Milesight

Network Camera User Manual

AI Series

Version: V9.0

Date: 2022-07-26

Chapter 1. Introduction

1.1 Copyright Statement

1.2 Industry Canada ICES-003 Compliance

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numerique de la classe B est conforme a la norme NMB-003 du Canada.

1.3 Safety Instruction

These instructions are intended to ensure that user can use the product correctly to avoid danger or property loss. The precaution measures are divided into “Warnings” and “Cautions”

Warnings: Serious injury or death may be caused if any of these warnings is neglected.

- This installation must be conducted by a qualified service person and should strictly comply with the electrical safety regulations of the local region
- To avoid risk of fire and electric shock, do keep the product away from rain and moisture before installed.
- Do not touch components such as heat sinks, power regulators, and processors, which may be hot
- Source with DC/AC 12V or PoE
- Please make sure the plug is firmly inserted into the power socket
- When the product is installed on a wall or ceiling, the device should be firmly fixed
- If the product does not work properly, please contact your dealer. Never attempt to disassemble the camera by yourself

Cautions: Injury or equipment damage may be caused if any of these cautions are neglected.

- Make sure that the power supply voltage is correct before using the camera
- Do not store or install the device in extremely hot or cold temperatures, dusty or damp locations, and do not expose it to high electromagnetic radiation
- Only use components and parts recommended by manufacturer
- Do not drop the camera or subject it to physical shock
- To prevent heat accumulation, do not block air circulation around the camera
- Laser beams may damage image sensors. The surface of image sensors should not be exposed to where a laser beam equipment is used
- Use a blower to remove dust from the lens cover
- Use a soft, dry cloth to clean the surface of the camera. Stubborn stains can be removed using a soft cloth dampened with a small quantity of detergent solution, then wipe dry
- Do not use volatile solvents such as alcohol, benzene or thinners as they may damage the surface finishes
- Save the package to ensure availability of shipping containers for future transportation

1.4 EU Conformity Statement

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

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

1.5 Revision History

Version	Revision Content	Release Date
V9.0	First release	June 2022

Chapter 2. Product Description

2.1 Product Overview

Milesight provides a consistent range of cost-effective and reliable network cameras to fully meet your requirements. Based on embedded Linux operating system, Milesight network cameras could be easily accessed and managed either locally or remotely with great reliability. With built-in high-performance DSP video processing modules, the cameras pride on low power consumption and high stability. They support state-of-the-art H.265/ H.264/ MJPEG video compression algorithm and industry-leading HD dual-stream technology to achieve the highest level of video image quality under the limited network resources. It is fully functional, supporting for flexible and comprehensive alarm linkage mechanism, day and night auto switch and privacy masking, etc.

In practical applications, Milesight network cameras could either work independently in the LAN, or be networked to form a powerful safety monitoring system. It is widely used in fields such as finance, education, industrial production, civil defense, health care for security's sake.

2.2 Key Features

System

- Built-in WEB server, support IE/ Firefox/ Chrome/ Safari browser
- Based on Linux OS with high reliability
- Support Plugin-Free mode
- Support activation and set-up of the security questions for cameras
- Support ONVIF Profile G & Q & S & T
- Three-privilege levels of users for flexible management
- Micro SD/SDHC/SDXC card local storage support, expand the edge storage

Image

- 0.001Lux Ultra Low Light
- Smart IR II technology
- 4K Video Viewing Experience
- P-Iris Control
- 3 in 1 Super WDR Pro
- Support HLC
- Support BLC
- ICR filter with auto switch, true day/night

- Corridor Mode

Video

- H.265/ H.264/ MJPEG video compression capability
- 70% ~80% bandwidth saved by 10-level adjustable H.265+
- Support Primary Stream/ Secondary Stream/ Tertiary Stream
- Support Smart Stream
- Real-time video electronic amplification

Audio

- G.711/AAC audio compression capability
- Support Audio I/O

Network

- UPnP protocol for the easy management of camera
- Support Milesight DDNS
- FTP upload, SMTP upload, SD card record and SIP phone

Advanced Function

- Motion Detection, Privacy Masking, Network Fault Detection and ROI
- Support AI Video Content Analysis
- Support People Counting function
- Support Face Detection function
- Support Heat Map function

Hardware

- Support PoE for power supply
- Support Alarm I/O
- Built-in Microphone
- IK10-rated vandal-proof metal cover, and IP67-rated weather-proof housing

PTZ

- Up to 42X for Speed Dome, 23X Optical Zoom for PTZ Bullet Plus and 23X for PTZ Dome
- 360° continuous pan and -5°~ 90° (Auto Flip) tilt for Speed Dome
- 360° continuous pan and -45°~30° tilt for PTZ Bullet
- 360° continuous pan and -5°~90° (Auto Flip) tilt for PTZ Dome
- 300 Preset Points, 8 Patrols and 4 Patterns
- Auto Tracking, 3D Positioning, PTZ Motion, PTZ Limit, Scheduled Tasks and Auto Home function

- White LED for PTZ Bullet

2.3 System Requirements

Operating System: Windows XP/Vista/7/8/10/Server 2000/Server 2008

CPU: 1.66GHz or higher

RAM: 1G or higher

Graphic memory: 128MB or more

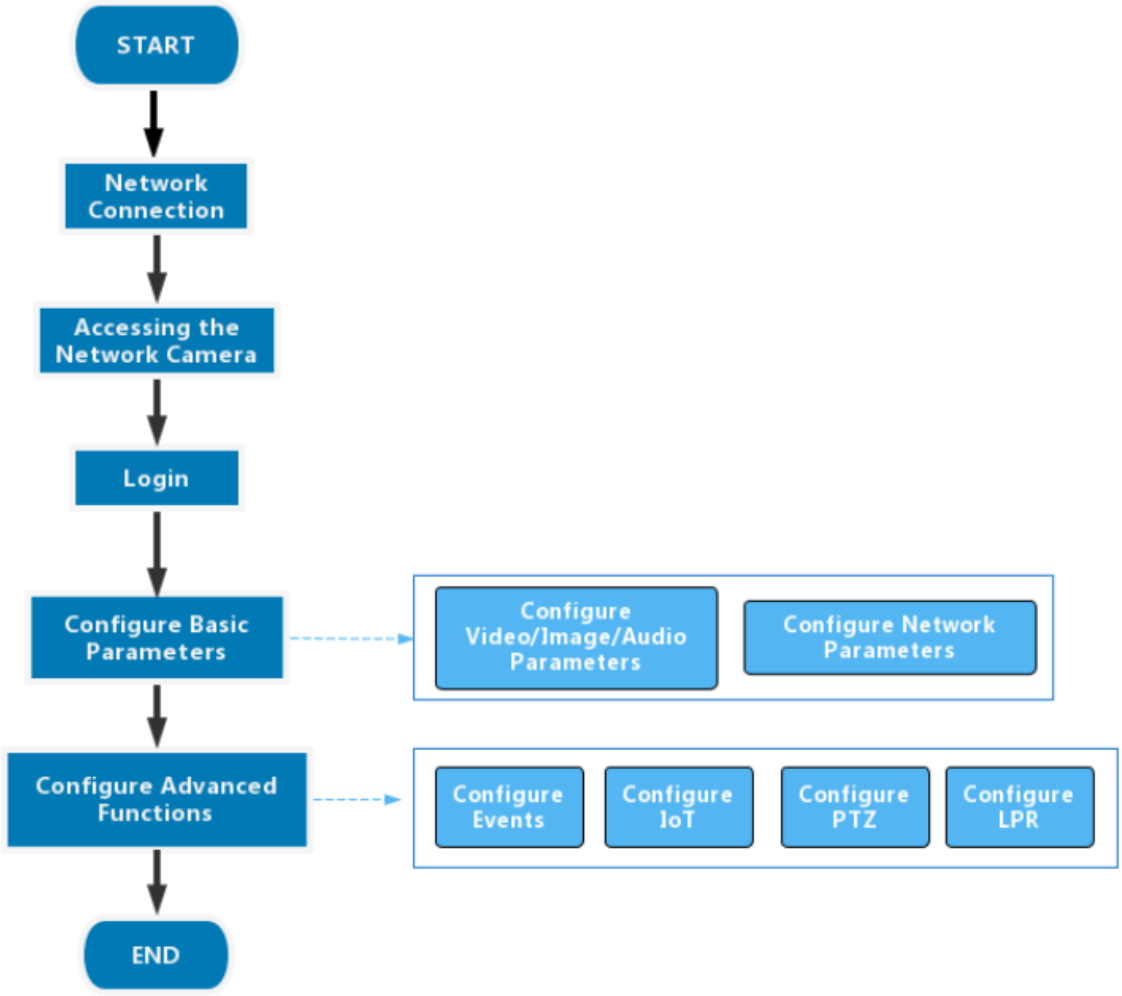
Internet protocol: TCP/IP (IPv4/IPv6)

Web Browsers: Internet Explorer 8.0 and above version, Mozilla Firefox, Google Chrome and Safari.

Chapter 3. Configuration Flow

The configuration flow of cameras is shown in the following figure.

Note: The configuration must be based on the actual situation of different models.



More configuration details is shown in the following table.

Table 1. Description of flow

Configuration	Description	Reference
Network Connection	Connect the network camera. You can set the camera over the LAN or dynamic IP connection.	4.1 Setting the Camera over the LAN *(page 12)*
Accessing the Network Camera	Accessing from IP address, web browser and Milesight back-end software are available.	5.1 Assigning An IP Address *(page 14)*
Configure Basic Parameters	After login the camera, you can adjust the video/image/audio/network parameters as needed.	8.1 Media *(page 48)* 8.2 Network *(page 70)*
Configure Advanced Functions	Configure the advanced functions, such as VCA and people counting.	8.4 Event *(page 101)*

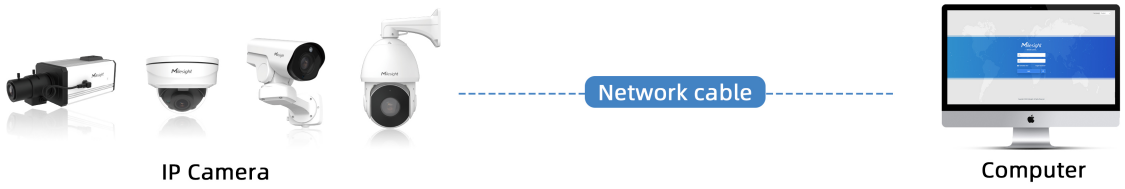
Chapter 4. Network Connection

4.1 Setting the Camera over the LAN

Connecting the camera to a switch or a router is the most common connection method. The camera must be assigned an IP address that is compatible with its LAN.

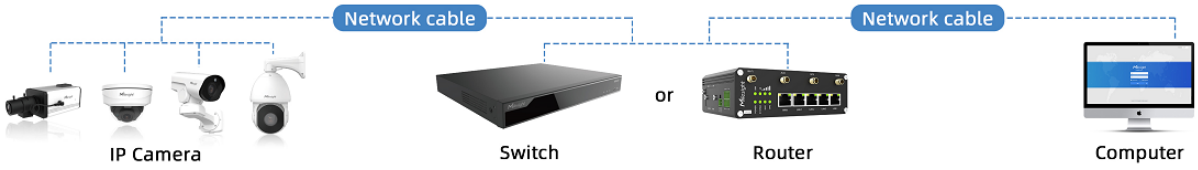
4.1.1 Connect the Camera to the PC Directly

In this method, only the computer connected to the camera will be able to view the camera. The camera must be assigned a compatible IP address to the computer. Details are shown as the following figure.



4.1.2 Connect via a Switch or a Router

Refer to the following figure to set network camera over the LAN via the switch or router.



4.2 Dynamic IP Connection

Step1: Connect the network camera to a router;

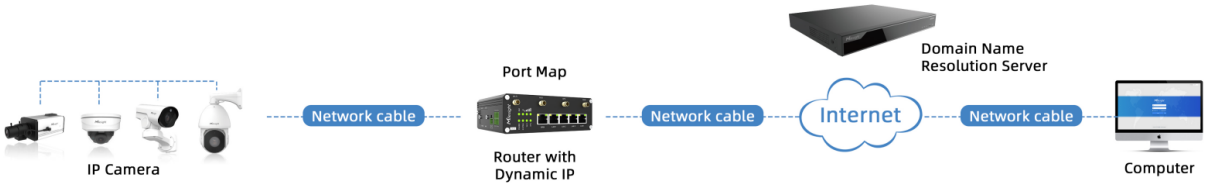
Step2: On the camera, assign a LAN IP address, the Subnet mask and the Gateway;

Step3: On the router, set port forwarding. E.g. 80, 8000 and 554 ports. The steps for port forwarding vary depending on different routers. Please look up the router's user manual for assistance with port forwarding;

Step4: Apply a domain name from a domain name provider;

Step5: Configure the DDNS settings in the setting interface of the router;

Step6: Visit the camera via the domain name.



Chapter 5. Accessing the Network Camera

5.1 Assigning An IP Address

The Network Camera must be assigned an IP address to be accessible. The default IP address of Milesight network cameras is 192.168.5.190.

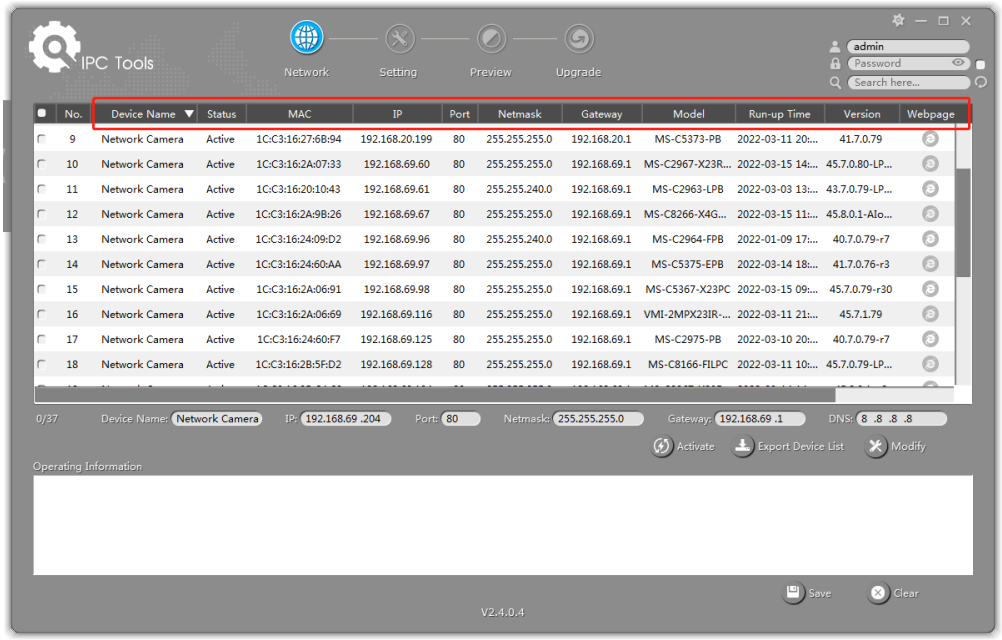
You can either change the IP address of the camera via Smart Tools or browser. Please connect the camera in the same LAN of your computer.

5.1.1 Assigning An IP Address Using Smart Tools

Smart Tools is a software tool which can automatically detect multiple online Milesight network cameras in the LAN, set IP addresses, and manage firmware upgrades. It's recommended to use when assigning IP addresses for multiple cameras.

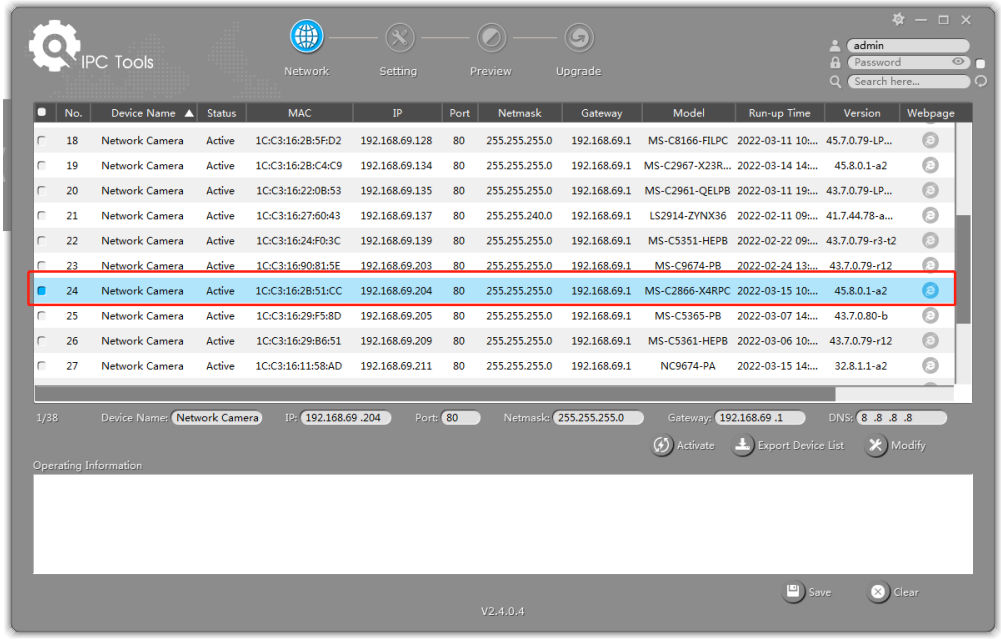
Step1: Install Smart Tools (The software could be downloaded from our website);

Step2: Start Smart Tools, click the IPC Tools page, then enter the device information, such as IP address, MAC address, Status, Port number, Netmask, and Gateway, then all related Milesight network camera in the same network will be displayed. Details are shown as the figure below;

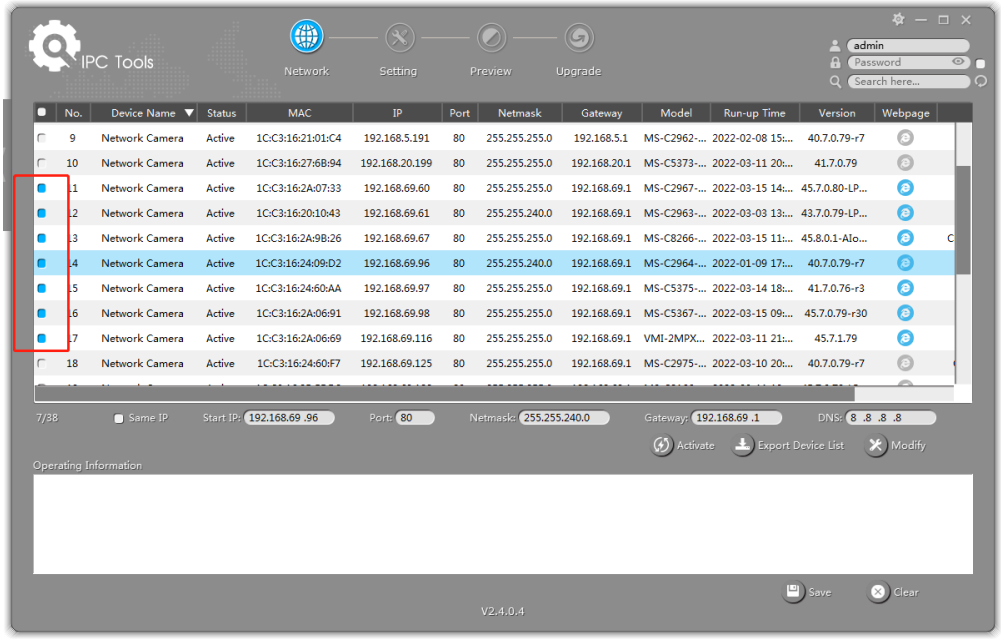


Step3: Select a camera or multiple cameras according to the MAC addresses;

Select single camera:



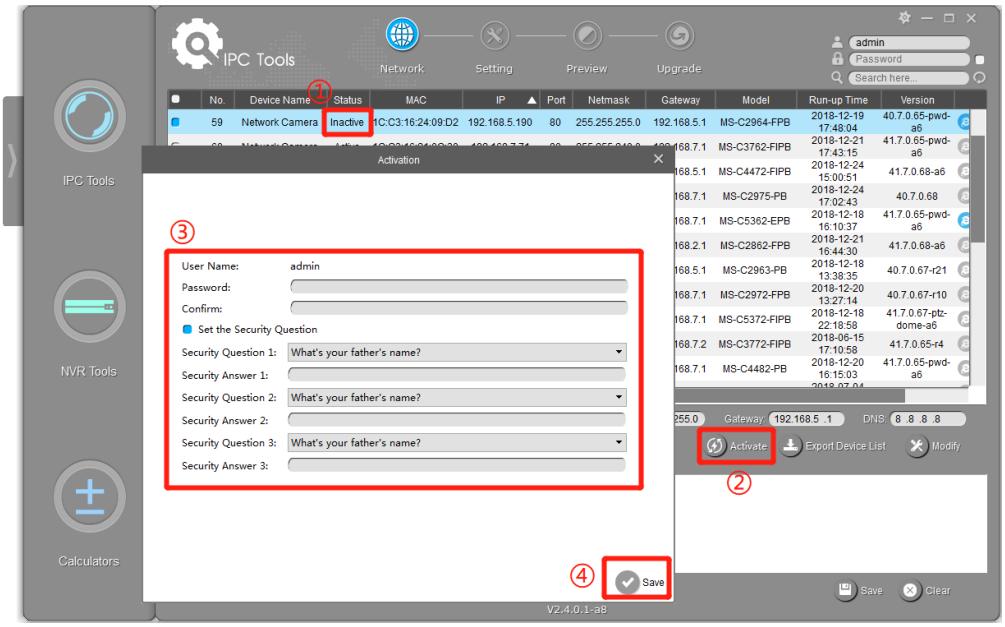
Select multiple cameras:



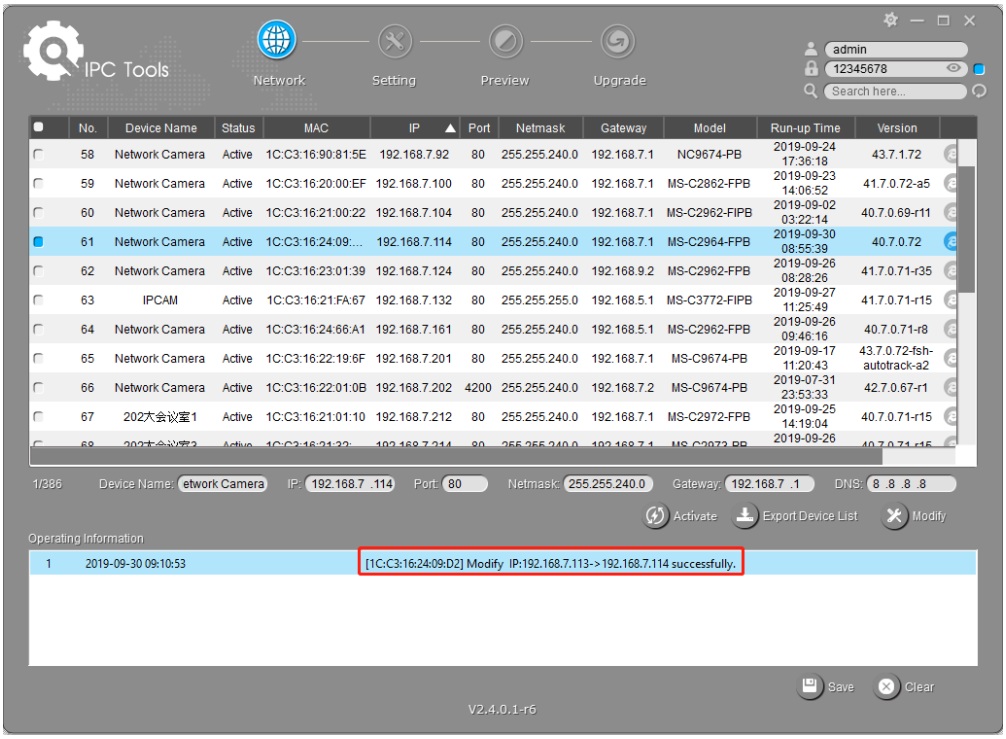
Step4: If the selected camera shows "Inactive" in the status bar, click "Activate" to set the password when using it for the first time. You can also set the security questions when activating the camera in case that you forget the password (You can reset the password by answering three security questions correctly). Click ‘Save’ and it will show that the activation was successful.

Note:

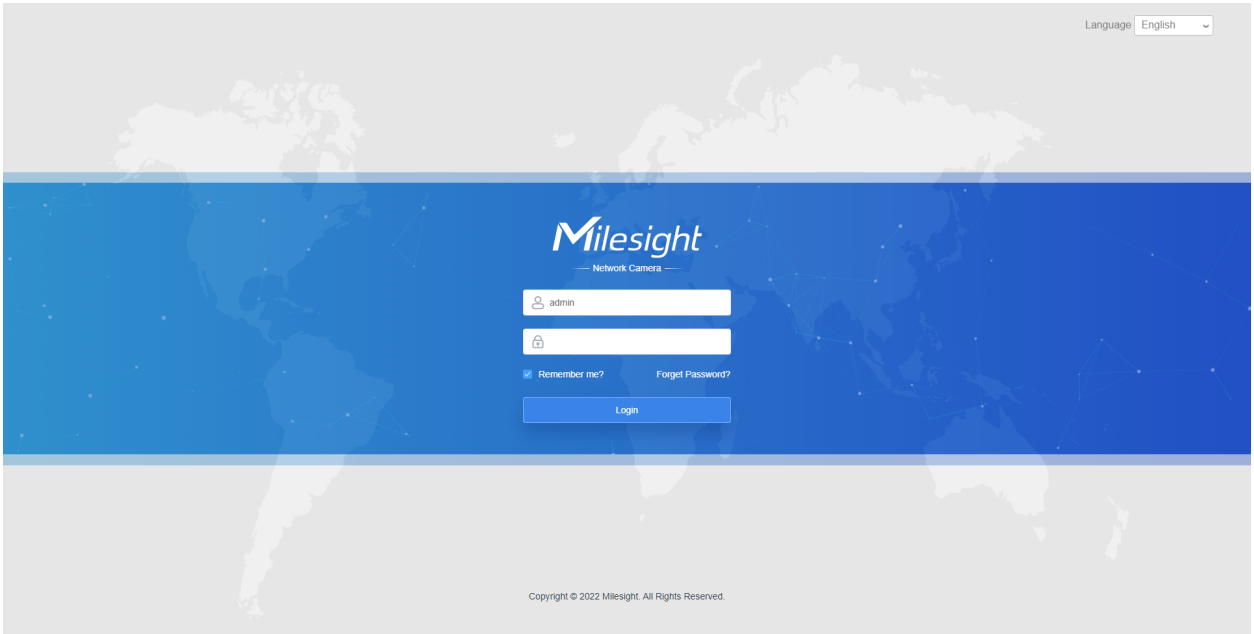
- Password must be 8 to 32 characters long, contain at least one number and one letter.
- You need to upgrade Smart Tools version to V2.4.0.1 or above to activate the camera.



Step5: After activation, you can change the IP address or other network values, and then click “Modify” button.



Step6: By double clicking the selected camera or the browser of interested camera, you can access the camera via web browser directly. The Internet Explorer window will pop up.



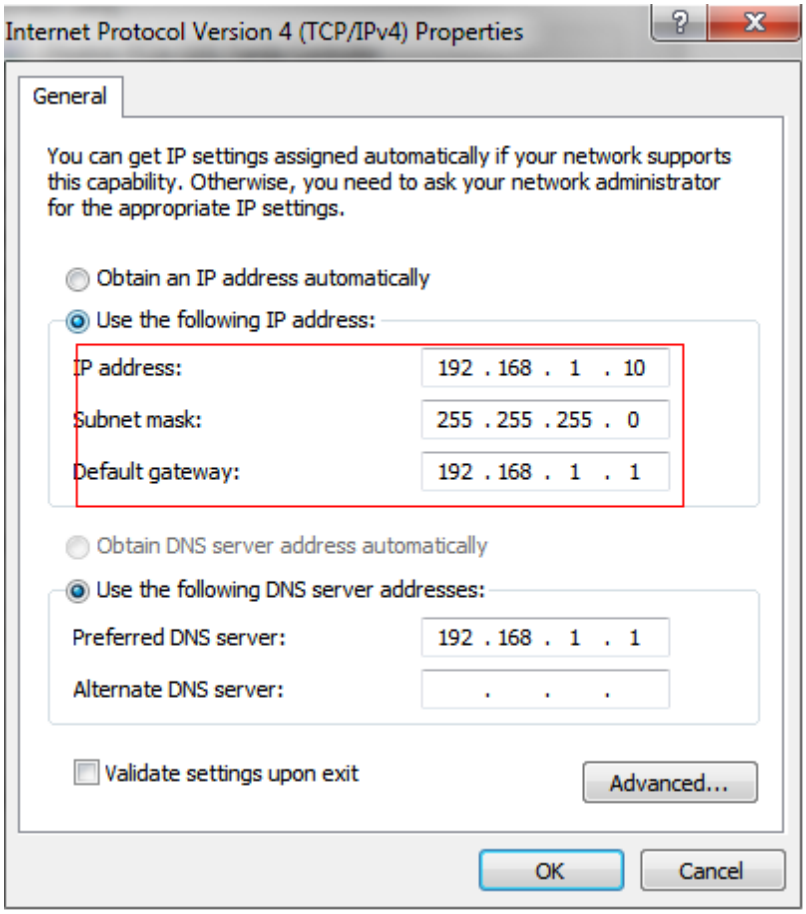
More usage of Smart Tools, please refer to the ***Smart Tools User Manual***.

5.1.2 Assign An IP Address via Browser

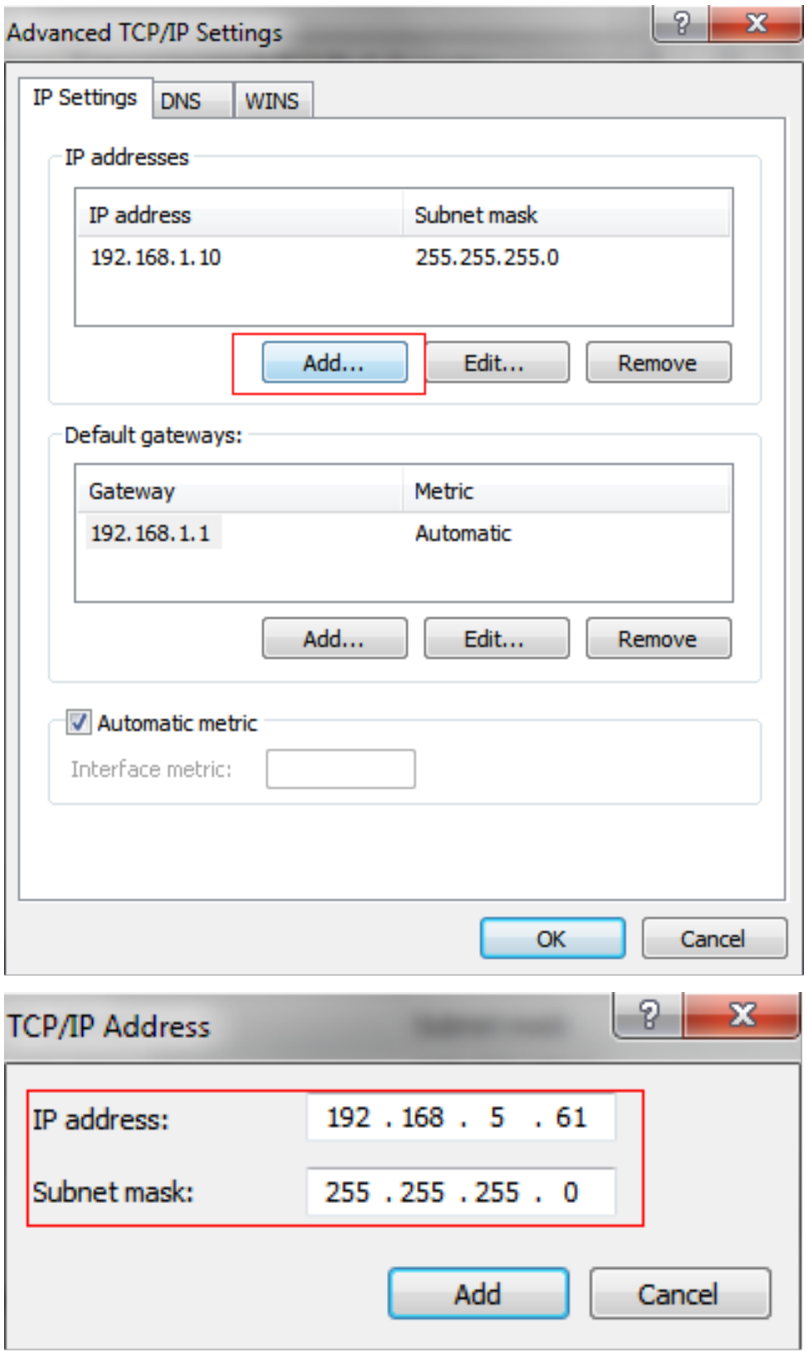
If the network segment of the computer and that of the camera are different, please follow the steps to change the IP address:

Step1: Change the IP address of computer to 192.168.5.0 segment, here are two ways as below:

a. Start→Control Panel→Network and Internet Connection→Network Connection→Local Area Connection, and double click it;



b. Click “Advanced”, and then click “IP settings”--> “IP address”--> “Add”. In the pop-up window, enter an IP address that in the same segment with Milesight network camera (e.g. 192.168.5.61, but please note that this IP address shall not conflict with the IP address on the existing network);



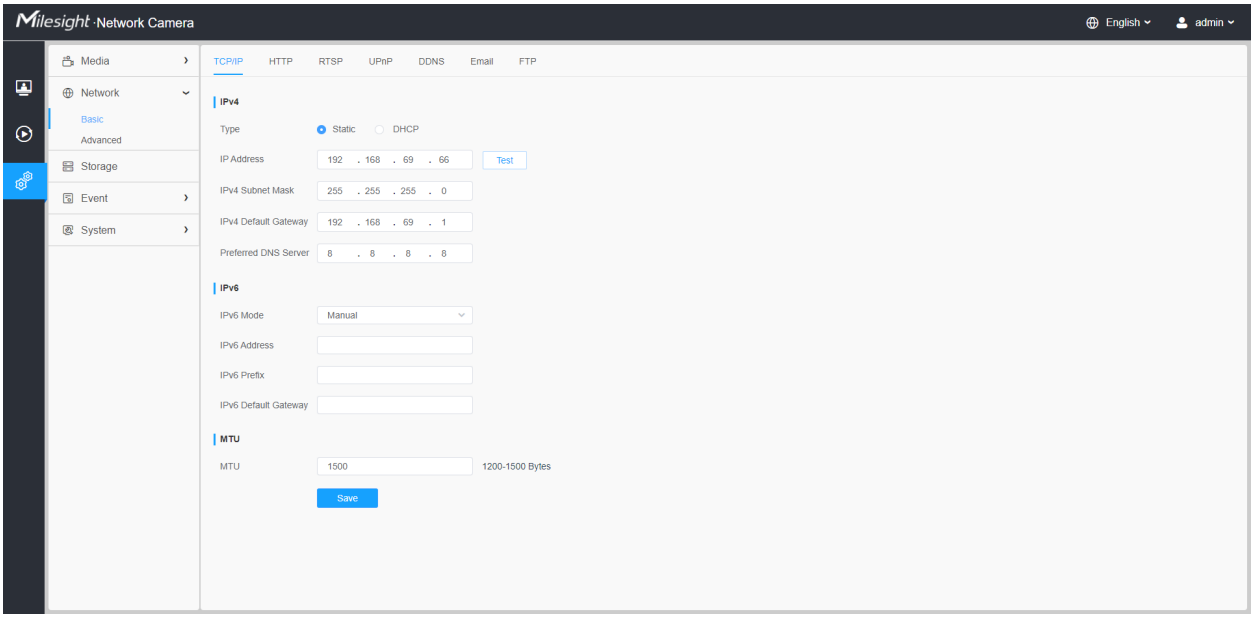
Step2: Start the browser. In the address bar, enter the default IP address of the camera:http://192.168.5.190;

Step3: You need to set the password first when using it for the first time. And you can also set three security questions for your device after activation. Then you can log in to the camera with the user name (admin) and a custom password.

Note:

- Password must be 8 to 32 characters long, contain at least one number and one letter.
- You can click the “forget password” in login page to reset the password by answering three security questions when you forget the password, if you set the security questions in advance.

Step4: After login, please select “Settings” → “Network” → “Basic” → “TCP/IP”. The Network Settings page appears (Shown as below Figure);



Step5: Change the IP address or other network values. Then click “Save” button;

Step6: The change of default IP address is completed.

5.2 Accessing from the Web Browser

The camera can be used with the most standard operating systems and browsers. And the camera was upgraded to support Plugin-Free Mode. In Plugin-Free Mode, you can preview the video on the browser without plugin. Currently Plugin-Free Mode is supported in Firefox & Google Chrome & Safari & Edge browser for Windows system, MAC system, iOS system and Android system. Both H.265&H.264 video codec are supported in Plugin-Free Mode for camera, and it will play the secondary stream by default.

Note:

- For the firmware which below V4x.7.0.74, please upgrade the Network Camera to V4x.7.0.74 or above (Please upgrade the browser to the latest version).

- For V4x.7.0.74 or above, you can enjoy Plugin-Free Mode without any configuration about the browser (Please upgrade the browser to the latest version).
- For more details about set plugin-free mode of Milesight camera, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000643388.

5.3 Accessing from Milesight Back-end Software

5.3.1 Accessing from Milesight NVR (Network Video Recorder)

Milesight NVR Series can work with Milesight network cameras. Based on embedded Linux operation system, Milesight NVR Series manages and stores HD video data. It owns multi-disk management systems, front end HD device management system, HD video analysis system and high-capacity system for video. Also, it adopts the technology of high flow capacity data network transmitting&transmission, with multi-channel video decoding, to achieve functions like intelligent management, safe storage, HD decoding, etc.

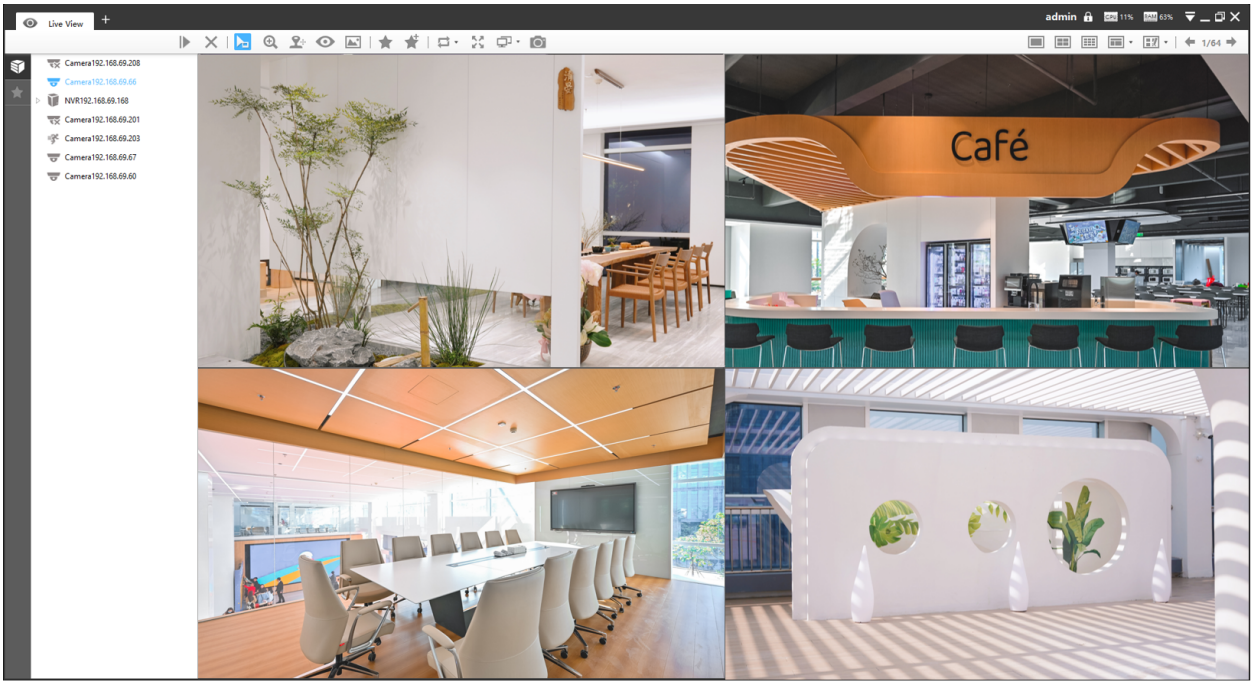
For detailed information about how to use the Milesight NVR Series, please refer to ***Milesight NVR User Manual***.

5.3.2 Accessing from Milesight CMS (Center Management System)

Milesight Central Management System (CMS) is a central management system for Milesight network cameras and Milesight NVR. It is an intelligent surveillance solution for users to control up to 256 devices, to remote preview and playback more conveniently. With high-efficient management performance, Milesight CMS software offers users a superior administration experience in such

centralized system. Featured with friendly UI design, the intelligent video management system CMS allows users of all levels to setup and deploy solutions as easy as ABC. Moreover, E-map function provides users a smarter way to show the devices spatial distribution. The software could be downloaded from our website https://www.milesight.com/.

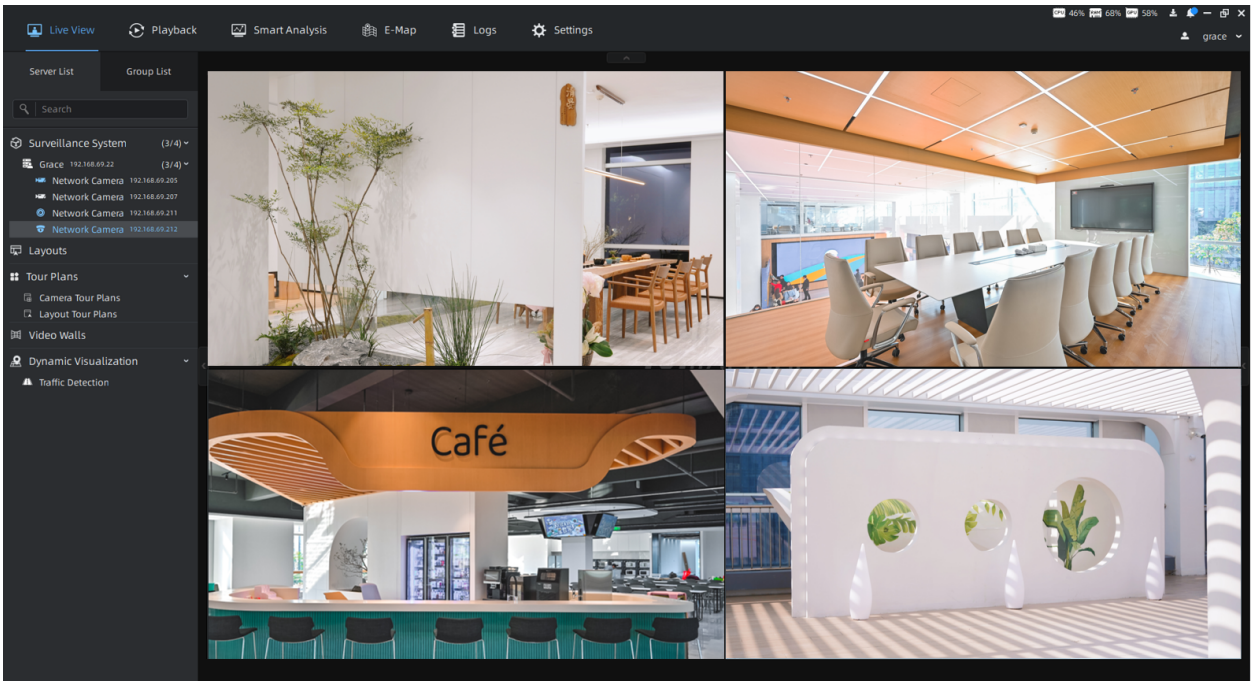
Please install Milesight CMS; then launch the program to add the camera to the channel list. For detailed information about how to use the software, please refer to ***Milesight CMS User Manual***.



5.3.3 Accessing from Milesight VMS Enterprise (Video Management System)

Milesight VMS Enterprise is a professional and intelligent video management software for businesses. Together with our cameras, it can simplify and freshen up your video surveillance. With advanced C/S architecture, it fulfills your demands and expectations, with rich core functions including live view, record, E-Map, event alarm and smart analysis etc. The software could be downloaded from our website https://www.milesight.com/.

Please install Milesight VMS Enterprise; then launch the program to add the camera to the channel list. For detailed information about how to use the software, please refer to ***Milesight VMS Enterprise User Manual.***

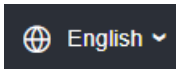

Live View
Playback
Smart Analysis
E-Map
Logs
Settings
grace
Server List
Group List
Search
Surveillance System
Grace
Network Camera
Network Camera
Network Camera
Network Camera
Layouts
Tour Plans
Camera Tour Plans
Layout Tour Plans
Video Walls
Dynamic Visualization
Traffic Detection
Café

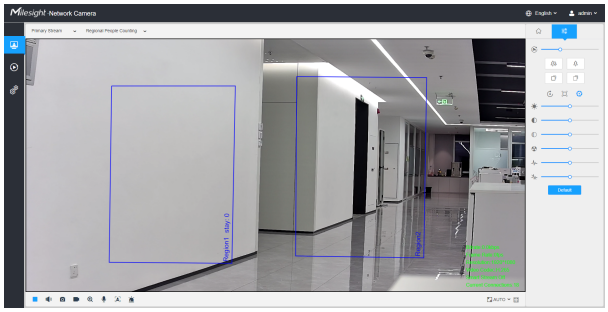
Chapter 6. Live View

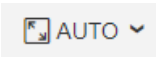
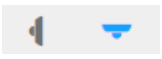
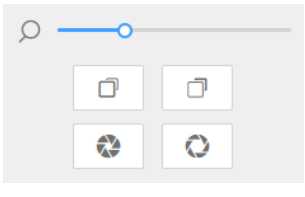
6.1 Live Video

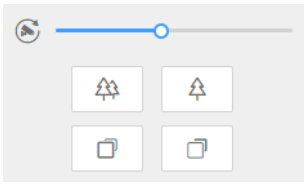
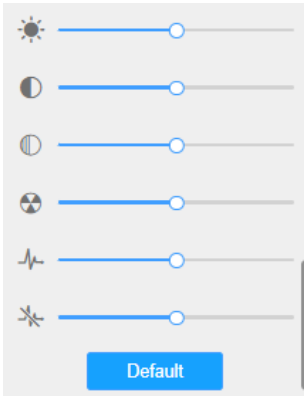
After logging in the network camera web GUI successfully, user is allowed to view live video as follows.

Table 2. Description of the buttons

No.	Parameter	Description
1	 Live Video	Click to access the live view page.
2	 Playback	Click to access the playback page.
3	 Settings	Click to access the configuration page.
4		Click to select system language.

No.	Parameter	Description
5	admin	Display the user name and click to logout.
6	Primary Stream	Choose the stream (**Primary/Secondary/Tertiary**) to show on the current video window.
7	Regional People Counting	Choose the options (**Hide Detection Region/Region Entrance/ Region Exiting/Advanced Motion/Line Crossing/Loitering/ People Counting/Object Left/Object Remove/Regional People Counting**) to hide/display detection region on the current video window.  **Note:** The **People Counting/Regional People Counting** is optional for MS-Cxxxx-xPA and MS-Cxxxx-xPC.
8	Recording	When recording, the icon appears.
9	Alarm	When an alarm of VCA event was triggered, the icon appears.
10	Alarm	When an alarm of people counting was triggered, the icon appears.
11	Alarm	When an alarm of Motion Detection was triggered, the icon appears.
12	Alarm	Except for the three kinds of alarms above, when other alarms were triggered, the icon appears.

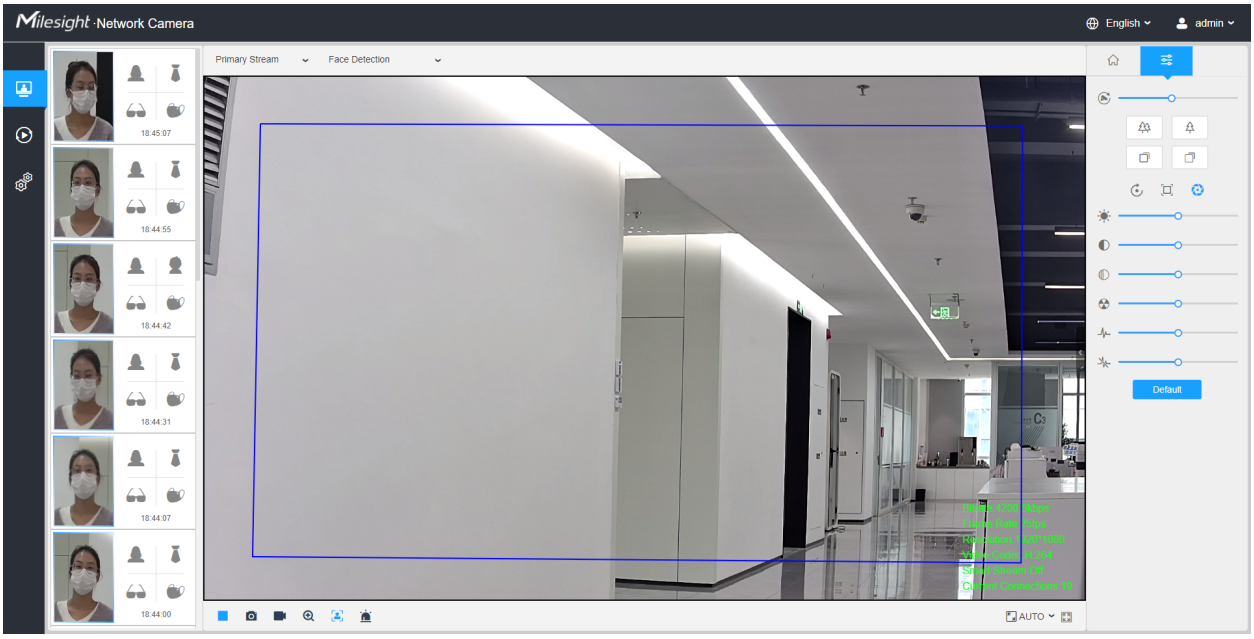
No.	Parameter	Description
13	 Stop/Play	**Stop/Play** live view.
14	 Snapshot	Click to capture the current image and save to the configured path. The default path is: C:VMS\+-1\ IMAGE-MANUAL.
15	 Start/Stop Recording	Click to **Start Recording** video and save to the configured path. The default path is C:VMS\+-1\MS_Record. Click again to **Stop Recording**.
16	 Digital Zoom	When enabled, you can zoom in a specific area of video image with your mouse wheel.
17	 Manual Output	Manually trigger Camera Alarm Output.
18	 Window Size	Click to display images at a window size.
19	 Full Screen	Click to display images at full-screen.
20	 Face Detection	Click to enable the Face Detection Mode. **Note:** Only appears when your camera is MS-Cxxxx-xPC.
	 Wall/Ceiling	Click to access installation. And the AI algorithm will change according to the installation (Wall algorithm/Ceiling algorithm).
		**Zoom:** Adjust the Zoom length of the lens. **Note:** Only work when your camera is equipped with motorized lens.
		Focus-/Focus+: Adjust focus of the lens. **Note:** Only work when your camera is equipped with motorized lens.

No.	Parameter	Description
		Iris-/Iris+: Adjust Iris of the lens. **Note:** Only work when your camera is equipped with motorized lens.
		**Focus Speed:** To adjust the speed of focus. **Note:** Only work when your camera is equipped with auto focus lens.
		Zoom-/Zoom+: Click to zoom in and zoom out. **Note:** Only work when your camera is equipped with auto focus lens.
		Focus-/Focus+: Click to focus near or far of the lens. **Note:** Only work when your camera is equipped with auto focus lens.
		Lens Initialization, Auxiliary Focus and Auto Iris. **Note:** • The Auto Iris is turned on by default when your camera is equipped with auto focus lens. • The Auto Iris support turn on/off when your camera is equipped with P-Iris.
		**Brightness**: Adjust the Brightness of the scene.
		Contrast: Adjust the color and light contrast.
		Saturation: Adjust the Saturation of the image. Higher Saturation makes colors appear more "pure" while lower one appears more “wash-out”.
		Sharpness: Adjust the Sharpness of image. Higher Sharpness sharps the pixel boundary and makes the image looks “more clear”.
		2D DNR/3D DNR: Adjust the noise reduction level.
		Default: Restore brightness, contrast and saturation to default settings.

6.2 Face Detection Mode

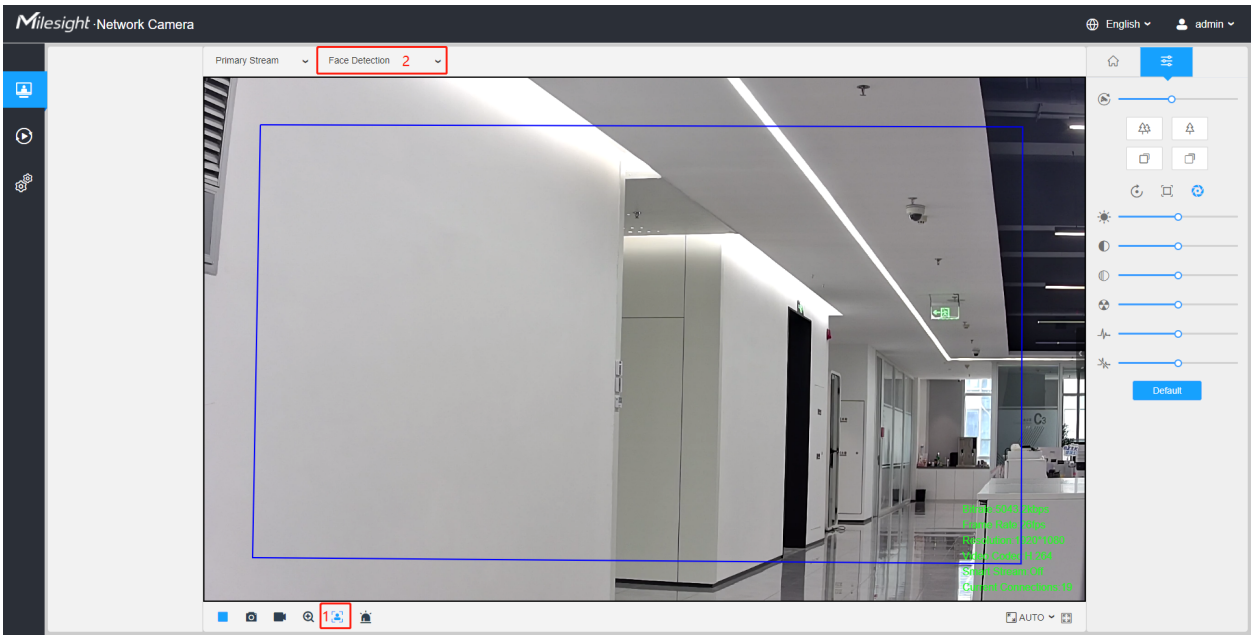
Milesight face detection function detects human faces in the monitoring scene and captures the snapshots, which greatly enhances the monitoring efficiency and benefits the large population related industries such as public security, access control and business management.

Note: Make sure your camera model is MS-Cxxxx-xPC.

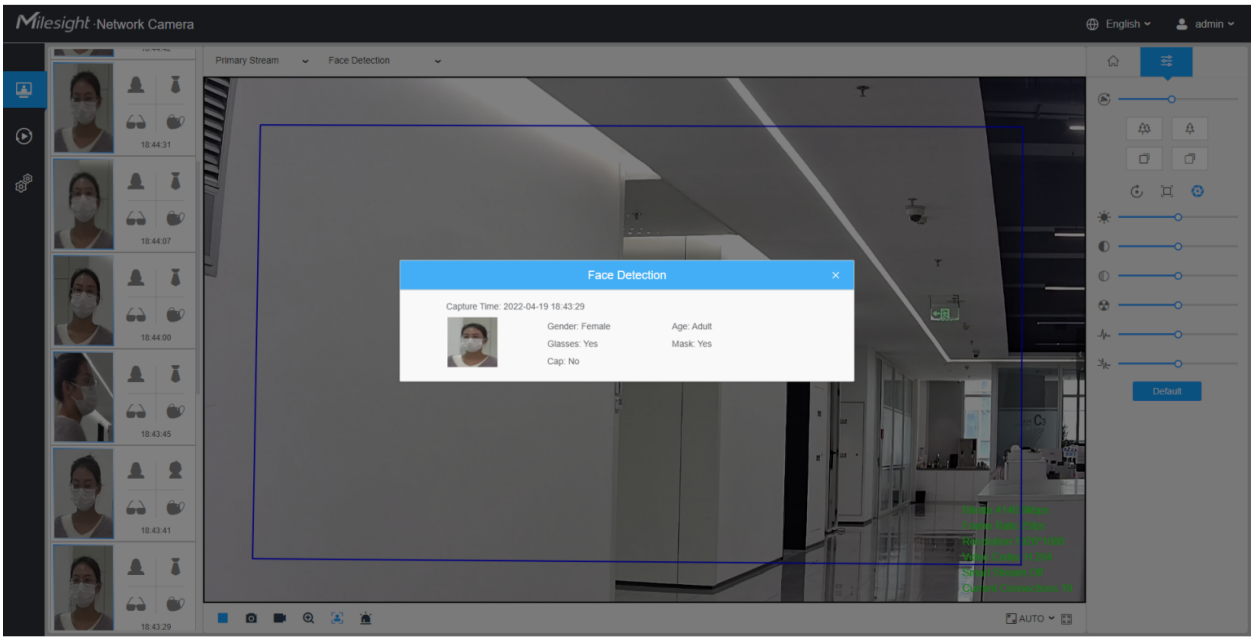


Step1: Click  to enable the Face Detection Mode. And the camera will detect faces in live view according to the region and conditions you set.

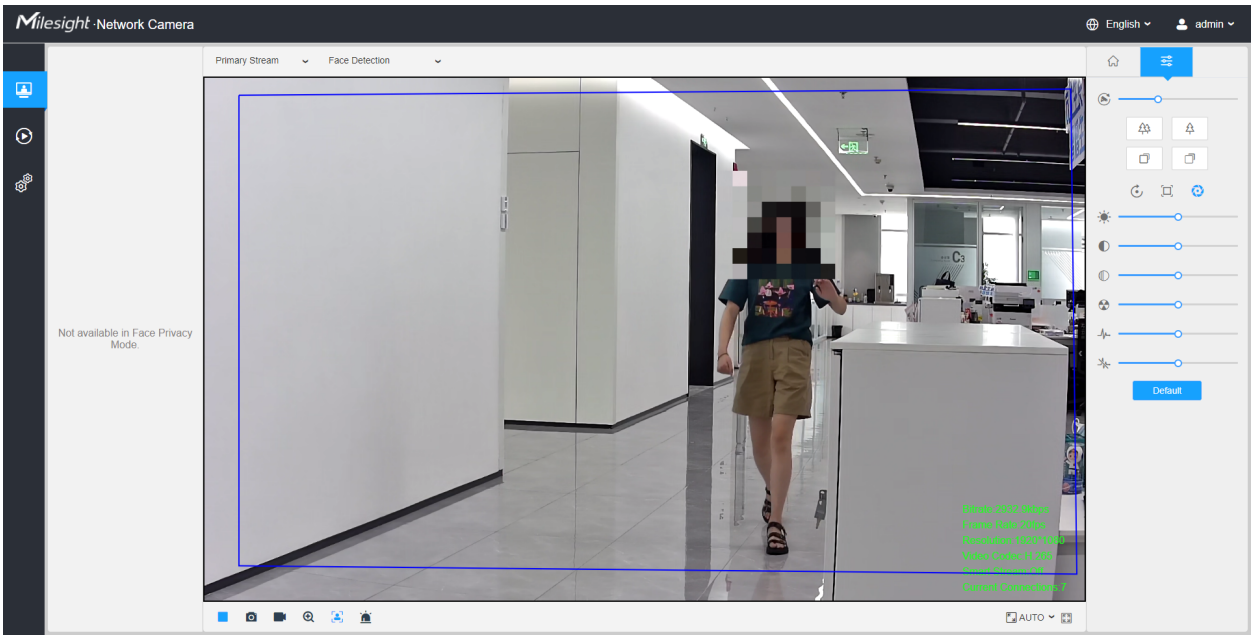
Note: Before enabling the face detection mode, ensure that the face detection function has been enabled and configured. For more details about how to configure the face detection, please refer to 8.4.4 Face Detection *(page 151)*.



Step2: When Attribute Recognition is enabled, the attributes of detected faces will be displayed on the left side of the Live View interface.



Step3: When Face Privacy Settings is enabled, the detected faces in the face detection area will be mosaic automatically. The size of the mosaic is related to that of the detected faces, and users can customize the size of the detected faces as needed. The Face Privacy function meets the needs of users in some special scenarios, which greatly protects people's portrait rights.



Note: Face Capture/Face Detection Message Post/Attribute Recognition are not available in Face Privacy Mode.

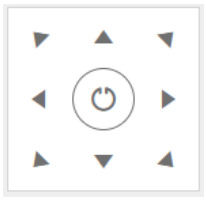
6.3 PTZ Mode

After logging in the PTZ network camera web GUI successfully, user is allowed to view live video as follows.

6.3.1 Operations on Live View Page

Note: For description of other buttons, you can refer to Table 1 *(page 24)*.

Table 3. Description of the buttons

No.	Parameter	Description
	 PTZ Control	Navigation key is used to control the direction. The rotation key is used for auto-rotation.
	 PTZ Speed	To adjust the speed of pan/tilt movements, from 1 to 10 .
	 Zoom-/Zoom+	Click to zoom in and zoom out.
	 Focus-/Focus+	Click to focus near or far of the lens.
		Lens Initialization, Auxiliary Focus and Auto Iris. **Note:** The Auto Iris is turned on by default.
		**Lighting For 30s:** Click to open/ close the White LED for lighting 30s. **Note:** Only for PTZ Bullet.
		3D Positioning: Click to enable/ disable 3D positioning.
		One-touch Patrol: Click to carry out the patrol.
		Auto Home: Click to enable Auto Home.
		Manual Tracking: Click to track the moving objects.
		Dehumidifying: Click to enable the fan working mode.
		Enable to set 300 preset positions for each regional view channel.

No.	Parameter	Description
		Enable to set 8 patrol paths for each regional view channel.
		Display the pattern.

6.3.2 3D Positioning

3D Positioning allows user to use mouse clicking and dragging to control the PTZ.

Steps:

1. Click  on the toolbar of Live View interface.

2. Operate the 3D positioning function

- Left click a position of the Live View, and the corresponding position will be moved to the center of the Live View.
- Hold down the left mouse button and drag the mouse to the lower right or upper right on the Live View, then you can see a blue rectangle. The corresponding position will be moved to the center of the Live View and Zoom in.
- Hold down the left mouse button and drag the mouse to the lower left or upper left on the Live View, then you can see a blue rectangle. The corresponding position will be moved to the center of the Live View and Zoom out.
- The Bigger the rectangle is, the smaller zoom in/out will be acted.

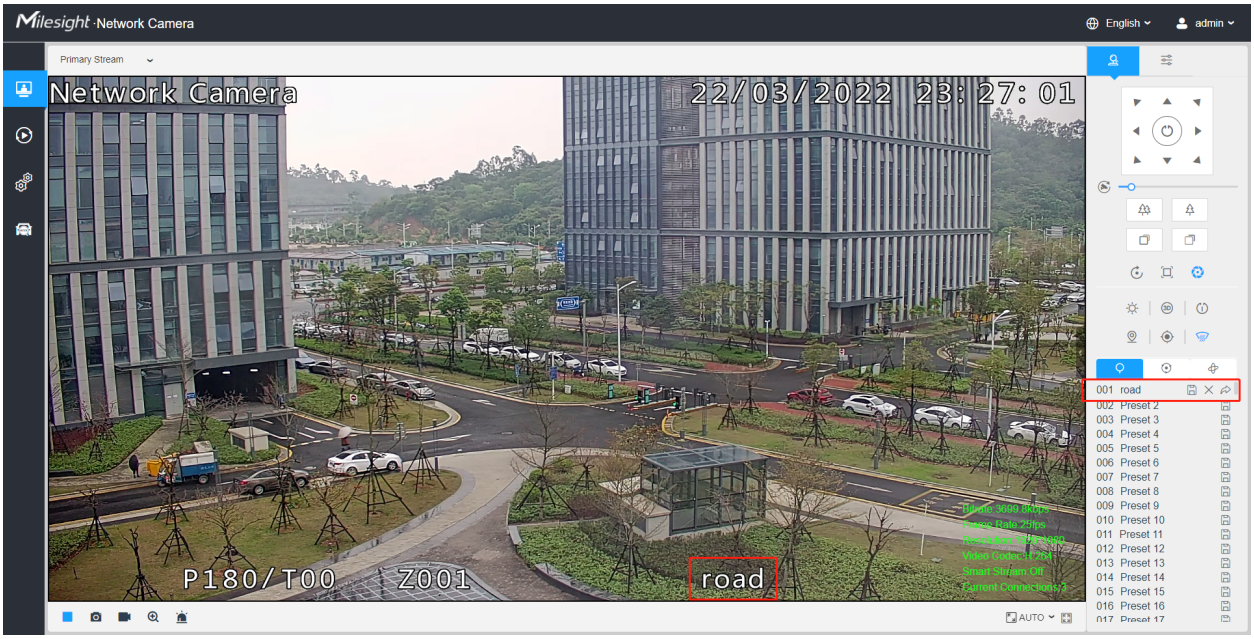
6.3.3 Set / Call a Preset / Patrol / Pattern

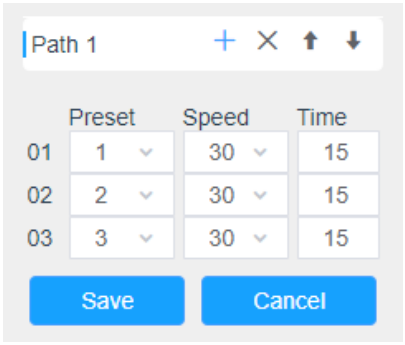
A preset is a predefined image position. You can click the call button from the preset list to quickly go to the desired image position.

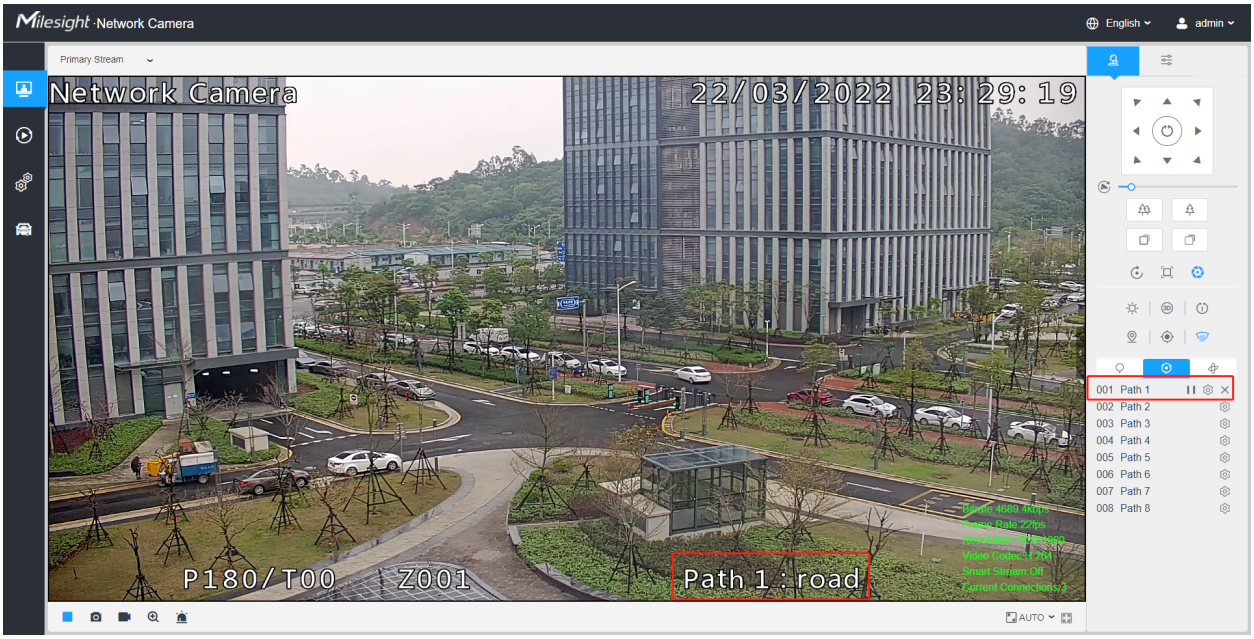
Set a preset:

Step1: In the PTZ control panel, select a preset number from the preset list, and you can also customize the preset name displayed on the screen. The patrol name displayed on the screen will also be customized if you customize preset name and set a patrol as shown below;


001 road
002 Preset 2
003 Preset 3
004 Preset 4
005 Preset 5
006 Preset 6
007 Preset 7
008 Preset 8
009 Preset 9
010 Preset 10
011 Preset 11
012 Preset 12
013 Preset 13
014 Preset 14
015 Preset 15
016 Preset 16
017 Preset 17


Milesight Network Camera
English
admin
Primary Stream
Network Camera
22/03/2022 23:27:01
P180/T00 Z001
road
AUTO
001 road
002 Preset 2
003 Preset 3
004 Preset 4
005 Preset 5
006 Preset 6
007 Preset 7
008 Preset 8
009 Preset 9
010 Preset 10
011 Preset 11
012 Preset 12
013 Preset 13
014 Preset 14
015 Preset 15
016 Preset 16
017 Preset 17





Step2: Use the PTZ control buttons to move the lens to the interested position;

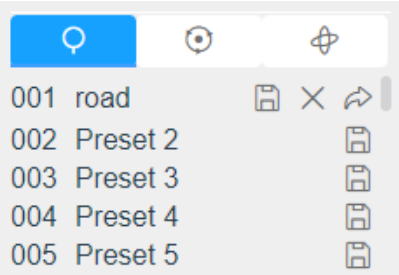
Step3: Click to save the setting of the current preset;

Step4: Click to delete the chosen preset.

Note: Up to 300 presets can be configured (18 presets are not modifiable). Up to 300 presets can be configured (for each regional view channel).

Calling a preset:

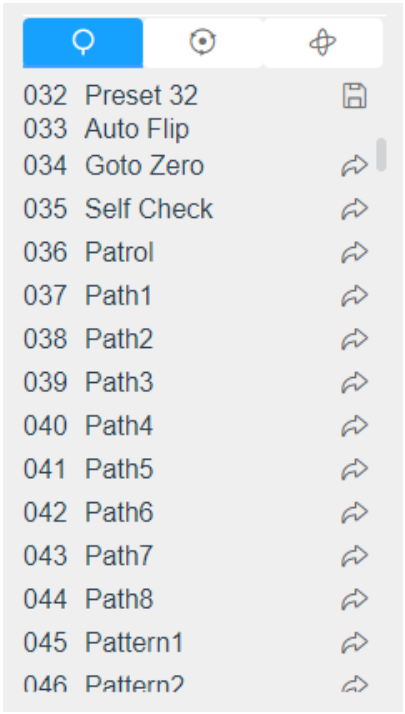
Select a defined preset from the preset list and click to call the preset.



Note: The following presets are predefined with special commands. You can only call them but can't configure them. For example, preset 037 is the "Self Check". If you call the preset number 037, the PTZ camera will start self check function at once.

Table 4. Special Presets

Special Preset	Function	Special Preset	Function
33	Auto Flip(Speed Dome only)	42	Path6
34	Go to Zero	43	Path7
35	Self Check	44	Path8
36	Patrol	45	Pattern1
37	Path1	46	Pattern2
38	Path2	47	Pattern3
39	Path3	48	Pattern4
40	Path4	49	Stop Scan
41	Path5	50	Auto Scan



Set / Call a patrol

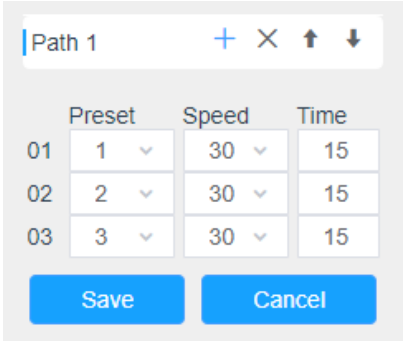
A patrol is a memorized series of preset function. It can be configured and called on the patrol setting list. You can customize up to 8 patrols and it can be configured with 48 presets. Before configuring the patrol, you should make sure that the presets you want to add to the patrol have been defined.

Set a patrol:

Step1: In the PTZ control panel, click to enter the patrol settings interface;

Step2: Select a patrol number, the setting icon will appear , click it;

Step3: Click to add presets to this patrol, as shown in Figure;



Step4: Configure the preset number, patrol speed and patrol time;

Table 5. Description of Patrol Settings

Name	Description
Patrol Speed	The speed of moving from one preset to another.
Patrol Time	The duration staying on one patrol point. The PTZ camera moves to another patrol point after the set patrol time.

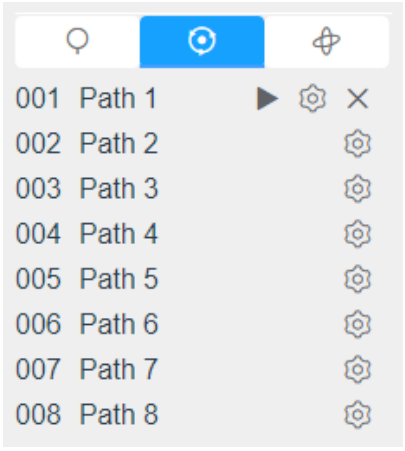
Step5: Click Save to save the patrol settings.

Note:

- Patrol Speed only works in Patrol mode.
- Patrol Time should be 15~120s for PTZ Bullet and 0~120s for Speed Dome.

Call a patrol:

In the PTZ control panel, select a defined patrol from the patrol list, and click ▶ to call the patrol, as shown below.



Note: The three buttons behind the Patrol list means: Play, Set and Delete.

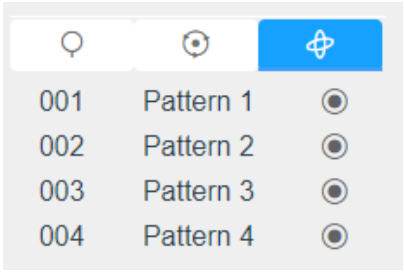
Set / Call a pattern

A pattern is a memorized series of pan, tilt, zoom and preset functions. It can be called on the pattern settings interface. There are up to 4 patterns can be set.

Set a pattern:

Step1: In the PTZ control panel, click to enter the pattern settings interface;

Step2: Select a pattern number from the pattern list as shown in the figure below;



Step3: Click to activate recording the panning, tilting and zooming actions;

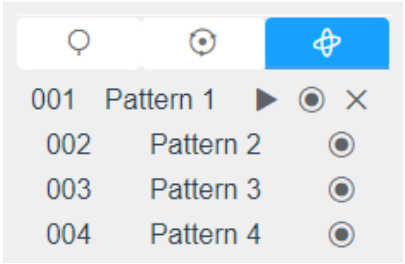
Step4: Use the PTZ controller buttons to move the lens to the interested position;

Step5: Click to save all the pattern settings.

Note: The percentage of number on the OSD is the remaining space of pattern. Start with 100% and run out of 0%.

Call a pattern:

In the PTZ control panel, select a defined pattern from the pattern list, click to call the pattern, as shown in the figure below.



Note:

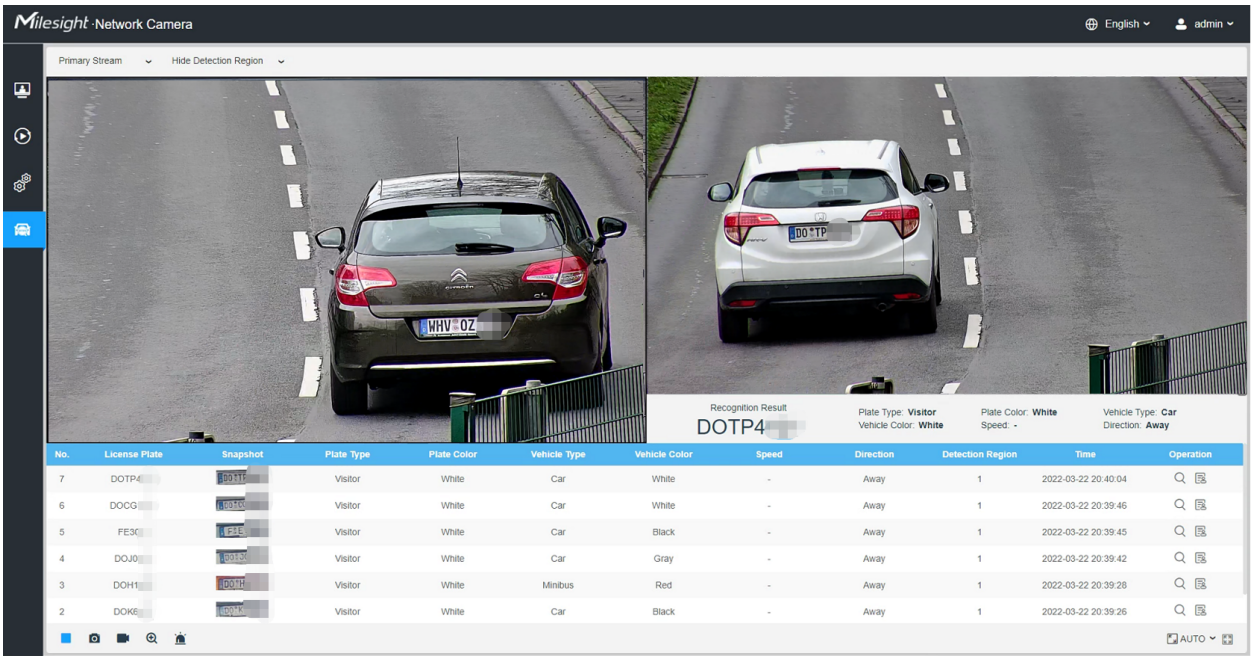
The three button behind the Pattern list means: Play, Record and Delete.

When configuring the pattern, pan and tilt are valid but the limit stops and auto flip will be invalid. Also, 3D Positioning operation is not supported.

6.4 LPR Mode

Milesight LPR Camera supports professional LPR Live View interface , it can show the real-time license plate recognition results and display the snapshots of detected license plates ,which realizes a stand-alone LPR solution.

After logging in the LPR network camera web GUI successfully, users can click to access the LPR Mode page, which is shown as follows.



Left Panel: Live View interface of LPR cameras.

Right Panel: Snapshots of the real-time vehicle and display the information of the vehicle according to the snapshot.

Bottom Panel: Display the information of the vehicles recently detected.

Note: The Speed can only be detected by Radar LPR network cameras:

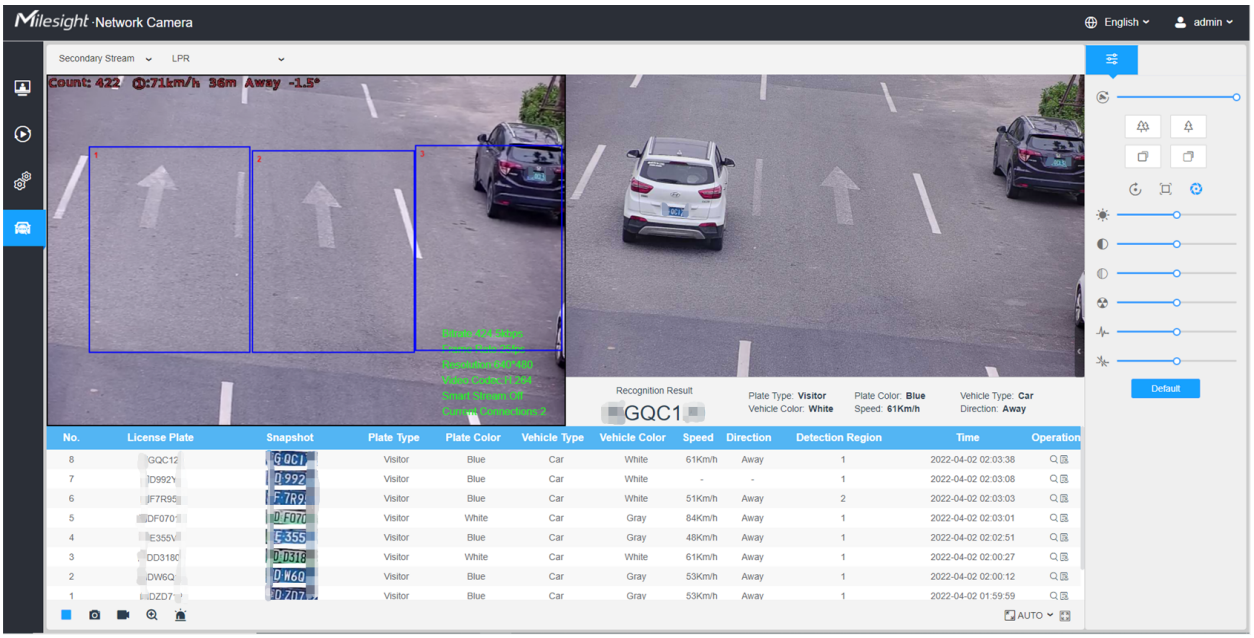
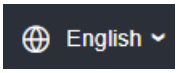
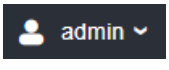
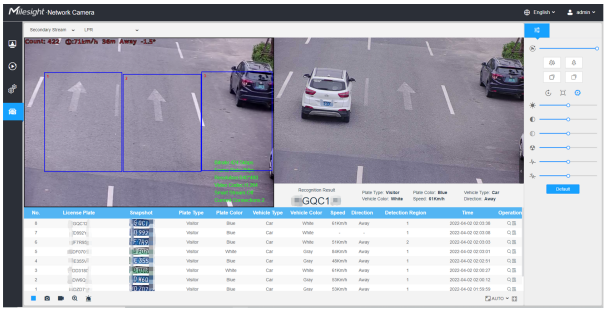
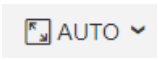
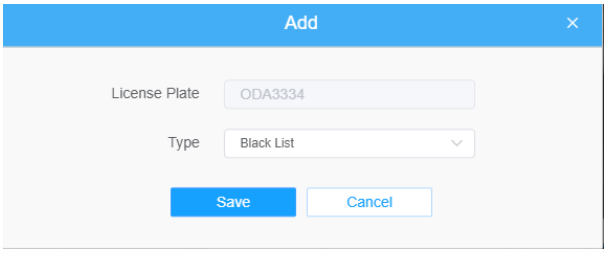


Table 6. Description of the buttons

	Parameter	Description
1	 Live Video	Click to access the live view page.
2	 Playback	Click to access the playback page.
3	 Settings	Click to access the configuration page.
4	 LPR Mode	Click to access the LPR Mode page.
5		Click to select system language.
6		Display the user name and click to logout.

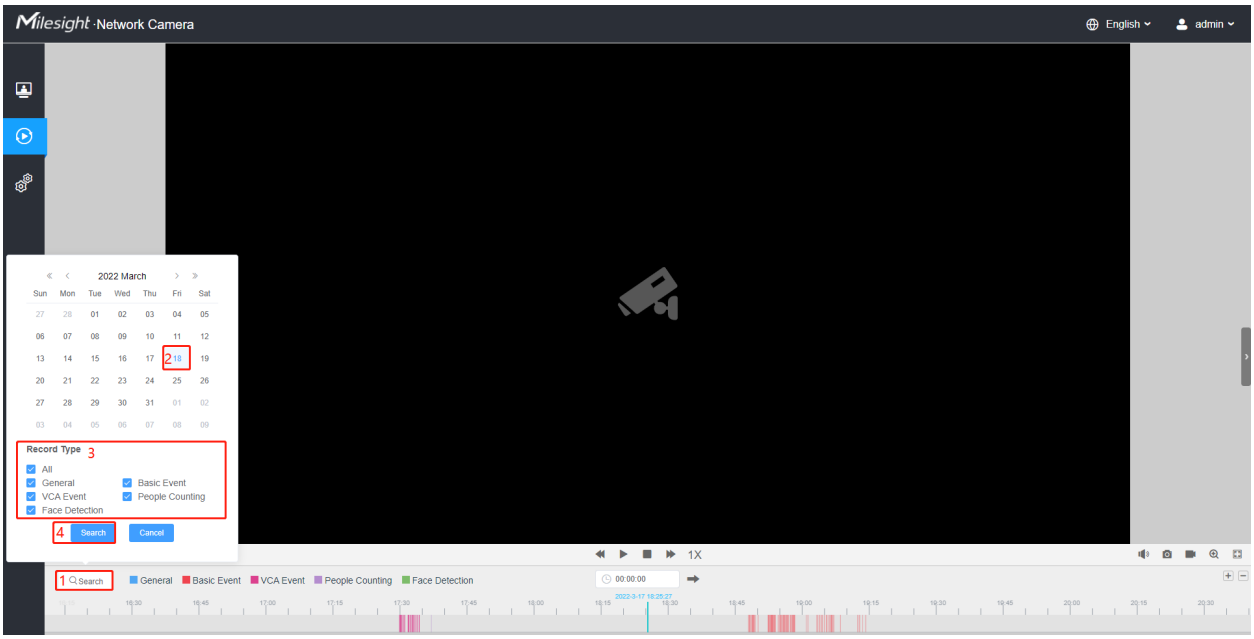
	Parameter	Description
7	Primary Stream	Choose the Stream (**Primary/Secondary/Tertiary**) to show on the current video window.
8	Hide Detection Region	Choose the options (**Hide Detection Region/LPR**) to hide/ show detection region on the current video window. 
9	/ Stop/Play	**Stop/Play** live view.
10	Alarm	When the Black List license plates passing by, the icon appears.
11	Alarm	When the White List license plates passing by, the icon appears.
12	Alarm	When the Visitor license plates passing by, the icon appears.
13	Snapshot	Click to capture the current image and save to the configured path. The default path is: C:VMS\+-1\ IMAGE-MANUAL.
14	/ Start/Stop Recording	Click to **Start Recording** video and save to the configured path. Click again to stop recording. The default path is C:VMS\ +-1\MS_Record. Click again to **Stop Recording**.
15	Digital Zoom	When enabled, you can zoom in a specific area of video image with your mouse wheel.

	Parameter	Description
16	 Manual Output	Manually trigger Camera Alarm Output.
17	 Window Size	Click to display images at a window size.
18	 Full Screen	Click to display images at full-screen.
Operation		Click to view selected license plate with a large picture.
Operation		Click to add the selected license plate to White/Black List. 

Chapter 7. Playback

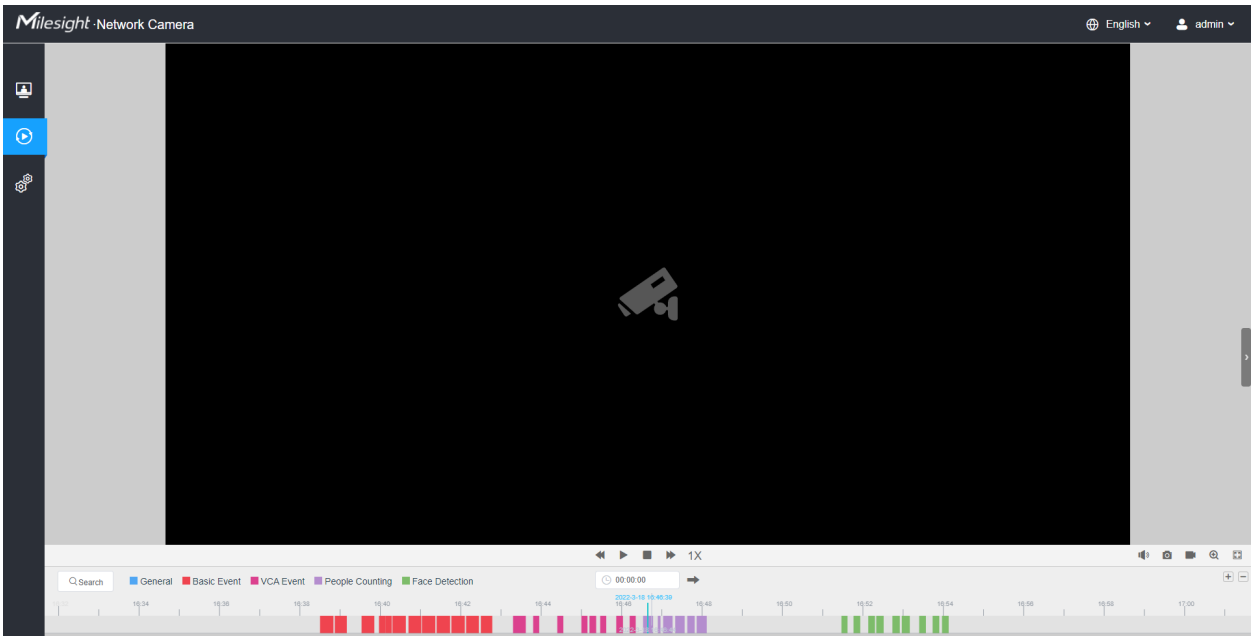
Click  to enter playback interface. In this part, you can search and playback the recorded video files stored in SD cards or NAS. The Playback interface is as below:

Step1: Click the "**Search**" botton, choose the data and record type when the window pops up.



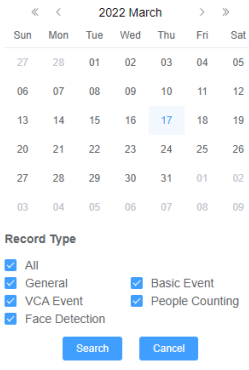
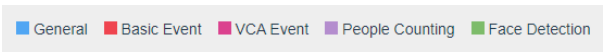
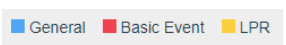
Step2: The timeline displays the video files for the day and show different colors according to selected record type. Drag the progress bar with the mouse to locate the exact playback point as needed.

Note: You can also input the time and click to locate the playback point in the 00:00:00 filed. You can also click to zoom out/in the progress bar.



Step3: Click ▶ to play the video files found on this date. The toolbar on the button of playback interface can be used to control playing progress.

Table 7. Description of the buttons

No.	Parameter	Description
Search		Choose date to search recorded videos.
		Search the recorded videos by record type (**All/General/ Basic Event/VCA Event/People Counting/Face Detection**). The timeline will show different colors according to selected record type as below:  **Note:** Face Detection only appears when your camera is MS-Cxxxx-xPC. For LPR camera, the record type include **All/General/Basic Event/LPR**. The timeline will show different colors according to selected record type as below: 

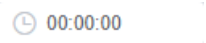
No.	Parameter	Description
1	 Speed Down/Speed Up/Speed	Adjust the speed of video playback. **Speed Down:** Includes 0.5X and 0.25X for Play. **Speed Up:** Includes 2X and 4X for Play. **Speed:** The default playback speed is 1X
2	 Play/Pause	Play/Pause the video.
3	 Stop	Stop the video.
4	 Search Time	Select the time that want to locate.
5	 Jump	Go To.

Table 8. Description of the buttons

No.	Parameter	Description
1	 Mute	Click to enable the audio.
2	 Snapshot	Click to take a snapshot.
3	 Start/Stop recording	Click to start/stop recording.
4	 Digital Zoom	Click to zoom on/off .
5	 Full Screen	Full Screen.

No.	Parameter	Description
6	 Time Expand/Narrow	Time narrow/expand.

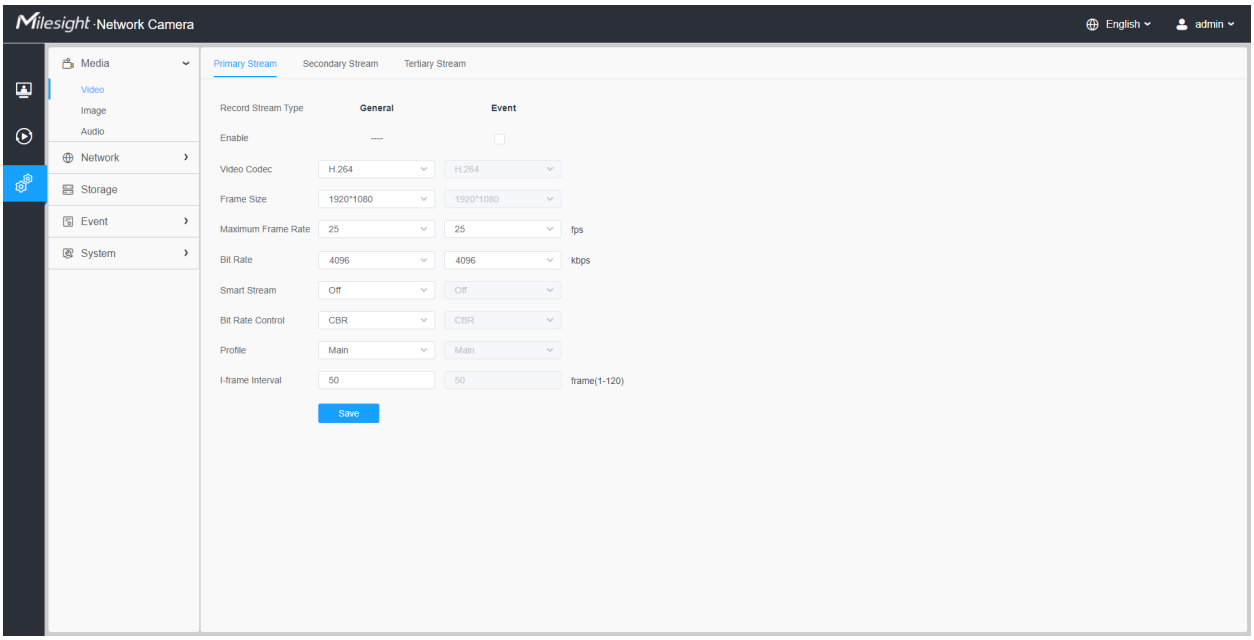
Chapter 8. Settings

8.1 Media

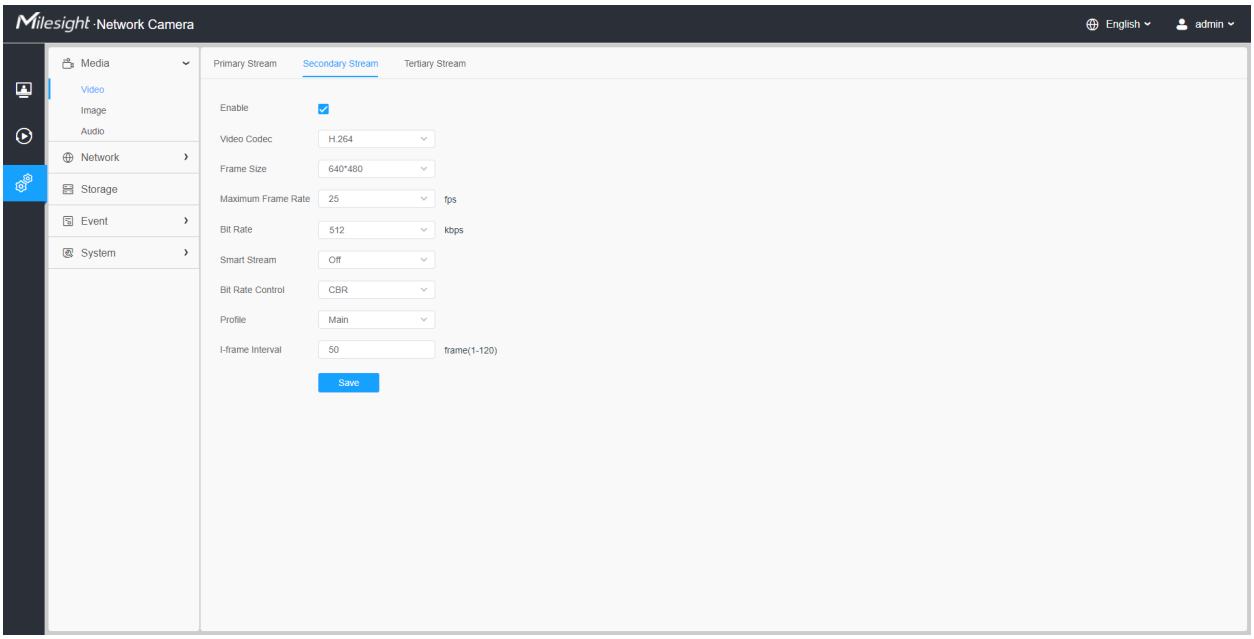
8.1.1 Video

Stream parameters can be set in this module, adapting to different network environments and demands.

Primary Stream Settings



Secondary Stream Settings



Tertiary Stream Settings

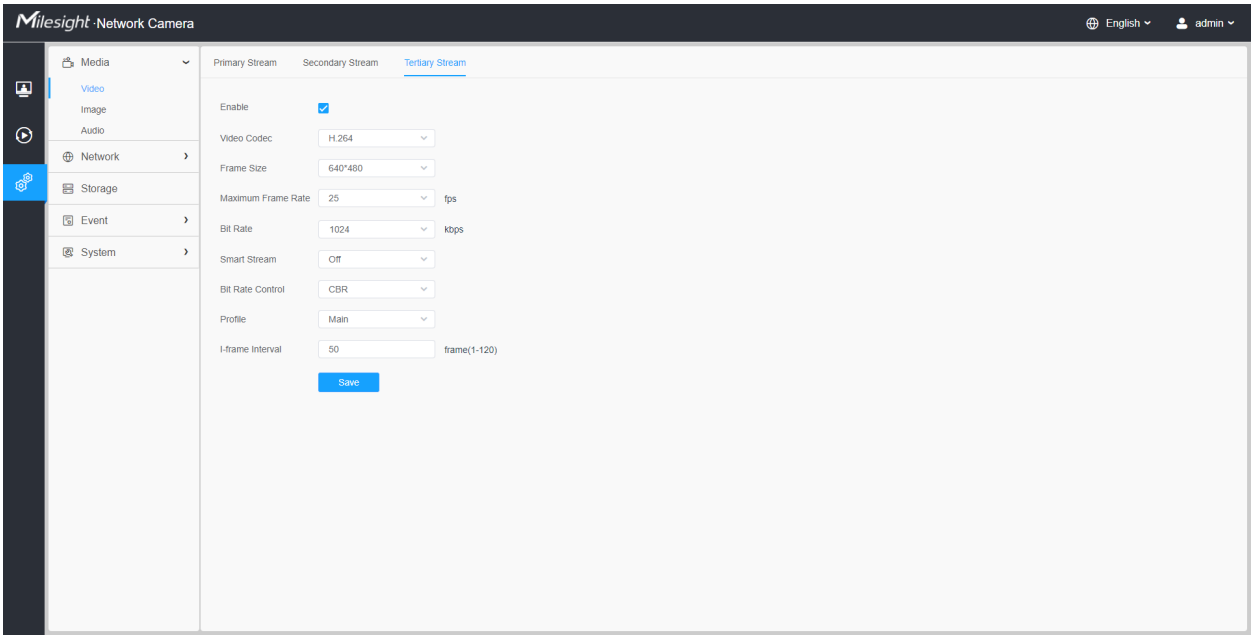


Table 9. Description of the buttons

Parameters	Function Introduction
Record Stream Type	**General** & **Event** are available only for **Primary Stream**. **General** refers to continuous record video, while **Event** includes events that can trigger alarms, such as Motion, Exception, LPR and so on. This item can separately set different bit rate and frame rate for different Recording Stream Types. If user chooses **Event**, video will be recorded according to the configuration of video stream type when an event happens, thereby greatly reducing the recording storage space.
Enable Event Stream	This item is optional only if you selected the Event.
Video Codec	H.265/H.264/MJPEG are available.
Frame Size	Options include 8M(3840×2160), 6M(3072×2048), 5M(2592*1944), 5M(2560*1920), 5M(2560*1440), 4M(2592*1520), 3M(2304*1296), 3M(2048*1536), 1080P(1920*1080), 2M(1600 *1200), 1.3M(1280*960), 720P(1280*720), D1(704*576). For **Secondary Stream**, it includes 704*576, 640*480, 640*360, 352*288, 320*240, 320*192, 320*176. For **Tertiary Stream**, it include 1920*1080, 1280*720, 704*576, 640*480, 640*360, 352*288, 320*240, 320*192, 320*176. **Note:** The options of **Frame Size** are variable according to the model.
Maximum Frame Rate	Maximum refresh frame rate of per second and it is variable according to the mode.
Bit Rate	Transmitting bits of data per second, this item is optional only if you select the H.265/ H.264 Set the bitrate to 32~16384 Kbps. The higher value corresponds to the higher video quality, and the higher bandwidth is required as well.
Smart Stream	Optional to turn On/Off Smart Stream mode. Smart Stream mode remarkably reduces the bandwidth and the data storage requirements for network cameras while ensuring the high quality of images, and it is a 10-level adjustable codec. **Level**: Level 1~10 are available as needed.
Bit Rate Control	**CBR**: Constant Bitrate. The rate of CBR output is constant.
Bit Rate Control	**VBR**: Variable Bitrate. VBR files vary the amount of output data per time segment.
Image Quality	**Low**/**Medium**/**High** are available, this item is optional only if you select VBR.

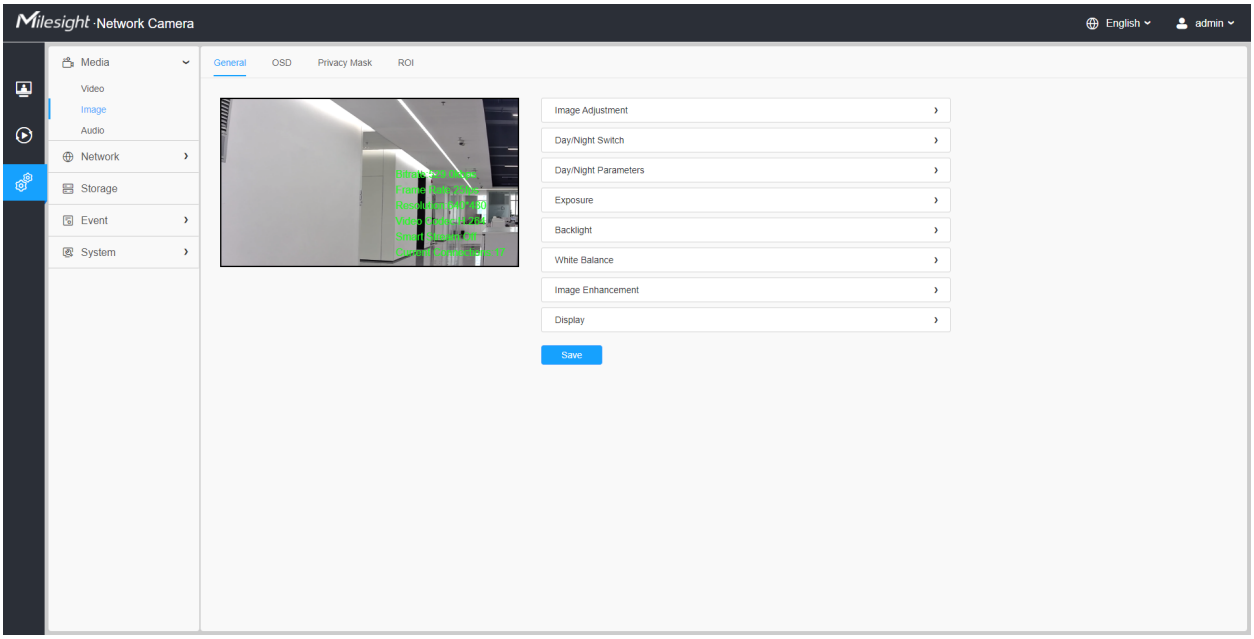
Parameters	Function Introduction
Profile	The option is for H.264, Main/High/Base can be selected as needed.
I-frame Interval	Set the I-frame interval to 1~120, 50 for the default. This item is optional only if you select the H.265/H.264. The number must be a multiple of the number of frames.

8.1.2 Image

General settings of image including the image adjustment, day/night setting and image enhancement can be set in this module. OSD (On Screen Display) content, privacy mask and video time can be displayed to rich the image information.

8.1.2.1 General

General settings of image including the image adjustment, day/night switch, day/night parameters, exposure, backlight, white balance, image enhancement and Display can be set in this module.



[Image Adjustment]

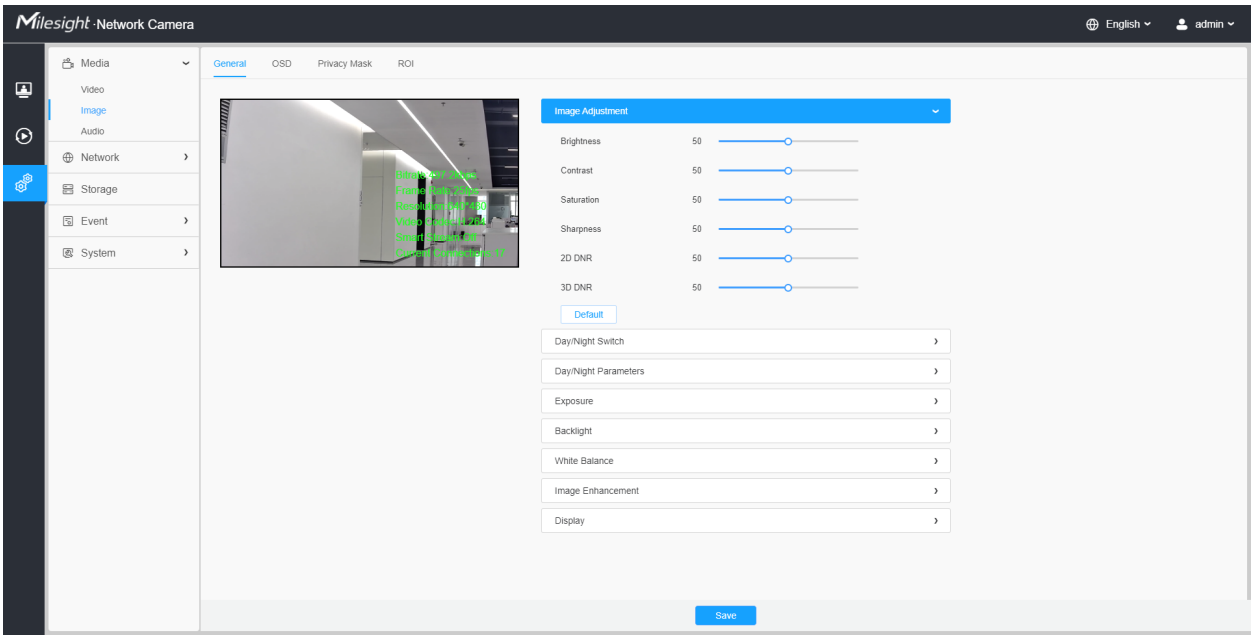


Table 10. Description of the buttons

Parameters	Function Introduction
Brightness	Adjust the Brightness of the scene.
Contrast	Adjust the color and light contrast.
Saturation	Adjust the Saturation of the image. Higher Saturation makes colors appear more "pure" while lower one appears more “wash-out”.
Sharpness	: Adjust the Sharpness of image. Higher Sharpness sharps the pixel boundary and makes the image looks “more clear”.
2D DNR	Adjust the noise reduction level.
3D DNR	Restore brightness, contrast and saturation to default settings.
Default	Adjust the Brightness of the scene.

[Day/Night Switch]

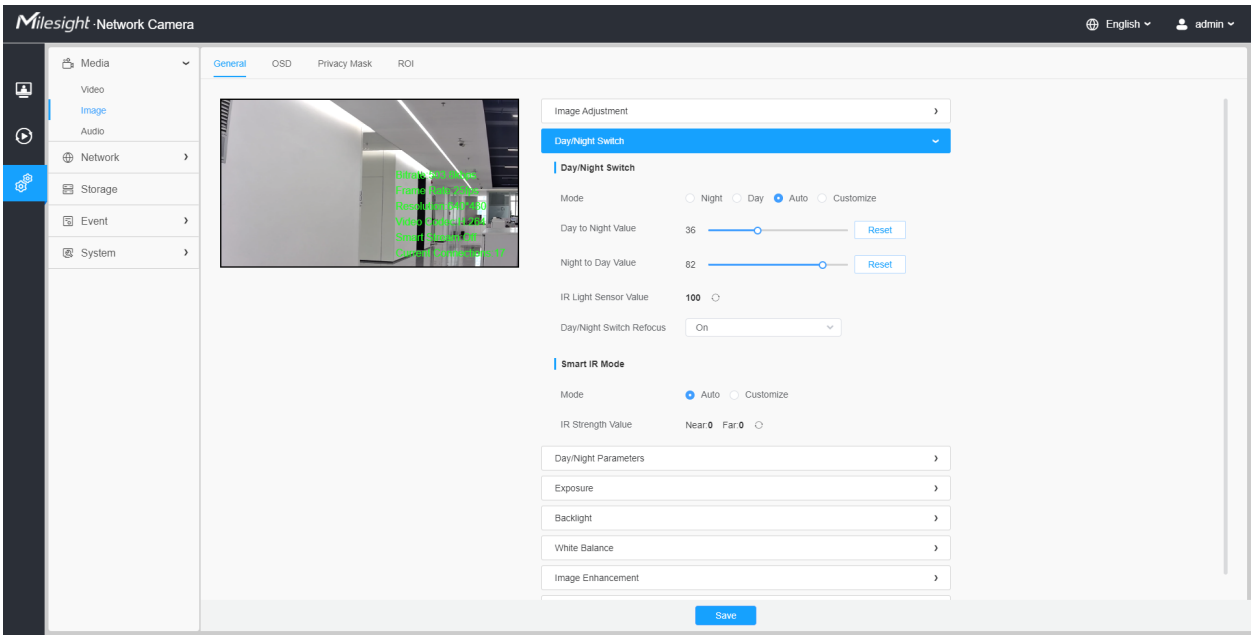


Table 11. Description of the buttons

Parameters	Function Introduction
Day/Night Switch	**Night Mode:** Shown in live view based on Night Mode settings. **Day Mode:** Shown in live view based on Day Mode settings. **Auto Mode:** Shown in live view based on environment, set the sensitivity for switching Day Mode to Night Mode, or Night Mode to Day Mode. **Customize:** Shown in live view based on your own settings' time to start/end Night Mode. **Note:** There are several parameters such as Exposure Level, Maximum Exposure Time and IR-CUT Interval, etc, associated with the modes.
Day/Night Switch	**Day/Night Switch Refocus:** With this option enabled, the camera will refocus when switching between day mode and night mode.

Parameters	Function Introduction
Day/Night Switch	**Day to Night Value:** You can set the sensitivity for switching Day Mode to Night Mode. When IR Light Sensor Current Value is lower than this value, it will switch Day Mode to Night Mode. You can click Reset to reset the value to 36. **Night to Day Value:** This is the sensitivity for switching Night Mode to Day Mode. When IR Light Sensor Current Value is higher than this value, it will switch Night Mode to Day Mode. You can click Reset to reset the value to 82. **IR Light Sensor Value:** The current value of the IR light sensor. **Note:** The three buttons are optional only if you select Auto Mode.
Day/Night Switch	**Start Time of Night:** You can set the time for start the Night Mode. **End Time of Night:** You can set the time for start the Day Mode. **Note:** Start/End Time of Night are optional only if you select Customize Mode.
Smart IR Mode	Support to set the strength of the IR to **Auto Mode** or **Customize** to achieve the best effect. With the combination of the High Beam and Low Beam, the IR LEDs technology has been upgraded to provide better image clarity and quality regardless of the object distance. Also, the Low Beam and High Beam's brightness can be adjusted manually or automatically on the basis of the Zoom ratio. Moreover, with the IR anti-reflection panel, the infrared light transmittance is highly increased.
	Near View IR Level: Adjust the light strength of Low-Beams LED light level from 0 to 100. **Far View IR Level:** Adjust the light strength of High-Beams LED light level from 0 to 100. **Note:** • Near/Far View IR Level are only available in MS-C9674-PA. • Near/Far View IR Level are optional only if you select Customize Mode of Smart IR. • Click Reset to reset the light strength to 50.
	IR Strength Value: The current value of Low-Beams LED and High-Beams LED light value.

[Day/Night Parameters]

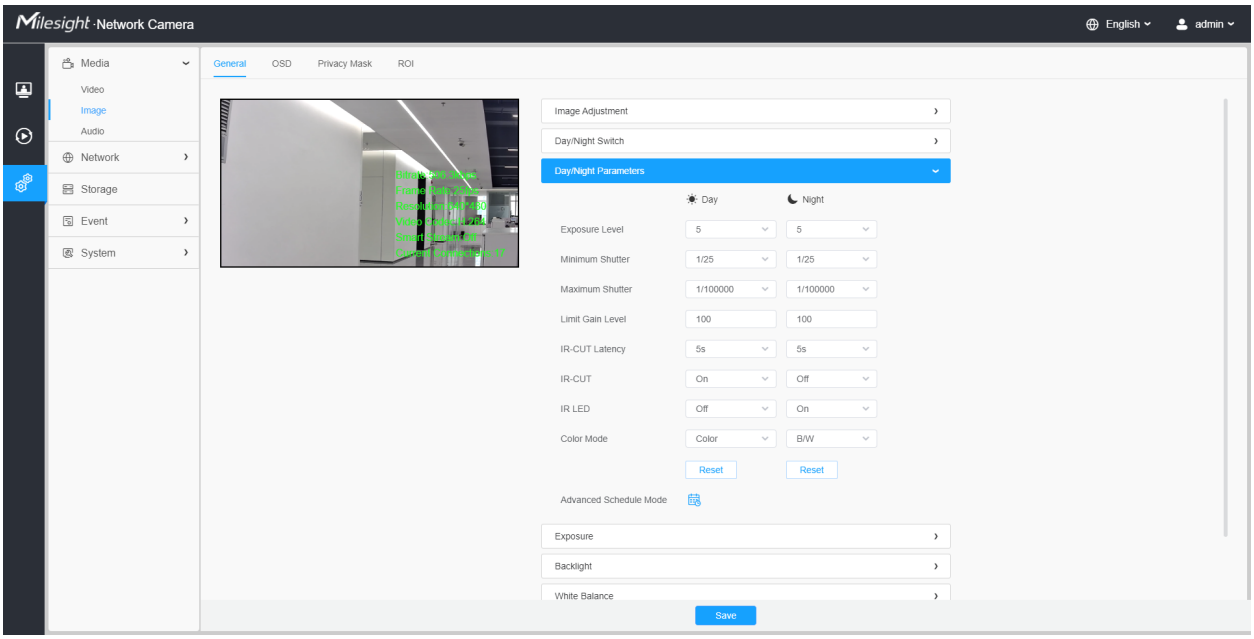
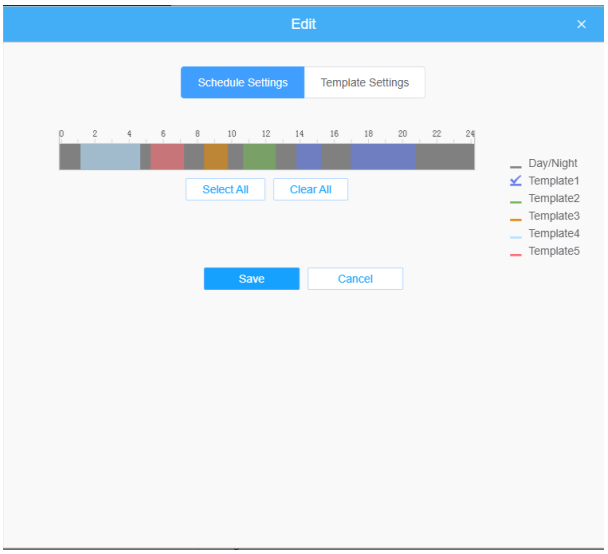


Table 12. Description of the buttons

Parameters	Function Introduction
Exposure Level	Level 0~10 are available to meet your need.
Minimum Shutter	Minimum Shutter is the same as Maximum Exposure Time. Set the minimum Shutter to 1~1/100000s.
Maximum Shutter	Maximum Shutter is the same as Minimum Exposure Time. Set the maximum Shutter to 1~1/100000s.
IR-CUT Latency	The interval time of switching one mode to another.
Limit Gain Level	Set the Limit Gain Level to 1~100.
IR-CUT	Turn on/off IR-CUT.
IR LED	Turn on/off IR-LED.
Color Mode	Select B/W or Color mode.

Parameters	Function Introduction
Advanced Schedule Mode	Here you can customize your special demands for different time, then the Day mode and Night mode will switch automatically according to your settings. 

[Exposure]

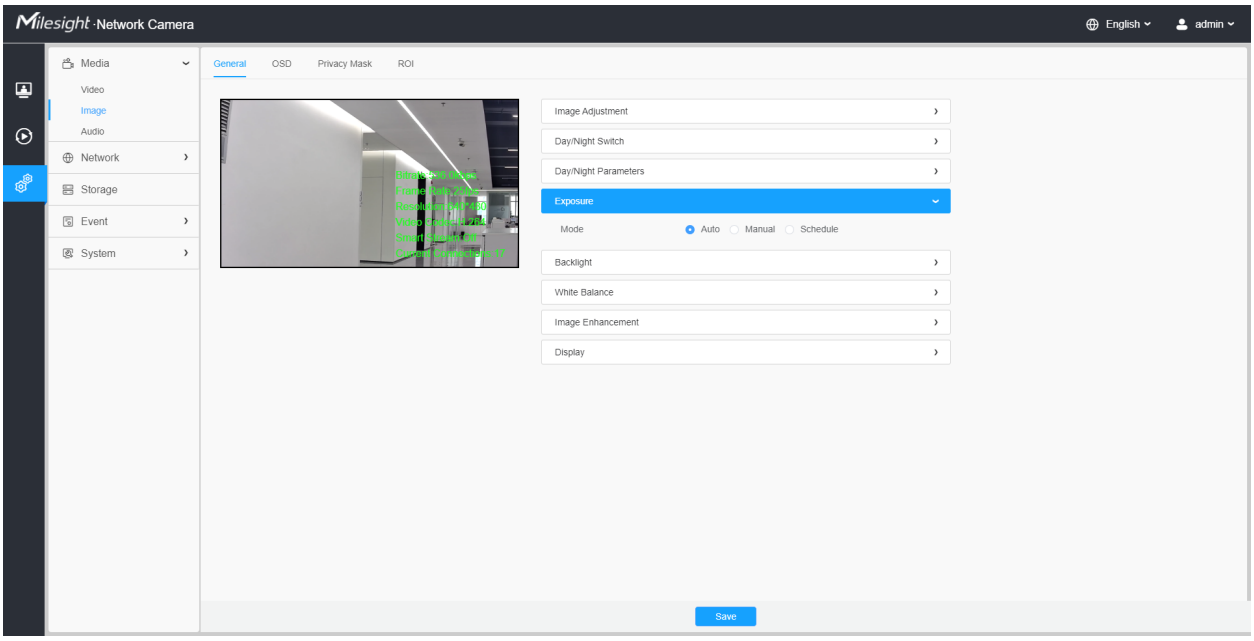
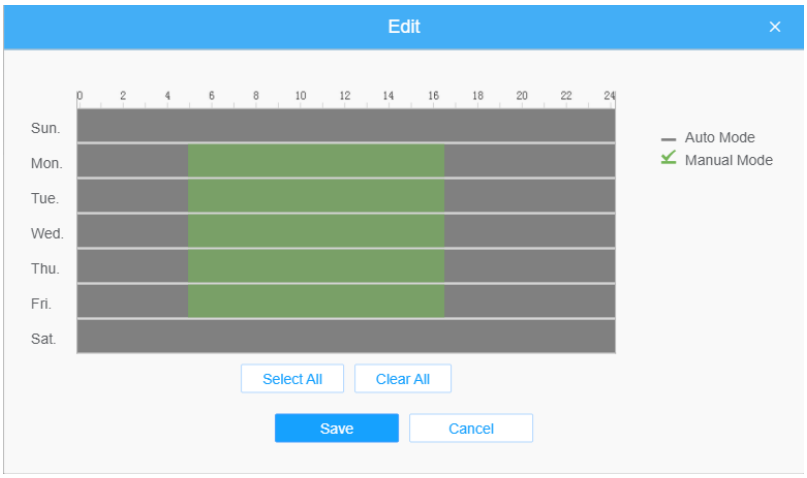


Table 13. Description of the buttons

Parameters	Function Introduction
Exposure Mode	Auto Mode, Manual Mode and Schedule Mode are available. **Auto Mode:** The camera will adjust the brightness according to the light environment automatically. **Manual Mode:** The camera will adjust the brightness according to the value you set, you can set the exposure time from 1~1/100000s, the higher the value is, the brighter the image is. **Schedule Mode:** You can customize the schedule to enable/disable Auto Mode and Manual Mode. 

[Backlight]

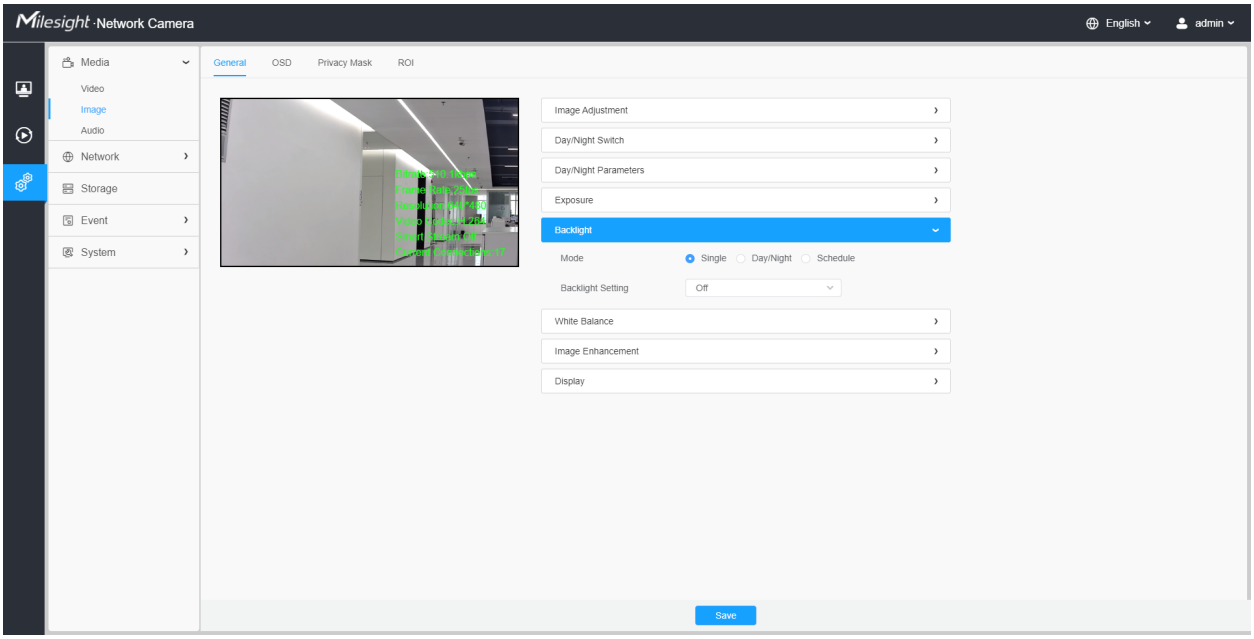
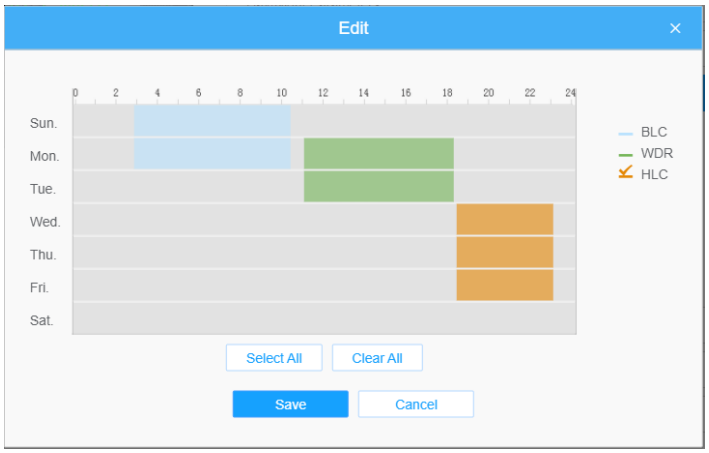


Table 14. Description of the buttons

Parameters	Function Introduction
Backlight Mode	**Single Mode:** Set single mode for BLC/WDR/HLC. **Note:** Do not support WDR and General HLC while High Frame Rate is enabled. **Day/Night Mode:** Support BLC/WDR/HLC on Day Enhancement Mode/Night Enhancement Mode separately. **Schedule Mode:** Set schedule mode for BLC/WDR/HLC. You can customize the schedule to enable/disable BLC/WDR/HLC mode. 

Note:

- For more details about **Milesight WDR on & off Video**, you can click to the YouTube:

  https://www.youtube.com/watch?v=McoOL0Pyk0w
- For more details about **Milesight Ultra Low-light Video Demo - HLC**, you can click to the YouTube:

  https://www.youtube.com/watch?v=ly8uKWbii40
- For more details about **Milesight Super WDR Pro**, you can click to the YouTube:

  https://www.youtube.com/watch?v=edsPZXBJRnI
- For more details about **Milesight Super WDR Performance**, you can click to the YouTube:

  https://www.youtube.com/watch?v=BKEZ6BW-YZE

[White Balance]

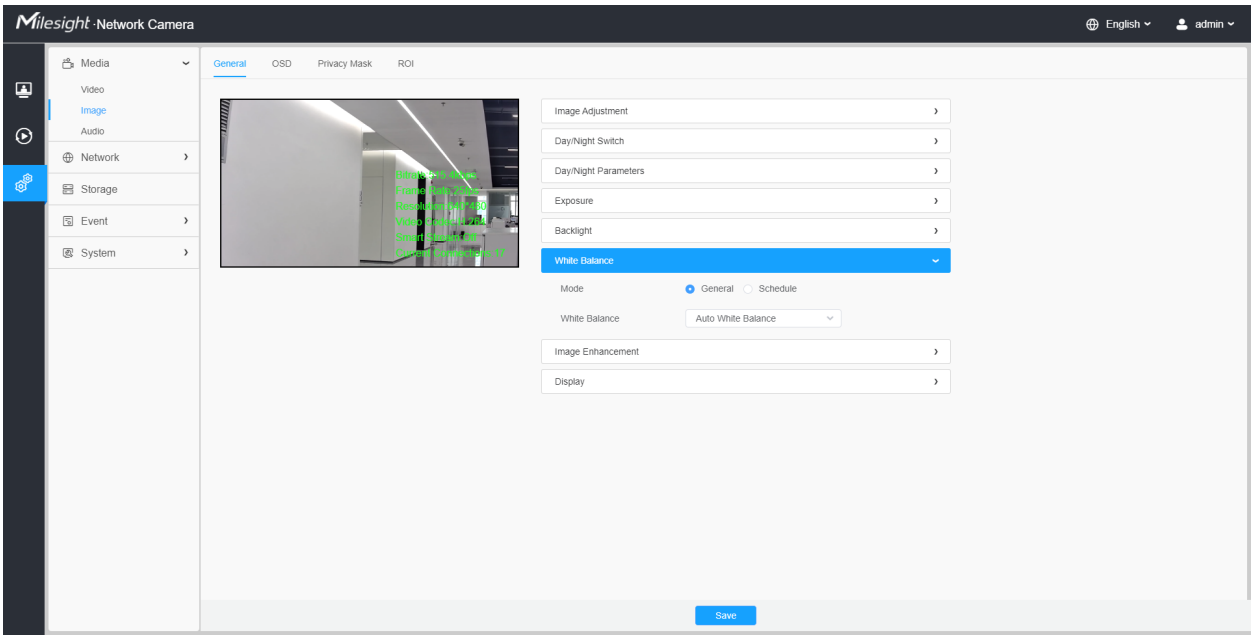
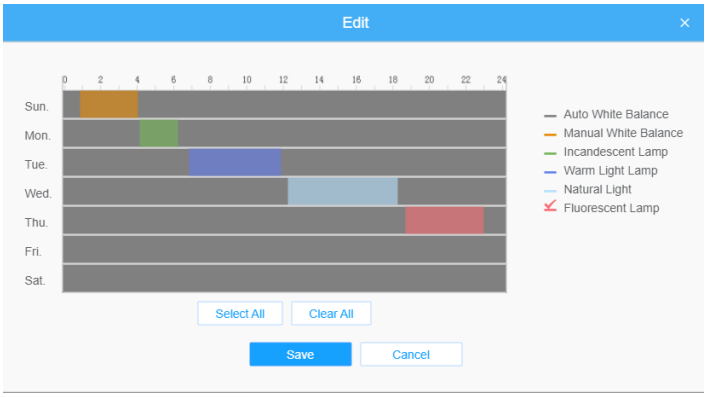


Table 15. Description of the buttons

Parameters	Function Introduction
White Balance	To restore white objects, removed color distortion caused by the light of the environment. **Auto White Balance:**This option will automatically enable the White Balance function. **Manual White Balance:** Set Red Gain Level and Blue Gain Level manually. **Incandescent Lamp:** Select this option when light is similar with incandescent lamp. **Warm Light Lamp:** Select this option when light is similar with warm light lamp. **Natural Light**: Select this option when there is no other light but natural light. **Fluorescent Lamp:** Select this option when light is similar with Fluorescent Lamp. **Schedule mode:** Select this option that you can customize the schedule to enable/ disable above modes. 

[Image Enhancement]

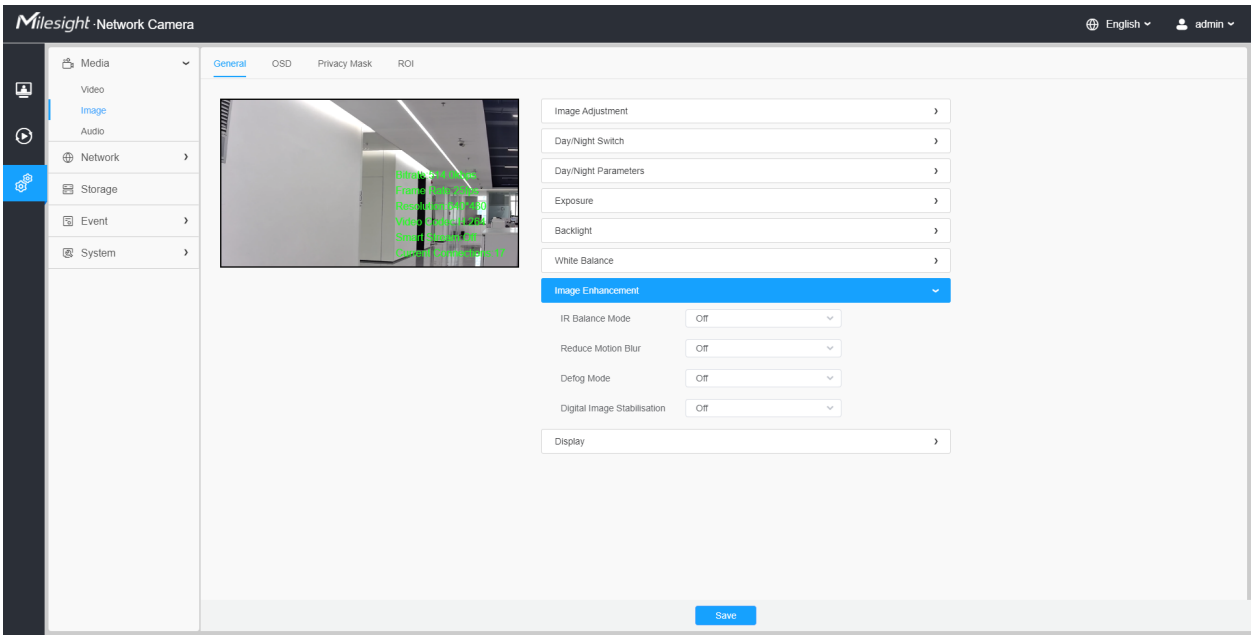


Table 16. Description of the buttons

Parameters	Function Introduction
IR Balance Mode	There is an option to turn On/Off the IR LED. IR Balance Mode would avoid the problem of overexposure and darkness, and the IR LED will change according to the actual illumination.
Reduce Motion Blur	Enable this function to reduce the motion blur of objects effectively. You can adjust the deblur level from 1 to 100. **Note:** For more details about **Milesight Deblur**, you can click to the YouTube: https://www.youtube.com/watch?v=-vynrami51s
Defog Mode	Better image effect in foggy weather. **Note:** • Defog Mode is not supported for the MS-Cxxxx-xPA. • For more details about **Milesight Defog**, you can click to the YouTube: https://www.youtube.com/watch?v=a9od7Trao4U
Digital Image Stabilisation	Decrease the blur and shakiness of the image.

[Display]

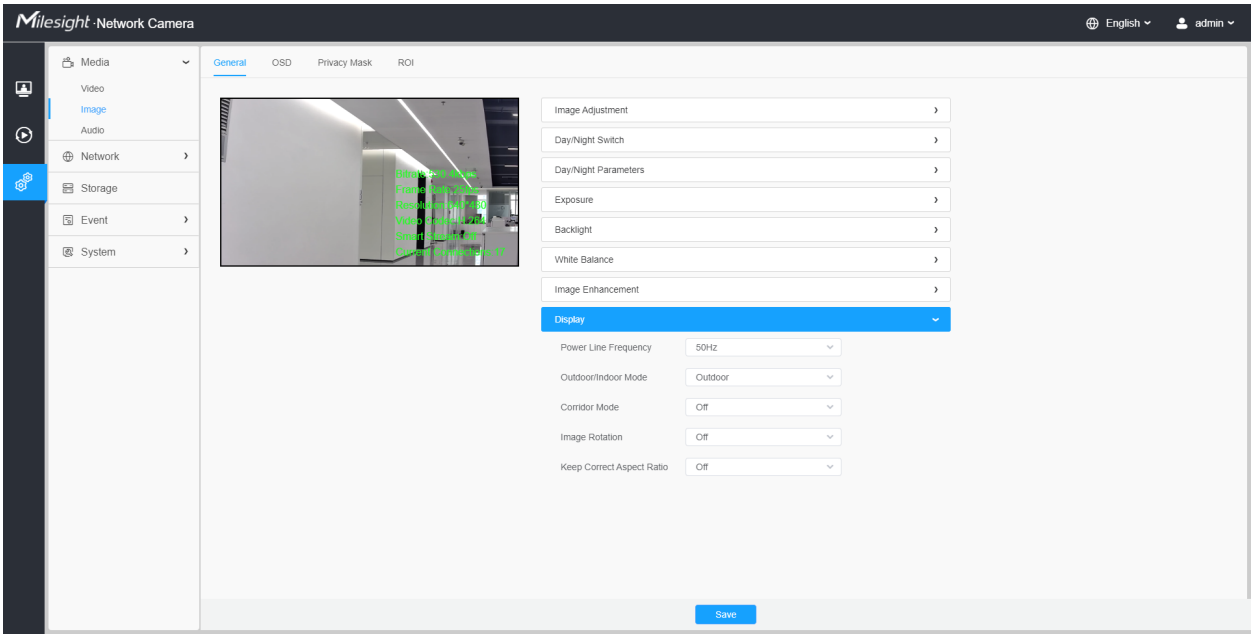


Table 17. Description of the buttons

Parameters	Function Introduction
Power Line Frequency	60Hz and 50Hz are available.
Outdoor/Indoor Mode	Select indoor or outdoor mode to meet your needs.
Corridor Mode	There are three options available, you can select one to meet your need. **Off:** Keep the image in normal direction. **Clockwise 90°:** Rotate the image by 90° clockwise. **Anticlockwise90°:** Rotate the image by 90° anticlockwise.
Image Rotation	There are four options available, you can select one to meet your need. **Off:** Keep the image in normal direction. **Rotating 180°:** Upside down the image. **Flip Horizontal:** Flip the image horizontally. **Flip vertical:** Flip the image vertically.
Keep Correct Aspect Ratio	With this option enabled, the camera will prevent the image from distortion when resolution ratio is changed.

Parameters	Function Introduction
Zoom Limit	Set the Zoom Limit. **Note:** Only for the PTZ Network Camera with optical zoom of 20X or above.
White LED Level	Set the White LED Level to 1~100. **Note:** Only for PTZ Bullet.
Smoked Dome Cover	This function is only for Pro Dome. If Pro Dome is equipped with a Smoked Dome Cover, enable this function to display a normal image. **Note:** Only for Pro Dome.

8.1.2.2 OSD

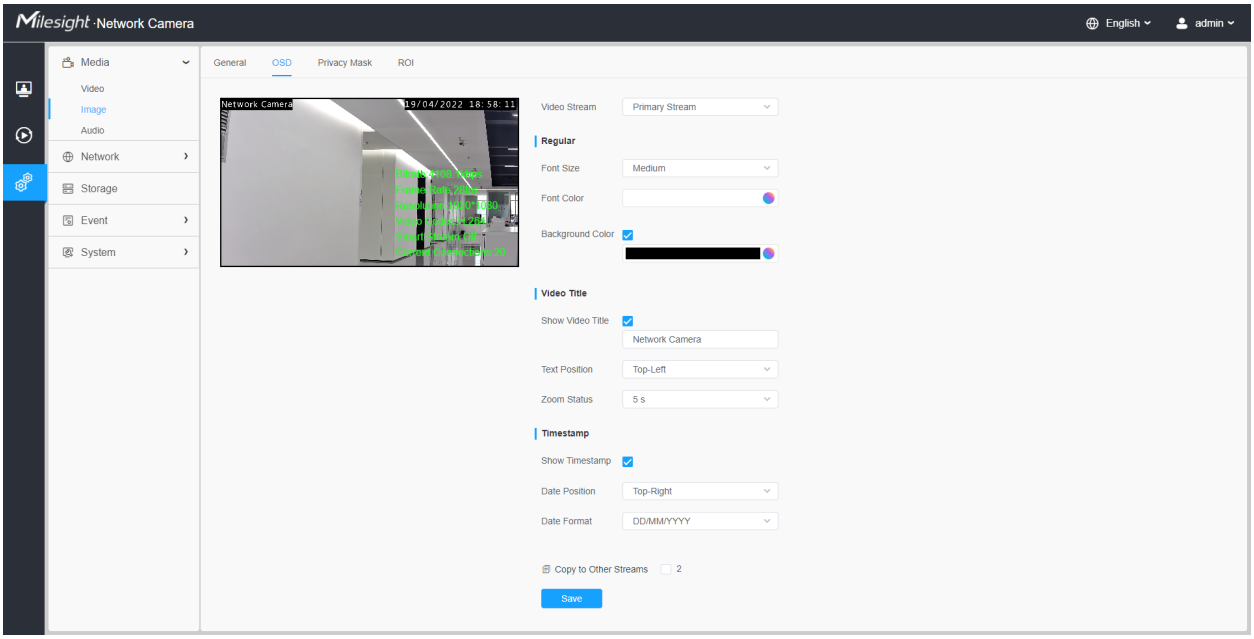
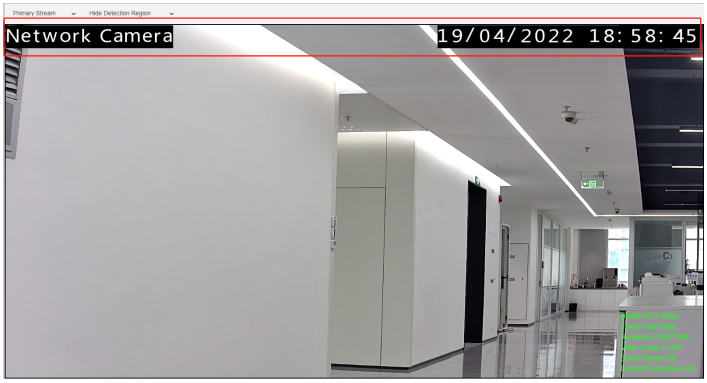


Table 18. Description of the buttons

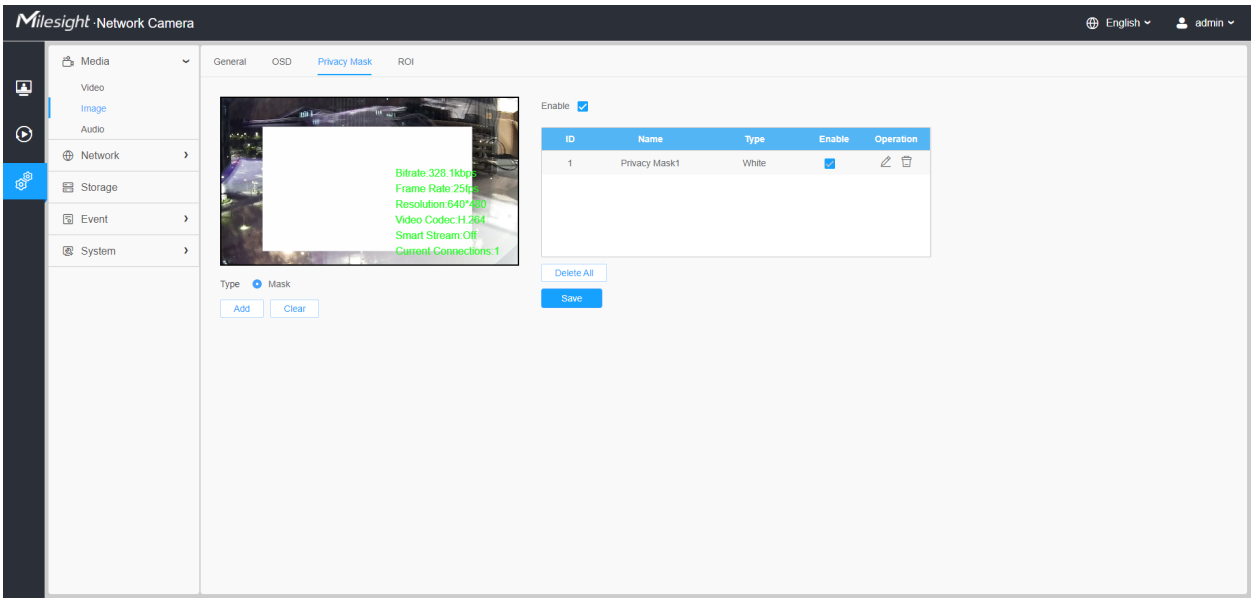
Parameters	Function Introduction
Video Stream	Enable to set OSD for primary stream and secondary stream.
Font Size	Smallest/Small/Medium/Large/Largest/Auto are available for title and date.
Font Color	Enable to set different color for title and date.

Parameters	Function Introduction
Background Color	Enable to set different colors for display information background on screen. You can set different colors for font and background of image , then the image OSD will show as below: 
Show Video Title	Check the check box to show video title.
Video Title	Customize the OSD content.
Text Position	OSD display position on the image.
Show Timestamp	Check the checkbox to display date on the image.
Date Position	Date display position on the image.
Date Format	The format of date.
Copy to Other Streams	Copy the settings to other streams.

8.1.2.3 Privacy Mask

Privacy mask enables to cover certain areas on the live video to prevent certain spots in the surveillance area from being viewed and recorded.

[Privacy Mask]



You can select the color to use for the cover certain areas on the live video.

Note:

- For the MS-Cxxxx-xPC model, up to 24 mask areas and 4 mosaic areas are supported.
- For the MS-Cxxxx-xPA model, up to 24 mask areas are supported.
- For the MS-Cxxxx-xPD model, up to 4 mask areas are supported.

Table 19. Description of the buttons

Parameters	Function Introduction
Enable	Check the check box to enable the Privacy Mask function.
Type	Select the color to use for the privacy areas, there are eight colors available: White, Black, Blue, Yellow, Green, Brown, Red and Violet.
Add	Drew a privacy area on the live video as needed.
Clear	Clear the area you drew on the live video.
Delete All	Clear all areas you drew before.

[Mosaic type of Privacy Mask]

You can select the color type and mosaic type to use for the cover certain areas on the live video. The mosaic type can maintain the continuity of the picture and improve the visual effect. Up to 28 mask areas are supported, which includes 24 mask areas and 4 mosaic areas.

Note: Make sure your camera model is MS-Cxxxx-xPC.

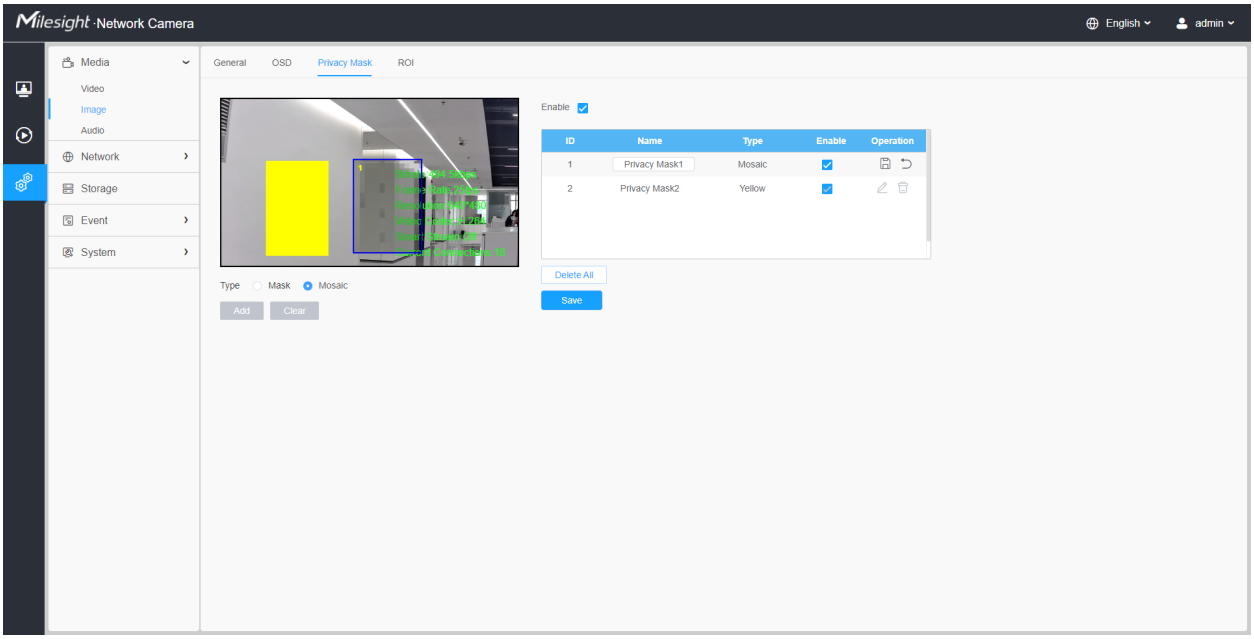


Table 20. Description of the buttons

Parameters	Function Introduction	
Enable	Check the check box to enable the Privacy Mask function.	
Type	Select the type to use for the privacy areas, there are two types available: Mask and Mosaic.	
Add	Drew an privacy area on the live video as needed.	
Clear	Clear the area you drew on the live video.	
Operation	/	Enable/disable the selected ROI areas.
		Change the color of Mask area, there are eight colors available: White, Black, Blue, Yellow, Green, Brown, Red and Violet
		Delete the privacy mask area

8.1.2.4 ROI

Region of interest (often abbreviate ROI), is a selected subset of samples within a dataset identified for a particular purpose. Users can select up to 8 key regions of a scene to transmit through separate streams for targeted preview and recording.

By using Milesight ROI technology, more than 50% of bit rate can be saved and therefore less bandwidth demanded and the storage usage reduced. So according to this, you can set a small bit rate for high resolution.

Note: For more details about how to set ROI, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000643441.

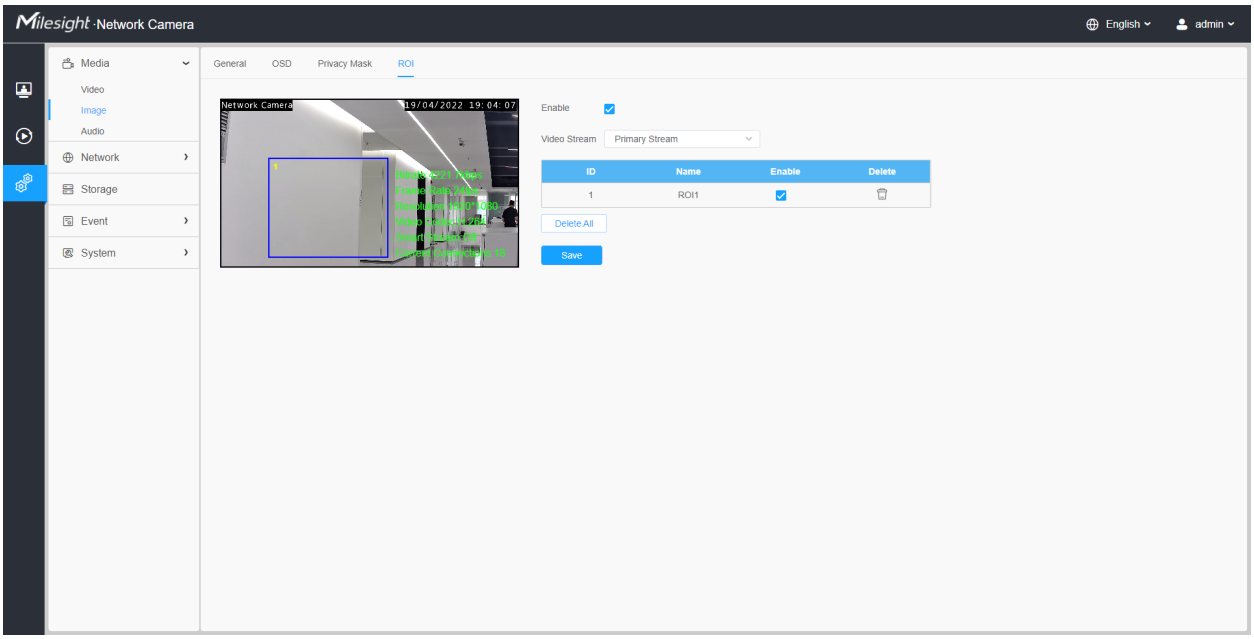


Table 21. Description of the buttons

Parameters	Function Introduction	
Enable	Check the checkbox to enable the ROI function.	
Video Stream	Choose the Video Stream.	
ROI	/	Enable/disable the selected ROI areas.

Parameters	Function Introduction	
		Delete the selected ROI areas.
Delete All	Clear all areas you drew before.	

Note:

- You can set a low bit rate. For example, you can set a bit rate with 512Kbps and a resolution with 1080P, then you can see the image quality of ROI is more clear and fluent than the other region.

8.1.3 Audio

8.1.3.1 Audio

This audio function allows you to hear the sound from the camera or transmit your sound to the camera side. A two-way communication is also possible to be achieved with this feature. Alarm can be triggered when the audio input is above a certain alarm level you set, and configured audio can be played when an alarm occurs.

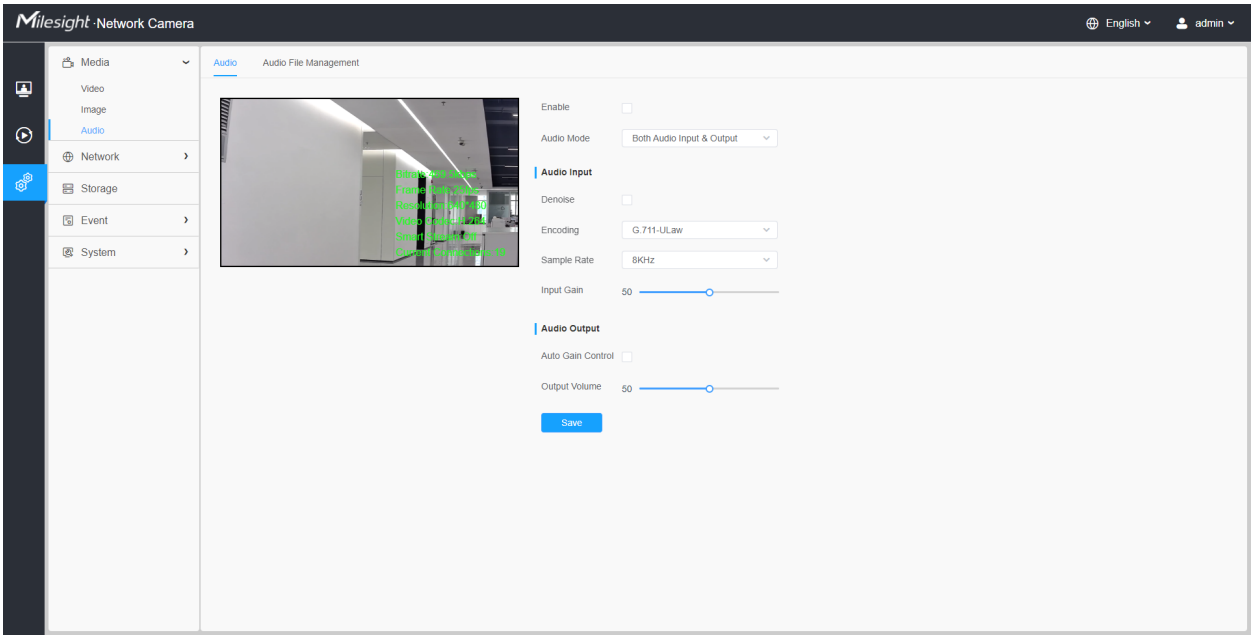
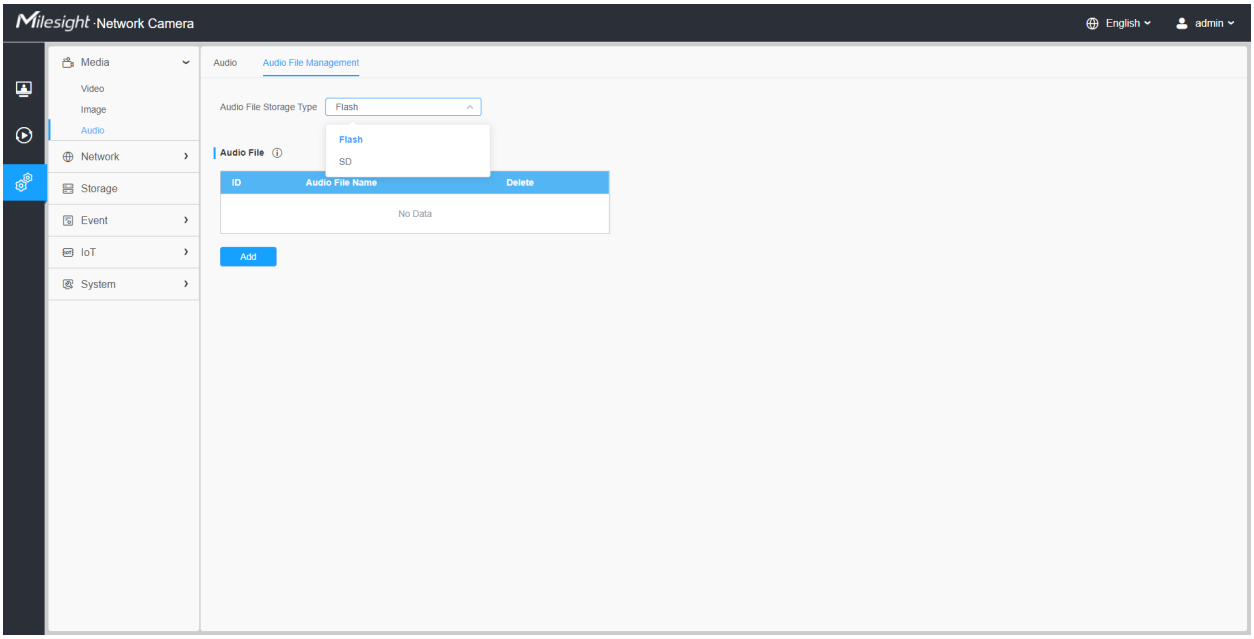


Table 22. Description of the buttons

Parameters	Function Introduction
Enable	Check on the checkbox to enable audio feature.
Audio Mode	**Audio Input/Audio Output/Both Audio Input & Output** are optional.
Audio Input	**Denoise:** Set it as On/Off. When you set the function on, the noise detected can be filtered. **Encoding:** G.711-ULaw, G.711-ALaw, AAC LC, G.722 and G.726 are available **Audio Bit Rate:** The function is available only for AAC LC, and supports up to 256kbps. **Sample Rate:** 8KHz, 16KHz, 32KHz, 44.1KHz, and 48KHz are available. **Input Gain:** Input audio gain level, 0-100. **Alarm Level:** Alarm will be triggered if voice alarm is enabled and input gained volume is higher than the alarm level, 1-100.
Audio Output	**Auto Gain Control:** This function is only for H.265 series, improve the quality of audio **Output Volume:** Adjust volume of output

8.1.3.2 Auto File Management

You can upload up to 5 audio files manually to Flash or SD Card on the Audio web page and you can also edit the audio file's name when upload.



Note:

- The Audio mode and Audio Output are only for certain modules.
- Only support ‘.wav’ audio files with codec type PCM/PCMU/PCMA, 64kbps or 128 kbps and no more than 500k.

Note: Only support '.wav' audio files with codec type PCM/PCMU/PCMA, 64kbps or 128kbps bitrate and no more than 500k!

8.2 Network

8.2.1 Basic

8.2.1.1 TCP/IP

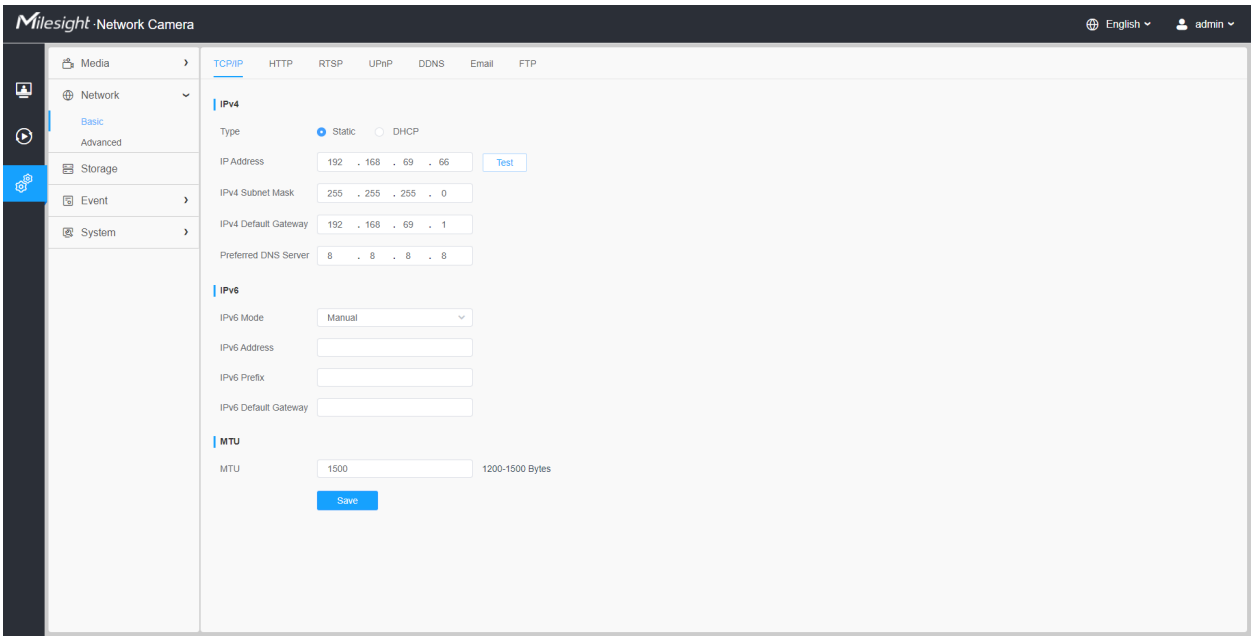


Table 23. Description of the buttons

Parameters	Function Introduction
IPv4	**Type:** Static Type and DHCP Type are optional for user to get IPv4 address automatically or use fixed IP address. **IPv4 Address:** An address that used to identify a network camera on the network. **Note:** The **Test** button is used to test if the IP is conflicting. **IPv4 Subnet Mask:** It is used to identify the subnet where the network camera is located. **IPv4 Default Gateway:** The default router address. **Preferred DNS Server:** The DNS Server translates the domain name to IP address.
IPv6	**IPv6 Mode:** Choose different modes for IPv6: Manual/Route Advertisement/ DHCPv6 **IPv6 Address:** IPv6 Address used to identify a network camera on the network **IPv6 Prefix:** Define the prefix length of IPv6 address **IPv6 Default Gateway:** The default router IPv6 address
MTU	Maximum Transmission Unit. The default value is 1500. You can customize the value from 1200 to 1500 as needed.
Save	Save the configuration.

8.2.1.2 HTTP

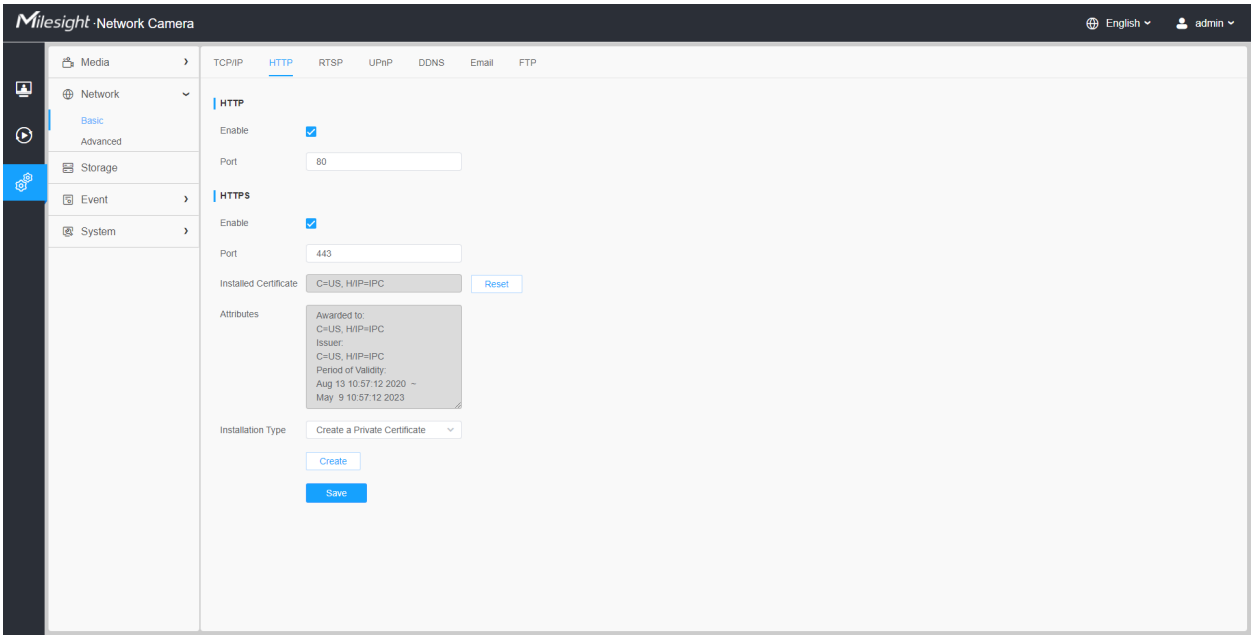


Table 24. Description of the buttons

Parameters	Function Introduction
HTTP	**Enable:** Start or stop using HTTP. **Port:** Web GUI login port, the default is 80, the same with ONVIF port.
HTTPs	**Enable:** Start or stop using HTTPs. **Port:** Web GUI login port via HTTPS, the default is 443. **Note:** For more details about how to use enable HTTPS access, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000797384.
Installed Certificate	Upload and set the SSL certificate.
Attributes	
Installation Type	
Save	Save the configuration.

Table 25. HTTP URL are as below:

Stream	URL
Main Stream	http://username:password@IP:port/ipcam/mjpeg.cgi
Secondary Stream	http://username:password@IP:port/ipcam/mjpegcif.cgi
Tertiary Stream	http://username:password@IP:port/ipcam/mjpegthird.cgi

Note: You need to change the codec type of streams to MJPEG except the main stream of H.264 cameras whose models with “-A”.

8.2.1.3 RTSP

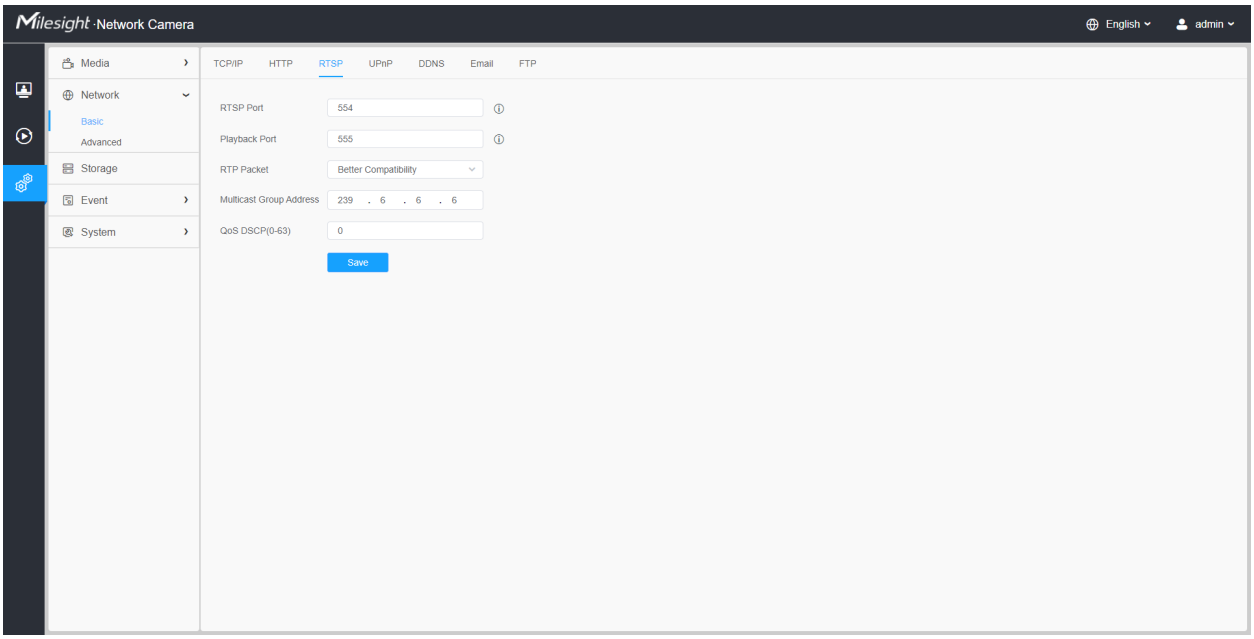


Table 26. Description of the buttons

Parameters	Function Introduction
RTSP Port	The port of RTSP, the default is 554.
Playback Port	Playback Port The port of playback, the default is 555. **Note:** Port 0 means closing playback function.
RTP Packet	There are Better Compatibility and Better Performance two options, if your camera's image mess up, please switch this option.
Multicast Group Address	Support multicast function.
QoS DSCP	The valid value range of the DSCP is 0-63.
Save	Save the configuration.

Table 27. RTSP URL are as below:

Stream	URL
Primary Stream	rtsp://IP:RTSP Port/main
Secondary Stream	rtsp://IP:RTSP Port/sub
Tertiary Stream	rtsp://IP:RTSP Port/third

Note:

- DSCP refers to the Differentiated Service Code Point; and the DSCP value is used in the IP header to indicate the priority of the data.
- A reboot is required for the settings to take effect.

8.2.1.4 UPnP

Universal Plug and Play (UPnP) is a networking architecture that provides compatibility among networking equipment, software and other hardware devices. The UPnP protocol allows devices to connect seamlessly and to simplify the implementation of networks in the home and corporate environments. With the function enabled, you don't need to configure the port mapping for each port, and the camera is connected to the Wide Area Network via the router.

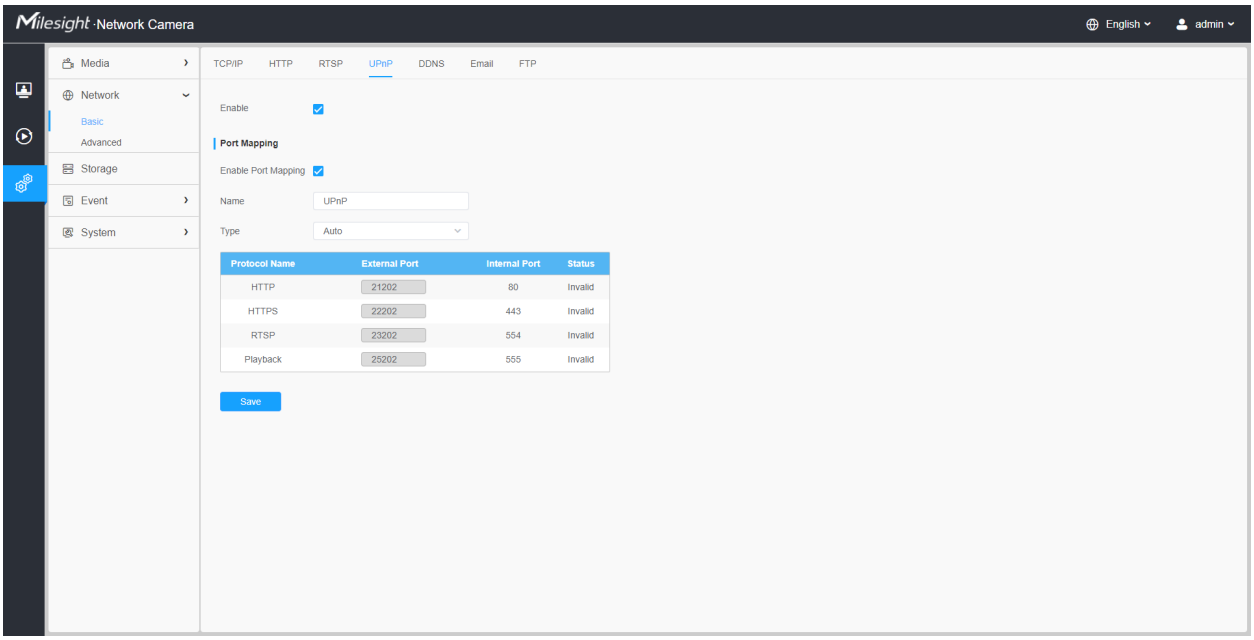


Table 28. Description of the buttons

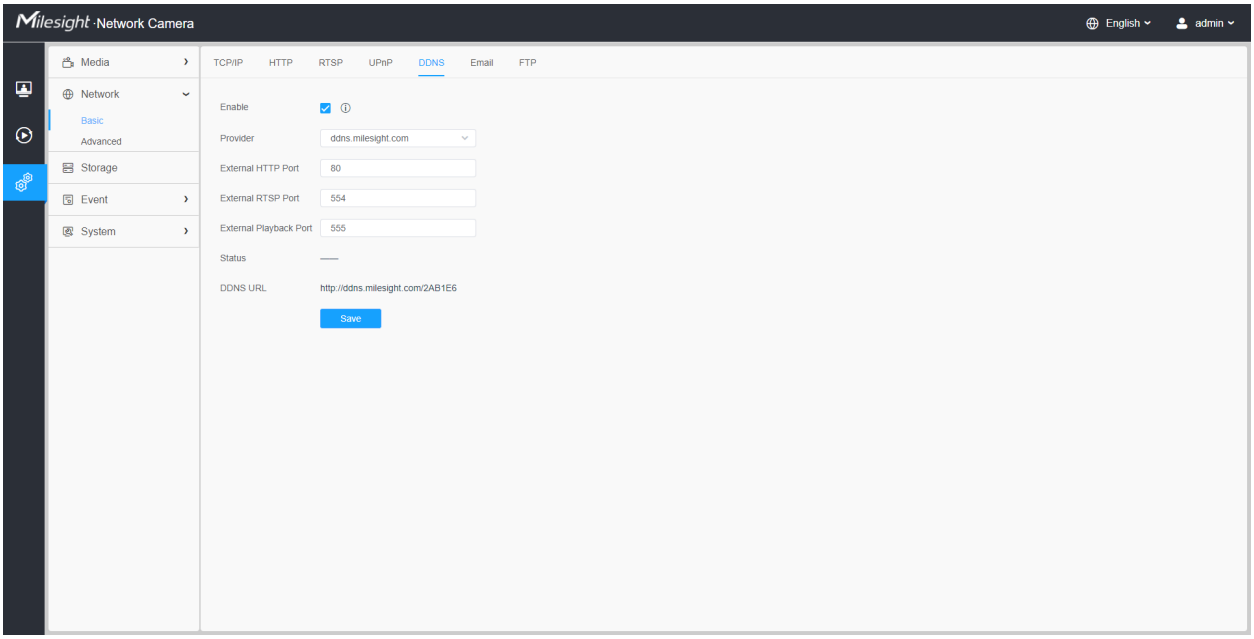
Parameters	Function Introduction
Enable	Check the checkbox to enable the UPnP function.
Enable Port Mapping	Check the checkbox to enable the Port Mapping
Name	The name of the device detected online can be edited

Parameters	Function Introduction
Type	**Auto:** Automatically obtain the corresponding HTTP and RTSP port, without any settings **Manual:** Need to manually set the appropriate HTTP port and RTSP Port. When choose Manual, you can customize the value of the port number by yourself
Save	Save the configuration.

8.2.1.5 DDNS

DDNS allows you to access the camera via domain names instead of IP address. It manages to change IP address and update your domain information dynamically. You need to register an account from a provider.

Note: For more details about how to set DDNS, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000643406.



You can choose “ddns.milesight.com” as provider for DDNS. After enabling it, you can access the device via the URL “http://ddns.milesight.com/MAC address”.

Table 29. Description of the buttons

Parameters	Function Introduction
Enable DDNS	Check the checkbox to enable DDNS service. **Note:** Recommend to enable and configure UPnP ports which can be used directly in DDNS.
Provider	Get support from DDNS provider: ddns.milesight.com, freedns.afraid.org, dyndns.org, www.no-ip.com, www.zoneedit.com. You can also customize the provider for DDNS.
Hash	A string used for verifying, only for "freedns.afraid.org".
User name	Account name from the DDNS provider, unavailable for "freedns.afraid.org".
Password	Account password, unavailable for "freedns.afraid.org".
Host name	DDNS name enabled in the account.
Status	Display DDNS running status.
Save	Save the configuration.

Note:

- Please do the Port Forwarding of HTTP Port and RTSP Port before you use Milesight DDNS.
- Make sure that the internal and the external port number of RTSP are the same.

8.2.1.6 Email

Alarm video files can be sent to specific mail account through SMTP server. You must configure the email settings correctly before using it.

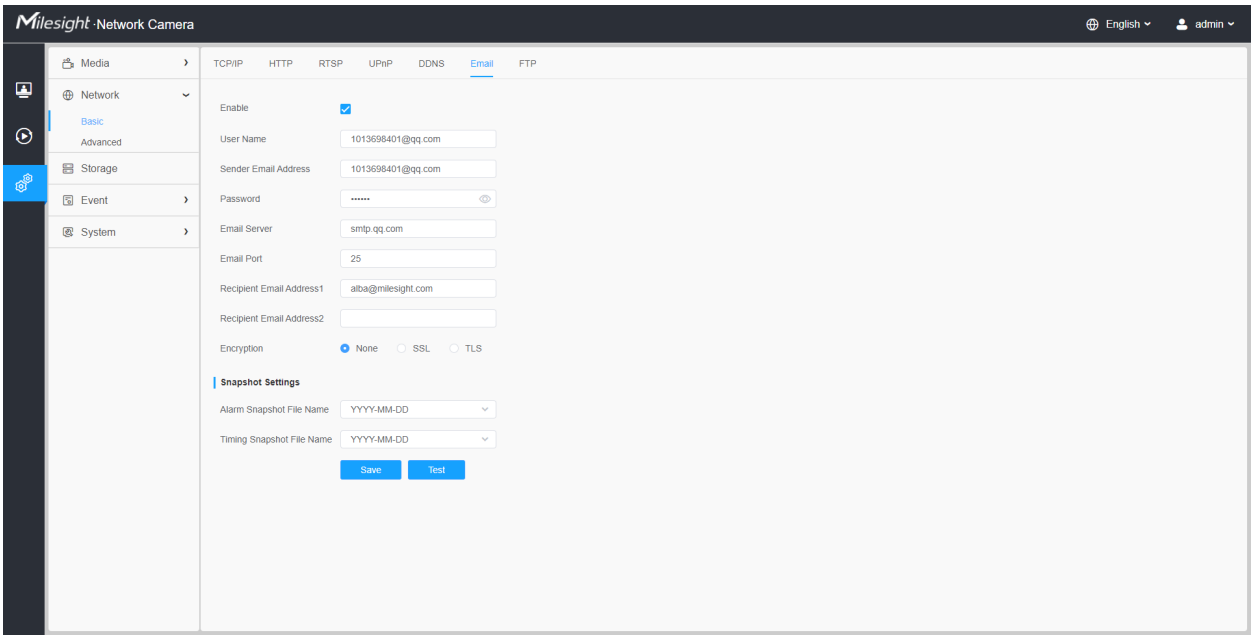


Table 30. Description of the buttons

Parameters	Function Introduction
Enable	Check the checkbox to enable Email function.
User Name	The sender's name. It is usually the same as the account name.
Sender Email Address	Email address to send video files attached emails.
Password	The password of the sender.
Email Server	The email server IP address or host name(e.g. smtp.gmail.com).
Email Port	The default TCP/IP port for SMTP is 25(not secured). For SSL/TLS port, it depends on the mail you use.
Recipient Email Address1	Email address to receive video files.
Recipient Email Address2	Email address to receive video files.
Encryption	Check the checkbox to enable SSL or TLS if it is required by the SMTP server.

Parameters	Function Introduction
Snapshot Settings	**Alarm Snapshot File Name:** Default(YYYY-MM-DD) /MM-DD-YYYY/ DD-MM-YYYY/ Add prefix/ Overwrite with the base file name/ Customize are available. **Timing Snapshot File Name:** Default(YYYY-MM-DD) /MM-DD-YYYY/ DD-MM-YYYY/ Add prefix/ Overwrite with the base file name/ Customize are available.
Save	Save the configuration.
Test	Test whether the configuration is successful.

Note: You can refer to the following file name tip to customize the file name.

8.2.1.7 FTP

Alarm video files can be sent to specific FTP server. You must configure the FTP settings correctly before using it.

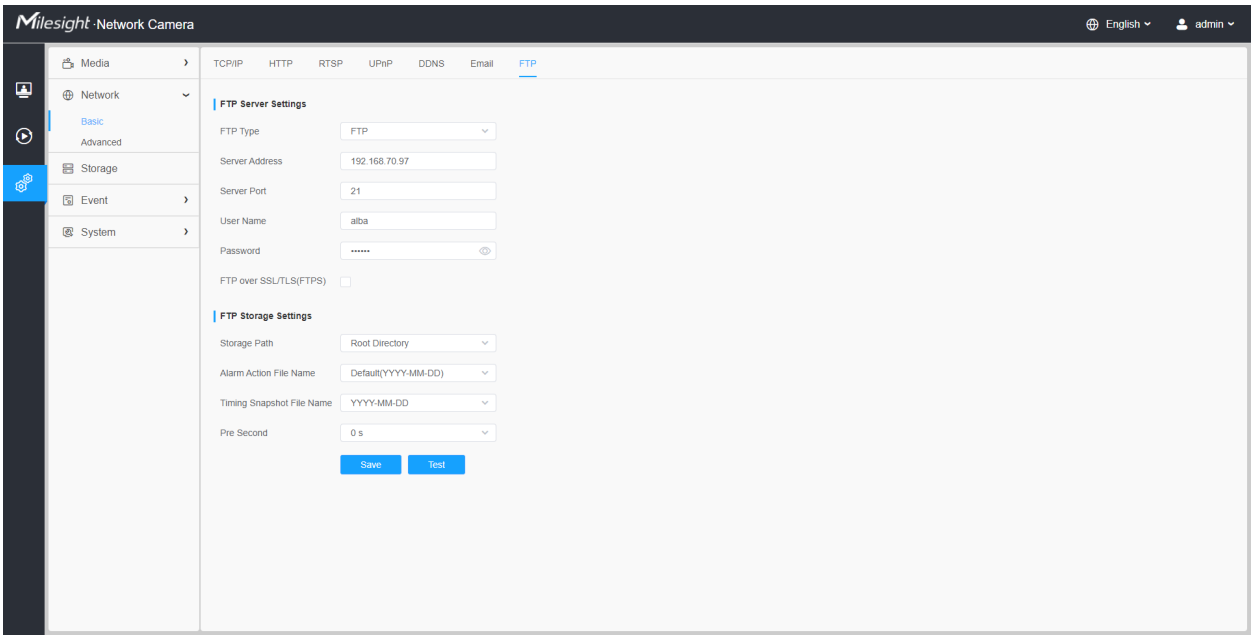


Table 31. Description of the buttons

Parameters		Function Introduction
FTP Server Settings	**FTP Type**	FTP and SFTP are optional.
	Server Address	FTP/SFTP server address.
	Server Port	The port of the FTP server. Generally it is 21. The port of the SFTP server. Generally it is 22.
	User Name	User name used to log in to the FTP/SFTP sever.
	Password	User password.
FTP Storage Settings	**Storage Path**	Storage Path where video and image will be uploaded to the FTP server. Four FTP storage path types are available, including Root Directory, Parent Directory, Child Directory and Customize.
	Parent Directory	Choose IP Address/ Device Name/ Date as the folder name of Parent Directory, or customize the folder name.
	Child Directory	Choose IP Address/ Device Name/ Date as the folder name of Child Directory, or customize the folder name.

Parameters		Function Introduction
FTP Storage Settings	Multilevel Folder Name	If the storage path is more than two levels, enter Multilevel FTP storage path here manually.
	Alarm Action File Name	Choose the default(YYYY-MM-DD) or customize the alarm action file name.
	Video File Name	If you choose to customize the alarm action file name, YYYY-MM-DD/ MM-DD-YYYY/ DD-MM-YYYY/ Add prefix are available.
	Image File Name	If you choose to customize the alarm action file name, YYYY-MM-DD/ MM-DD-YYYY/ DD-MM-YYYY/ Add prefix are available.
	Timing Snapshot File Name	Default(YYYY-MM-DD) /MM-DD-YYYY/ DD-MM-YYYY/ Add prefix/ Overwrite with the base file name are available.
	Pre Second	Reserve the record time before alarm, 0~10 sec.
Save		Save the configuration, 0s ~ 10s are optional.
Test		Test whether the configuration is successful.

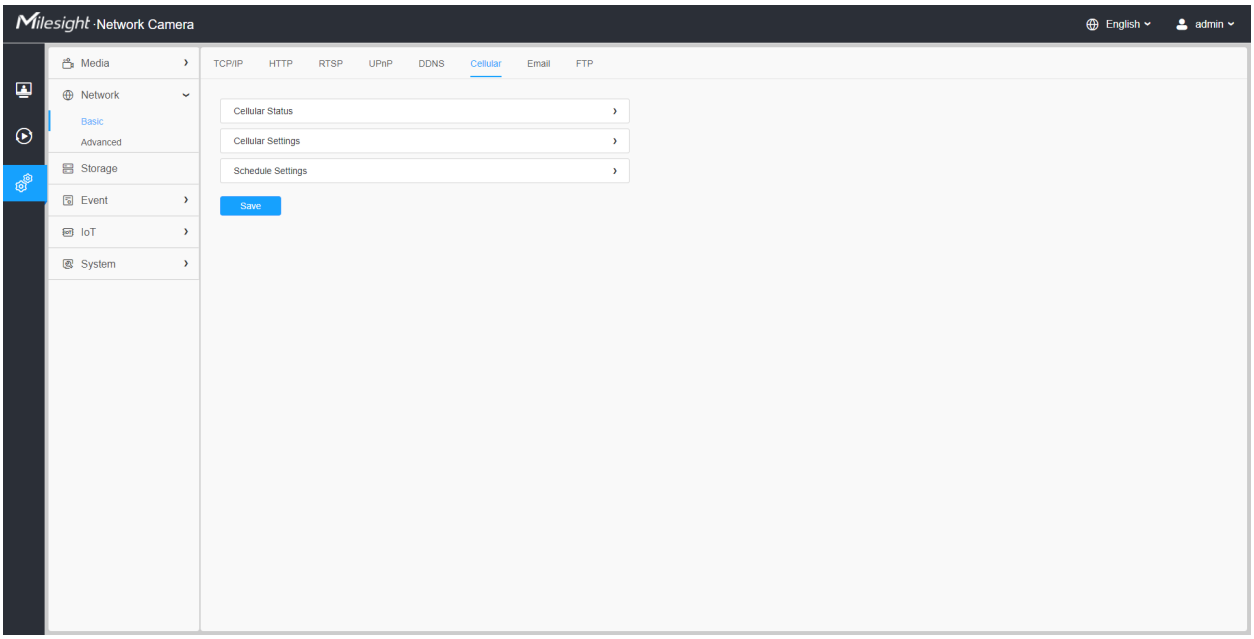
Note:

- Parent Directory will be under Root Directory, and Child Directory will be under Parent Directory.
- You can refer to the following file name tip to customize the file name.

8.2.1.8 Cellular (Optional)

The 5G AIoT Pro Bullet Plus Network Camera provides a fresh experience of UHD image quality, low latency and fast transmission speed to some scenarios where network wiring is inconvenient.

You can check the cellular status and set the cellular settings here when using 5G camera, as shown below.



Note:

- If you use the 5G camera for the first time, it is necessary to connect the camera through the network port to access the web page of the camera for basic configuration.
- Before using the 5G network, please insert the SIM card into the SIM card slot at the bottom of the camera. It supports Nano SIM for SIM card slot.

[Cellular Settings]

Step1: Fill in the information provided by your Internet Service Provider (ISP) to Cellular Settings interface, then click Save to access the network successfully.

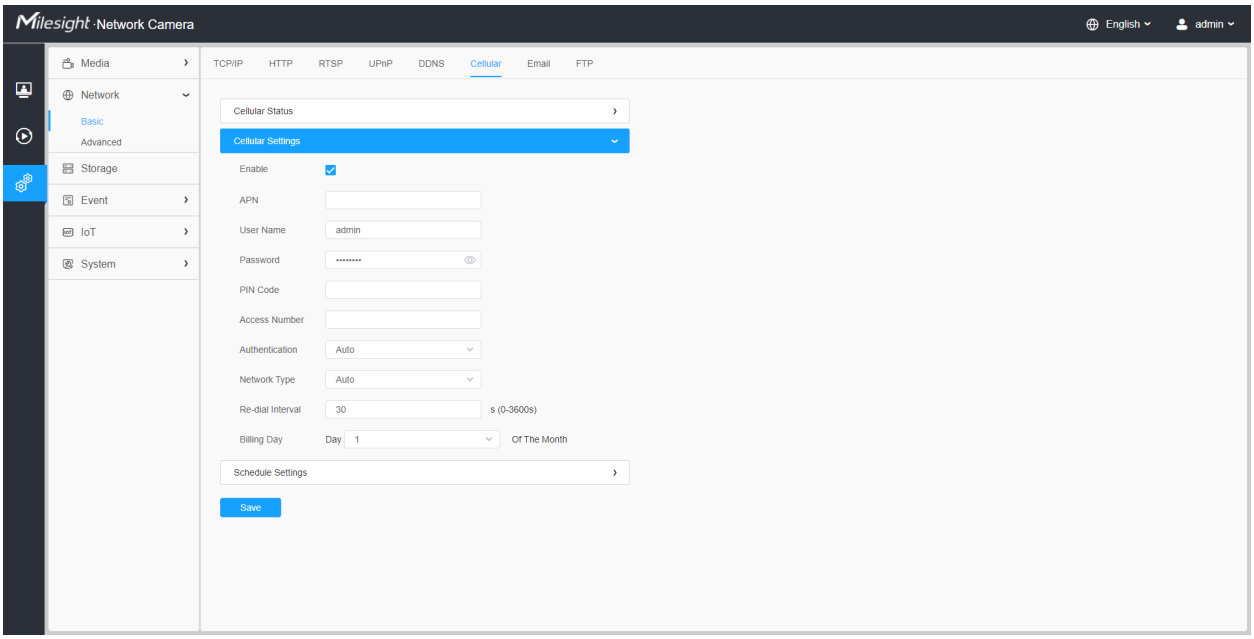


Table 32. Description of the buttons

Parameters	Function Introduction
Enable	Check this option to enable 5G network.
APN	Enter the Access Point Name for cellular dial-up connection provided by local ISP.
User name	Enter the user name for cellular dial-up connection provided by local ISP.
Password	Enter the password for cellular dial-up connection provided by local ISP.
PIN Code	Enter a 4-8 characters PIN code to unlock the SIM.
Access Number	Enter the dial-up center NO. For cellular dial-up connection provided by local ISP.
Authentication Type	Select the Authentication Type. There are five options including **Auto, PAP, CHAP, MS-CHAP, MS-CHAPv2** to match different Internet Service Providers. The default option is **Auto**, which can automatically match Internet Service Provider.
Network Type	Select the network type of cellular network. There are five options including Auto, 5G, 4G, 3G and 2G. **Auto:** connect to the network with the strongest signal automatically.
Re-dial Interval	Fill in the re-dial interval time. When the 5G network is offline, it will re-dial according to the interval you set. The Re-dial Interval must be between 0-3600s.
Billing Day	Select the date for clearing the data each month. Users can choose from 1st to 31st, and the system will clear the data on the date you set each month.

Note: For some Internet Service Provider, users only need to insert the SIM card directly to access the 5G network without additional configuration.

[Cellular Status]

Step2: After connecting to the network successfully, you can check the cellular status information on Cellular Status interface, as shown below.

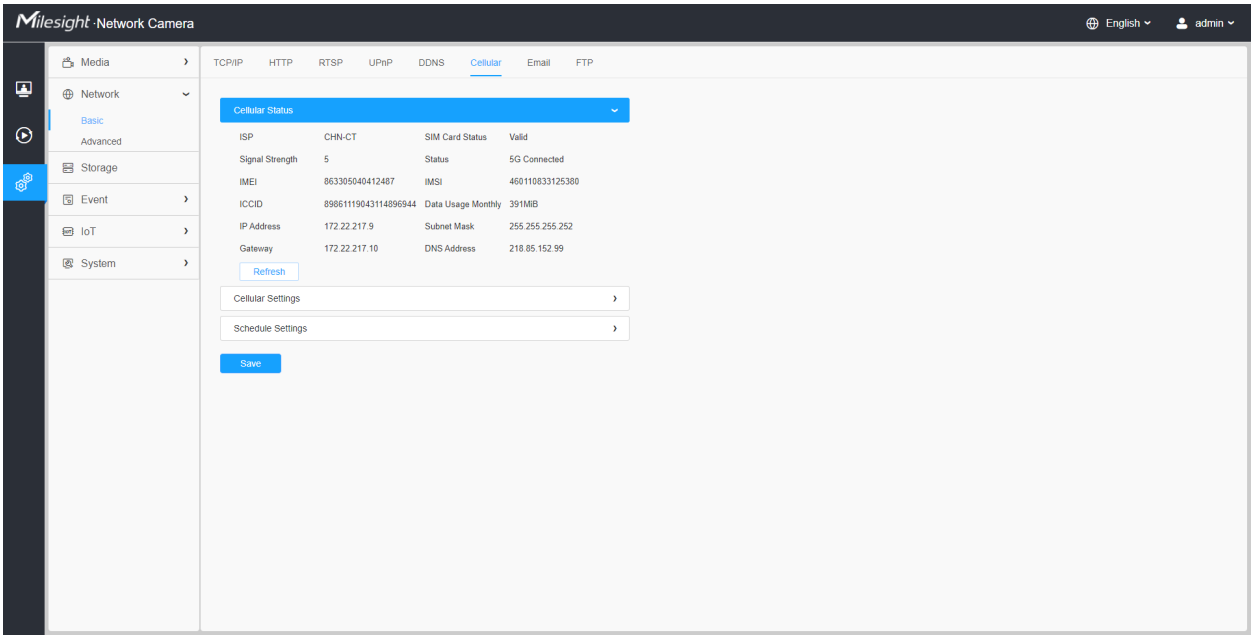


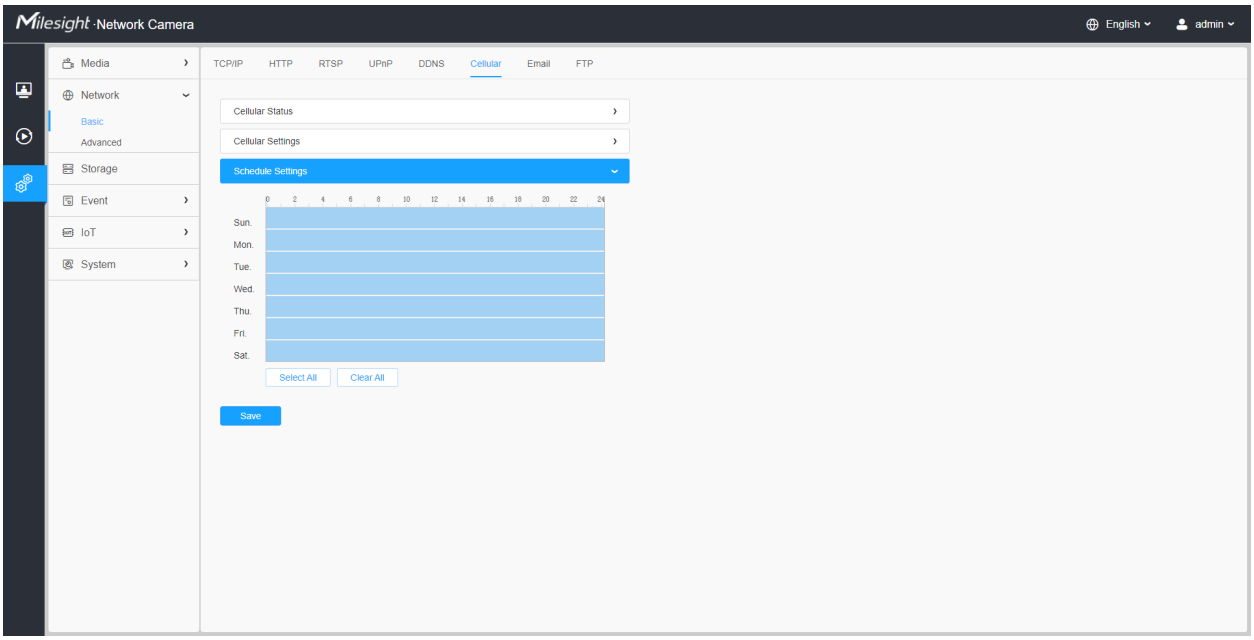
Table 33. Description of the buttons

Parameters	Function Introduction
ISP	Show the network provider which the SIM card registers on. **Note:** It will display "-" when the SIM card is not inserted or not recognized.
SIM Card Status	Display the connection status of SIM card. **No SIM Card:**The SIM card is not inserted. **Invalid:**The SIM card has been inserted but failed to connect to the network. **Valid:** The SIM card has been inserted and successfully connected to the network.
Signal Strength	Display the current signal strength of the network.
Status	Display the connection status of the network, including “connect” and “disconnect”.
IMEI	Show the IMEI of the module.

Parameters	Function Introduction
IMSI	Show IMSI of the SIM card.
ICCID	Show ICCID of the SIM card.
Data Usage Monthly	Display current monthly used data.
IP Address	Display the IP Address, Subnet Mask, Gateway and DNS Address of the current network. If the SIM card is not inserted or not recognized, it will display 0.0.0.0.
Subnet Mask	
Gateway	Display the IP Address, Subnet Mask, Gateway and DNS Address of the current network. If the SIM card is not inserted or not recognized, it will display 0.0.0.0.
DNS Address	
Refresh	Click this button to manually refresh the above status.

[Schedule Settings]

Step 3: Set the schedule, the 5G network will take effect according to the schedule you set.

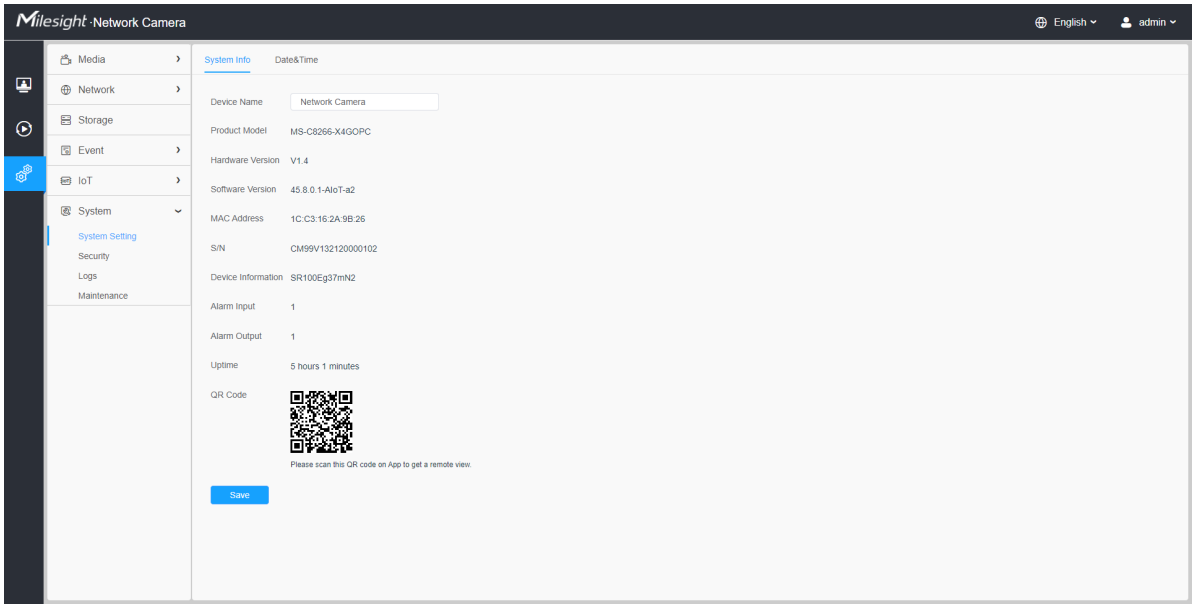


Step 4: After configuring the cellular settings, you also need to complete other basic configurations of the camera if needed, such as events, recordings, etc.

Step 5: After completing the basic settings of the camera, you can access the camera using 5G network without connecting the network cable.

Note:

- You can connect and configure the 5G camera to Milesight CMS via P2P.
- You can use 5G network to connect the 5G camera to Milesight VMS Enterprise, Milesight CMS and M-sight Pro APP via P2P.
- For 5G camera, the P2P function will be activated by default as shown below.

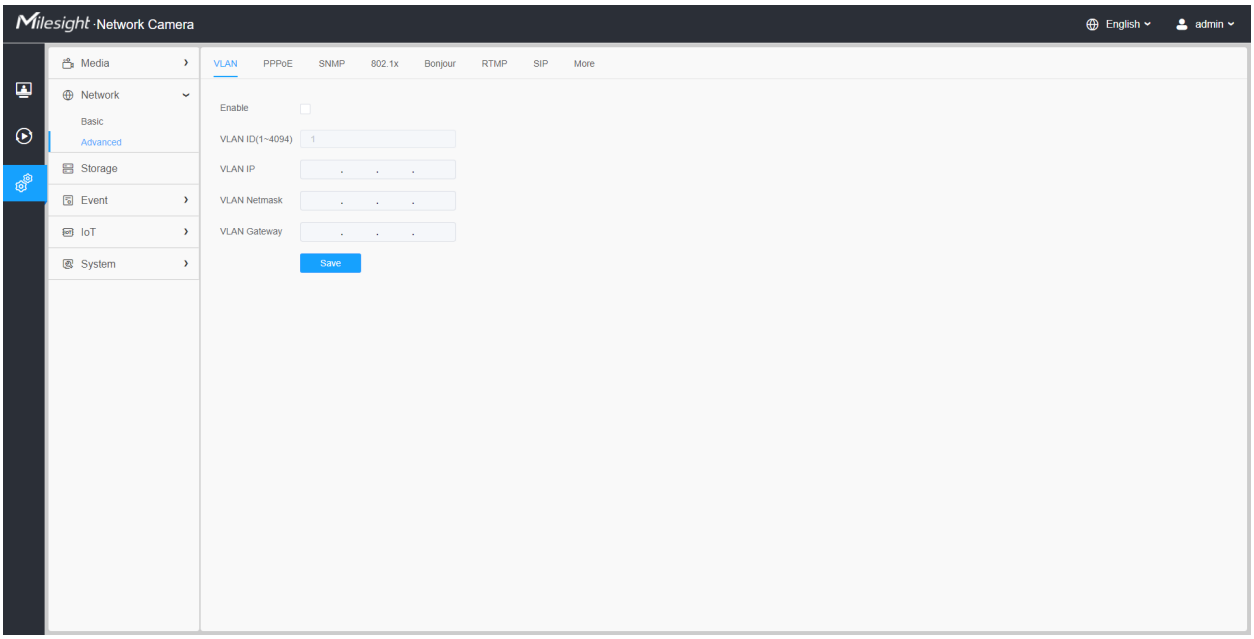


- If you don’t need to use the 5G network, you can connect to the camera through a network cable to use it.

8.2.2 Advanced

8.2.2.1 VLAN

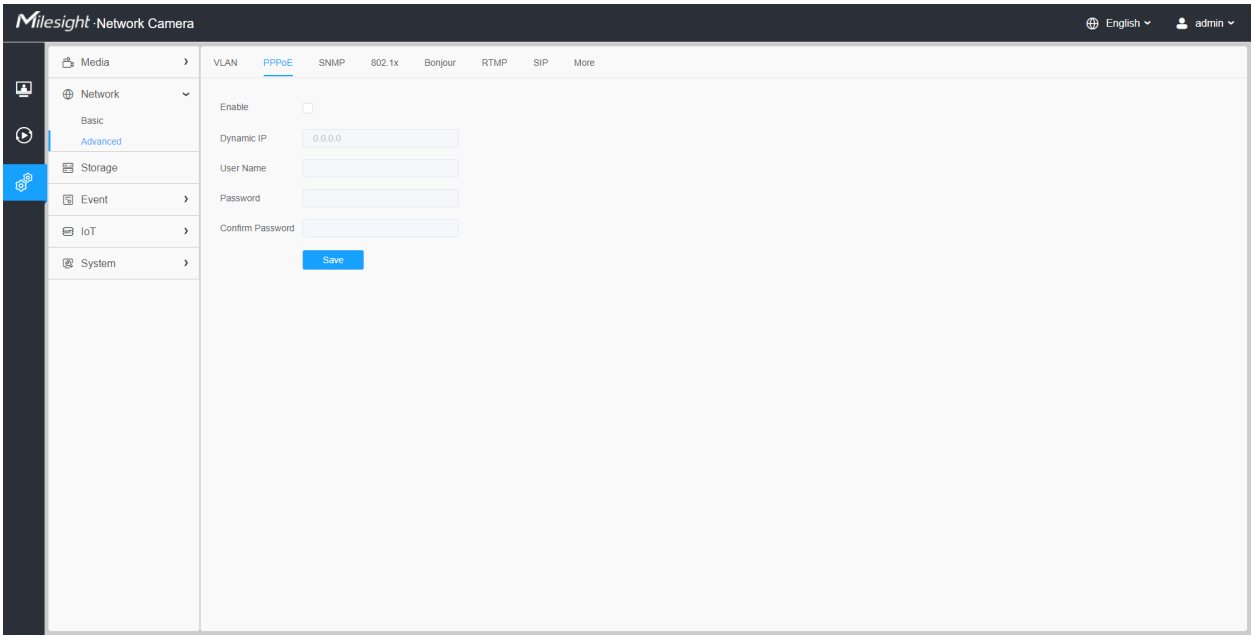
A virtual LAN (VLAN) is any broadcast domain that is partitioned and isolated in a computer network at the data link layer (OSI layer 2). LAN is an abbreviation of local area network. VLANs allow network administrators to group hosts together even if the hosts are not on the same network switch. This can greatly simplify network design and deployment, because VLAN membership can be configured through software. Without VLANs, grouping hosts according to their resource needs necessitates the labour of relocating nodes or rewiring data links.



Note: About how to set up VLAN in switches, please refers to your switches user manual.

8.2.2.2 PPPoE

This camera supports the PPPoE auto dial-up function. The camera gets a public IP address by ADSL dial-up after the camera is connected to a modem. You need to configure the PPPoE parameters of the network camera.



Note:

- The obtained IP address is dynamically assigned via PPPoE, so the IP address always changes after rebooting the camera. To solve the inconvenience of the dynamic IP, you need to get a domain name from the DDNS provider (e.g. DynDns.com).
- The user name and password should be assigned by your ISP.

8.2.2.3 SNMP

You can set the SNMP function to get camera status, parameters and alarm related information and manage the camera remotely when it is connected to the network.

Before setting the SNMP, please download the SNMP software and manage to receive the camera information via SNMP port. By setting the Trap Address, the camera can send the alarm event and exception messages to the surveillance center.

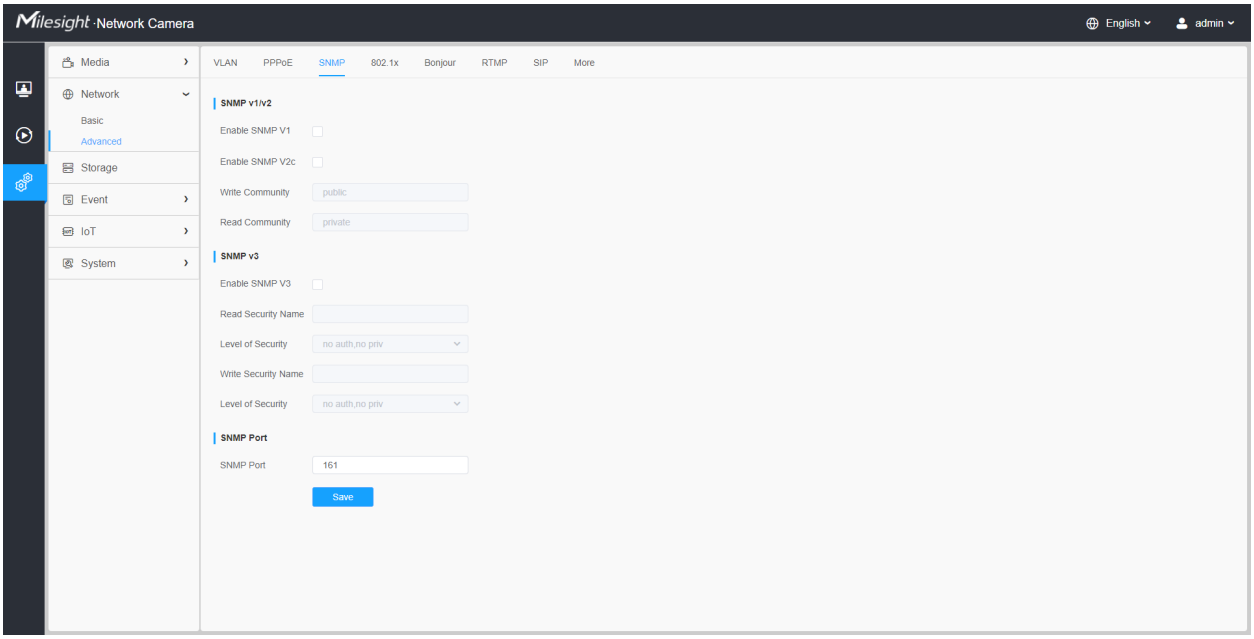


Table 34. Description of the buttons

Parameters	Function Introduction
SNMP v1/v2	The version of SNMP, please select the version of your SNMP software. **Enable SNMP v1:** Provide no security. **Enable SNMP v2:** Require password for access. **Write Community:** Input the name of Write Community. **Read Community:** Input the name of Read Community

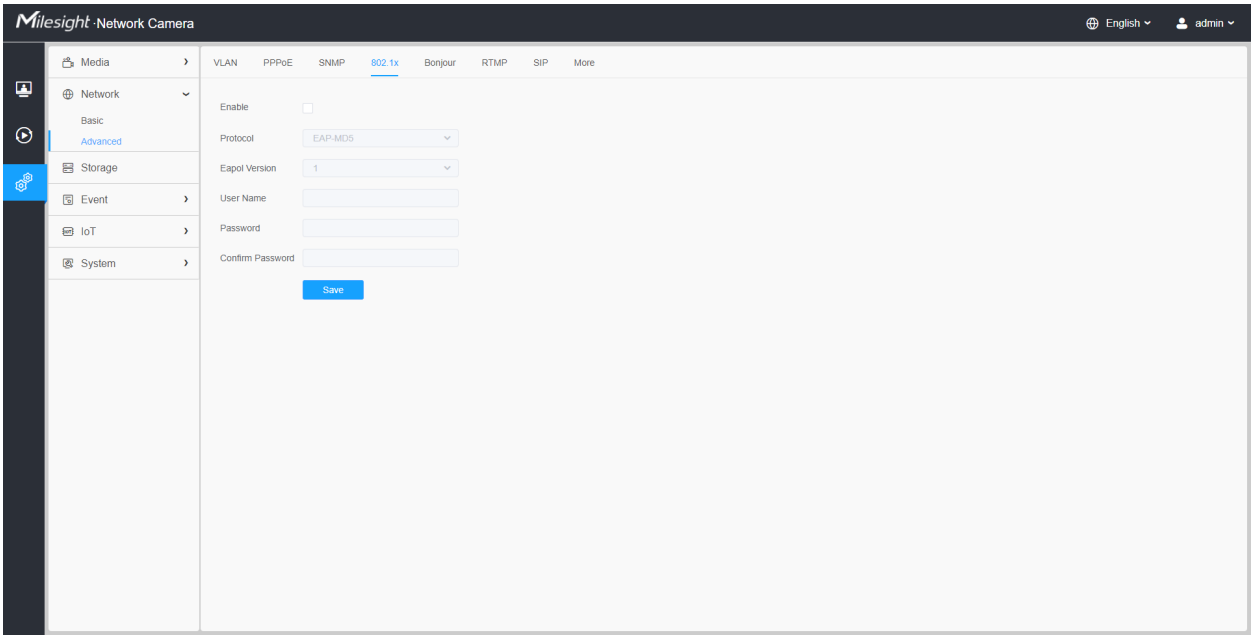
Parameters	Function Introduction
SNMP v3	**Enable SNMP v3:** Provide encryption and the HTTPS protocol must be enabled. **Read Security Name:** Input the name of Read Security Community. **Level of Security:** There are three levels available: (auth, priv), (auth, no priv) and (no auth, no priv). **Write Security Name:** Input the name of Write Security Community. **Level of Security:** There are three levels available: (auth, priv), (auth, no priv) and (no auth, no priv).
SNMP Port	The port of SNMP, the default is 161.
Save	Save the configuration.

Note:

- The settings of SNMP software should be the same as the settings you configure here;
- A reboot is required for the settings to take effect.

8.2.2.4 802.1x

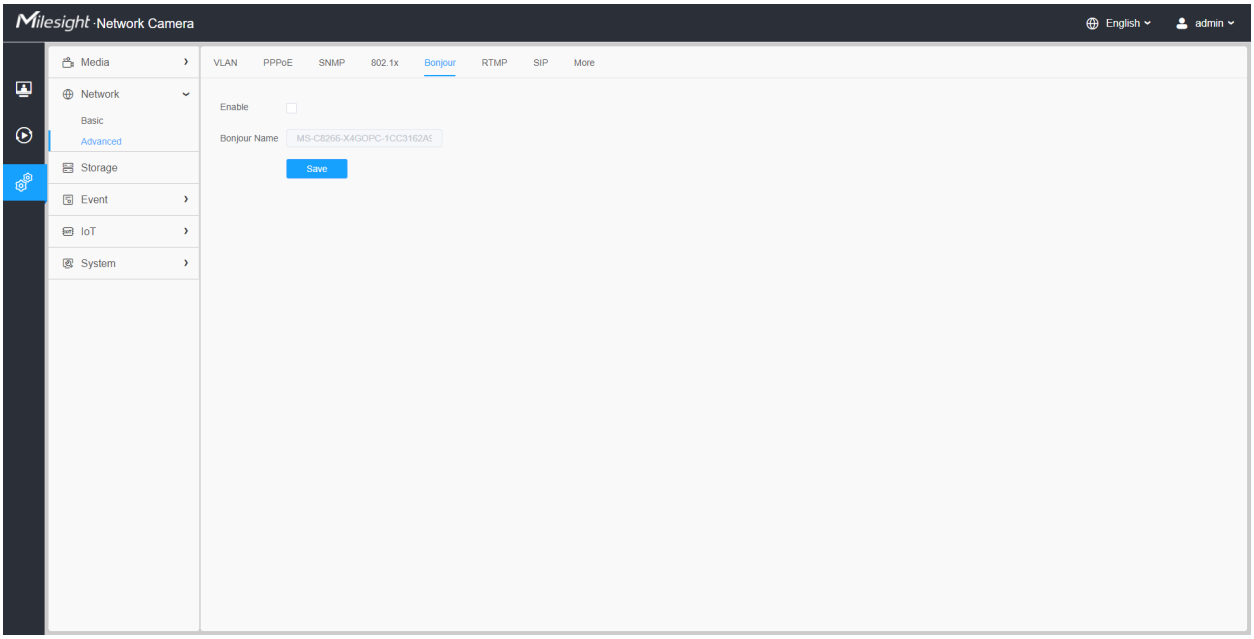
The IEEE 802.1X standard is supported by the network cameras, and when the feature is enabled, the camera data is secured and user authentication is needed when connecting the camera to the network protected by the IEEE 802.1X.



8.2.2.5 Bonjour

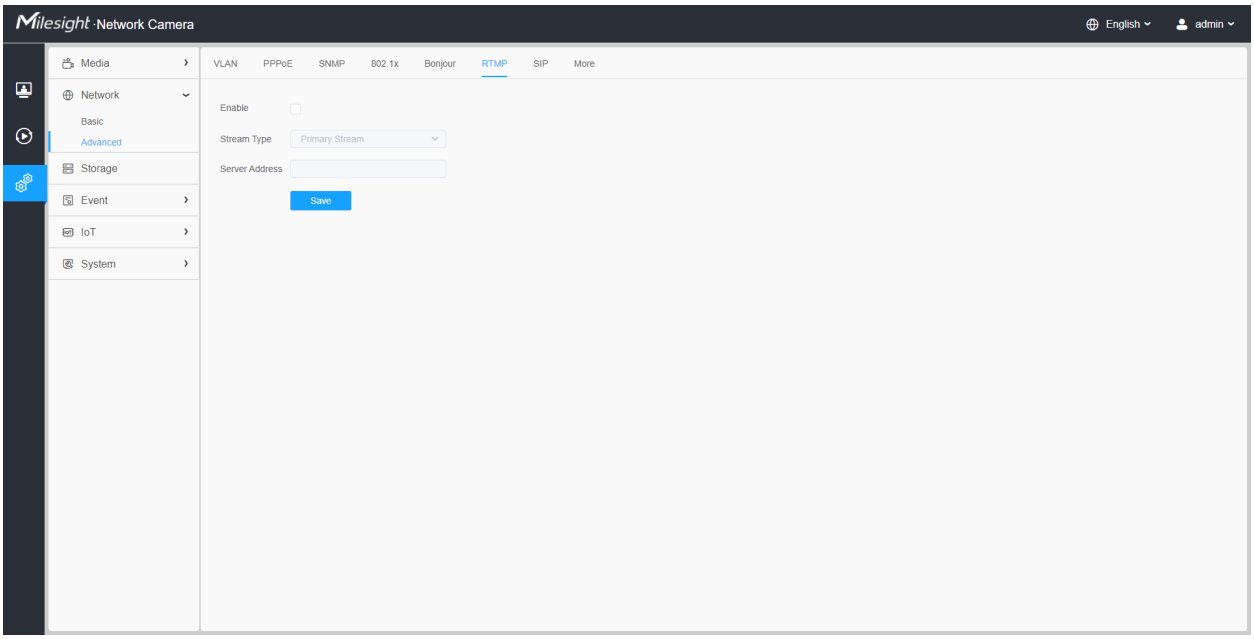
Bonjour is based on Apple's multicast DNS service. Bonjour devices can automatically broadcast their service information and listen to the service information of other devices.

If you don't know the camera information, you can use the Bonjour service on the same LAN to search for network camera devices and then to access the devices.



8.2.2.6 RTMP

Real-Time Messaging Protocol (RTMP) was initially a proprietary protocol for streaming audio, video and data over the Internet, between a Flash player and a server. RTMP is a TCP-based protocol which maintains persistent connections and allows low-latency communication. It can realize the function of live broadcast so that customers can log in to the camera wherever there is a network.



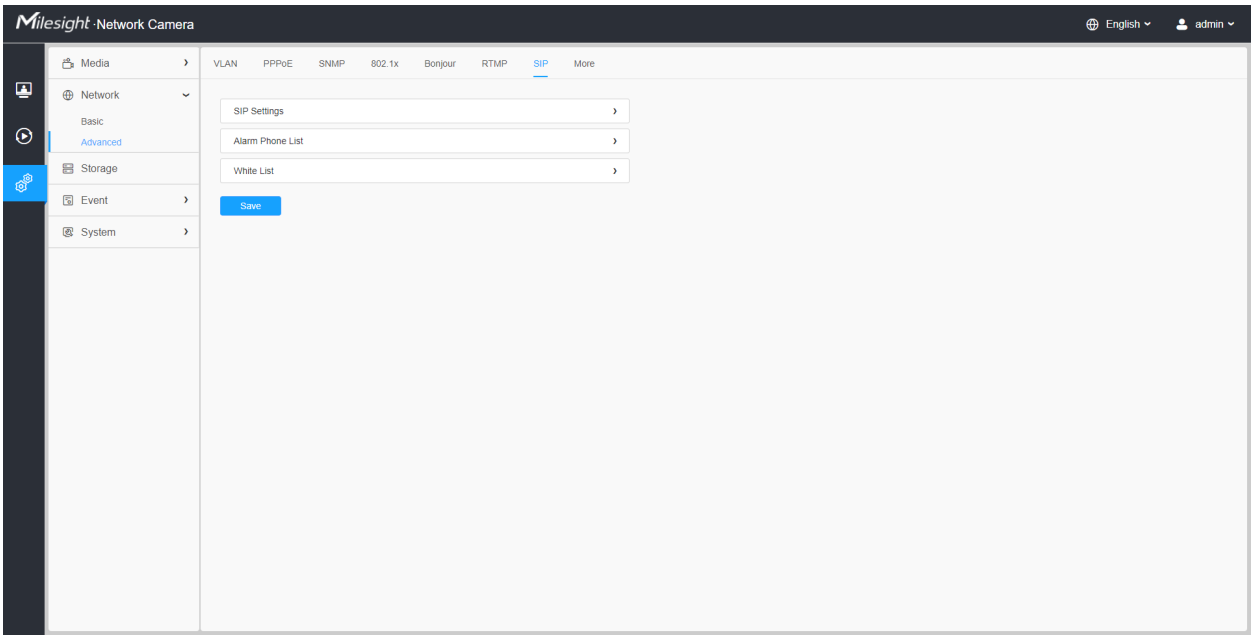
Note:

- For YouTube live broadcast, if you use a newly created account to live broadcast, you need to wait for 24hrs to activate the account for using live function.
- For RTMP, since G.711 is not available for YouTube, so you can only play video from Milesight Network Camera with H.264 video coding and AAC audio coding on YouTube.
- Server Address in Network Camera RTMP interface needs to be filled with the format: rtmp://< Server URL >/< Stream key >, remember it needs '/'to connect between < Server URL > and < Stream key >.
- For more details about how to use RTMP for live broadcast, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000643313.

8.2.2.7 SIP

The Session Initiation Protocol(SIP) is a signaling communications protocol, widely used for controlling multimedia communication sessions such as voice and video calls over Internet Protocol (IP) networks. This page allows user to configure SIP related parameters. Milesight can be configured as SIP endpoint to call out when alarm triggered; or allow permitted number to call in to check the video if the video IP phone is used.

Note: For more details about how to use SIP, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000643391.



To use this function, the settings in SIP page must be configured properly. There are two ways to get video through SIP, one is to dial the IP address directly, the other is account registration mode. the details are as follows:

Method 1: IP Direct mode

Dial on the camera's IP address directly through SIP phone, so you can see the video.

Note: SIP phone and the camera should in the same network segment.

Method2: Account registration mode

- Before using the SIP, you need to register an account for the camera from the SIP server;
- Register another user account for the SIP device from the same SIP server;
- Call the camera User ID from the SIP device, you will get the video on the SIP device.

[SIP Settings]

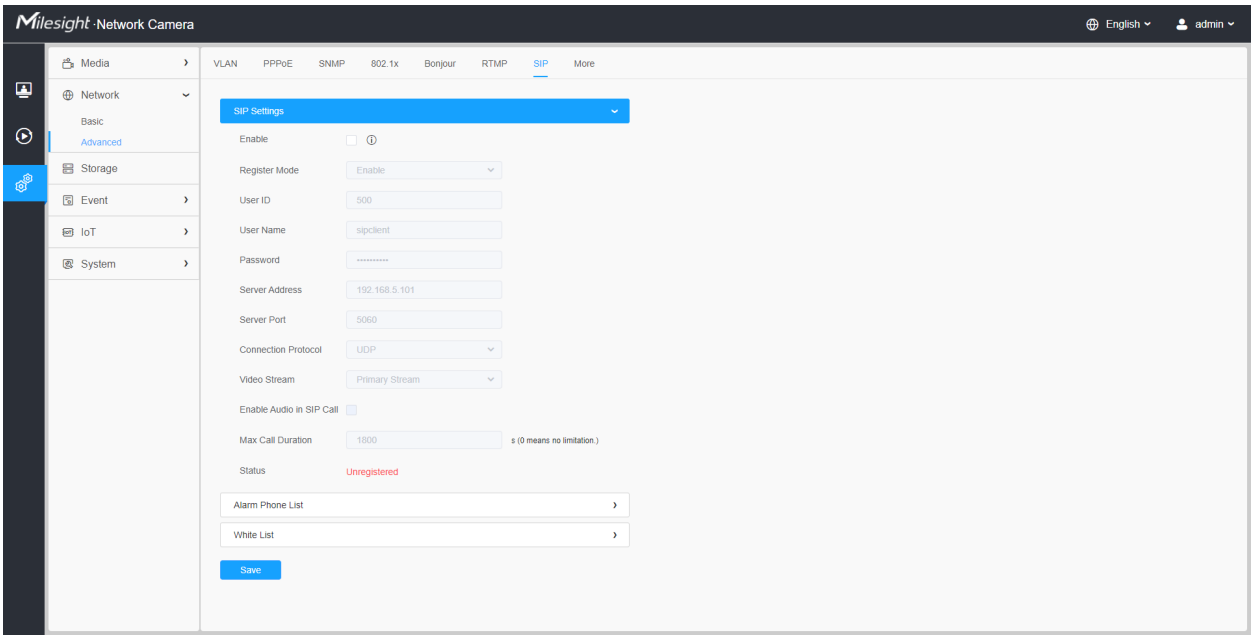


Table 35. Description of the buttons

Parameters	Function Introduction
Enable	Start or stop using SIP. **Note:** SIP supports Direct IP call.
Register Mode	Choose to use Enable mode or Disable mode. Enable mode means to use SIP with register account. Disable mode refers to use SIP without register account, just use the IP address to call.
User ID	SIP ID.
User Name	SIP account name.
Password	SIP account password.
Server Address	Server IP address.
Server Port	Server port.
Connection Protocol	UDP/TCP.
Video Stream	Choose the video stream.

Parameters	Function Introduction
Enable Audio in SIP Call	Enable/disable audio in SIP call.
Max Call Duration	The max call duration when use SIP.
Status	SIP registration status. Display “Unregistered” or “Registered” .

[Alarm Phone List]

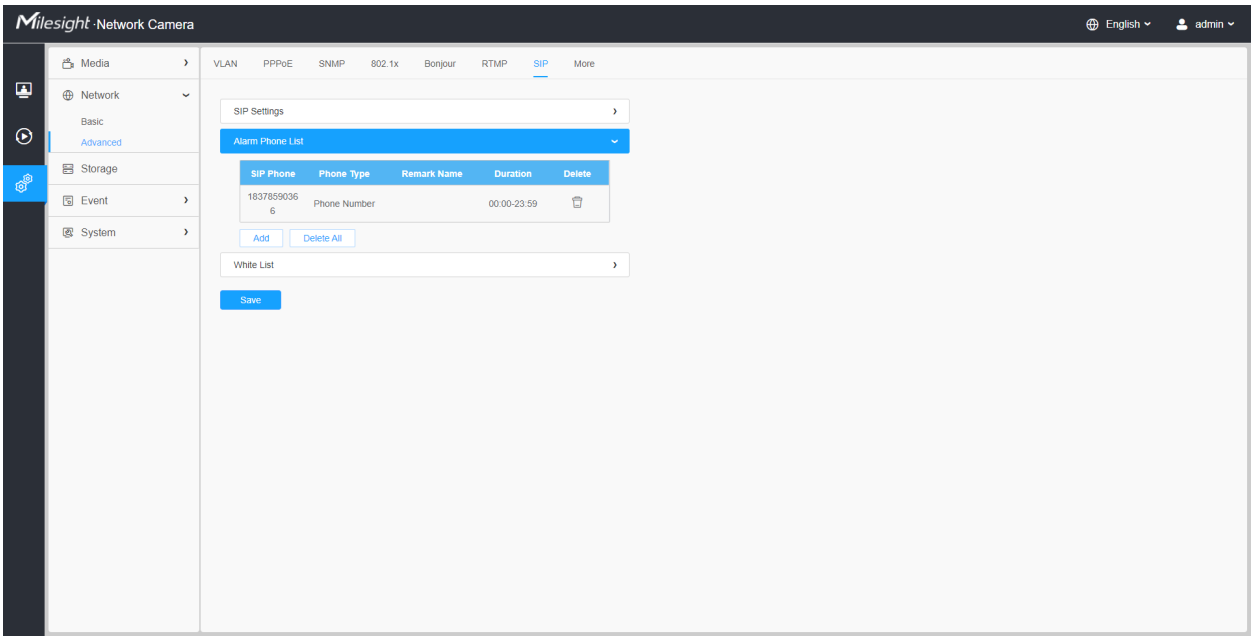


Table 36. Description of the buttons

Parameters	Function Introduction
Add	Add alarm phone to the camera. **Phone Type:** Phone Number(Call by phone number) & Direct IP Call(Check to accept peer to peer IP call). **To Phone Number/IP Address:** Call by phone number or IP address. **Remark Name:** Display name. **Duration:** The time schedule to use SIP.
	Delete the selected alarm phone.
Delete All	Delete all added alarm phone.

[White List]

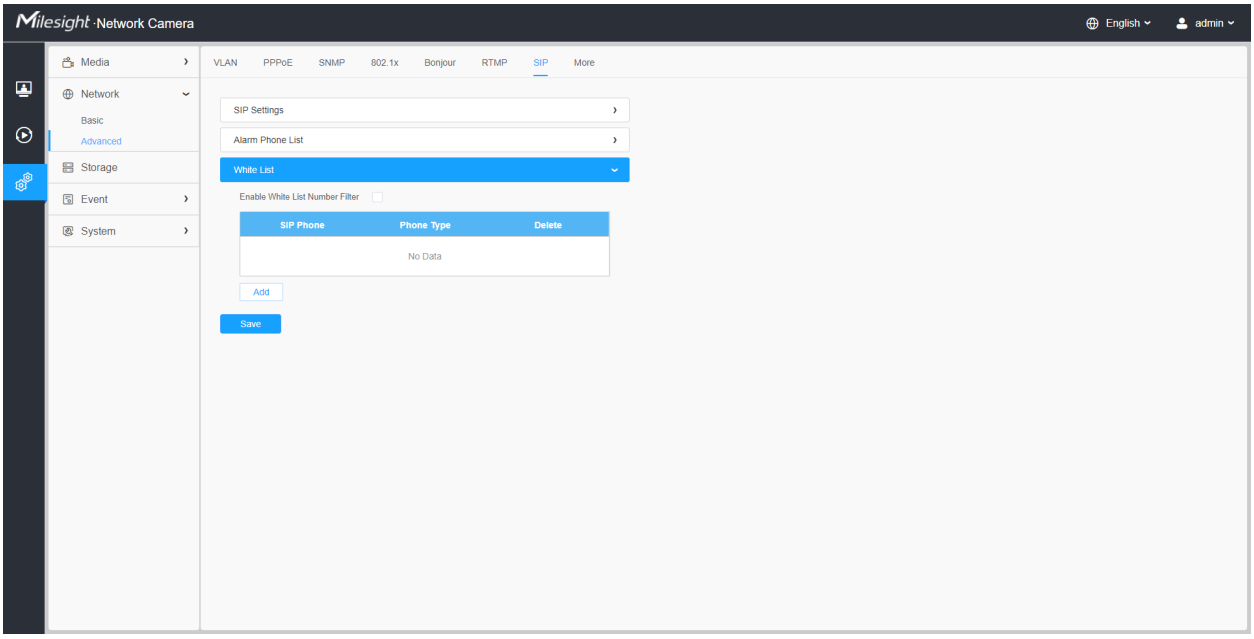


Table 37. Description of the buttons

Parameters	Function Introduction
Enable White List Number Filter	When enabled, only the designated phone number or IP address can visit
Add	**Phone Type:** Phone Number(Call by phone number) & Direct IP Call. **Phone Number/IP Address:** Including the phone number or IP address on the white list.

8.2.2.8 More

Here you can set more functions, like Push Message Settings and ONVIF Settings.

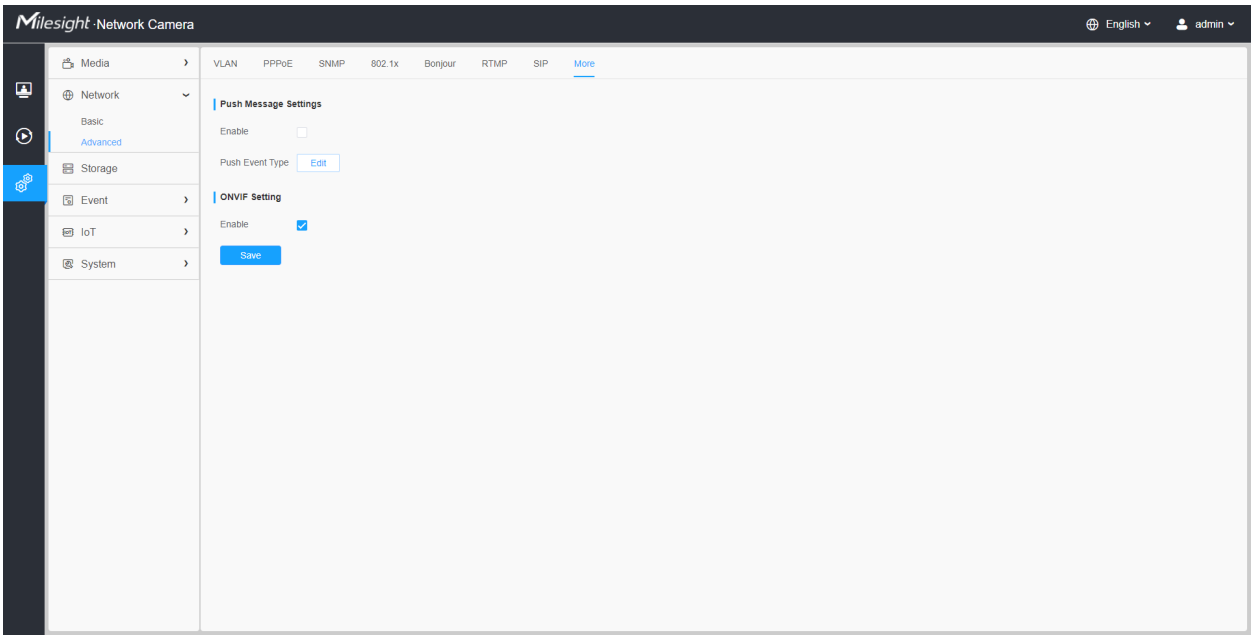
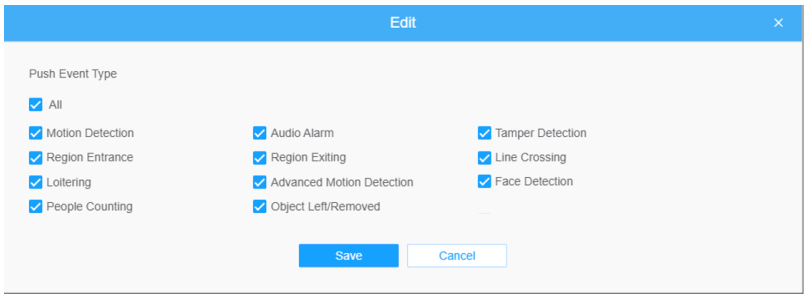


Table 38. Description of the buttons

Parameters	Function Introduction
Push Message Settings	**Enable:** Enable/disable the Push Message function **Push Event Type:** You can click Edit to choose the types of Events' message which will be pushed to M-sight Pro App as shown below: 
ONVIF Setting	Here you can choose whether to enable or disable camera ONVIF function. If camera ONVIF function is enabled, it can be searched out, added and connected by third-party software through ONVIF protocols. Generally, the default status of ONVIF function is enabled.

8.3 Storage

8.3.1 Storage Management

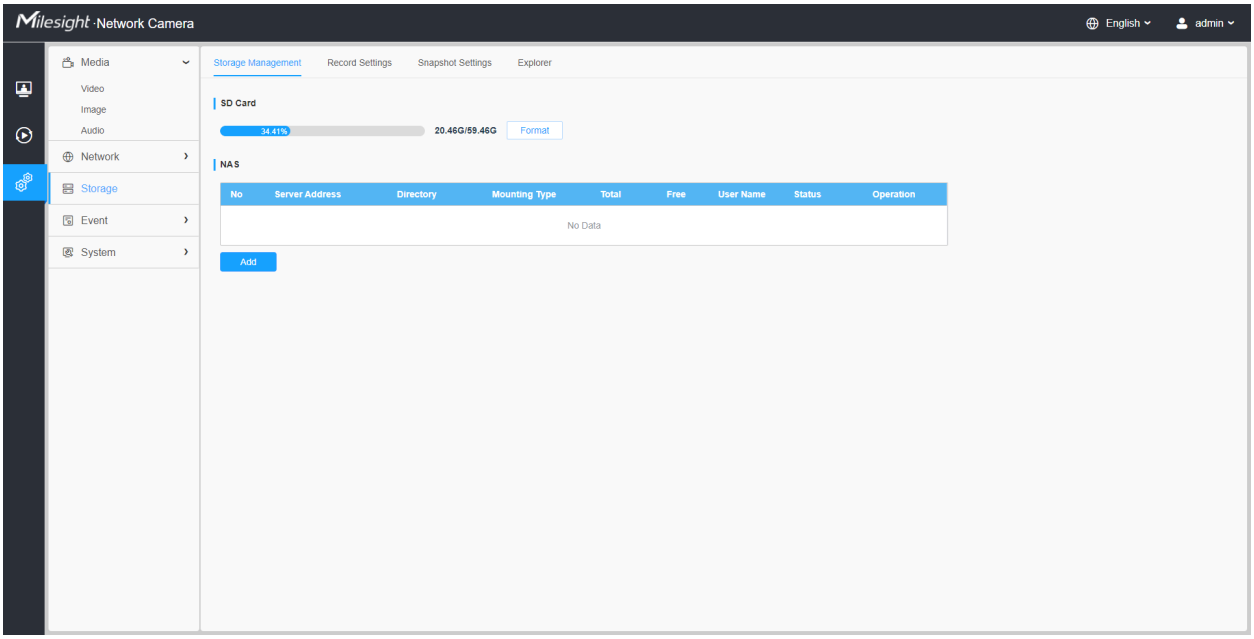
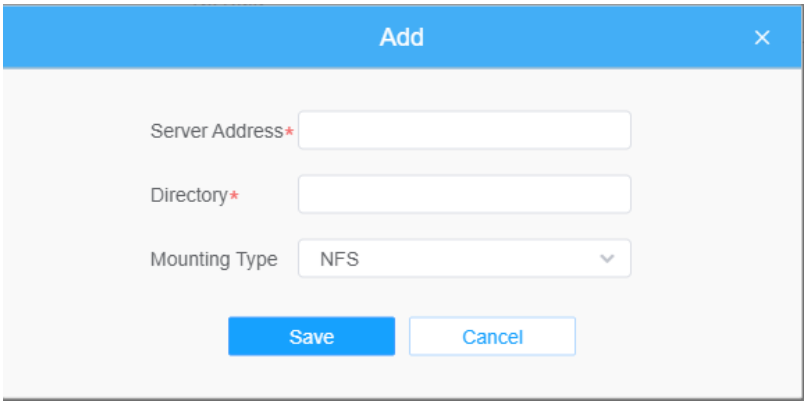


Table 39. Description of the buttons

Parameters	Function Introduction
SD Card	**Format:** Format SD card, the files in SD card will be removed. **Mount/UnMount:** Mount/Dismount SD card. **Delete:** Enable cyclic storage, when the free disk space reach at a certain value, it will automatically delete the files at certain percentage according to your settings.

Parameters	Function Introduction
Nas	The network disk should be available within the network and properly configured to store the recorded files, etc. NAS (Network-Attached Storage), connecting the storage devices to the existing network, provides data and files services.  **Server Address:** IP address of NAS server. **Directory:** Input the NAS directory, e.g. "\path". **Mounting Type:** NFS and SMB/CIFS are available. And you can set the user name and password to guarantee the security if SMB/CIFS is selected. **Note:** • Up to 5 NAS disks can be connected to the camera. • For more details about how to use NAS on Milesight Network Camera, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000797902.

8.3.2 Record Settings

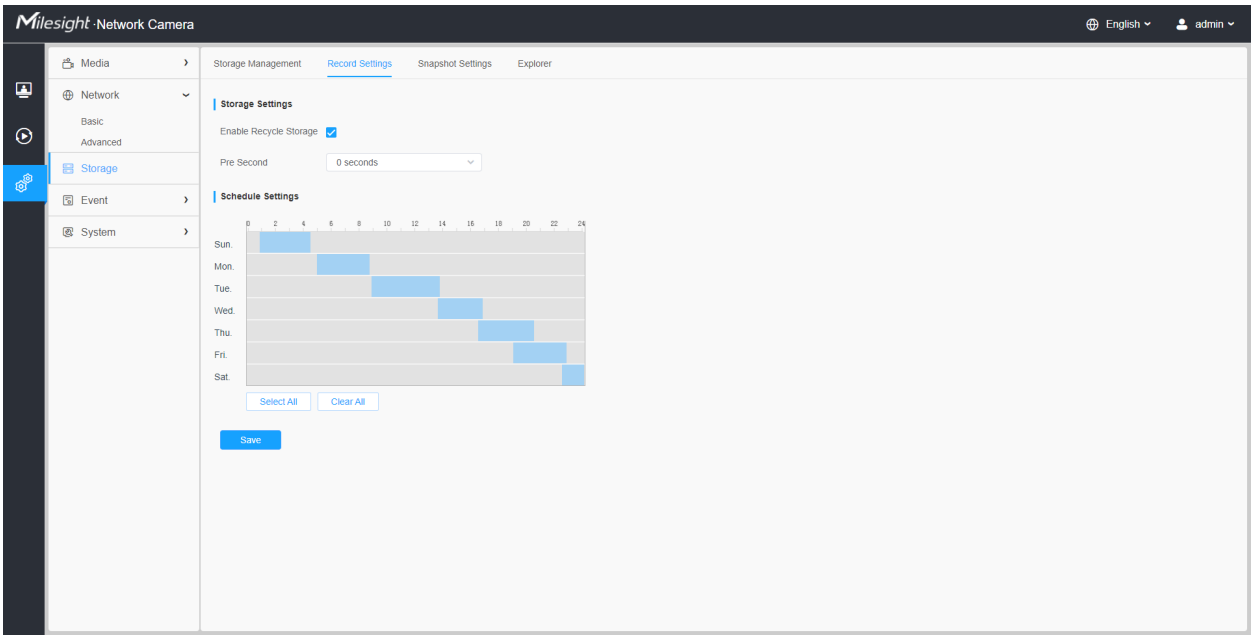
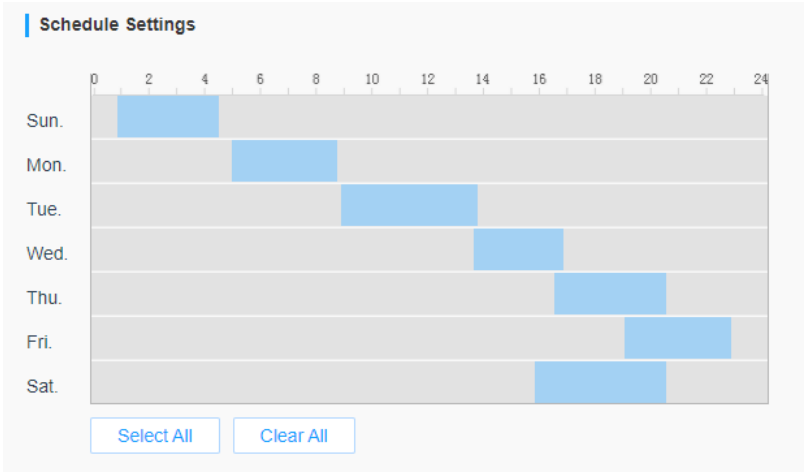
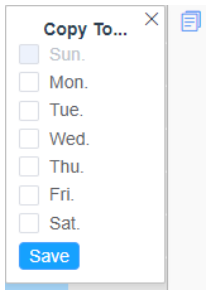
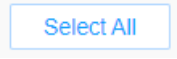
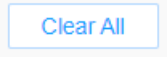
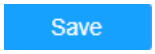


Table 40. Description of the buttons

Parameters	Function Introduction
Enable Recycle Storage	Enable/Disable Recycle Storage, if you enable this option, it will delete the files when the free disk space reaches a certain value.
Pre Second	Reserve the record time before alarm, 0~10 sec.
Schedule Settings	Edit record schedule as needed. Intuitive scheduling by drawing the time bar directly. 

Parameters	Function Introduction	
Schedule Settings		Copy the schedule area to another date.
		Select all schedule.
		Clear all schedule.
	Save the configuration.	

Note: SD Card or NAS are available.

8.3.3 Snapshot Settings

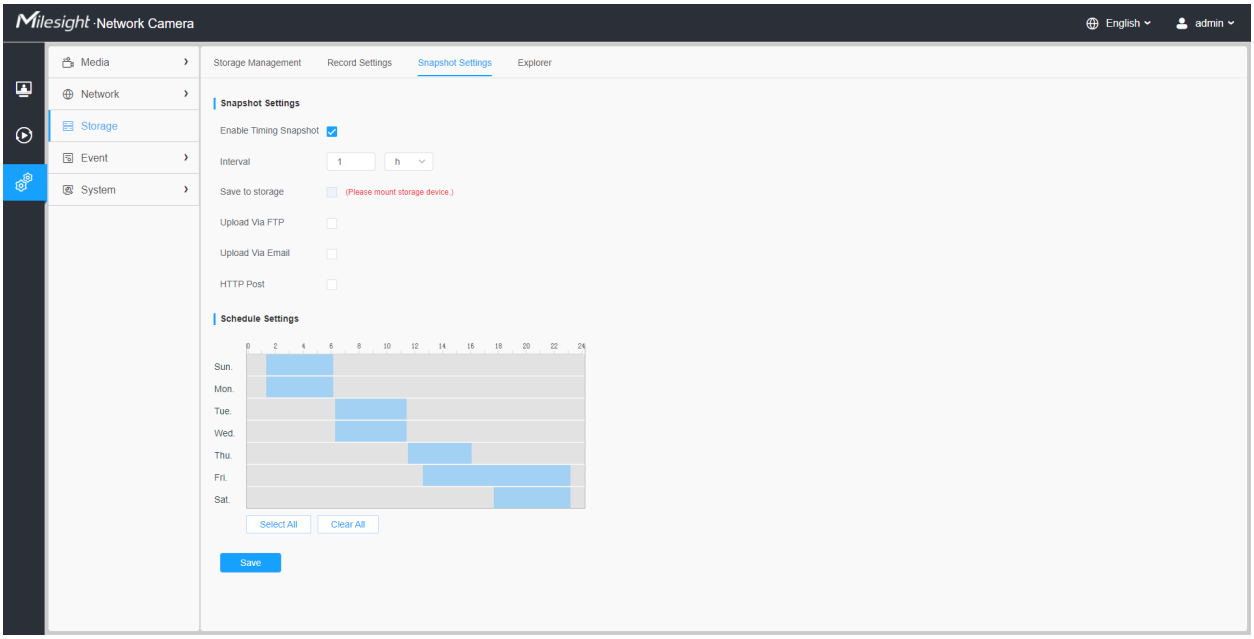


Table 41. Description of the buttons

<table>
<tr><th>Parameters</th><th colspan="2">Function Introduction</th></tr>
<tr><td>Snapshot Settings</td><td colspan="2">Enable Timing Snapshot: Check the checkbox to enable the Timing Snapshot function

Interval: Set the snapshots interval, input the number and choose the unit(millisecond, second, minute, hour, day).

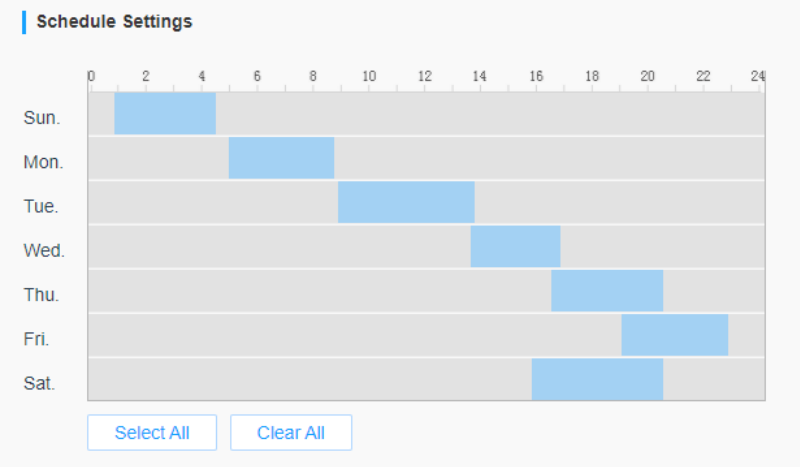
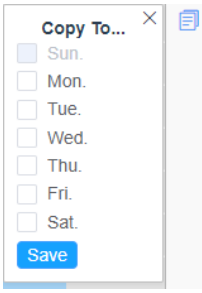
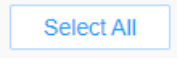
Save Into Storage: Save the snapshots into SD card or NAS, and choose the file name to add time suffix or overwrite the base file name.

Save Into NAS: Save the snapshots into NAS, and choose the file name to add time suffix or overwrite the base file name.

Upload Via FTP: Upload the snapshots via FTP.

Upload Via Email: Upload the snapshots via Email.

Note: If you choose to add time suffix, every snapshot picture will be saved, but if you choose to overwrite the base file name, only one latest picture will be saved. When you choose add overwrite the base file name to SD Card or NAS, it will create a file named “Snapshot” to place the snapshot.

HTTP Post: Upload the snapshots via HTTP Post. Support uploading the snapshots to specified HTTP URL.</td></tr>
<tr><td>Schedule Settings</td><td colspan="2">Edit record schedule as needed. Intuitive scheduling by drawing the time bar directly.
 
</td></tr>
<tr><td rowspan="2">Schedule Settings</td><td> 
</td><td>Copy the schedule area to another date.</td></tr>
<tr><td> 
</td><td>Select all schedule.</td></tr>
</table>

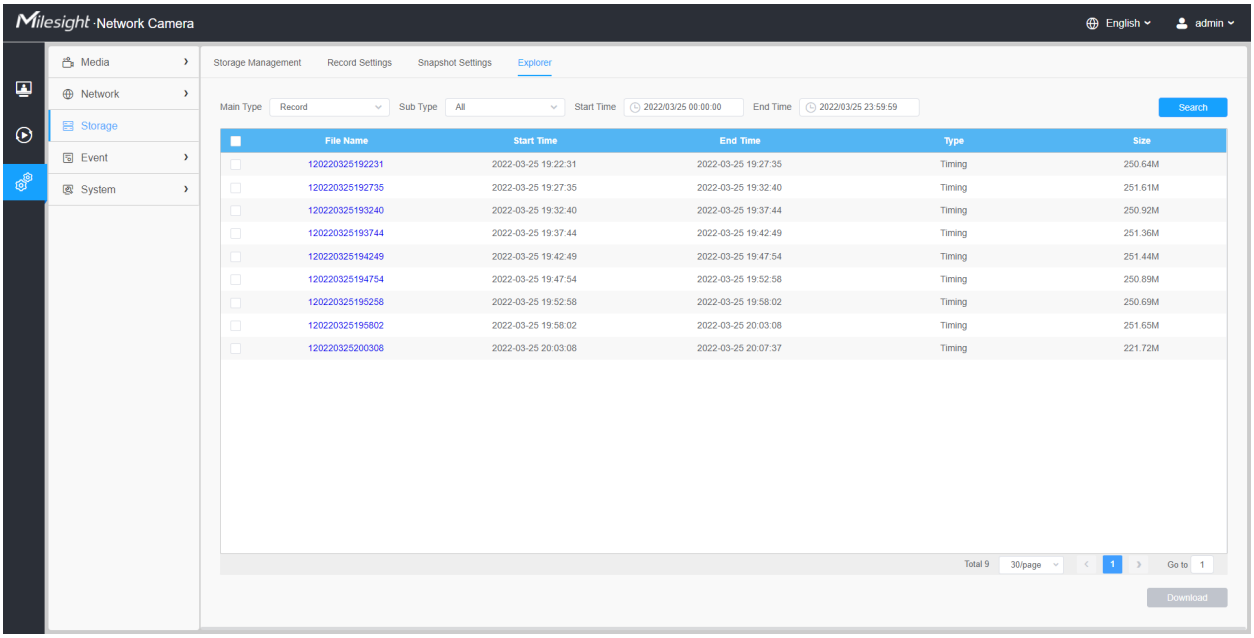
Parameters	Function Introduction	
	Clear All	Clear all schedule.
Save	Save the configuration.	

8.3.4 Explorer

Files will be seen on this page when they are configured to save into SD card or NAS. You can set time schedule every day for recording videos and save video files to your desired location.

Note: Files are visible once SD card is inserted. Don't insert or pull out SD card when power on

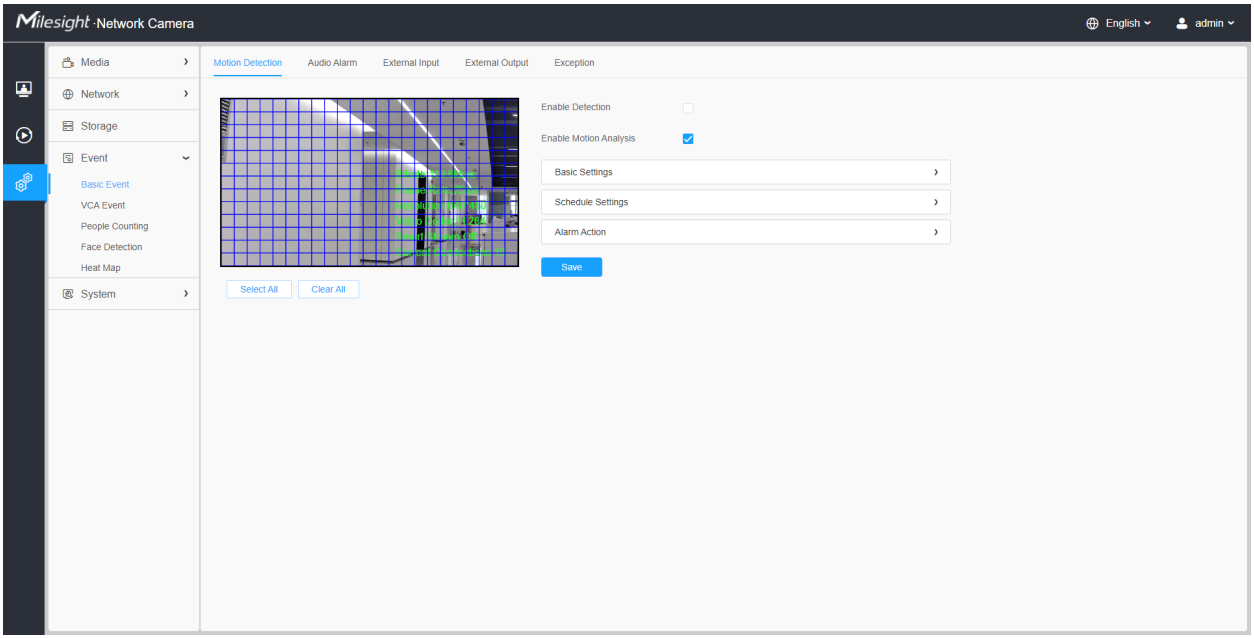
Video files are arranged by date. Set file type and start/end time to search out files. Each day files will be displayed under the corresponding date, from here you can copy and delete files etc. You can visit the files in SD card by ftp, for example, ftp://username:password@192.168.5.190(user name and password are the same as the camera account and the IP followed is the IP of your device.).



8.4 Event

8.4.1 Basic Event

8.4.1.1 Motion Detection



Note: For more details about how to set motion detection, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000643423.

Settings steps are shown as follows:

Step1: Check the checkbox to enable the motion detection.

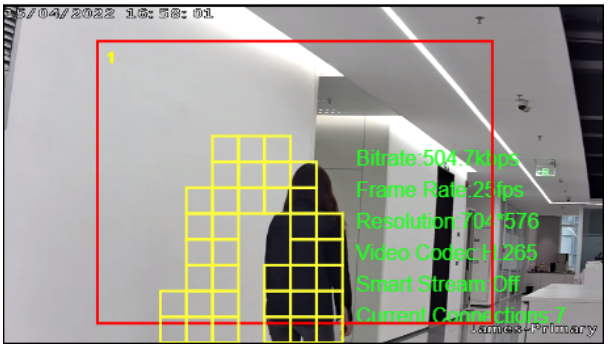
Step2: Check the check box to enable the motion analysis.

Step3: Select the detection mode;

Step4: Set motion region;

Table 42. Description of the buttons

Parameters	Function Introduction
Enable Detection	Check the checkbox to enable Motion Detection function.

Parameters	Function Introduction
Enable Motion Analysis	When Motion Analysis is enabled, the moving region will turn yellow so that the user can know exactly where the motion occurred. **Note:** Only support when HTTP is selected in Live View. 
Select All	Click the button, the motion in the area will be detected.
Clear All	Click the button, the area drawn before will be removed.
Save	Save the configuration.

[Basic Settings]

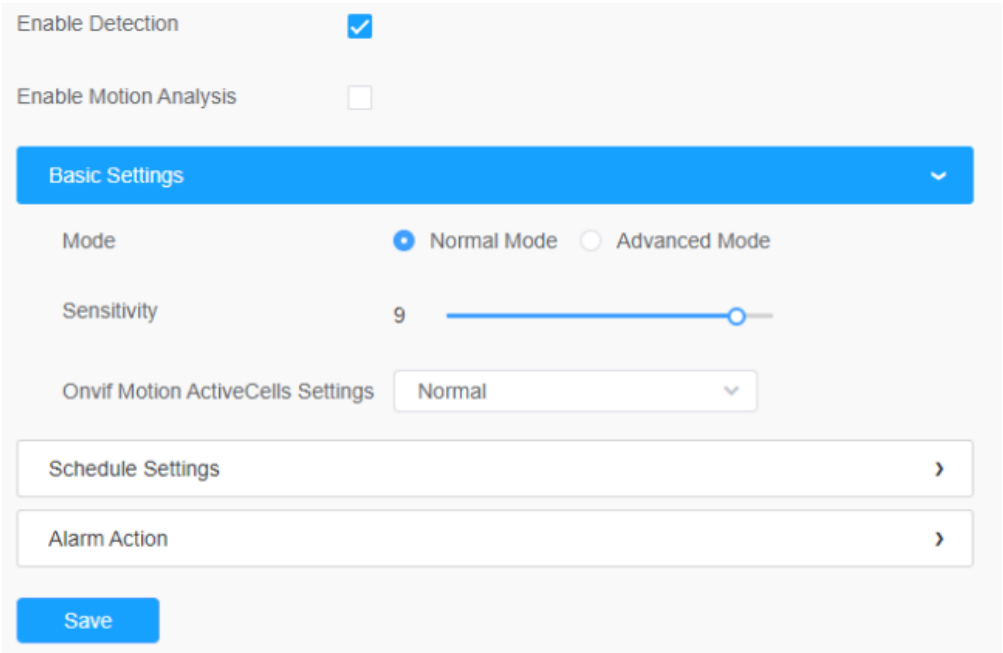


Table 43. Description of the buttons

Parameters	Function Introduction
Detection Mode	Normal Mode and Advanced Mode are available for the option. When Advanced Mode is selected, users can configure up to 4 detection regions and sensitivity for each detection region.
Sensitivity	Sensitivity level, 1~10
Onvif Motion ActiveCells Settings	Normal and Compatible are available for the option. If the setting of motion region of the third-party software is different from ours, please set this option to Compatible

[Schedule Settings]

Step5: Set motion detection schedule;

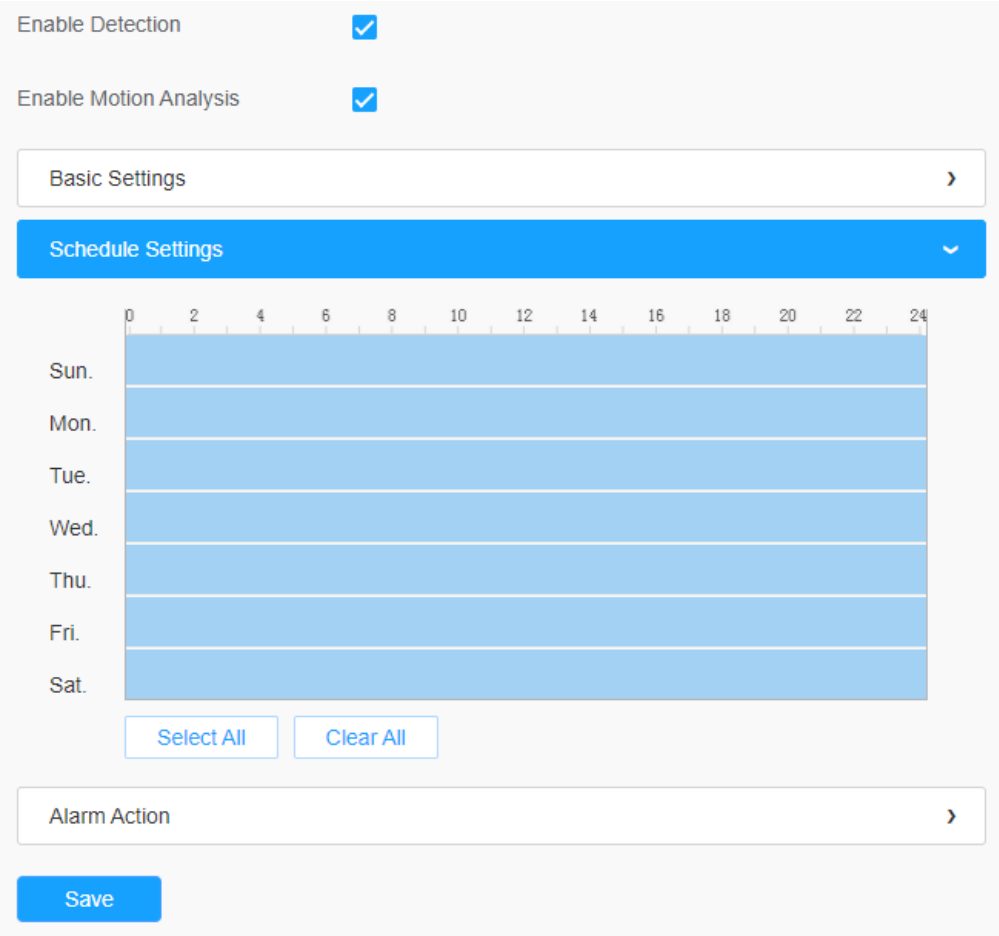
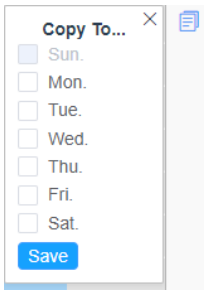
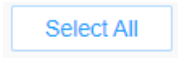
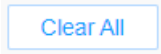


Table 44. Description of the buttons

Parameters	Function Introduction
	Copy the schedule area to another date.
	Select all schedule.
	Clear all schedule.

[Alarm Action]

Step6: Set alarm action;

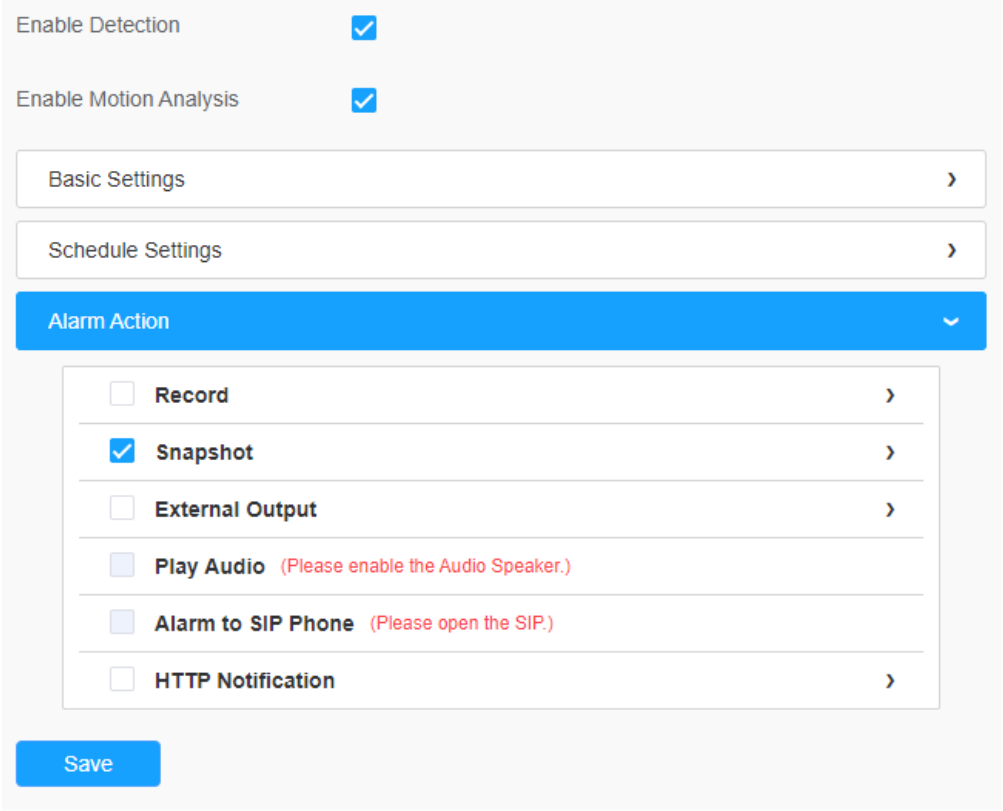


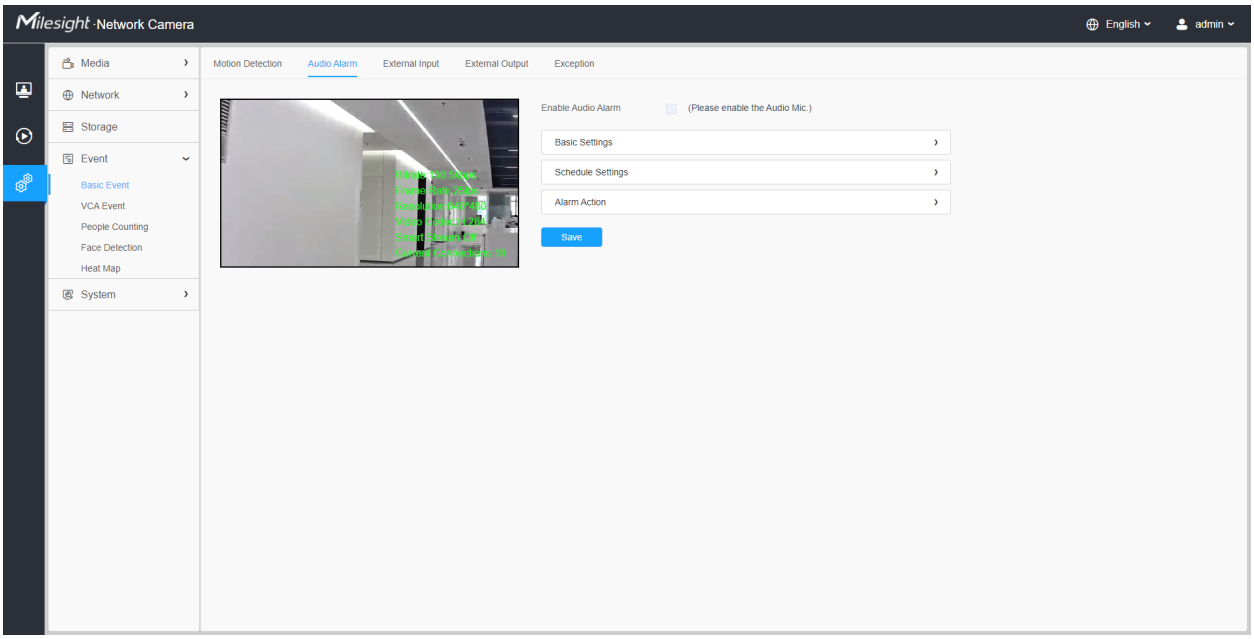
Table 45. Description of the buttons

Parameters	Function Introduction
Record	**Duration:** Selected the duration time of alarm. 5s/10s/15s/20s/25s/30s are available. **Linkage:** Save alarm recording files into SD Card or NAS or Upload the recording files via FTP.
Snapshot	**Number:** The number of snapshot, 1~5 are available. **Interval:** This cannot be edited unless you choose more than 1 to Snapshot. **Linkage:** Save alarm recording files into SD Card or NAS, Upload the recording files via FTP and send alarm email.
External Output	If the camera equips with External Output, you can enable the action after configuring the trigger duration.
Play Audio	Auto/10 seconds/30 seconds/1 minute/5 minutes/10 minutes are available. **Note:** Please enable the Audio Speaker.
Alarm to SIP Phone	Support to call the SIP phone after enable the SIP function.
HTTP Notification	Support to pop up the alarm news to specified HTTP URL. **Note:** • Three HTTP notifications at most can be added to the same event. • HTTP Notification supports Basic & Digest authentication
White LED	When the alarm triggered, White LED will turn on to warn the detected objects. **Note:** Only for PTZ Bullet.
PTZ Motion	When the motion alarm triggered, PTZ Motion allows the camera move the lens to the motion triggered position and zoom in. **Note:** Only for PTZ series.
Call Preset/ Call Patrol/Call Pattern **(Only for External Input)**	When the motion alarm triggered, the specified preset/patrol/pattern can be called. **Note:** Only for PTZ series.

8.4.1.2 Audio Alarm

Check the check box to enable the Audio Alarm function.

Note: Enable the Audio Mic before using Audio Alarm function.



[Basic Settings]

Table 46. Description of the buttons

Parameters	Function Introduction
Alarm Threshold	Audio Alarm will be triggered when the thresholds reaches to a certain value from 0 to 100.
Audio Sample Value	The current value of the audio sample.

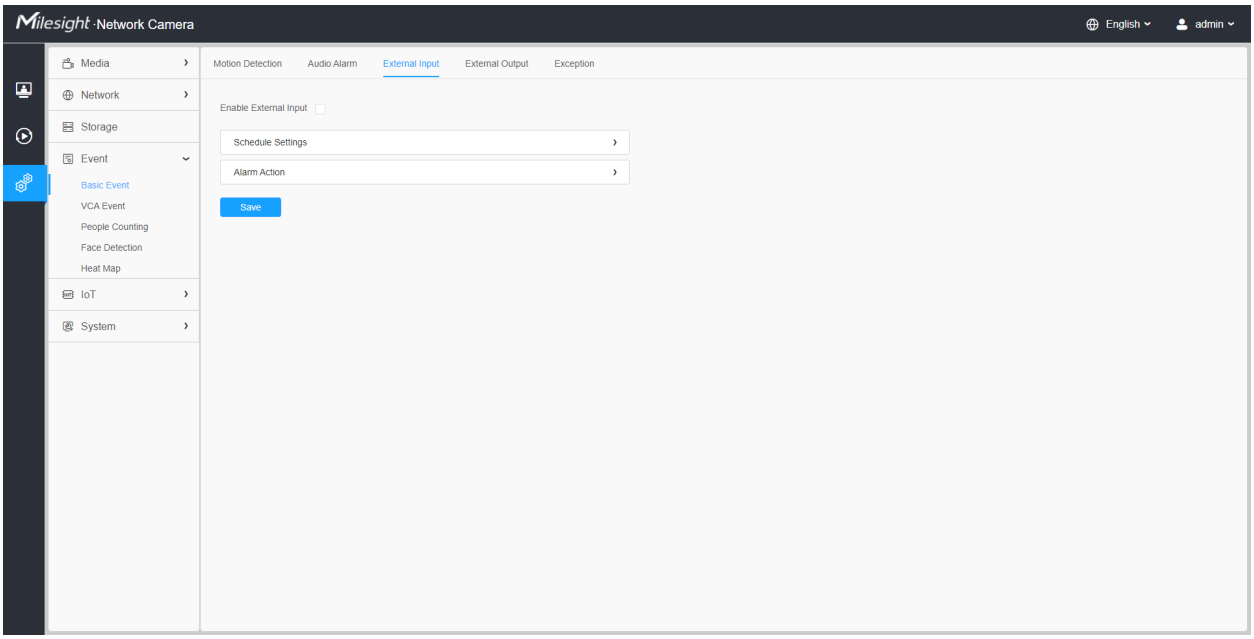
[Schedule Settings]

Refer to the table Table 3 *(page 105)* for the meanings of the items, here will not repeat again.

[Alarm Action]

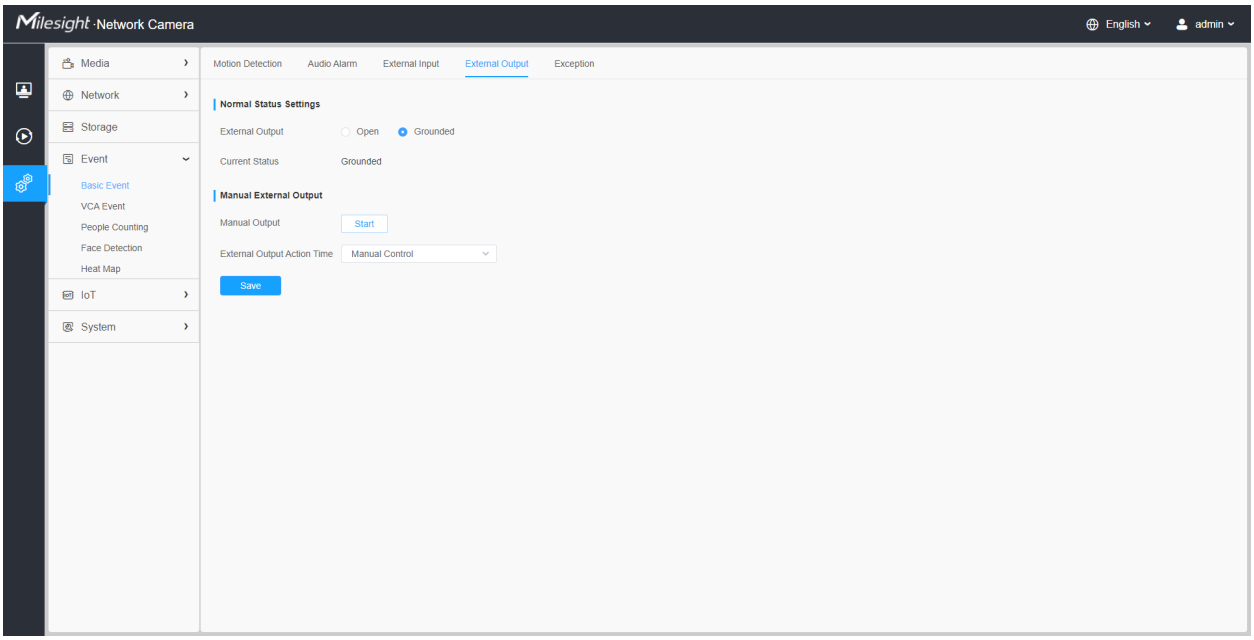
Refer to the table Table 4 *(page 106)* for the meanings of the items, here will not repeat again.

8.4.1.3 External Input



Refer to the table Table 3 *(page 105)* for the meanings of the items, here will not repeat again.

8.4.1.4 External Output



[Normal Status Settings]

Please set the **Normal Status** firstly, when the **Current Status** is different with **Normal Status**, it will lead to the alarm.

[Manual External Output]

You can set the manual external output.

Table 47. Description of the buttons

Parameters	Function Introduction
Manual Output	Click to Start/Stop manual external output.
External Output Action Time	Manual Control/Customize/10 s/1 min./5 min./10 min. are available.

8.4.1.5 Exception

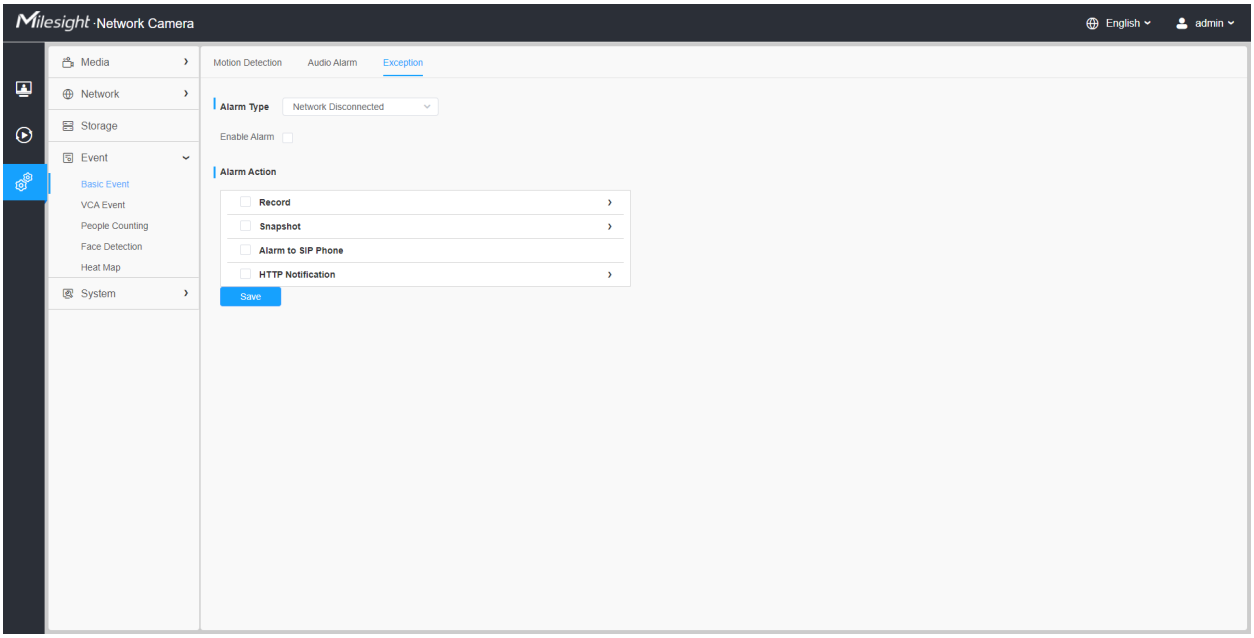


Table 48. Description of the buttons

Parameters	Function Introduction
Alarm Type	**Network Disconnected**, **IP Address Conflicted, Record Failed, SD Card Full, SD Card Uninitialized, SD Card Error** and **No SD Card** are available Check the checkbox to enable the alarm type you selected
Alarm Action	Refer to the table Table 3 *(page 105)* for the meanings of the items, here will not repeat again.

8.4.2 VCA Event

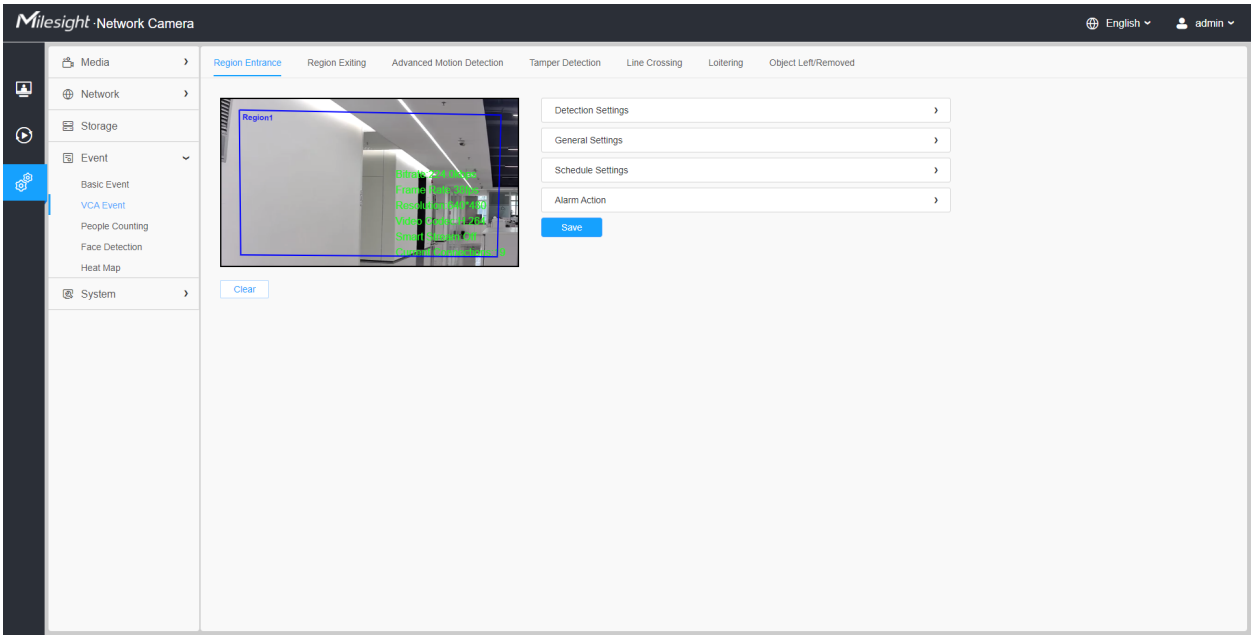
Smart Event uses VCA (Video Content Analysis) technology, which provides advanced, accurate smart video analysis for Milesight network cameras. Powered by AI chip,the new generation video analytics is capable of recognizing vast attributes of human, vehicle, and object pattern recognition models. As vehicle and human related events are very important in security monitoring, the filtering is supported to better optimize the efficiency.

Note:

- For more details about how to use set VCA solution, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000643371.
- For more details about how to configure the VCA function, please refer to https://milesight.freshdesk.com/a/solutions/articles/new?translate=false.

8.4.2.1 Region Entrance

Region entrance helps to protect a special area from potential threat of suspicious person's or object's entrance. An alarm will be triggered when objects enter the selected regions by enabling region entrance.



Settings steps are shown as follows:

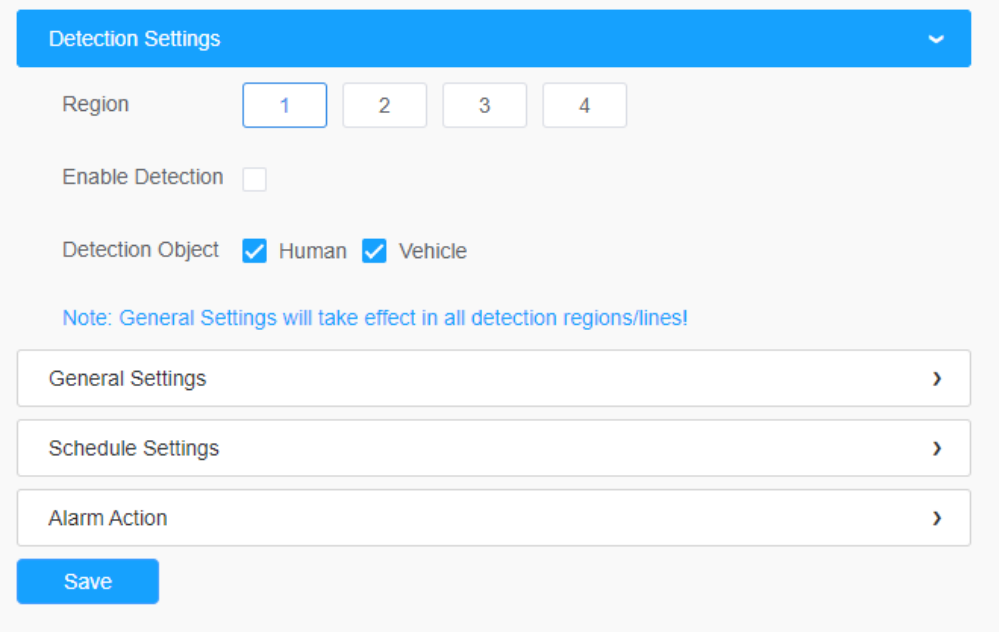
[Detection Settings]

Note: General Settings will take effect in all detection regions/lines!

Step1: Selected detection region and enable region entrance detection;

Note: If you choose **Normal Mode**, it supports configuring the detection region for the current area. If you choose **Advanced Mode**(Only for PTZ series), it supports configuring the detection region for different PTZ presets (Only support Preset 1~4 so far). And set object size limits.

Step2: Choose detection object. Check Human or Vehicle attribute, and the camera will alarm once detecting people or vehicle and triggering related events;



[General Settings]

Step3: Set detecting sensitivity and object size limits;

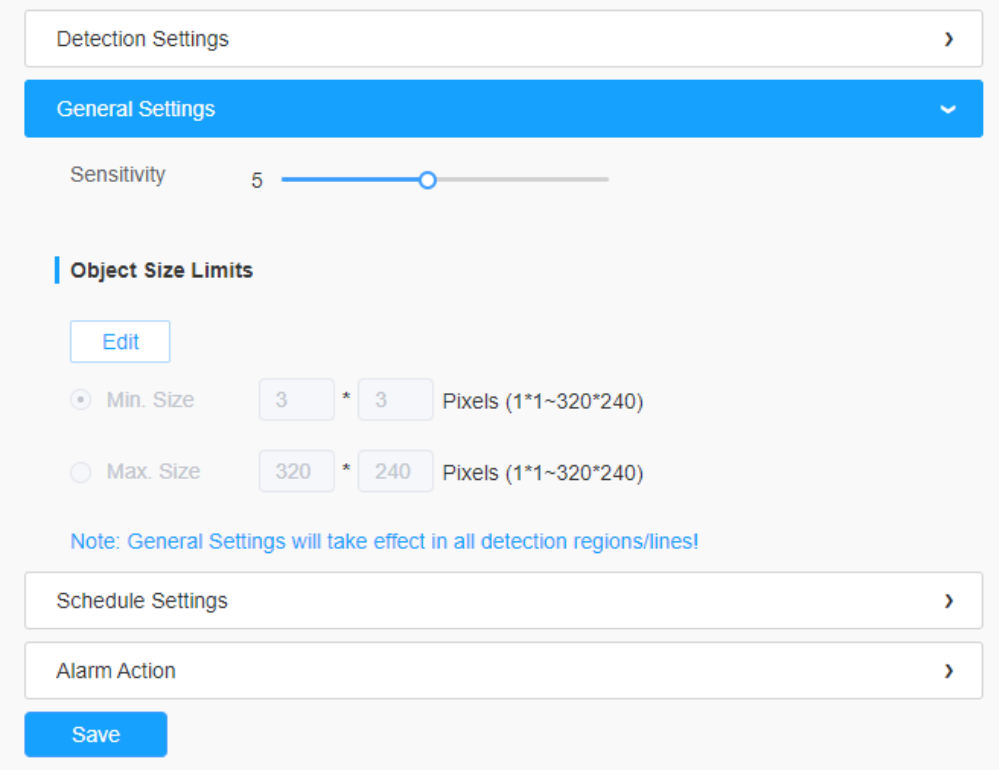


Table 49. Description of the buttons

Parameters	Function Introduction
Sensitivity	Level 1~10 are available, the default level is 5. The higher the sensitivity, the easier it is for moving objects to be recorded in the results.
Min. Size	Draw the screen or input pixel number to set the minimum size of the detected object. When the object is smaller than this size, it will not be detected. The default minimum size is 3*3.
Max. Size	Draw the screen or input pixel number to set the maximum size of the detected object. When the object is larger than this size, it will not be detected. The default maximum size is 320*240.

[Schedule Settings]

Step4: Set detection schedule;

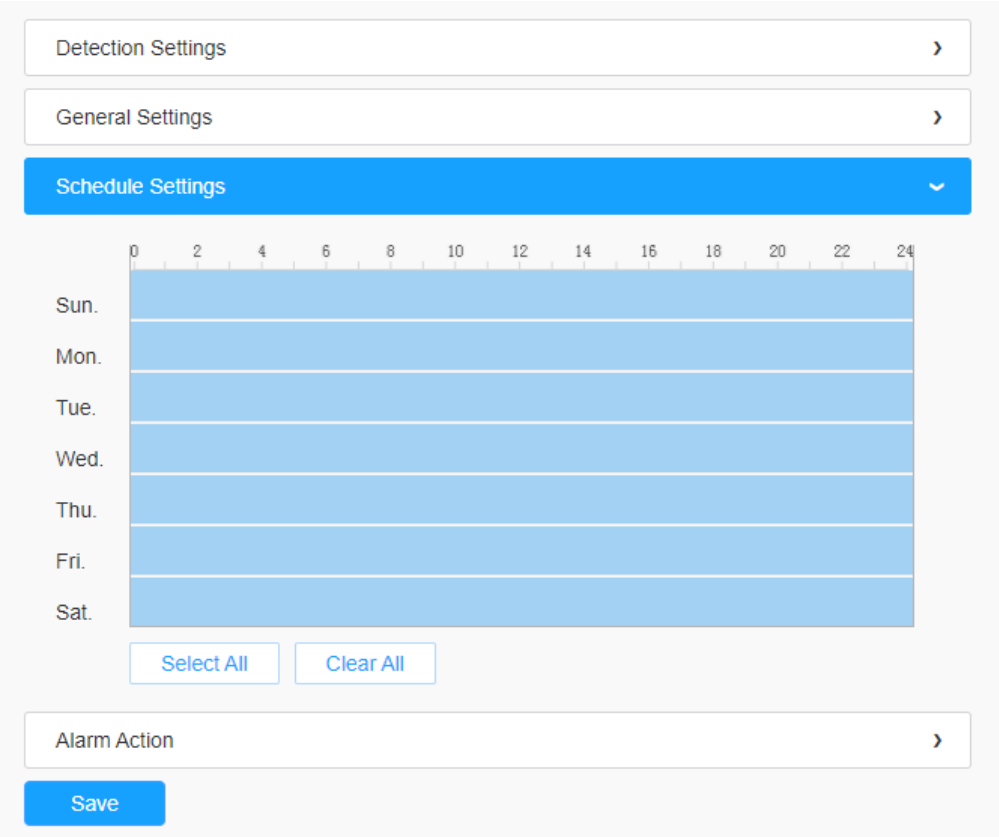
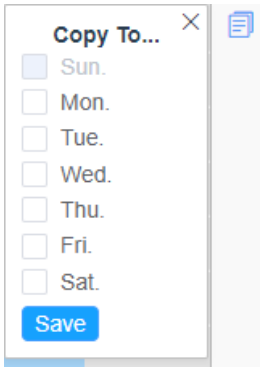
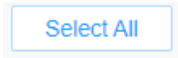
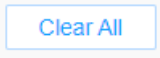


Table 50. Description of the buttons

Parameters	Function Introduction
	Copy the schedule area to another date.
	Select all schedule.
	Clear all schedule.

[Alarm Action]

Step5: Set alarm action;

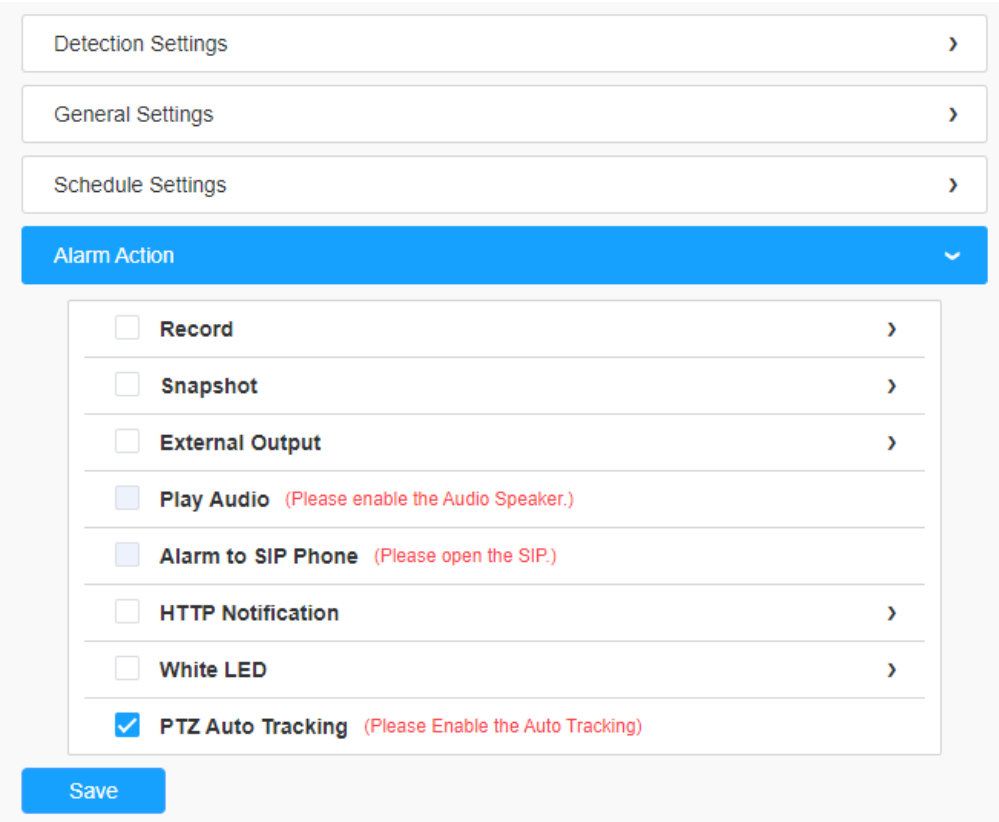


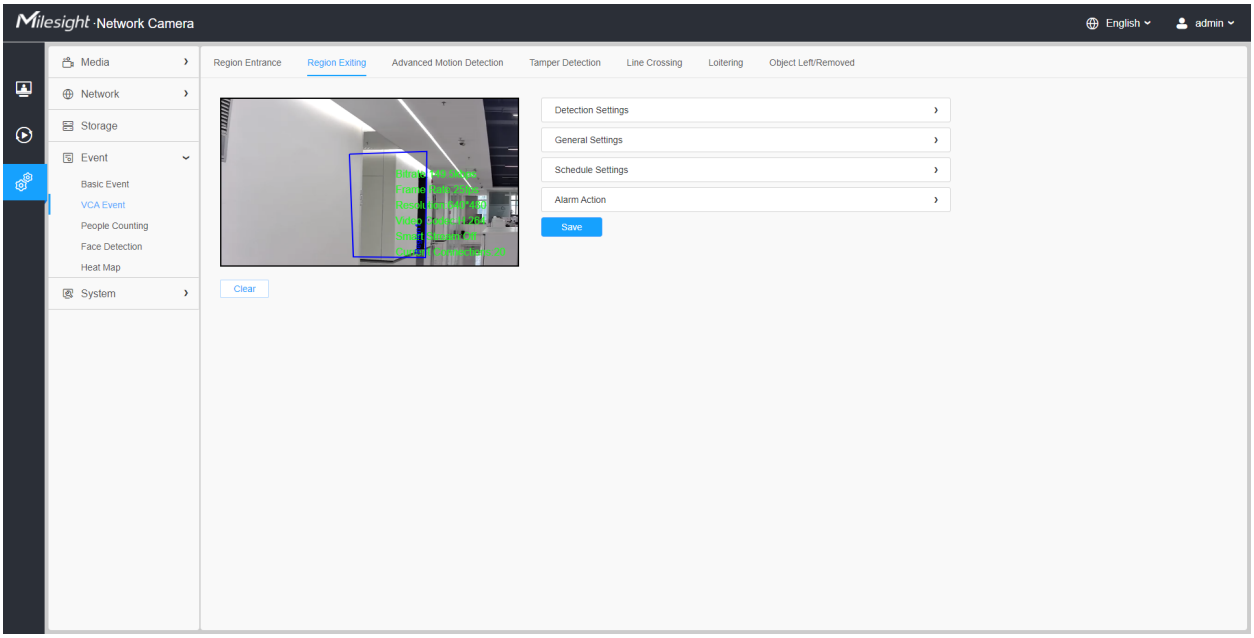
Table 51. Description of the buttons

Parameters	Function Introduction
Record	**Duration:** Selected the duration time of alarm. 5s/10s/15s/20s/25s/30s are available. **Linkage:** Save alarm recording files into SD Card or NAS or Upload the recording files via FTP.
Snapshot	**Number:** The number of snapshot, 1~5 are available. **Interval:** This cannot be edited unless you choose more than 1 to Snapshot. **Linkage:** Save alarm recording files into SD Card or NAS, Upload the recording files via FTP and send alarm email.
External Output	If the camera equips with External Output, you can enable the action after configuring the trigger duration.
Play Audio	Auto/10 seconds/30 seconds/1 minute/5 minutes/10 minutes are available. **Note:** Please enable the Audio Speaker.

Parameters	Function Introduction
Alarm to SIP Phone	Support to call the SIP phone after enabling the SIP function. **Note:** Please open the SIP.
HTTP Notification	Support to pop up the alarm news to specified HTTP URL.
White LED	When the alarm triggered, White LED will turn on to warning the detected objects. **Note:** Only for PTZ Bullet.
PTZ Motion **(Only for Advanced Motion Detection)**	When the motion alarm triggered, PTZ Motion allows the camera to move the lens to the motion triggered position and zoom in. **Note:** Only for PTZ series.
PTZ Auto Tracking	Camera will automatically track objects and trigger an alarm if objects enter the selected regions. **Note:** • Only for PTZ series. • Please enable Auto Tracking on the PTZ interface first. • PTZ Auto Tracking is checked by default.

8.4.2.2 Region Exiting

Region exiting is to make sure that any person or object won't exit the area that is being monitored. Any exit of people or objects will trigger an alarm.



Settings steps are shown as follows:

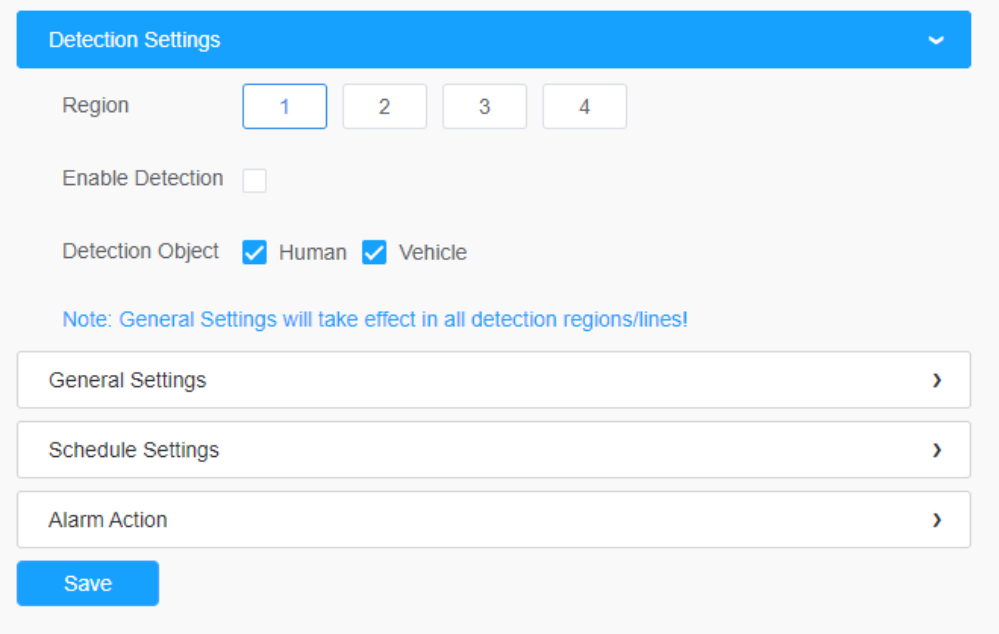
[Detection Settings]

Note: General Settings will take effect in all detection regions/lines!

Step1: Selected detection region and enable region exiting detection;

Note: If you choose **Normal Mode**, it supports configuring the detection region for the current area. If you choose **Advanced Mode**(Only for PTZ series), it supports configuring the detection region for different PTZ presets (Only support Preset 1~4 so far). And set object size limits.

Step2: Choose detection object. Check Human or Vehicle attribute, and the camera will alarm once detecting people or vehicle and triggering related events;



[General Settings]

Step3: Set detecting sensitivity and object size limits;

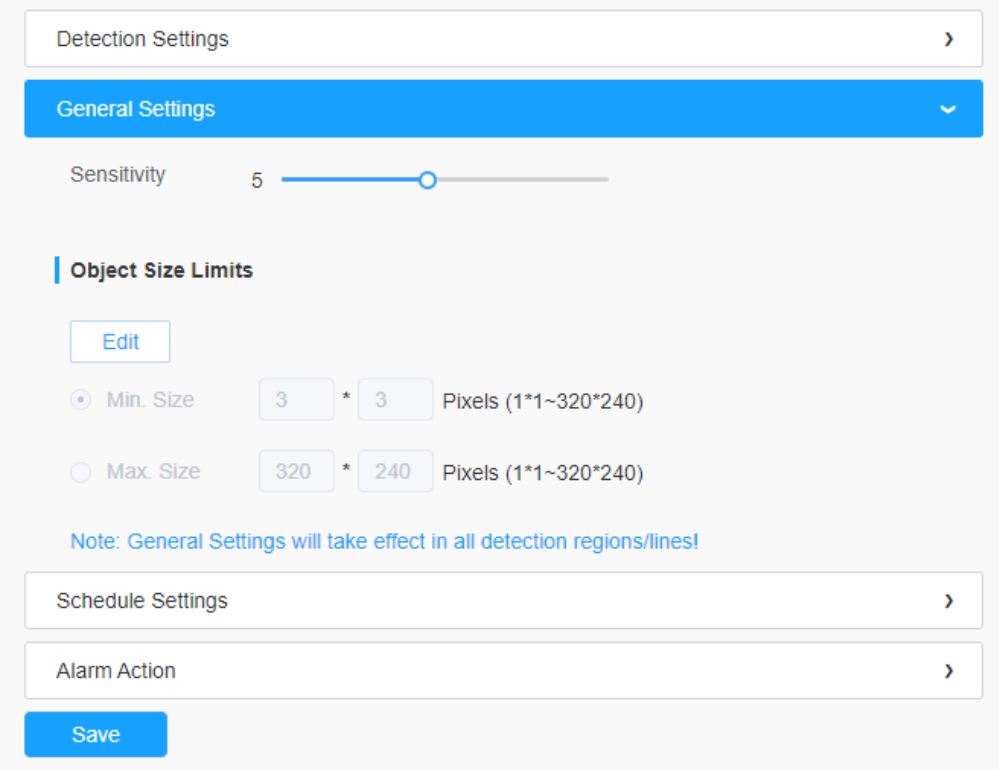
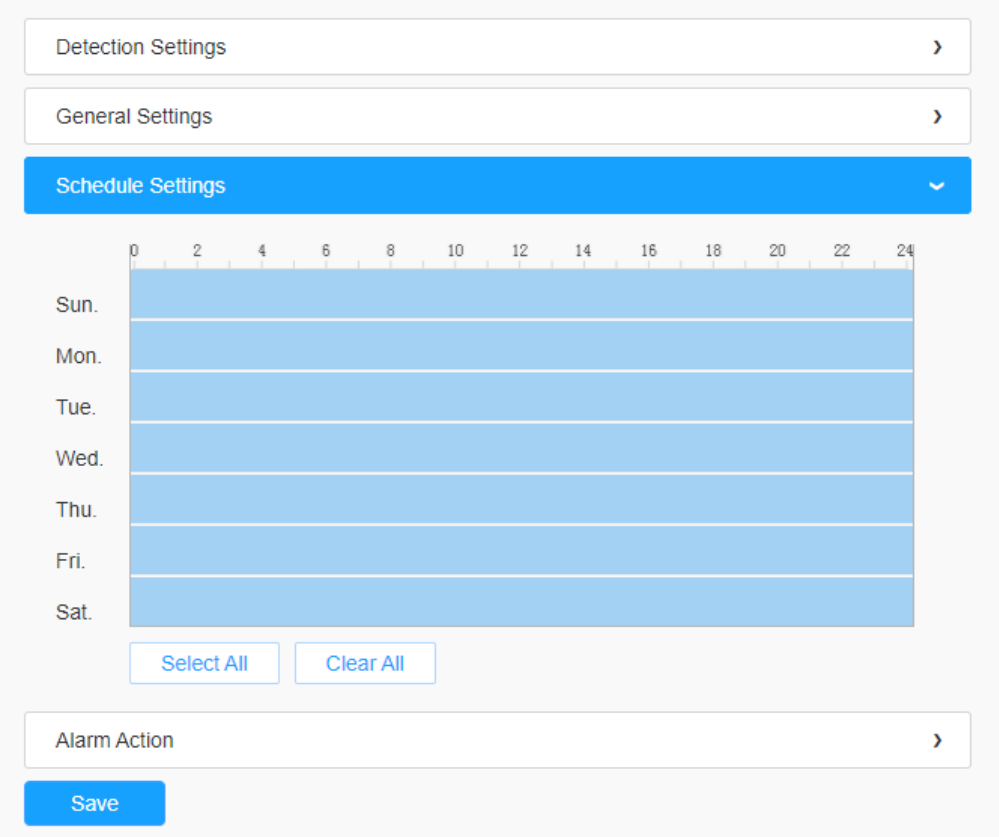


Table 52. Description of the buttons

Parameters	Function Introduction
Sensitivity	Level 1~10 are available, the default level is 5. The higher the sensitivity, the easier it is for moving objects to be recorded in the results.
Min. Size	Draw the screen or input pixel number to set the minimum size of the detected object. When the object is smaller than this size, it will not be detected. The default minimum size is 3*3.
Max. Size	Draw the screen or input pixel number to set the maximum size of the detected object. When the object is larger than this size, it will not be detected. The default maximum size is 320*240.

[Schedule Settings]

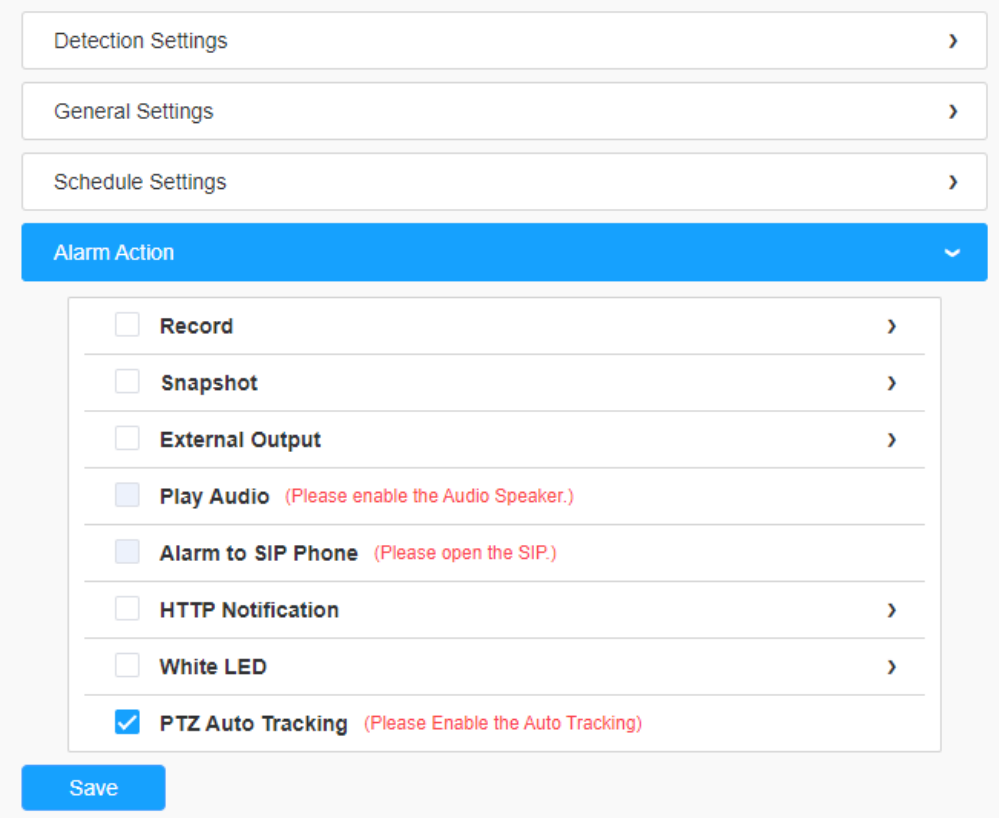
Step4: Set detection schedule;



Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Alarm Action]

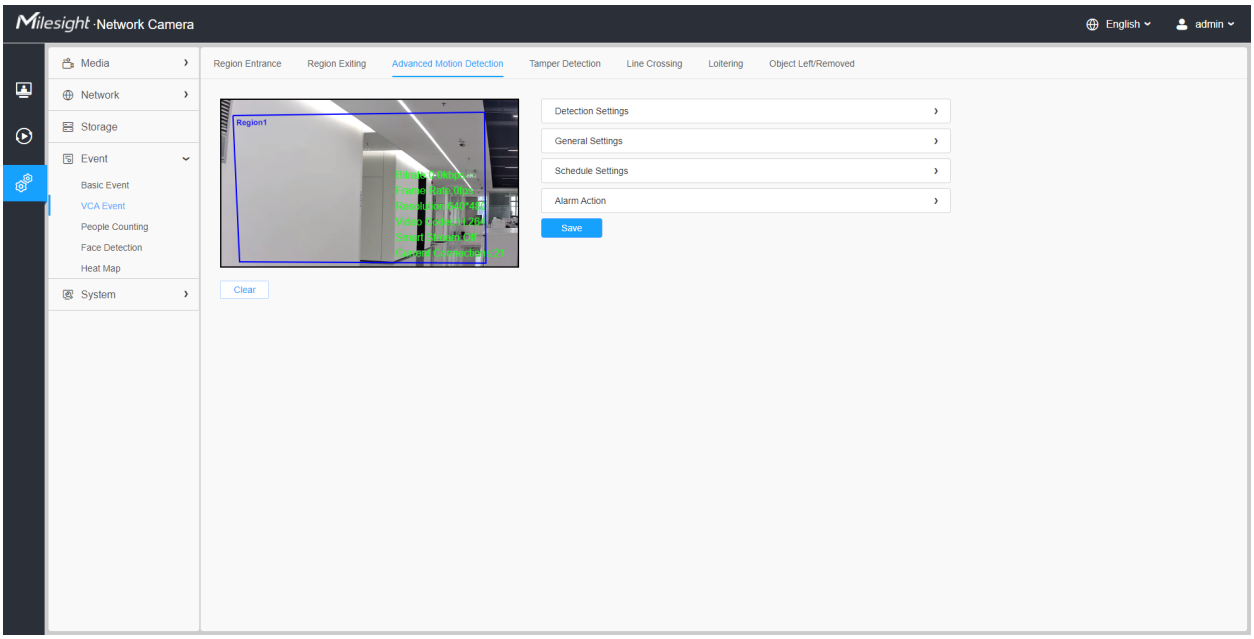
Step5: Set alarm action;



Note: This part is the same as the regular alarm settings. You can refer to Table 3 *(page 114)*.

8.4.2.3 Advanced Motion Detection

Different from traditional motion detection, advanced motion detection can filter out “noise” such as lighting changes, natural tree movements, etc. When an object moves in the selected area, it will trigger alarm.

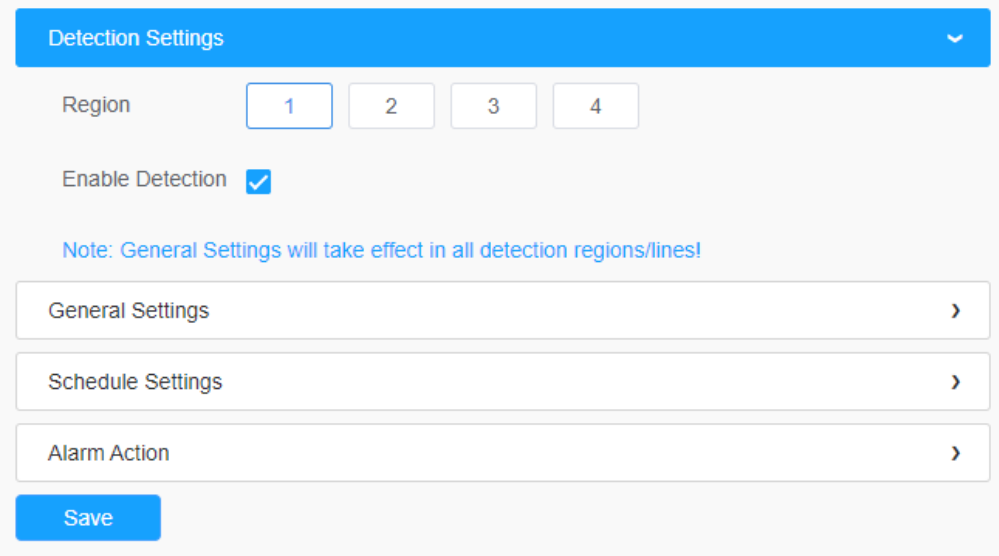


Settings steps are shown as follows:

Step1: Selected Detection Region and enable advanced motion detection;

Note: If you choose **Normal Mode**, it supports configuring the detection region for the current area. If you choose **Advanced Mode**(Only for PTZ series), it supports configuring the detection region for different PTZ presets (Only support Preset 1~4 so far). And set object size limits.

Step2: Choose detection object. Check Human or Vehicle attribute, and the camera will alarm once detecting people or vehicle and triggering related events;



[General Settings]

Step3: Set Ignore Short-Lived Motion time. If you set the time, when the moving duration of an object is within the setting time, the alarm will not be triggered;

Step4: Set detecting sensitivity and object size limits;

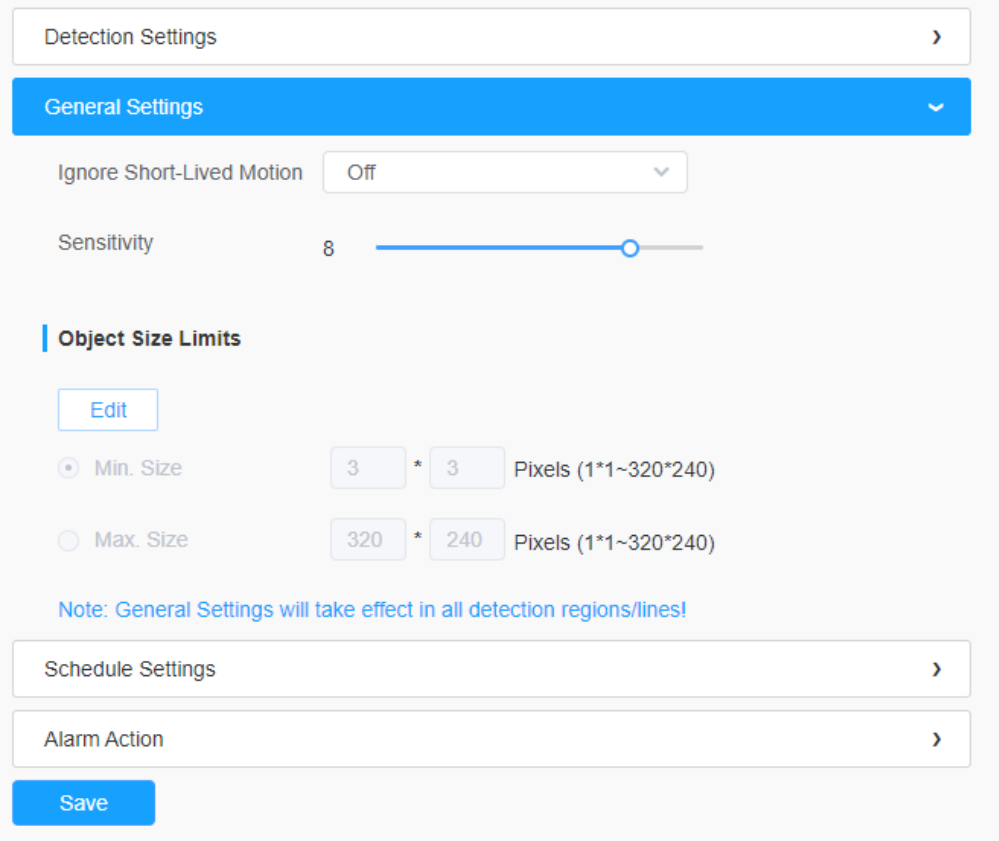


Table 53. Description of the buttons

Parameters	Function Introduction
Ignore Short-Lived Motion	The alarm will not be triggered when the moving duration of an object is within the setting time. Off/1s/2s/3s/4s/5s are available. **Note:** Ignore Short-Lived Motion time is to avoid false alarm caused by instant object movement within time setting.
Sensitivity	Level 1~10 are available, the default level is 5. The higher the sensitivity, the easier it is for moving objects to be recorded in the results. **Note:** The sensitivity can be configured to detect various movement according to different requirements. When the level of sensitivity is low, slight movement won't trigger the alarm.
Min. Size	Draw the screen or input pixel number to set the minimum size of the detected object. When the object is smaller than this size, it will not be detected. The default minimum size is 3*3.
Max. Size	Draw the screen or input pixel number to set the maximum size of the detected object. When the object is larger than this size, it will not be detected. The default maximum size is 320*240.

[Schedule Settings]

Step5: Set detection schedule;

Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Alarm Action]

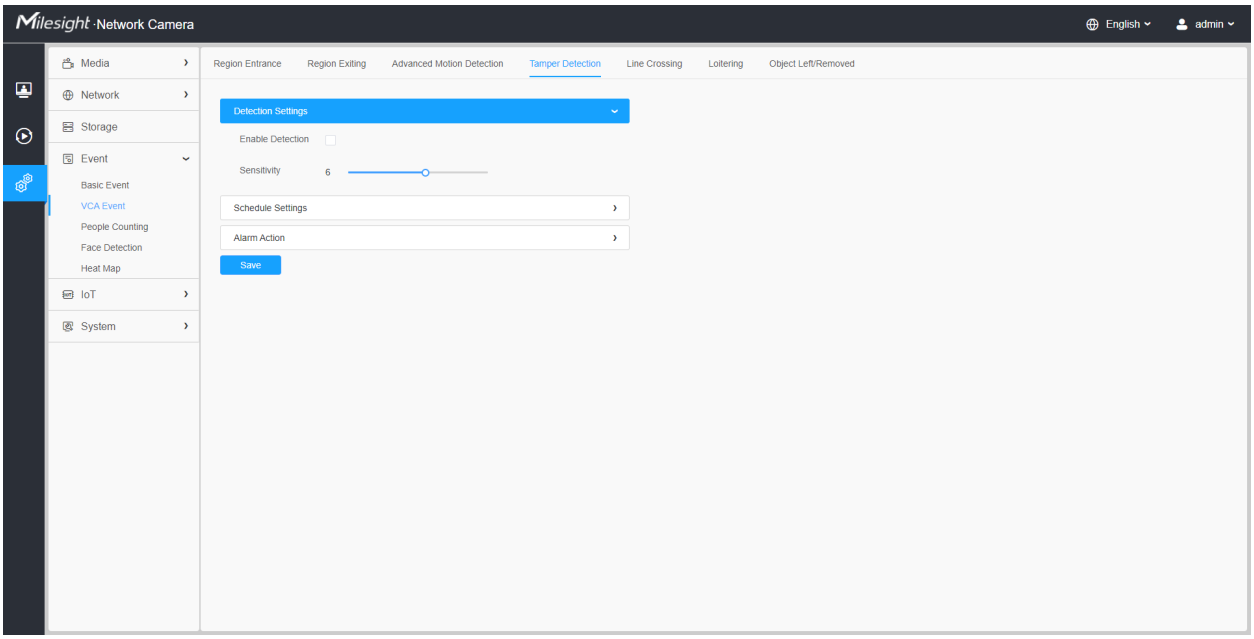
Step6: Set alarm action;

Note:

- This part is the same as the regular alarm settings. You can refer to Table 3 *(page 114)*.
- If you enable External Output and choose Constant External Output Action Time, when object motion time is longer than the Ignore Short-Lived Motion time which you set in the selected regions, External Output Action alarm time will be always constant till the alarm is released.

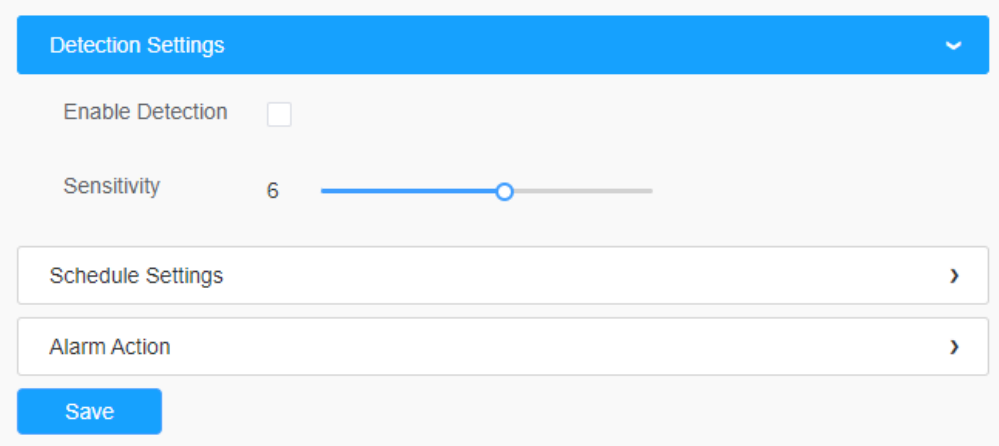
8.4.2.4 Tamper Detection

Tamper Detection is used to detect possible tampering like the camera being unfocused, obstructed or moved. This functionality alerts security staff immediately when any above-mentioned actions occur.



Settings steps are shown as follows:

Step1: Enable Tamper Detection and set detecting sensitivity;



[Schedule Settings]

Step2: Set detection schedule;

Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Alarm Action]

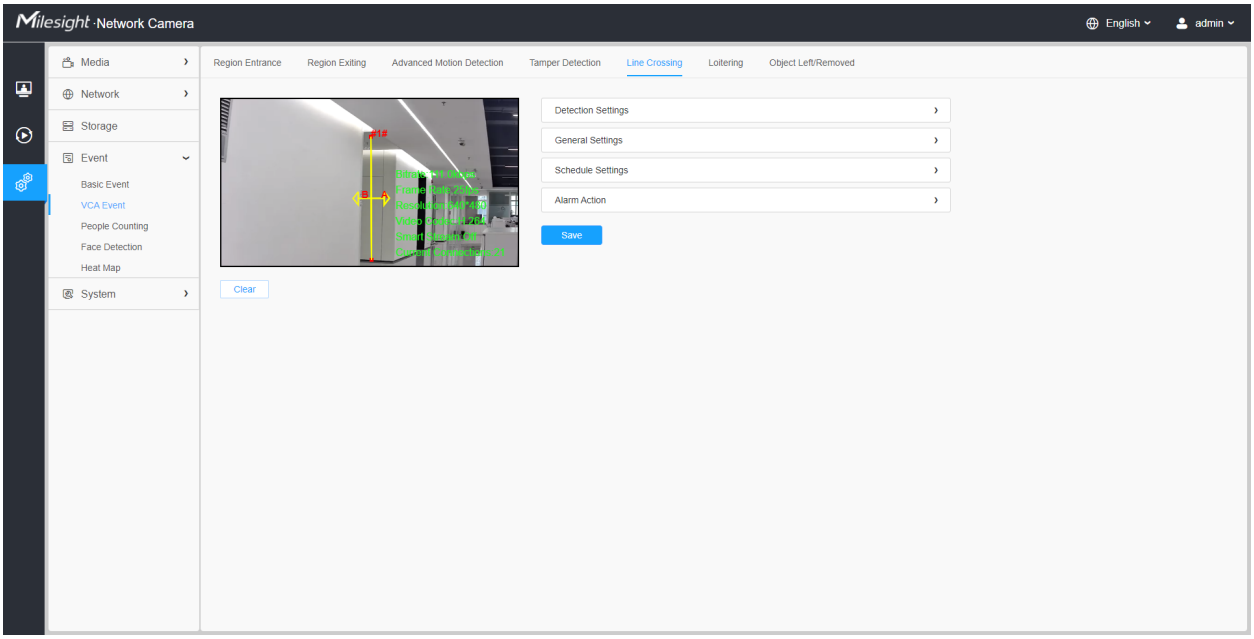
Step3: Set alarm action;

Note:

- This part is the same as the regular alarm settings. You can refer to Table 3 *(page 114)*.
- If you enable External Output and choose Constant External Output Action Time, when possible tampering is detected, External Output Action alarm time will be always constant till the alarm is released.
- The algorithm supports defocus detection in Tamper Detection function.

8.4.2.5 Line Crossing

Line Crossing detection is designed to work in most indoor and outdoor environment. An event will be triggered every time when the camera detects objects crossing a defined virtual line.



Settings steps are shown as follows:

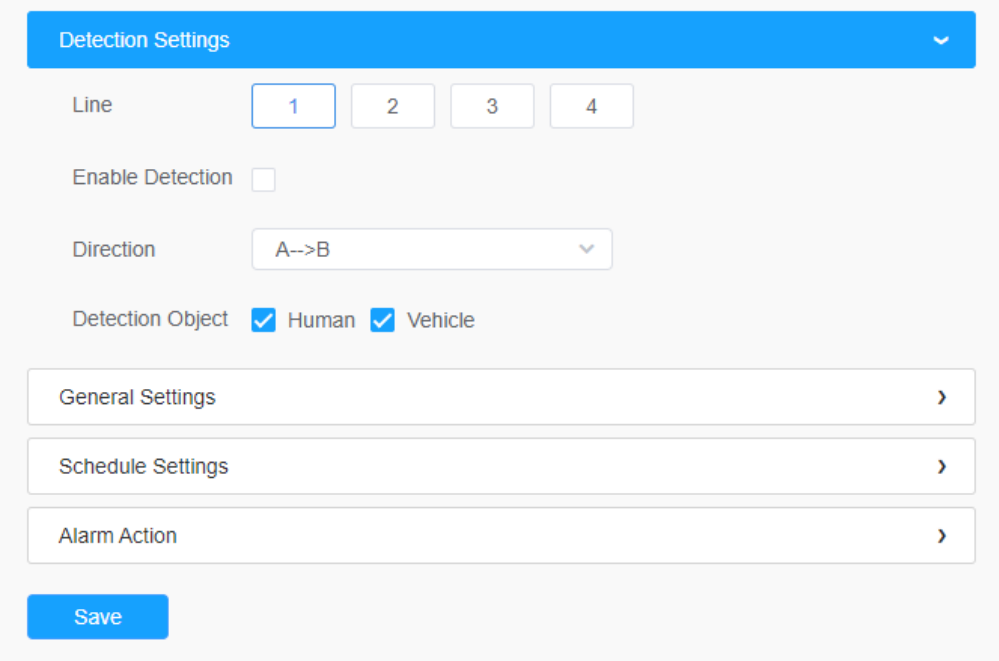
[Detection Settings]

Step1: Select detection line, enable line crossing detection and define its direction;

Note:

- If you choose **Normal Mode**, it supports configuring the detection region for the current area. If you choose **Advanced Mode**(Only for PTZ series), it supports configuring the detection region for different PTZ presets (Only support Preset 1~4 so far). And set object size limits.
- Allows to set up to four lines at a time. There are three direction modes to choose for triggering alarm. “A→B” means when there is any object crossing the line from the “A” side to the “B” side, the alarm will be triggered. “B→A” vice versa. “A ↔ B” means that the alarm will be triggered when objects cross line from either side.

Step2: Choose detection object. Check Human or Vehicle attribute, and the camera will alarm once detecting people or vehicle and triggering related events;



[General Settings]

Step3: Set detecting sensitivity and object size limits;

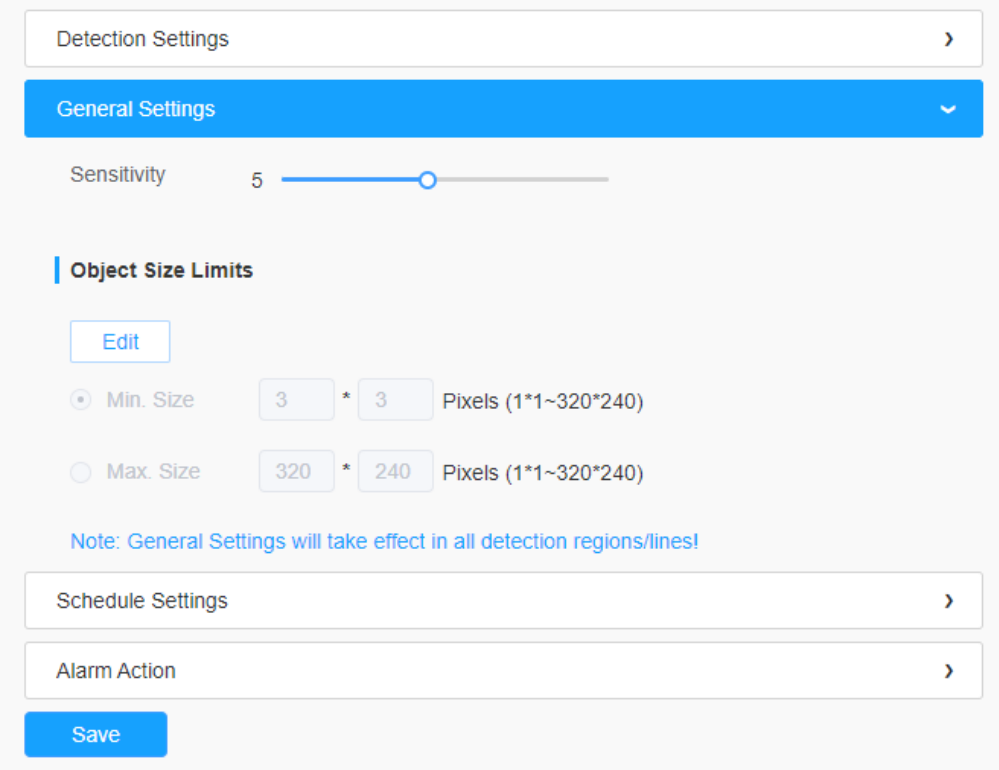
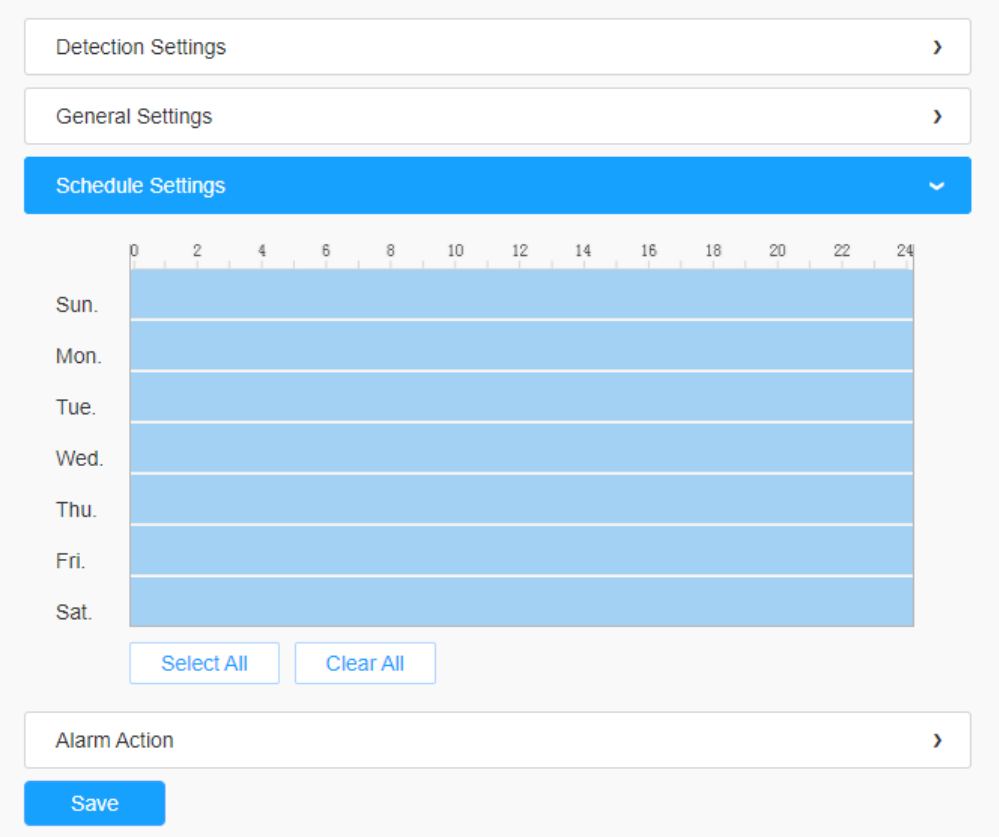


Table 54. Description of the buttons

Parameters	Function Introduction
Sensitivity	Level 1~10 are available, the default level is 5. The higher the sensitivity, the easier it is for moving objects to be recorded in the results.
Min. Size	Draw the screen or input pixel number to set the minimum size of the detected object. When the object is smaller than this size, it will not be detected. The default minimum size is 3*3.
Max. Size	Draw the screen or input pixel number to set the maximum size of the detected object. When the object is larger than this size, it will not be detected. The default maximum size is 320*240.

[Schedule Settings]

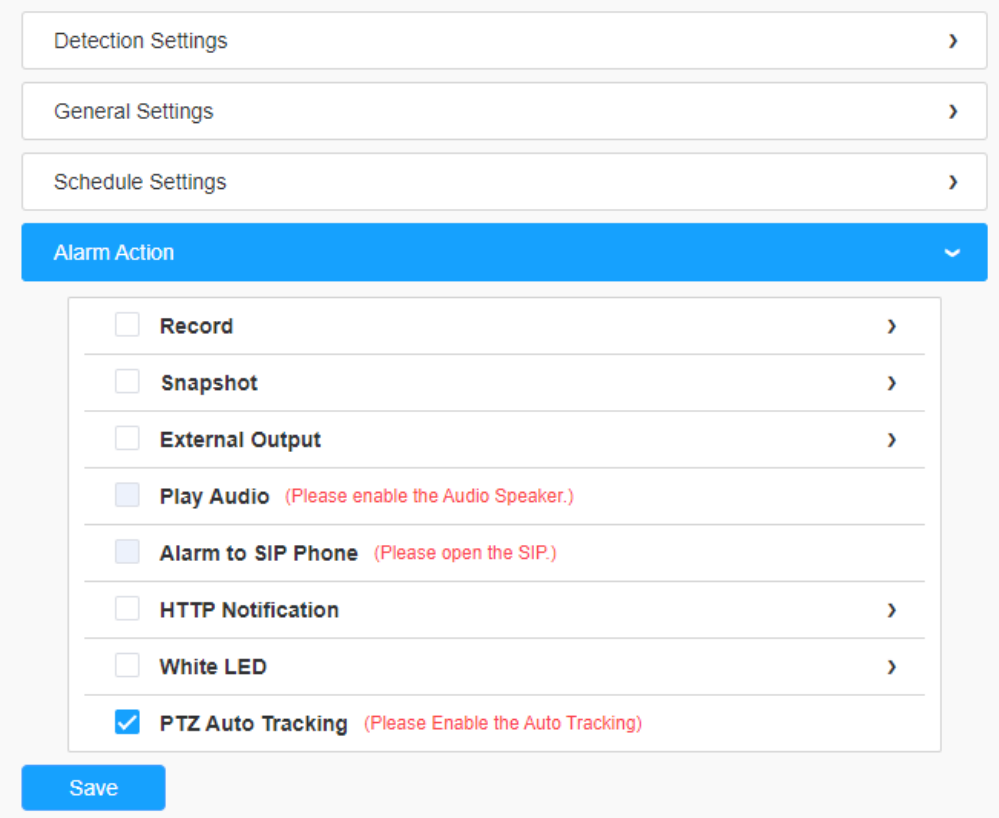
Step4: Set detection schedule;



Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Alarm Action]

Step5: Set alarm action;

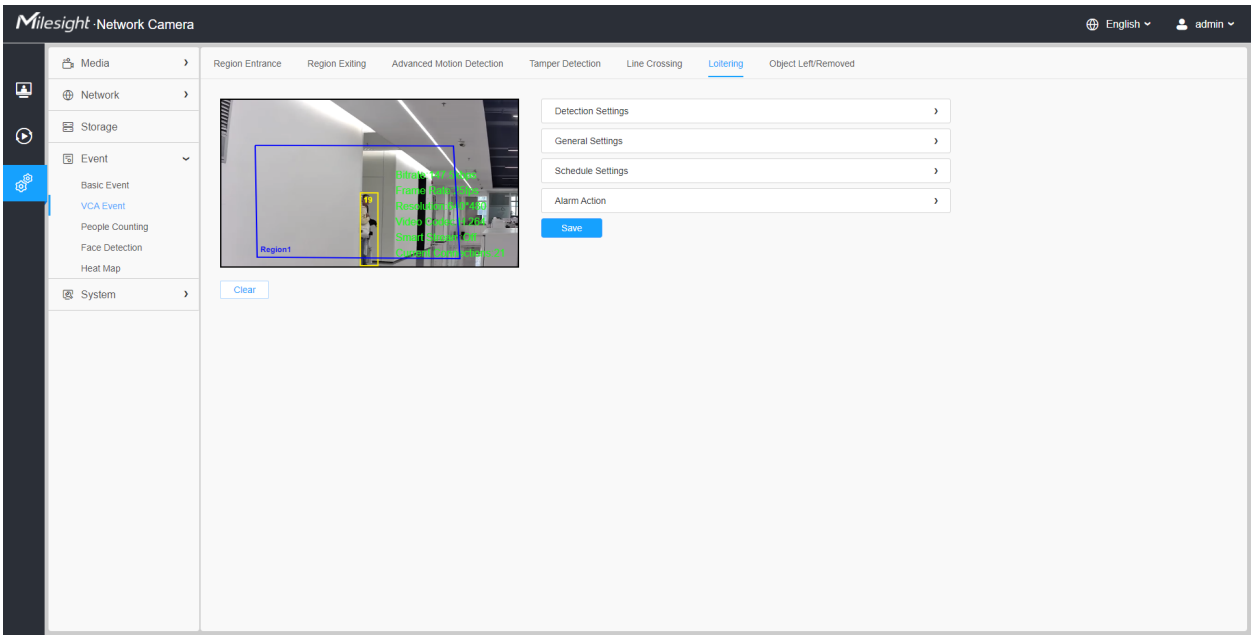


Note:

- This part is the same as the regular alarm settings. You can refer to Table 3 *(page 114)*.
- When enabling PTZ Auto Tracking, camera will automatically track objects and trigger an alarm if detecting objects crossing a defined virtual line
- If you enable External Output and choose Constant External Output Action Time, when objects cross a defined virtual line, External Output Action alarm time will be always constant till the alarm is released

8.4.2.6 Loitering

When objects are loitering in a defined area for a specific period of time, it would trigger an alarm.



Settings steps are shown as follows:

[Detection Settings]

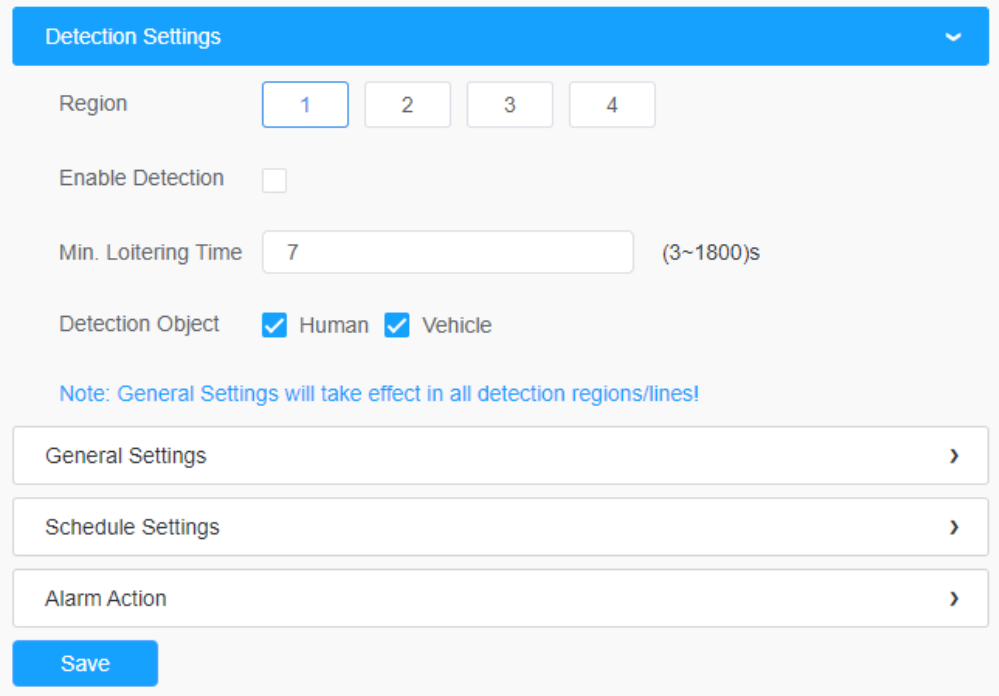
Note: General Settings will take effect in all detection regions/lines!

Step1: Select detection region and enable loitering detection;

Note: If you choose **Normal Mode**, it supports configuring the detection region for the current area. If you choose **Advanced Mode**(Only for PTZ series), it supports configuring the detection region for different PTZ presets (Only support Preset 1~4 so far). And set object size limits.

Step2: Set Min. Loitering Time. After setting minimum loitering time from 3s to 1800s, any objects loitering in the selected area over the minimum loitering time will trigger the alarm;

Step3: Choose detection object. Check Human or Vehicle attribute, and the camera will alarm once detecting people or vehicle and triggering related events;



[General Settings]

Step4: Set object size limits;

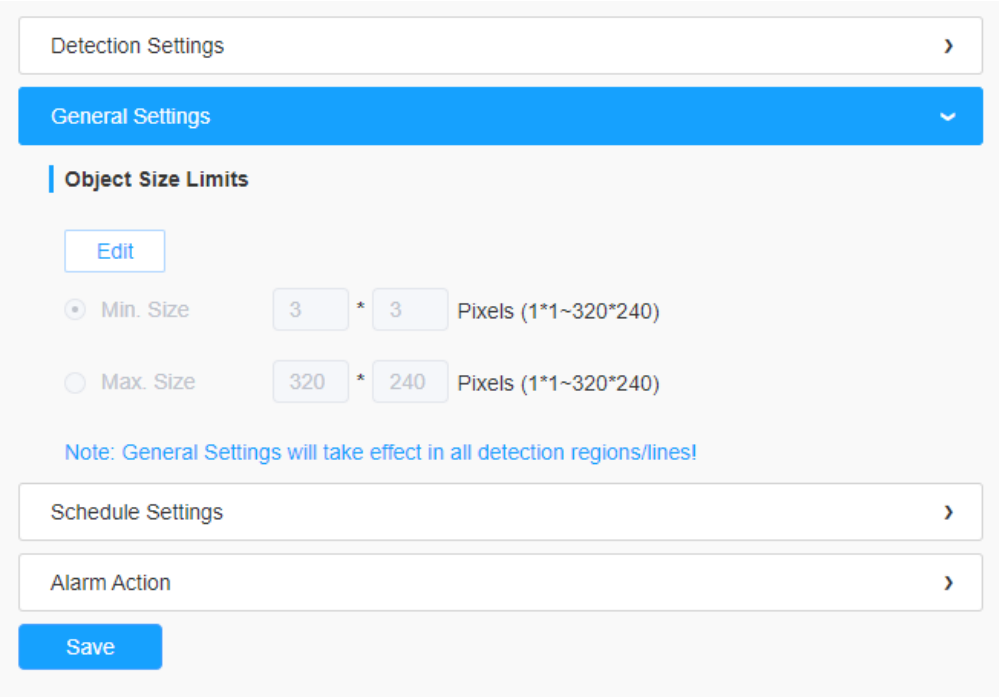


Table 55. Description of the buttons

Parameters	Function Introduction
Min. Size	Draw the screen or input pixel number to set the minimum size of the detected object. When the object is smaller than this size, it will not be detected. The default minimum size is 3*3.
Max. Size	Draw the screen or input pixel number to set the maximum size of the detected object. When the object is larger than this size, it will not be detected. The default maximum size is 320*240.

[Schedule Settings]

Step4: Set detection schedule;

Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Alarm Action]

Step5: Set alarm action;

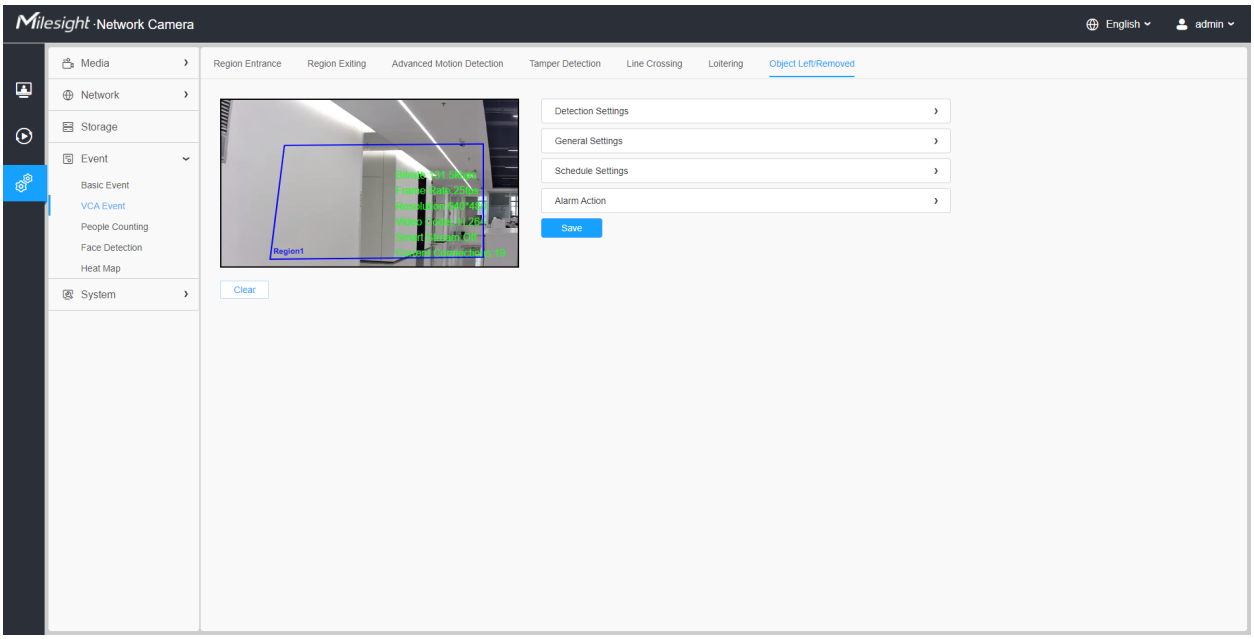
Note:

- This part is the same as the regular alarm settings. You can refer to Table 3 *(page 114)*.
- When enabling PTZ Auto Tracking and Loitering Detection, camera will automatically track objects and trigger an alarm if objects have been loitering in a defined area for more than the Min. Loitering Time.
- If you enable External Output and choose Constant External Output Action Time, when objects loiter in the selected regions, External Output Action alarm time will be always constant till the alarm is released.

Step5: Set alarm settings. If you enable External Output and choose Constant External Output Action Time, when objects loiter in the selected regions, External Output Action alarm time will be always constant till the alarm is released.

8.4.2.7 Object Left/Removed

Object Left can detect and prompt an alarm if an object is left in a pre-defined region. Object Removed can detect and prompt an alarm if an object is removed from a pre-defined region.



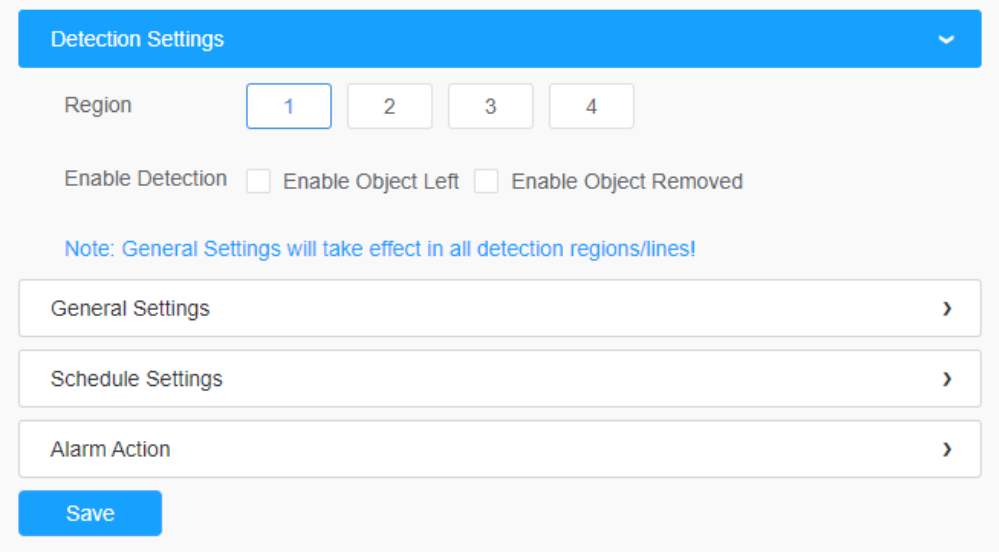
Settings steps are shown as follows:

[Detection Settings]

Note: General Settings will take effect in all detection regions/lines!

Step1: Selected detection region and enable object left/removed detection (Or you can enable both features at the same time);

Note: If you choose **Normal Mode**, it supports configuring the detection region for the current area. If you choose **Advanced Mode**(Only for PTZ series), it supports configuring the detection region for different PTZ presets (Only support Preset 1~4 so far). And set object size limits.



[General Settings]

Step2: Set Min. time, detecting sensitivity and object size limits.

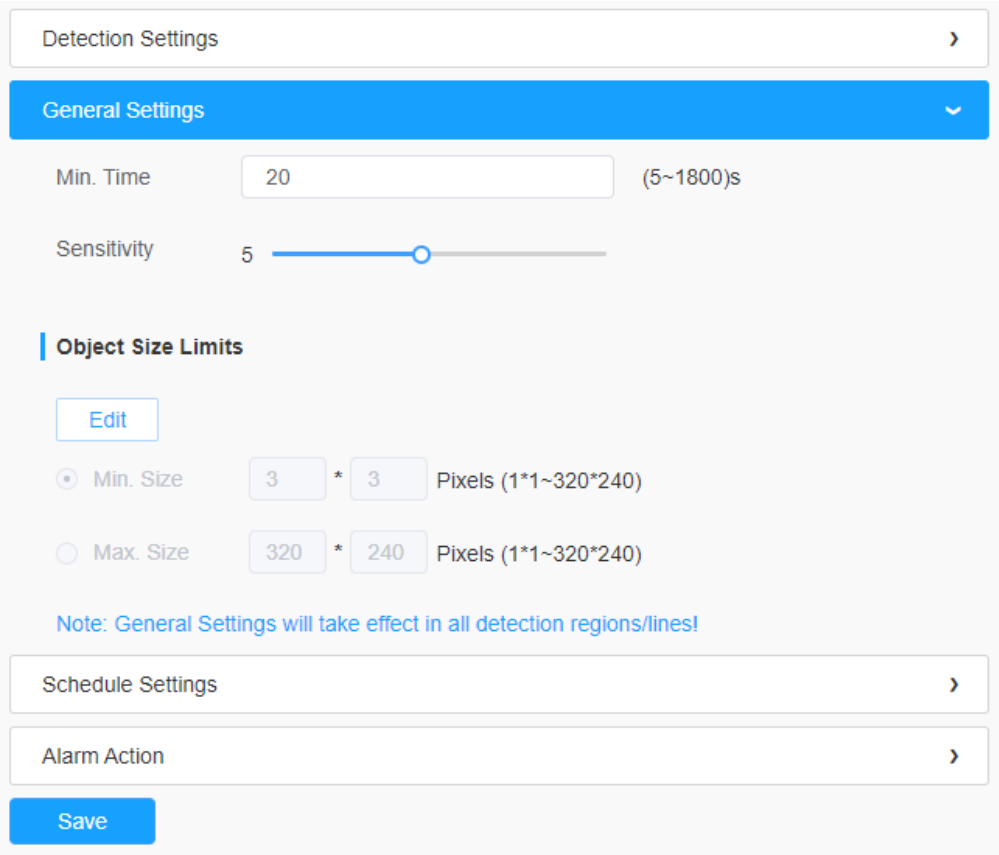


Table 56. Description of the buttons

Parameters	Function Introduction
Min. Time	After setting Min. time from 5s to 1800s, any objects are left in the selected area or removed from the selected area over the minimum time will trigger the alarm.
Sensitivity	Level 1~10 are available, the default level is 5. The higher the sensitivity, the easier it is for moving objects to be recorded in the results. **Note:** The sensitivity can be configured to detect various movement according to different requirements. When the level of sensitivity is low, slight movement won't trigger the alarm.
Min. Size	Draw the screen or input pixel number to set the minimum size of the detected object. When the object is smaller than this size, it will not be detected. The default minimum size is 3*3.
Max. Size	Draw the screen or input pixel number to set the maximum size of the detected object. When the object is larger than this size, it will not be detected. The default maximum size is 320*240.

[Schedule Settings]

Step5: Set detection schedule;

Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Alarm Action]

Step6: Set alarm action;

Note:

- This part is the same as the regular alarm settings. You can refer to Table 3 *(page 114)*.
- When enabling PTZ Auto Tracking, camera will automatically track objects and trigger an alarm if an object is left or removed in a defined area.
- If you enable External Output and choose Constant External Output Action Time, when an object is left/removed from the selected regions, External Output Action alarm time will be always constant till the alarm is released.

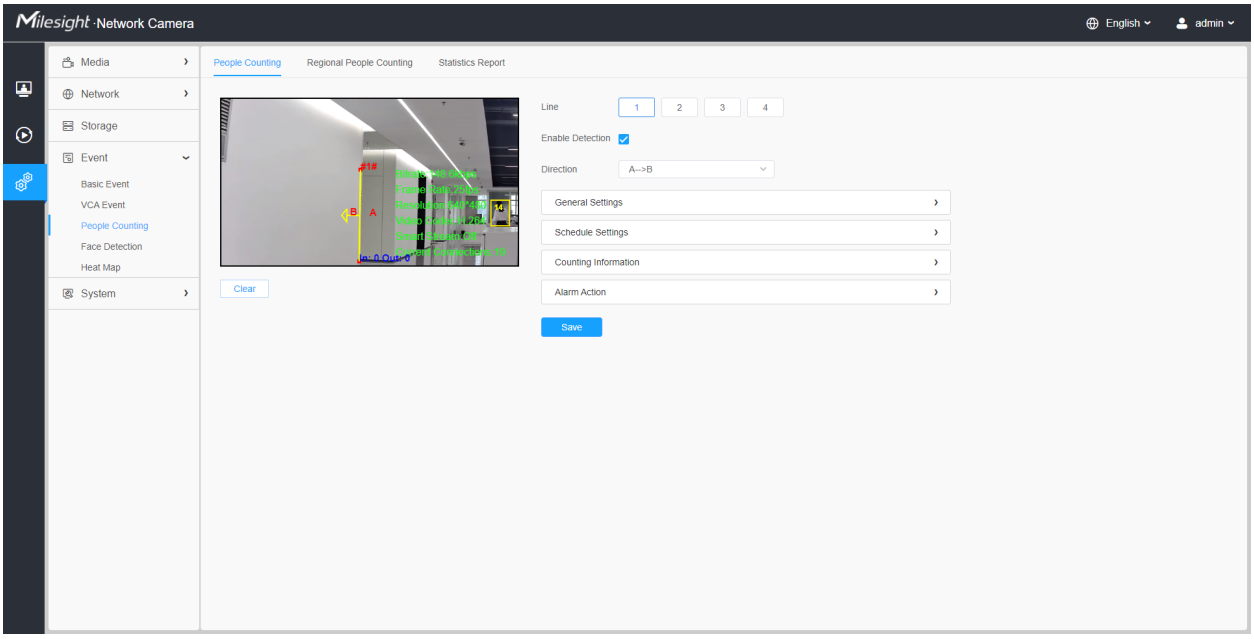
8.4.3 People Counting

8.4.3.1 People Counting

People Counting is able to count how many people enter or exit during the setting period.

Note: For more details about how to use people counting, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000639819.

Note: Make sure your camera model is MS-Cxxxx-xPC/PA.



Settings steps are as shown below:

Step1: Enable People Counting;

Step2: Set detection line and direction.

Note:

- Crossing along the direction of the arrow will record as “In”, opposite is “Out”.
- Support up to 4 detection lines.

[General Settings]

Step3: Set sensitivity and object size limits.

Note: If you choose **Normal Mode**, it supports configuring the detection line for the current area. If you choose **Advanced Mode** (Only for PTZ series), it supports configuring the detection line for different PTZ presets(Only support Preset 1~4 so far).

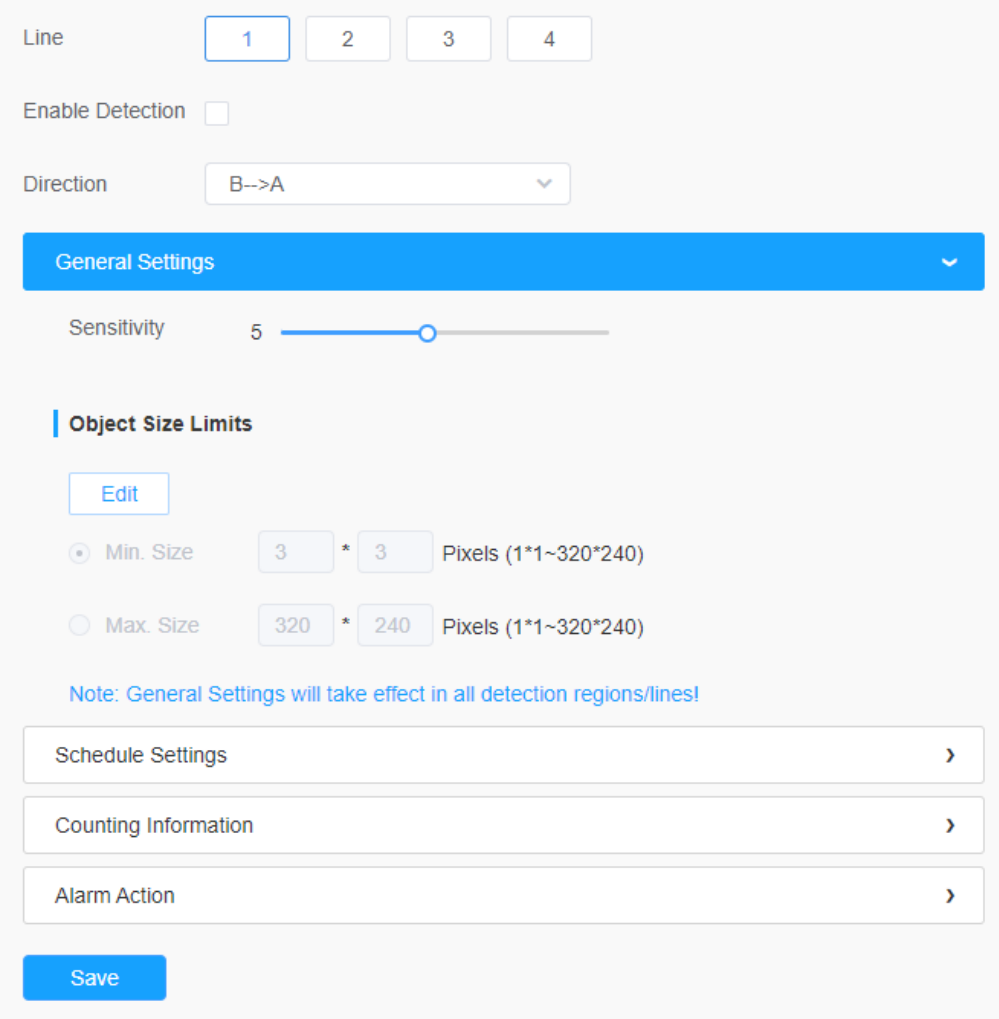


Table 57. Description of the buttons

Parameters	Function Introduction
Sensitivity	Level 1~10 are available, the default level is 5. The higher the sensitivity, the easier it is for moving objects to be recorded in the results.
Min. Size	Draw the screen or input pixel number to set the minimum size of the detected object. When the object is smaller than this size, it will not be detected. The default minimum size is 3*3.
Max. Size	Draw the screen or input pixel number to set the maximum size of the detected object. When the object is larger than this size, it will not be detected. The default maximum size is 320*240.

[Schedule Settings]

Step4: Set detection schedule;

Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Counting Information]

Step5: Set counting information;

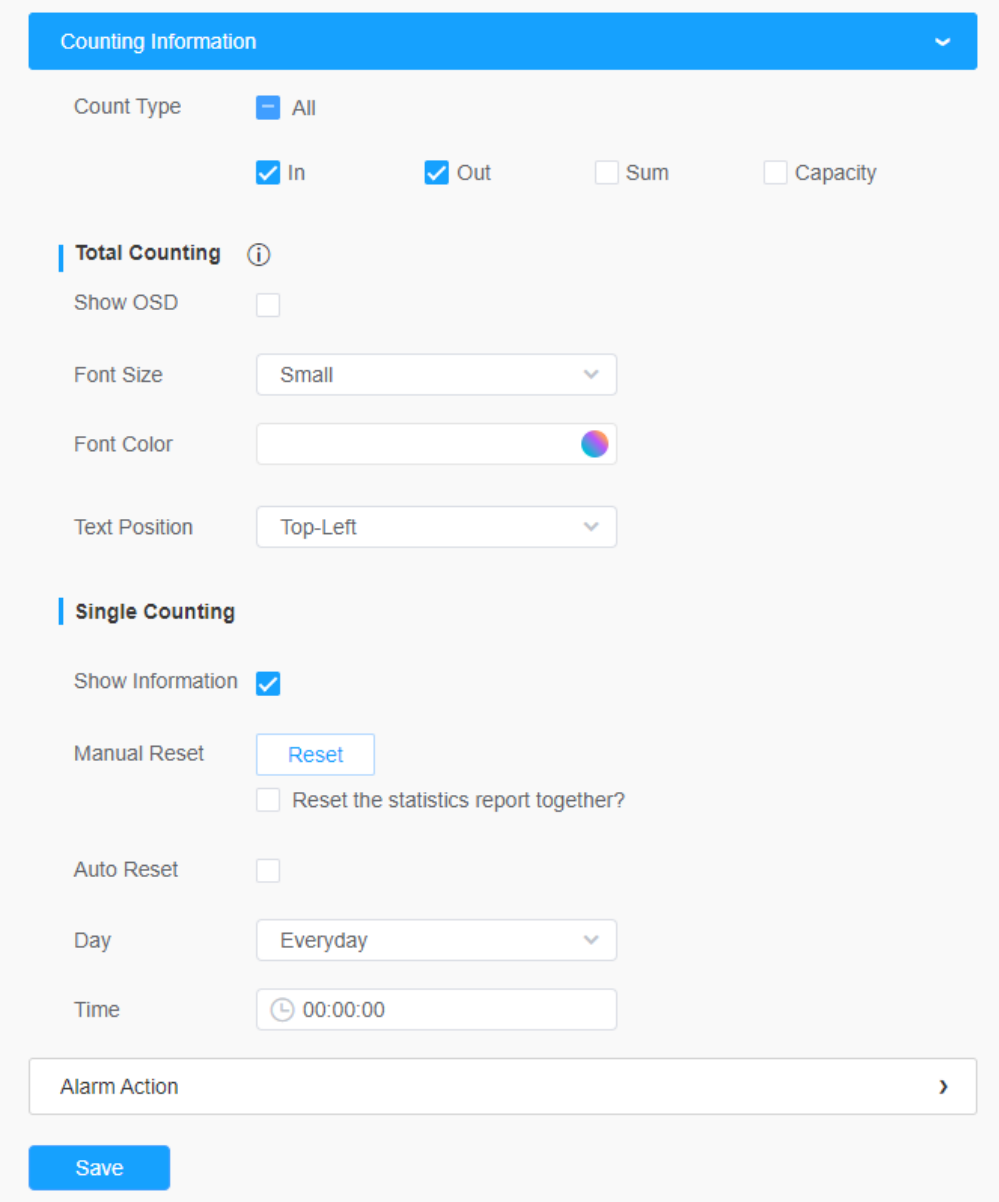


Table 58. Description of the buttons

Parameters	Function Introduction
Count Type	Users can choose the information they want to display in Live Video.

Parameters	Function Introduction
Total Counting	Set counting OSD. **Note:** The Total Counting OSD configuration is linked in all detection lines. **Show OSD:** Click to enable/disable the OSD shown. **Font Size:** The font size of the OSD display. **Font Color:** The font color of the OSD display. **Text Position:** The text position of the OSD display.
Single Counting	Set Single Counting. **Note:** The Total Counting OSD configuration is linked in all detection lines. **Show Information:** Click to show the information. **Manual Reset:** Reset the counting of each single line. You can choose to reset the statistics report together. **Auto Reset:** It is used to automatically clear the single counting information. **Day:** The day of Auto Reset. **Time:** The time of Auto Reset.

[Alarm Action]

Step6: Set alarm trigger and alarm action;

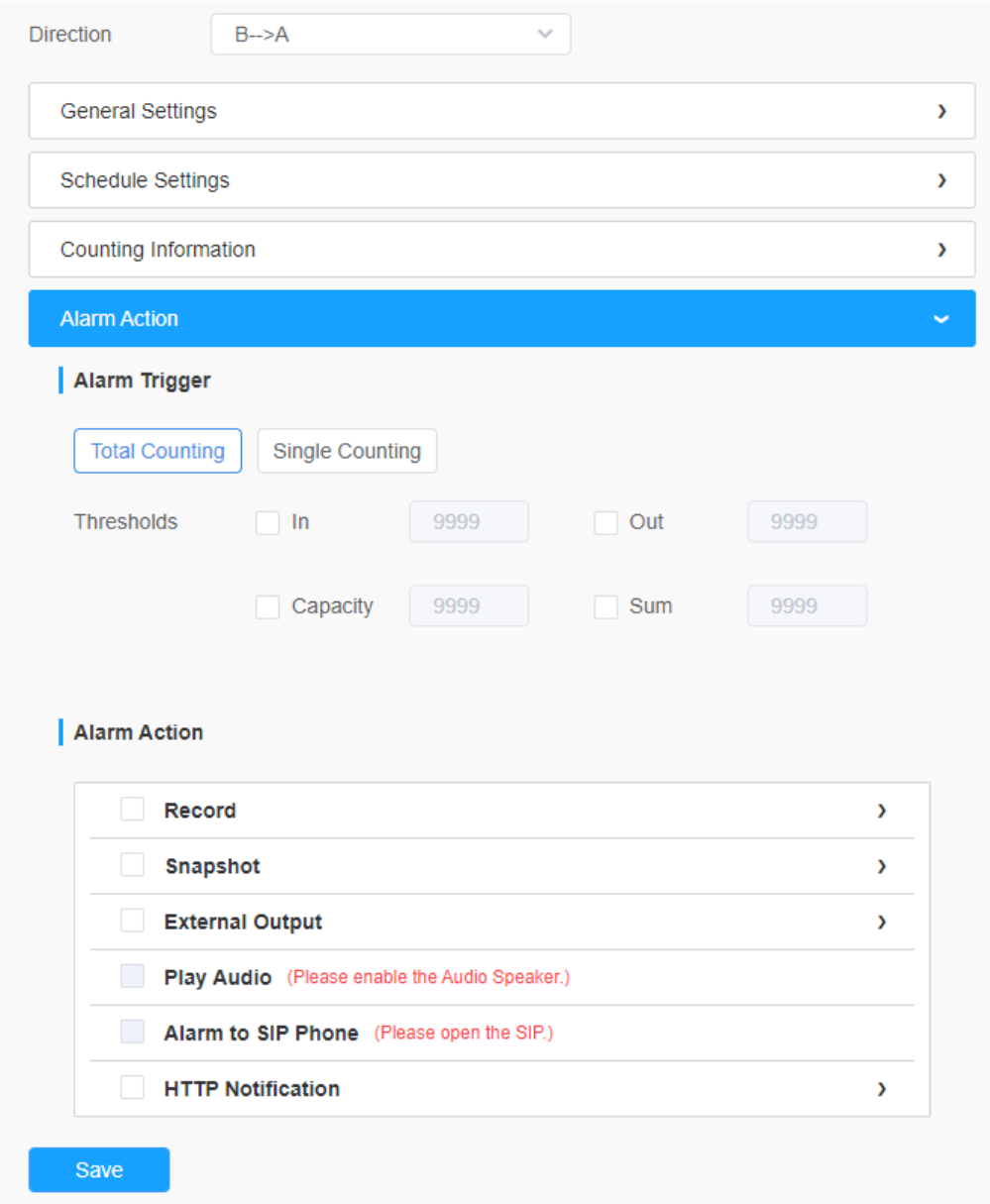


Table 59. Description of the buttons

Parameters	Function Introduction
Alarm Trigger	Alarm will be triggered when the thresholds reaches to a certain value from 1 to 9999. Total Counting and Single Counting are available. You can set the Alarm Thresholds of In/Out/Capacity/Sum. **Note:** • For Total Counting, the thresholds are the sum of the total number of 4 detection lines. • For Single Counting, the threshold is for the selected detection line.

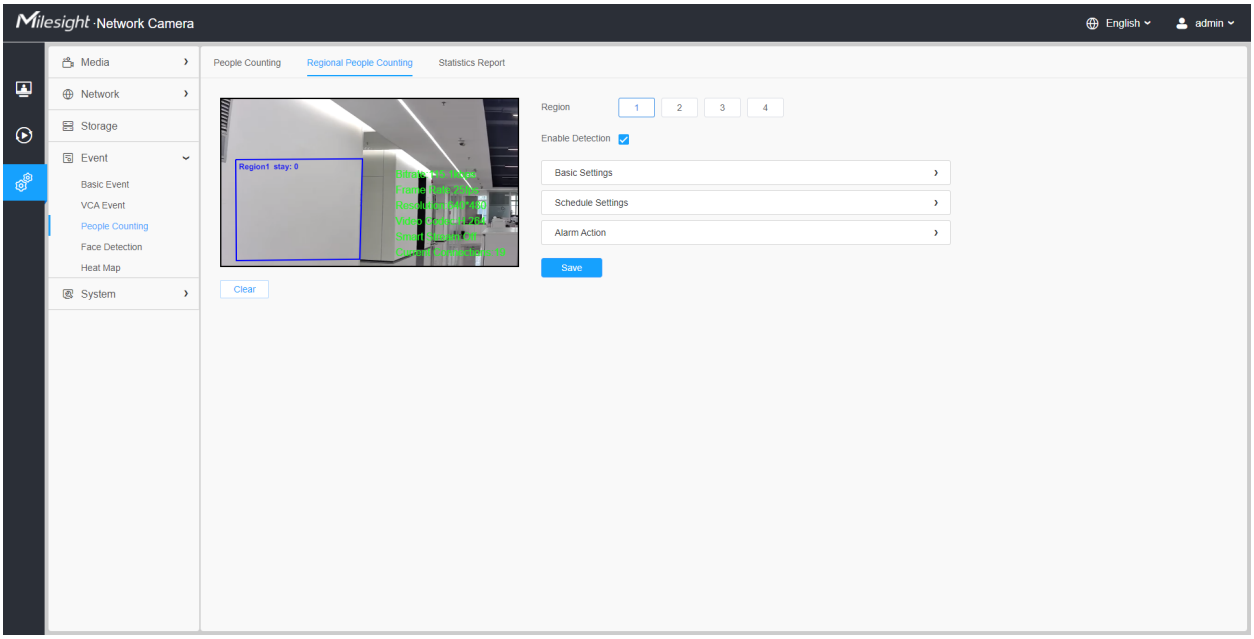
Parameters	Function Introduction
Alarm Action	This part is the same as the regular alarm settings. You can refer to Table 3 *(page 114)*. **Note:** • The alarm action is effective on 4 detection lines simultaneously. • If you enable External Output and choose Constant External Output Action Time, when the thresholds reach to a certain value you set, External Output Action alarm time will be always constant till the alarm is released.

8.4.3.2 Regional People Counting

When enabling Regional People Counting, users can check the real-time number of people and the time of each person's stay in the detection region.

Note:

- Make sure your camera model is MS-Cxxxx-xPC/PA.
- Support up to 4 detection regions for regional people counting.
- Users can check the real-time number of people and the time of each person's stay in the detection region on Live View interface.



Settings steps are as shown below:

Step1: Select Detection Region and enable regional people counting detection;

Note: Support up to 4 detection regions.

[Basic Settings]

Step2: Set sensitivity and object size limits.

Note: If you choose **Normal Mode**, it supports configuring the detection line for the current area. If you choose **Advanced Mode** (Only for PTZ series), it supports configuring the detection line for different PTZ presets(Only support Preset 1~4 so far).

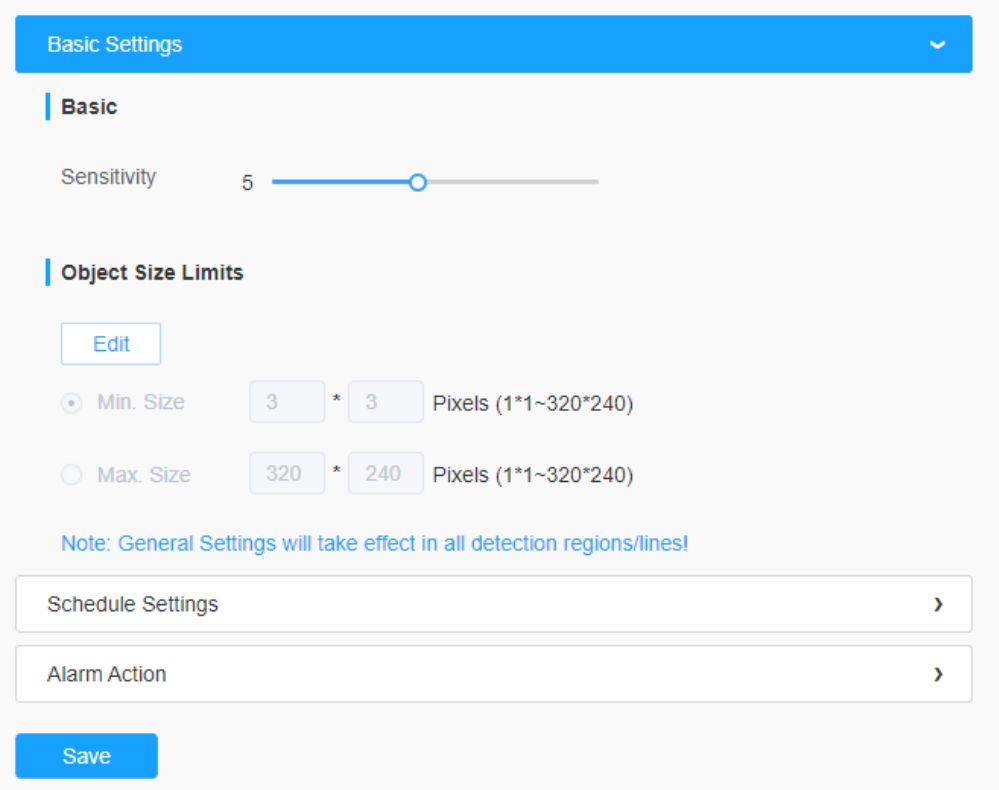


Table 60. Description of the buttons

Parameters	Function Introduction
Sensitivity	Level 1~10 are available, the default level is 5. The higher the sensitivity, the easier it is for moving objects to be recorded in the results.
Min. Size	Draw the screen or input pixel number to set the minimum size of the detected object. When the object is smaller than this size, it will not be detected. The default minimum size is 3*3.
Max. Size	Draw the screen or input pixel number to set the maximum size of the detected object. When the object is larger than this size, it will not be detected. The default maximum size is 320*240.

[Schedule Settings]

Step4: Set detection schedule;

Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Alarm Action]

Step6: Set alarm trigger and alarm action;

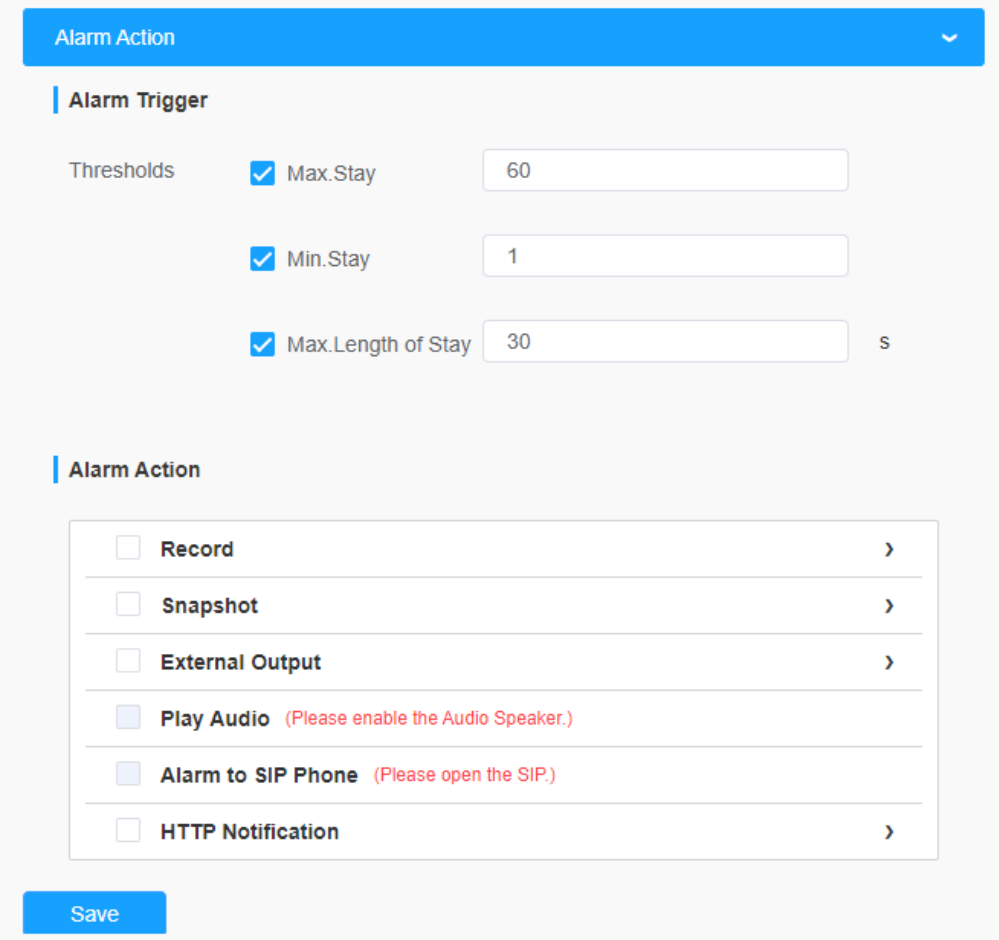


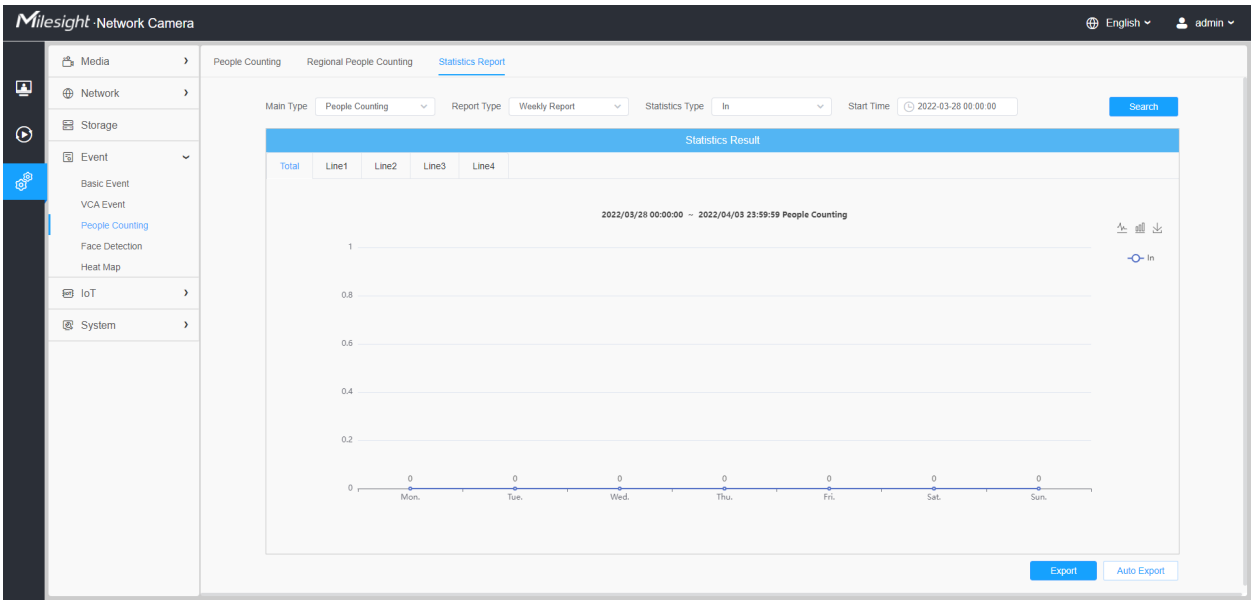
Table 61. Description of the buttons

Parameters	Function Introduction
Alarm Trigger	Alarm will be triggered when the Max./Min. Stay/Max. Length of Stay thresholds reaches to the value. **Note:** The value must be in the range of 1 to 60.

Parameters	Function Introduction
Alarm Action	This part is the same as the regular alarm settings. You can refer to Table 3 *(page 114)*. **Note:** • The alarm action is effective on 4 detection regions simultaneously. • If you enable External Output and choose Constant External Output Action Time, when the thresholds reach to a certain value you set, External Output Action alarm time will be always constant till the alarm is released.

8.4.3.3 Statistics Report

The results during the enabling period will be displayed on "**Statistics Report**" interface.



Step 1: Select Main Type;

Step2: Select Report Type including Daily Report, Weekly Report, Monthly Report and Annual Report;

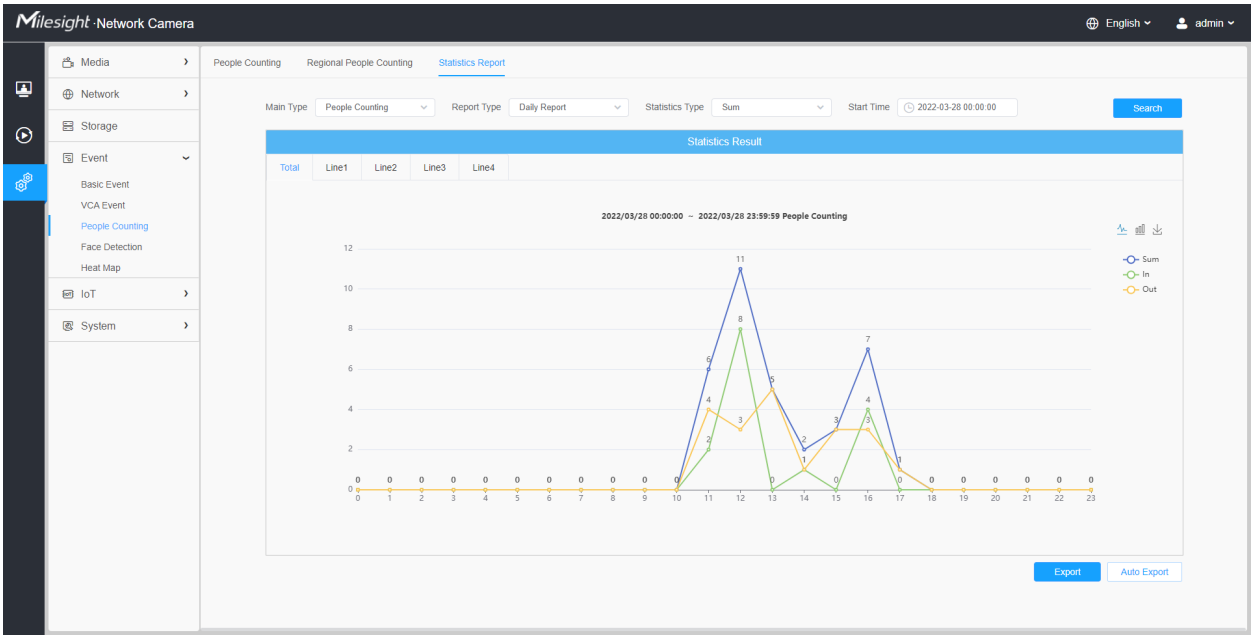
Step3: For people counting, select Statistics Type including In, Out and Sum. For regional people counting, select Length of Stay including All, More Then and Less Then and set the time of more then/less then.

Note: For regional people counting, check the check box to search the report of regions as needed.

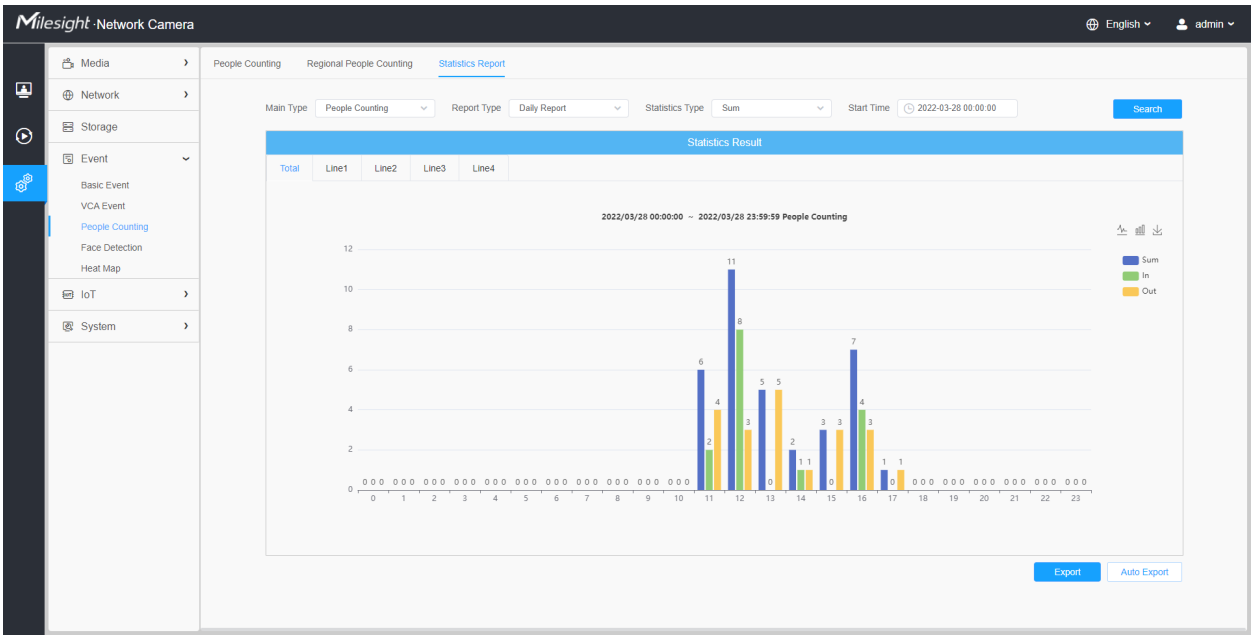
Step4: Select Start Time, then click "Search" button, the camera will automatically count the data for the day/ week/ month/ year (based on the report type selected by the user) from the start time and generate the corresponding report.

Step5: Moreover, you can also click "Line Chart" or "Bar Chart" to switch display mode of Statistics Report as shown below.

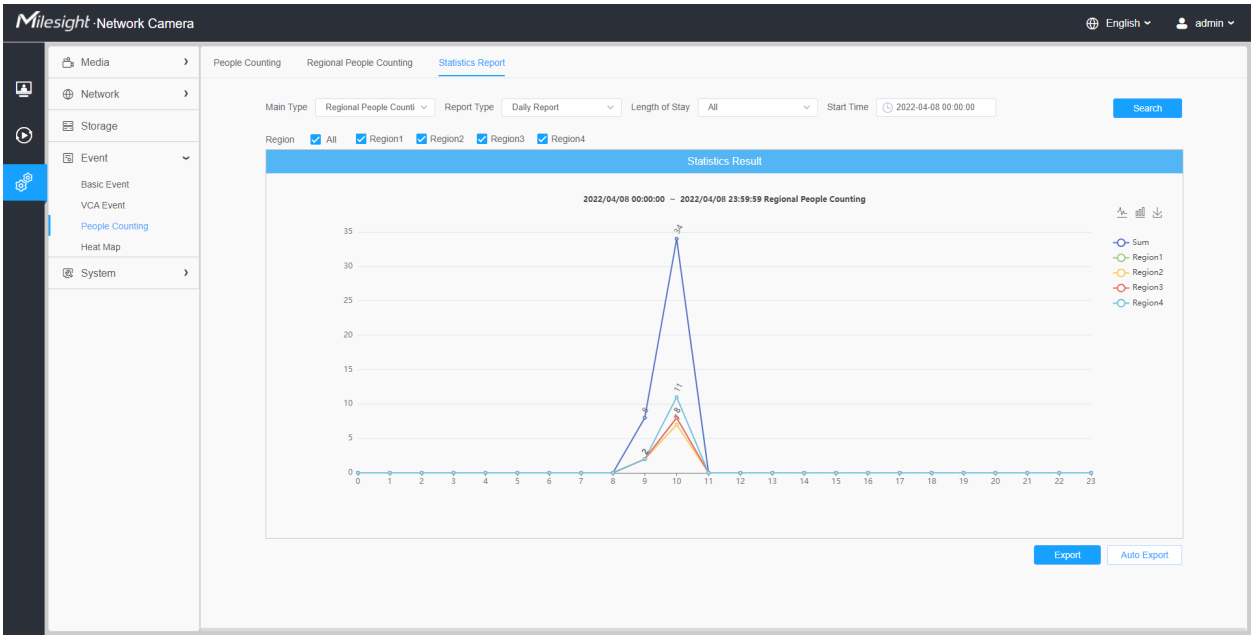
People Counting-Statistics Report (Line Chart)



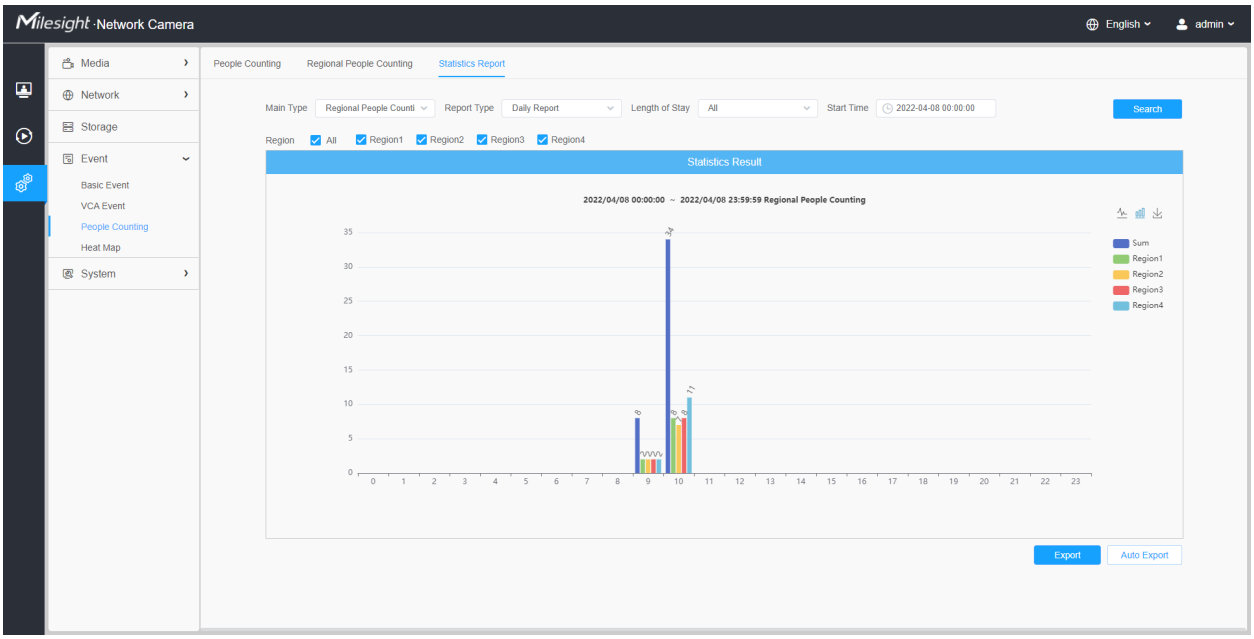
People Counting-Statistics Report (Bar Chart)



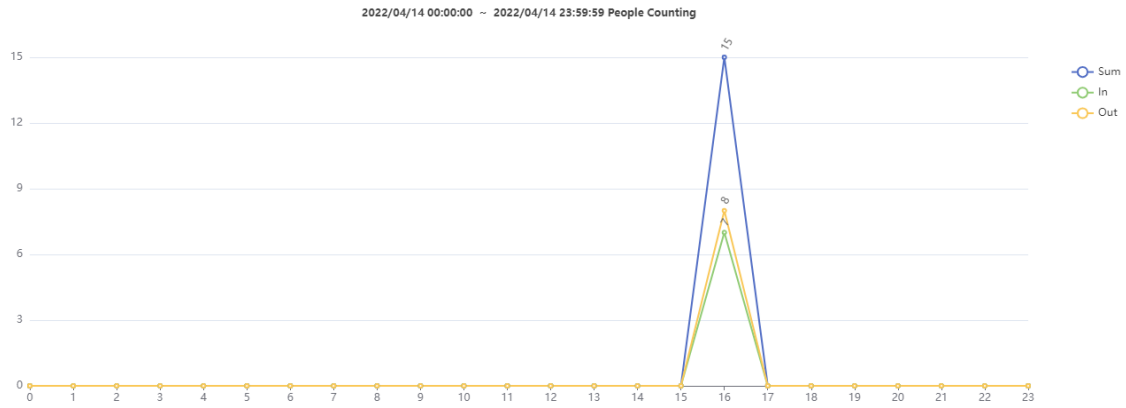
Regional People Counting-Statistics Report (Line Chart)



Regional People Counting-Statistics Report (Bar Chart)

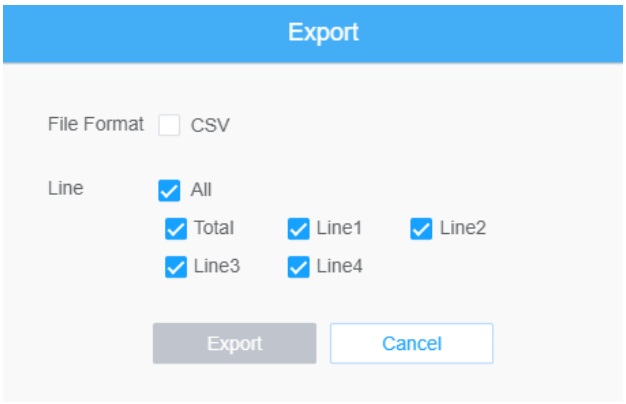


Step6: Click "Download" button to download the screenshot of the statistical report chart.

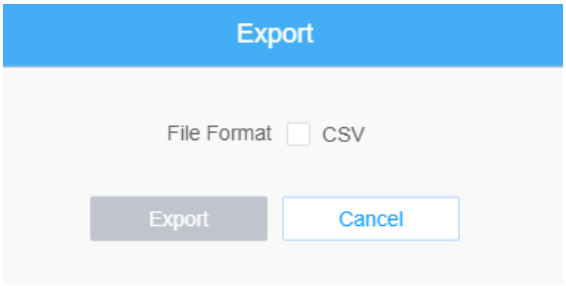


Step7: Click "Export" button to pop up the Export window as shown below, and you can choose File Format to export the report to local. For people counting Statistics Report, you can check the check box to export the report of different lines as needed.

People Counting-Export

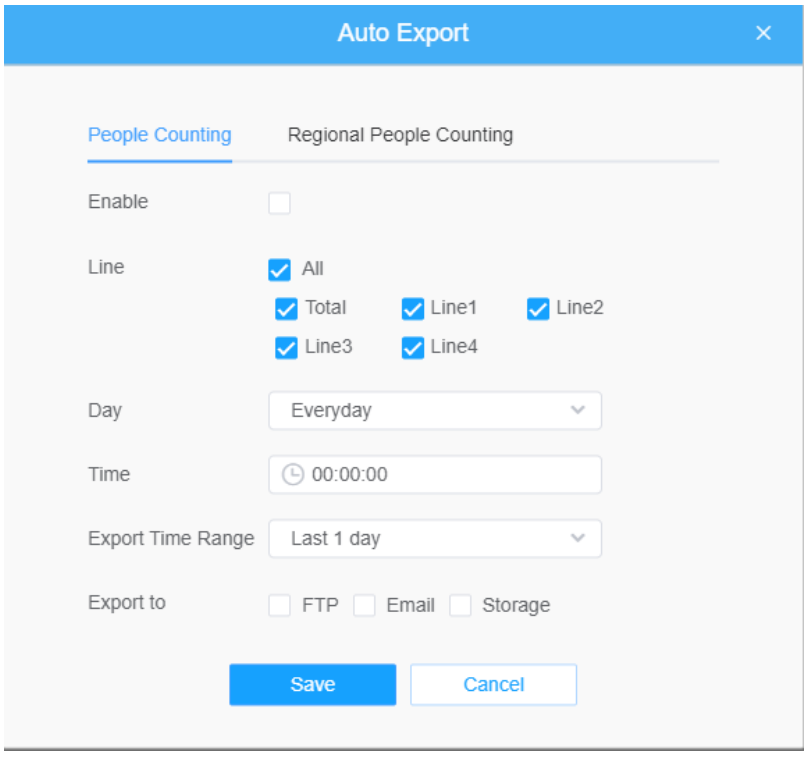


Regional People Counting-Export

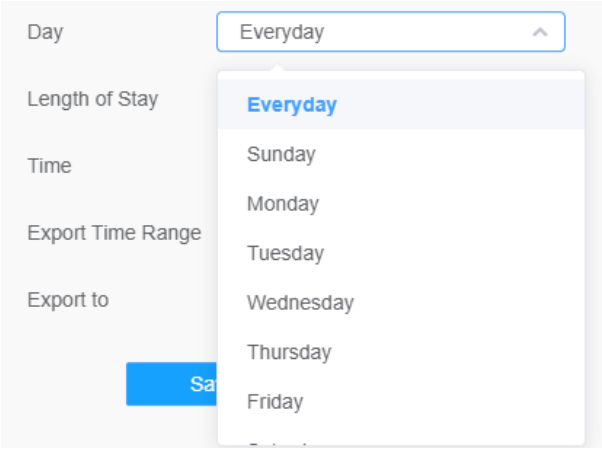


Step8: Click "Auto Export" button to pop up the Statistics Report Settings as shown below.

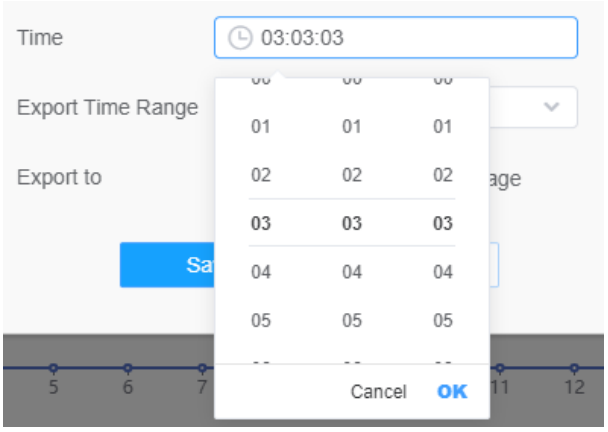
People Counting-Auto Export



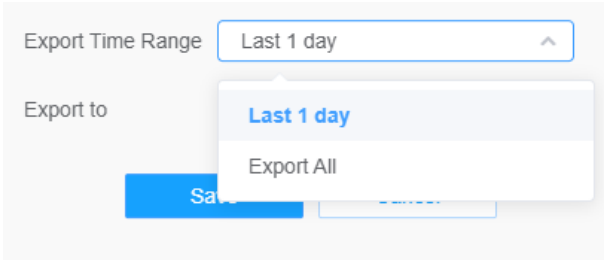
- Check the check box to enable the auto export of people counting, then select the lines as needed.
- Set Day. User can choose Everyday to export daily reports, while choosing others to export reports on a specific day of the week;



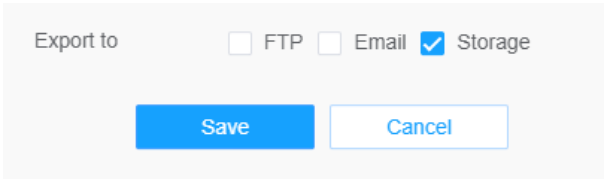
- Set Time. User can choose the time of day to export the Statistics Report automatically, click the calendar icon to pop up the following Quick Selection;



- Set Export Time Range;

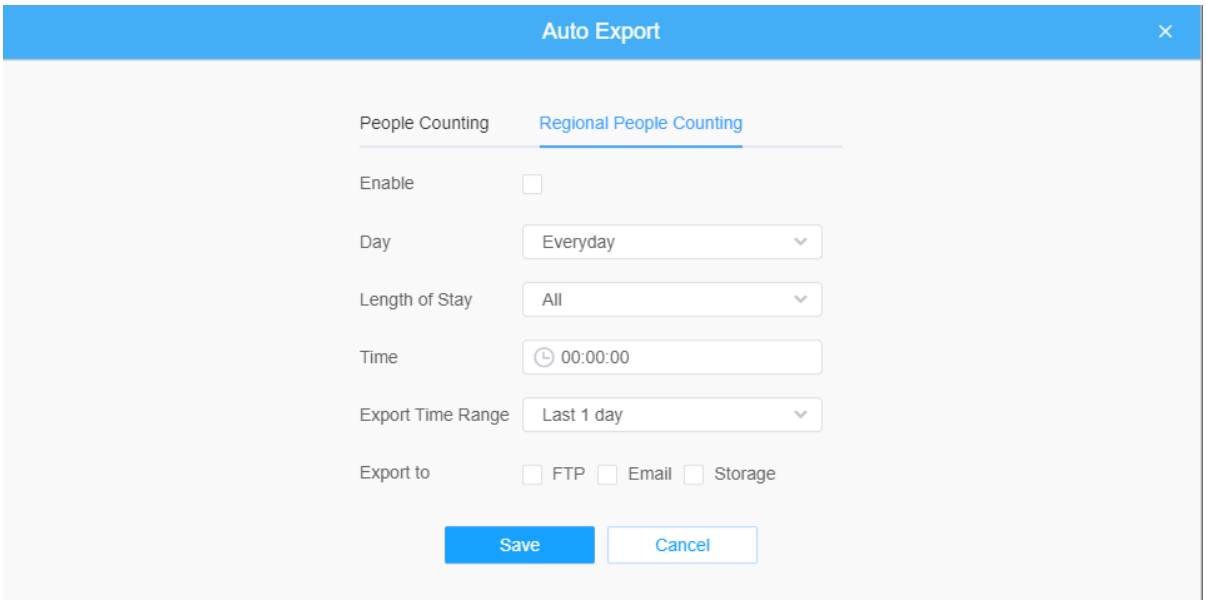


- Set the destination path of the automatically exported report. The report can be exported to FTP/ Email/Storage automatically as the form of an Excel spreadsheet according to the day, time and export time range you set. Then click “Save”.

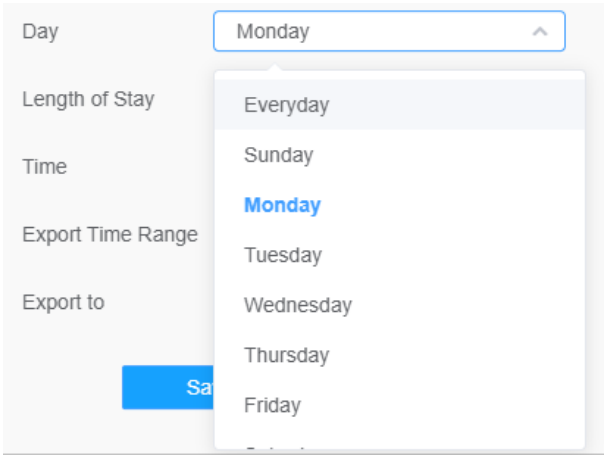


Note: If the current Statistics Report is generated, it will be saved as a csv form.

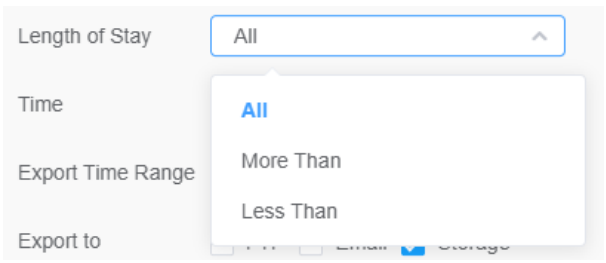
Regional People Counting-Auto Export



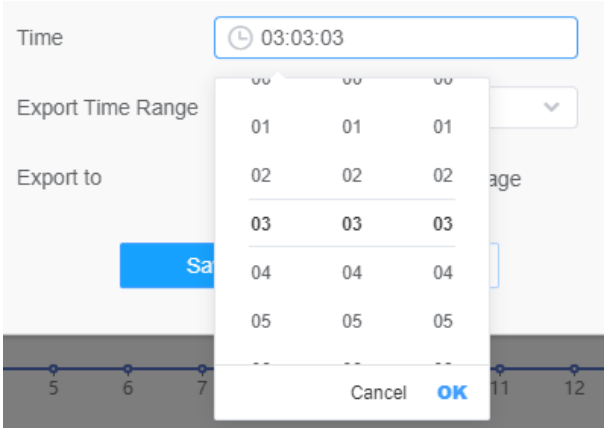
- Check the check box to enable the auto export of regional people counting.
- Set Day. User can choose Everyday to export daily reports, while choosing others to export reports on a specific day of the week;



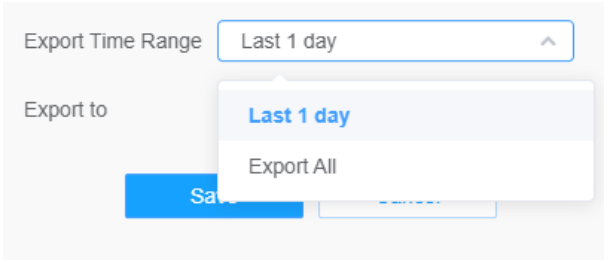
- Set Length of Stay.



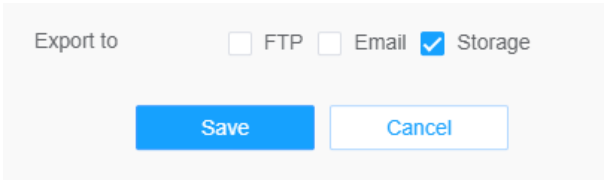
- Set Time. User can choose the time of day to export the Statistics Report automatically, click the calendar icon to pop up the following Quick Selection;



- Set Export Time Range;



- Set the destination path of the automatically exported report. The report can be exported to FTP/ Email/Storage automatically as the form of an Excel spreadsheet according to the day, time and export time range you set. Then click “Save”.



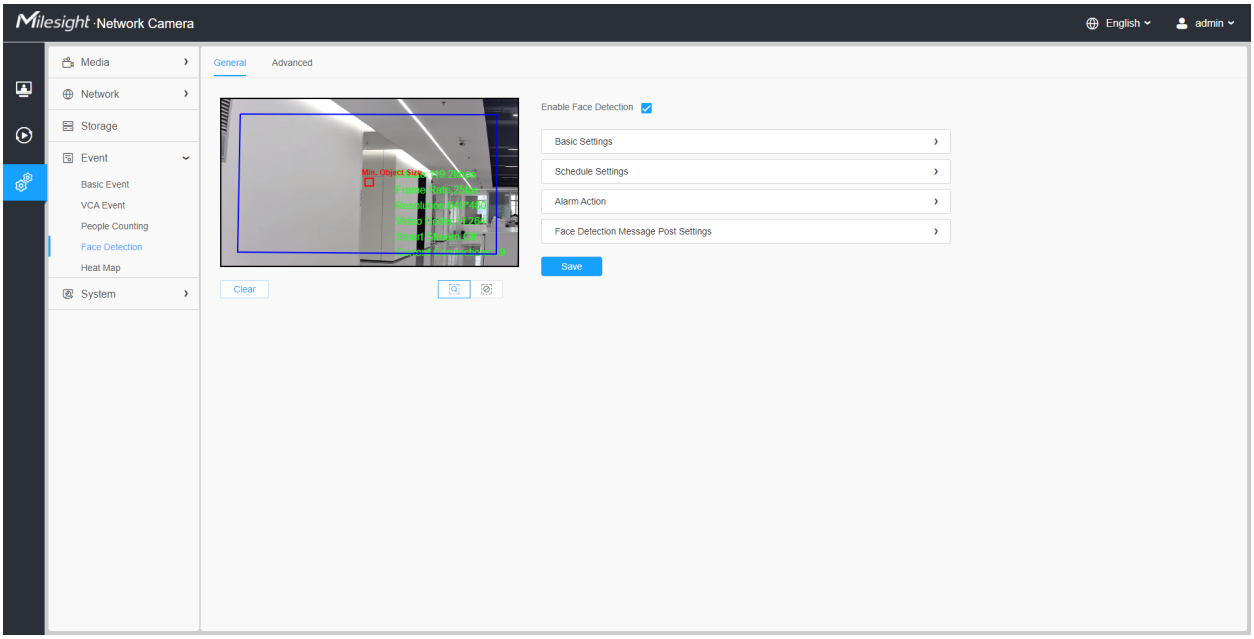
Note: If the current Statistics Report is generated, it will be saved as a csv form.

8.4.4 Face Detection

The Face Detection function can detect the face appearing in the drawn area and support saving face snapshots into Storage, upload via FTP or Email, display in Live View.

Note: Make sure your camera model is MS-Cxxxx-xPC.

8.4.4.1 General



Settings steps are as shown below:

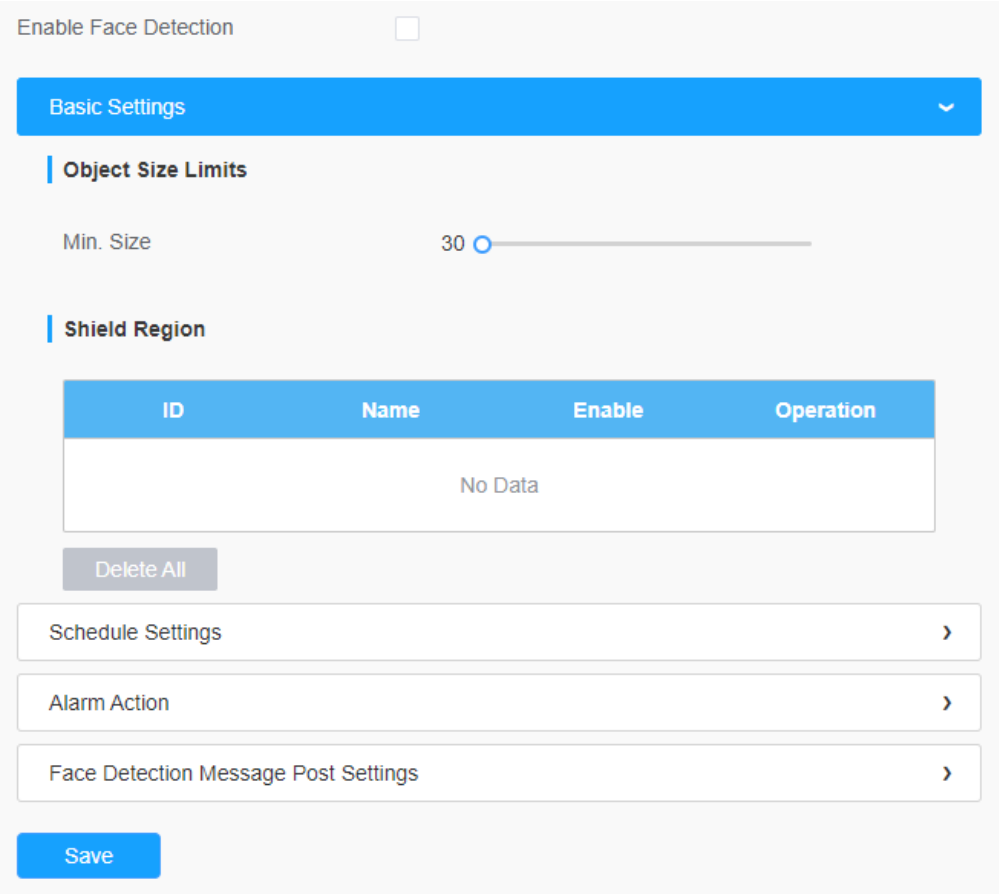
Step1: Enable Face Detection;

[Basic Settings]

Step2: Set Min. Object Size;

Step3: Set detection region, you can drag the detection region to adjust the size. Only faces in this region will be detected;

Step4: Set Shield Region to make faces in the some places of detection region be not detected. The faces can be set to be not detected in some places of detection region via setting the Shield Region. You can draw a Shield Region in the preview interface firstly, then click Add button. There are at most four Shield Region drawn available;



[Schedule Settings]

Step5: Set detection schedule.

Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Alarm Action]

Step6: Set alarm action.

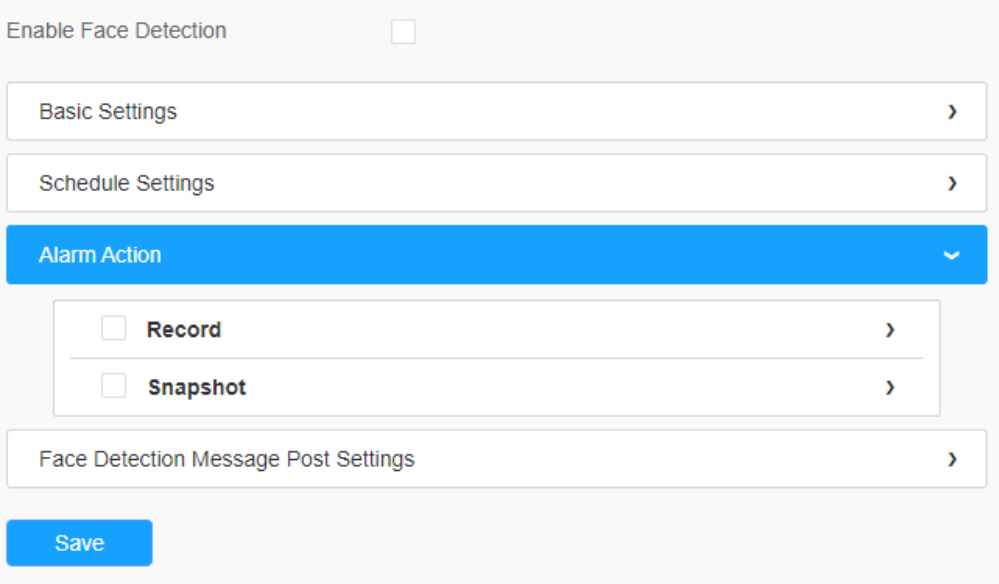


Table 62. Description of the buttons

Parameters	Function Introduction
Record	**Duration:** Select the duration time of alarm. 5s/10s/15s/20s/25s/30s are available. **Linkage:** Save alarm recording files into SD Card or NAS or Upload the recording files via FTP.
Snapshot	**Number:** The number of snapshot, 1~5 are available. **Interval:** This cannot be edited unless you choose more than 1 to Snapshot. **Linkage:** Save alarm recording files into SD Card or NAS, Upload the recording files via FTP and send alarm email.

[Face Detection Message Post Settings]

Step6: Enable face detection Messagr post.

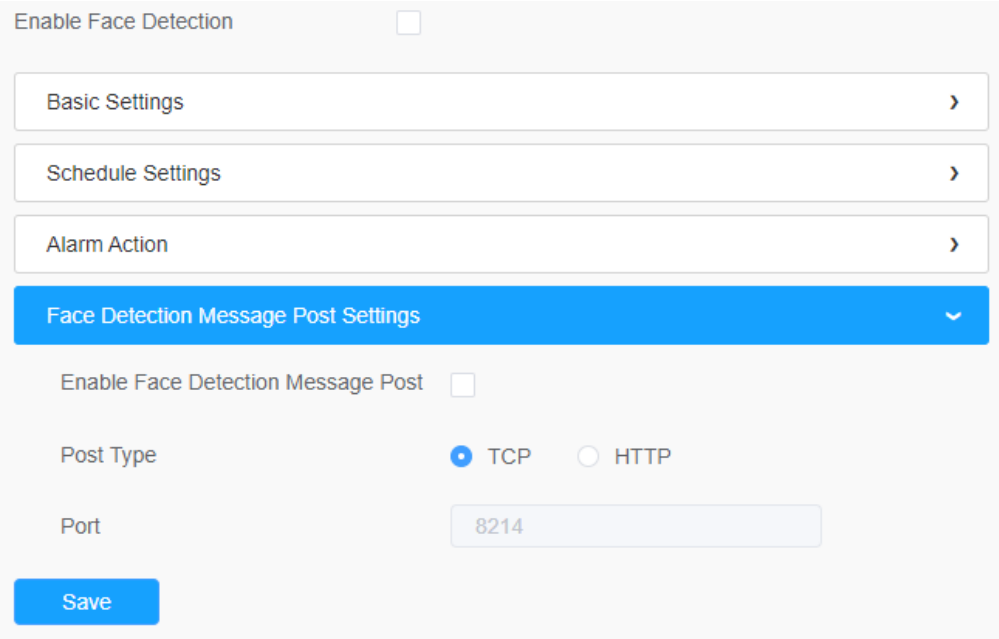
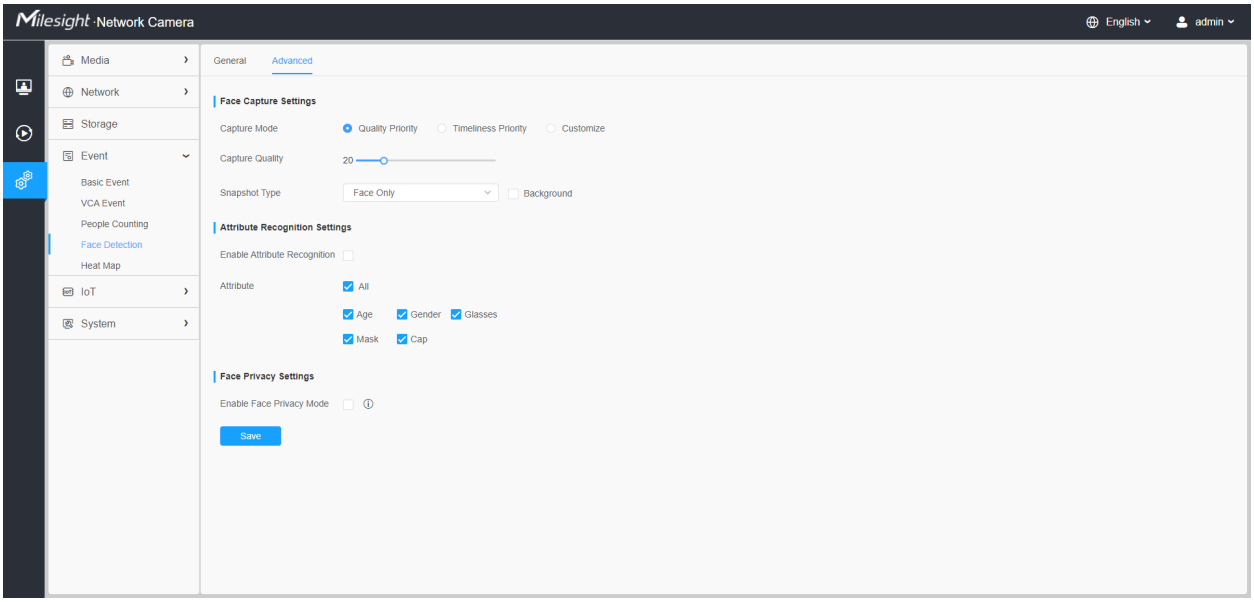


Table 63. Description of the buttons

Parameters	Function Introduction
Enable Face Detection Message Post	Check the check box to enable Face Detection Message Post. It will push information to some third-party devices or compatible software. Information can be pushed by TCP or HTTP.
Port Type	Information can be pushed by **TCP** or **HTTP**.

8.4.4.2 Advanced



[Face Capture Settings]

Here you can make configuration for face capture snapshot.

Table 64. Description of the buttons

Parameters	Function Introduction
Capture Mode	**Auto Mode, Quality Priority, Timeliness Priority, Customize** are available. **Auto Mode:** In this mode, it will push a face screenshot based on screenshot quality and push speed when the face is detected. **Quality Priority:** In this mode, it will push a face screenshot of best quality when the face is detected. **Timeliness Priority:** In this mode, it will push a face screenshot in the shortest time when the face is detected. **Customize:** In this mode, you can customize some detect conditions, including Snapshot Interval, Oblique Face Angle Limit, Pitching Face Angle Limit, Side Face Angle Limit, Blur Limit.
Snapshot Interval	80 milliseconds, 200 milliseconds, 500 milliseconds, 1 second, 2 seconds and 4 seconds are available. **Note:** Optional for Customize mode.
Oblique Face Angle Limit	Set **Oblique Face Angle Limit to 1~180.** The larger the value, the larger angle the oblique face that can be detected. **Note:** Optional for Customize mode.
Pitching Face Angle Limit	Set **Pitching Face Angle Limit to 1~180.** The larger the value, the larger angle the pitching face that can be detected. **Note:** Optional for Customize mode.
Side Face Angle Limit	Set **Side Face Angle Limit to 1~180.** The larger the value, the larger angle the side face that can be detected. **Note:** Optional for Customize mode.
Blur Limit	Set **Blur Limit to 1~10.** The larger the value, the more blurred the face can be detected. **Note:** Optional for Customize mode.

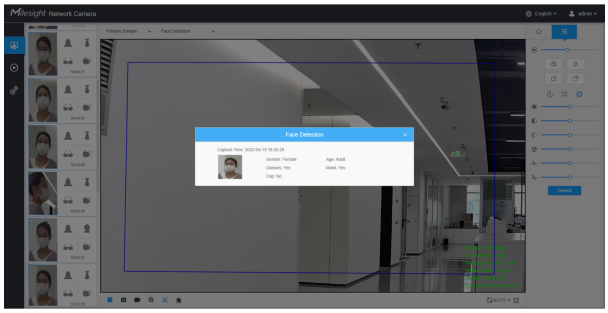
Parameters	Function Introduction
Snapshot Type	**Face Only, Upper Body, Whole Body** are available. **Face Only:** Capture the screenshot of face only. **Upper Body:** Capture the screenshot of upper body. **Whole Body:** Capture the screenshot of whole body. If you check the "Background" option, it will take another screenshot of the entire image.

Camera will detect faces in Live View according to the region and conditions you set. If you check the "Show Tracks" option, it will display the face screenshot with the ID on the left side of Live View.

[Attribute Recognition Settings]

Here you can enable Attribute Recognition and configure the attributes you want to detect.

Table 65. Description of the buttons

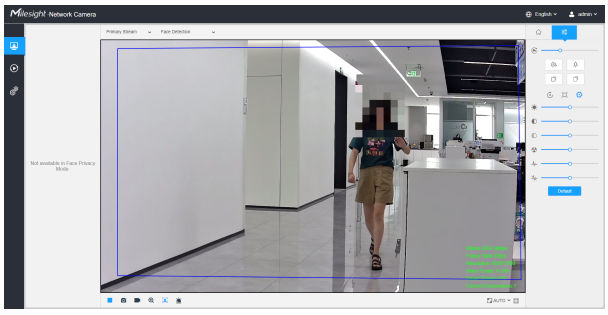
Parameters	Function Introduction
Enable Attribute Recognition	When Attribute Recognition is enabled, the attributes of detected faces will be displayed on the left side of the Live View interface. The attributes include Age, Gender, Glasses, Mask and Cap. Attribute Recognition meets the needs of users in some special scenarios, which improves user experience.  **Note:** • Please make sure the face detection function is enabled. • Make sure the Capture Mode Option is set to Quality Priority. • Attribute Recognition function cannot be used together with Face Privacy function.

Parameters	Function Introduction
Attribute	Users can choose the attributes as needed. **All:** Select or deselect all attributes in one click. **Age:** Recognize the age according the face, the types including Child (Age 0-17), Adult (Age 18-59), Elderly (Age more than 59). **Gender:** Recognize the gender according to the face, the types including Male and Female. **Glasses:** Recognize whether person is wearing glasses or not. **Mask:** Recognize whether person is wearing mask or not. **Cap:** Recognize whether person is wearing cap or not. **Note:** Unrecognized or abnormally recognized attributes will be displayed as "-".

[Face Privacy Settings]

Here you can enable the Face Privacy Mode for Face Detection.

Table 66. Description of the buttons

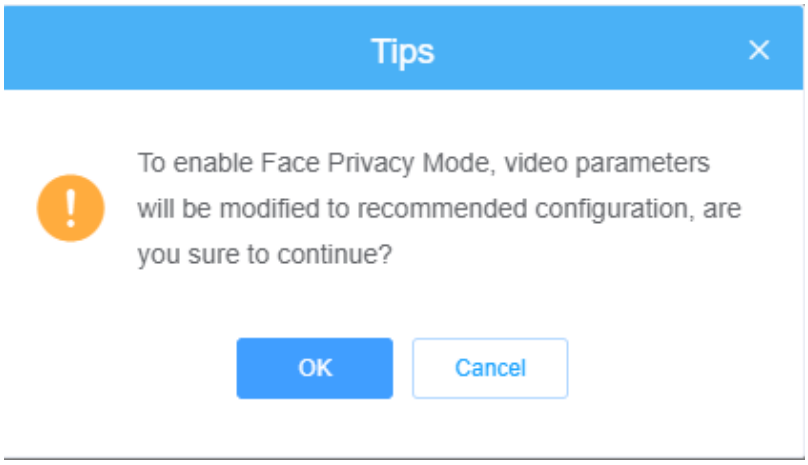
Parameters	Function Introduction
Enable Face Privacy Mode	When Face Privacy Mode is enabled, the detected faces in the face detection area will be mosaic automatically. The size of the mosaic is related to that of the detected faces, and users can customize the size of the detected faces as needed. The Face Privacy function meets the needs of users in some special scenarios, which greatly protects people's portrait rights. 

Note: To enable Face Privacy Mode, video parameters should be:

- H.265 video codec (all streams).
- Primary Stream: 1080P@25fps.
- Secondary Stream: 704*576@25fps.
- Tertiary Stream: Disabled.

- Face Capture/Face Detection Message Post/Attribute Recognition are not available in Face Privacy Mode.

  You can change video parameters to recommended configuration in the pop up window:



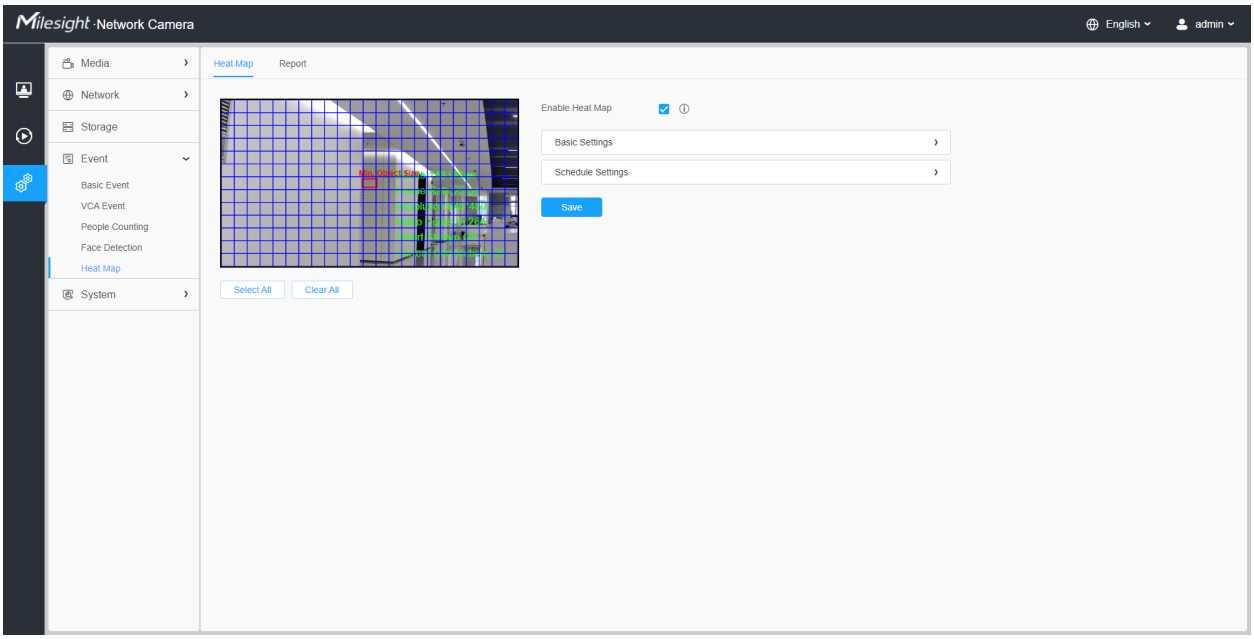
8.4.5 Heat Map

Heat Map function can analyze customers movement to reveal insights for better business management with the intuitive and accurate statistical analysis results in time or space pattern as needed.

8.4.5.1 Heat Map

Note:

- Make sure your camera model is MS-Cxxxx-xPC/PA.
- Heat Map function is supported in AI models except PTZ and LPR series.
- Only allowed to view reports within 7 days without a SD card or NAS.
- For more details about how to set Heat Map, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000643314.



Step1: Enable Heat Map function.

[Basic Settings]

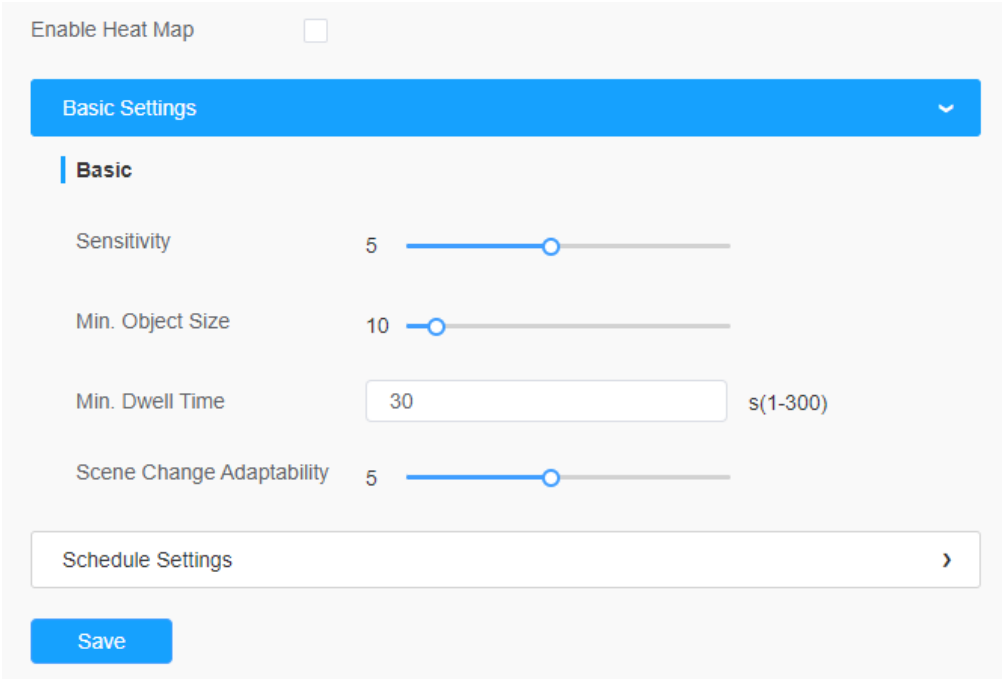
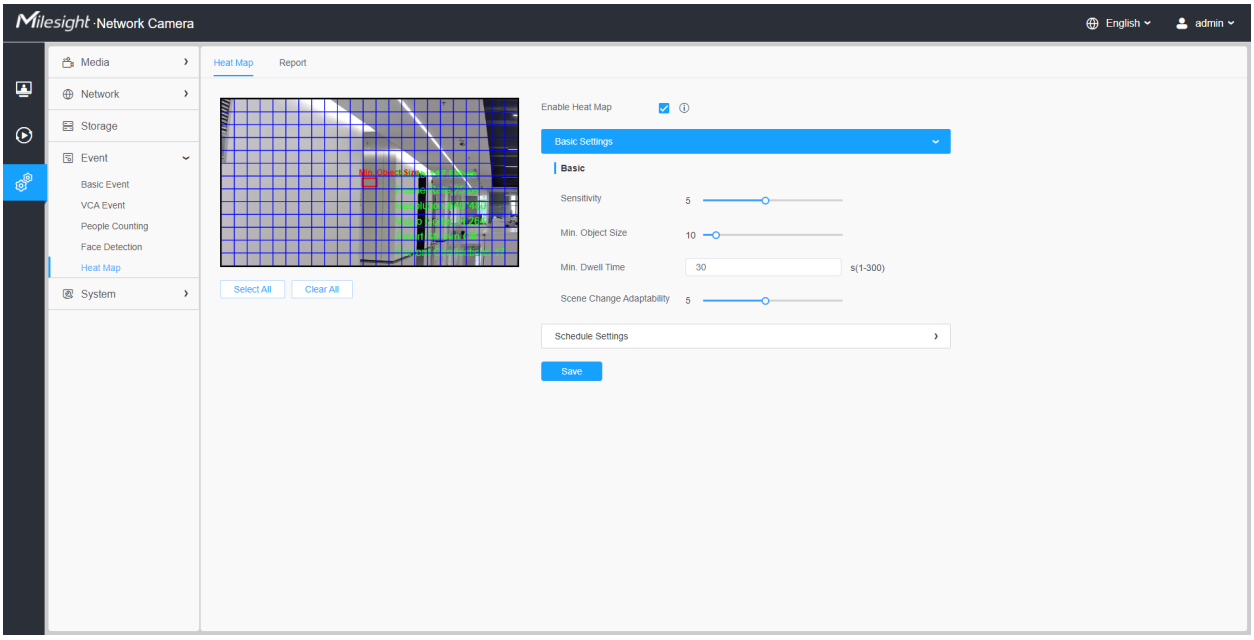


Table 67. Description of the buttons

Parameters	Function Introduction
Sensitivity	Level 1~10 are available, the default level is 5. The higher the sensitivity, the easier it is for moving objects to be recorded in the results.
Min. Object Size	Set the minimum object size from 1 to 100, the default value is 10. Objects smaller than this value will not be recorded in the result.
Min. Dwell Time	Set the minimum dwell time from 1 to 300, the default value is 30. If the object stays in the area longer than the set "Minimum Dwell Time", it will not be recorded in the result.
Scene Change Adaptability	Level 1~10 are available, the default level is 5. Scene Change Adaptability indicates the camera's adaptability to scene changes, which can increase the accuracy of detection. The camera better adapts to faster changing scenes if the value is higher.

Step2: Set Heat Map Region. Draw the screen to set the detection area. You can click "**Select All**" button to select all areas, or "**Clear All**" button to remove the current drawn area.



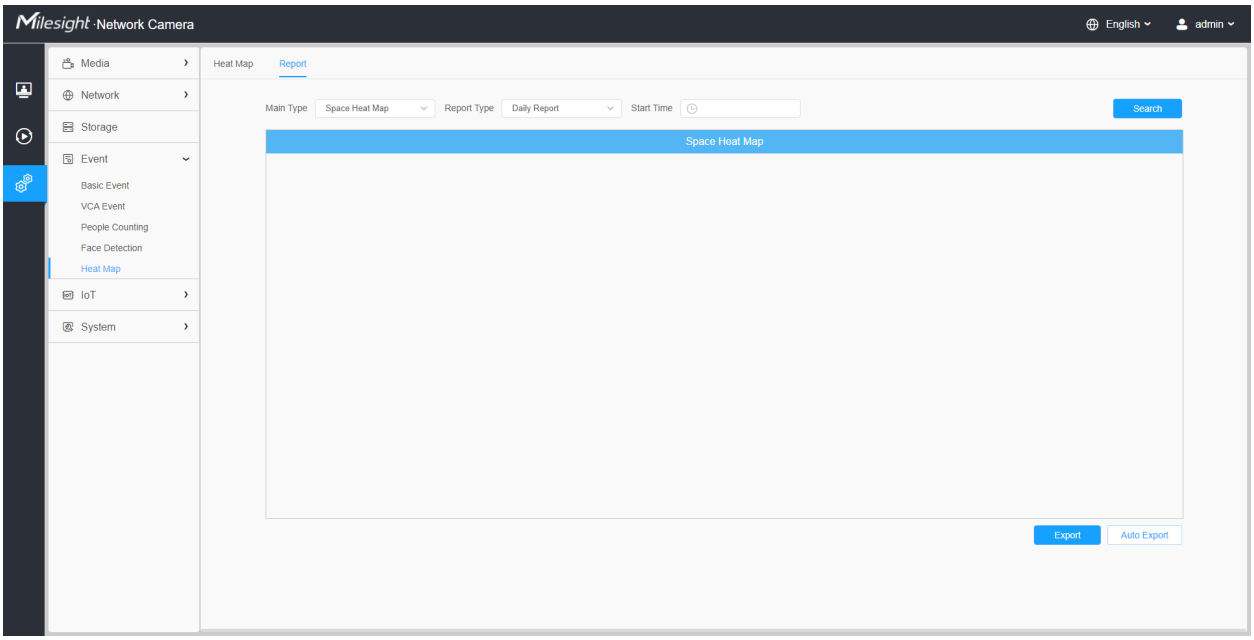
[Schedule Settings]

Step3: Schedule Settings.

Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

8.4.5.2 Report

The heat map results will be displayed on this interface.



Step1: Select Main Heat Map Type.

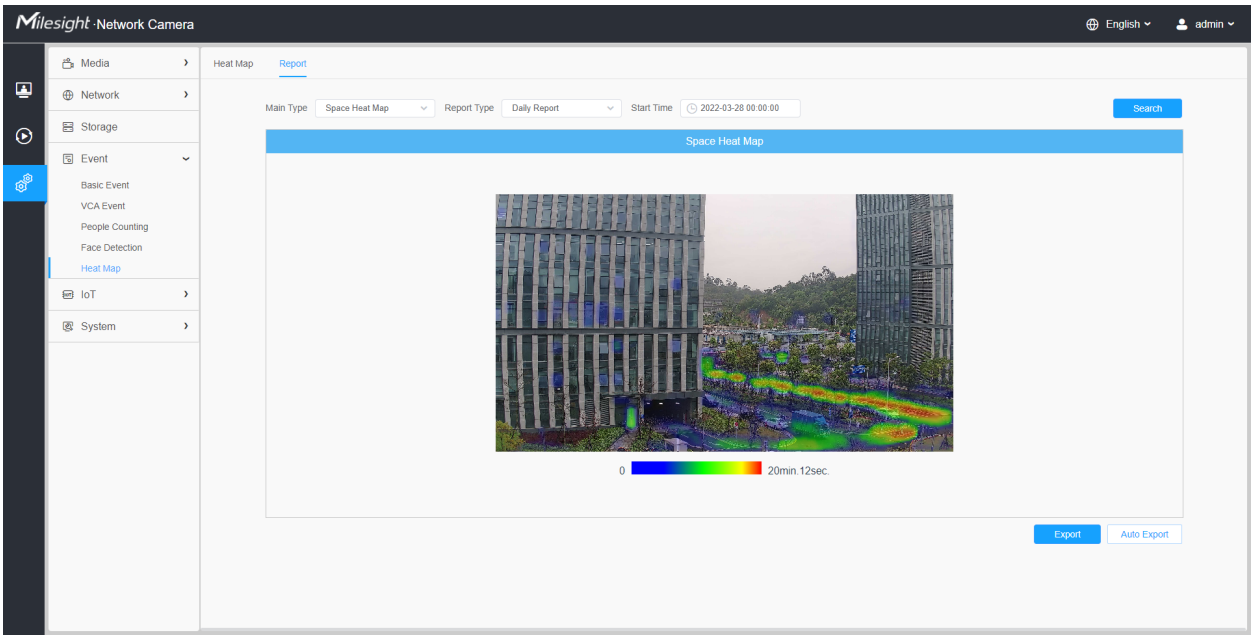
[Space Heat Map]: Space Heat Map will be presented as a picture with different colors. Different colors represent different heat values. Red represents the highest and blue represents the lowest.

[Time Heat Map]: Time heat map will be presented as a line chart to show the heat at different times.

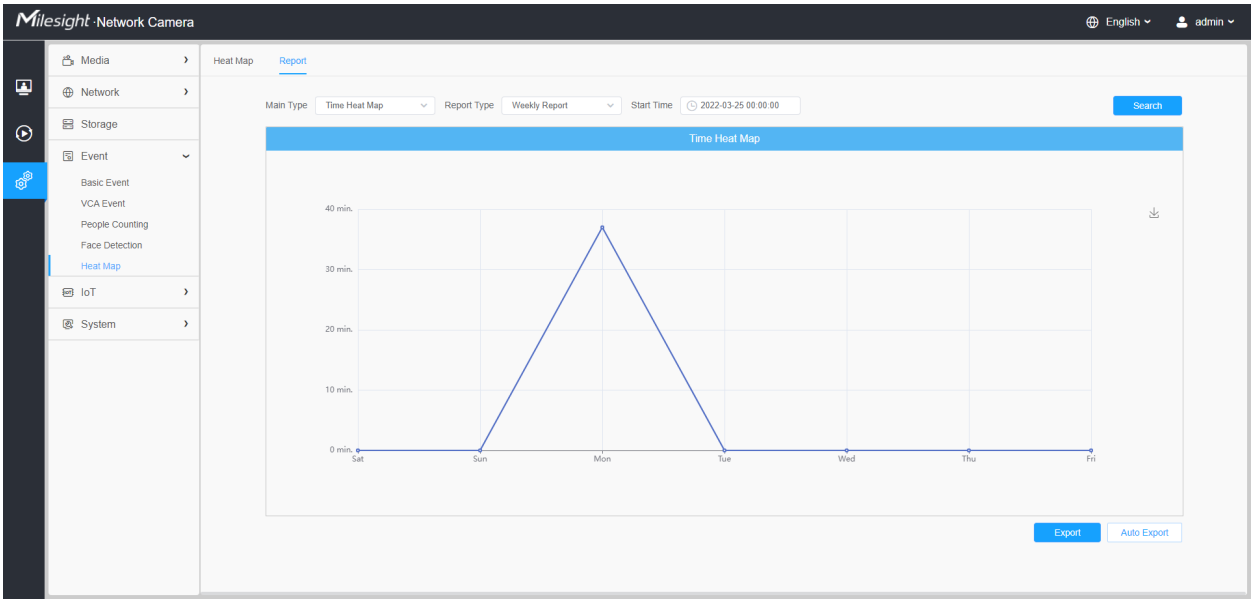
Step2: Select Report Type including Daily Report, Weekly Report, Monthly Report and Annual Report.

Step3: Select Start Time, then click the **"Search"** button, the camera will automatically count the data for the day/ week/ month/ year (based on the report type selected by the user) from the start time and generate the corresponding report as shown below.

Space Heat Map

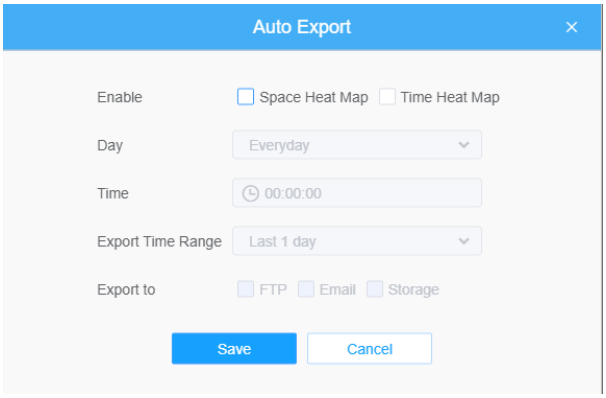


Time Heat Map

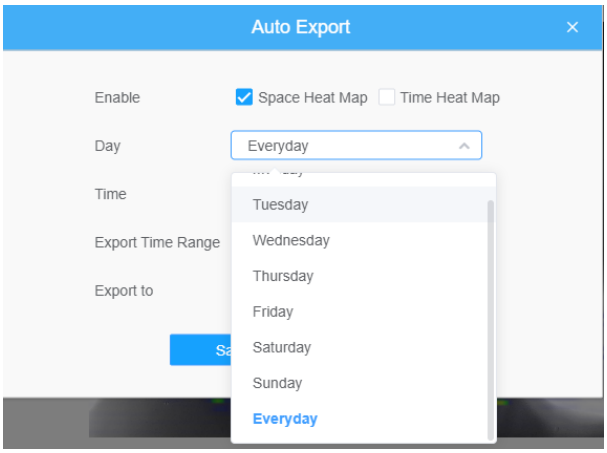


Step4: Click the "**Report Export**" button to export the report to local.

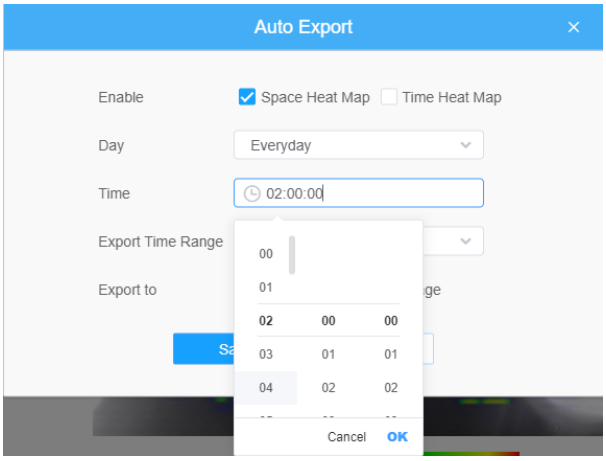
Step5: Click the **"Auto Export"** button to pop up the Heat Map Report Settings as shown below.



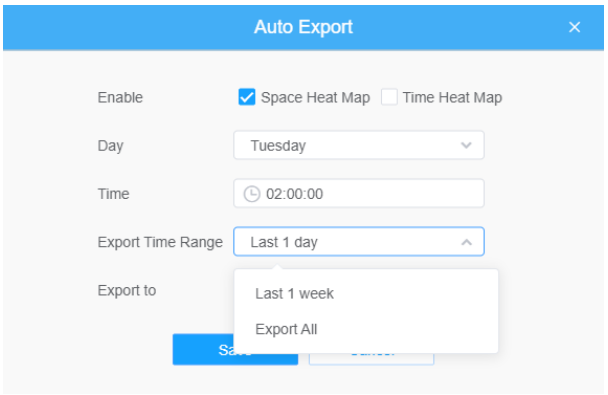
- Set Export Type. User can check Space Heat Map or Time Heat Map or both. When either Space Heat Map or Time Heat Map is checked, the gray item becomes editable as shown below;
- Set Day. User can choose Everyday to export daily reports, while choosing others to export reports on a specific day of the week;



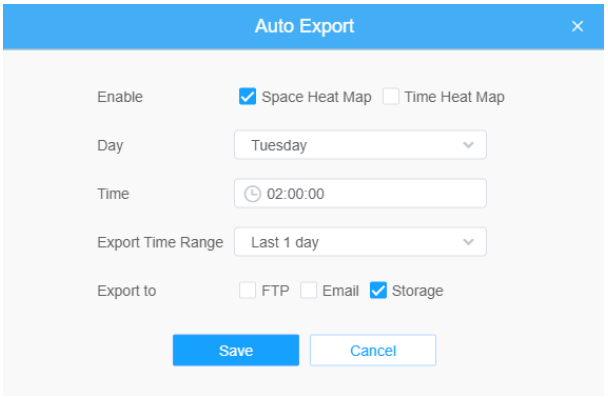
- Set Time. User can choose the time of day to export the heat map automatically, click the calendar icon to pop up the following Quick Selection;



- Set Export Time Range.



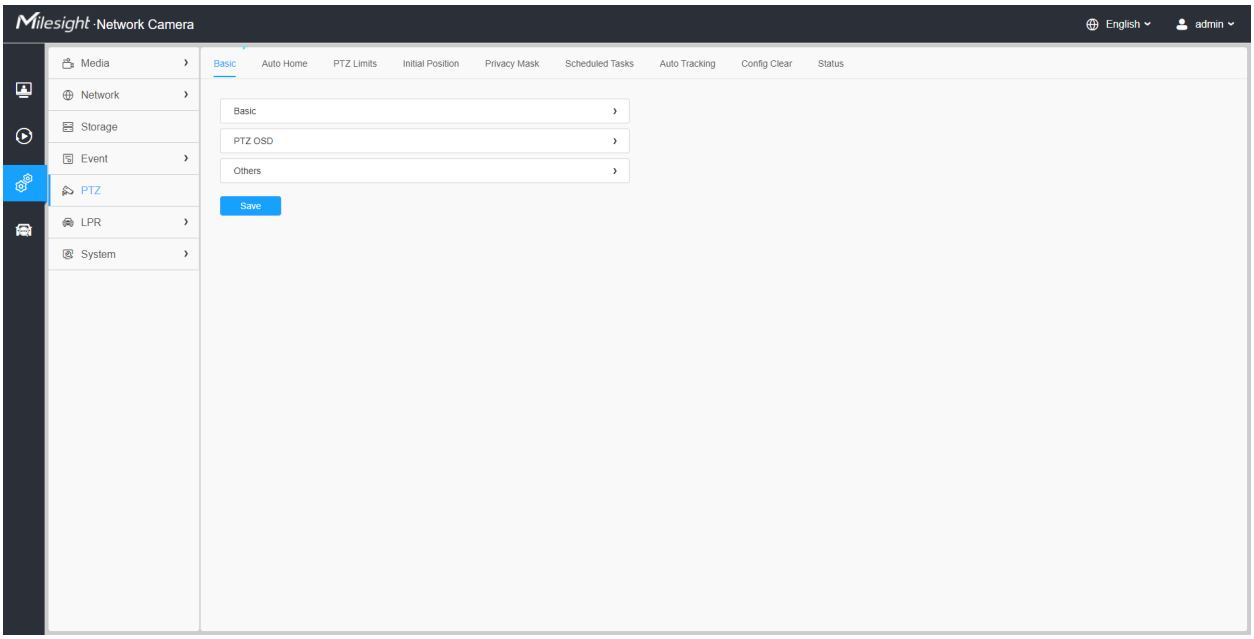
- Set the destination path of the automatically exported report. The report can be exported to FTP/Email/Storage automatically as the form of an Excel spreadsheet or a picture according to the day, time and export time range you set. Then click “Save”.



If the current Space Heat Map is generated, it will be saved as a png image. If the current Time Heat Map is generated, it will be saved as a csv form.

8.5 PTZ

8.5.1 Basic



[Basic]

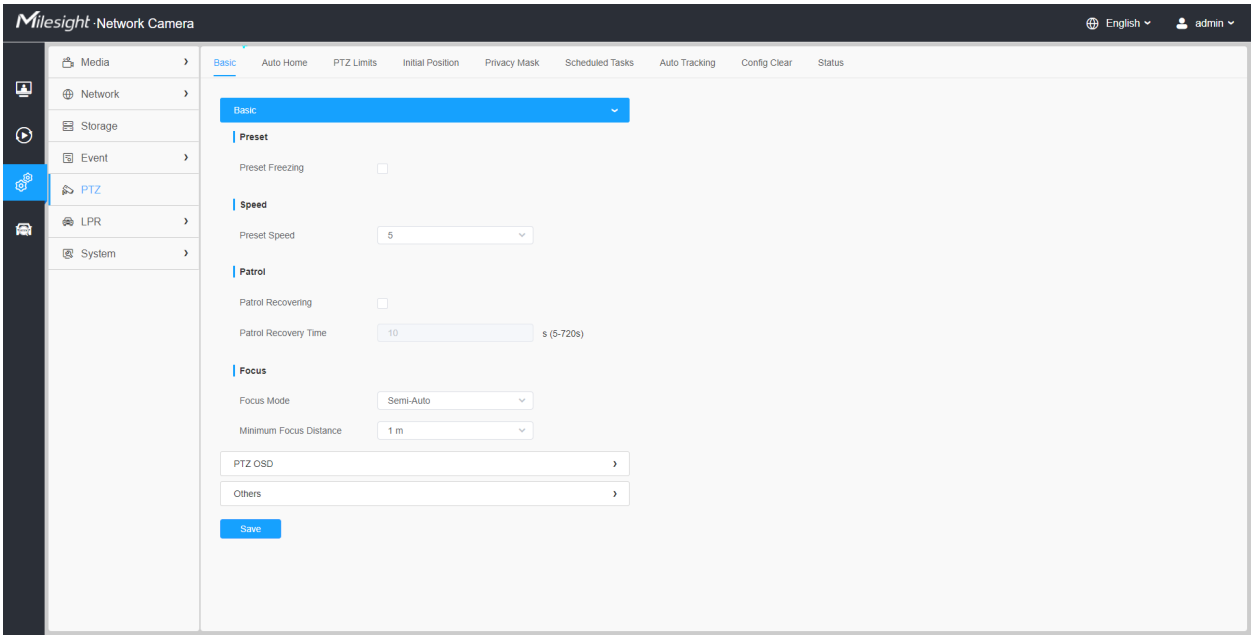


Table 68. Description of the buttons

Parameters	Function Introduction
Preset	If you enabled Preset Freezing, the live view of preset position will be showed directly instead of showing both the moving path to the position and the live view. It can also reduce the use of bandwidth in the digital network system.
Speed	**Preset Speed:** It determines the speed of calling presets. Level 1~10 are available.
	Manual Speed: It determines the PTZ speed of Manually control. **Low**/ **Medium**/ **High** are available. **Note:** Only for Speed Dome.
	Scan Speed: It determines the speed of Auto Scan. Level 1~10 are available. **Note:** Only for Speed Dome.
Patrol	**Patrol Recovering**: Click to enable Patrol Recovering.
	Patrol Recovery Time: Set time for Patrol Recovering, which is between 5 to 720 seconds.
Focus	**Focus Mode**: Three focus modes are available: Auto/ Semi-Auto/ Manual.
	Minimum Focus Distance: Set the minimum focus distance to adjust the step length of each focus. 1 meter, 1.5 meters, 3 meters, 6 meters, 10 meters and 20 meters are available. The default minimum focus distance is 1 meter.

[PTZ OSD]

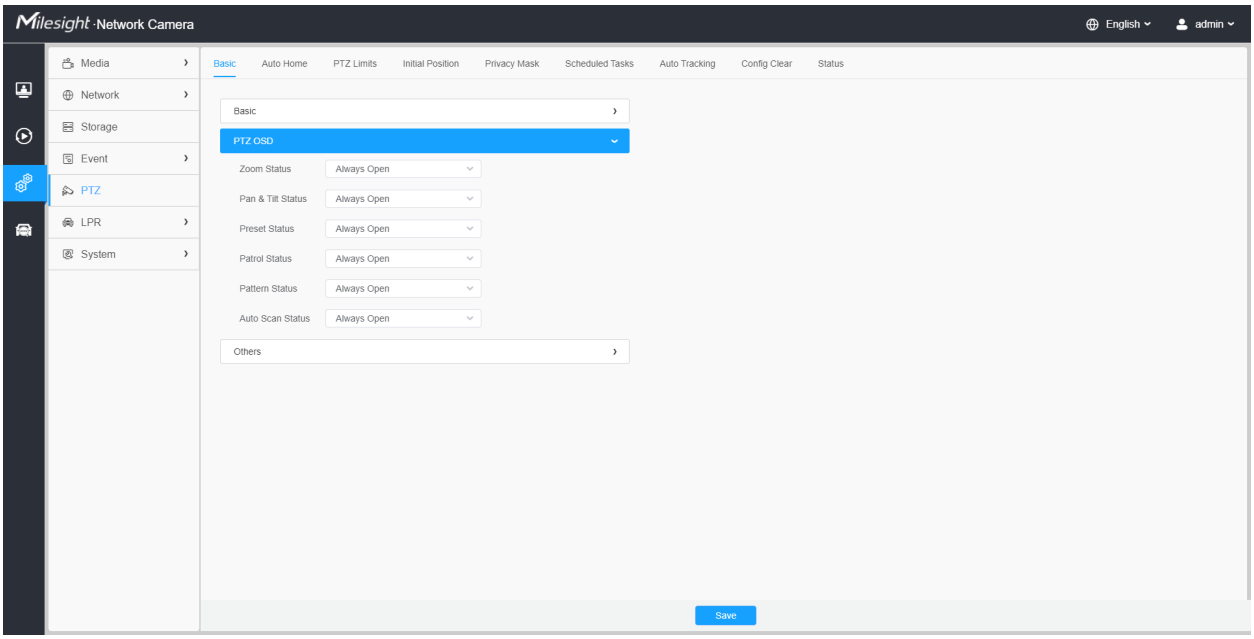


Table 69. Description of the buttons

Parameters	Function Introduction
Zoom Status	2s/ 5s/ 10s/Always Open/ Always Close are available.
Pan & Tilt Status	2s/ 5s/ 10s/Always Open/ Always Close are available.
Preset Status	2s/ 5s/ 10s/Always Open/ Always Close are available.
Patrol Status	Always Open/ Always Close are available.
Pattern Status	Always Open/ Always Close are available.
Auto Scan Status	Always Open/ Always Close are available.

[Others]

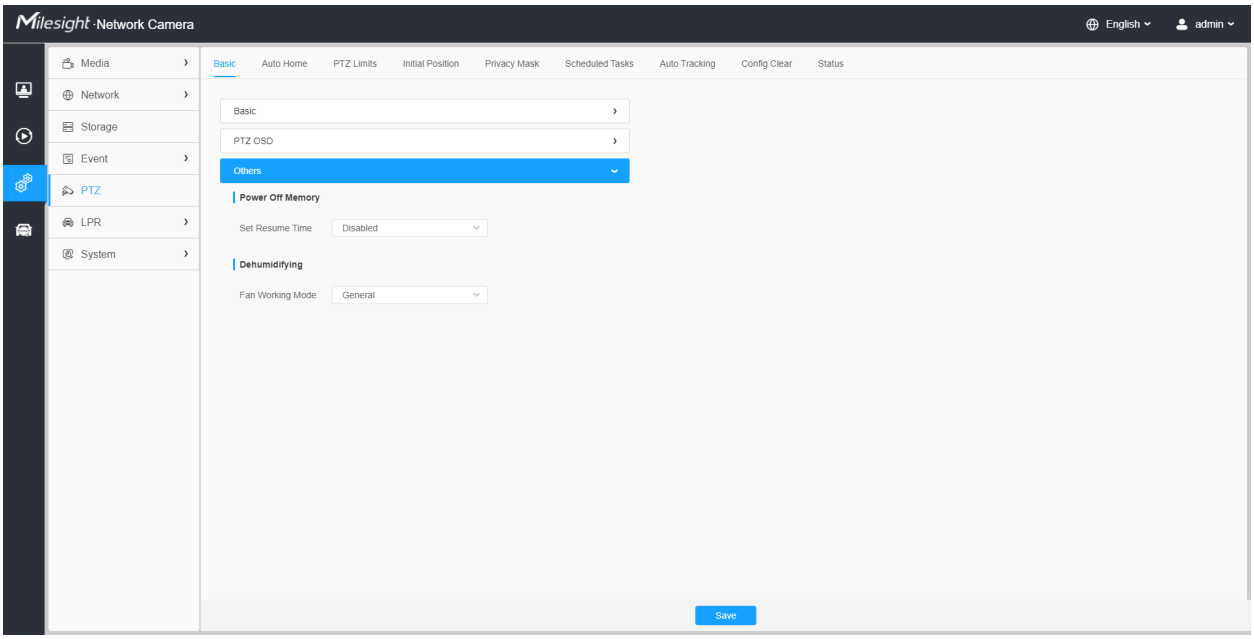
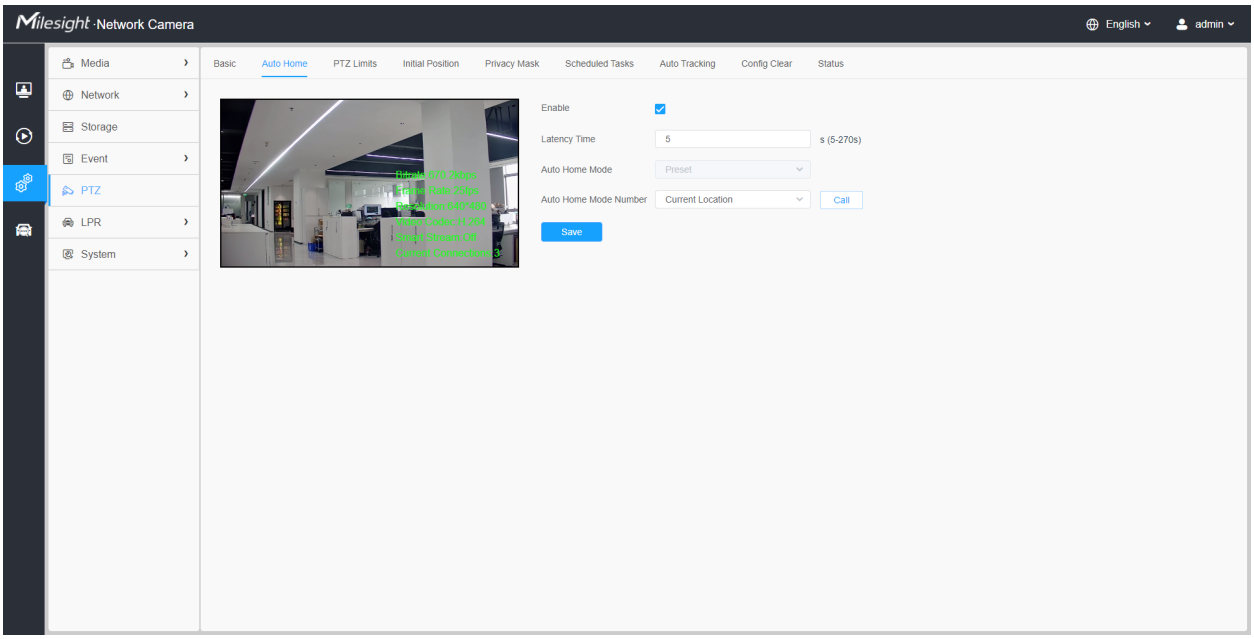


Table 70. Description of the buttons

Parameters	Function Introduction
Power Off Memory	If the camera stop working for a longer time than predefined, the position of it will be recorded. And it will resume to the position after going back to the normal work from power off. You can set the resume time to 30 seconds, 60 seconds, 300 seconds or 600 seconds to record its position.
Dehumidifying	**Fan Working Mode:** Three fan working modes are available: General/ Enhancement/ Constant. **General:** The fans are turned on from 4am to 7am and 5pm to 8pm every day. **Enhancement:** The fans are turned on from 5pm to 7am every day. **Constant:** The fans work 24 hours a day.

8.5.2 Auto Home



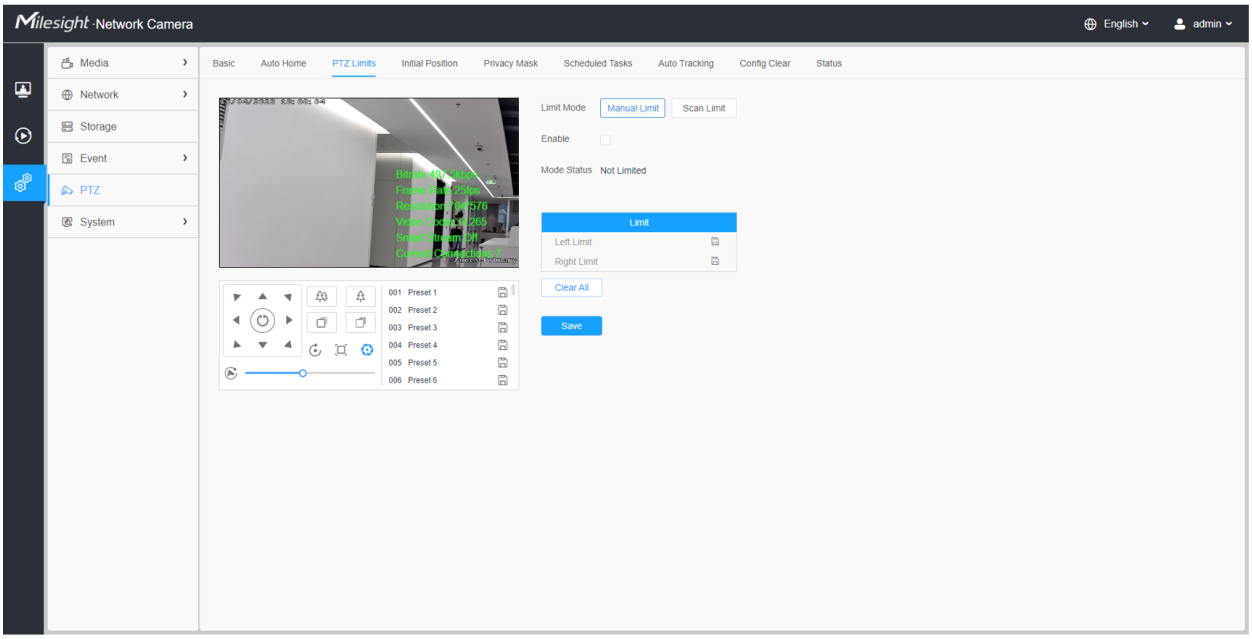
Auto Home allows the PTZ camera to return to a predefined Home Position automatically after a period of latency time. Check the checkbox to enable the Auto Home mode.

Table 71. Description of the buttons

Parameters	Function Introduction
Enable	Enable/disable the auto home function.
Latency Time	Set a latency time to trigger Auto Home mode, 5-720s.
Auto Home Mode	Preset: A preset point will take effect when triggering the Auto Home.
Auto Home Mode Number	Select a predefined preset in the list, press “Call” to check the location. Also support to select current location.

8.5.3 PTZ Limits

The PTZ camera can be programmed to move within the configurable PTZ Limits (Left/Right).



Step1: Check the checkbox to enable the PTZ Limit function.

Step2: Choose the limit mode as Manual limit or scanning limit.

- Manual Limit:

When Manual limit stops are set, you can operate the PTZ control panel manually only in the limited surveillance area.

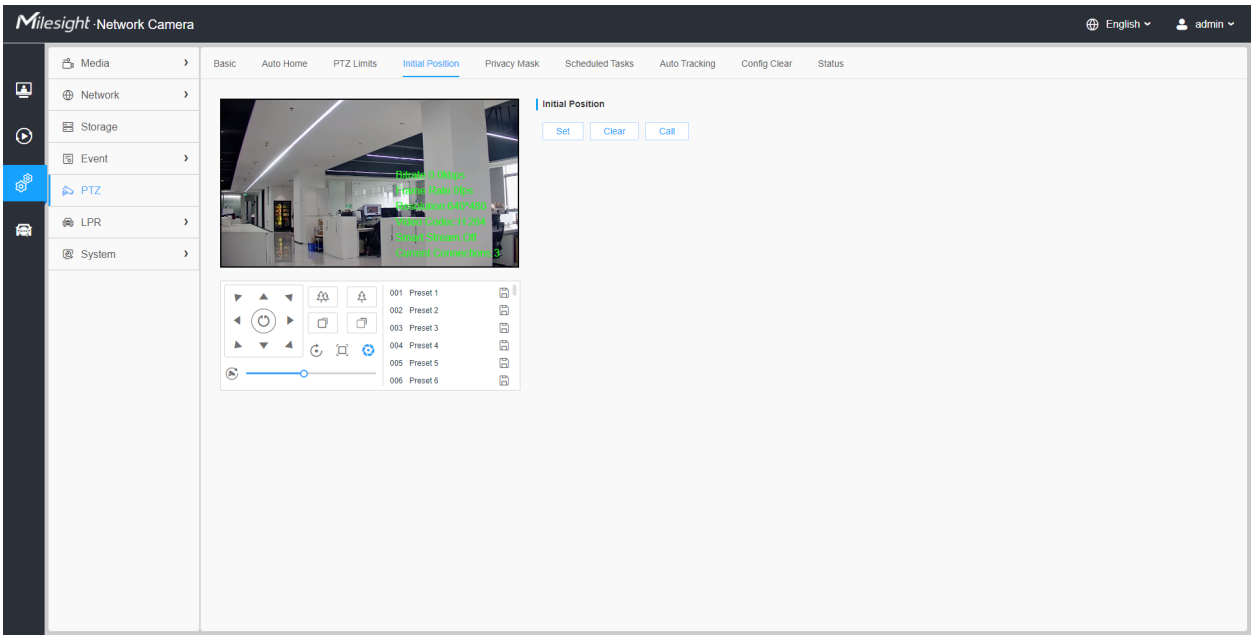
- Scan Limit:

When Scan limit stops are set, the auto scan is performed only in the limited surveillance area.

Step3: Click the PTZ controller buttons to set the left/right limit stops; you can also call the defined presets and set them as the limits of the PTZ camera.

Step4: Click **Set** to save the limits or **Clear** to clear the limits.

8.5.4 Initial Position



You can configure the Initial Position for PTZ cameras as a zero point.

Step1: Click the PTZ control buttons as the Initial Position of the PTZ bullet, you can also call a defined preset and set it as the Initial Position.

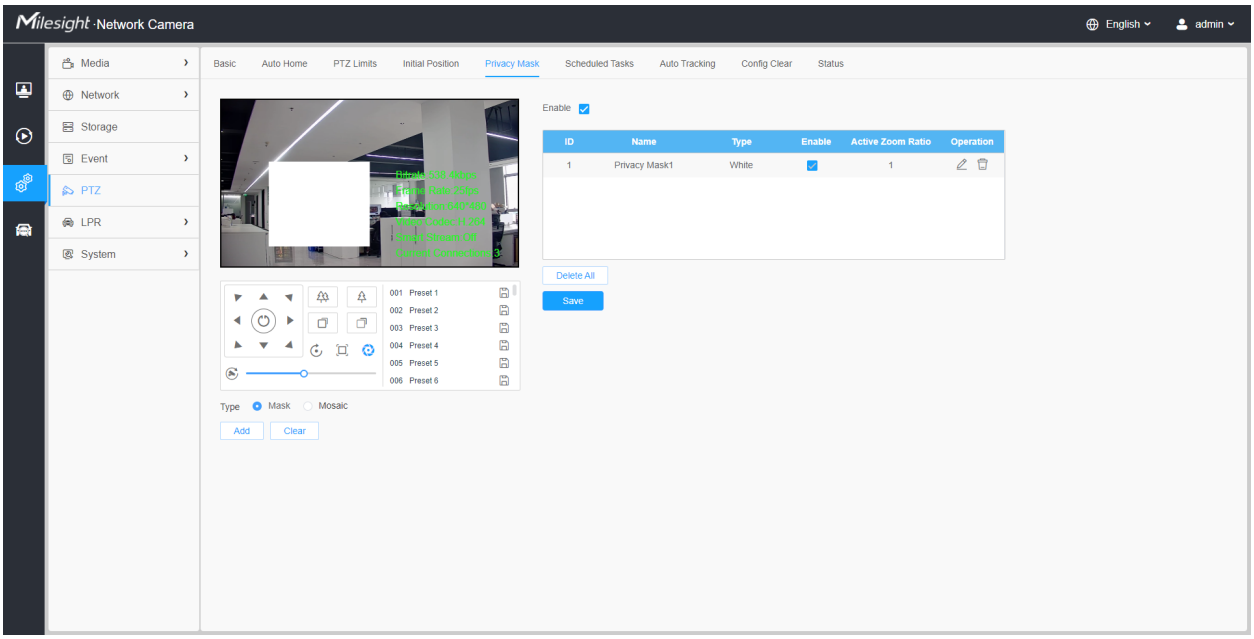
Step2: Click Set to save the position as the Initial Position.

Table 72. Description of the buttons

Parameters	Function Introduction
Set	Click to set the current position as a Initial Position
Clear	Clear the Initial Position to default settings.
Call	Click to call the Initial Position.

8.5.5 Privacy Mask

Privacy mask enables to cover certain areas on the live video to prevent certain spots in the surveillance area from being viewed and recorded. The mask area does not move as the lens moves.



[Privacy Mask]

You can select the color to use for the cover certain areas on the live video.

Note:

- For the MS-Cxxxx-xPC model, up to 24 mask areas and 4 mosaic areas are supported.
- For the MS-Cxxxx-xPA model, up to 24 mask areas are supported.

Table 73. Description of the buttons

Parameters	Function Introduction
Enable	Check the checkbox to enable the Privacy Mask function
Add	Add the current drawing area as Privacy Mask
Clear	Clear the current drawing area
Delete All	Clear all areas you drew before
Name	Support to customize the name of Privacy Mask

Parameters	Function Introduction
Type	Select the color for the privacy areas, there are eight colors available: White, Black, Blue, Yellow, Green, Brown, Red, Violet
Active Zoom Ratio	Set the value of Active Zoom Ratio according to your need, and then the mask will only appear when the zoom ratio is greater than the predefined value

[Mosaic type of Privacy Mask]

You can select the color type and mosaic type to use for the cover certain areas on the live video. The mosaic type can maintain the continuity of the picture and improve the visual effect. Up to 28 mask areas are supported, which includes 24 mask areas and 4 mosaic areas.

Note: Make sure your camera model is MS-Cxxxx-xPC.

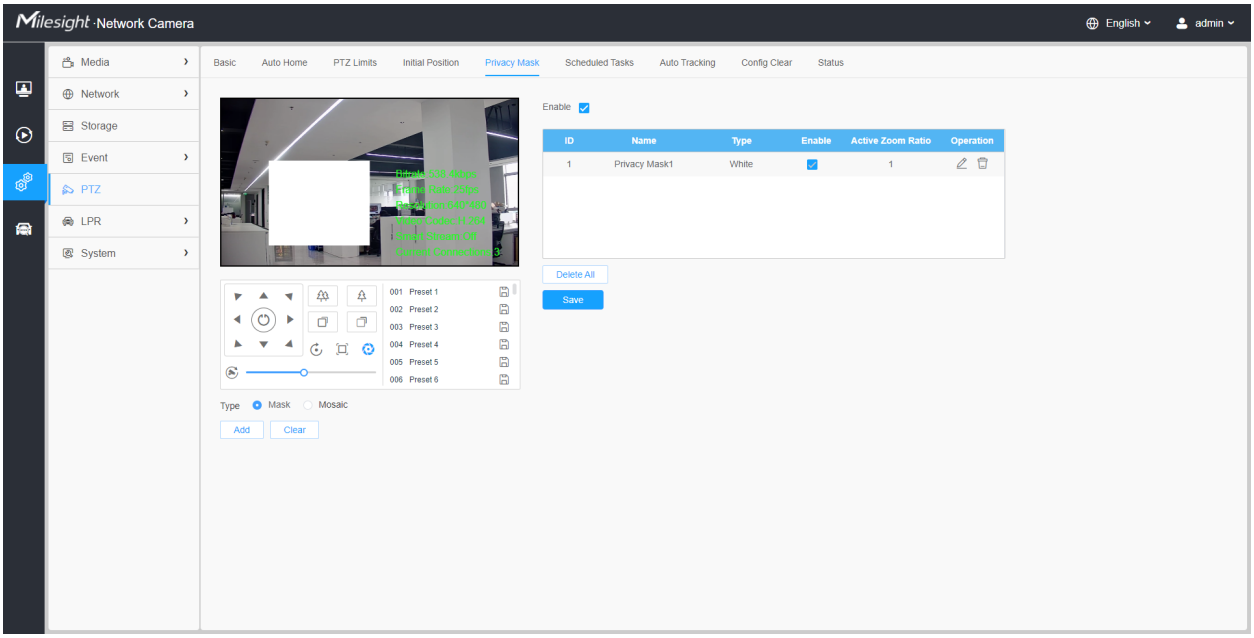


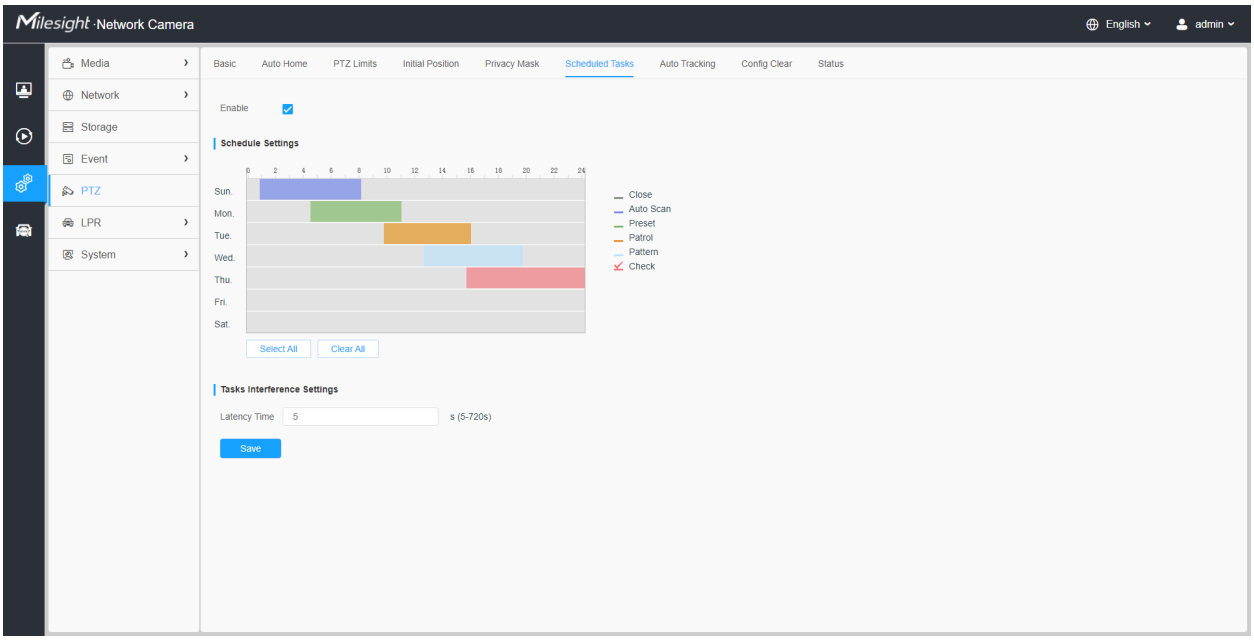
Table 74. Description of the buttons

Parameters	Function Introduction
Enable	Check the check box to enable the Privacy Mask function.
Type	Select the type to use for the privacy areas, there are two types available: Mask and Mosaic.
Add	Drew an privacy area on the live video as needed.

Parameters	Function Introduction	
Clear	Clear the area you drew on the live video.	
Operation	/	Enable/disable the selected ROI areas.
		Change the color of Mask area, there are eight colors available: White, Black, Blue, Yellow, Green, Brown, Red and Violet
		Delete the privacy mask area

8.5.6 Schedule Tasks

You can configure the PTZ camera to perform a certain action automatically in a user-defined time period.



Step1: Enter the Scheduled Task Settings interface:

Step2: Check the check box to Enable Scheduled Task.

Step3: Set the schedule and task details.

Step4: Set the Task Recovery Time (from 5 to 720 seconds). You can set the time(a period of inactivity) before the PTZ camera starts the schedule and task details.

Step5: Click Save button to save all the configurations.

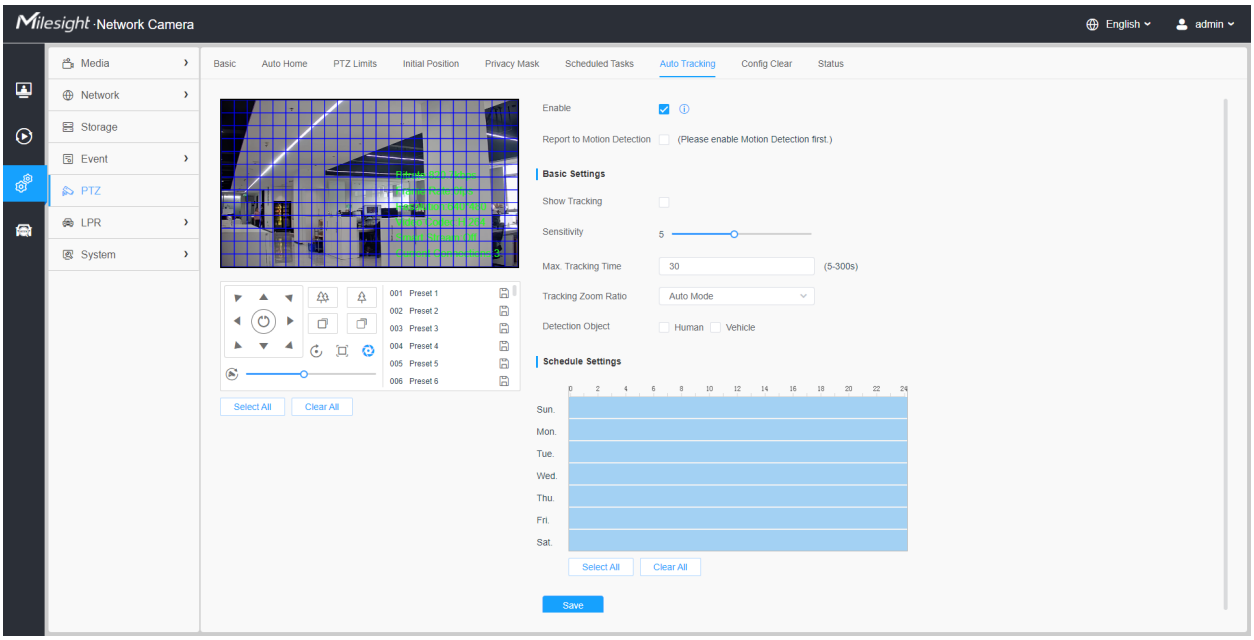
Note:

- The time of each task cannot be overlapped. Up to 10 tasks can be configured for each day.
- The Scheduled Tasks function is prior to Auto Home function. When these two functions are set at the same time, only the Scheduled Tasks function takes effect.
- You can click button to select or close all schedule of different kinds of tasks.

8.5.7 Auto Tracking

PTZ series cameras support to track the moving objects automatically after you configure this function.

Note: In non-associated conditions, the priority for Auto Tracking is:VCA Event > Auto Tracking > Motion Detection.



Settings steps are shown as follows:

Step1: Check the check box to enable Auto Tracking;

Step2: Check the check box to enable Report to Motion Detection. The motion detection alarm will be triggered during auto tracking.

Note: Please enable motion detection first.

[Basic Settings]

Step3: Enable “Show Tracking” to show tracking in Auto Tracking function.

Step4: Set detecting sensitivity;

Step5: Set Max. Tracking Time which must be between 5~300s. The camera will stop tracking when the tracking time is used up.

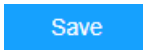
Step6: Set Tracking Zoom Ratio including Auto Mode and Customize. The camera will automatically adjust tracking zoom ratio when Auto Mode is chosen. When Customize is chosen, user needs to set the tracking zoom ratio first by adjusting zoom button, then camera will automatically track the moving objects according to customized tracking zoom ratio and the object's proportion in the picture at the moment. At the same time, the object will always keep the same proportion in the picture during the tracking process.

Step7: Choose detection object. Check Human or Vehicle attribute, and the camera will alarm once detecting people or vehicle and triggering related events;

[Schedule Settings]

Step8: Set Auto Tracking schedule.

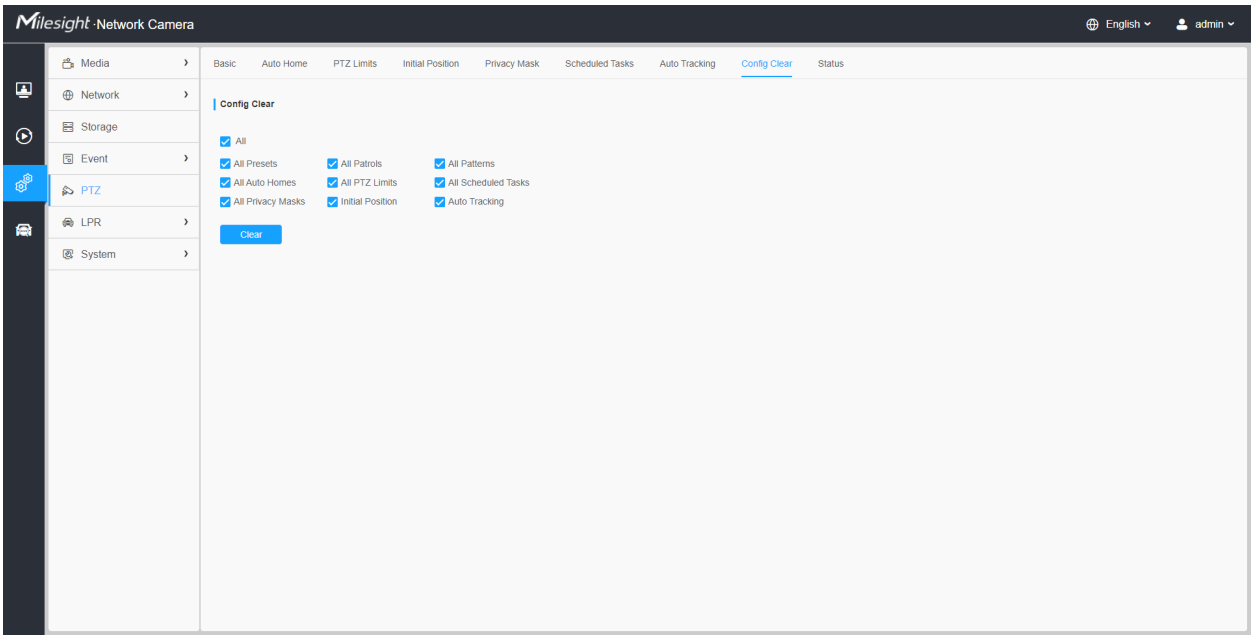
Step9: Draw the screen to set the detection region.

Step10: Click 

to save the configuration.

Note: Please turn off Auto Home before using Auto Tracking.

8.5.8 Config Clear

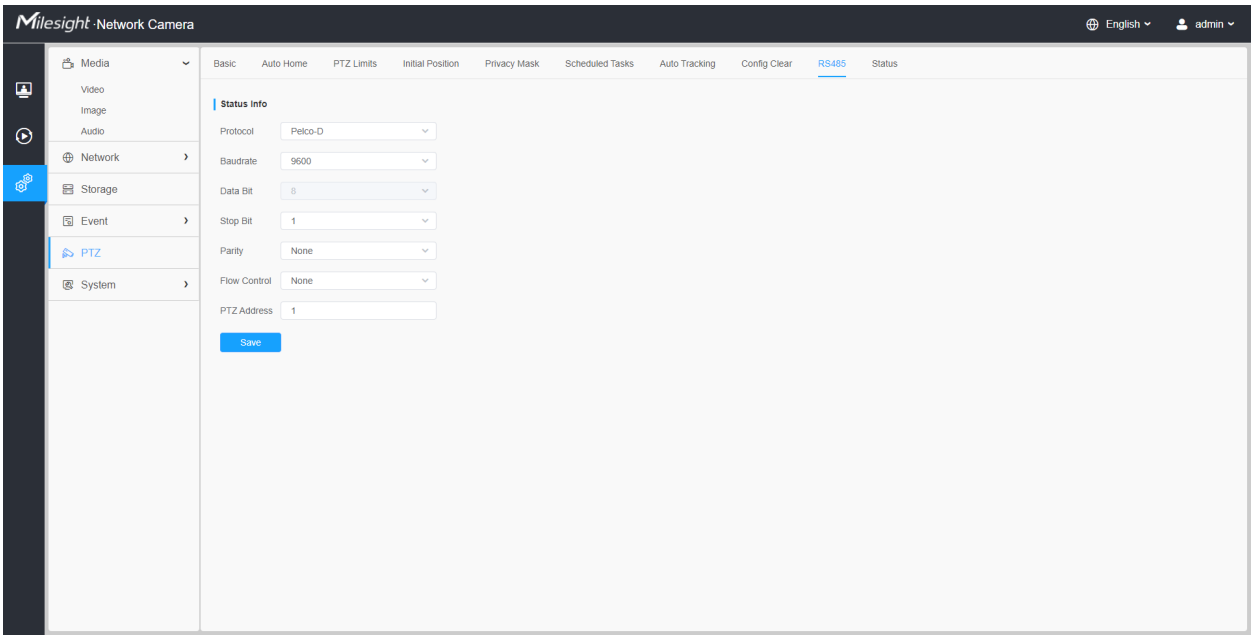


Here you can clear PTZ configurations, including all PTZ configurations, Presets, Patrols, Patterns, Auto Homes, PTZ Limits , Initial Position (PTZ Bullet), Privacy Masks and Scheduled Tasks.

8.5.9 RS485

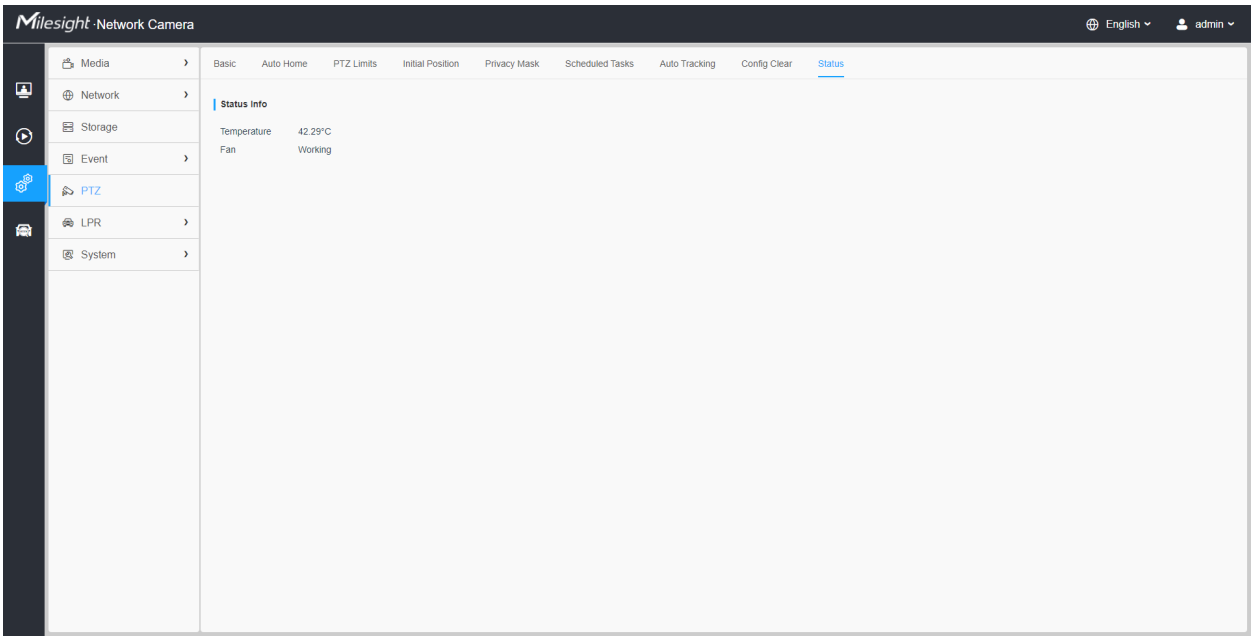
Here you can clear configure RS485 serial port to control the PTZ of Speed Dome. Protocol, Baudrate, Data Bit, Stop Bit, Parity, Flow Control, PTZ Address should be exactly the same as those of the control device.

Note: This function is only for Speed Dome.



8.5.10 Status

Here you can see the status information for PTZ camera, including temperature and fan status.



8.6 LPR (Optional)

8.6.1 Settings

The LPR function will automatically detect and capture license plate in real time and compares to a predefined list, then takes appropriate action such as generating an alert once the license plate is on the predefined black list.

Note:

- Currently we have several LPR versions, **LPR1, LPR2, LPR3, LPR 4, LPR EU, LPR AP and LPR AM**. LPR_EU, LPR2 are for European. LPR1 and LPR_AP are for Asia&Pacific. LPR4 and LPR_AM are for America. LPR3 is for Korea.

- There is only Basic Event under Event Tab for LPR cameras.
- For more details about how to set ANPR solution, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000640021.
- For more details about how to set LPR1, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000797908.

- For more details about how to set LPR2, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000797905.

- For more details about how to set LPR3, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000797904.

8.6.1.1 General

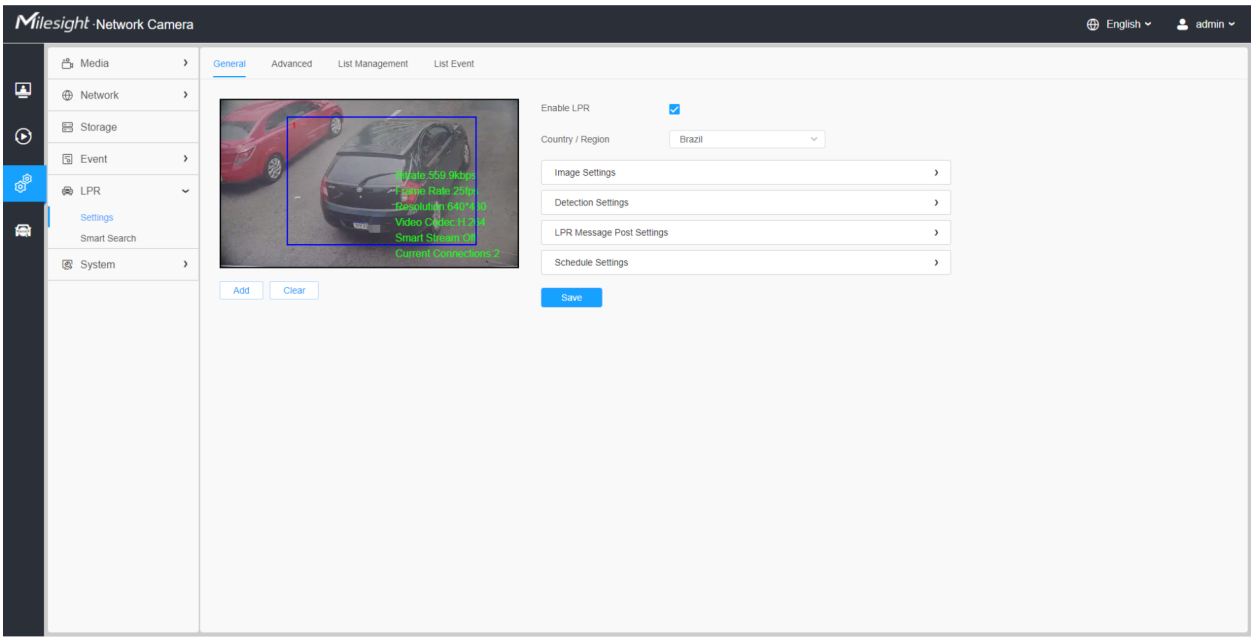


Table 75. Description of the buttons

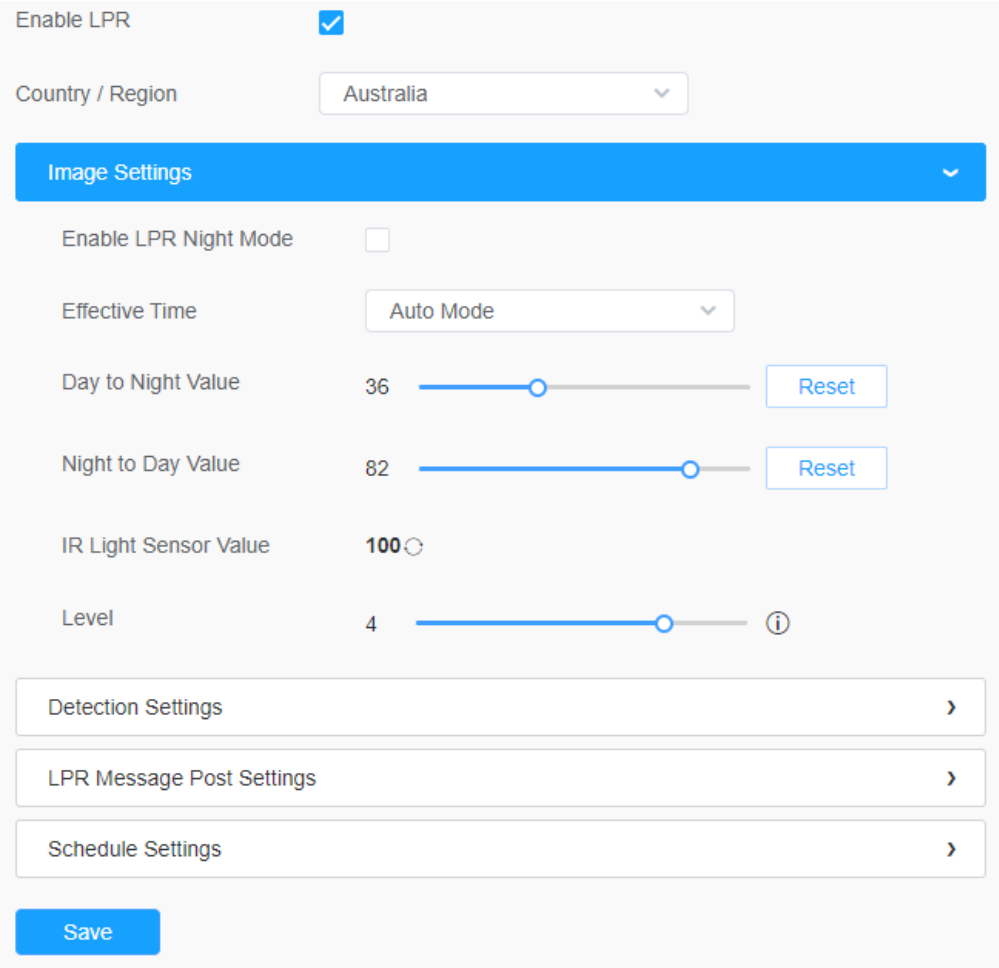
Parameters	Function Introduction
Enable Detection	Enable/disable the LPR detection function.
Country/ Region **(Only for LPR1 and LPR EU)**	Select country/ region to detect the license plate.
Effective Region **(Only for PTZ series)**	**Normal:** configure the LPR detection regions for the current area. **Advanced:** configure different LPR detection regions for different PTZ presets(Only support Preset 1~4 so far).

Step1: Check the check box to enable the LPR detection function. Select country/ region to detect the license plate.

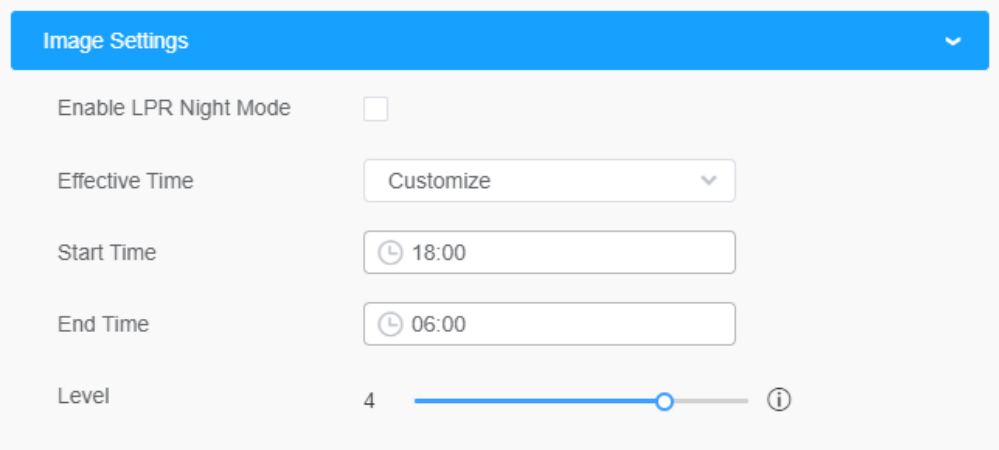
Note: For LPR2 and LPR3, please enter a license to activate the LPR function on System info interface. When the License Status changes to Valid, the camera can start detecting the license plates.

[Image Settings]

Step2: The LPR Night Mode supports the optimal LPR night recognition effect by adjusting different parameter levels. You can choose Customize to set effective time manually, or choose Auto Mode which can automatically switch to night mode according to illumination intensity.



Customize Mode



Auto Mode

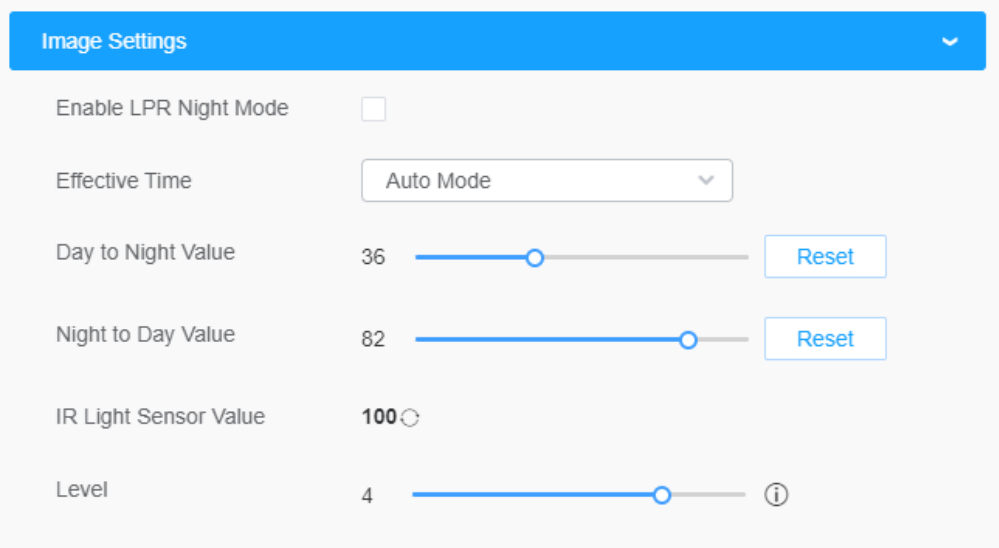
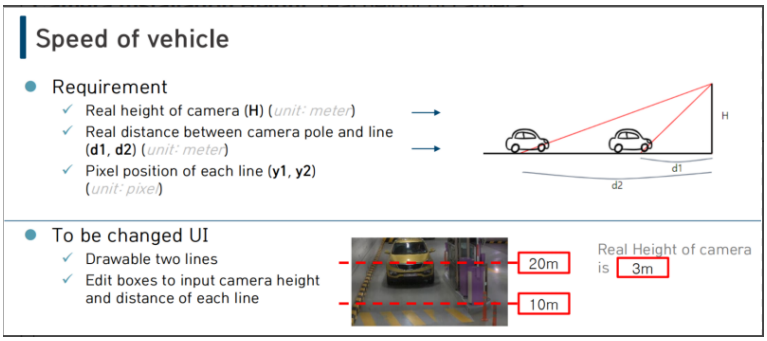


Table 76. Description of the buttons

Parameters	Function Introduction
Enable LPR Night Mode **(Only for LPR3 and LPR EU)**	With this option enabled, the camera will enable different detection modes according to Day/Night mode.
Enable Vehicle Speed Detection **(Only for LPR3)**	With this option enabled, the camera will detect the vehicle speed and display results on the Smart Search interface. You need to draw two lines(Line1 and Line2) on the live view, and fill in Camera Installation Height, Horizontal Distance1 and Horizontal Distance2, camera will combine the lines you draw and the data filled to calculate the vehicle speed. **Camera Installation Height**: real height of camera. **Horizontal Distance1**: real distance between camera pole and line1. **Horizontal Distance2**: real distance between camera pole and line2. 
Effective Time	You can choose Customize to set effective time manually, or choose Auto Mode which can automatically switch to night mode according to illumination intensity.

Parameters	Function Introduction
Level	Level 1~10 are available. **Note:** Minimum Shutter of each Level : 1- 1/250, 2- 1/500, 3- 1/750, 4- 1/1000, 5- 1/2000.

[Detection Settings]

Step3: Check the check box “Enable License Plate Recognition”, you can draw the screen to select area interested.

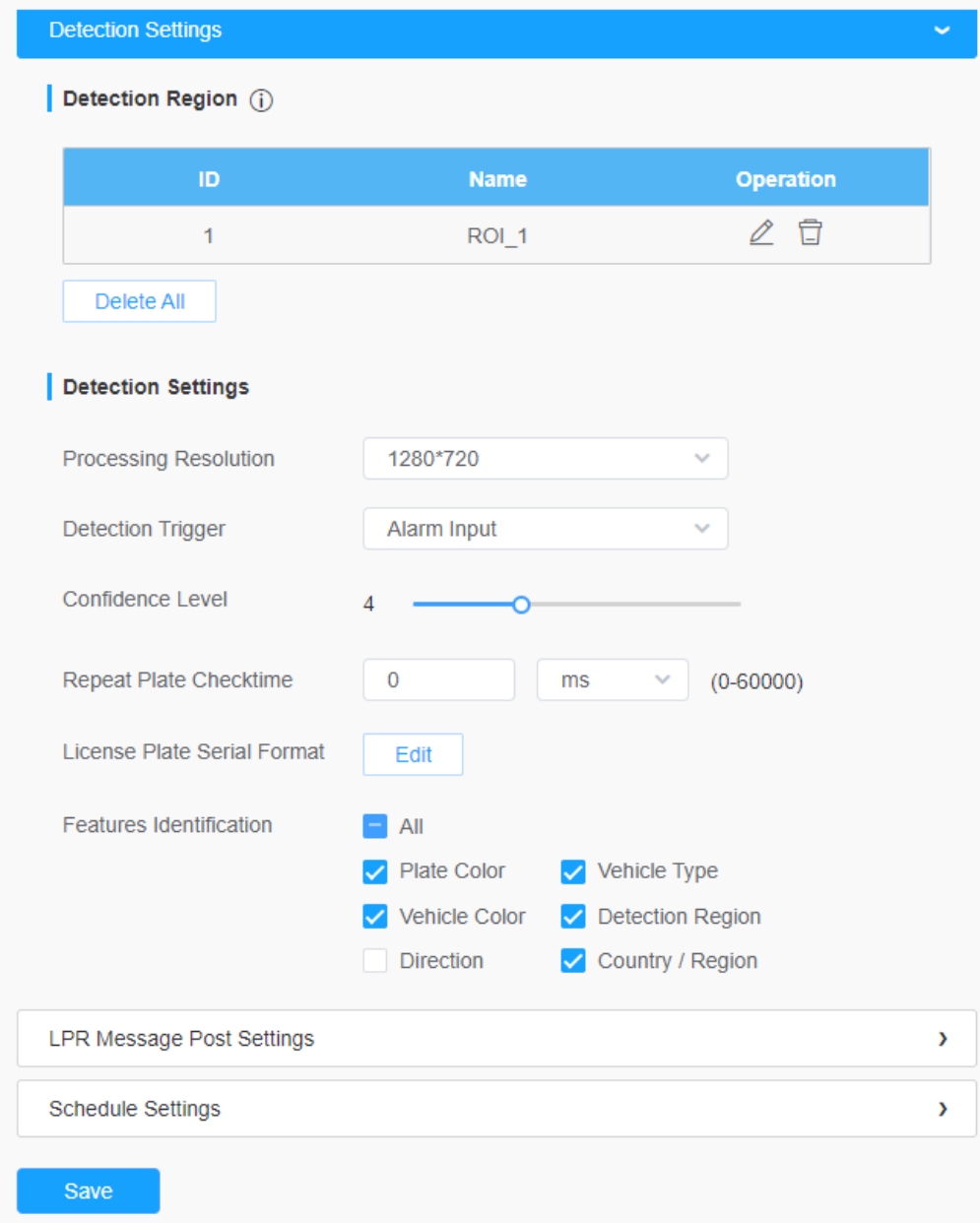
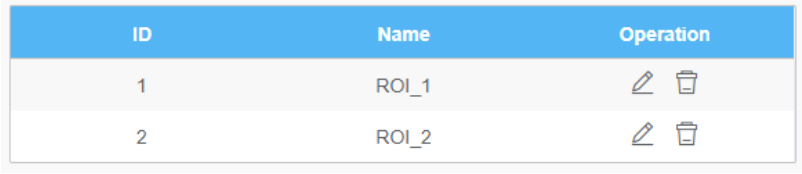


Table 77. Description of the buttons

Parameters	Function Introduction
Add	Draw the screen to select the area interested, then click “Add”button to add the area, only four recognition areas can be added. You can edit the name of the area or delete the area in the list below.  **Note:** Only license plates larger than 150 pixels can be recognized.
Clear	Click the "Clear" button to clear the area being drawn.
Delete All	Click the "Delete All" button to delete all the added areas.

Step4: Set Detection Settings.

Table 78. Description of the buttons

Parameters	Function Introduction
Processing Resolution	Resolution of the stream for LPR analysis, including 1920*1280, 1280*720, 640*360, 320*176.
Detection Trigger	**Always:** in this mode, camera will always detect license plates. **Alarm Input:** in this mode, camera will only detect license plates during Alarm Input is being triggered.
Repeat Plate Checktime	Set the time interval for repeatedly reading license plates to effectively avoid duplicate identification of parking vehicles. You can set Repeat Plate Checktime from 0 to 60min or 0 to 60000ms.
License Plate Serial Format	License Plate Serial Format function supports formulating identification rules and can automatically do further processing, filter license plates in non-compliant formats to achieve more intelligent and accurate license plate recognition.
Features Identification	Check **Country/Region(Only for LPR2 and LPR_EU)**, **Direction Region**, **Direction** or **All** to enable Feature Identification, it will display the corresponding information on the Smart Search interface.

Step5: Set LPR Message Post Settings.

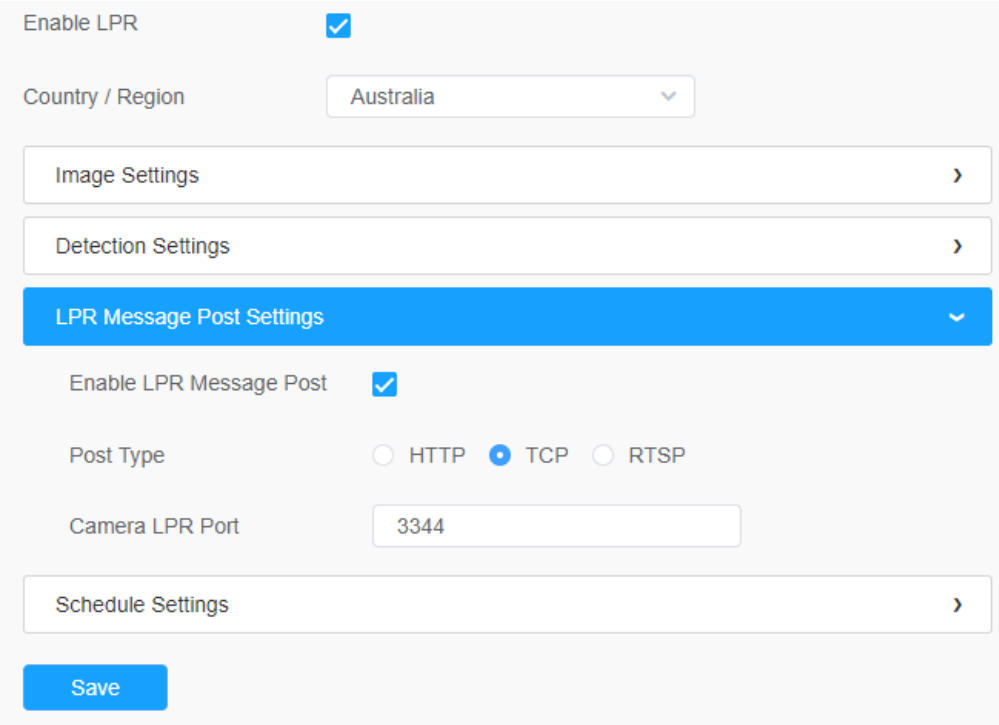


Table 79. Description of the buttons

Parameters	Function Introduction
Enable LPR Message Post	Check the checkbox to enable LPR Message Post. It will push information to some third-party devices or software that are compatible with ours.
Post Type	Information can be pushed by **RTSP**, **TCP** or **HTTP**.
HTTP Method	There are two HTTP push methods, including Post and Get.
Snapshot Type	Three kinds of snapshot can be chosen: All, License Plate and Full Snapshot. When you choose All, License Plate Snapshot and Full Snapshot will be pushed. Note: This option is available just for Post HTTP Method.
HTTP Notification URL	LPR camera can use the API URL to send LPR information to back-end devices when the license plate is recognized. API URL format fills as below: http://IP:Port/api/lpr?
User Name	Receiver name
Password	Receiver Password

[Schedule Settings]

Step6: Schedule Settings.

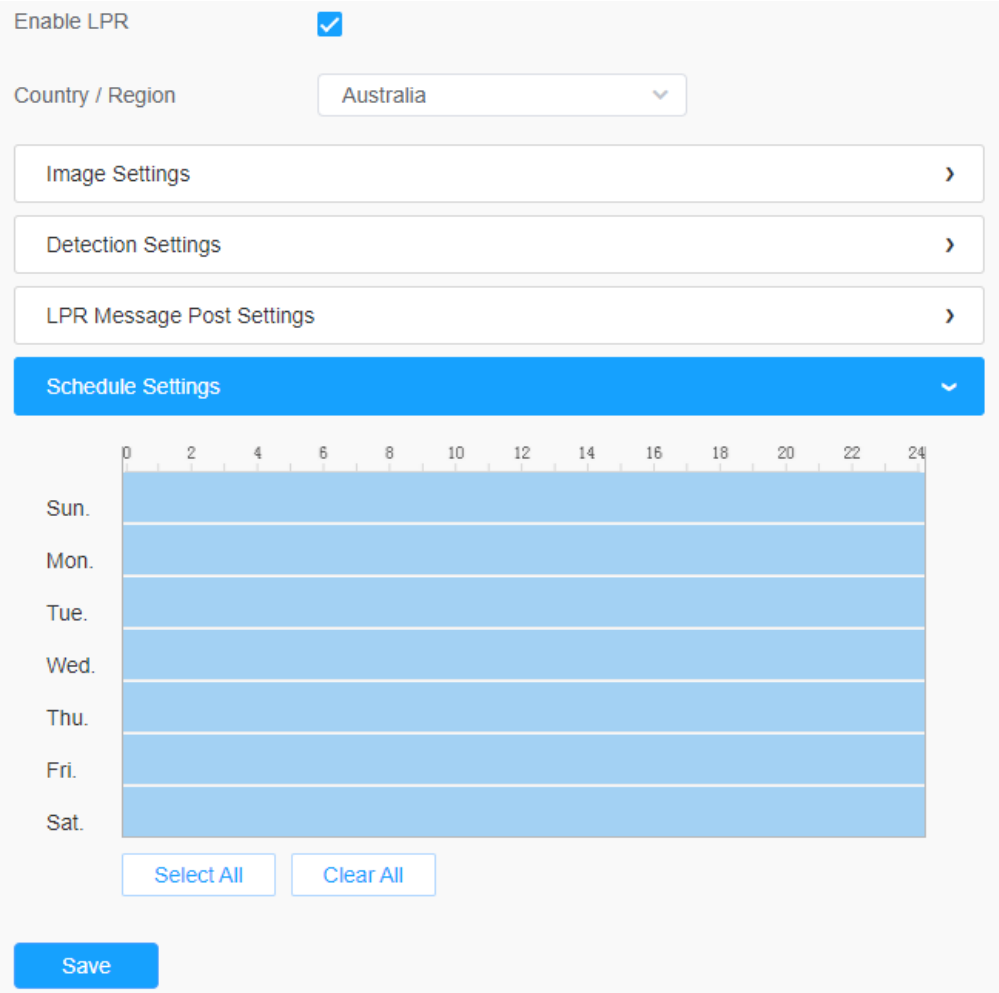
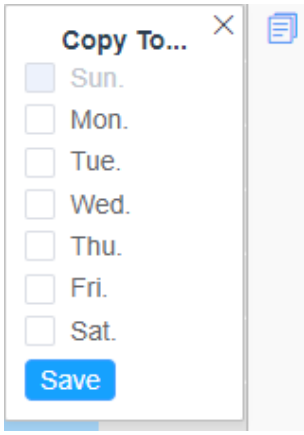


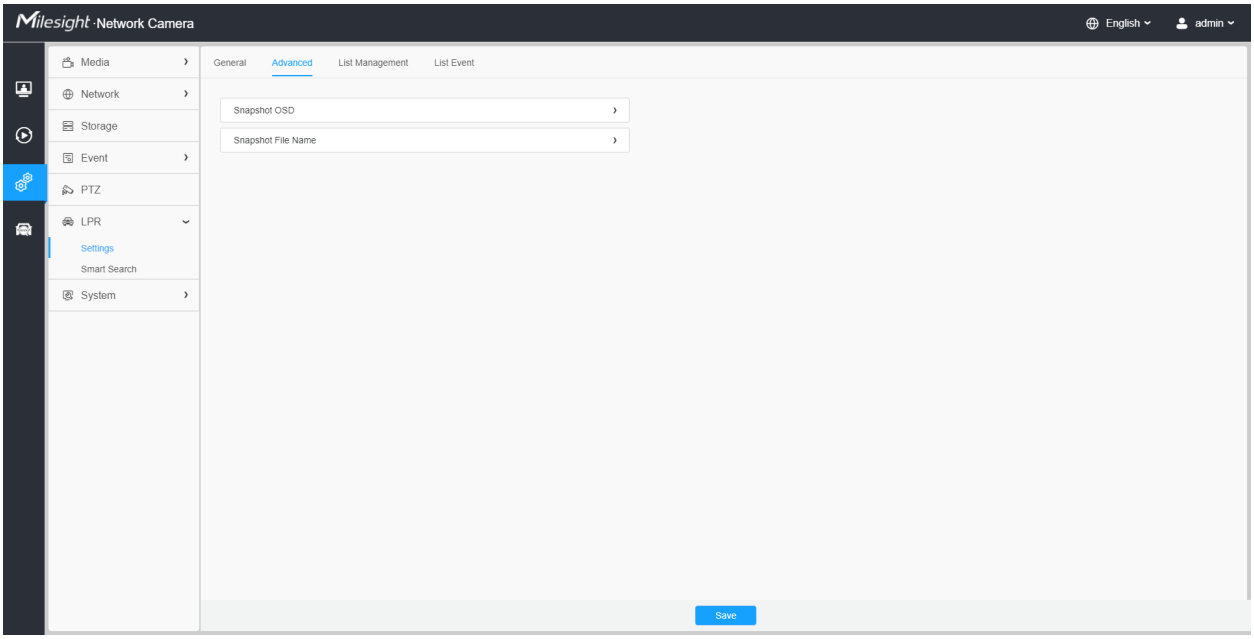
Table 80. Description of the buttons

Parameters	Function Introduction
	Copy the schedule area to another date.
	Select all schedule.

Parameters	Function Introduction
Clear All	Clear all schedule.

8.6.1.2 Advanced

In the interface, you can set display information on snapshot of license plate recognition, and also customize the file name of snapshots which are uploaded via FTP or Email or stored on local LPR Picture File Path.



[Snapshot OSD]

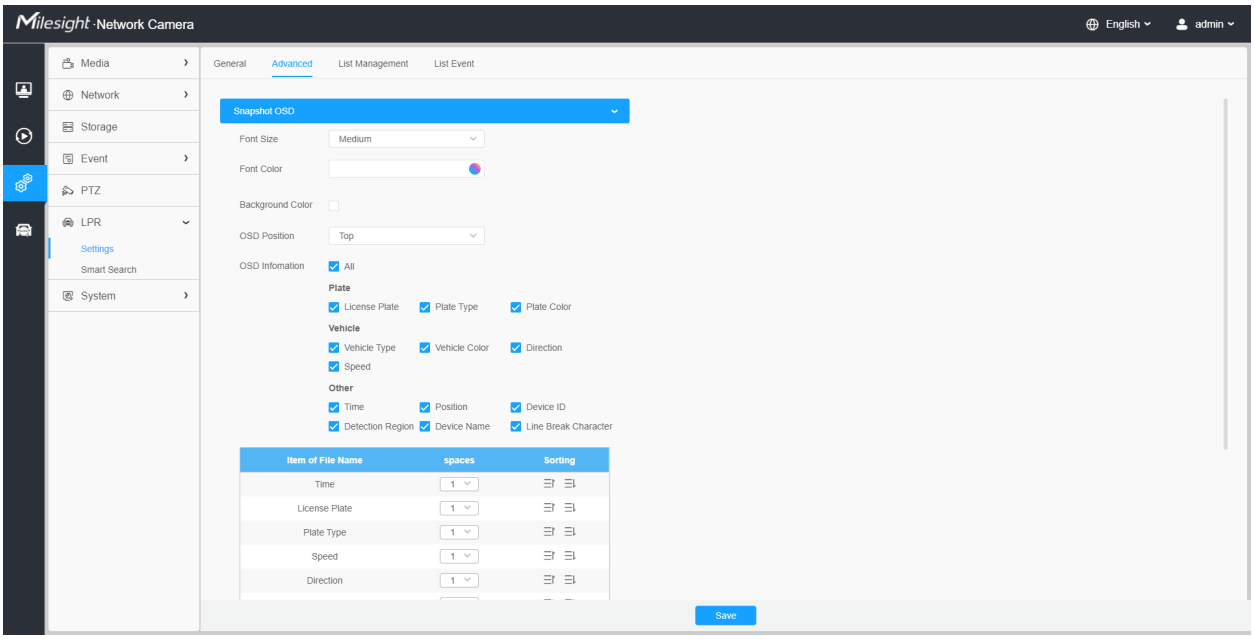
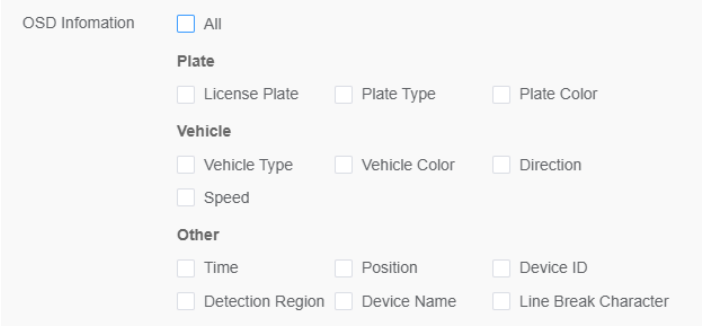


Table 81. Description of the buttons

Parameters	Function Introduction
Font Size	Small/Medium/Large are available for OSD information. **Note:** Snapshot OSD font size and Image OSD font size are corresponded.
Font Color	Enable to set different colors for OSD information. **Note:** Snapshot OSD font color and Image OSD font color are corresponded.
Background Color	Check the checkbox to select background color of snapshot OSD information. **Note:** Background color cannot be the same with font color.
OSD Position	Check the checkbox to show OSD information position.

Parameters	Function Introduction
OSD Information	Customize the OSD content. You can set OSD Information as shown below:  When license plate is recognized and the alarm is triggered, the snapshot of license plate recognition will show as below: 

[Snapshot File Name]

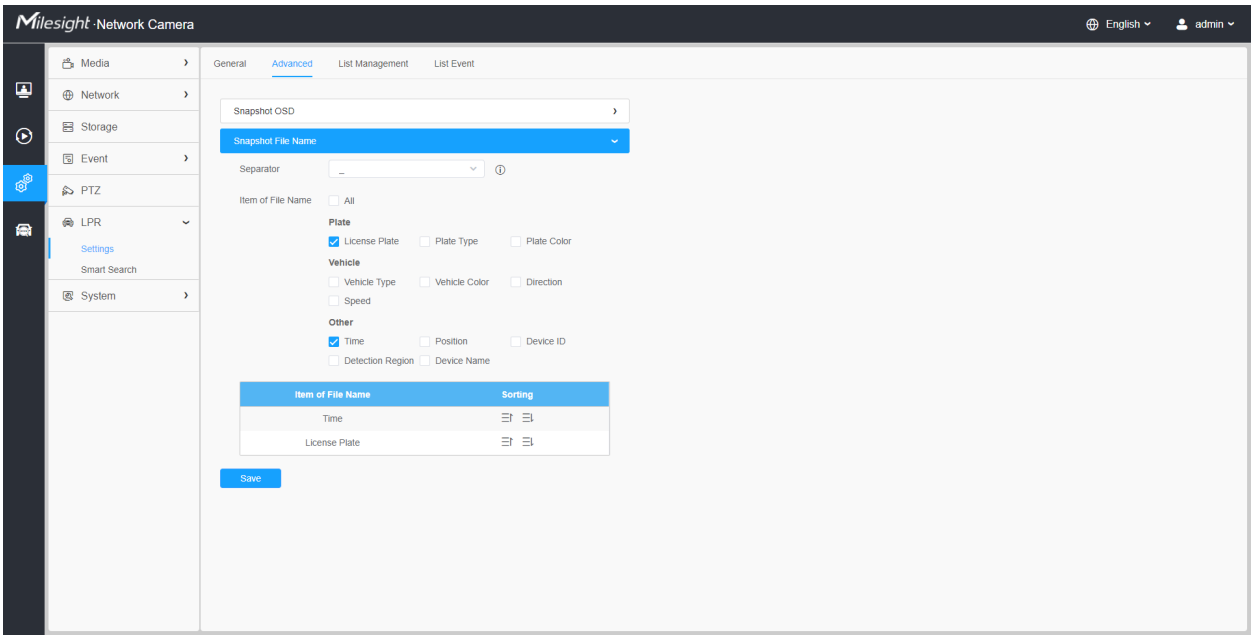


Table 82. Description of the buttons

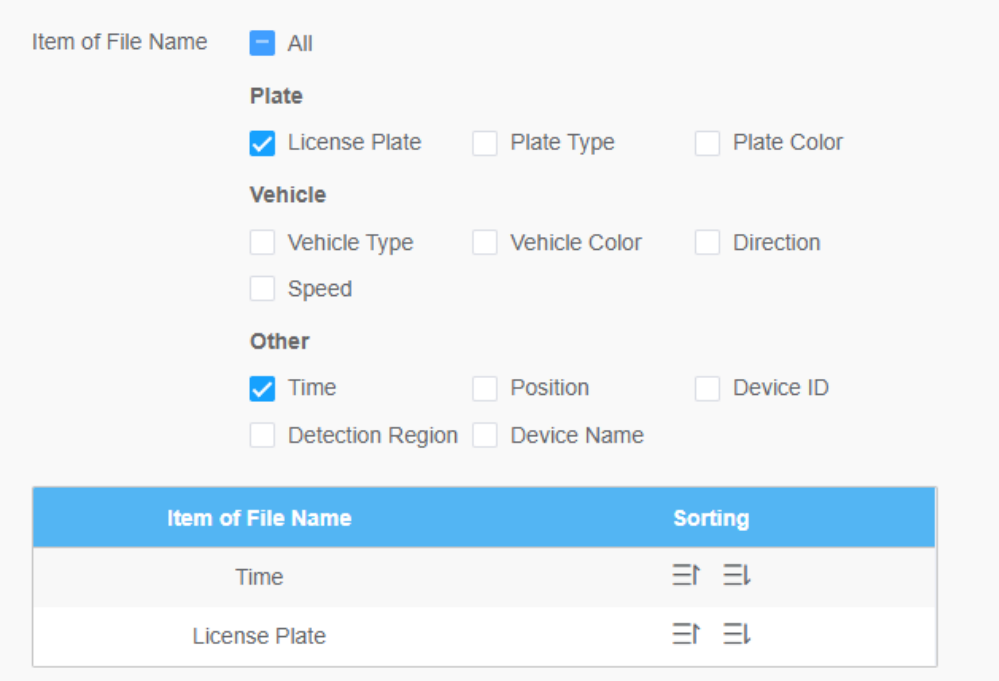
Parameters	Function Introduction
Separator	"-", "_" and Space are available for File Name Separator format. The default separator is "-".
Item of File Name	You can customize the snapshot file name according to items chosen. Item of File Name All Plate License Plate Plate Type Plate Color Vehicle Vehicle Type Vehicle Color Direction Speed Other Time Position Device ID Detection Region Device Name

Each time when an item is checked, the list will add the item row, including the item name and sorting operation. You can click and button to sort these items, and choose separator to

connect these items name. Also, the content of Position and Device ID items can be customized. When you check all items, the function interface will show as below:

Note: You need to check at least one item.

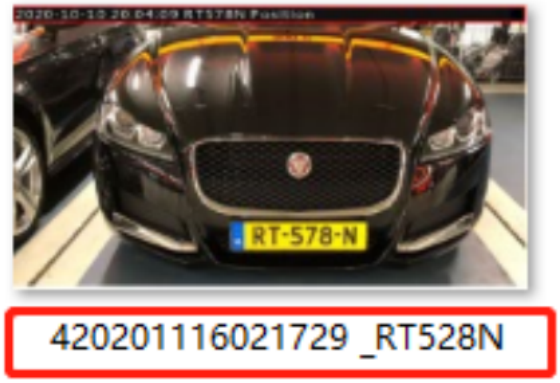
For example, you can choose items, separator and items sorting as below:



Once license plate is recognized, and the snapshot will be uploaded via FTP or Email or stored on your local LPR Picture File Path. Then, You can see the snapshot file name which you customize as shown below:

Full-snapshot Recognized successfully

Full-snapshot Recognized failed



License plate snapshot Recognized successfully

License plate snapshot Recognized failed

Note:

- If the item checked is not recognized successfully, then the item will be displayed with the specific symbol “#”.
- The file name of full-snapshot will be preceded by a number of 4.

8.6.1.3 List Management

Add the license plates to this interface as Black or White type (Black/White List), and then you can set the alarm action for these license plates in the corresponding black list mode or white list

mode interface. When these license plates are detected, the camera will respond accordingly to your settings.

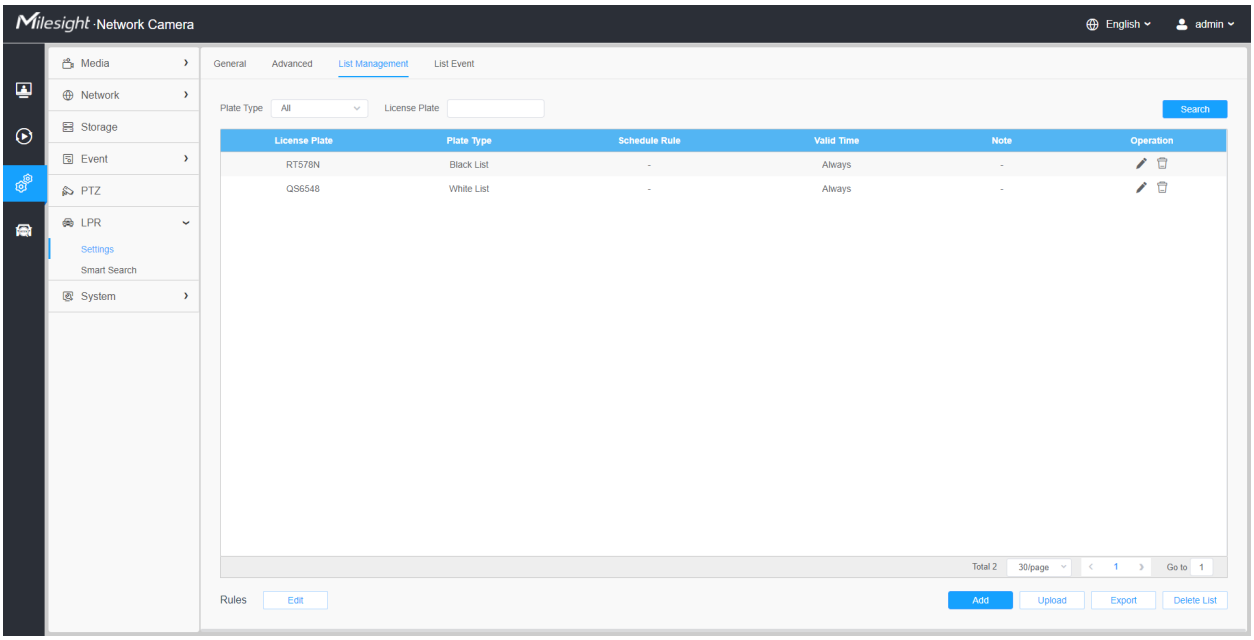
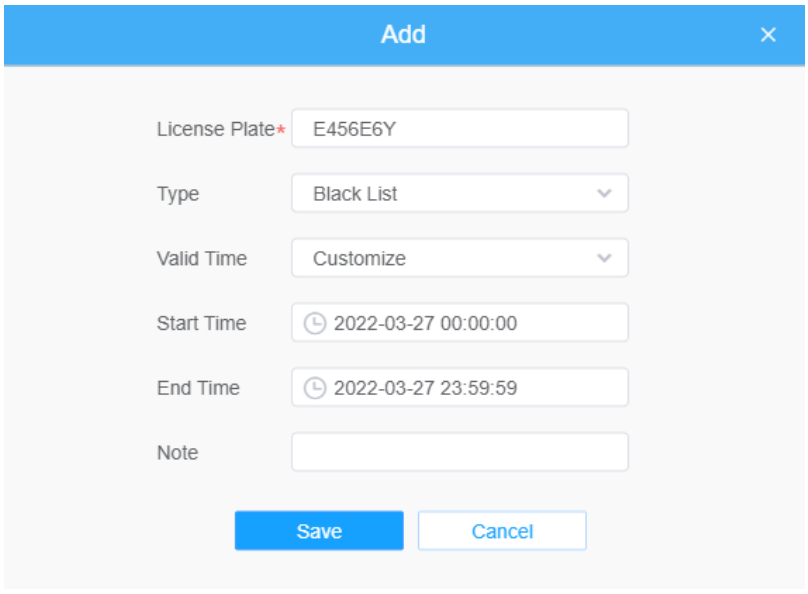
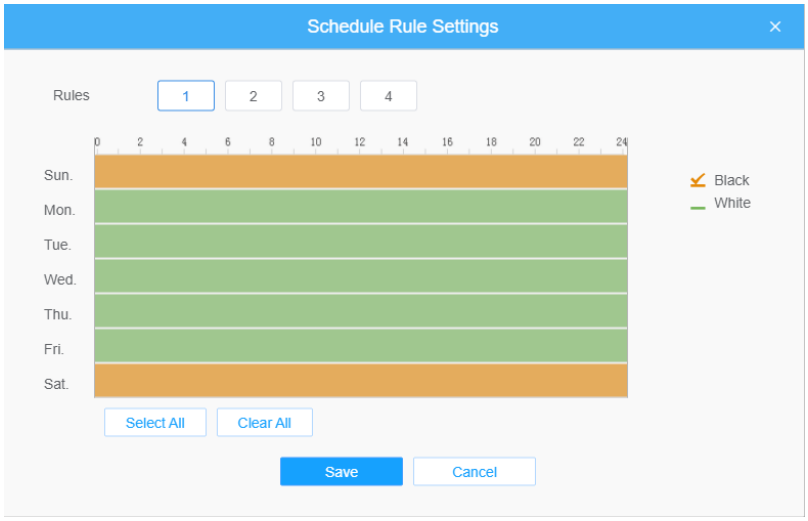
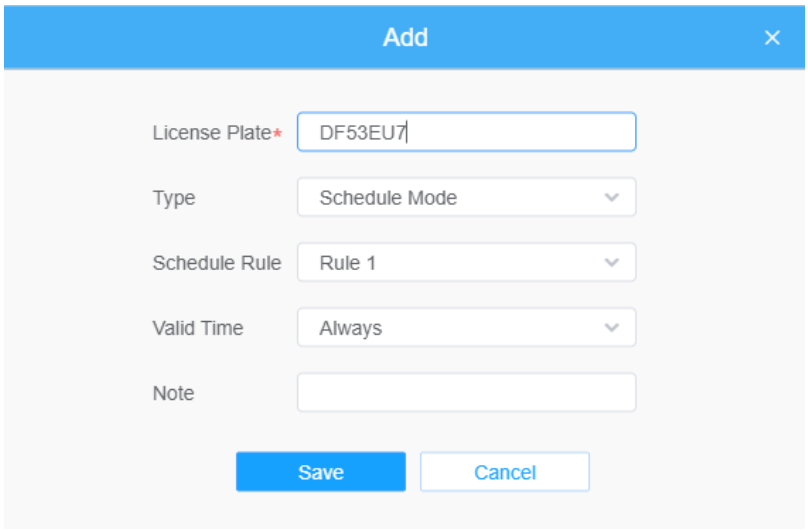


Table 83. Description of the buttons

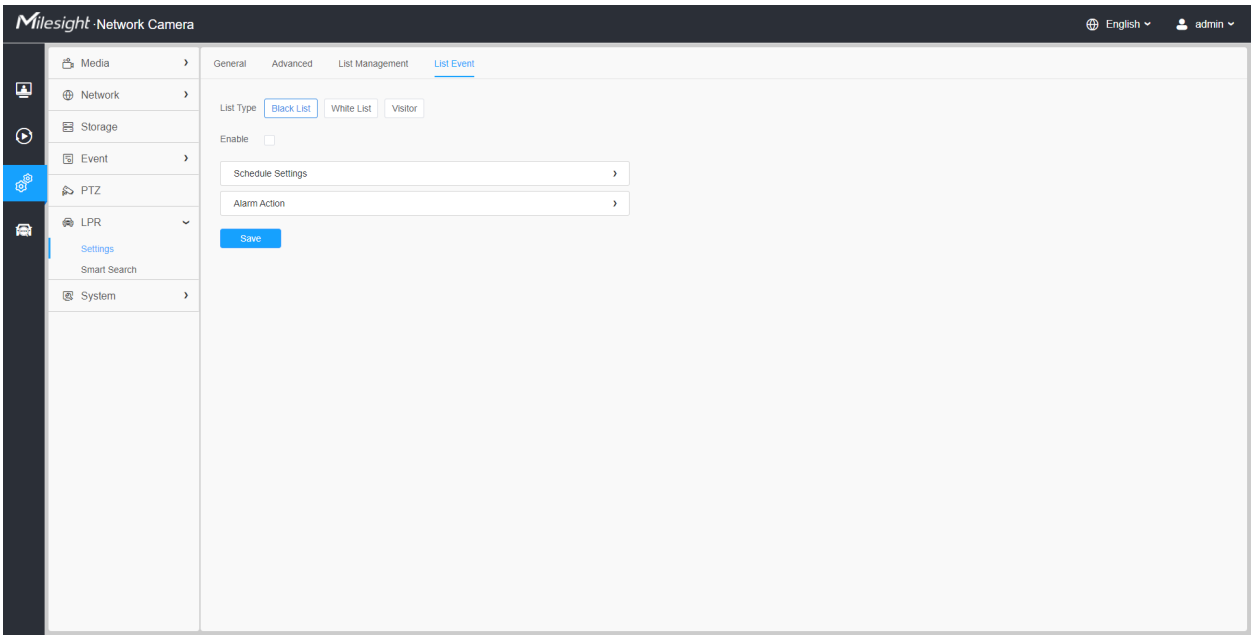
Parameters	Function Introduction
Add License Plate	Select the license plate type as black or white, enter the license plate, click the "Add" button, the license plate will be added successfully. 

Parameters	Function Introduction
Batch Upload	You can add a csv form with the license plate you want to add, click the "Browse" button to import the form to this interface, click the "Upload" button, the license plates will be added successfully. **Note:** You can first download the template as a reference in this interface.
List Search	Select Plate Type or directly enter the license plate number, click the “Search” button, the corresponding license plate will be displayed in the list below.
Export List	Click the "Export List" button to export the license plate in the current list to a csv form locally.
Delete List	Click the "Delete List" button to delete all the license plate in the current list.

Parameters	Function Introduction
Schedule Rules	Click the “Edit” button to customize a rule.  And then set the license plate to Schedule Mode and choose a custom schedule rule that can configure the license plate as Black List or White List at different times.  **Note:** Support setting up to 4 Schedule Rules for Schedule Mode.

Note: It supports adding 1000 Black List and White List.

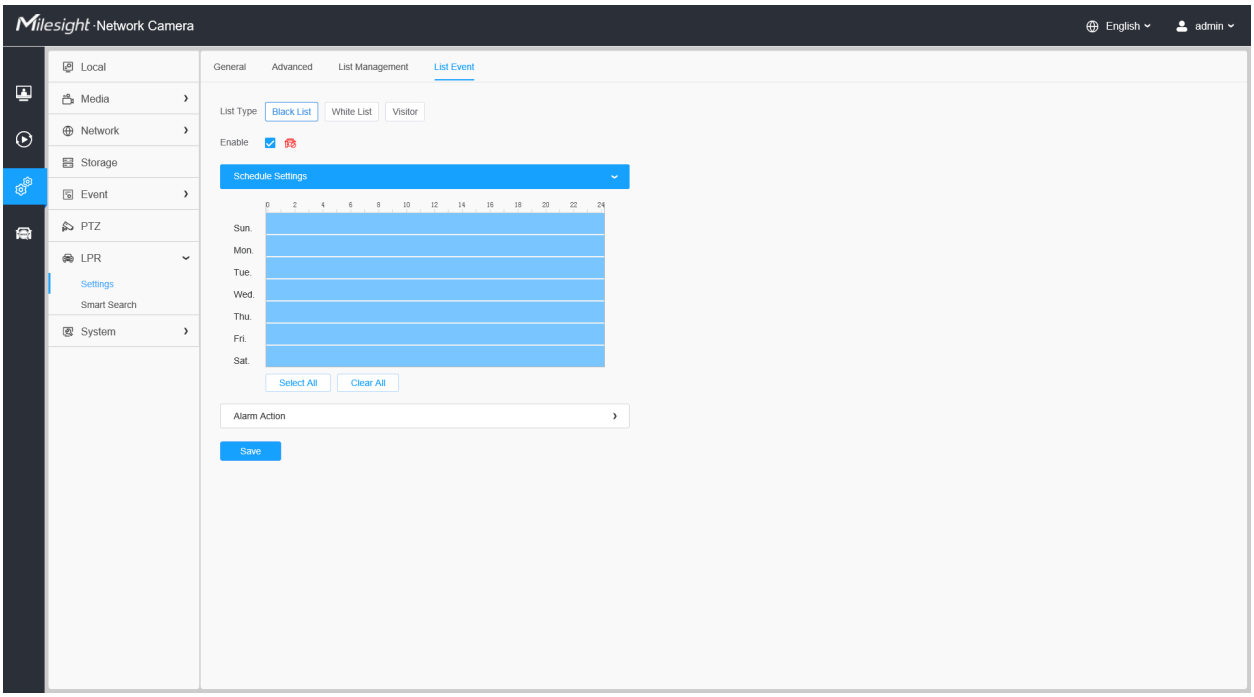
8.6.1.4 List Event

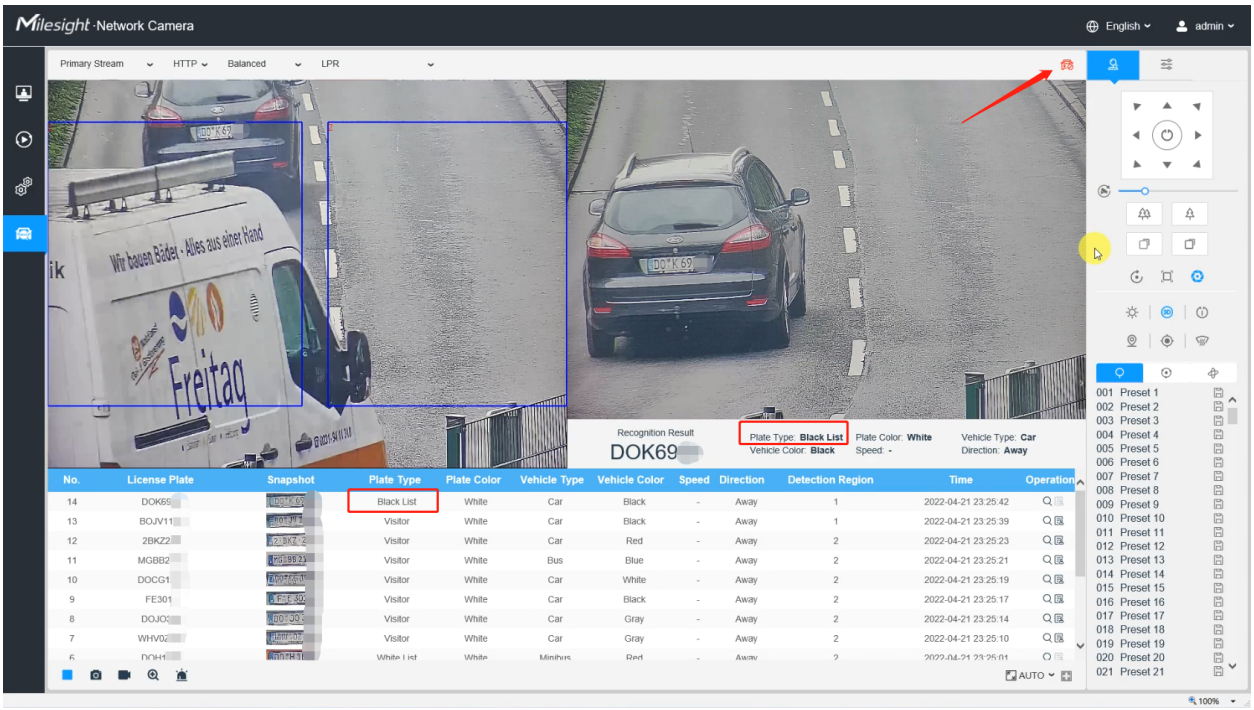


Step1: Select the List Type. Check the check box to enable Black List/White List/Visitor mode.

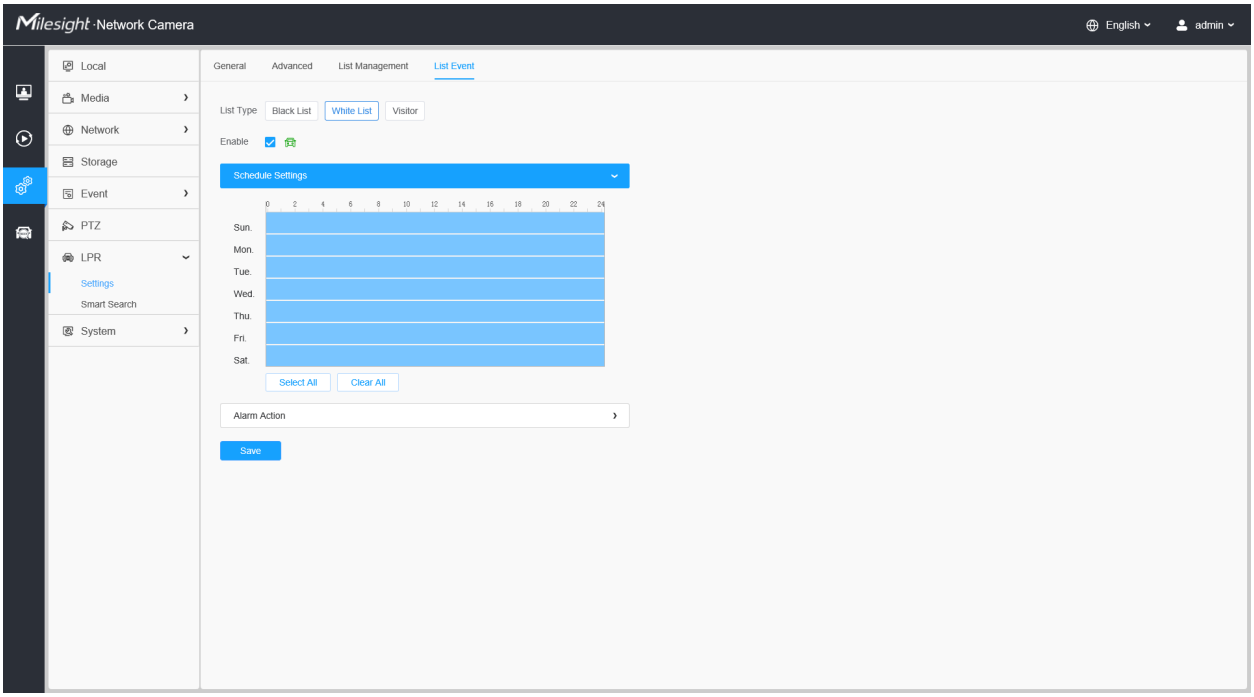
Step2: The corresponding alarm icon is triggered when the Black List/White List/Visitor vehicles passing by.

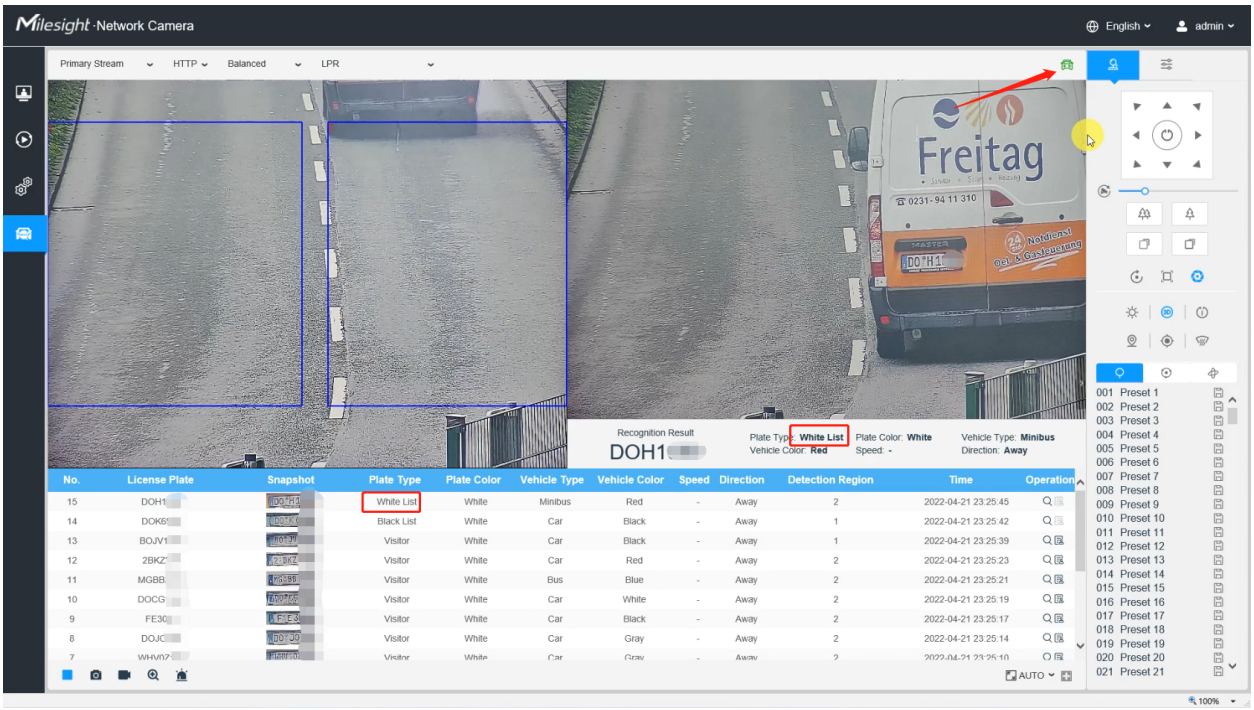
Black List:



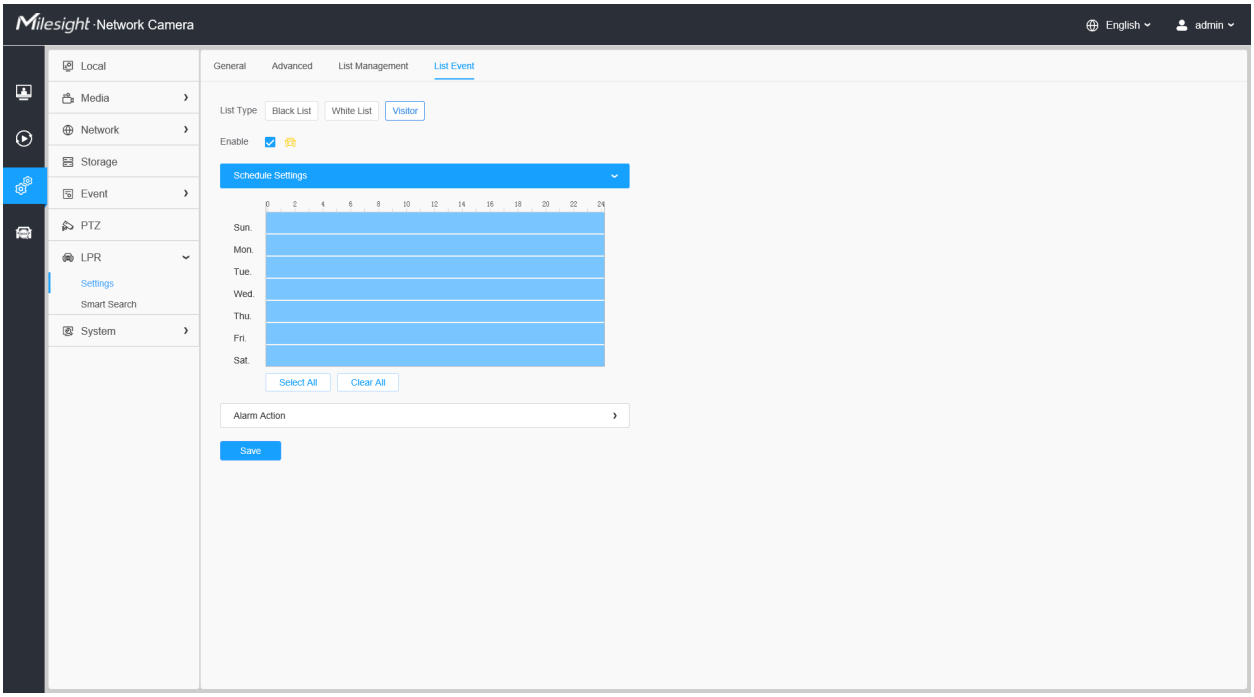

Milesight Network Camera
English
admin
Primary Stream
HTTP
Balanced
LPR
Recognition Result
DOK69
Plate Type: Black List
Plate Color: White
Vehicle Type: Car
Vehicle Color: Black
Speed: -
Direction: Away
No. License Plate Snapshot Plate Type Plate Color Vehicle Type Vehicle Color Speed Direction Detection Region Time Operation
14 DOK6S Black List White Car Black - Away 1 2022-04-21 23:25:42
13 BOJV11 Visitor White Car Black - Away 1 2022-04-21 23:25:39
12 2BKZ2 Visitor White Car Red - Away 2 2022-04-21 23:25:23
11 MGBB2 Visitor White Bus Blue - Away 2 2022-04-21 23:25:21
10 DOCG1 Visitor White Car White - Away 2 2022-04-21 23:25:19
9 FE301 Visitor White Car Black - Away 2 2022-04-21 23:25:17
8 DOJO3 Visitor White Car Gray - Away 2 2022-04-21 23:25:14
7 WHV02 Visitor White Car Gray - Away 2 2022-04-21 23:25:10
001 Preset 1
002 Preset 2
003 Preset 3
004 Preset 4
005 Preset 5
006 Preset 6
007 Preset 7
008 Preset 8
009 Preset 9
010 Preset 10
011 Preset 11
012 Preset 12
013 Preset 13
014 Preset 14
015 Preset 15
016 Preset 16
017 Preset 17
018 Preset 18
019 Preset 19
020 Preset 20
021 Preset 21
AUTO
100%

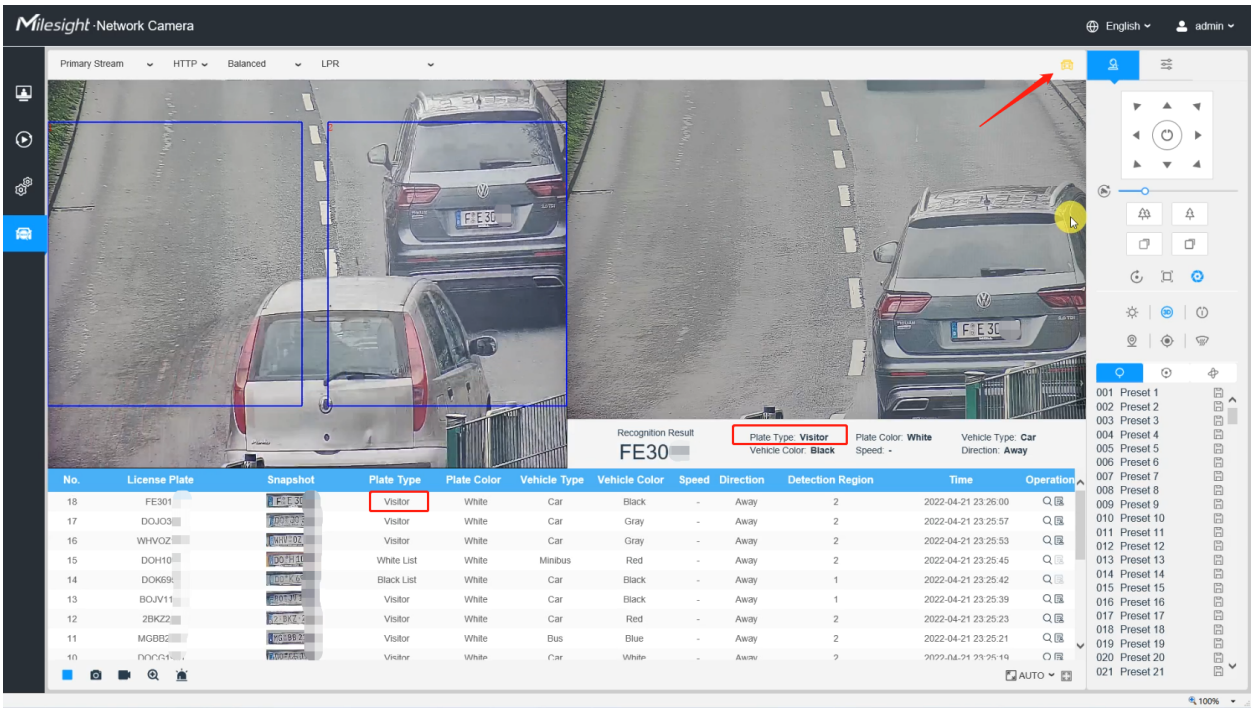
White List:


Milesight Network Camera
English
admin
Local
Media
Network
Storage
Event
PTZ
LPR
Settings
Smart Search
System
General
Advanced
List Management
List Event
List Type
Black List
White List
Visitor
Enable
Schedule Settings
Sun.
Mon.
Tue.
Wed.
Thu.
Fri.
Sat.
Select All
Clear All
Alarm Action
Save


Milesight Network Camera
English
admin
Primary Stream
HTTP
Balanced
LPR
Recognition Result
DOH1
Plate Type: White List
Plate Color: White
Vehicle Type: Minibus
Vehicle Color: Red
Speed: -
Direction: Away
No. License Plate Snapshot Plate Type Plate Color Vehicle Type Vehicle Color Speed Direction Detection Region Time Operation
15 DOH1 White List White Minibus Red - Away 2 2022-04-21 23:25:45
14 DOK6 Black List White Car Black - Away 1 2022-04-21 23:25:42
13 BOJV1 Visitor White Car Black - Away 1 2022-04-21 23:25:39
12 2BKZ Visitor White Car Red - Away 2 2022-04-21 23:25:23
11 MGBB Visitor White Bus Blue - Away 2 2022-04-21 23:25:21
10 DOCG Visitor White Car White - Away 2 2022-04-21 23:25:19
9 FE30 Visitor White Car Black - Away 2 2022-04-21 23:25:17
8 DOJC Visitor White Car Gray - Away 2 2022-04-21 23:25:14
001 Preset 1
002 Preset 2
003 Preset 3
004 Preset 4
005 Preset 5
006 Preset 6
007 Preset 7
008 Preset 8
009 Preset 9
010 Preset 10
011 Preset 11
012 Preset 12
013 Preset 13
014 Preset 14
015 Preset 15
016 Preset 16
017 Preset 17
018 Preset 18
019 Preset 19
020 Preset 20
021 Preset 21
AUTO
100%

Visitor:


Milesight Network Camera
English
admin
Local
Media
Network
Storage
Event
PTZ
LPR
Settings
Smart Search
System
General
Advanced
List Management
List Event
List Type
Black List
White List
Visitor
Enable
Schedule Settings
Sun.
Mon.
Tue.
Wed.
Thu.
Fri.
Sat.
Select All
Clear All
Alarm Action
Save



[Schedule Settings]

Step3: Schedule Settings.

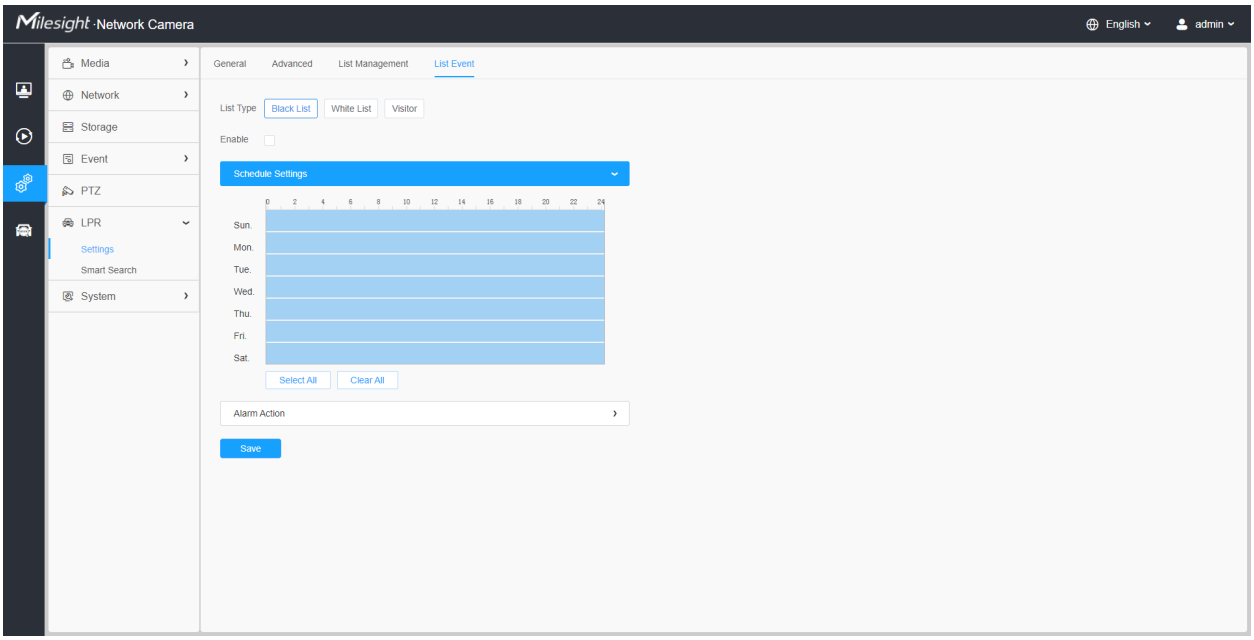
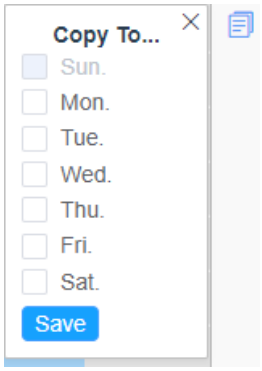
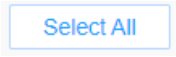
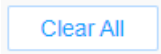


Table 84. Description of the buttons

Parameters	Function Introduction
	Copy the schedule area to another date.
	Select all schedule.
	Clear all schedule.

[Alarm Action]

Step4: Set Alarm Action.

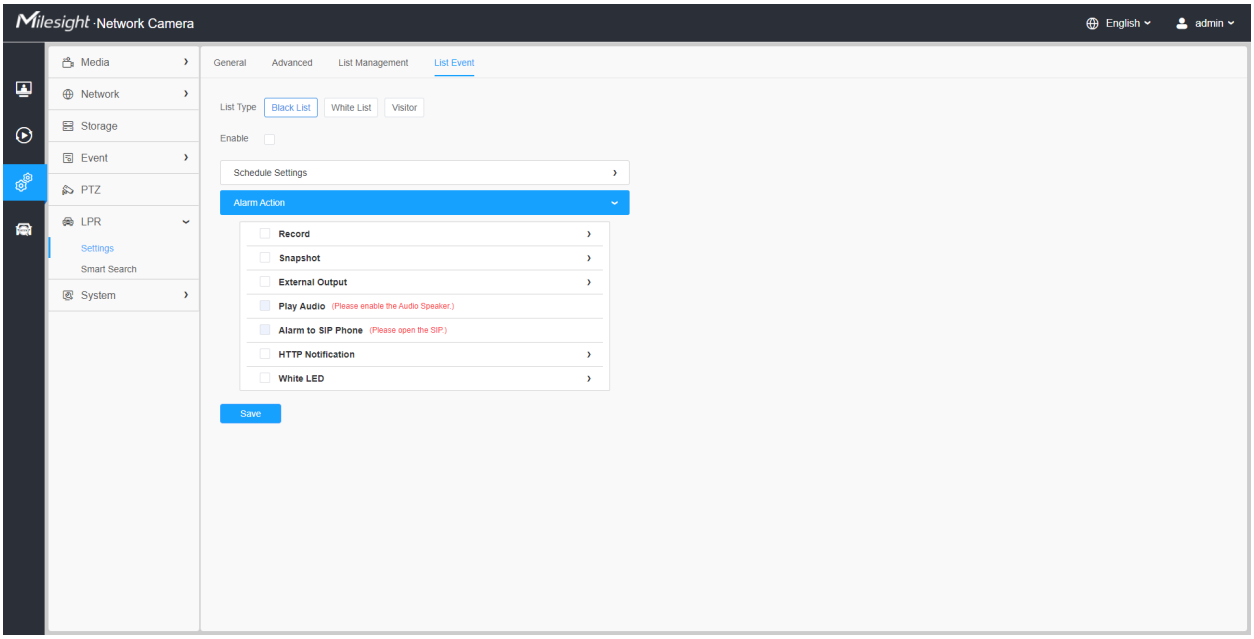


Table 85. Description of the buttons

Parameters	Function Introduction
Record	**Duration:** Selected the duration time of alarm. 5s/10s/15s/20s/25s/30s are available. **Linkage:** Save alarm recording files into SD Card or NAS or Upload the recording files via FTP.
Snapshot	**Number:** The number of snapshot, 1~5 are available. **Interval:** This cannot be edited unless you choose more than 1 to Snapshot. **Linkage:** Save alarm recording files into SD Card or NAS, Upload the recording files via FTP and send alarm email.
External Output	If the camera equips with External Output, you can enable the action after configuring the trigger duration.
Play Audio	Auto/10 seconds/30 seconds/1 minute/5 minutes/10 minutes are available. **Note:** Please enable the Audio Speaker.
Alarm to SIP Phone	Support to call the SIP phone after enable the SIP function.
HTTP Notification	Support to pop up the alarm news to specified HTTP URL. **Note:** • Three HTTP notifications at most can be added to the same event. • HTTP Notification supports Basic & Digest authentication
White LED	When the alarm triggered, White LED will turn on to warning the detected objects (Only for PTZ Bullet).

8.6.1.5 Traffic Detection

For Milesight, the Radar AI LPR Network Camera not only supports the embedded LPR algorithm, but also the deep learning algorithm based on the AI platform, which can achieve higher detection accuracy and richer intelligent functions.

Milesight Radar AI LPR camera is a truly all-in-one integrated camera. The radar module is directly integrated in the camera, making installation more convenient.

In this page, you can configure the Traffic Detection of Radar model.

Note:

- Make sure your camera model is Milesight Radar AI LPR Cameras.
- For more details, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000797257.

Step1: Enable the traffic detection.

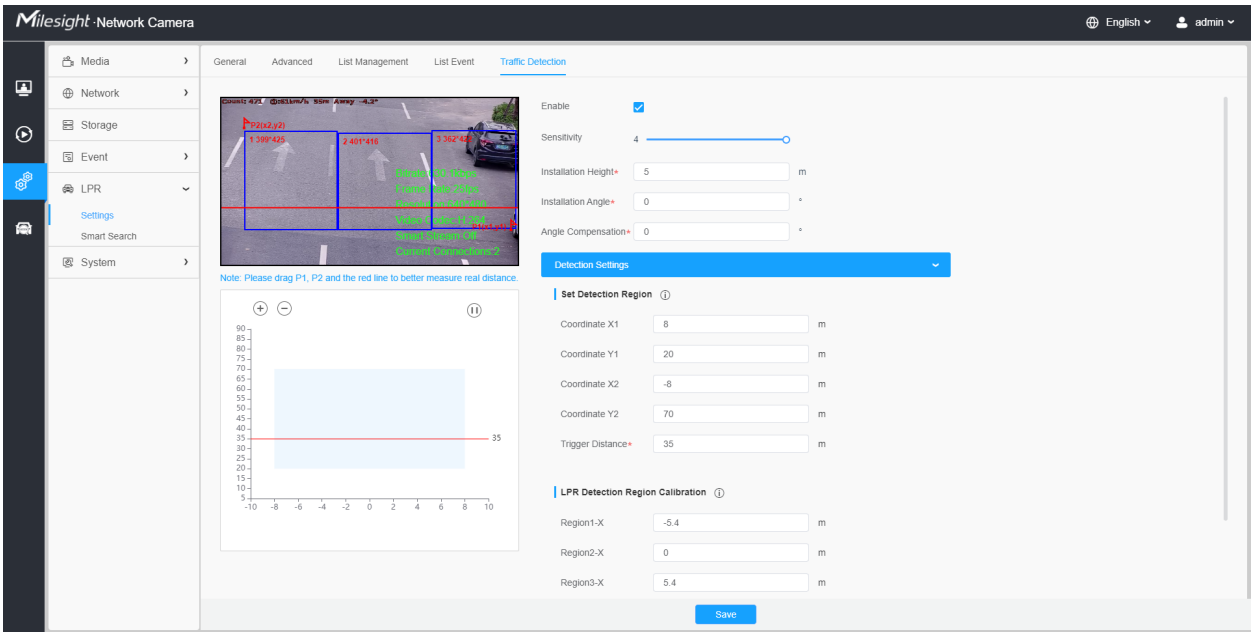
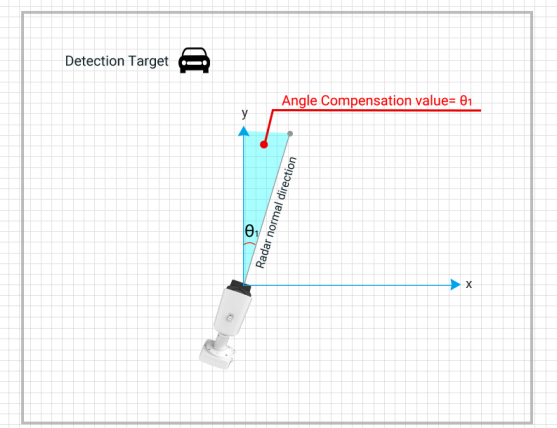
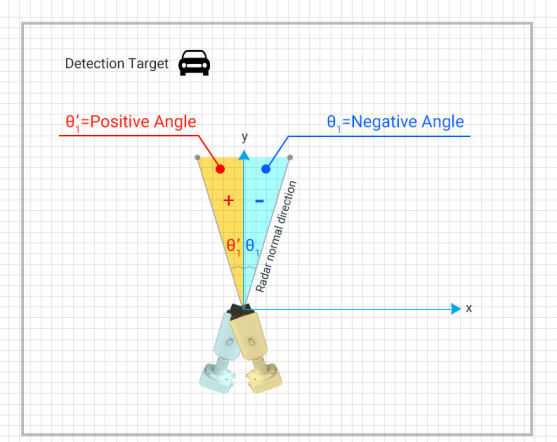


Table 86. Description of the buttons

Parameters	Function Introduction
Installation Height	Please fill in the installation height according to the actual installation height of the camera.
Installation Angle	Please fill in the installation height according to the actual installation angle between the camera's field of view and the horizontal.

Parameters	Function Introduction
Angle Compensation	Support angle compensation range: -30°~30°, default 0°. Angle compensation is mainly used as horizontal angle compensation, such as the radar cannot be installed in the middle of the road, in order to detect data more accurate, the angle between the installation position and the road can be compensated and corrected. Angle Compensation value= θ1 θ1 is the angle between the radar normal direction and y-axis direction (Normally the y-axis is parallel to the road direction)  θ1=The angle between the radar normal direction and the y-axis direction **Angle Compensation** **Note:** The compensation angle value needs to be confirmed as positive or negative, the angle between the camera's left rotation and the y axis is defined as a positive angle, otherwise it is defined as a negative angle.  θ°=The angle between the radar normal direction and the y-axis direction **Angle Compensation**

[Detection Settings]

Step2: Set Detection Region. Configure the radar detection area on the basis of the successful saving of the LPR detection area settings.

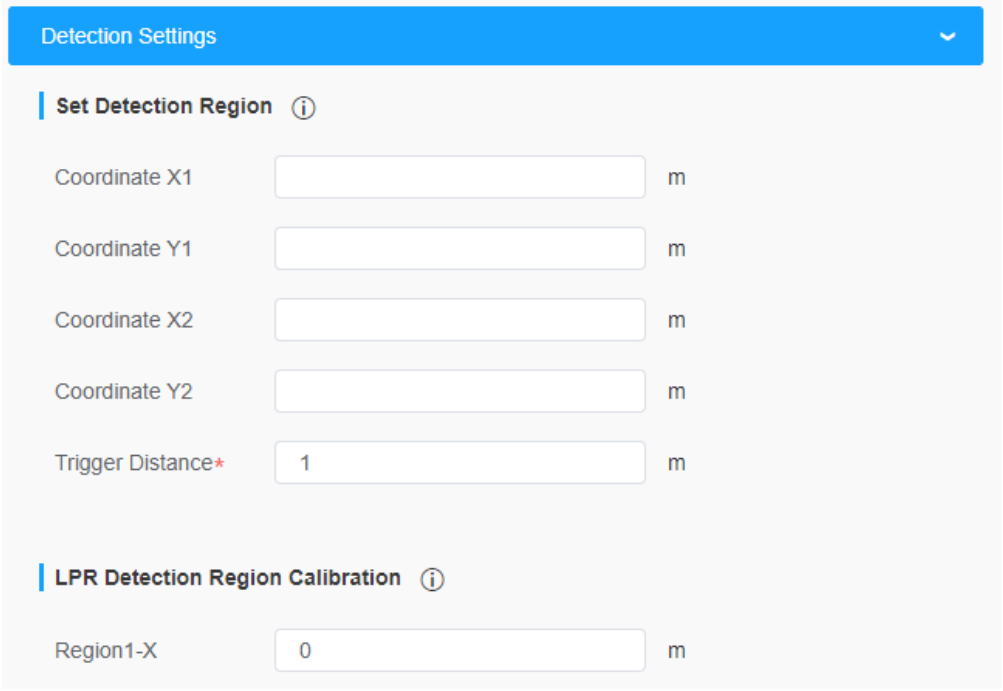
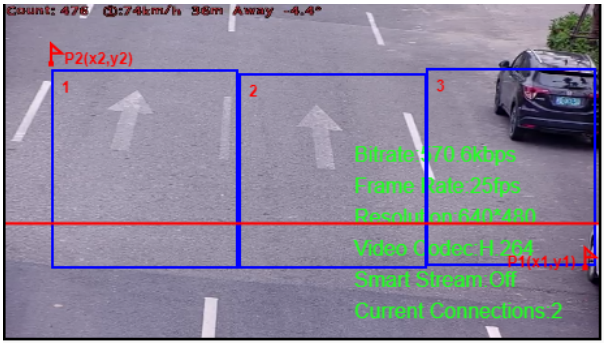
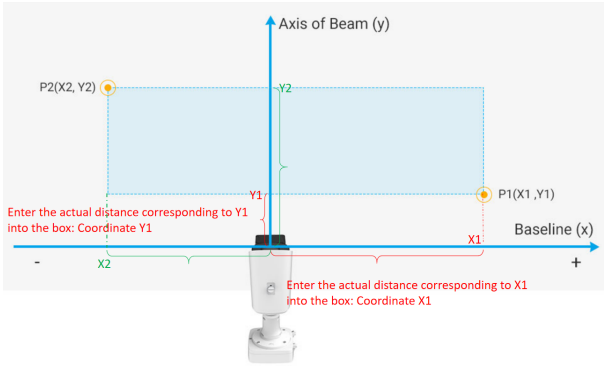
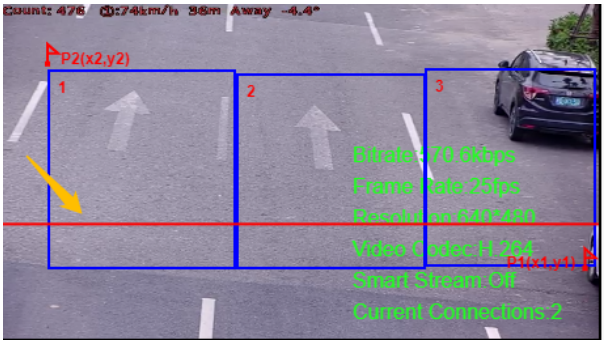
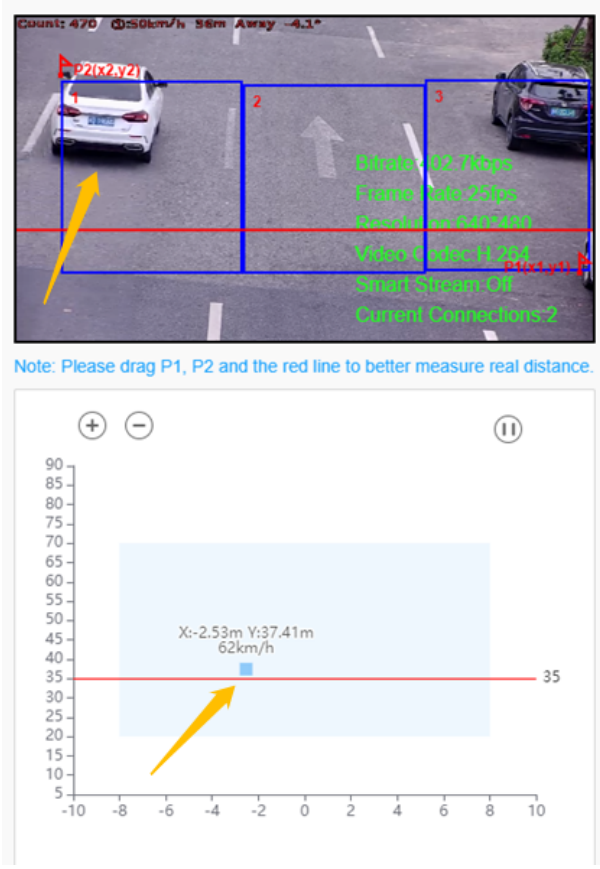


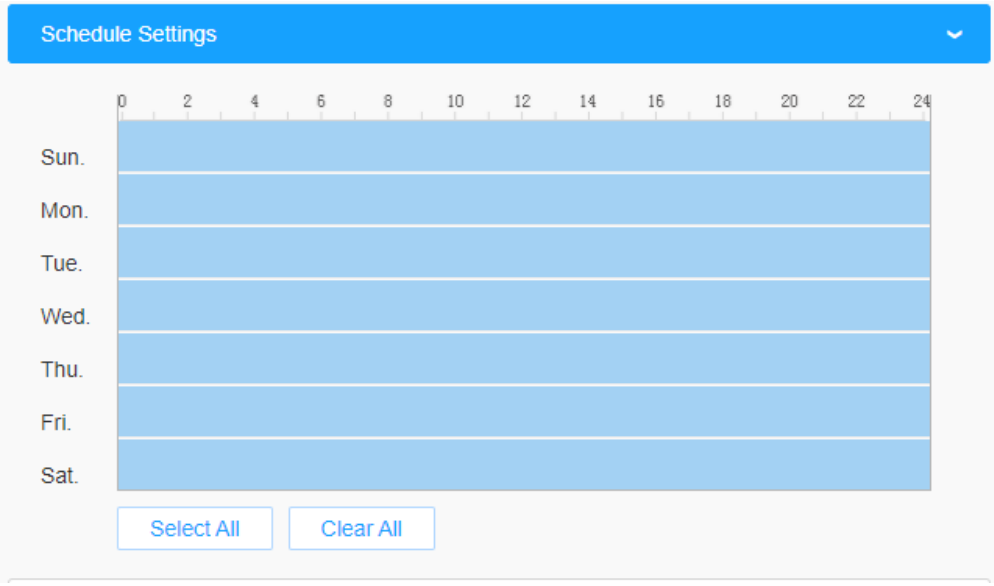
Table 87. Description of the buttons

Parameters	Function Introduction
Set Detection Region	As shown in the figure below, there are two coordinate points. Points P1 and P2 are used to facilitate the user's spatial positioning.  The Radar detection area is a rectangle with diagonal lines in the two coordinate points;  Please measure the actual position of the plane coordinates of the two vertices, taking the radar position as the zero position (0,0). Then fill in the parameter input boxes for the following two vertices: **Coordinate X1/Y1:** X/Y axis parameter of P1 coordinates. **Coordinate X2/Y2:** X/Y axis parameter of P2 coordinates. **Trigger Distance:** As shown in the radar configuration page in the figure below, there will be a red line in the preview box of the configuration page. The red line is the position that can be adjusted up and down, and the Trigger Distance is the horizontal distance from the red line to the radar. To ensure relative accuracy, users need to fill in after actual measurement. The LPR detection triggers the start of recognition through this distance, which promotes a better match between the LPR data and the radar data. 

Parameters	Function Introduction
LPR Detection Region Calibration	To match LPR data, please configure LPR detection region calibration after radar detection. The calibration of the LPR detection area is mainly to match the space coordinates. The number of this configuration item shows the corresponding number according to the number of the LPR detection area. The data filled in is based on the corresponding trajectory map on the right when the target vehicle enters the area to find the target and fill in the X value shown above. To match LPR data, please configure LPR detection region calibration after radar detection. For example, after you have drawn 3 detection areas, you can find the coordinate information corresponding to the targets in the detection area from the radar coordinates. You only need to fill in this coordinate information; 

[Schedule Settings]

Step4: Schedule Settings. Set the effective time of traffic detection.



Note: This part is the same as the regular schedule settings. You can refer to 8.4.2.1 Region Entrance *(page 110)*.

[Traffic Information]

Step5: Traffic OSD Settings. Customers can choose the information that needs to be displayed in Live Video and the display format, such as color, size, etc.

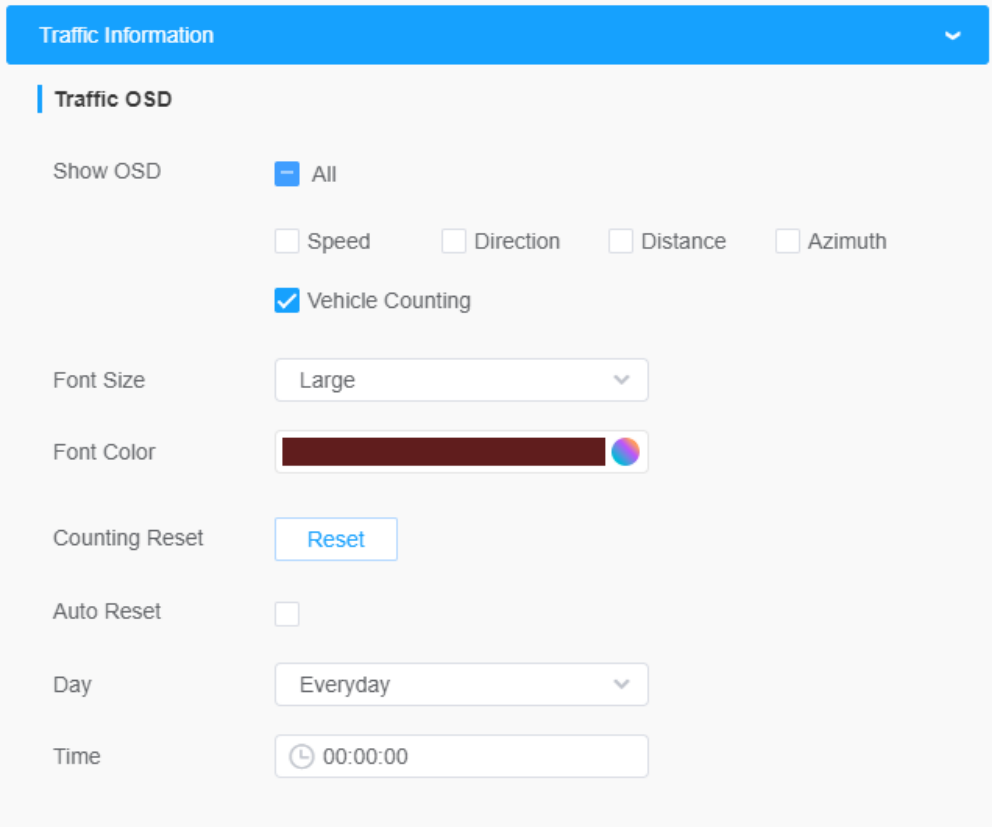
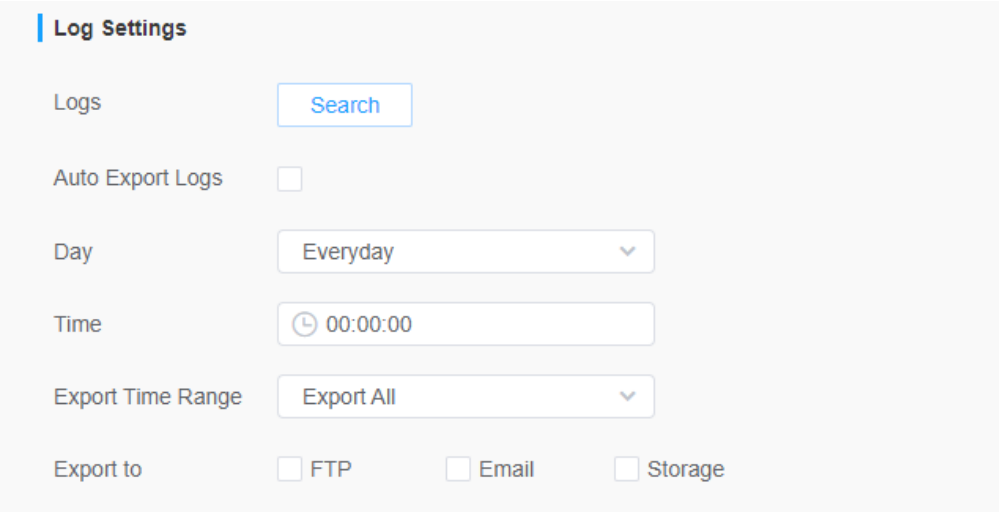


Table 88. Description of the buttons

Parameters	Function Introduction
Show OSD	Users can choose the information they want to display in Live Video.
Font Size	The font size of the OSD display, the default size is Medium.
Font Color	The font color of the OSD display.
Counting Reset	Click the "Reset" button to manually reset the vehicle count.
Auto Reset	It is used to automatically clear the vehicle count at regular intervals (Just reset the OSD count for Live Video).
Day	The day of Auto Reset.
Time	The time of Auto Reset.

Step6: Log Settings. It allows users to search for various types of logs and support the log export function;

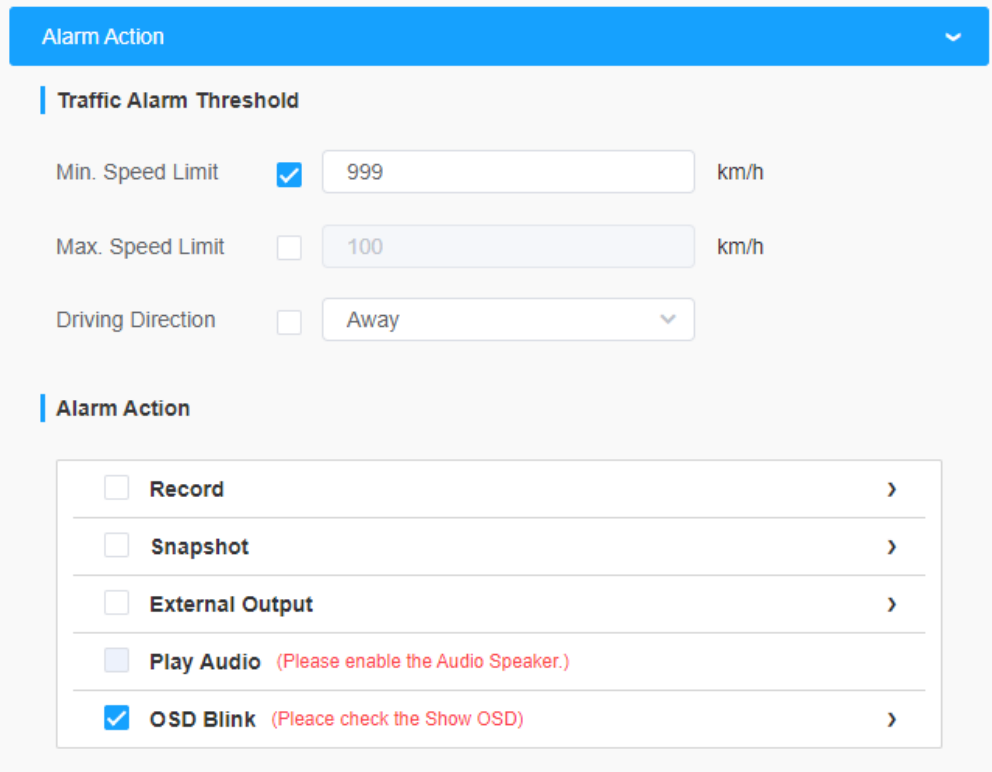


[Alarm Action]

Step7: Traffic Alarm Threshold. Used to set traffic alarm thresholds, such as maximum and minimum speed limits, and driving direction limits;

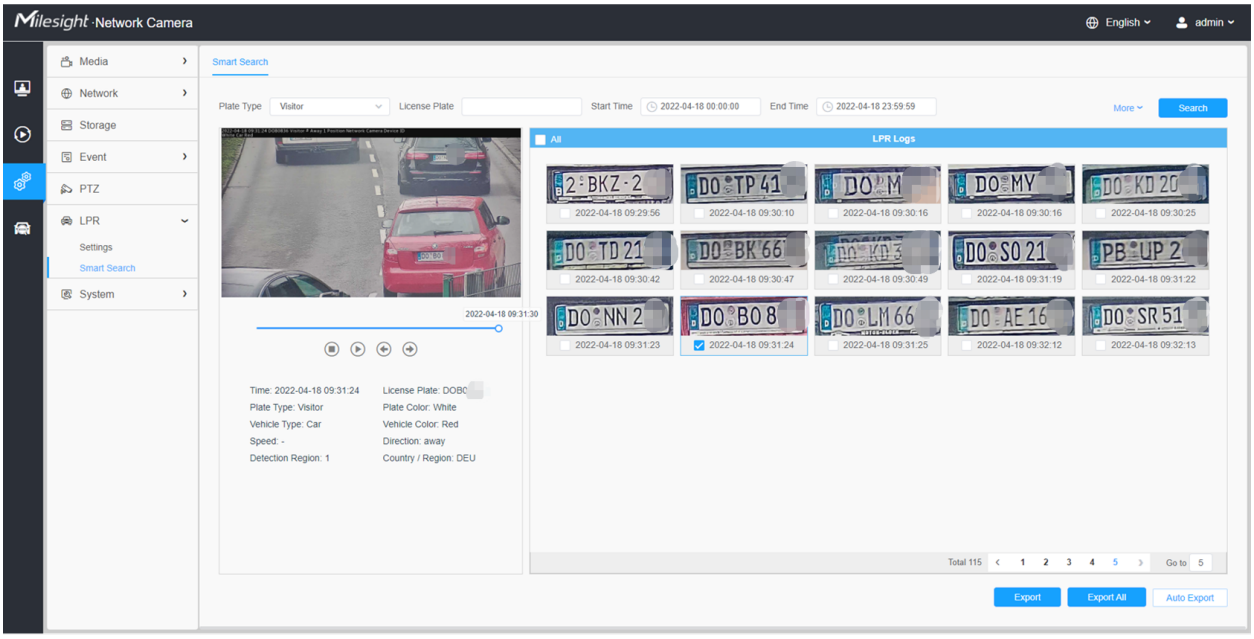
Step8: Set the alarm action. The OSD Blink here needs to be turned on after the OSD function. When an alarm is triggered, the OSD information will flash and alarm, and you can also set the duration of the OSD Blink Time, which supports 1~10s.

Note: This part is the same as the regular alarm settings. You can refer to Table 3 *(page 114)*.



8.6.2 Smart Search

The real-time detection results will be displayed on the right side of Smart Search page, including detected time, live screenshot, and license plate.

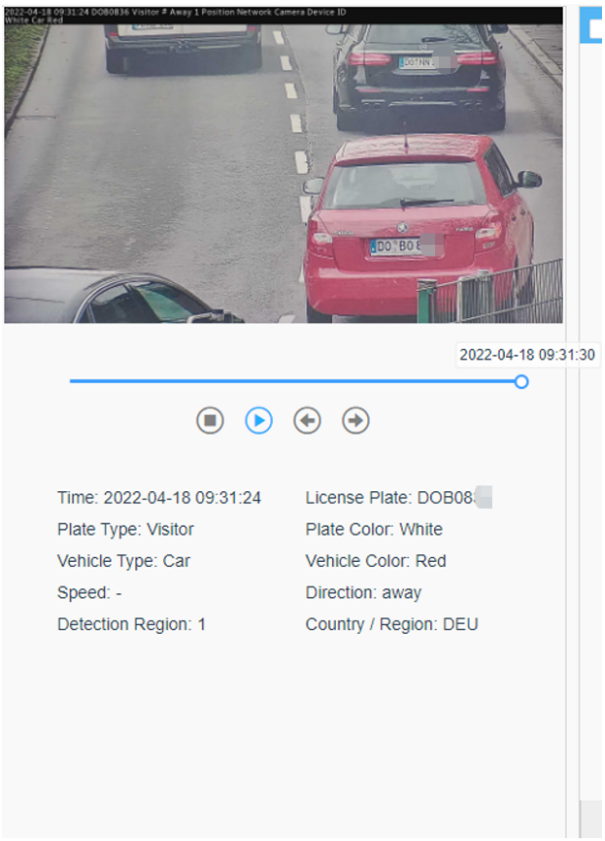


Step1: Select Plate Type or directly enter the license plate number and then select Start Time and End Time. The related license plate information will be displayed as below by one click on the "**Search**" button.

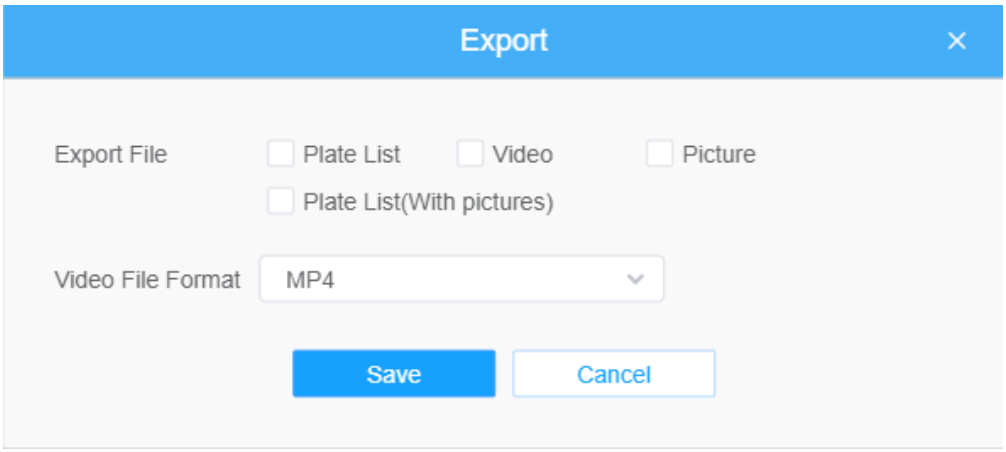
Note:

- It supports displaying 4,000 logs.
- Only when there is a SD Card or NAS has been set on the storage management , then the logs can be stored and showed on Smart Search page.
- For Plate Color/Vehicle Color Recognition and Vehicle Type Classification, please make sure your model is MS-Cxxxx-xPC.

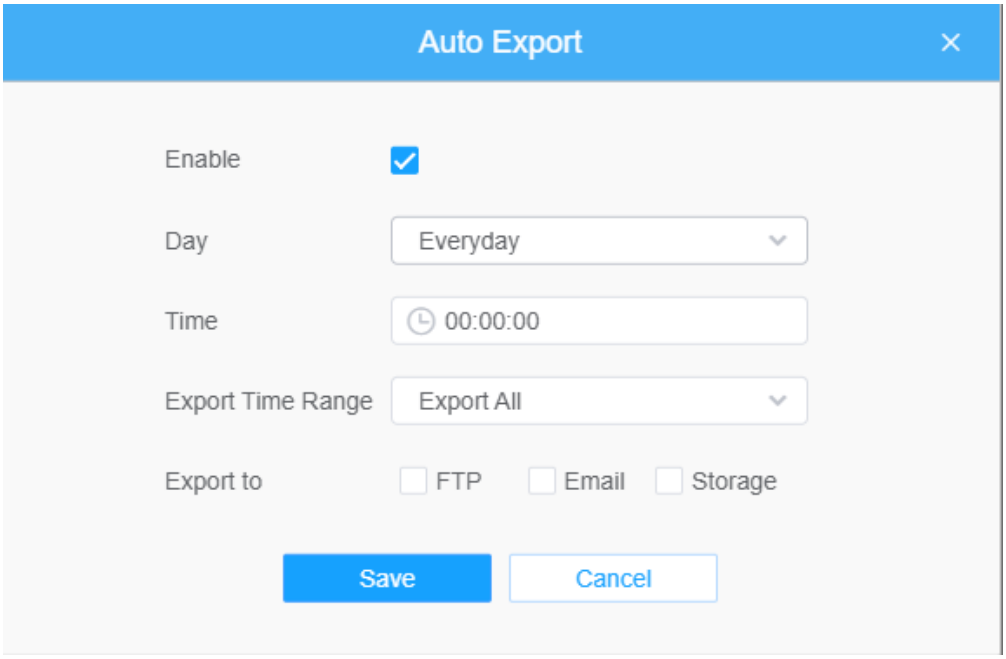
Step2: Click on the thumbnail photo under the LPR Logs, then the license plate details will be shown as below :



Step3: Click the "**Export**" or "**Export All**" button to export the desired files in the current list to a local folder.



Step4: Click the "**Auto Export**" button to automatically export the logs to FTP, Email or Storage.



8.7 IoT (Optional)

Milesight Embedded IoT Module supports LPWAN technology to communicate wordlessly over long distance using lower power consumption.

You can manage end device and set the alarm settings here when using IoT camera.

Note: For more details about how to set IoT function, please refer to https://milesight.freshdesk.com/a/solutions/articles/69000797250.

8.7.1 Settings

8.7.1.1 Radios Settings

Currently our IoT camera supports three IoT frequency bands of **915M** (The corresponding channel plan is ***US915/AU915/KR920/AS923/AS923-2***), **868M** (The corresponding channel plan is ***IN865/EU868/RU864***) and **470M** (The corresponding channel plan is ***CN470***). Before buying the camera, you need to contact our sales to choose the frequency band that is supported in your country.

For example, here I choose the IoT camera with the frequency bands of 915M or reference document regional parameters for LoRaWAN, and it will show that the current channel plan is US915 on the page.

Note: Usually you can directly use the default settings without configuring Radio Settings. If you need to customize some radio settings, you can make further settings as shown below.

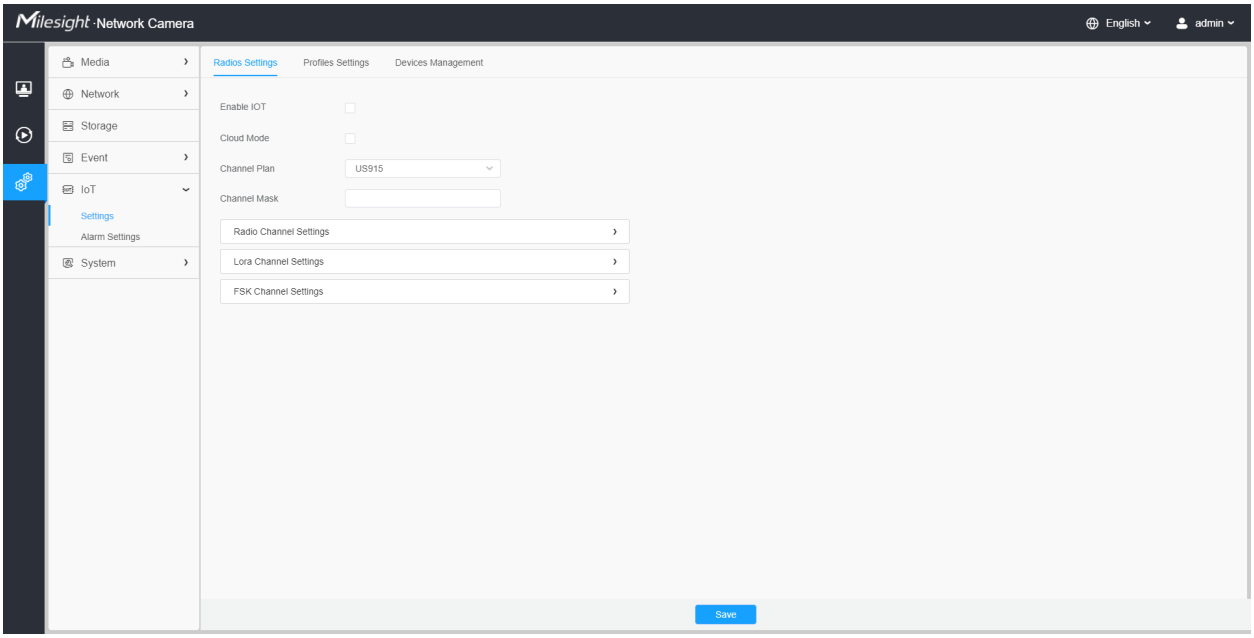


Table 89. Description of the buttons

Parameters	Function Introduction
Enable IoT	Enable/Disable the IoT function.
Cloud Mode	Enable/disable Milesight IoT Cloud management.
Channel Plan	Show the corresponding channel plan of your IoT camera.

Parameters	Function Introduction
Channel Mask	Enabled frequencies are controlled using channel mask. Leave it blank means using all the default standard usable channels specified in the LoRaWAN® regional parameters document. A bit in the Channel Mask field set to 1 means that the corresponding channel can be used for uplink transmissions if this channel allows the data rate currently used by the end-device. A bit set to 0 means the corresponding channels should be avoided.This option is optional for CN470, US915 and AU915.

[Radio Channel Settings]

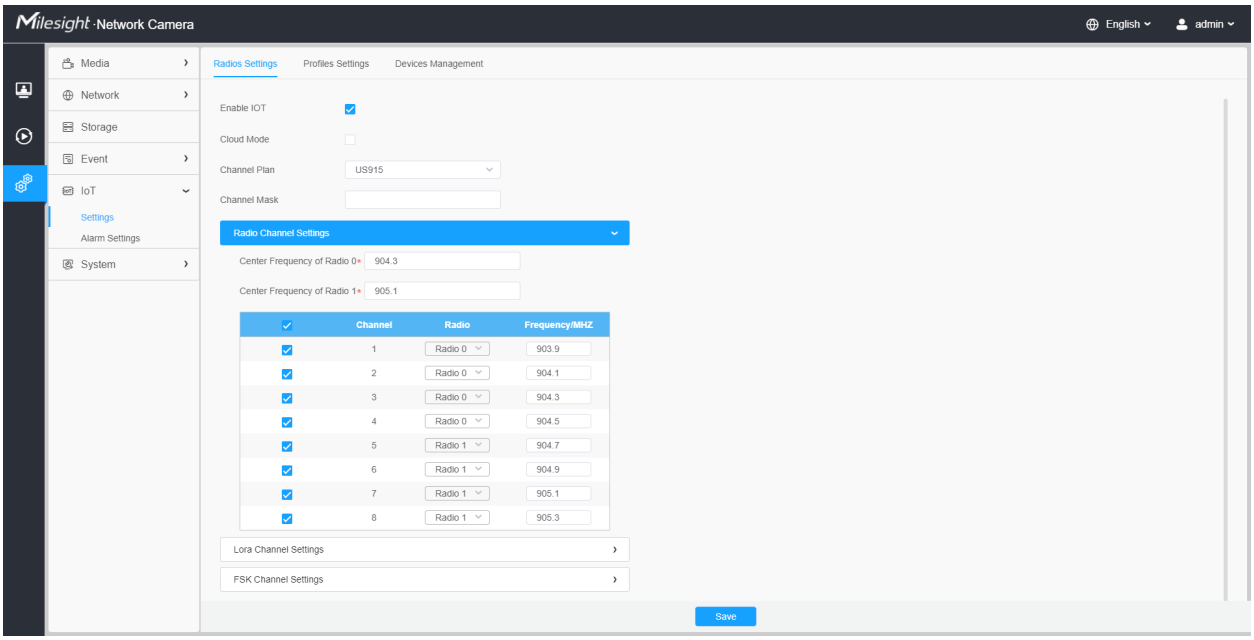
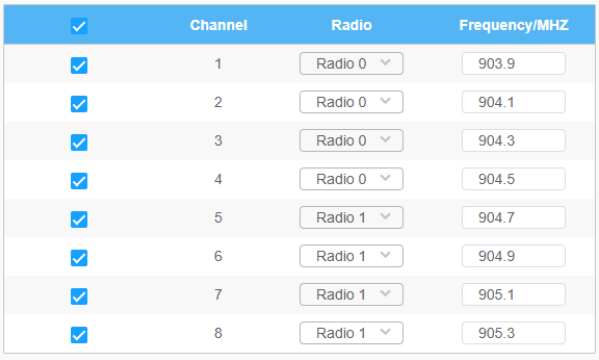


Table 90. Description of the buttons

Parameters	Function Introduction
Center Frequency of Radio 0	Supports transmitting and receiving packet; **Note:** For details of default value and configuration ranges in different regions, please refer to **Milesight Troubleshooting-5G AIoT Camera.**
Center Frequency of Radio 1	Only supports receiving packet from nodes; **Note:** For details of default value and configuration ranges in different regions, please refer to **Milesight Troubleshooting-5G AIoT Camera.**

Parameters	Function Introduction
Multi-channel list	The radio and frequency corresponding to all channels will be listed here. All channels are enabled by default. You can also check the box to enable the corresponding channel. 

[Lora Channel Settings]

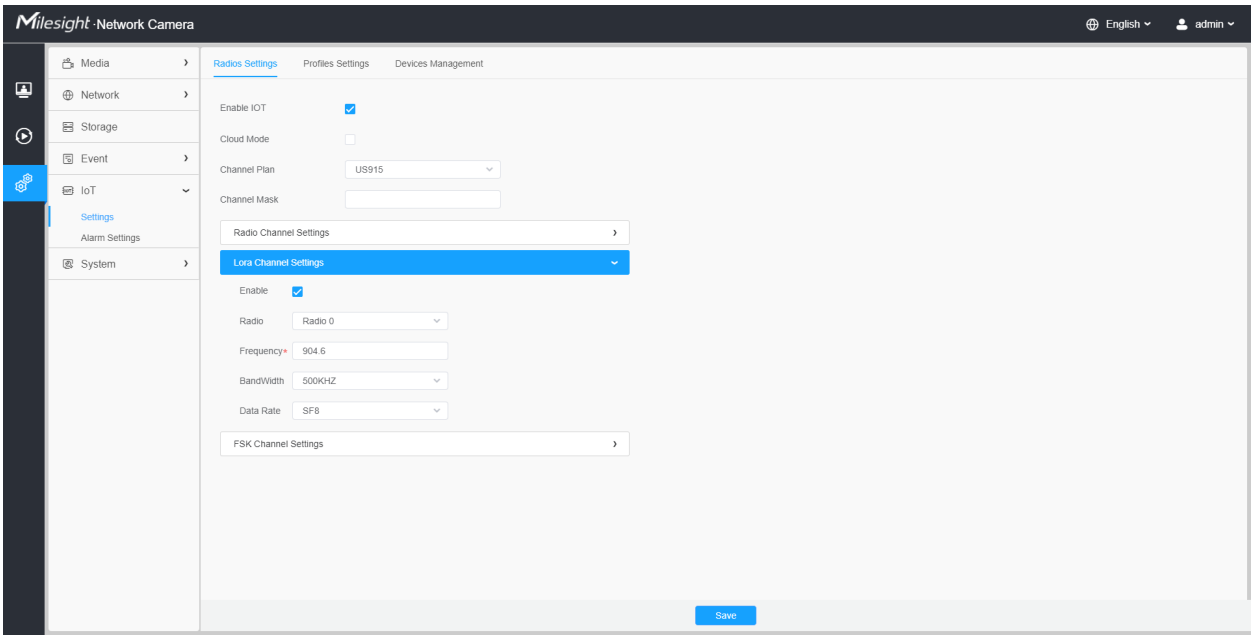


Table 91. Description of the buttons

Parameters	Function Introduction
Enable	Enable/Disable the LoRa Channel.
Radio	Choose Radio 0 or Radio 1 as center frequency.

Parameters	Function Introduction
Frequency	Enter the frequency of this channel. **For example:** • The frequency range formula of US915 and AU915: Center frequency ±0.55; • The frequency range formula of other regions (except US915 and AU915): Center frequency ±0.4625; For example, the center frequency is configured with 867.5, then the frequency range corresponding to each channel: 867.5-0.4625~867.5+0.4625.
Band Width	Enter the bandwidth of this channel. 125KHz, 250KHz and 500KHz are available. The default option is 250KHz; **Note:** The default option is 500KHz for AU915 and US915.
Data Rate	From SF7 to SF12, the transmission rate decreases and the transmission distance increases. In general, the range of Data Rate is SF7 ~ SF12, the default value would be SF7. Only the default value of the Channel Plan AU915 and US915 is SF8.

[FSK Channel Settings]

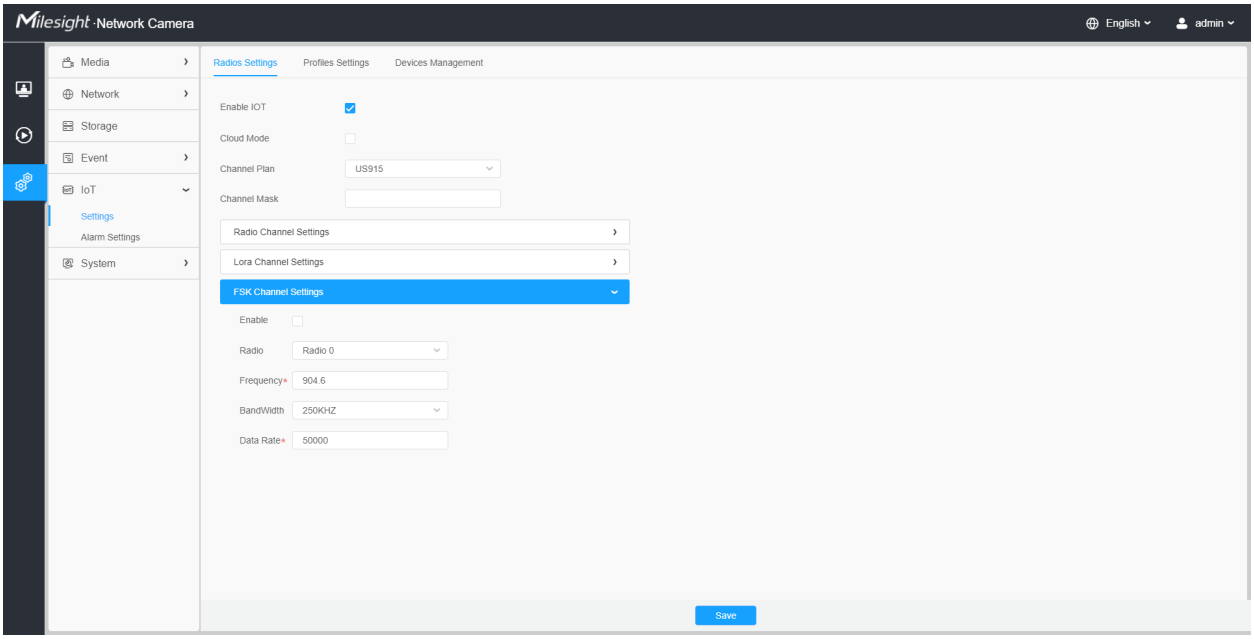


Table 92. Description of the buttons

Parameters	Function Introduction
Enable	Enable/Disable the FSK Channel.
Radio	Choose Radio 0 or Radio 1 as center frequency.
Frequency	Enter the frequency of this channel.
BandWidth	Enter the bandwidth of this channel. 125KHz, 250KHz and 500KHz are available. The default option is 125KHz. **Note:** The default option is 250KHz for AU915 and US915.
Data Rate	Enter the data rate. The Date Rate must be between 500~250000.

Note: The configurations here should be the same with those in End Device.

8.7.1.2 Profiles Settings

Usually you can use the default settings without configuring Profiles Settings. If you need to customize some profiles settings, you can click the Profiles Settings button to make further settings and click Apply button, it will list the Device-profiles you created.

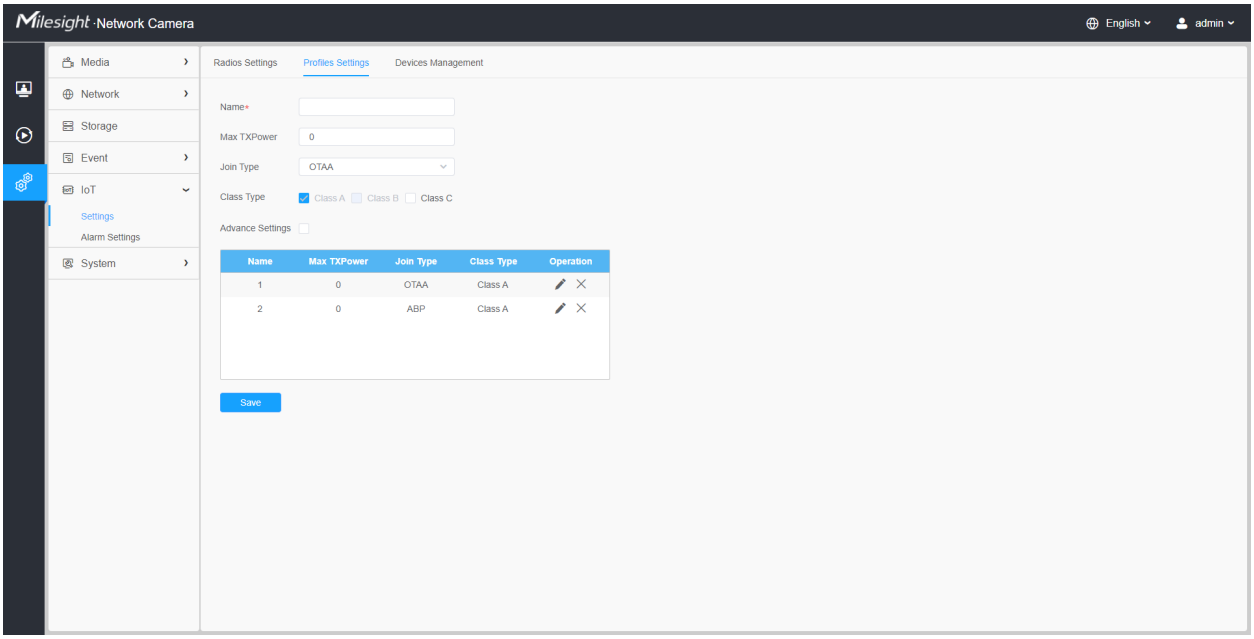


Table 93. Description of the buttons

<table>
<tr><th>Parameters</th><th colspan="2">Function Introduction</th></tr>
<tr><td>Name</td><td colspan="2">Customize the profile name.</td></tr>
<tr><td>Max TXPower</td><td colspan="2">Enter the maximum transmit power. The TXPower indicates power levels relative to the Max EIRP level of the end-device. 0 means using the max EIRP. EIRP refers to the Equivalent Isotropically Radiated Power. The Max TXPower must be between 0~16.</td></tr>
<tr><td>Join Type</td><td colspan="2">OTAA and ABP are optional, the default option is OTAA.
• OTAA: Over-the-Air Activation.
For over-the-air activation, end-devices must follow a join procedure prior
to participating in data exchanges with the network server. An end-device
has to go through a new join procedure every time as it has lost the session context information.
• ABP: Activation by Personalization.
Under certain circumstances, end-devices can be activated by
personalization. Activation by personalization directly ties an end-device to
a specific network by passing the join request - join accept procedure.</td></tr>
<tr><td>Class Type</td><td colspan="2">Device type is Class A by default. Users can check the box of Class B or Class C to add the class type.</td></tr>
<tr><td rowspan="5">Advance Settings</td><td>MAC Version</td><td>Choose the version of the LoRaWAN® supported by the end-device. 1.0.0/1.0.1/1.0.2/1.1.0 are optional, the default option is 1.0.2.</td></tr>
<tr><td>Regional Parameters Revision</td><td>Revision of the Regional Parameters document is supported by the end-device.A and B are optional, the default option is B.</td></tr>
<tr><td>RX1 Data Rate Offset</td><td>The offset used for calculating the RX1 data-rate is based on the uplink data-rate.</td></tr>
<tr><td>RX2 Data Rate</td><td>Enter the RX2 datarate which is used for the RX2 receive-window.</td></tr>
<tr><td>RX2 Channel Frequency</td><td>RX2 channel frequency is used for the RX2 Frequency receive-window.</td></tr>
</table>

Parameters	Function Introduction	
Advance Settings	**Frequency List**	List of factory-preset frequencies. The range is based on what is specified in the LoRaWAN® regional parameters document.

8.7.1.3 Device Management

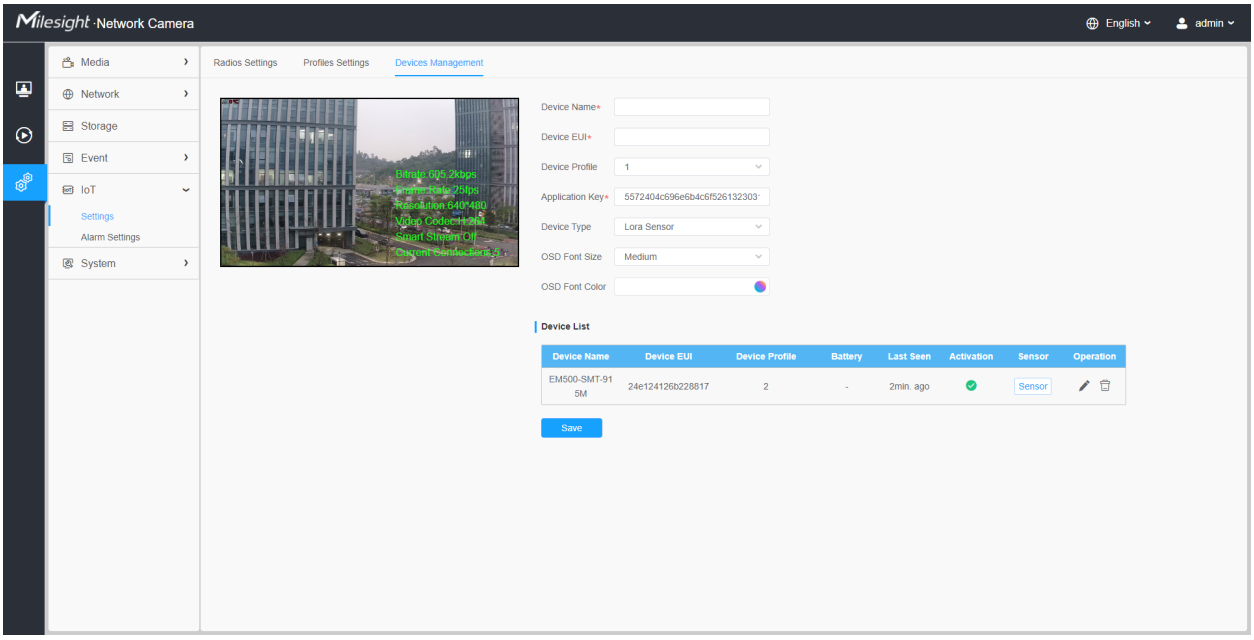
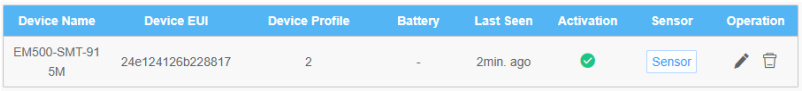
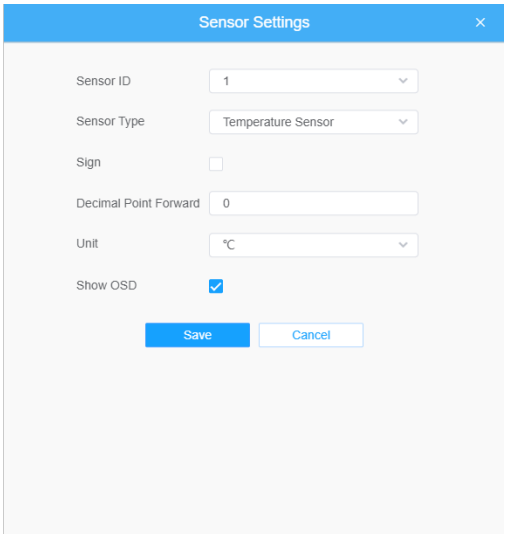
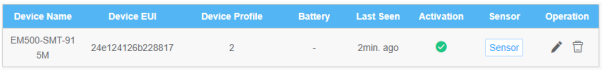
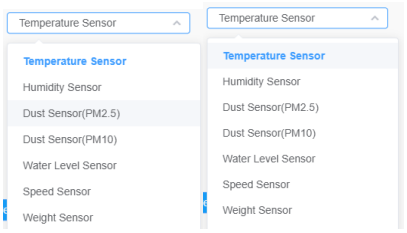
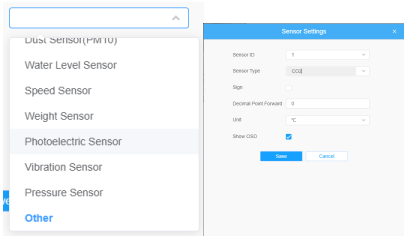
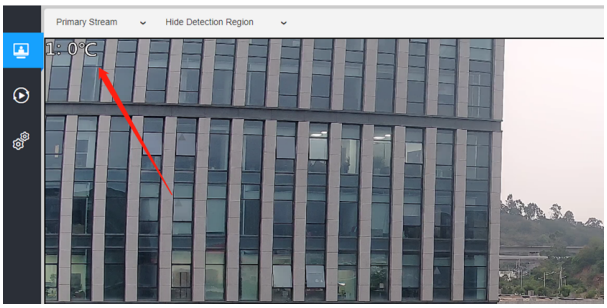


Table 94. Description of the buttons

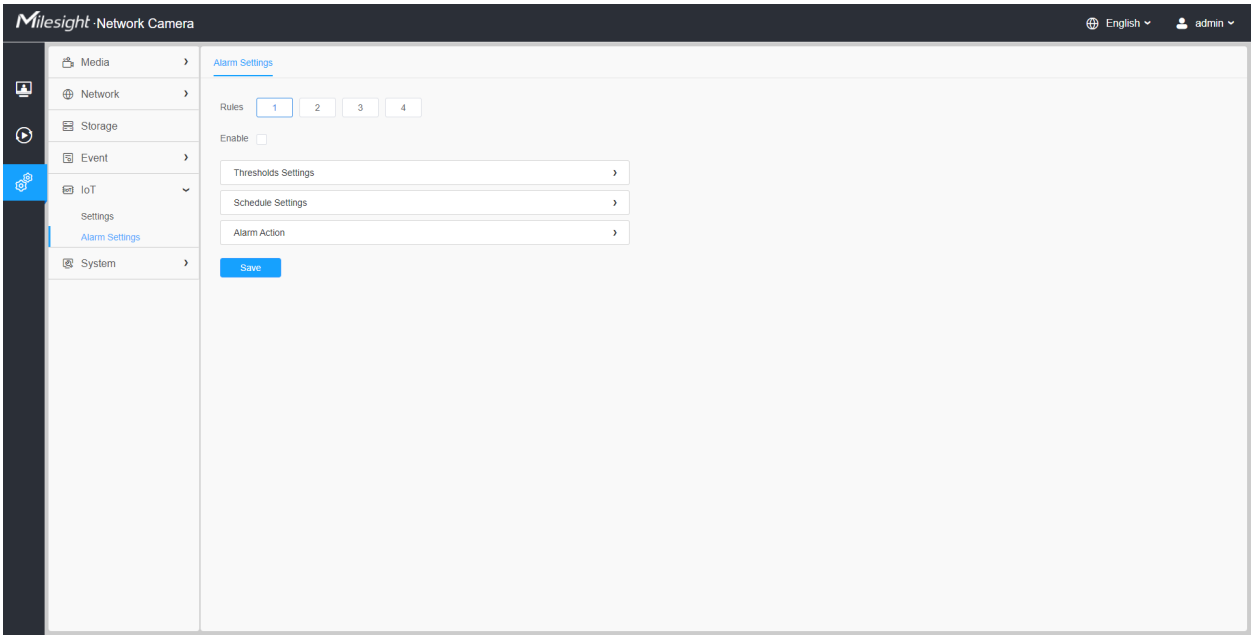
Parameters	Function Introduction
Device Name	Customize the device name.
Device EUI	Fill in Device EUI which can be obtained from the device label. You can also get Device EUI from Milesight Tool Box if you use Milesight Lora Sensor.
Device Profile	OTAA and ABP are optional, the default option is OTAA.

Parameters	Function Introduction
Application Key	Whenever an end-device joins a network via over-the-air activation, the application key is used for derive the Application Session key. It is mainly used to generate corresponding Device Address/Network Session Key/Application Session Key. **Note:** • The default key can be obtained from the end-device. • Milesight Sensors' default key is 5572404c696e6b4c6f52613230313823.
Device Address **/Network Session Key** **/Application Session Key**	Information is needed to access the network. If you choose ABP network access mode, you need to fill in these items. And you can obtain them from End Device. For example, you can get such information from Milesight Tool Box when you use Milesight Lora Sensor. **Device Address:** The device address identifies the end-device within the current network. **Network Session Key:** The network session key is specific for the end-device. It is used by the end-device to calculate the MIC or part of the MIC (message integrity code) of all uplink data messages to ensure data integrity. The default key of Milesight Sensor is 5572404c696e6b4c6f52613230313823. **Application Session Key:** The AppSKey is an application session key specific for the end-device. It is used by both the application server and the end-device to encrypt and decrypt the payload field of application-specific data messages. The default key of Milesight Sensor is 5572404c696e6b4c6f52613230313823.
Device Type	Select the device type according to the actual situation. Lora Sensor and Lora Sensor Node are optional. Lora Sensor is a kind of sensor that supports LoraWAN protocol, while Lora Sensor Node is a kind of device which receives data from interfaces of RS485, AI and GPIO.
OSD Font Size	Configure the OSD font color.
OSD Font Color	Configure the OSD font size.

Parameters	Function Introduction
Device List	**Step 1:** You can enter sensor configuration page by clicking Sensor After the configuration is finished, you can click Save to save your configuration or click Cancel to cancel your configuration.   **Step 2:** You can click to modify the configuration in End Device Management. **Step 3:** You can click to delete the device you added. 

Parameters	Function Introduction
Sensor Settings	**[Sensor ID]** Select the Sensor ID that you want to configure. The number of sensor IDs depends on how many kinds of data the sensor has and there is a one-to-one relationship between ID and data. **[Sensor Type]**Sensor Type configuration. We have several common used sensor types as shown below:  Or you can also customize it:  **[Sign]**The tick indicates that the value has a plus or minus sign. **[Decimal Place]** Decimal configuration. For example, when you fill in 1, you are moving the decimal point one to left, and you get a decimal. **[Unit]** Data unit configuration. We have some common units here and users can also customize it. **[Show OSD]** As the picture shown below, once you enable this function, you can see the detected data on the screen.  **Note:** • The channel ID and Sign should be consistent with those in End Device. • Decimal Place is set according to the properties of the sensor. For example, you need to set this value to 1 to get the correct temperature when using the Milesight temperature sensor.

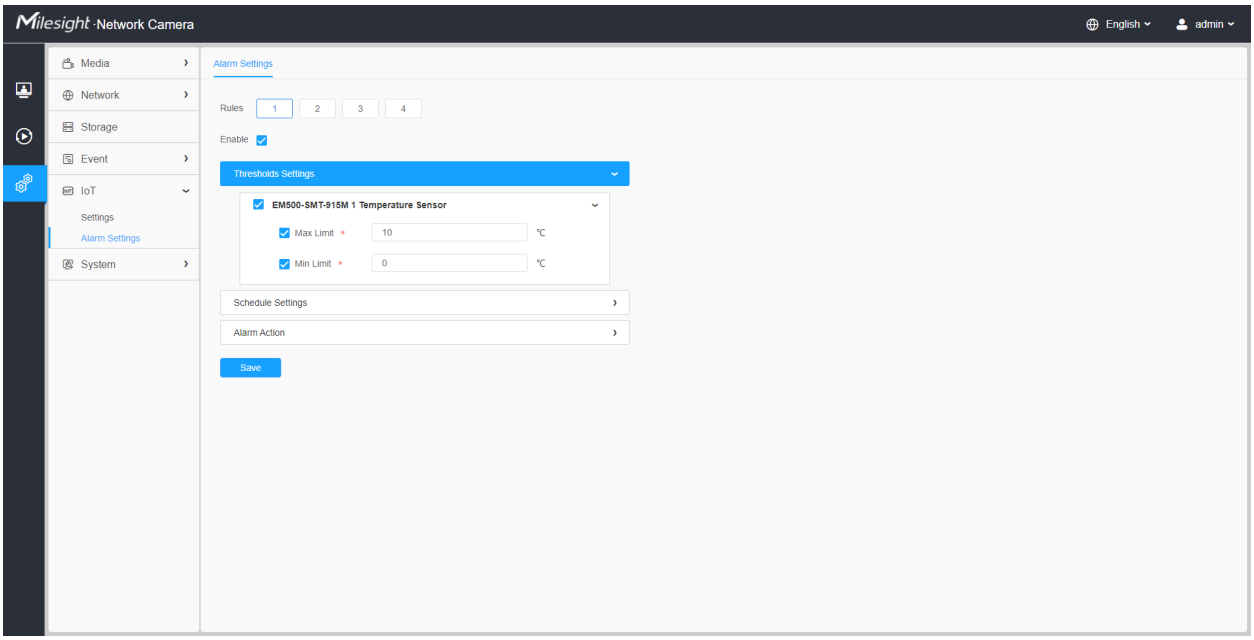
8.7.2 Alarm Settings



Step 1: Select the alarm rule that you want to set and you can configure four kinds of rules.

Step 2: Check the check box to enable Alarm Rules.

[Thresholds Settings]



Step 3: Click to select the sensor to alarm.

Step 4: Set threshold for the selected sensor. When the data reaches the critical value, the alarms will be triggered. Both upper and lower thresholds are configurable. You can also only configure upper or lower threshold.

[Schedule Settings]

Step 5: Set the alarm schedule for IoT.

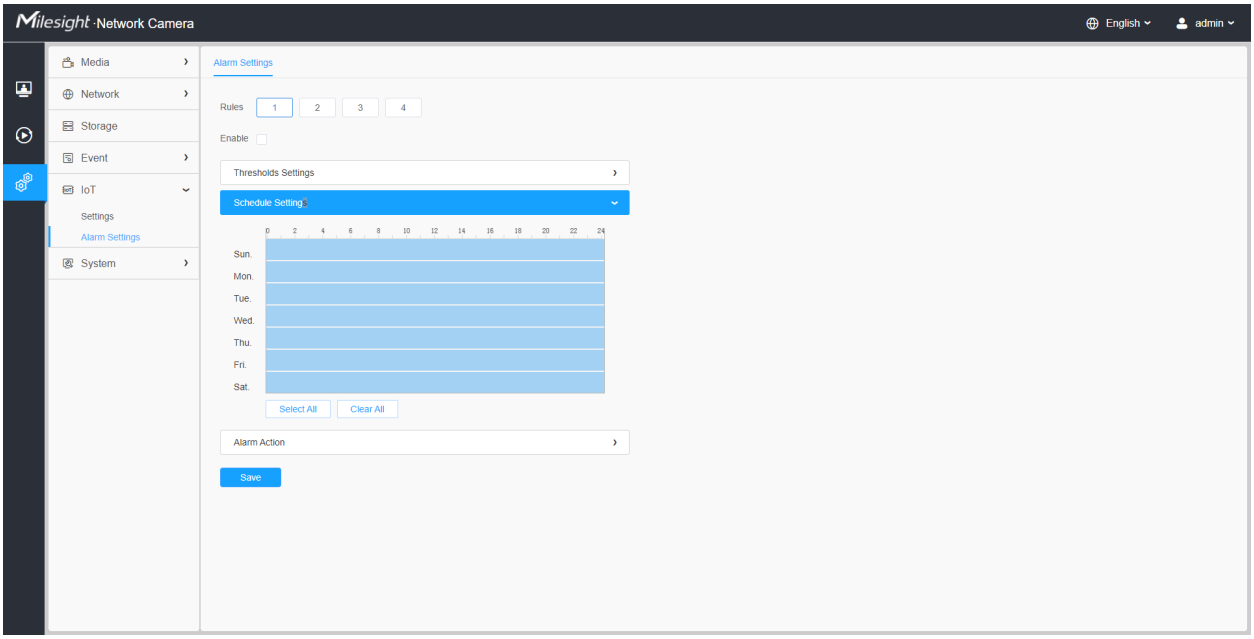
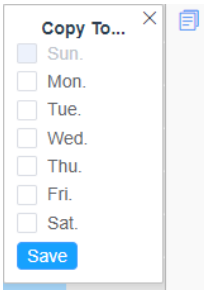
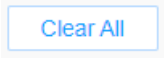


Table 95. Description of the buttons

Parameters	Function Introduction
	Copy the schedule area to another date.
	Select all schedule.
	Clear all schedule.

[Alarm Action]

Step 6: Set Alarm Action.

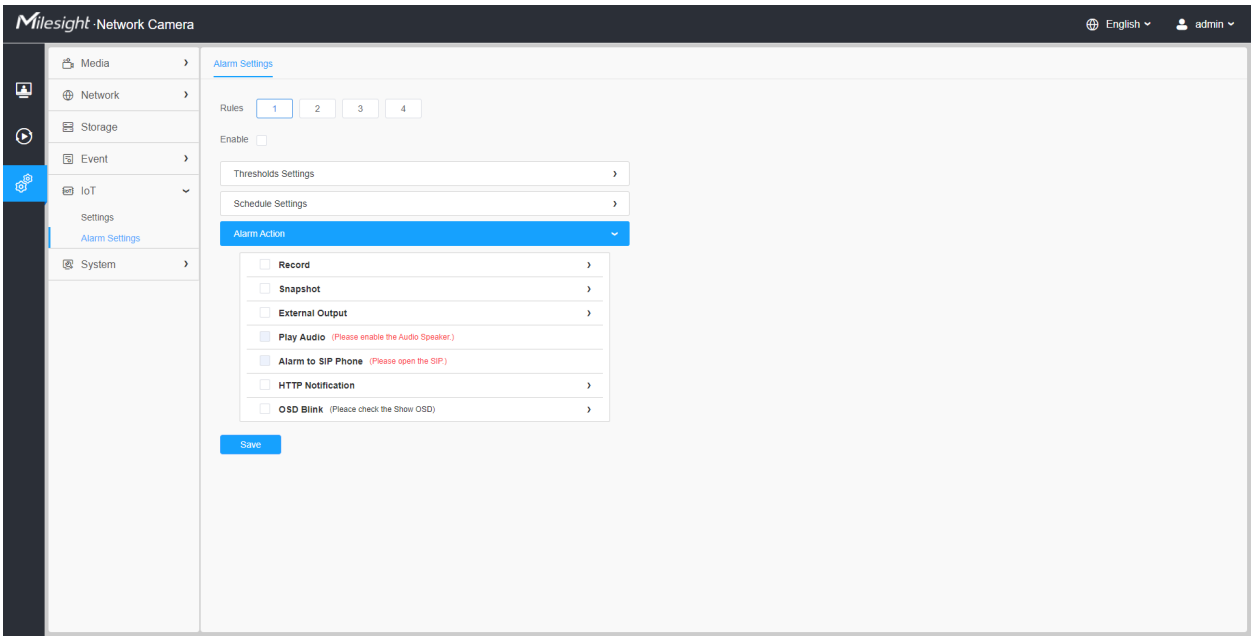
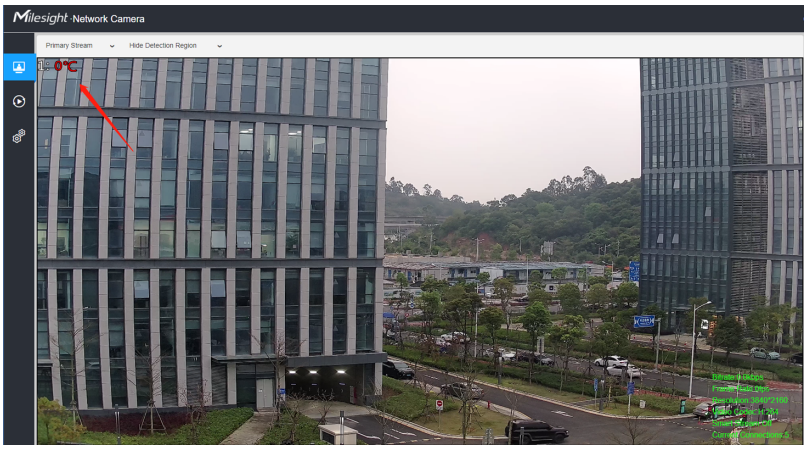


Table 96. Description of the buttons

Parameters	Function Introduction
Record	**Duration:** Selected the duration time of alarm. 5s/10s/15s/20s/25s/30s are available. **Linkage:** Save alarm recording files into SD Card or NAS or Upload the recording files via FTP.
Snapshot	**Number:** The number of snapshot, 1~5 are available. **Interval:** This cannot be edited unless you choose more than 1 to Snapshot. **Linkage:** Save alarm recording files into SD Card or NAS, Upload the recording files via FTP and send alarm email.
External Output	If the camera equips with External Output, you can enable the action after configuring the trigger duration.
Play Audio	Auto/10 seconds/30 seconds/1 minute/5 minutes/10 minutes are available. **Note:** Please enable the Audio Speaker.
Alarm to SIP Phone	Support to call the SIP phone after enabling the SIP function. **Note:** Please open the SIP.

Parameters	Function Introduction
HTTP Notification	Support to pop up the alarm news to specified HTTP URL.
OSD Blink	If the Show OSD in the page of sensor configuration is checked, the OSD will blink when alarm is triggered. **OSD Blink Time:** Support to set the blinking duration of the OSD, 1~10 are Available. For example, the alarm action is set to OSD blinking at an interval of 3 seconds, when the data reaches the critical value, the alarms will be triggered and the OSD blinking on the live view interface. 

8.8 System

Here you can configure System Setting, Security, Logs and Maintenance.

8.8.1 System Setting

Here you can check System information and Date&Time.

8.8.1.1 System info

All information about the hardware and software of the camera can be checked on this page.

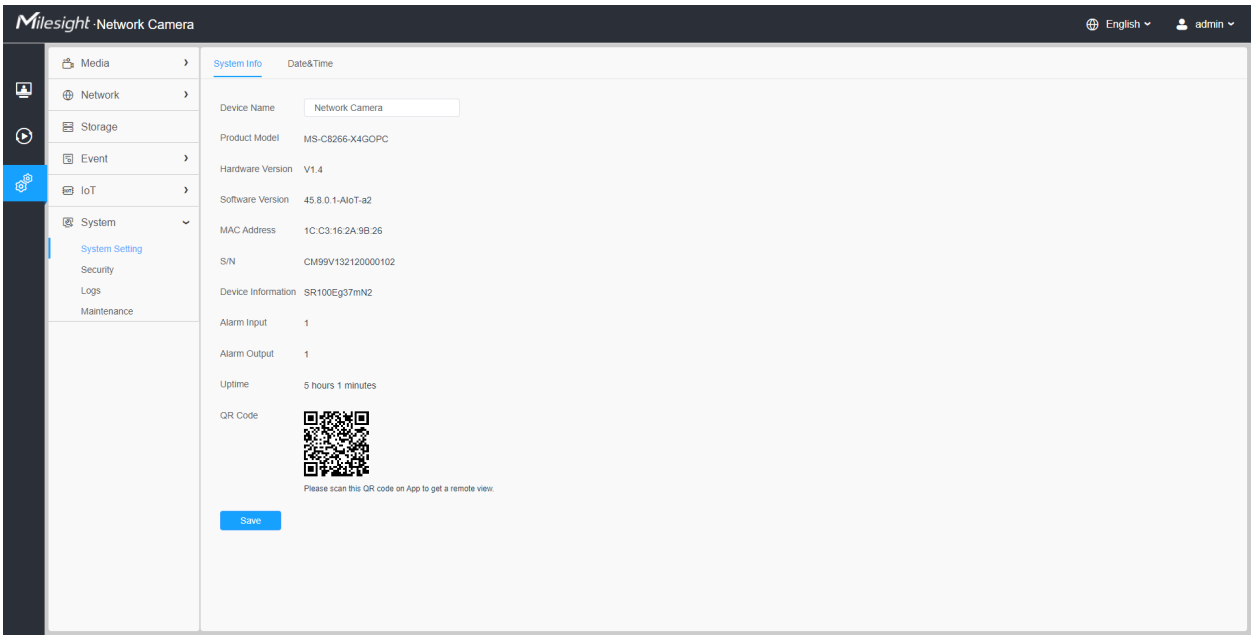


Table 97. Description of the buttons

Parameters	Function Introduction
Device Name	The device name can be customized. It will be seen in file names of video files.
Product Model	The product model of the camera.
Hardware Version	The hardware version of the camera.
Software Version	The software version of the camera can be upgraded.
LPR License **(Only for LPR2, LPR3, LPR 4, LPR EU, LPR AP and LPR AM)**	Generated by camera's information. **Note:** Only for LPR Series.
License Status **(Only for LPR2, LPR3, LPR 4, LPR EU, LPR AP and LPR AM)**	Show present license status, including **Valid** and **Invalid** **Note:** Only for LPR Series.
MAC Address	Media Access Control address.
S/N	Stock Number.
Device Information	The device information, including information about alarm I/O and clipper chip.

Parameters	Function Introduction
Alarm Input	The number of Alarm Input interface. **Note:** The Alarm Input will appear only when the camera have alarm input/ output interface.
Alarm Output	The number of Alarm Output interface. **Note:** The Alarm Output will appear only when the camera have alarm input/ output interface.
Uptime	The elapsed time since the last restarted of the device.
Save	Save the configuration.

8.8.1.2 Date&Time

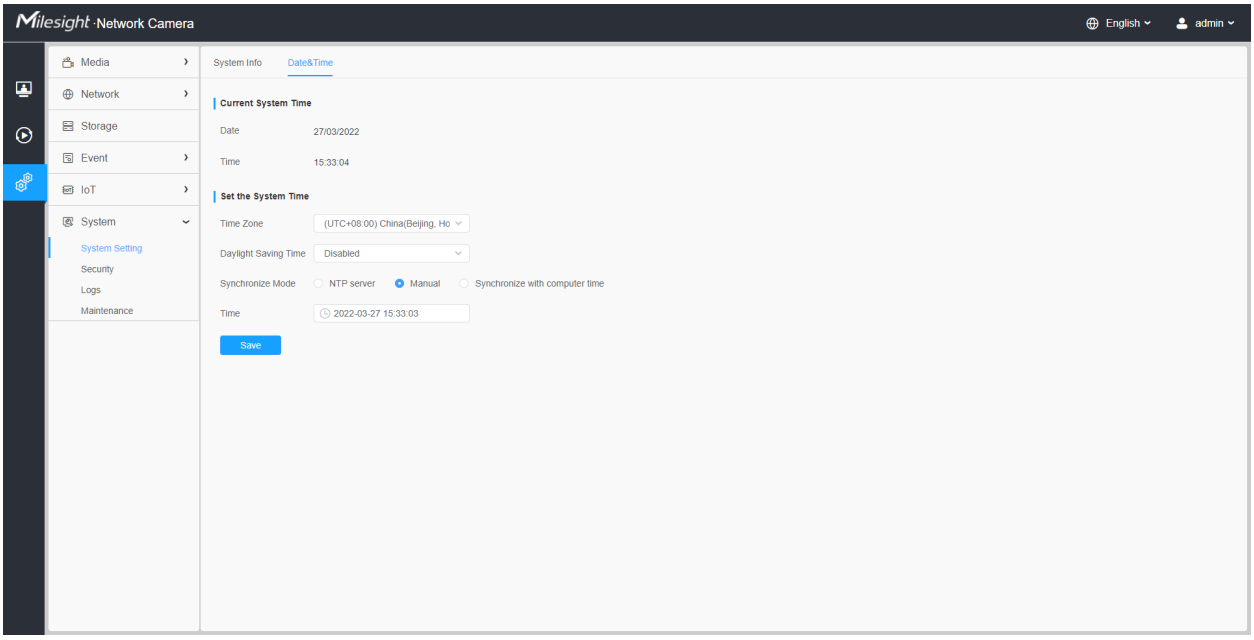


Table 98. Description of the buttons

Parameters	Function Introduction
Current System Time	Current date&time of the system.
Set the System Time	**Time Zone:** Choose a time zone for your location.
	Daylight Saving time: Enable the daylight saving time.

Parameters	Function Introduction
	Synchronize Mode: NTP server, Manual and Synchronize with computer time are optional. **NTP server:** Input the address of NTP server. **NTP Sync:** Regularly update your time according to the interval time. **Manual:** Set the system time manually. **Synchronize with computer time:** Synchronize the time with your computer.
Save	Save the configuration.

8.8.2 Security

Here you can configure User, Access List, Security Service, Watermark, etc.

8.8.2.1 User

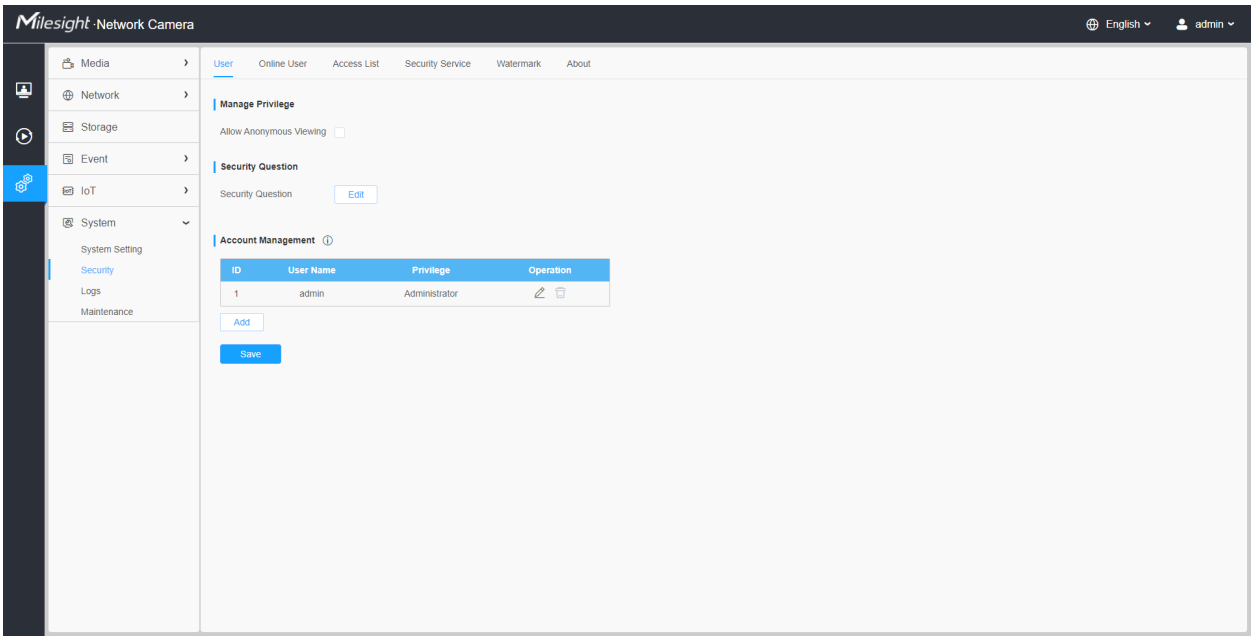
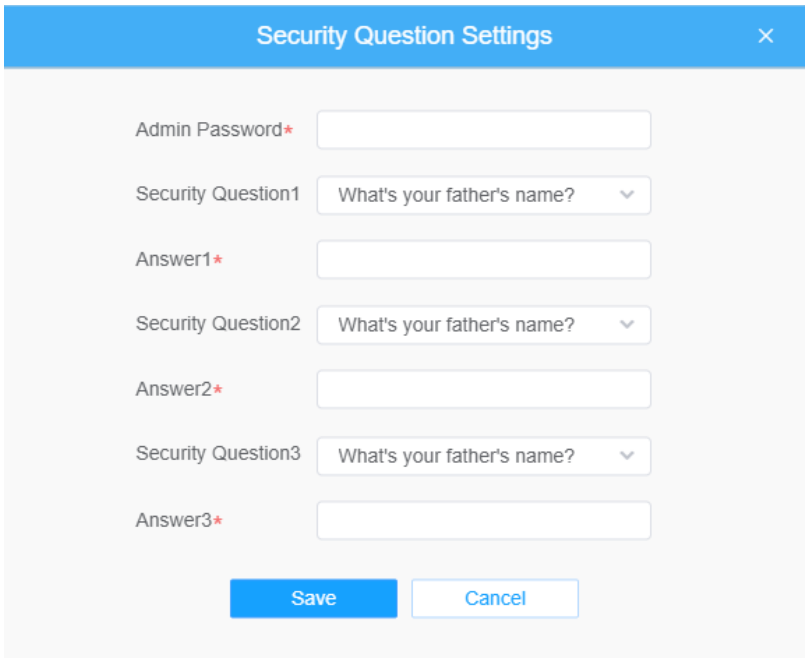
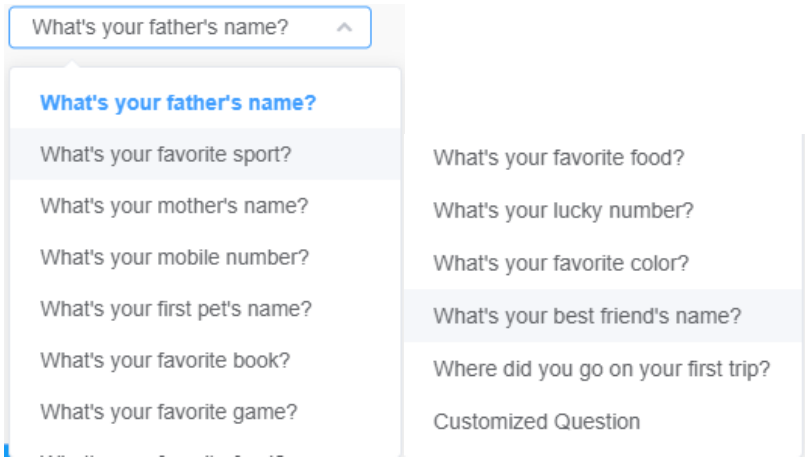


Table 99. Description of the buttons

Parameters	Function Introduction
Manage Privilege	**Allow anonymous viewing:** Check the checkbox to enable visit from whom doesn't have account of the device.

Parameters	Function Introduction
Security Question	Click “Edit” button to set three security questions for your camera. In case that you forget the password, you can click “Forget Password” button on login page to reset the password by answering three security questions correctly.  There are twelve default questions below, you can also customize the security questions. 

Parameters	Function Introduction
Account Management	Click “**Add**” button, it will display Account Management page. You can add an account to the camera by entering Admin Password, User Level, User Name, New Password, Confirm, and edit user privilege by clicking . The added account will be displayed in the account list. **Admin Password:** You can add an account only after you enter the correct admin password. **User Level:** Set the privilege for the account. **User Name:** Input user name for creating an account. **New Password:** Input password for the account. **Confirm:** Confirm the password. You can edit and delete the account in the account list under the admin account. For the default admin account, you can only change the password, and it cannot be deleted. **Note:** • Support up to 20 users, including a default user and 19 custom added users. • The operator privilege is all checked by default.

8.8.2.2 Online User

Here real-time status of user logging in camera will be shown.

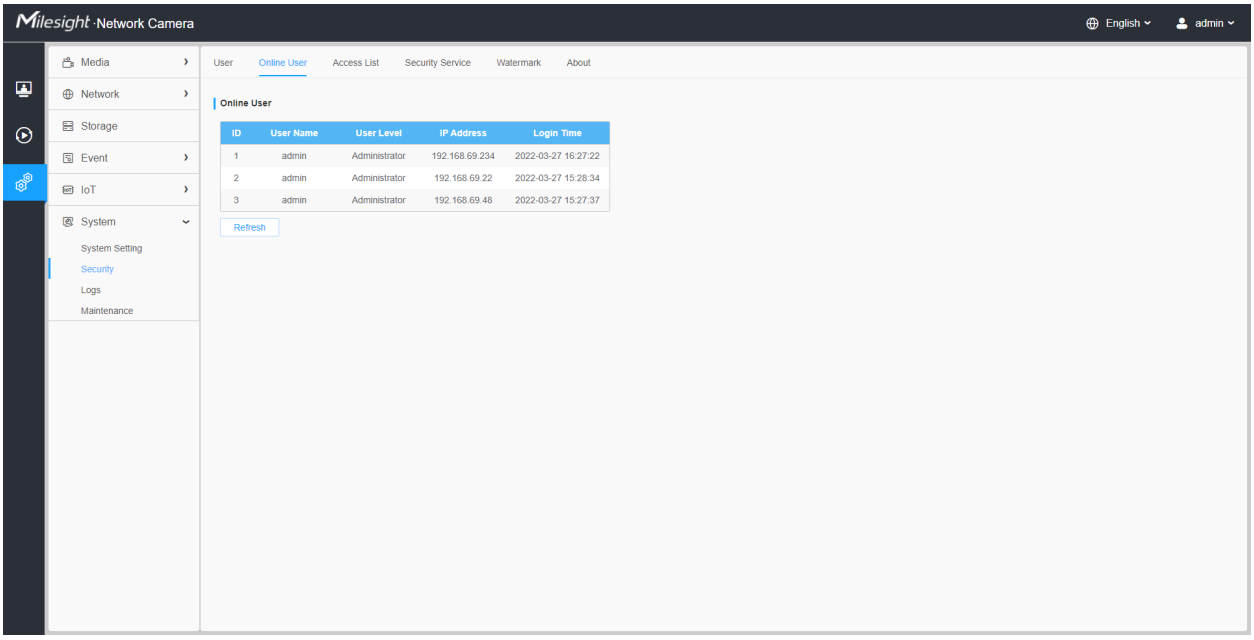


Table 100. Description of the buttons

Parameters	Function Introduction
Refresh	Click to get latest status of user accessing to camera.
ID	Record serial number of user logging in camera. **Note:** • There are at most 30 records shown at the list. • There is only one record if the same user logging on camera by the same IP address.
User Name	Name of user logging in camera.
User Level	Level of user logging in camera.
IP Address	Device IP address where user logging in camera web located.
Login Time	Camera system time of user logging in camera.

8.8.2.3 Access List

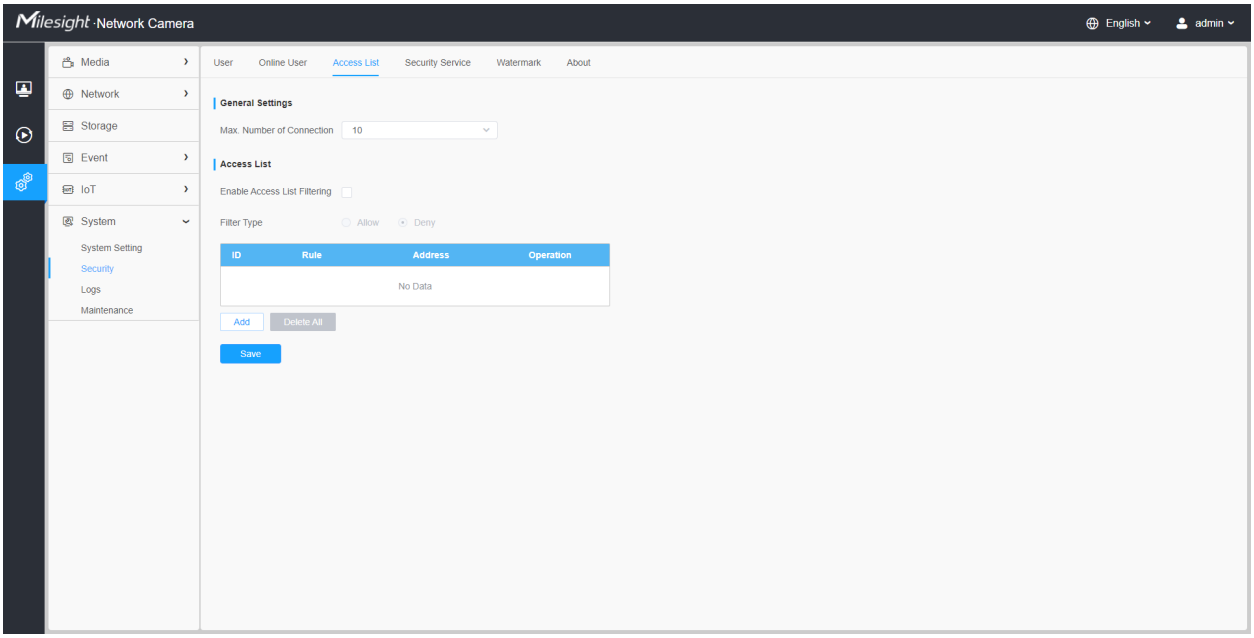


Table 101. Description of the buttons

Parameters	Function Introduction
General Settings	**Max. Number of Connection:** Select the maximum number of concurrent streaming. Options include No Limit, 1~10.

Parameters	Function Introduction	
Access List	**Enable Access List Filtering:** Able to access or restrict access for some IP address.	
Access List	**Filter type:** Allow or deny access.	
	Add	**Rule: Single, Network and Range** are available. **IP address:** Input the address to get the access to the device.
	Delete All	Delete all the access list.
		Edit the selected IP on access list.
		Delete the selected IP on access list.
Save	Save the configuration.	

8.8.2.4 Security Service

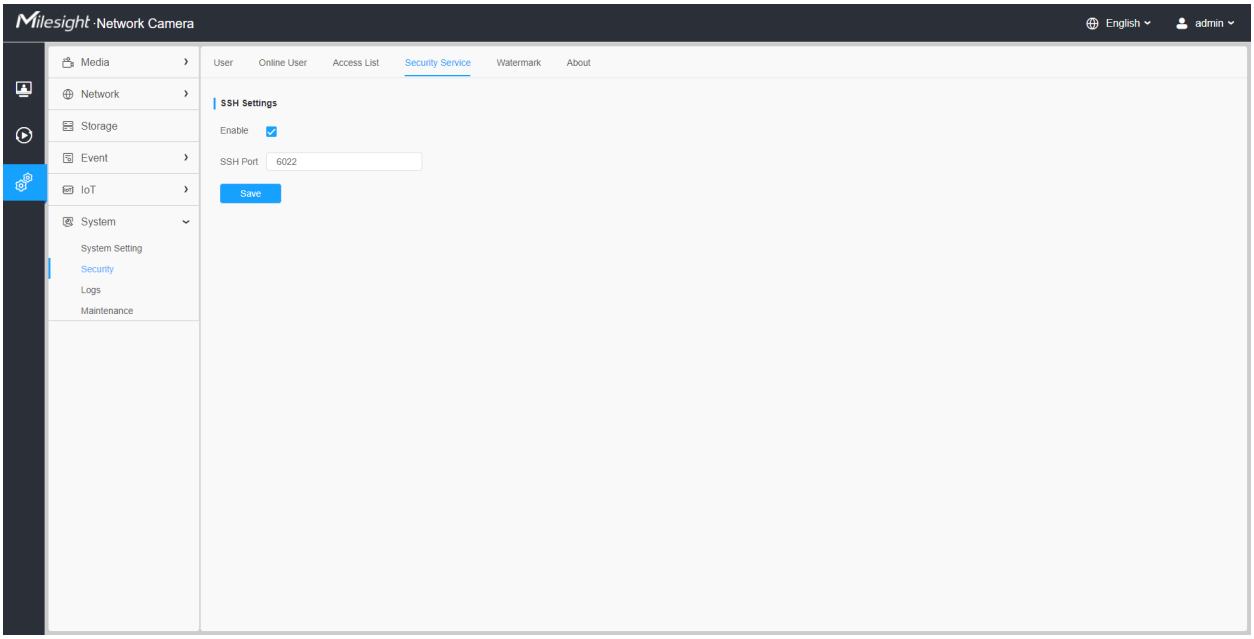
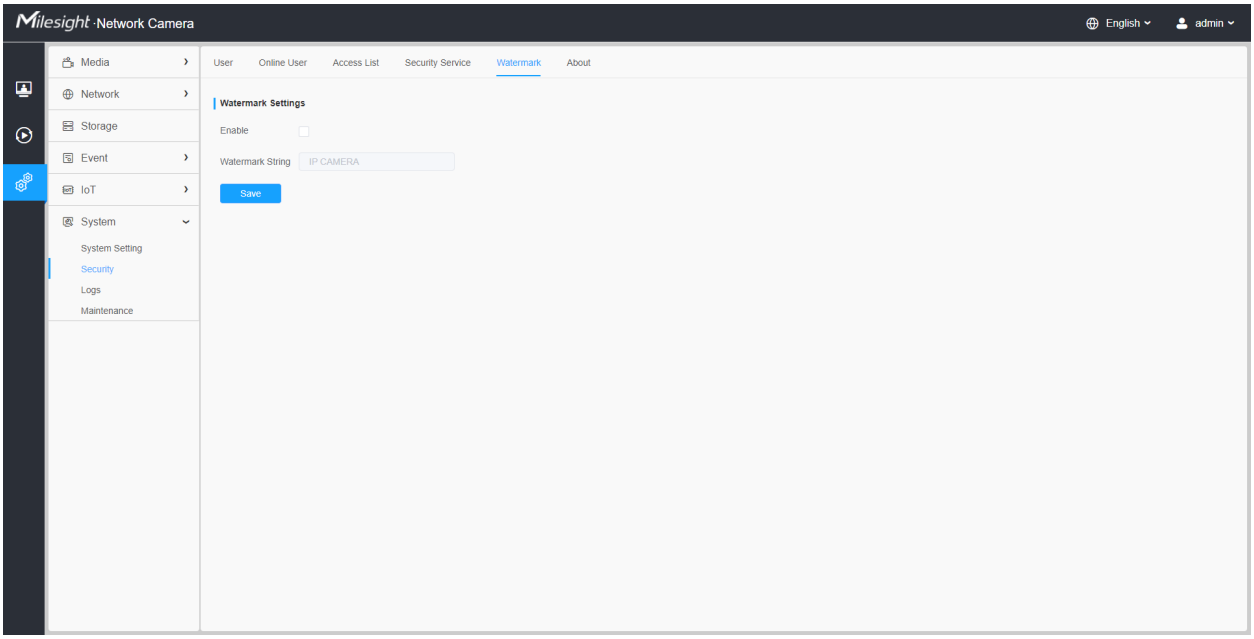


Table 102. Description of the buttons

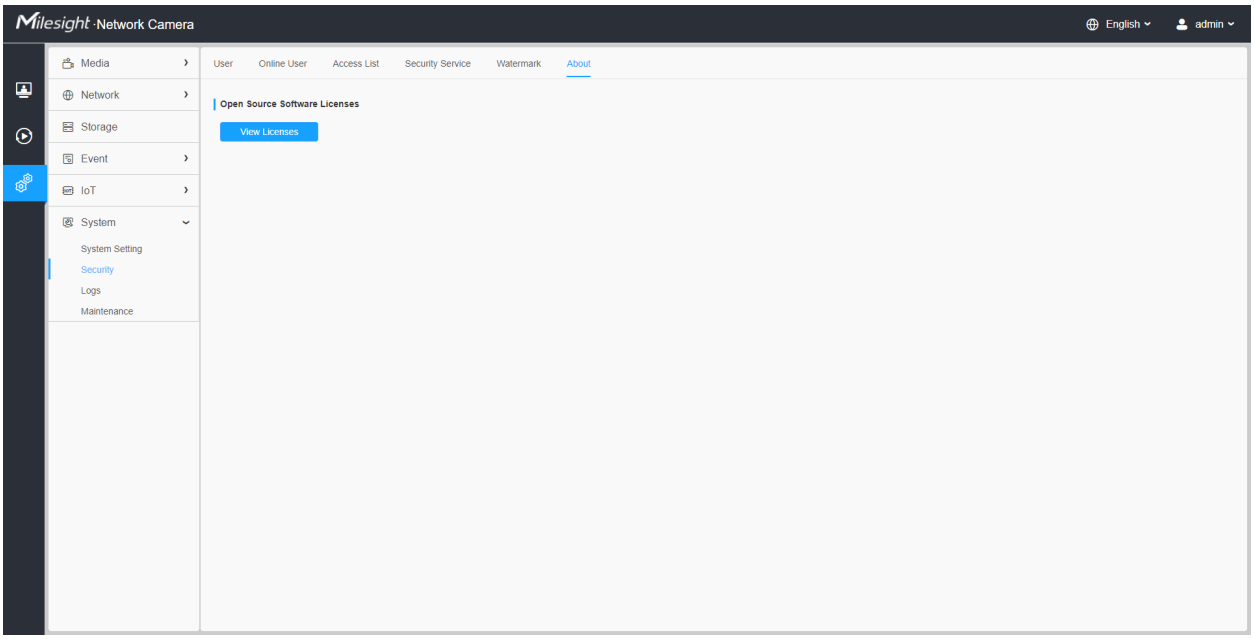
Parameters	Function Introduction
SSH Settings	Secure Shell (SSH) has many functions: it can replace Telnet and also provides a secure channel for FTP, POP, even for PPP.

8.8.2.5 Watermark



Watermarking is an effective method to protect information security, realizing anti-counterfeiting traceability and copyright protection. Milesight supports Watermark function to ensure information security.

8.8.2.6 About



User can view some open source software licenses about the camera by clicking the View Licenses button.

8.8.3 Logs

The logs contain the information about the time and IP that has accessed the camera through web.

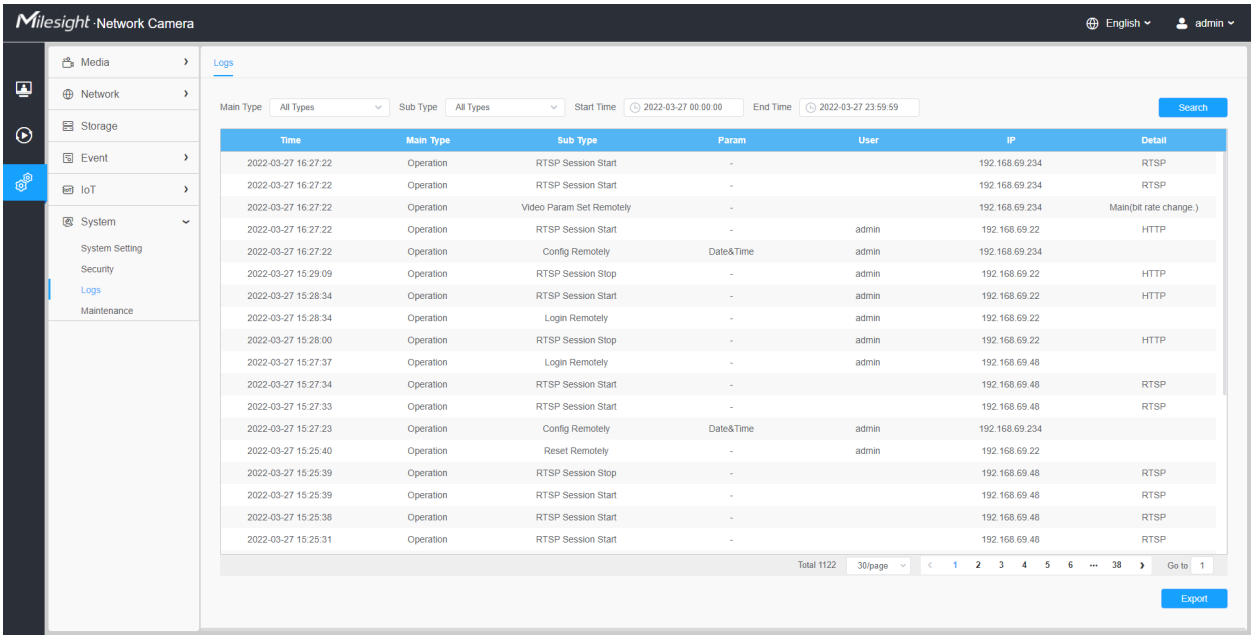


Table 103. Description of the buttons

Parameters	Function Introduction
Main Type	There are five main log types: **All Type, Event, Operation, Information, Exception** and **Smart.**
Sub Type	On the premise that main type has been selected, select the sub type to narrow the range of logs.
Start Time	The time log starts.
End Time	The time log ends.
Search	Search the logs.

Parameters	Function Introduction
Export	Export the logs.
Go to	Input the number of logs' page.

8.8.4 Maintenance

Here you can configure System Maintenance and Auto Reboot.

8.8.4.1 System Maintenance

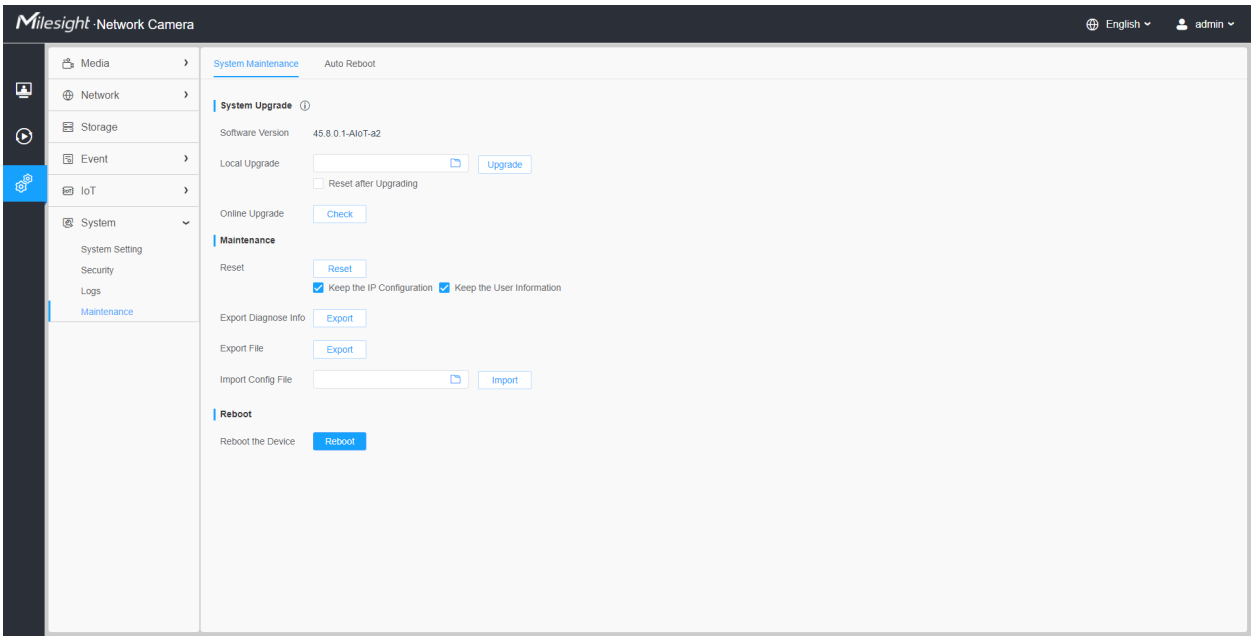
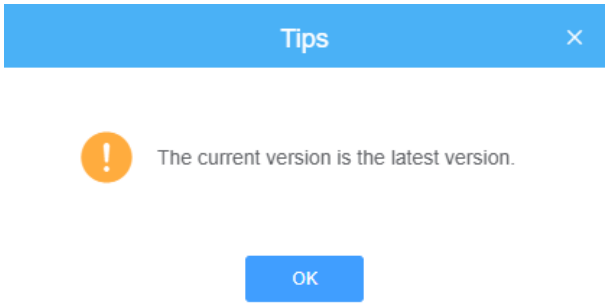
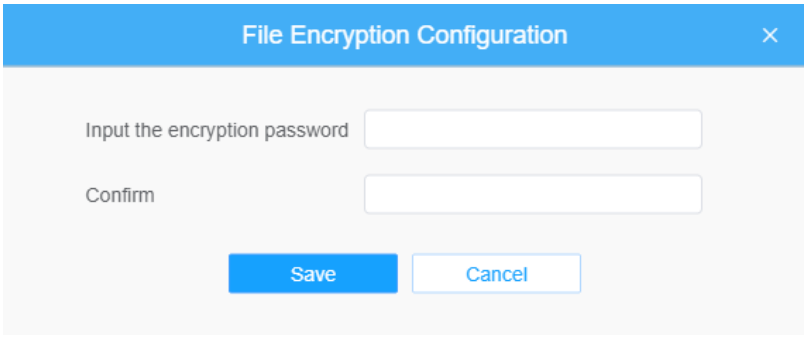
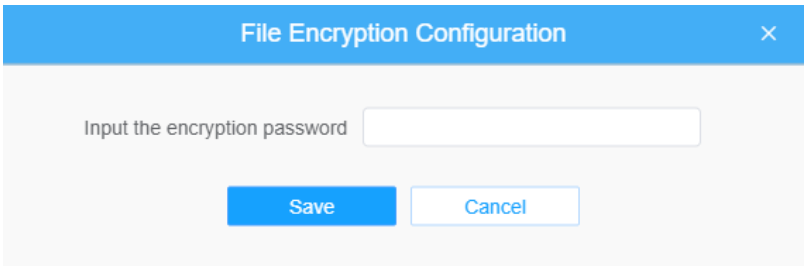
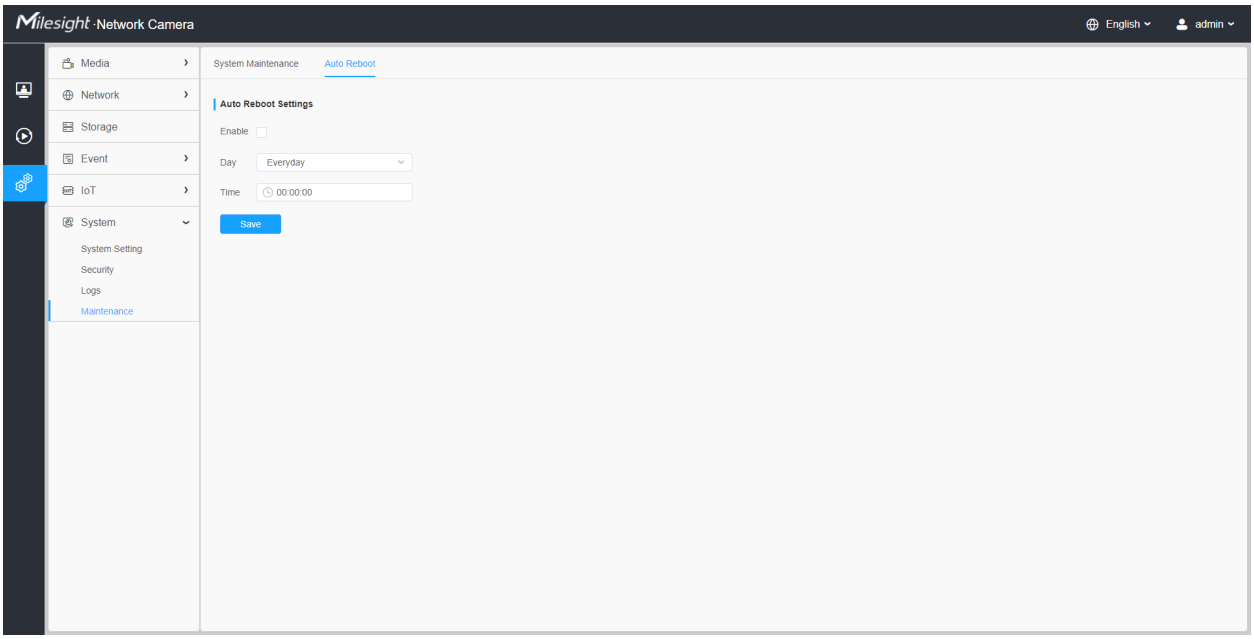


Table 104. Description of the buttons

Parameters	Function Introduction
System Upgrade	**Software Version:** The software version of the camera. **Local Upgrade:** Click the “Browse” button and select the upgrading file, then click the “Upgrade” button to upgrade. After the system reboots successfully, the update is done. You can check “**Reset after Upgrading**” to reset the camera after upgrading it. **Online Upgrade:** Click the "Check" button to check the current latest firmware version on our website, and then click "OK" to upgrade to this version. It will prompt "The current version is the latest version" if your camera is already the latest version.  **Note:** Do not disconnect the power of the device during the update. The device will be restarted to complete the upgrading.

Parameters	Function Introduction
Maintenance	**Reset:** Click “Reset” button to reset the camera to factory default settings. **Keep the IP Configuration:** Check this option to keep the IP configuration when resetting the camera. **Keep the User information:** Check this option to keep the user information when resetting the camera. **Export Diagnose Info:** Click this button to export logs and system information of the device operation status. **Note:** The file format is “.txt”. **Export Config File:** Click this button and a window will pop up as shown below:  You need to enter and confirm password again, then click save button to export configuration file. **Import Config File:** Click this button, then a window will pop up and you can click "OK" to update the configuration. It will pop up a window to prompt "Input the password of config file" , then enter password and click save button to import configuration file.  **Note:** Export and import the same configuration file. Password must be the same.
Reboot	Click “Reboot” button to restart the device immediately.

8.8.4.2 Auto Reboot



Set the date and time to enable Auto Reboot function, the camera will reboot automatically according to the customized time in case that camera overload after running a long time.

Chapter 9. Services

Milesight Technology Co., Ltd provides customers with timely and comprehensive technical support services. End-users can contact your local dealer to obtain technical support. Distributors and resellers can contact directly with Milesight for technical support.

Technical Support Mailbox: support@milesight.com

Web: http://www.milesight.com

Online Problem Submission System: http://www.milesight.com/service/feedback.asp

MILESIGHT USA

TEL: +1-800-561-0485

Add: 7509 N.W. 36th Street, Miami, Florida 33166, USA

MILESIGHT KOREA

TEL: +82-2-839-3335

Add: 925, Anyang SK V1 Center, LS-ro 116beon-gil, Dongan-gu, Anyang-si, Korea

MILESIGHT CHINA

TEL: +86-592-5922772

Add: Building C09, Software Park Phase III, Xiamen 361024, Fujian, China