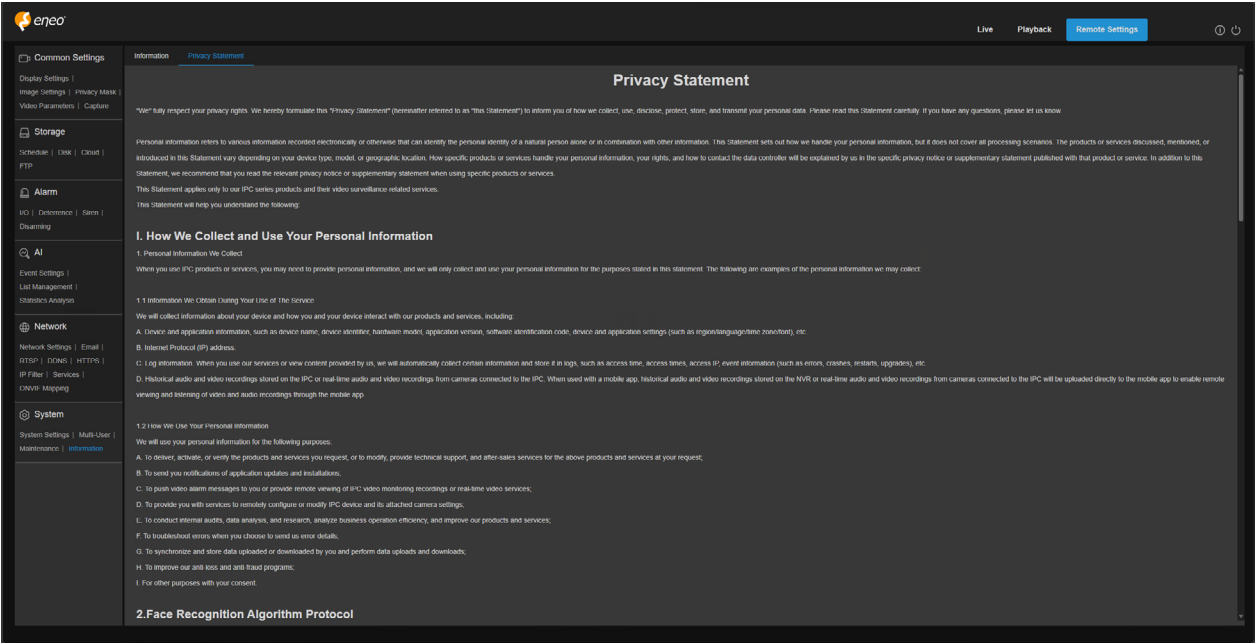
Information

This menu allows users to view system information such as the device ID, model name, MAC address, and firmware version.



Privacy Statement

This page provides users with the specifics of the device's privacy agreement.



7 – APPENDIX

7.1 – Glossary

#

- 4-eye login / -timeout: At least two users must authorise themselves to access certain functions. The session ends after the set time has elapsed.

A

- Alarm: Triggered event (e.g. by motion, I/O, AI, thermal) that can start actions such as recording, push, e-mail or outputs.
- Alarm group: Logical group (especially for face/code databases) that controls classification and alarm response.
- Alarm output: I/O switching output/relay function for activating external alarm devices in the event of events.
- Alarm threshold: Limit value above which an alarm is triggered (e.g. counting functions).
Resolution: Image size in pixels (e.g. 1920x1080).
- Authorisation certificate (certificate.txt): Export file to secure password change/restore.
- Autofocus: Automatic focussing of the lens.

B

- Bit rate: Data rate of the video stream; affects quality and bandwidth/storage.
- Bit rate control: Type of bit rate control (CBR or VBR).
- BLC (Backlight Compensation): Enhances details in dark areas when there is strong backlighting.
- Broadcast (UDP): UDP transmission to all recipients in the network segment.

C

- Capture: Still image recording.
- CBR (**Constant Bit Rate**): Constant bit rate; easily predictable data requirements, less flexible when scene complexity changes.
- Cloud storage: Upload alarm images/videos or interval snapshots to Dropbox/Google Drive.
- Corridor mode: Image adjustment for vertical scenes (e.g., hallways).
- CSV (**Comma Separated Values**): Table format for import/export (e.g., license plate lists).

D

- Day/night mode: Switch between color and black and white (typically with IR-CUT/IR-LED).
- DDNS (**Dynamic DNS**): Service that allows you to be reached under a fixed host name despite changing IP addresses.
- Detection area: Defined area in the image in which detection is active.
- DHCP (**Dynamic Host Configuration Protocol**): Automatic assignment of IP addresses and network parameters by routers/servers.
- Digital zoom: Magnification by cropping (no optical zoom).
- DNS (**Dynamic Name System**): Server for name resolution.
- DST (**Daylight Saving Time**): Daylight saving time adjustment of the system time.

E

- Event push/push notification: Transmission of events to clients/servers (HTTP/HTTPS or UDP).

F

- Firmware: Device software; updates change functions/bug fixes.
- Flicker-free: Reduction of flicker by adjusting to 50/60 Hz.
- FPS (**F**rames **p**er **S**econd): Frame rate; images per second.
- FTP / SFTP (**(S)**ecure **F**ile **T**ransfer **P**rotocol): (S)FTP upload of alarm images/videos; SFTP is encrypted.
- Fusion: Combination/overlay of optical and thermal image data.

G

- Gateway: Router address for communication with other networks/the Internet.
- GET: Requests data, with parameters passed openly in the URL.

H

- Heat map: Statistical representation of activity/dwell time by location or time.
- HLC (**H**ighlight **C**ompensation): Reduces overexposure in very bright areas (e.g., headlights).
- HTTP Push: Method for data transfer between client and server (GET/POST).
- HTTPS (**H**ypertext **T**ransfer **P**rotocol **S**ecure): Encrypted web connection; uses certificates/keys.
- Hybrid (detection): Mode that can take into account both moving and static targets.

I

- I-frame / I-frame interval: Full frame intervals in video compression; affects quality, bandwidth, and searchability.
- I/O alarm: Alarm via external inputs/outputs (e.g., contact).
- IEEE 802.1X: Port-based network access control (authentication in LAN).
- Interval mode (snapshots): Generates/transmits images at defined intervals.
- Intrusion: AI rule where an object enters/exits a defined area (depending on the rule type).
- IP (IPv4/IPv6): Network address of the camera.
- IR-CUT: Switch/filter for day/night operation (IR cut filter).
- IR LED control / Smart IR: Control of IR illumination to prevent overexposure.
- Iris (aperture): Opening in the lens; affects the amount of light and depth of field.

L

- Latch time: Period of time during which alarm responses/alarm outputs remain active.
- Line crossing: AI event when a line is crossed (direction $A \rightarrow B/B \rightarrow A/A \leftrightarrow B$).
- Long exposure / Exposure time: Exposure duration; affects brightness and motion blur.
- Low beam (IR): Setting value for the brightness of an IR LED group (typically close range).

M

- Min Pixel / Max Pixel: Filter to exclude objects that are too small/too large.
- MJPEG: Stream format as a sequence of individual images; only possible in the substream.
- Multicast: Sending a stream to multiple recipients via multicast address/port.

N

- **NAS (Network Attached Storage) / NetHDD:** Network storage destination for captures (e.g., via NFS or SMB/CIFS).
- **NFS (Network File System):** NAS protocol, typically without user/password.
- **Noise detection:** Audio-based alarm for level changes/threshold values.
- **Noise reduction:** Reduces image noise but may smooth out details.
- **NTP (Network Time Protocol):** Time synchronization.

O

- **ONVIF (Open Network Video Interface Forum):** Interoperability standard for IP cameras, IP recorders, and software.
- **OSD (On-Screen Display):** Overlays in the video image (name, time, alarm statistics).
- **OTA upgrade (Over the Air):** Firmware update via network (e.g., via server/FTP/HTTP).

P

- **Palette:** Pseudocolor scheme for displaying temperature differences in thermal images.
- **PIR:** Passive infrared sensor for motion/presence (in addition to video motion).
- **Pixel counter:** Tool for determining the pixel dimensions of an image area.
- **POST:** Sends data to the server to create or modify it.
- **PPPoE (Point to Point Protocol over Ethernet):** Dial-up protocol, often used for DSL connections.
- **Pre-recording:** Recording starts a few seconds before the alarm event.
- **Preset:** Stored PTZ position.
- **Privacy zones:** Masked areas in the image that are not monitored/recorded.
- **PTZ (Pan/Tilt/Zoom):** Pan/tilt/zoom motorized cameras.

R

- Reflection temperature: Thermal environment parameter; takes reflected heat radiation into account for more accurate measurement.
- ROI (**R**egion **o**f Interest): Image area that can be encoded with higher quality/FPS.
- RTMP (**R**eal-Time **M**essaging **P**rotocol): Streaming push protocol (e.g., to YouTube Live).
- RTSP (**R**eal-Time **S**treaming **P**rotocol): Streaming protocol for live video (default port: 554).
- Recording: Saving video (e.g. on SD card or NAS), permanently or event-controlled.
- Recording schedule: Time grid when the camera records (and which type, if applicable).

S

- Sensitivity: Threshold parameter that determines how difficult/easy it is to trigger a detection/ alarm.
- Shutter: Exposure control (auto/manual).
- Shutter correction: Manual correction to improve the thermal image.
- Siren: Acoustic deterrent.
- Smart (playback): Playback/search mode that marks "intelligent" alarms.
- SMB/CIFS (**S**erver **M**essage **B**lock / **C**ommon Internet **F**ile **S**ystem): NAS protocol via Windows shares, usually with user/password.
- Snapshot / Still image capture: Single image capture (interval or alarm-controlled).
- SNMP (**S**imple **N**etwork **M**anagement **P**rotocol): Network management/monitoring (including trap messages).
- Subnet mask: Defines which IP addresses are in the same network segment.

T

- Temperature measurement (point/line/area): Thermal function for measuring defined areas, including alarm rules.

U

- UDP (**U**ser **D**atagram **P**rotocol): Push method without prior connection establishment or delivery guarantee.
- UPnP (**U**niversal **P**lug and **P**lay): Automatic port forwarding on the router for remote access.

V

- VBR (**V**ariable **B**it **R**ate): Adjusts the data rate to the complexity of the scene.
- Video tampering: Sabotage/tampering detection of the video view.

W

- WDR (**W**ide **D**ynamic **R**ange): Expanded dynamic range; better display of bright and dark areas simultaneously.
- White balance: Automatic or manual color correction.
- White light: Light for illumination/deterrence (continuous light or strobe).



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