



Version:

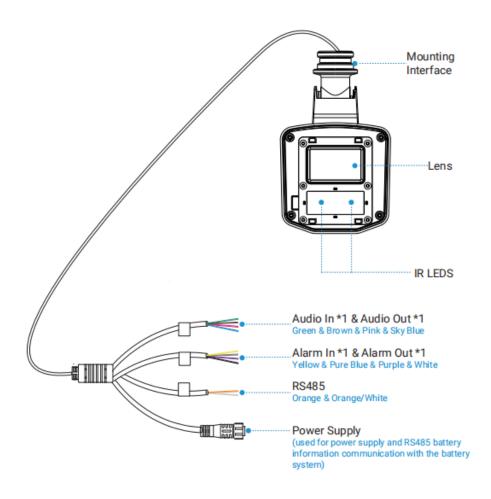
Date: 2025-02-13

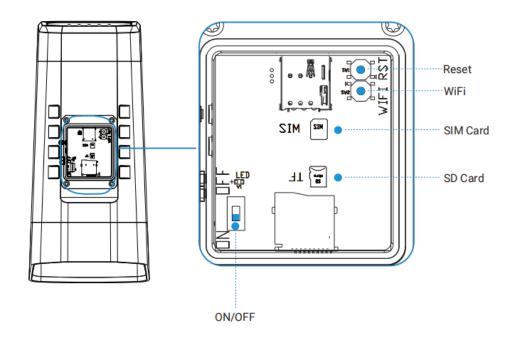
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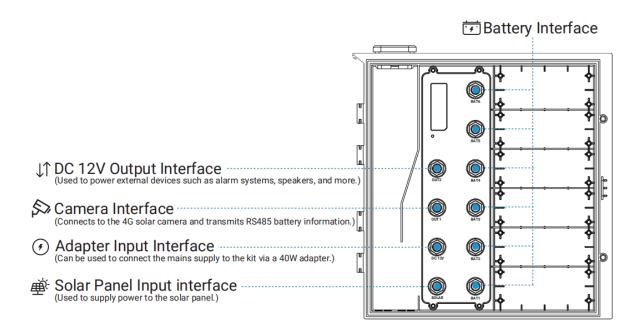
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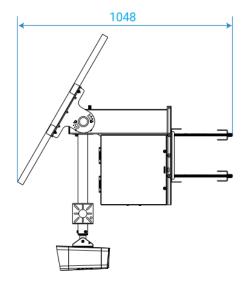
Chapter 1. Product Introduction

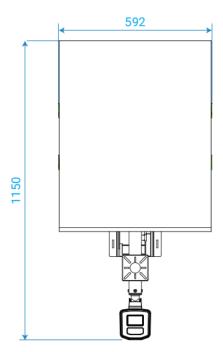
Hardware Overview



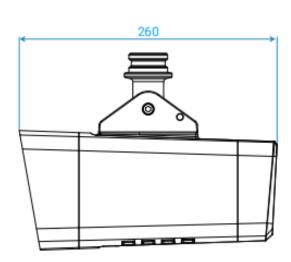


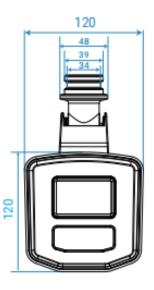




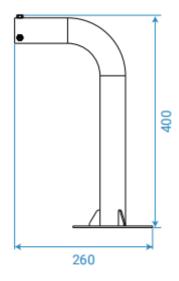


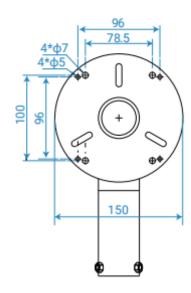
Camera





SA02





Related Resources

Table 1.

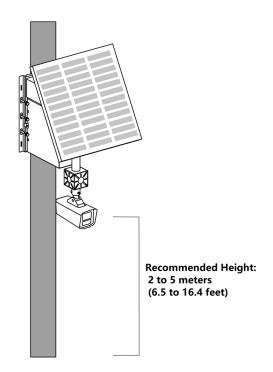
	4G Solar-powered Camera Kit	
Resource Type	Link	
Datasheet - Security	https://resource.milesight.com/milesight/security/document/datasheet/ipc/milesight-4g-solar-powered-security-camera-kit-datasheet-en.pdf	
Datasheet - ANPR	https://resource.milesight.com/milesight/security/document/datasheet/ipc/milesight-4g-solar-powered-anpr-camera-kit-datasheet-en.pdf	
Quick Start Guide	https://resource.milesight.com/milesight/security/document/user-manual/ipc/milesight-4g-solar-powered-camera-kit-quick-start-guide.pdf	
Video - Installation	https://www.youtube.com/watch?v=A2ZH597YPuk	
Video - Wind Resistant Test	https://www.youtube.com/watch?v=4yz7PnPb3cQ	
Demo	https://www.youtube.com/watch?v=GfX9BCgsSyg	

Chapter 2. Installation

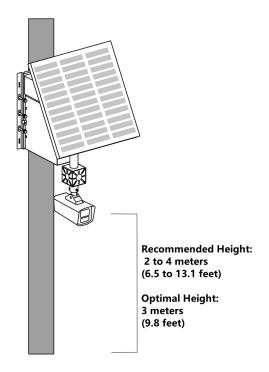
Installation Recommendations

Recommended Installation Heights

- 1. 4G Solar-powered Security Camera (Model: SP111/41)
 - Recommended Installation Height: 2 to 5 meters (6.5 to 16.4 feet)
 - This height range ensures a broad field of view and effective coverage for general surveillance purposes.



- 2. 4G Solar-powered ANPR Camera (Model: SP111/41L)
 - Recommended Installation Height: 2 to 4 meters (6.5 to 13.1 feet)
 - Optimal Height: 3 meters (9.8 feet)



Note: Proper installation height is crucial for achieving the desired coverage and functionality of the cameras. Ensure that the cameras are mounted securely and at the recommended heights for optimal performance.

Recommended Installation Angle

1. 4G Solar-powered Security Camera (Model: SP111/41)

This camera model does not have any specific angle requirements for installation. You can mount the camera at any angle that best suits your surveillance needs.

Key Points to Consider:

- Ensure the camera is securely mounted.
- Position the camera to cover the desired area effectively.
- Avoid obstructions that may block the camera's view.

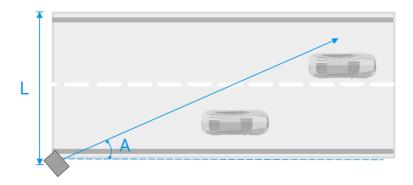
2. 4G Solar-powered ANPR Camera (Model: SP111/41L)

Angle A represents the angle between the camera's direction and the road, while L denotes the distance from the camera's installation position to the outermost lane.

For a 16mm lens camera: It is suggested to maintain an angle A of approximately 14 degrees (i.e., the distance from the camera to the outermost lane should not exceed 8

meters, L less than or equal to 8m). The camera can accommodate angles within the range of A less than or equal to 30 degrees.

For a 6mm lens camera: It is recommended to keep angle A at around **15-25 degrees** (i.e., the distance from the camera to the outermost lane should not exceed 8 meters, L less than or equal to 8m). The camera can support angles within the range of A less than or equal to 25 degrees.



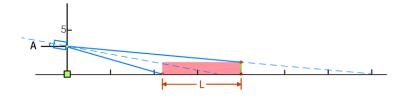
The camera should be tilted downwards, as shown in the diagram below.

A represents the pitch angle, and L represents the optimal monitoring distance.

For a 16mm lens camera: It is recommended to set A at 10 degrees, with a maximum of 15 degrees. The optimal monitoring distance, L, is between 10 to 20 meters.

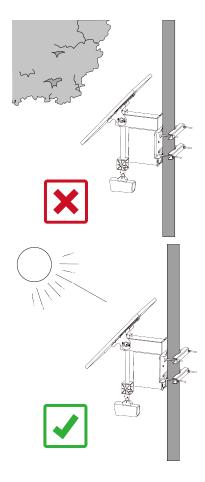
For a 6mm lens camera: It is suggested to set A between 15 to 25 degrees, with a maximum of 25 degrees. The optimal monitoring distance, L, is between 3 to 10 meters.

Please note that these angles are provided as suggested references, and final adjustments should be made based on the actual image results.

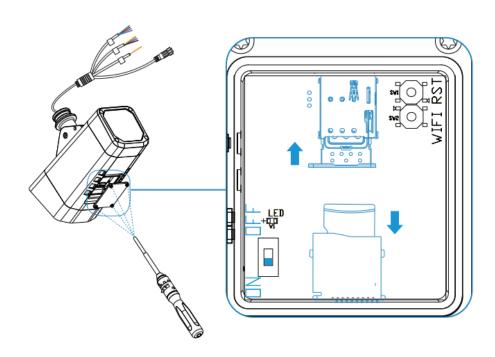


Installation Guide

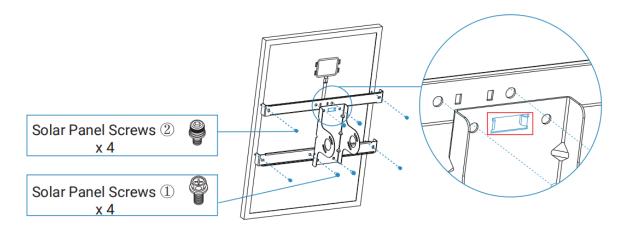
Note: Please ensure that the installation point receives ample sunlight without obstruction from trees or buildings, as this may affect the solar panel's charging efficiency.



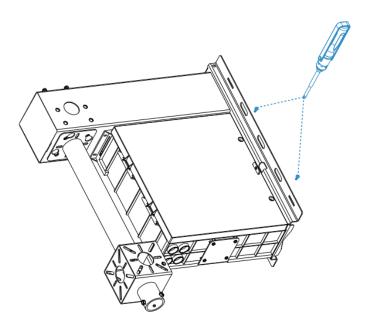
Step1: Use a screwdriver to open the back cover at the bottom of the camera. Insert the SD card and SIM card.

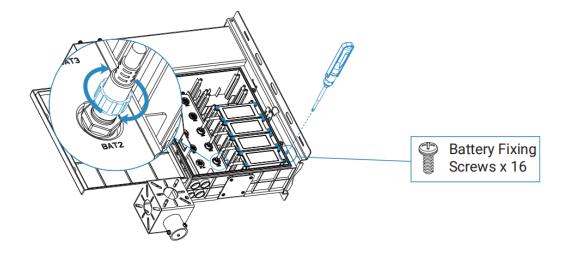


Step2: Assemble the solar panel.

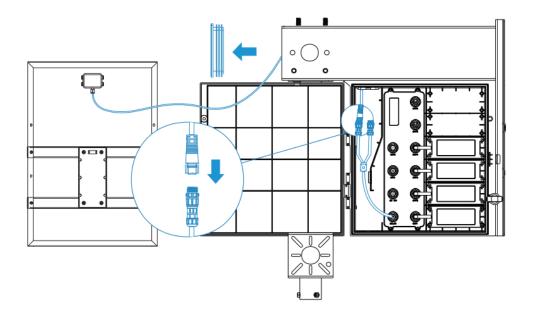


Step3: Use a screwdriver to remove the screws from the battery box and open it. Unscrew the protective cover of the battery connector, connect the battery to the power system, tighten the connector, and finally secure the battery with screws.

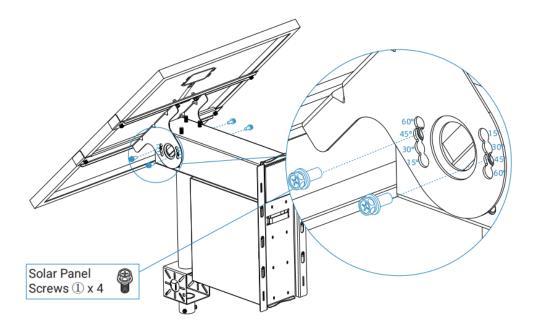




Step4: Take out the previously assembled solar panel. Run the solar cables through the bracket and connect them to the battery system.

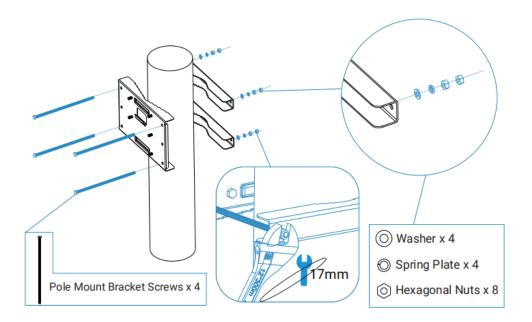


Step5: Attach the solar panel to the bracket. Tighten the screws to secure the solar panel at the desired angle.



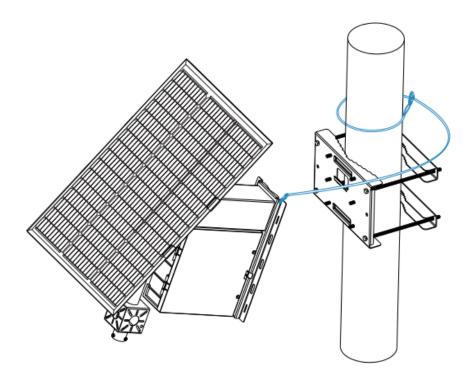
Note: Adjust the panel to the desired angle and secure it by tightening the screws in the corresponding holes on the bracket.

Step6: Install the pole-mount bracket.

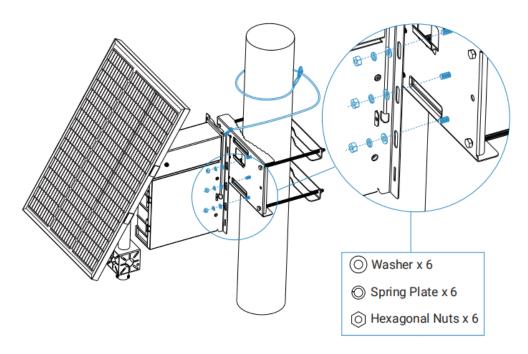


Note: The recommended diameter for the support columns is 150mm to 210mm.

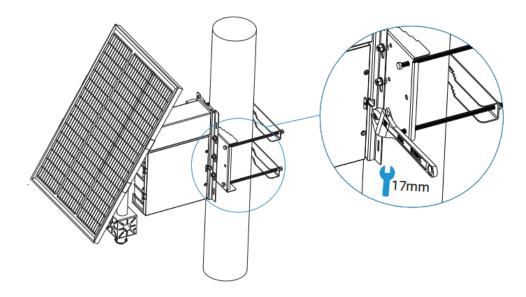
Step7: Use kit safety chain to connect the fully assembled bracket to the pole.



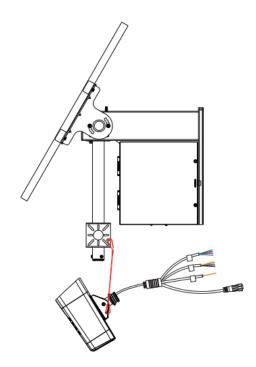
Step8: Hook the bracket onto the mounting hook on the pole.

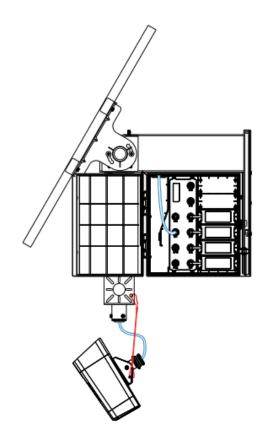


Step9: Secure the bracket using hex nuts.

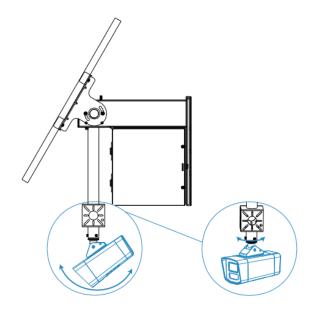


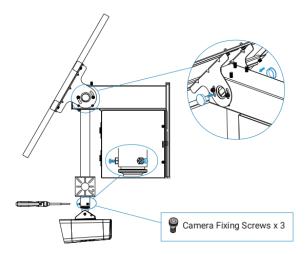
Step10: Use camera safety chain to securely attach the camera to the bracket interface. Opening the front cover of the bracket allows for easier threading of the camera's tail cable through the interface to the battery system.



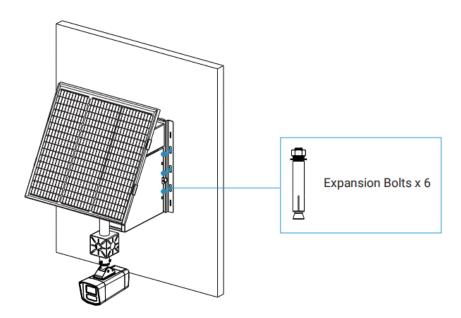


Step11: The camera can be freely rotated to adjust the angle. Once the desired angle is set, tighten the screws between the camera and the bracket.



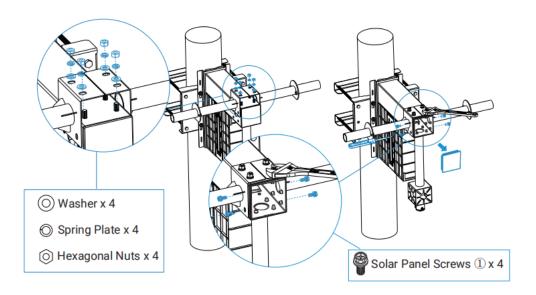


Note: You can also use expansion screws to mount the entire assembled bracket directly onto the wall.

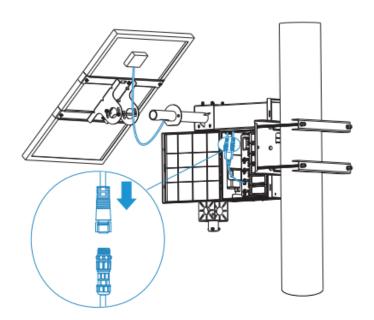


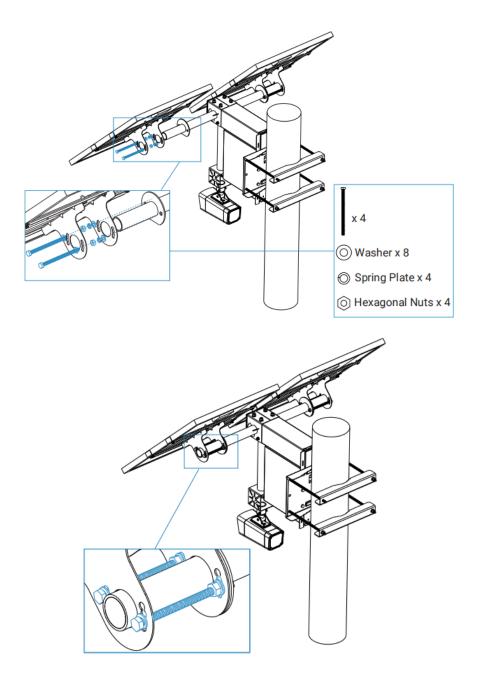
Solar Expansion Kit Installation

Step1: If you have purchased the Solar Expansion Kit, attach the additional bracket to the main bracket and secure it with screws.

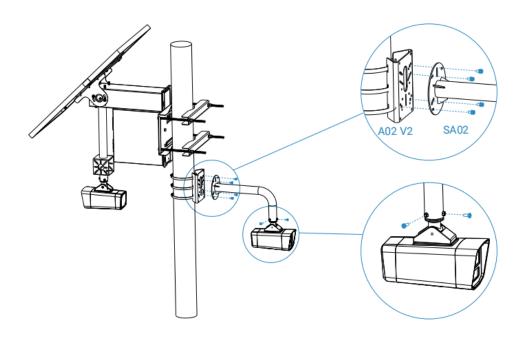


Step2: Secure the assembled solar panel to the additional bracket.





SA02 Installation



Chapter 3. Live Video

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

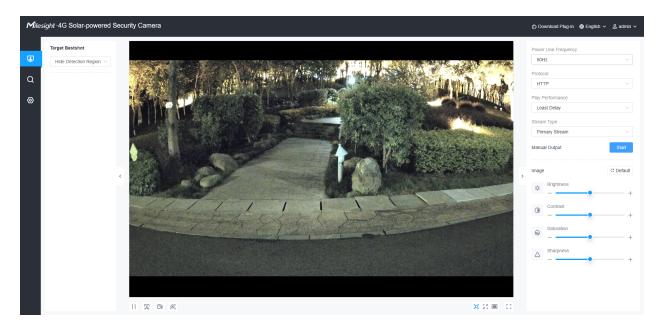


Table 2. Description of the buttons

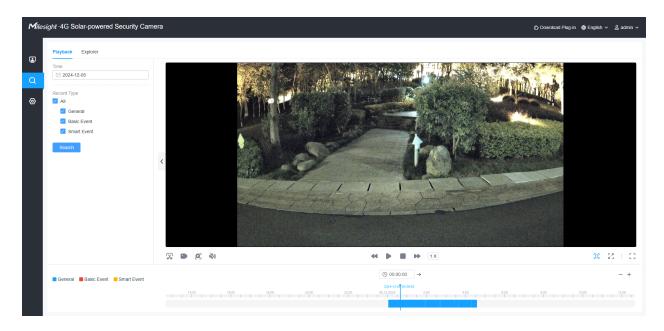
No.	Parameter	Description
1	Live Video	Click to access the live view page.
2	Q Playback	Click to access the playback page.
3	Settings	Click to access the configuration page.
4	♠ Download Plug-in	To enhance the video preview quality, you can download and install the Mplayer video plug-in. This plug-in is designed to provide a smoother and more reliable video playback experience. Note: This plug-in is only compatible with Windows systems.

No.	Parameter	Description
5	⊕ English ∨	Click to select system language.
6	≤ admin ∨	Display the user name and click to logout.
7	Power Line Frequency 50Hz Protocol HTTP Play Performance Least Delay Stream Type Primary Stream Manual Output Start	Power Line Frequency: Choose either 50Hz or 60Hz based on your region's power supply frequency. Note: Selecting the correct power line frequency helps to reduce video flicker caused by the interaction between the camera's frame rate and the power supply frequency. Protocol: Choose either UDP, TCP, or HTTP based on your specific needs and network conditions. Play Performance: Choose either Least Delay, Balanced, or Best Fluency based on your specific needs and network conditions. Stream Type: Choose the stream (Primary/Secondary/Tertiary) to show on the current video window. Manual Output: Manually trigger Camera Alarm Output.
8	Stop/Play	Stop/Play live view.
9	Snapshot	Click to capture the current image and save to the configured path.
10	Start/Stop Recording	Click to Start Recording video and save to the configured path. Click again to Stop Recording .
11	©, Digital Zoom	When enabled, you can zoom in a specific are a of video image with your mouse wheel.
12	Auto-Original Ratio	This setting maintains the original aspect ratio of the video feed. The video will be displayed in its native dimensions without any distortion.
12	Auto-Resize	This setting automatically resizes the video to fit the display window while attempting to maintain the aspect ratio. It may introduce slight adjustments to ensure the video fits well within the available space.

No.	Parameter	Description
	100%	This setting displays the video at its actual size (100% scale) without any resizing. The video will appear in its true pixel dimensions.
13	Full Screen	Click to display images at full-screen.
	Image C Default	Brightness: Adjust the Brightness of the scene.
	:ò: Brightness	Contrast: Adjust the color and light contrast.
14	Contrast +	Saturation: Adjust the Saturation of the image. Higher Saturation makes colors appear more "pure" while lower one appears more "wash-out".
	Saturation +	Sharpness: Adjust the Sharpness of image. Higher Sharpness sharps the pixel boundary and makes the image looks "more clear".
	△ Sharpness +	Default : Restore brightness, contrast and saturation to default settings.

Chapter 4. Search

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 3. Description of the buttons

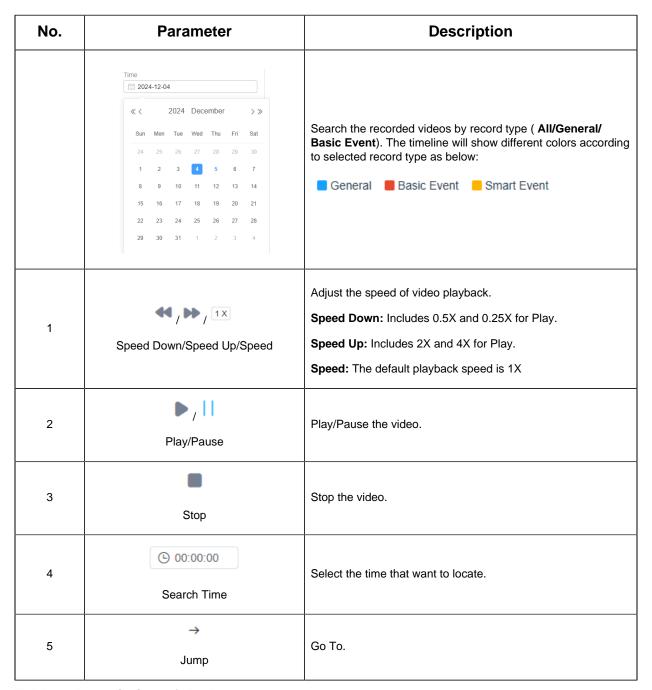


Table 4. Description of the buttons

No.	Parameter	Description
1	₩ / ◁» Mute	Click to enable the audio.

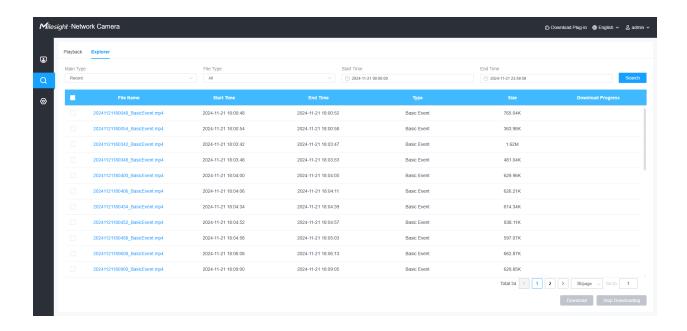
No.	Parameter	Description
2	Snapshot	Click to take a snapshot.
3	Start/Stop recording	Click to start/stop recording.
4	Digital Zoom	Click to zoom on/off.
5	Full Screen	Full Screen.
6	- + Time Expand/Narrow	Time narrow/expand.

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.).

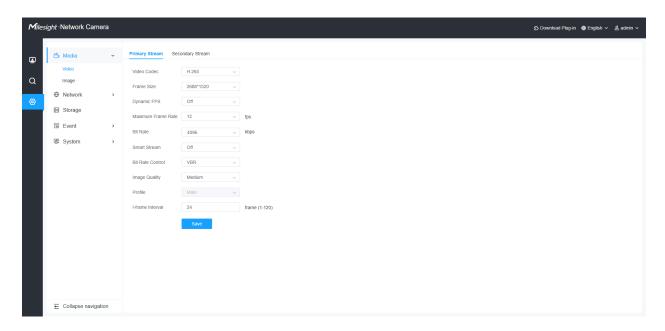


Chapter 5. Settings

Media

Video

[Primary Stream]:



[Secondary Stream]:

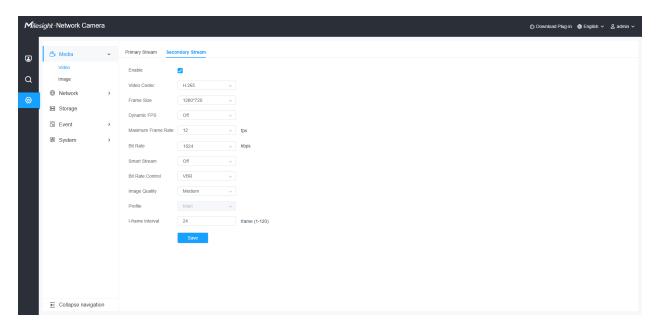


Table 5. Description of the buttons

Para	meters	Function Introduction
Secondary Stream	Enable	Click the "Enable" checkbox to activate the secondary stream.
Vide	o Codec	H.265/H.264 are available.
Frai	me Size	Options include 4M (2688*1520), 3M (2304*1296), 1080p (1920*1080), 720p (1280*720), D1 (704*576), VGA (640*480). For Primary Stream , it includes 2688*1520, 2304*1296, 1920*1080, 1280*720. For Secondary Stream , it include 1280*720, 704*576, 640*480.
Dyna	ımic FPS	Select whether the video stream is variable bitrate. Off: Disables the dynamic frame rate feature. Encodes at the frame rate selected in Maximum Frame Rate (constant frame rate). On: Enables variable frame rate encoding (dynamic frame rate) for the selected Primary Stream/Secondary Stream. High frame rate encoding is activated when AI detects a target.

Parameters	Function Introduction
Maximum Frame Rate	Maximum refresh rate per second. When Power Line Frequency is set to 50Hz, the supported range is 1-12 frames per second (fps). When Power Line Frequency is set to 60Hz, the supported range is 1-15 frames per second (fps). Note: You can change the Power Line Frequency in Image - General - Display - Power Line Frequency.
Bit Rate	Transmitting bits of data per second. Set the bitrate to 16~16384 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. 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.
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. The number must be a multiple of the number of frames.

Image

General image settings can be configured in this module, including Image Adjustments, Day/Night Settings, and Image Enhancement. You can also set OSD (On-Screen Display) content, Privacy Masks, and ROI (Region of Interest) areas.

General

[Scene Setting]

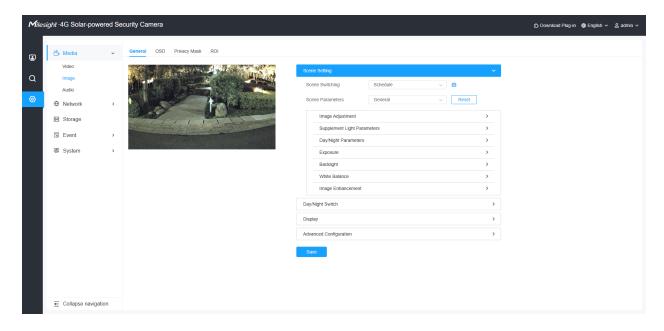


Table 6. Description of the buttons

Parameters	Function Introduction
Scene Switching	Select the scene parameter mode switch. You can choose General, Front Light, Low Light, Back Light, Customize 1, Customize 2, or Schedule as the image scene parameter mode. The default scene is Schedule.
Scene Parameters	Configure specific parameters for different scenes. After selecting a scene (General/Front Light/Low Light/Back Light/Customize 1/Customize 2), you can configure the parameters for that scene.

[Image Adjustment]



Table 7. Description of the buttons

Parameters	Function Introduction
Brightness	Adjust the Brightness of the scene.

Parameters	Function Introduction
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".
Default	Click this button to restore to the default setting.

[Supplement Light Parameters]



Table 8. Description of the buttons

Parameters	Function Introduction
IR LED Level	Use the slider to adjust the intensity of the IR LEDs. Increasing the level will enhance the brightness and visibility of the image in dark environments. Note: Adjust the IR LED level to balance image brightness and avoid overexposure, which can obscure details. Higher IR LED levels may increase power consumption and affect the camera's overall performance.

[Day/Night Parameters]

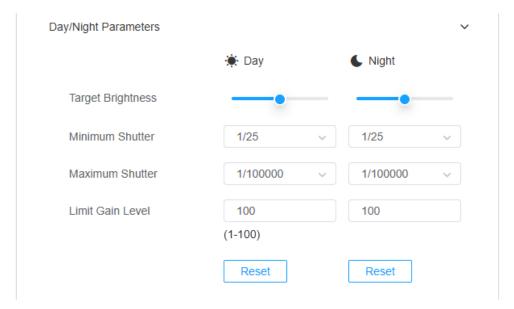


Table 9. Description of the buttons

Parameters	Function Introduction
Target Brightness	Move the slider to the left to decrease the brightness or to the right to increase the brightness. Adjust the slider until the desired brightness level is achieved for your specific environment. Note: It is recommended to test the brightness setting under different lighting conditions to find the optimal setting that provides clear and detailed images both during the day and at night.
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.
Limit Gain Level	Set the Limit Gain Level to 1~100.

[Exposure]

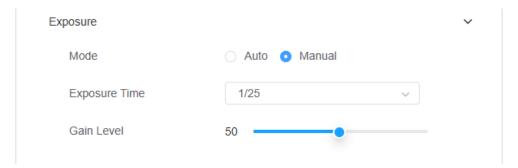


Table 10. Description of the buttons

Parameters	Function Introduction
Exposure Mode	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. Gain Level: You can manually adjust the gain level to achieve the desired image quality. Gain level refers to the amplification of the camera's signal to make the image brighter. Higher gain levels increase the image brightness but can also introduce more noise.

[Backlight]

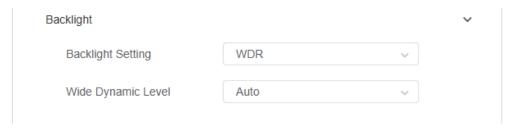


Table 11. Description of the buttons

Parameters	Function Introduction
Backlight	Backlight Setting: Set backlight mode for BLC/WDR/HLC.

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]

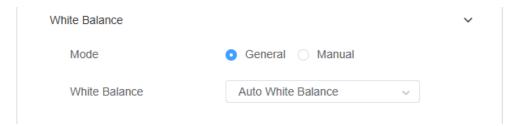


Table 12. Description of the buttons

Parameters	Function Introduction
White Balance	To restore white objects, removed color distortion caused by the light of the environment. Mode: General and Manual are available. General Mode: Select a white balance mode as required • Auto White Balance: This option will automatically enable the White Balance function. • 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.
	Manual Mode:Set Red Gain Level and Blue Gain Level manually.

[Image Enhancement]

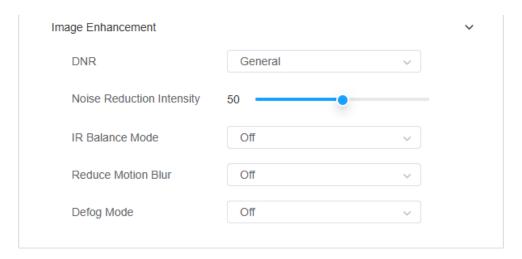
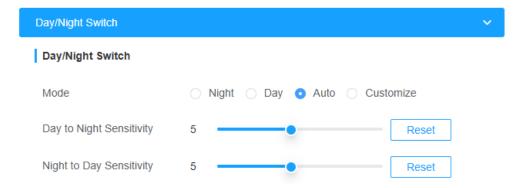


Table 13. Description of the buttons

Parameters	Function Introduction	
DNR	General: [Noise Reduction Intensity]: Adjust noise reduction level. Expert Mode: [2D DNR]: The 2D Digital Noise Reduction (DNR) feature helps to reduce noise within a single frame, improving the clarity of static images. Use the slider to adjust the noise reduction level. A higher level will reduce more noise but may slightly blur the image. [3D DNR]: The 3D Digital Noise Reduction (DNR) feature reduces noise across	
	multiple frames, enhancing the quality of dynamic video, especially in low-light conditions. Use the slider to adjust the noise reduction level. A higher level will reduce more noise but may affect the motion clarity.	
IR Balance Mode	There is an option to turn On/Off the IR LED.	
IR Balance Mode	IR Balance Mode would avoid the problem of overexposure and darkness, and the IR LED will change according to the actual illumination.	
	Enable this function to reduce the motion blur of objects effectively.	
	You can adjust the deblur level from 1 to 100.	
Reduce Motion Blur	Note: For more details about Milesight Deblur, you can click to the YouTube:	
	https://www.youtube.com/watch?v=-vynrami51s	

Parameters	Function Introduction
Defog Mode	Better image effect in foggy weather. [Anti-fog Intensity]: Adjusting the anti-fog intensity helps to reduce the effects of fog, mist, or smoke, enhancing image clarity in adverse weather conditions. Use the slider to adjust the level of anti-fog correction. Note: • For more details about Milesight Defog, you can click to the YouTube: https://www.youtube.com/watch?v=a9od7Trao4U • Adjust the anti-fog intensity gradually to avoid over-processing, which may lead to unnatural image quality. • The effectiveness of the anti-fog feature may vary depending on the severity of the weather conditions.

[Day/Night Switch]



There are 4 modes for Day/Night Switch, including Night, Day, Auto and Customize.

Table 14. Description of the options

Para	meters	Function Introduction
Day/Night	Night	Switch to Night Mode according to the parameters of night mode. Note: There are several parameters such as Exposure Level, Maximum Exposure Time and IR-CUT Interval, etc, associated with the mode.
Switch	Day	Switch to Day Mode according to the parameters of day mode. Note: There are several parameters such as Exposure Level, Maximum Exposure Time and IR-CUT Interval, etc, associated with the mode.

Parameters		Function Introduction
	Auto	Select this option to automatically switch the Day/Night Mode based on the image. • 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 to reset the value to 5. • 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 to reset the value to 5.
	Customize	Select this option to customize the Start Time and End Time of Night. • Start Time of Night: You can set the time to start the Night Mode. • End Time of Night: You can set the time to start the Day Mode.

[Display]



Table 15. Description of the buttons

Parameters	Function Introduction
Power Line Frequency	60Hz and 50Hz are available.
	There are six 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.
Image Rotation	Anticlockwise90°: Rotate the image by 90° anticlockwise.
	Rotating 180°: Upside down the image.
	Flip Horizontal: Flip the image horizontally.
	Flip vertical: Flip the image vertically.

Parameters	Function Introduction
Lens Distortion Correction	With this option enabled, the camera will prevent the image from distortion when resolution ratio is changed. Note: Enabling/Disabling lens distortion correction may cause slight displacement of the privacy masking area.

[Advanced Configuration]

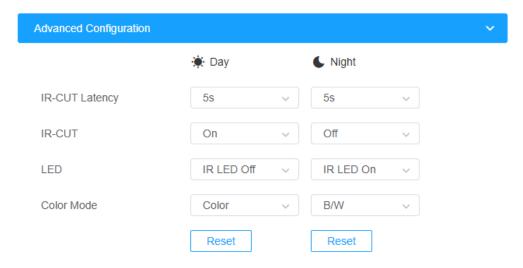


Table 16. Description of the buttons

Parameters	Function Introduction
IR-CUT Latency	Selectable from 1 to 20 seconds. Proper configuration of IR-CUT Latency ensures that the camera adapts smoothly to changes in lighting, avoiding abrupt changes in image quality. • Short Latency: Useful for environments with rapid changes in lighting. • Long Latency: Suitable for more gradual changes in lighting conditions, reducing the frequency of filter switching.
IR-CUT	On/Off IR-CUT. The IR-CUT filter is a mechanical filter that blocks infrared light during the day to produce true-to-life colors. At night, the filter is removed to allow infrared light to reach the camera sensor, enabling night vision.
LED	On/Off IR LED.
Color Mode	Color and B/W are available.

OSD

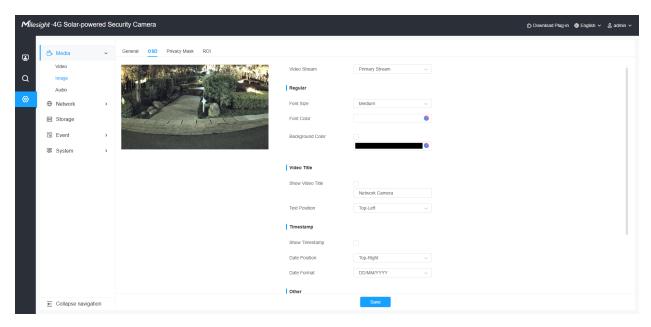


Table 17. Description of the buttons

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.	
Background Color	Enable to set different colors for display information background on screen. You can set different colors for font and background of image.	
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.	

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.

Up to 4 mask areas are supported.

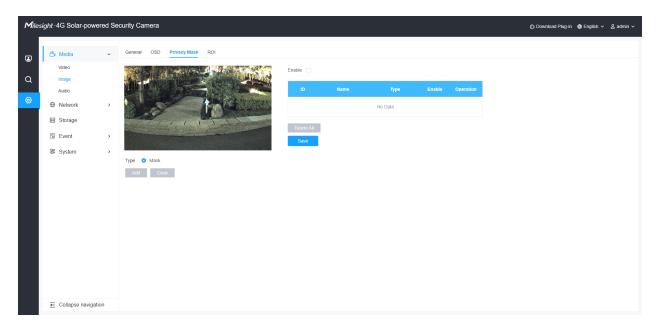


Table 18. Description of the buttons

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

ROI

The Region of Interest (ROI) is a specific subset of a scene that is selected for focused analysis or monitoring. Users can select up to 8 key regions within a scene for attention, making the selected areas the focus of image analysis and further processing.

By using Milesight's ROI technology, more than 50% of the bit rate can be saved, significantly reducing bandwidth demands and storage usage. This allows you to set a lower bit rate while maintaining high resolution for the selected regions.

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

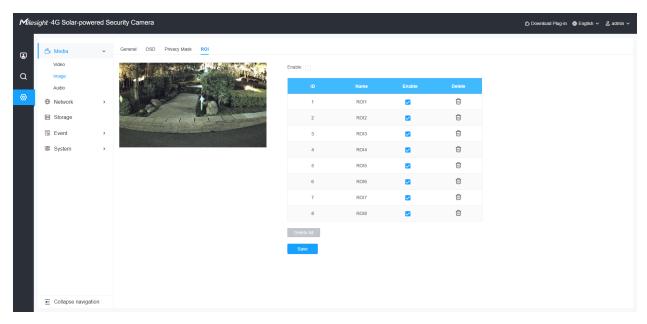


Table 19. Description of the buttons

Parameters	Function Introduction	
Enable	Check the checkbox to enable the ROI function.	
ROI	□, ☑	Enable/Disable the selected ROI areas.
KOI	⑪	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.

Audio

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.

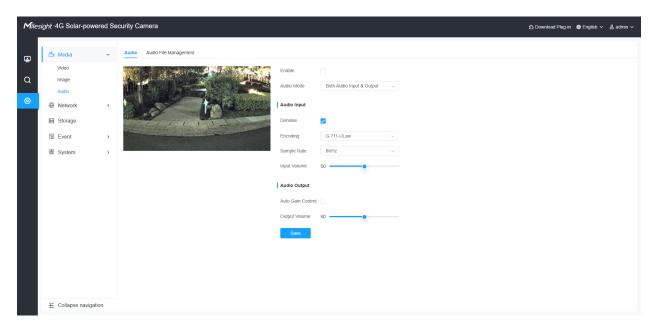


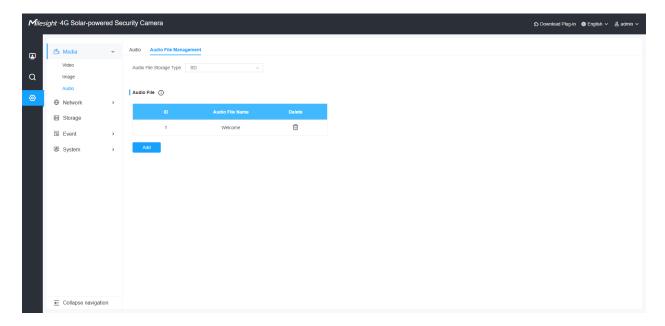
Table 20. Description of the buttons

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 48kbps. Sample Rate: 8KHz, 16KHz, 32KHz, and 48KHz are available. Input Volume: Adjust volume of input.		

Parameters	Function Introduction	
Audio Output	Auto Gain Control: This function is only for H.265 series, improve the quality of audio. Output Volume: Adjust volume of output.	

Audio 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.



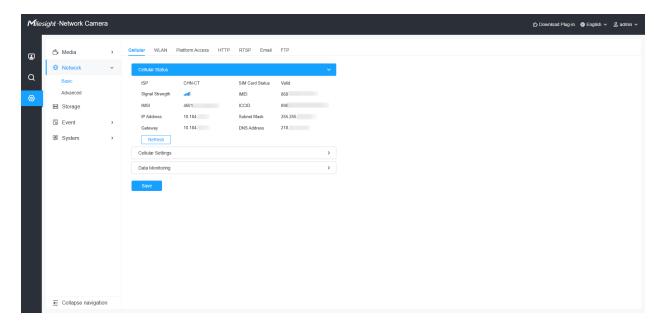
Note: Only support '.wav' audio files with codec type PCM/PCMU/PCMA, 64kbps or 128 kbps and no more than 500k.

Network

Basic

Cellular

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



Note:

 Before using the 4G 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.

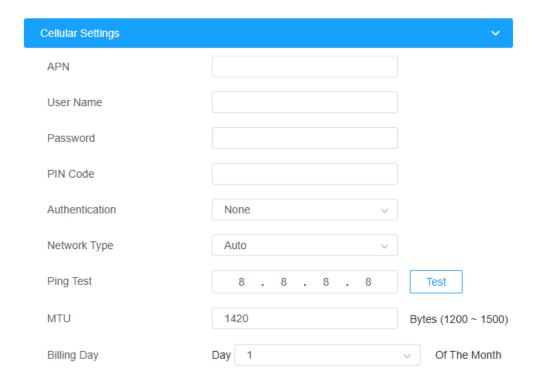


Table 21. Description of the buttons

Parameters	Function Introduction	
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.	
Authentication	Select the Authentication Type. There are three options: None , PAP and CHAP , to match different Internet Service Providers. The default option is None .	
Network Type	Select the network type of cellular network. There are three options including Auto, 4G and 3G. Auto: connect to the network with the strongest signal automatically.	
Ping Test	Input the IP address or domain name of the server you wish to ping. Common choices include well-known, reliable servers such as 8.8.8 (Google DNS) or www.google.com . Start the ping test by selecting the Test button.	
мти	Selectable 1200~1500 Bytes. MTU stands for Maximum Transmission Unit. It specifies the maximum size (in bytes) of each data packet that can be sent over the network.	
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.	

[Cellular Status]

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

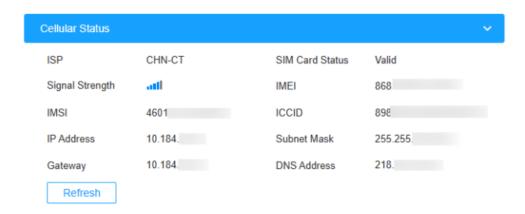


Table 22. Description of the buttons

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.		
IMEI	Show the IMEI of the module.		
IMSI	Show IMSI of the SIM card.		
ICCID	Show ICCID of the SIM card.		
IP Address	Display the IP Address, Subnet Mask, Gateway and DNS Address of the current		
Subnet Mask	network. If the SIM card is not inserted or not recognized, it will display 0.0.0.0.		
Gateway	Display the IP Address, Subnet Mask, Gateway and DNS Address of the current		
DNS Address	network. If the SIM card is not inserted or not recognized, it will display 0.0.0.0		
Refresh	Click this button to manually refresh the above status.		

[Data Monitoring]

Step 3: Effective data monitoring is crucial for managing the cellular data usage of your security camera. This section provides detailed information on how to monitor data usage and configure pre-alarm actions to optimize data consumption.

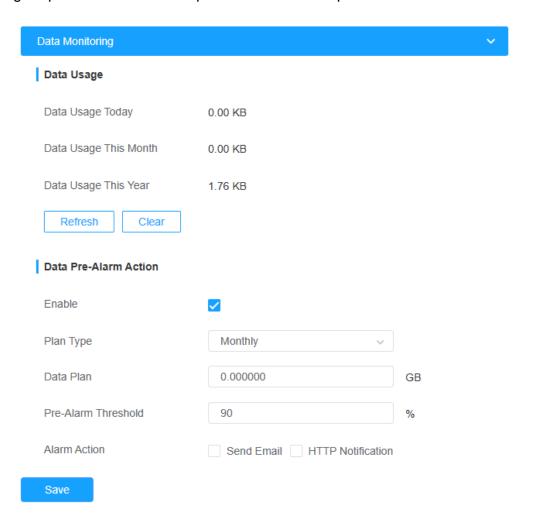


Table 23. Description of the buttons

Parameters	Function Introduction	
Data Usage	Displays the total amount of cellular data used by the camera today/this month/this year. Refresh: Refresh Data. Clear: Clear all data usage, this action is irreversible.	

Parameters	Function Introduction		
Data Pre-Alarm Action	The Data Pre-Alarm Action feature allows you to set predefined actions that the camera will take when data usage approaches a specified limit. This helps in preventing data overages and managing data costs effectively. Plan Type: Select the data usage reporting range. Options available are Daily, Monthly, and Annually. Data Plan: Enter the total data plan allowance, ranging from 0.01 to 1024 GB. Pre-Alarm Threshold: Can be set between 50% and 99%. Enter the alarm threshold, used in conjunction with the Data Plan. An alarm is triggered when data usage exceeds Data Plan * Pre-Alarm Threshold. Alarm Action: Selectable alarm notification methods: Email or HTTP Notification.		
Save Click this button to manually refresh the above status.			

WLAN

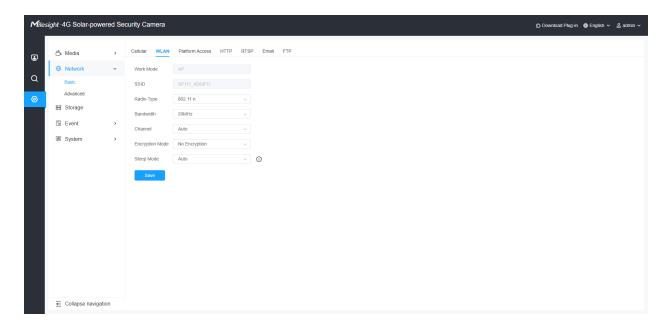
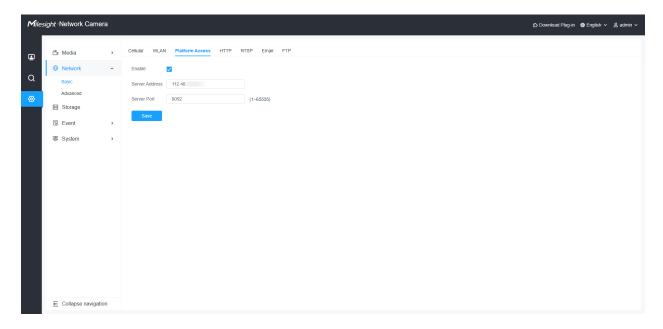


Table 24. Description of the buttons

Parameters	Function Introduction	
Work Mode	Wireless network operating mode, default is AP.	
SSID	Configure the wireless network name, default is SP111_XXXXXX (last six digits of the MAC address), not editable.	
Radio Type	Select the radio type for Wi-Fi connection. Available options are 802.11n and 802.11g.	

Parameters	Function Introduction	
Bandwidth	Select the bandwidth for Wi-Fi connection. If Radio Type is set to 802.11n: 20MHz, 40MHz. If Radio Type is set to 802.11g: 20MHz.	
Channel	Select the channel for Wi-Fi connection.	
Encryption Mode	Select the encryption mode for Wi-Fi connection. Available options are No Encryption, WPA-PSK, WPA2-PSK, WPA2-PSK.	
Sleep Mode	Configure the WiFi module to enter sleep mode, selectable options are Auto/Never. Note: Recommend selecting the 'Auto' mode, where the Wi-Fi will enter sleep mode after five minutes of inactivity between the device and the external environment. Choosing 'Never' mode will result in higher device power consumption.	
Save	Click this button to manually refresh the above status.	

Platform Access



Platform access can be enabled to configure the external IP address and port of the backend VMS server.

For detailed instructions, please refer to the following two documents:

https://resource.milesight.com/milesight/security/document/troubleshooting/ipc/milesight-troubleshooting-how-to-connect-4g-solar-powered-cameras-to-milesight-vms.pdf

https://resource.milesight.com/milesight/security/document/troubleshooting/ipc/milesight-troubleshooting-how-to-use-milesight-vpn-to-connect-4g-solar-powered-camera-and-vms-network.pdf

HTTP

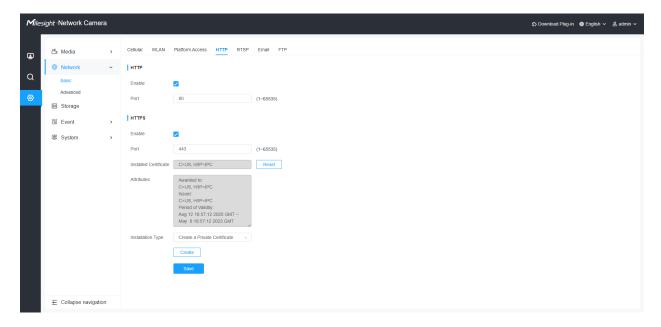


Table 25. Description of the buttons

Parameters	Function Introduction	
НТТР	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 Attributes Installation Type	Upload and set the SSL certificate.	
Save	Save the configuration.	

RTSP

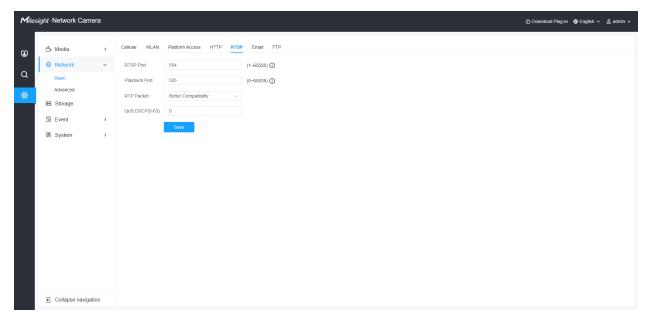


Table 26. Description of the buttons

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.	
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	

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.

Email

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

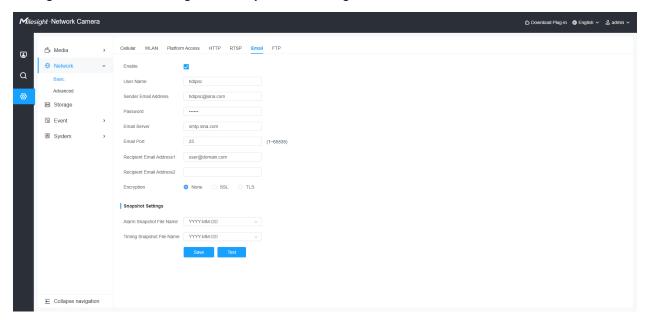


Table 28. Description of the buttons

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.

Parameters	Function Introduction
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.
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.

FTP

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

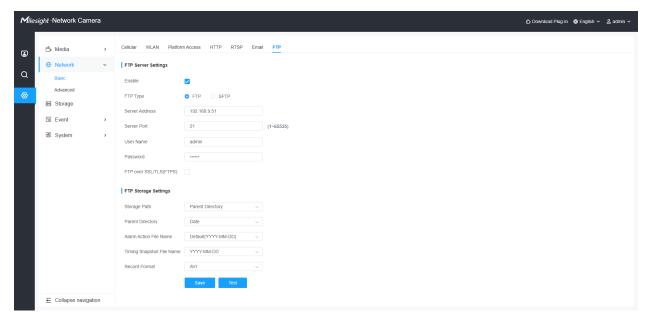


Table 29. Description of the buttons

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.
	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.
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.
Record Format		Optional AVI/MP4
Save		Save the configuration, 0s ~ 10s are optional.

Parameters	Function Introduction
Test	Test whether the configuration is successful.

Note:

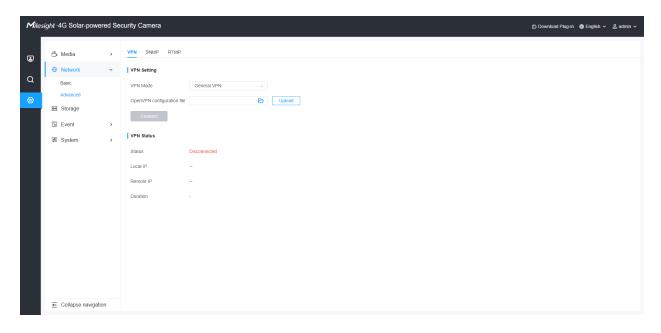
- Parent Directory will be under Root Directory, and Child Directory will be under Parent Directory.
- You can refer to the following file name tip to customize the file name.

Advanced

VPN

VPN stands for Virtual Private Network. It is a network protocol that can provide you secure encrypted connection over the public internet. It is a significant technology in surveillance industry. Imagine that you have a network camera connected via public IP address, it's possible for others to log in or listen illegally if someone knows the specific IP address and forwarded port. Via VPN the camera streams and data will be transferred through an encrypted tunnel. This encrypted VPN tunnel makes it appear as though you are directly connected to the private network, keeping your online activity (including your browsing history) hidden. For Milesight camera, VPN feature allows us to log in the camera via a virtual IP, which makes it easier to configure the camera remotely.

For more details about **How to use VPN on Milesight Camera**, please refer to https://milesight.freshdesk.com/support/solutions/articles/69000829102-how-to-use-vpn-on-milesight-network-camera.



[VPN Setting]

Table 30. Description of the buttons

Parameters	Function Introduction	
VPN Mode	General VPN	OpenVPN Configuration File: Upload the .ovpn format OpenVPN client configuration file.
	Milesight VPN	Server Address: Specify the server address of Milesight VPN server. Server Port: ISpecify the server port of Milesight VPN server. Authorization Code: Copy the authentication code from Milesight VPN server. Device Name: Customize a unique device name to define the device.
	Wireguard VPN	Wireguard VPN Configuration file: Upload Wireguard VPN configuration file.
Connect	Connect and save se	ttings.

[VPN Status]

Table 31. Description of the buttons

Parameters	Function Introduction
Status	Connection Status.
Local IP	IP Address Used by the User Device (also known as Local Host).
Remote IP	IP Address of the Remote Host Communicating with the User Device.
Duration	Connection Duration.

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.

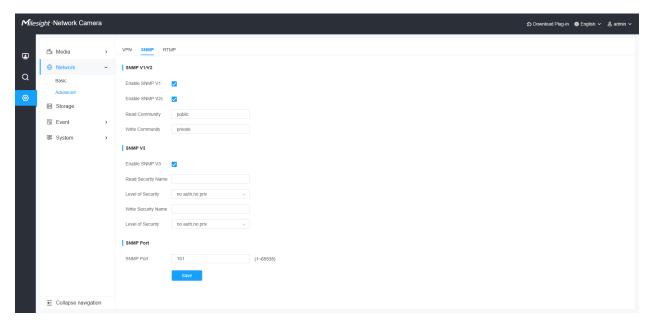


Table 32. Description of the buttons

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

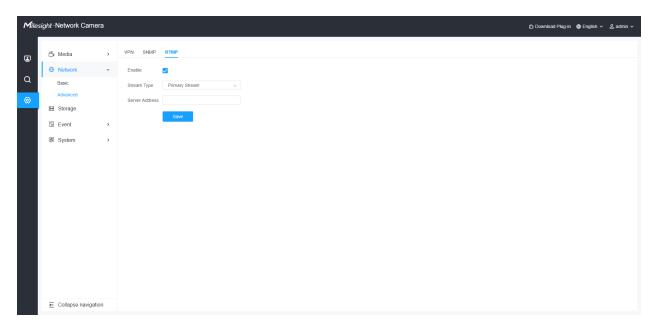
Parameters	Function Introduction
	Enable SNMP v3: Provide encryption and the HTTPS protocol must be enabled.
	Read Security Name: Input the name of Read Security Community.
SNMP v3	Level of Security: There are three levels available: (auth, priv), (auth, no priv) and (no auth, no priv).
	Write Security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

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.

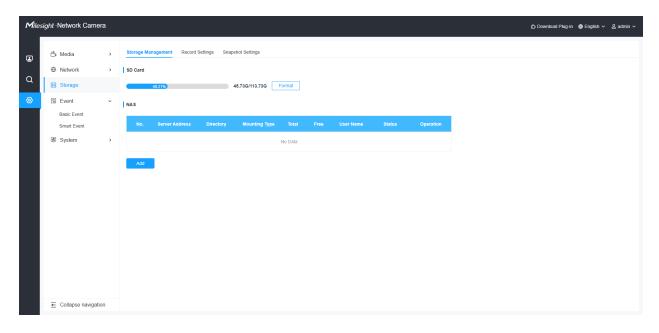


Note:

- 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.

Storage

Storage Management

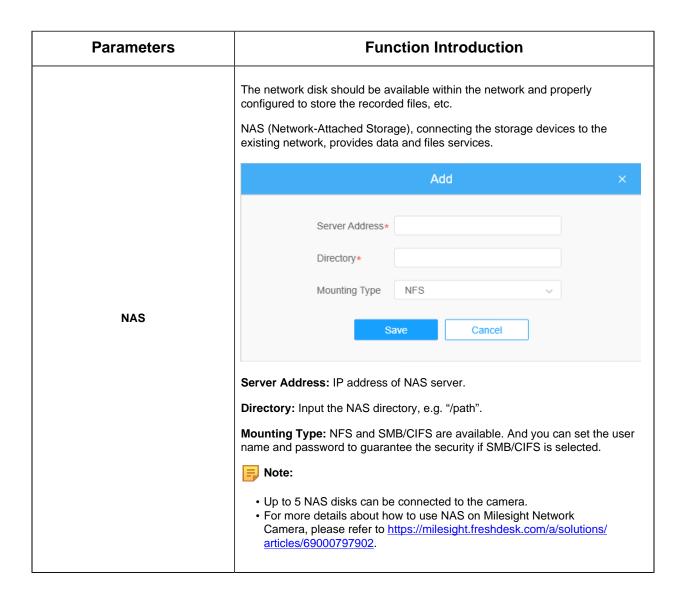


Note: Before you start:

- Before using the SD card for the first time, please format the card on the camera.
- To configure record settings, please make sure that you have the network storage device within the network or the SD card inserted in your camera.
- Choose the storage mode according to your needs.

Table 33. Description of the buttons

Parameters	Function Introduction
SD Card	Format: Format SD card, the files in SD card will be removed.



Record Settings

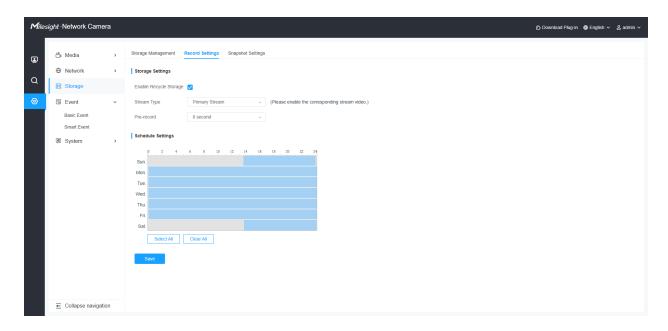
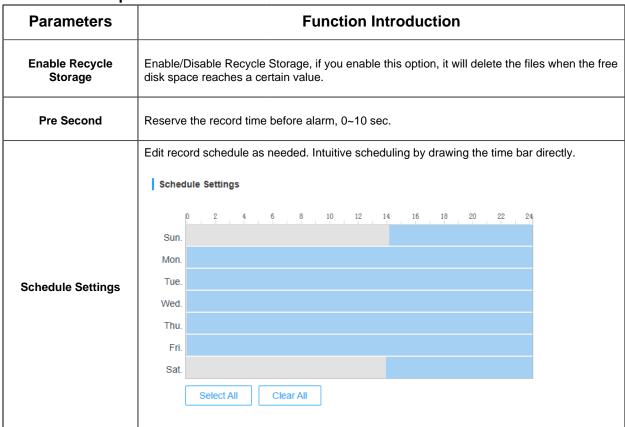


Table 34. Description of the buttons



Parameters	Function Introduction	
Schedule Settings	Copy To All Sun. Mon. Tue. Wed. Thu. Fri. Sat.	Copy the schedule area to another date.
	Select All	Select all schedule.
	Clear All	Clear all schedule.
Save	Save the configuration.	

SD Card or NAS are available.

Snapshot Settings

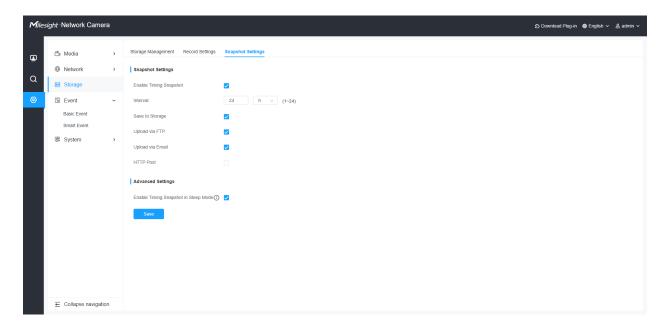


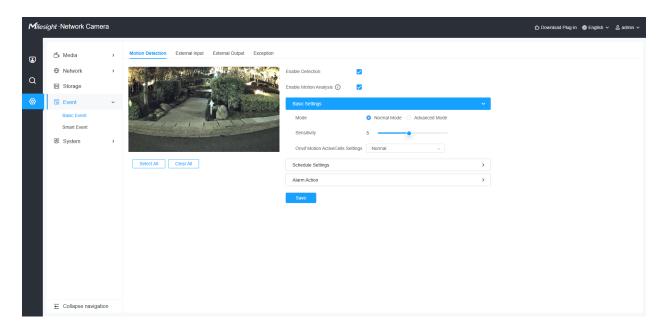
Table 35. Description of the buttons

Parameters	Function Introduction
Snapshot Settings	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. 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.
Advanced Settings	Enable Timing Snapshot in Sleep Mode: Check the checkbox to allow the device to continue performing timing snapshots in Sleep Mode. Note: When the device enters Sleep Mode, enabling Timing Snapshot will accelerate battery consumption.
Save	Save the configuration.

Event

Basic Event

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 36. Description of the buttons

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

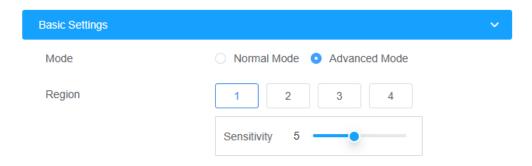


Table 37. Description of the buttons

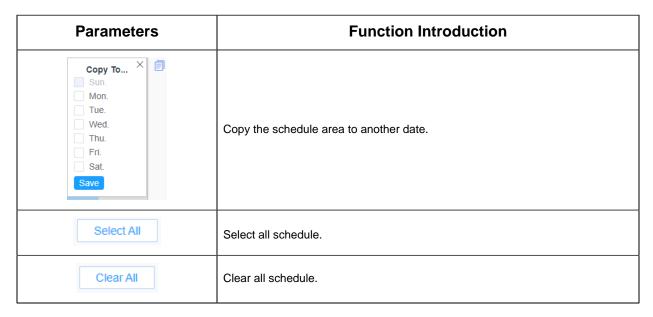
Parameters	Function Introduction
Detection Mode	Normal Mode and Advanced Mode are available for the option. When Advanced Mode is selected, users can configure up to 4 detection regions and sensitivity for each detection region.
Sensitivity	Sensitivity level, 1~10.
Onvif Motion ActiveCells Settings	Normal 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 38. Description of the buttons



[Alarm Action]

Step6: Set alarm action;

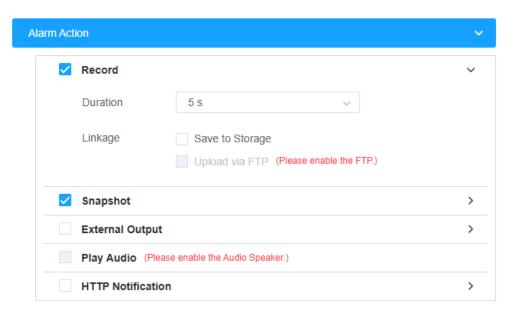
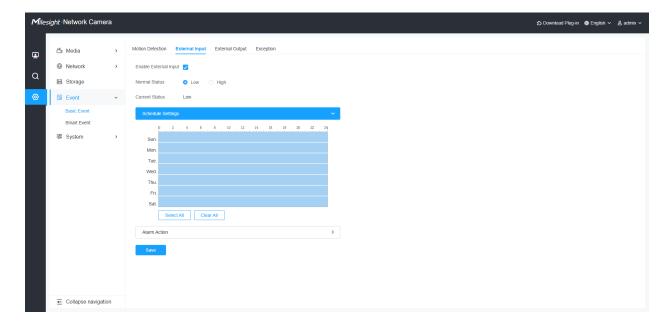


Table 39. Description of the buttons

Parameters	Function Introduction
	Duration: Selected the duration time of alarm. 5s/10s/15s/20s/25s/30s are available.
Record	Linkage: Save alarm recording files into SD Card or NAS or Upload the recording files via FTP.

Parameters	Function Introduction
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.
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.

External Input



[Normal Status]

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

[Schedule Settings]

Set motion detection schedule.



Table 40. Description of the buttons

Parameters	Function Introduction
Copy To X Sun. Sun. Mon. Tue. Wed. Thu. Fri. Sat. Save	Copy the schedule area to another date.
Select All	Select all schedule.
Clear All	Clear all schedule.

[Alarm Action]

Set alarm action.

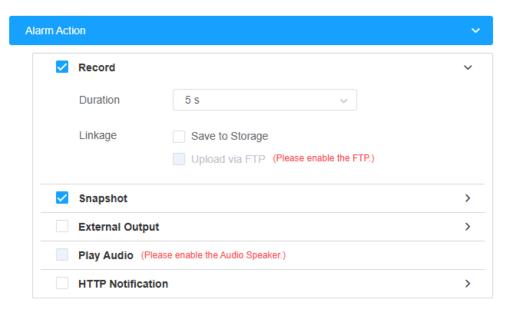
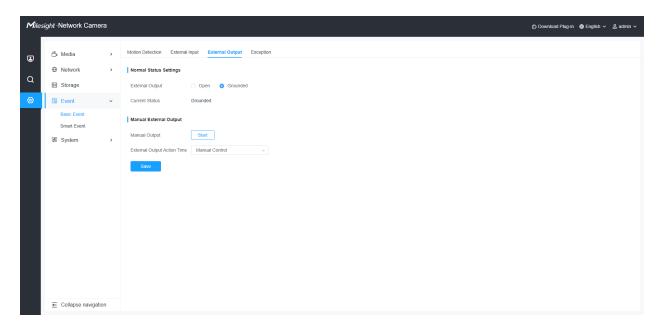


Table 41. Description of the buttons

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	Audio Action: Schedule the alarm activation time. Interval: Set different alarm trigger intervals. Options are Auto/10 s/30 s/1 min./5 min./10 min.
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.

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 42. 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.

Exception

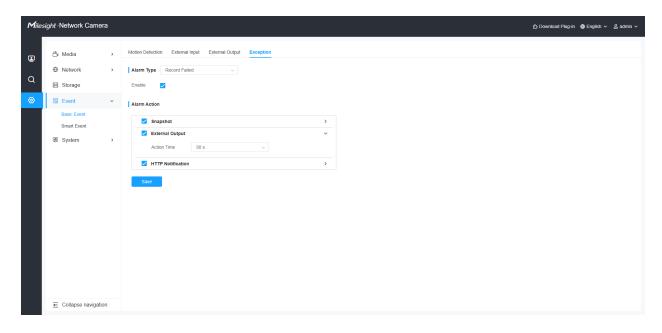


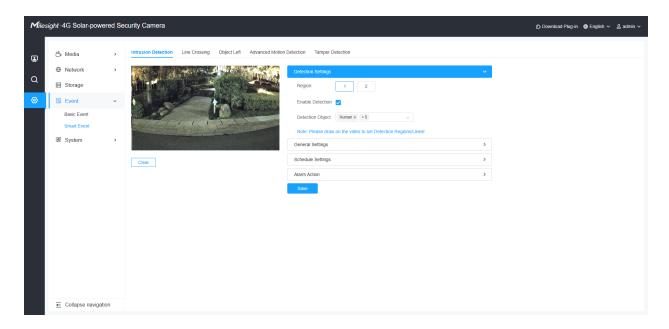
Table 43. Description of the buttons

Parameters	Function Introduction
Alarm Type	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	Please refer to the previous section for the meaning of the options; it will not be repeated here.

Smart Event

Intrusion Detection

Intrusion detection is used to protect a specific area from potential threats of intrusion by suspicious people or other objects. Whether it is an intrusion from outside the region or a sudden appearance within the region, an alarm action will be triggered.



Settings steps are shown as follows:

[Detection Settings]

Step1: Selected detection region and enable intrusion detection.

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

Select the detection object, and you can choose either People or Vehicles. For vehicles, you can specify the vehicle type, including Bicycle, Car, Motorcycle, Bus, and Truck. Once a person or the selected vehicle type is detected and triggers an Intrusion Detection event, the camera will issue an alarm.

[General Settings]

Step3: Set detecting sensitivity and object size limits, and set the trigger mode with General Mode or Bottom Mode.



Note: Please draw on the video to set Detection Regions/Lines!

Table 44. Description of the buttons

Parameters	Function Introduction
Min.Intrusion Duration	Set the triggering interval for intrusion.
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.
Trigger Mode	Set the desired mode of the trigger logic including General Mode and Bottom Mode. General Mode: The alarm is triggered when the object's body roughly enters the detection area. Bottom Mode: the alarm will be triggered as soon as the bottom of the object enters the detection area. Suitable for scenarios that require sensitivity to intrusion status/bottom detection preference.
Min. Size	Draw on the screen to set the minimum size of the detected object. Objects smaller than this size will not be detected. The default minimum size is 8*8.
Max. Size	Draw the screen 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 608*352.

[Schedule Settings]

Step4: Set detection schedule.

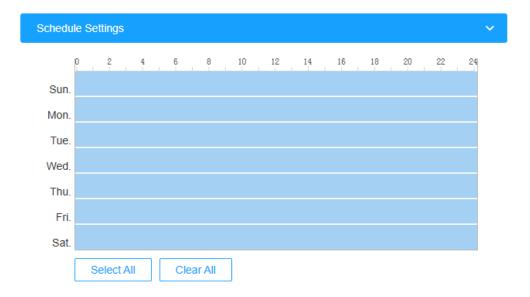


Table 45. Description of the buttons

Parameters	Function Introduction
Copy To All Sun. Mon. Tue. Wed. Thu. Fri. Sat.	Copy the schedule area to another date. The "All" button is handy to copy the today's schedule to all days.
Select All	Select all schedule.
Clear All	Clear all schedule.

[Alarm Action]

Step5: Set alarm action.

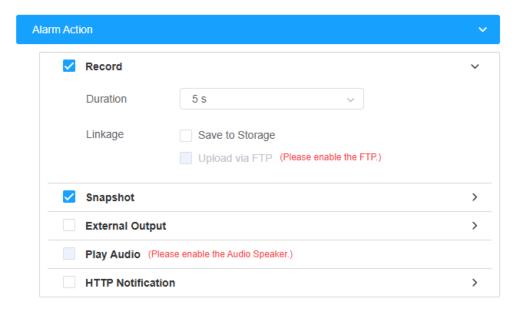
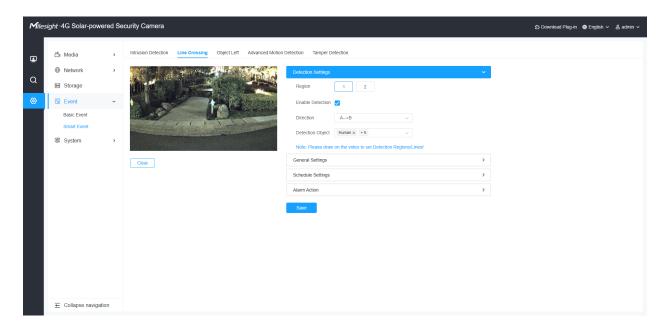


Table 46. Description of the buttons

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.
	Number: The number of snapshot, 1~5 are available.
Snapshot	Interval: This cannot be edited unless you choose more than 1 to Snapshot.
Snapsnot	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 configurin the trigger duration.
	Action Time:Customize/10 seconds/30 seconds/1minute/5 minutes/Constant are available.
Play Audio	Auto/10 seconds/30 seconds/1 minute/5 minutes/10 minutes are available.
HTTP Notification	Support to pop up the alarm news to specified HTTP URL.
	After filling in the basic information, you can click the test button to test the HTTP connectivity.

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: Selected effective region;

Step2: Select detection line, enable line crossing detection and define its direction;

Note: 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.

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 detecting sensitivity and object size limits.

Table 47. Description of the buttons

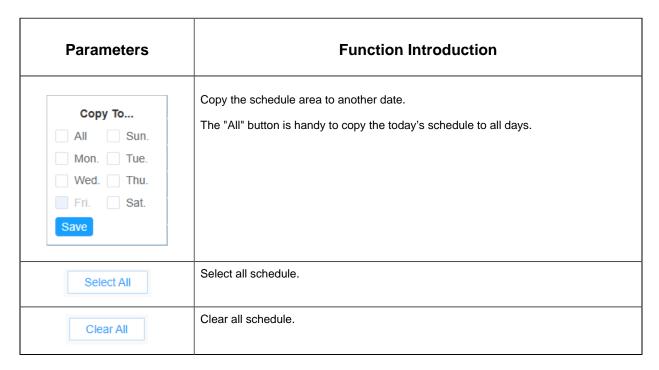
Parameters	Function Introduction
Sensitivity	Level 1~10 are available, the default level is 5. The higher the sensitivity, the easier it is for moving objects to be recorded in the results.
Trigger Mode	Set the desired mode of the trigger logic including General Mode and Bottom Mode. General Mode: The alarm is triggered when the object's body roughly enters the detection area. Bottom Mode: the alarm will be triggered as soon as the bottom of the object enters the detection area. Suitable for scenarios that require sensitivity to intrusion status/bottom detection preference.
Min. Size	Draw the screen 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 8*8.
Max. Size	Draw the screen 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 608*352.

[Schedule Settings]

Step5: Set detection schedule;



Table 48. Description of the buttons



[Alarm Action]

Step6: Set alarm action.

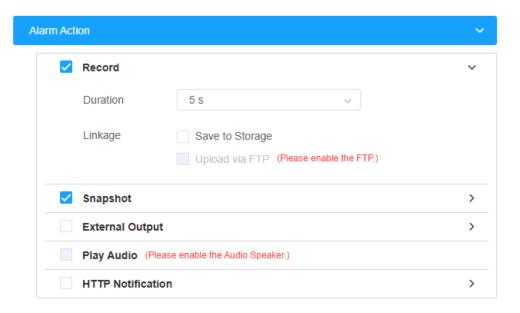


Table 49. Description of the buttons

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. Number: The number of snapshot, 1~5 are available.
Snapshot	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. Action Time:Customize/10 seconds/30 seconds/1minute/5 minutes/Constant are available.
Play Audio	Auto/10 seconds/30 seconds/1 minute/5 minutes/10 minutes are available.
HTTP Notification	Support to pop up the alarm news to specified HTTP URL. After filling in the basic information, you can click the test button to test the HTTP connectivity.

Note: 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.

Object Left

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

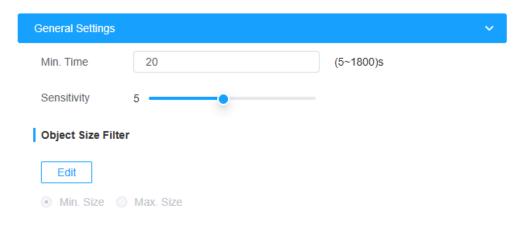
Settings steps are shown as follows:

[Detection Settings]

Step1: Selected detection region and enable object left detection.

[General Settings]

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



Note: Please draw on the video to set Detection Regions/Lines!

Table 50. 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 on the screen to set the minimum size of the detected object. Objects smaller than this size will not be detected. The default minimum size is 8*8.
Max. Size	Draw the screen 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 608*352.

[Schedule Settings]

Step3: Set detection schedule;



Table 51. Description of the buttons

Parameters	Function Introduction
Copy To All Sun. Mon. Tue. Wed. Thu. Fri. Sat. Save	Copy the schedule area to another date. The "All" button is handy to copy the today's schedule to all days.
Select All	Select all schedule.
Clear All	Clear all schedule.

[Alarm Action]

Step4: Set alarm action;

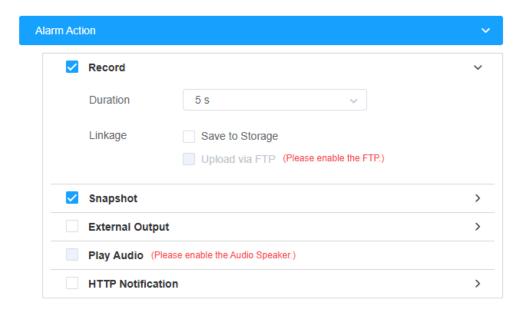


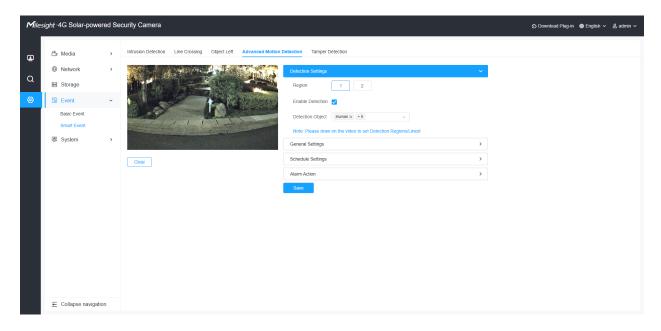
Table 52. Description of the buttons

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.
	Number: The number of snapshot, 1~5 are available.
Snapshot	Interval: This cannot be edited unless you choose more than 1 to Snapshot.
Snapsnot	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 configurin the trigger duration.
	Action Time:Customize/10 seconds/30 seconds/1minute/5 minutes/Constant are available.
Play Audio	Auto/10 seconds/30 seconds/1 minute/5 minutes/10 minutes are available.
HTTP Notification	Support to pop up the alarm news to specified HTTP URL.
	After filling in the basic information, you can click the test button to test the HTTP connectivity.

Note: If you enable External Output and choose Constant External Output Action Time, when an object is left from the selected regions, External Output Action alarm time will be always constant till the alarm is released.

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.

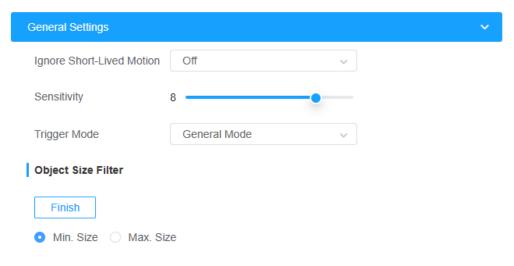
Step2: Enable advanced motion detection.

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 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;

Step5: Set detecting sensitivity and object size limits;



Note: Please draw on the video to set Detection Regions/Lines!

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]

Step6: Set detection schedule;

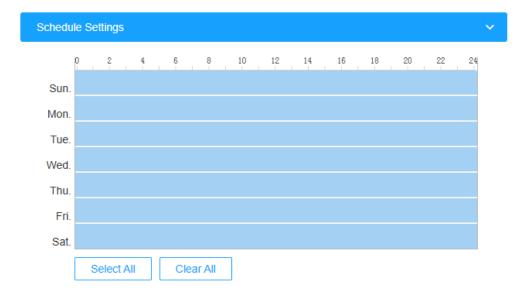


Table 54. Description of the buttons

Table 34. Description of	The batteris
Parameters	Function Introduction
Copy To All Sun. Mon. Tue. Wed. Thu. Fri. Sat. Save	Copy the schedule area to another date. The "All" button is handy to copy the today's schedule to all days.
Select All	Select all schedule.
Clear All	Clear all schedule.

[Alarm Action]

Step7: Set alarm action;

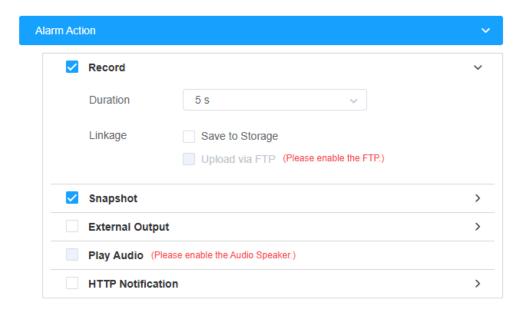


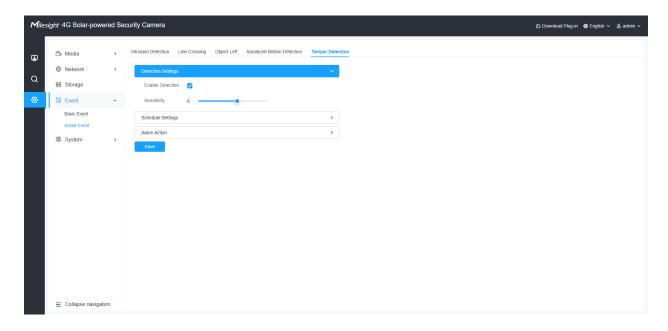
Table 55. Description of the buttons

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. Action Time:Customize/10 seconds/30 seconds/1minute/5 minutes/Constant are available.
Play Audio	Auto/10 seconds/30 seconds/1 minute/5 minutes/10 minutes are available.
HTTP Notification	Support to pop up the alarm news to specified HTTP URL. After filling in the basic information, you can click the test button to test the HTTP connectivity.

Note: 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.

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 abovementioned actions occur.



Settings steps are shown as follows:

Step1: Enable Tamper Detection and set detecting sensitivity;

[Schedule Settings]

Step2: Set detection schedule;

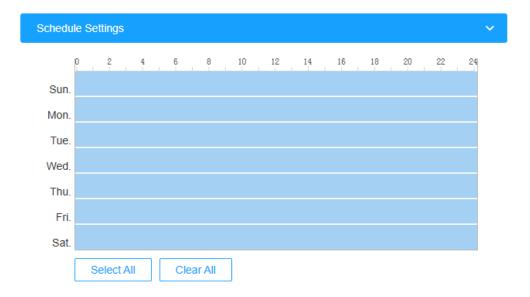


Table 56. Description of the buttons

Parameters	Function Introduction
Copy To All Sun. Mon. Tue. Wed. Thu. Fri. Sat.	Copy the schedule area to another date. The "All" button is handy to copy the today's schedule to all days.
Select All	Select all schedule.
Clear All	Clear all schedule.

[Alarm Action]

Step3: Set alarm action;

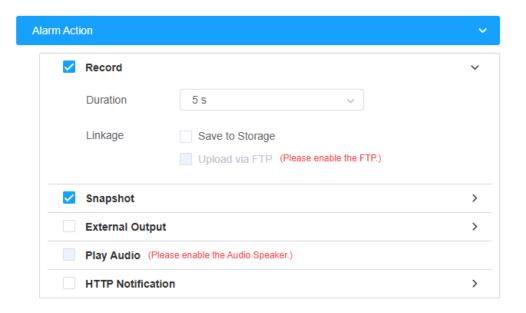


Table 57. Description of the buttons

Parameters	Function Introduction
	Duration: Selected the duration time of alarm. 5s/10s/15s/20s/25s/30s are available.
Record	Linkage: Save alarm recording files into SD Card or NAS or Upload the recording files via FTP.
	Number: The number of snapshot, 1~5 are available.
Snapshot	Interval: This cannot be edited unless you choose more than 1 to Snapshot.
Shapshot	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.
	Action Time:Customize/10 seconds/30 seconds/1minute/5 minutes/Constant are available.
Play Audio	Auto/10 seconds/30 seconds/1 minute/5 minutes/10 minutes are available.
HTTP Notification	Support to pop up the alarm news to specified HTTP URL.
	After filling in the basic information, you can click the test button to test the HTTP connectivity.

Note:

• 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.

System

System Setting

System Info

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

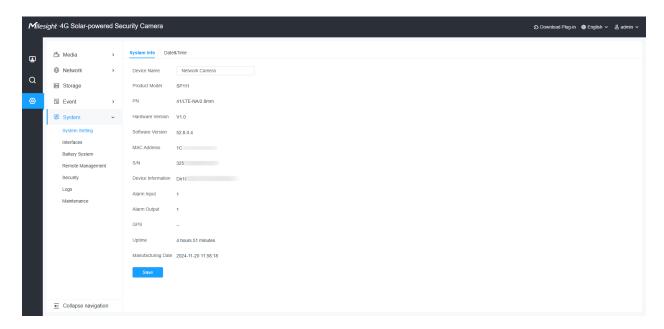


Table 58. Description of the buttons

Parameters	Function Introduction
Device Name	The device name can be customized.
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.
MAC Address	Media Access Control address.
S/N	Stock Number.

Parameters	Function Introduction
Device Information	The device information, including information about alarm I/O and clipper chip.
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.

Date&Time

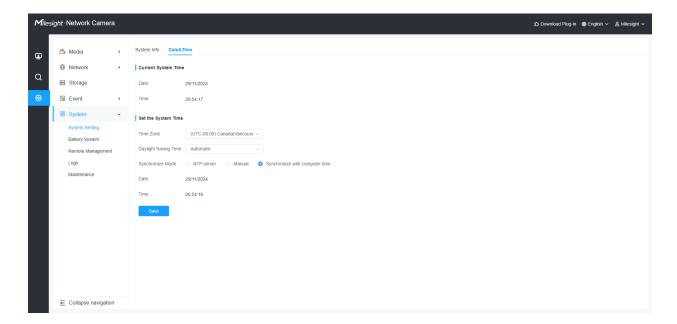


Table 59. Description of the buttons

Parameters	Function Introduction
Current System Time	Current date&time of the system.
	Time Zone: Choose a time zone for your location.
Set the System Time	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.

Interfaces

RS485

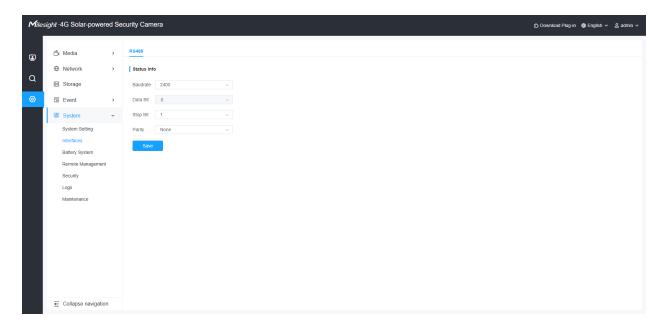


Table 60. Description of the buttons

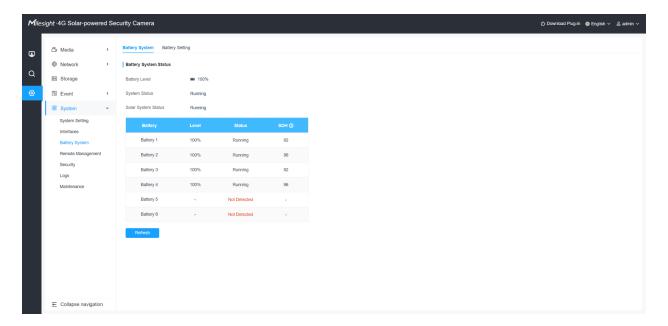
Parameters	Function Introduction
Baudrate	The available baudrate options for this device are: 2400 bps/4800 bps/9600 bps (default)/19200 bps/38400 bps.

Parameters	Function Introduction
Data Bit	The RS485 Data Bit setting is fixed at 8 bits and cannot be adjusted. This means that each data frame will contain 8 data bits.
Stop Bit	Select the desired number of stop bits from the available options: 1 stop bit/2 stop bits. Note: Ensure that the stop bit setting on your camera matches the setting on the connected RS485 device to ensure proper communication.
Parity	The available parity options for this device are: None (default)/Odd Parity/Even Parity. Select the desired parity option from the available choices: • None: No parity bit is used. • Odd Parity: The parity bit is set to ensure that the total number of 1-bits is odd. • Even Parity: The parity bit is set to ensure that the total number of 1-bits is even.
Save	Save the configuration.

Battery System

Battery System

You can check the battery status and battery health in this module.



[Battery System Status]

Table 61. Description of the buttons

Parameters	Function Introduction
Battery Level	Current battery level and charging status.
System Status	Running: The system is operating normally. Malfunction: The system is not functioning correctly. Note: Check the power supply and connections.
Solar System Status	Status: Indicates the current operational state of the solar panel. Running: The solar panel is currently supplying power. Malfunction: The solar panel is not supplying power.

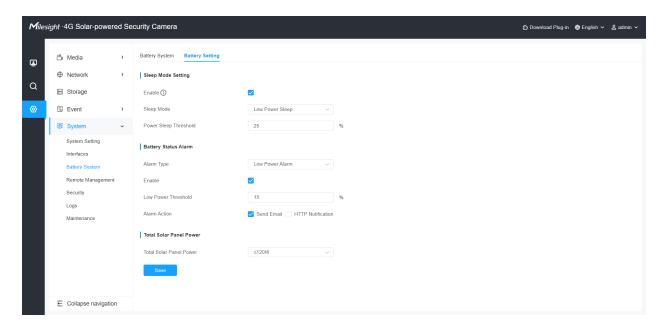
Parameters Function Introduction Battery: Battery Number: Numbered 1-6, their positions in the solar system are shown in the diagram. **Battery Interface Battery Status** Level: This column indicates the current battery level. It shows the remaining charge as a percentage, helping you monitor when the battery needs recharging or replacing. Status: This column indicates the current status of the battery. • Running: The battery is operating normally. • Low Power: The battery is running low on charge and needs recharging soon. • Malfunction: There is a problem with the battery, and it may not be functioning correctly. • Not Detected: The battery is not detected by the system. • HighTempProtect: The battery is in a high-temperature protection mode to prevent overheating. • LowTempProtect: The battery is in a low-temperature protection mode to prevent damage from cold temperatures.

SOH: SOH (State of Health) refers to the health status of a battery.

Parameters	Function Introduction
Save	Save the configuration.

Battery Setting

You can configure the battery sleep mode and battery health alarms in this module.



[Sleep Mode Setting]

Table 62. Description of the buttons

Parameters	Function Introduction
Enable	Click the enable checkbox to activate Sleep Mode. Note: Only remote access wakeup and Timing Wake Capture are supported under Low Power Sleep mode. And remote wake-up is only possible when the 4G network is functioning properly.
Sleep Mode	Select the trigger method for Sleep Mode.
Power Sleep Threshold	Configure the threshold for entering Sleep Mode. When the battery level falls below the set value, the device will enter sleep mode.

[Battery Status Alarm]

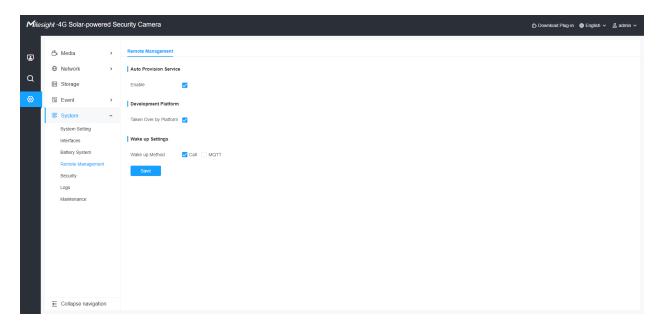
Table 63. Description of the buttons

Parameters	Function Introduction
Alarm Type	Select different alarm types for alarm configuration. The available battery status alarm types are: Low Battery Alarm, Malfunction Alarm, and Low Battery Health Alarm.
Enable	Click the enable checkbox to activate the Battery Status Alarm.
Low Power Threshold	The configuration for setting the low battery alarm threshold is available when the Alarm Type is set to Low Battery Alarm. When the battery level falls below the set value, the device will trigger the alarm.
Alarm Action	Send Email: Send alerts via email. For detailed email settings, please configure under Network - Basic - Email.
	HTTP Notification: When the battery status triggers an alarm, the security camera can send an HTTP notification to a specified server. To configure the HTTP notification for battery status alarms, please fill in the following information.
	URL: Enter the URL of the server that will receive the HTTP notification. This should be a fully qualified URL, including the protocol (e.g., http:// or https://).
	Enable: Enable or disable HTTP notification for battery status alarms.
	HTTP Method: Choose the HTTP method to be used for sending the notification. Common methods include POST and GET.
	User Name: If the server requires authentication, enter the user name here. This is typically used for basic authentication.
	Password: Enter the password associated with the user name for authentication purposes.
Save	Save the configuration.

[Total Solar Panel Power]

Please select the total power rating of your external solar panels. Options include <= 120W and >120W. Choosing the correct option will help optimize energy efficiency.

Remote Management



The Remote Management section allows you to configure various settings that enable remote control and management of your security camera. This includes enabling the Auto Provision Service, Development Platform, and configuring Wake Up Settings.

You can use the Milesight Development Platform for remote and bulk management of devices. Platform address:

https://account.milesight.com/login

For instructions on how to add a device, please refer to the platform manual:

https://www.milesight.com/docs/en/development-platform/introduction/connect-adevice.html

Auto Provision Service

Enable Auto Provision Service:

 Enabling this option means that the camera will automatically obtain preconfiguration from the Milesight Development Platform after rebooting.

Development Platform

Enable Development Platform:

 Enabling this option allows the Milesight Development Platform to modify camera settings. Users can then more conveniently modify camera settings remotely in bulk via the Milesight Development Platform.

Wake Up Settings

- Configure Wake Up Settings:
 - This setting determines how the camera will wake up from a low-power state.
 - Call: The camera can be woken up by making a call.
 - MQTT: The camera can be woken up using MQTT (Message Queuing Telemetry Transport) protocol.

Security

User

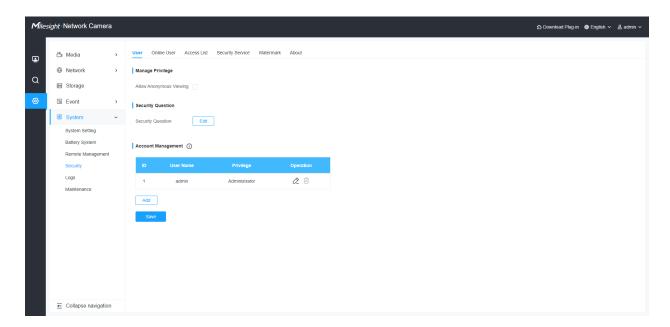
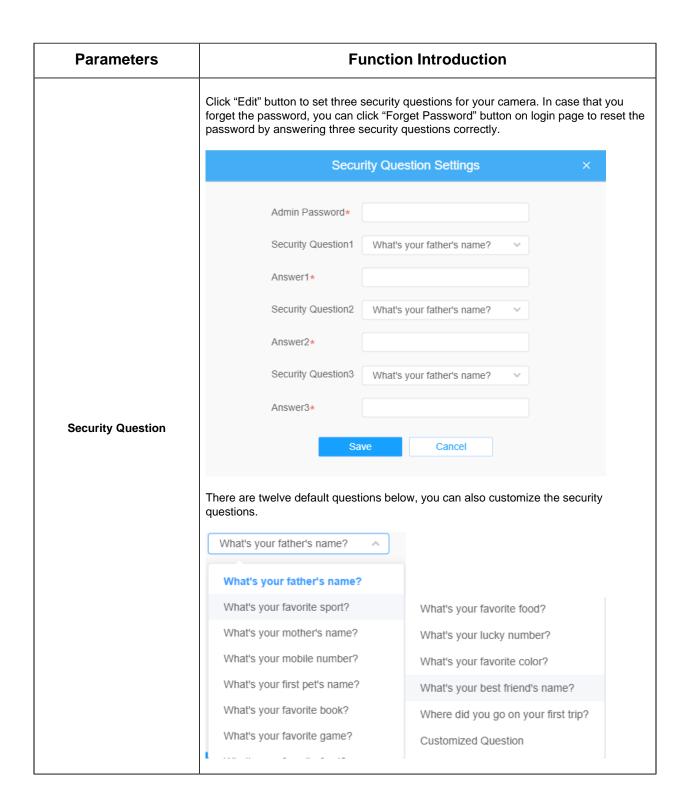


Table 64. Description of the buttons

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
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 Save The ad ded 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.

Online User

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

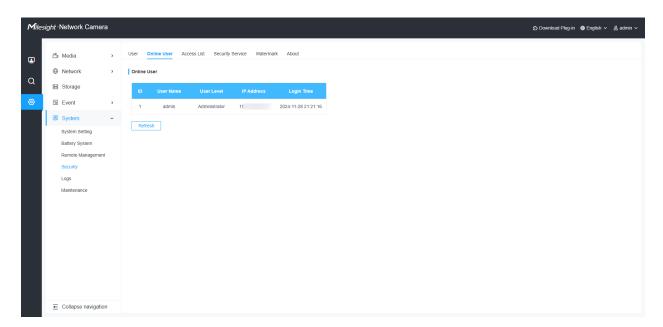


Table 65. Description of the buttons

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 logs in 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.	

Access List

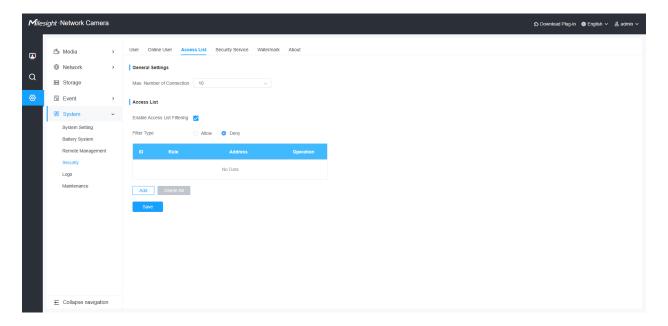


Table 66. Description of the buttons

Parameters	Function Introduction
General Settings	Max. Number of Connection: Select the maximum number of concurrent streaming. Options include No Limit, 1~10.
Access List	Enable Access List Filtering: Able to access or restrict access for some IP address.
Access List	Filter type: Allow or deny access.

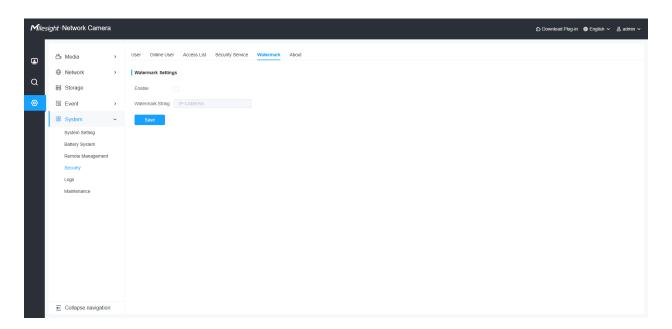
Parameters	Function Introduction	
	Add	Rule: Single, Network and Range are available. IP address: Input the address to get the access to the device.
	Delete All	Delete all the access list.
	2	Edit the selected IP on access list.
	⑪	Delete the selected IP on access list.
Save	Save the configuration	n.

Security Service

Table 67. Description of the buttons

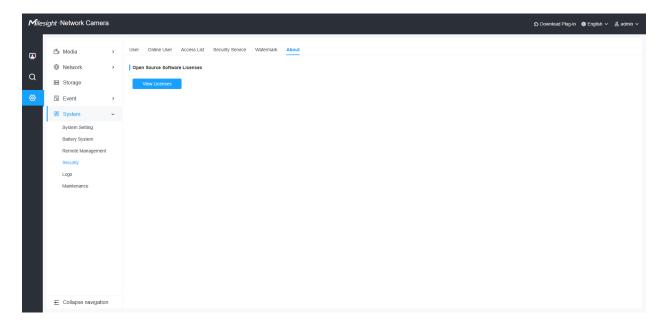
Parameters	Function Introduction
SSH Settings	Secure Shell (SSH) has many functions: it can replace Telnet and also provides a secure channel for FTP, POP, even for PPP.

Watermark



Watermarking is an effective method to protect information security, realizing anticounterfeiting traceability and copyright protection. Milesight Network cameras supports Watermark function to ensure information security.

About



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

Logs

Logs

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

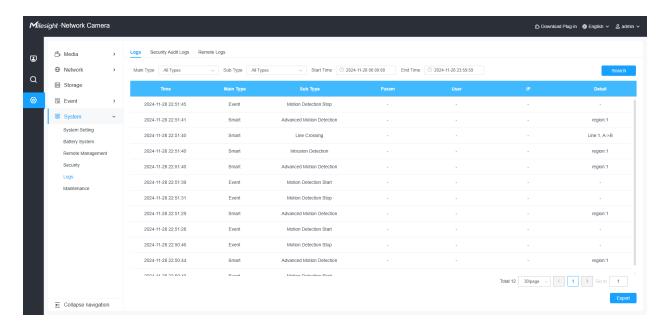


Table 68. Description of the buttons

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.
Export	Export the logs.
Go to	Input the number of logs' page.

Security Audit Logs

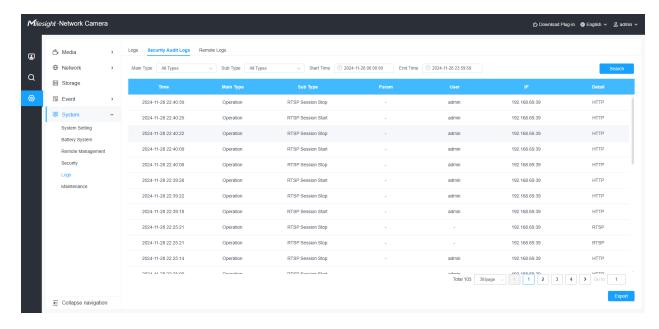


Table 69. Description of the buttons

Parameters	Function Introduction
Main Type	There are five main log types: All Type, Operation, Information and Exception.
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.
Export	Export the logs.
Go to	Input the number of logs' page.

Remote Logs

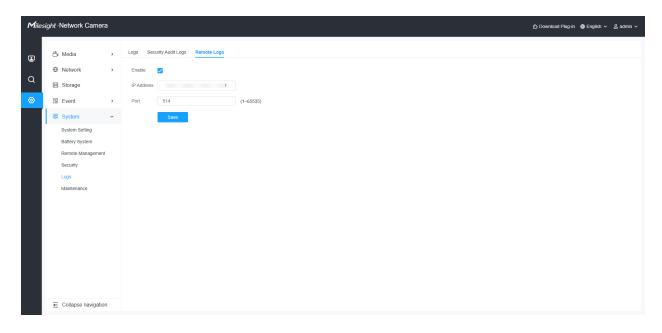


Table 70. Description of the buttons

Parameters	Function Introduction
Enable	Enable this checkbox to activate the Remote Logs feature. Logs can be sent to the target server.
IP Address	Enter the IP address of the target server where you wish to receive the logs.
Port	Enter the port number of the target server where you wish to receive the logs.
Save	Click this button to manually save the above operation.

Maintenance

System Maintenance

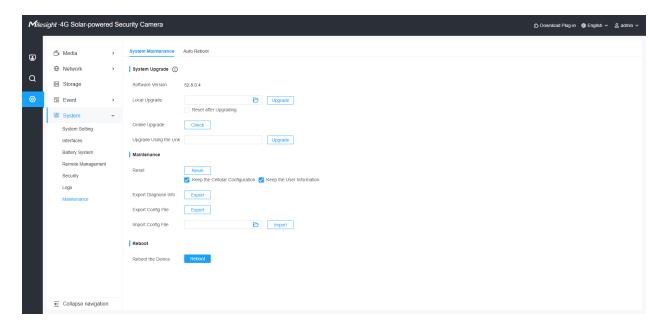
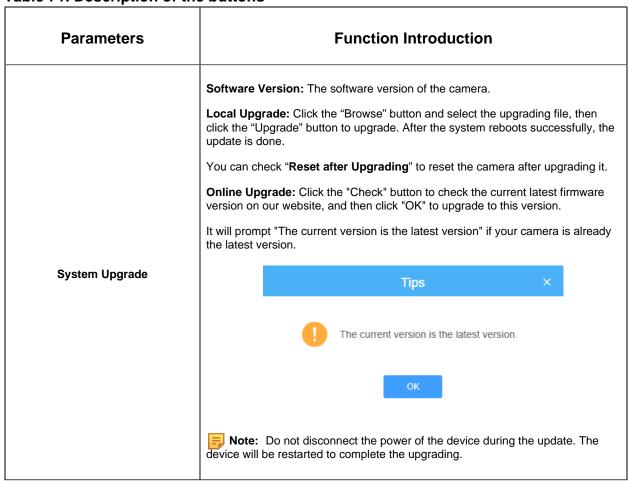
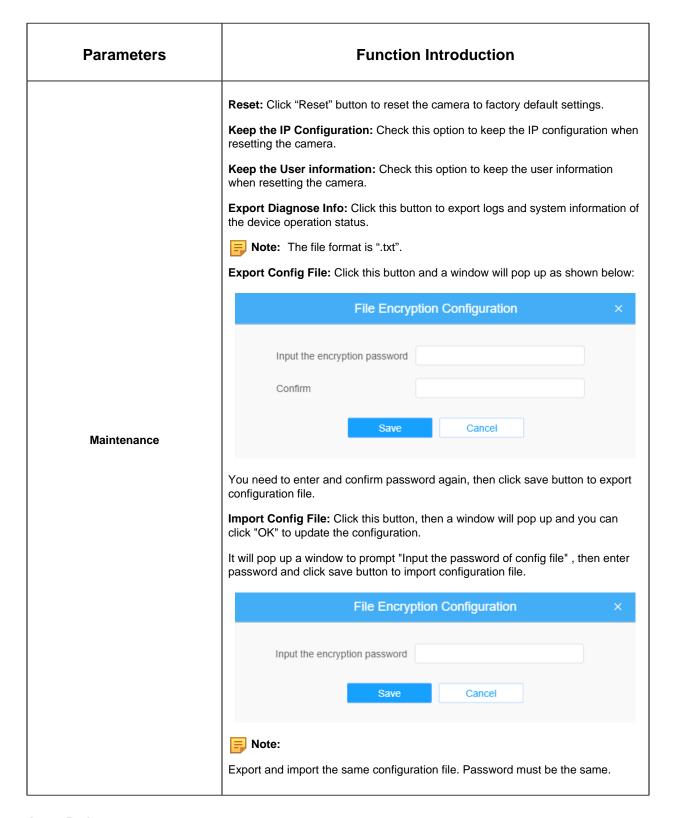
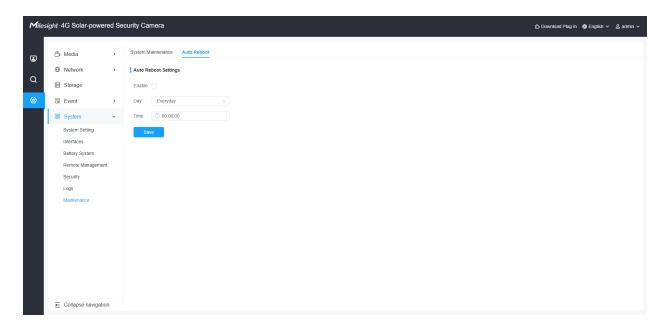


Table 71. Description of the buttons





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 6. Services

Milesight 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

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