Milesight

VS125 Outdoor Series

AI Stereo Vision People Counter

User Guide

Contents

Chapter 1. Preface

Copyright Statement

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Safety Instruction

Milesight will not shoulder responsibility for any loss or damage resulting from not following the instructions of this operating guide.

Warning:

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

- This installation must be conducted by a qualified service person and should strictly comply with the electrical safety regulations of the local region.
- To avoid risk of fire and electric shock, do keep the product away from rain and moisture before installation.
- Do not touch components which may be hot.
- Make sure the plug is firmly inserted into the power socket.
- Make sure the device is firmly fixed when installing.
- The device must not be disassembled or remodeled in any way.

CAUTION:

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

- Do not place the device where the temperature is below/above the operating range.
- The device must never be subjected to shocks or impacts.
- Do not expose the device to where a laser beam equipment is used.
- To prevent heat accumulation, do not block air circulation around the device.

- Use a soft, dry cloth to clean the lens of the device. Stubborn stains can be removed using a cloth dampened with a small quantity of detergent solution, then wipe them dry.
- Do not use volatile solvents such as alcohol, benzene or thinners as they may damage the surface finishes.

Gender Recognition Statement

Milesight respects and embraces all dimensions of diversity, including gender identity anywhere along or beyond the spectrum of gender expression.

For technical reasons, the algorithm embedded in the people counter recognizes only easily discernible, visual indications when determining whether a person is more likely to be female or male, A reliable detection of the biological sex of a person is nether possible nor intended. we intend no disrespect to the gender with which a person identifies. The counts are merely a statistical measurement of a large number of people.

Revision History

Data	Doc Version	Description
Oct. 22, 2025	V1.0	Initial version

Chapter 2. Product Introduction

Overview

VS125 Outdoor Series is a professional-grade people counting solution designed for outdoor environments. Designed to withstand harsh environments, it features an IP67 rating for water and dust resistance, along with protection against infrared/ultraviolet radiation and rain.

Powered by deep learning AI and binocular stereo vision, the sensor achieves up to 99.8% people counting accuracy even in low light or complete darkness. It also supports attribute recognition such as gender, children, and staff detection, while fully complying with GDPR privacy standards.

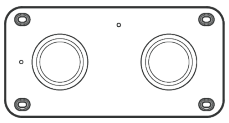
The device offers flexible connectivity options including Cellular and PoE, as well as expansion interfaces such as RS485, DO, and DI, enabling seamless integration and efficient space management in a wide range of outdoor applications.

The device can be used in places like scenic spots, streets, parks, outdoor activities,etc.

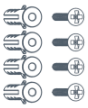
Key Features

- Up to 99.8% people counting accuracy with AI and stereo vision technology
- IP67-rated waterproof and dustproof housing ensures reliable outdoor performance across a wide temperature range
- Excellent light adaptability for reliable performance in low light and total darkness
- Supports ceiling mounting up to 6 m, with automatic tilt correction and infrared light adjustment
- Customer-defined preview privacy settings, no data with personal information is transmitted, complies with GDPR
- Supports line crossing people counting, regional people counting and dwell time detection
- Advanced attribute recognition including gender, group, children, and staff identification enabling deeper insights
- Supports heat map functionality for analyzing foot traffic intensity and distribution
- Supports Multi-Device stitching for linking up to 16 devices to expand coverage
- Supports local data storage and data retransmission to ensure secure data collection
- Provide multiple connectivity options (PoE, Cellular)
- Supports RS485/DI/DO multiple interfaces and has strong scalability
- Allows quick and easy management via Milesight Development Platform
- High compatibility of data transmission with HTTP(s)/MQTT(s) protocol and API, supports customized push content methods

Packing List



1 × VS125-O Device



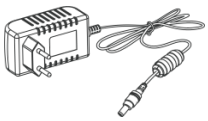
4 × Ceiling Mounting Kits

4 × Rubber Screw Hole Plugs

1 × Warranty Card

1 × Quick Guide

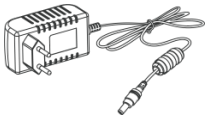
Cellular Version Only Accessories:



1 x Power Adapter

1 x SIM-eject Tool

PoE Version Only Accessories:



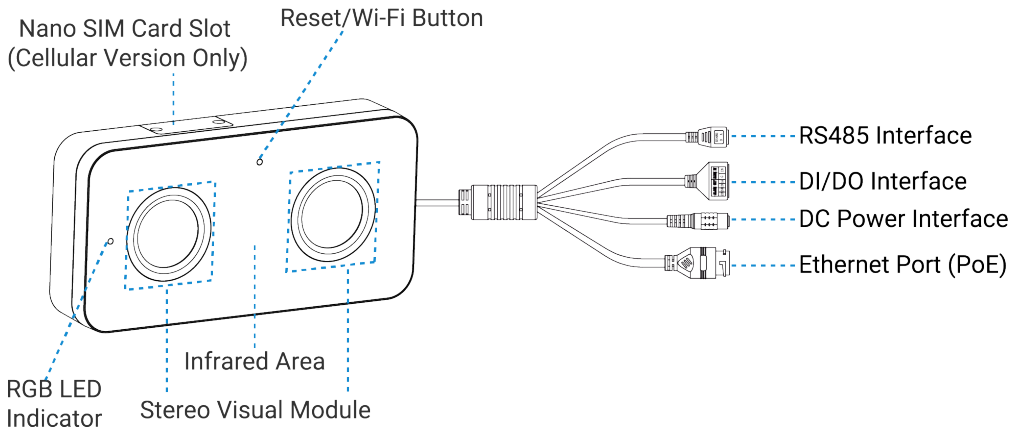
1 x Power Adapter (Optional)

Note:

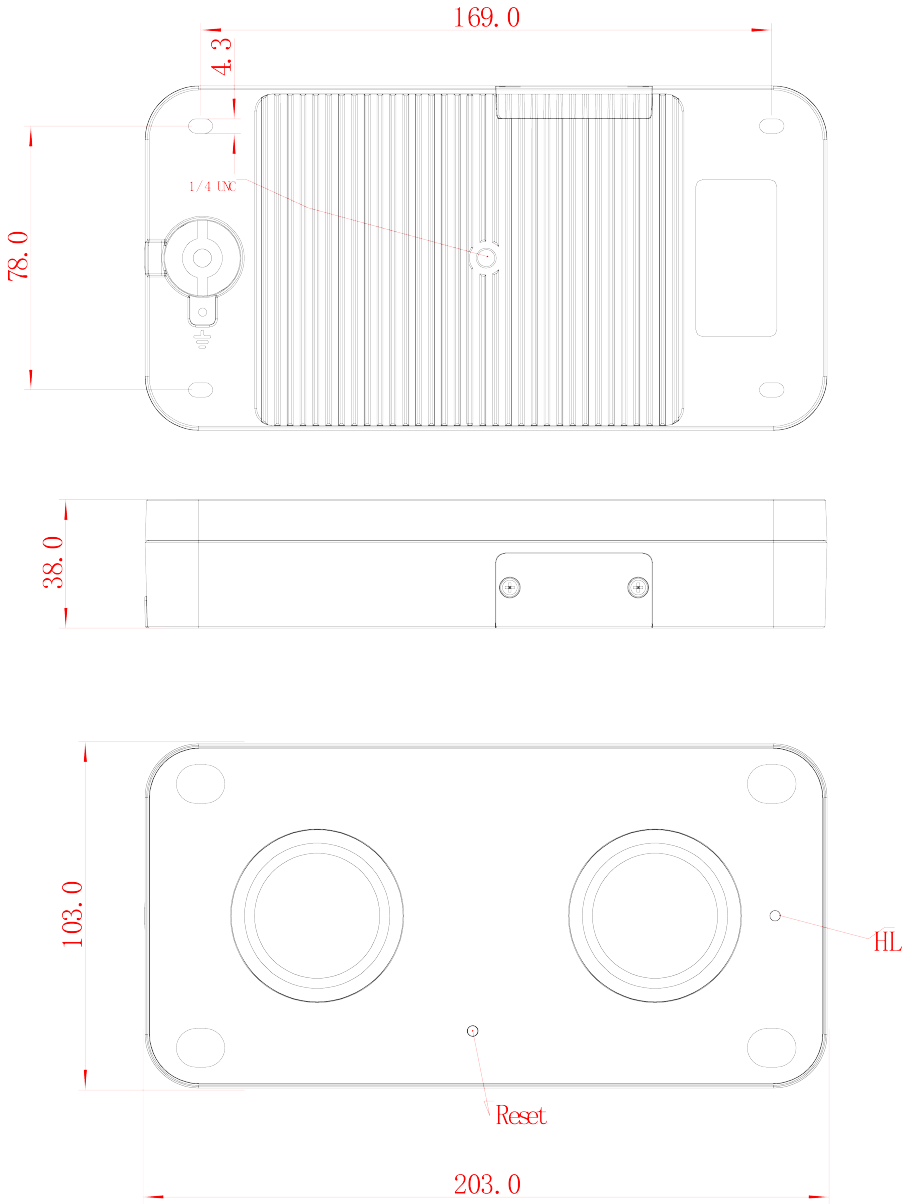
1. The device supports mounting kits and people counter accessories. For more information, please scan the QR code.

2. If any of the above items is missing or damaged, please contact your sales representative.

Hardware Overview



Dimensions (mm)

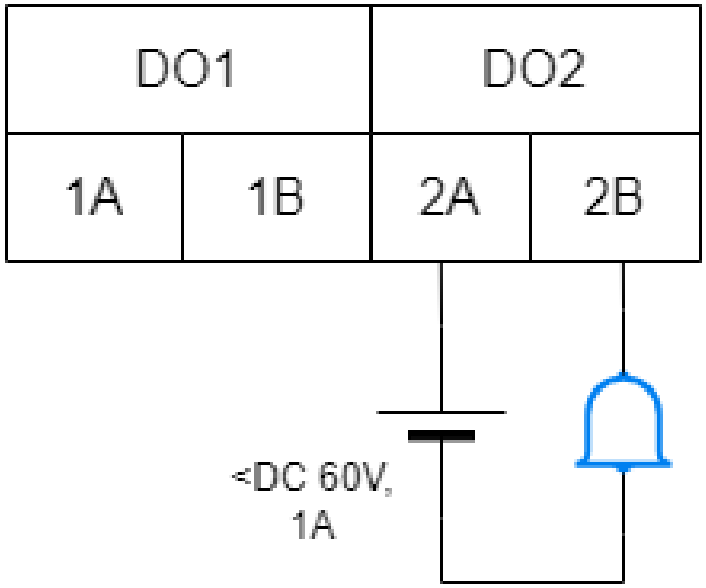


Button and LED Indicators

Function	Action	LED Indication
Turn On/Off Wi-Fi	Press and hold the power button for more than 3 seconds.	Turn On/Off: Blue light blinks for 3 seconds. Wi-Fi On: Blue light on. Wi-Fi Off: Green light on.

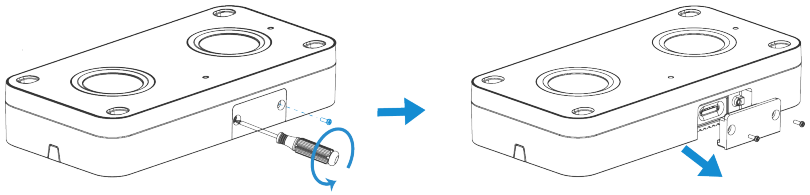
Function	Action	LED Indication
Reset to Factory Default	Press and hold the power button for more than 10 seconds.	Green light blinks until the reset process is completed.
Module or algorithm detection error	/	Red light on

Wirings

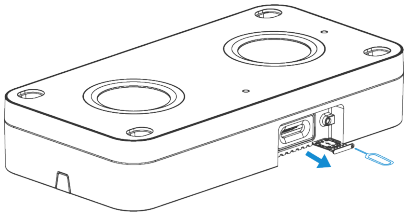


SIM Card Installation (Cellular Version Only)

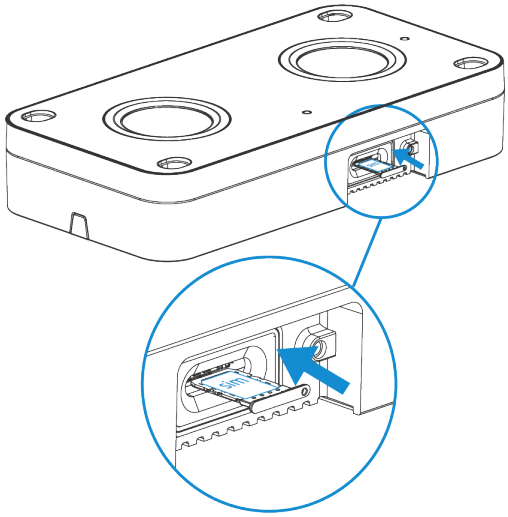
Step 1: Use screwdriver to remove the Nano SIM card slot.



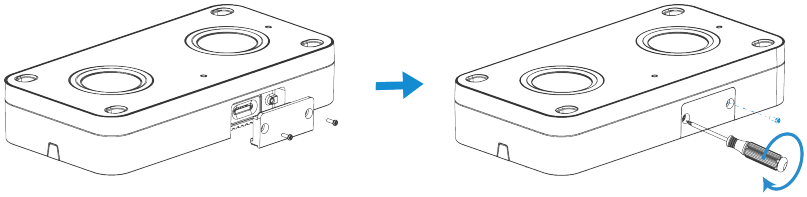
Step 2: Use the SIM-eject tool to pop open the SIM tray.



Step 3: Place the Nano SIM card into the SIM card slot and reinsert it.

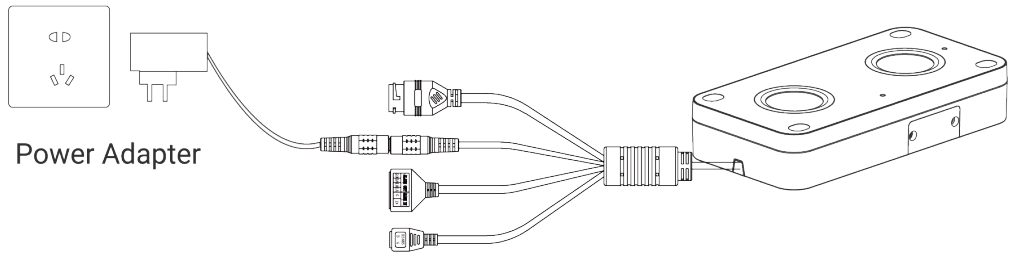


Step 4: Use a screwdriver to tighten the screws and restore the slot to its original position.

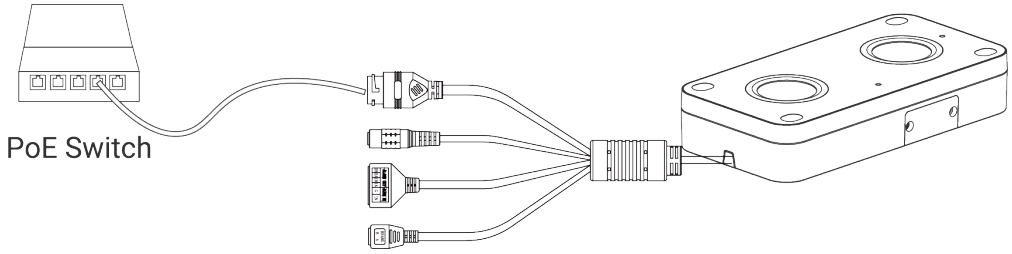


Chapter 3. Power Supply

Powered by DC Power Adapter (12V, 1A)



Powered by PoE Switch (PoE Version Only, 802.3af standard)



Chapter 4. Installation

Preparation before Installation

Installation Note

- It is recommended to inform people at the deployment site in advance that their images will be collected (through signage, user agreements, etc.) and obtain their consent before installation. Additionally, inform them that they may opt out if they do not consent to image collection.
- The device is sensitive to ambient light, so it's best to avoid placing it in areas where light conditions fluctuate significantly.
- To minimize false detections caused by reflections, avoid installing the device near mirror-like surfaces such as glass doors or mirrors. If unavoidable, position detection lines or areas away from these surfaces.
- When the device is installed at the door of the fan switch, the device needs to be installed on the opposite side of the door.
- For installation on door frames or above doorways, use the multifunctional bracket (available from Milesight or other sources). Adjust the bracket to ensure the device's field of view remains clear of obstructions.
- Make sure there are no obstacles in the device's live view.
- For optimal depth detection performance, install the device in areas with rich environmental textures (e.g., patterned floors or walls). Avoid uniform surfaces such as plain white walls or solid-colored floors, as these may reduce accuracy.
- Keep the device parallel to the ground whenever possible. If unavoidable, ensure the tilt angle remains within 10 degrees.

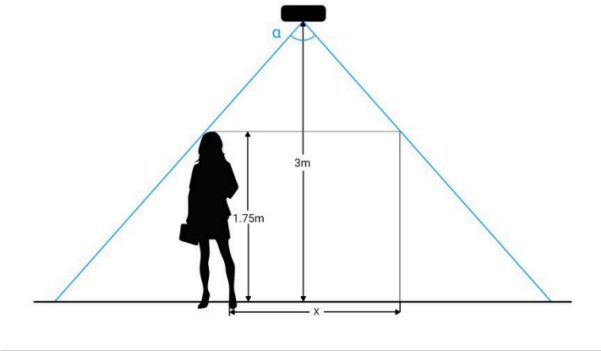
Covered Detection Area

Table 1. Parameter Definition

Parameters	Explanation	Value
H	Installation height	2.2 ~ 6 m
h	Target height	Example 1.7 m
α	Horizontal field of view angle	101°
β	Vertical field of view angle	70°
x	Length of detection range	2 × tan(α/2) × (H-h+0.05)

Parameters	Explanation	Value
y	Width of detection range	2 × tan(β/2) × (H-h+0.05)

The detection area depends on the device's field of view angle, installation height, and target height. The following figure uses the horizontal field of view angle, an installation height of 3 meters, and a target height of 1.75 meters as an example for illustration:



For example, if the pedestrians' height is 1.75 m, the detection area corresponding to each installation height is as follows:

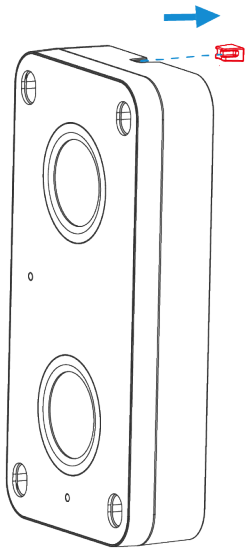
Installation Height (m)	Detection Area (m)
2.2	1.21 × 0.7
2.5	1.94 × 1.12
3.0	3.16 × 1.82
3.5	4.37 × 2.52
4.0	5.58 × 3.22
4.5	6.80 × 3.92
5.0	8.01 × 4.62
5.5	9.23 × 5.32
6.0	10.44 × 6.02

Installation Step

Note:
Check that the device and accessories are complete according to the **Quick Start Guide** in the unit's box.

Ceiling Mount

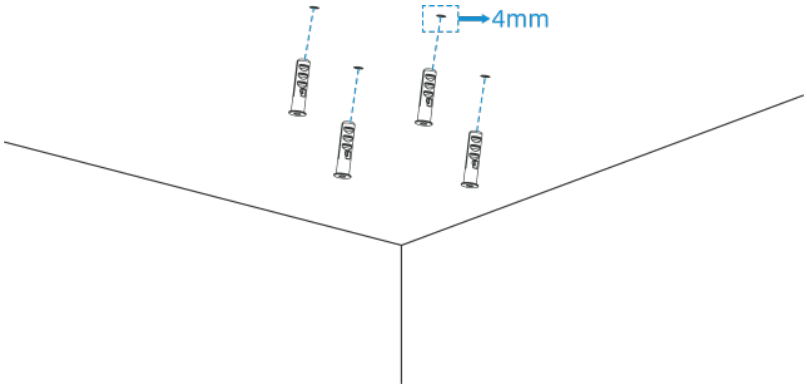
Step 1: Remove the rubber plug if the cables need to exit from the side of the device.



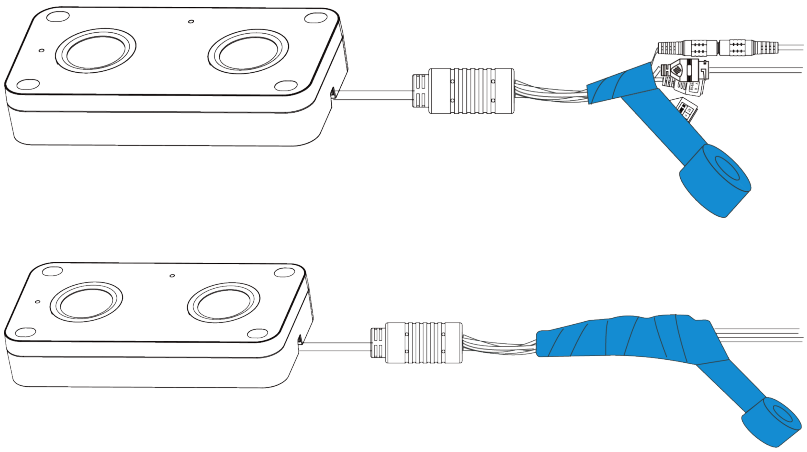
Step 2: Drill four holes (Ø4 mm) following the device's mounting pattern.

(f you need to route the power cord inside the ceiling, drill an additional hole.)

Insert the expansion bolts into the ceiling holes.

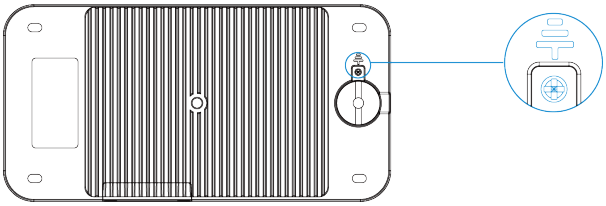


Step 3: Ensure all connectors are **properly sealed** with waterproof adhesive tape.



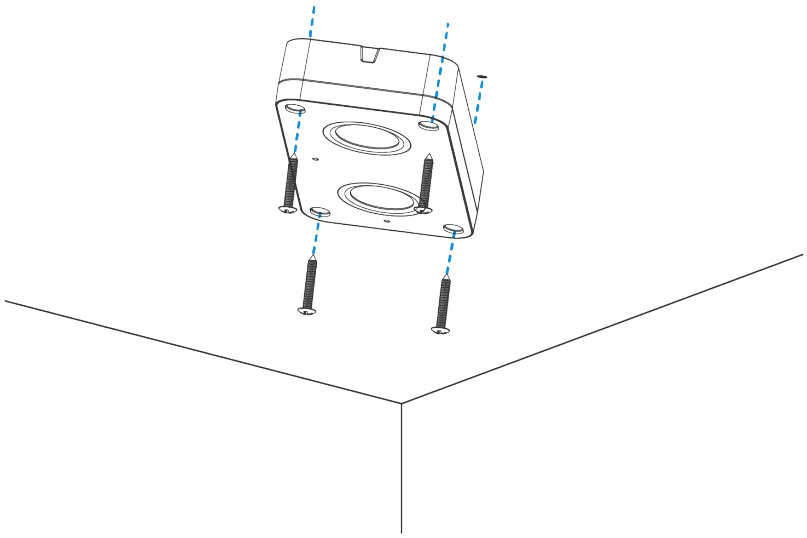
Step 4: Take lightning protection measures, including but not limited to:

- Connect the device to the earth ground.

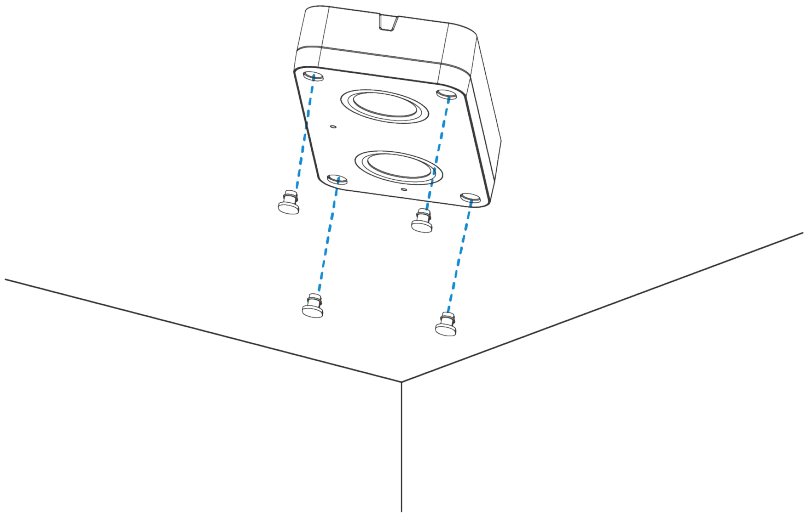


- Install PoE surge protectors between the device and the PoE injector/switch as required.
- Ensure the device is mounted below the highest point of the structure and within the lightning rod's protection range.

Step 5: Secure the device to the wall plugs with mounting screws.

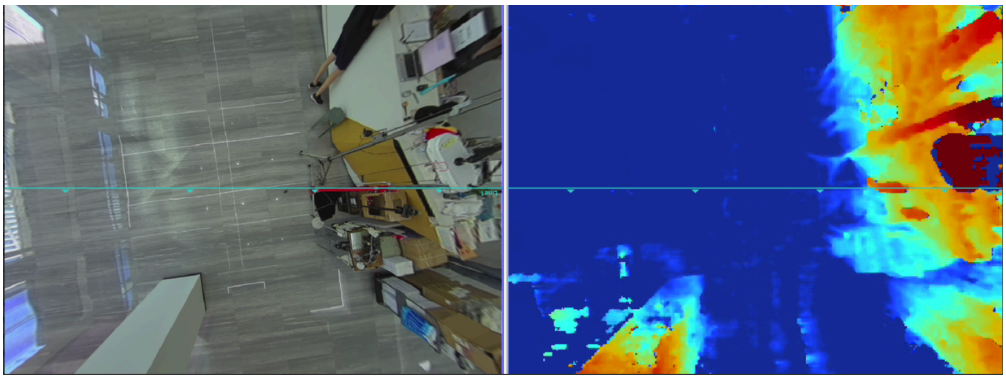


Step 6: Reinsert the Rubber Screw Hole Plugs back into their original holes.



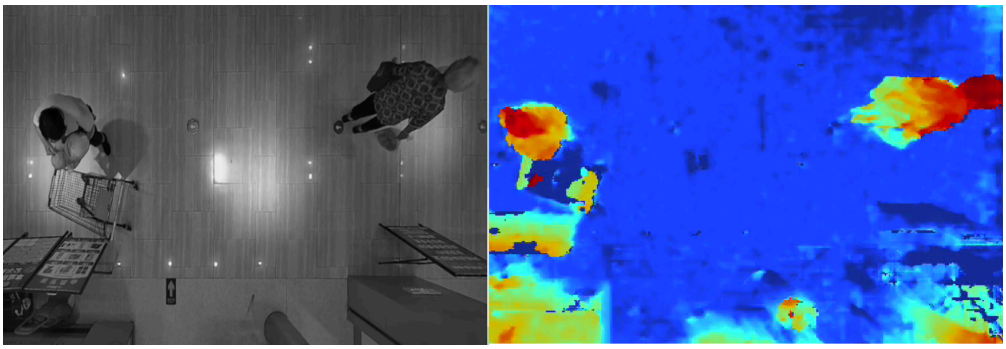
Step 7: Check live view.

Normal Environment:



Light blue or blue spot patterns appear on the ground, and taller objects appear increasingly red in the image.

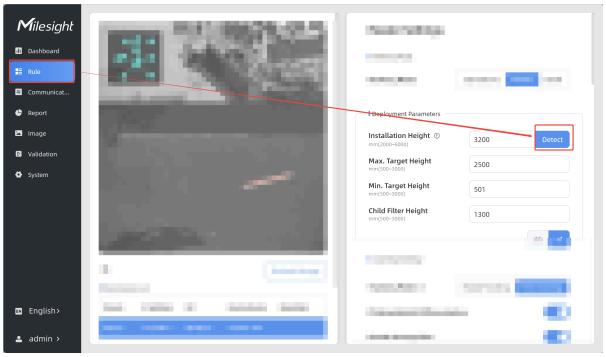
Normal Targets:



Targets show a clear color gradient, indicating good depth perception.

If the live view does not display a normal image, check the following in order:

1. Ensure the lens protective film has been removed.
2. Verify the device is installed level (within 10 degrees of horizontal).
3. Check for objects close to the device and within its field of view (e.g., pendant lights, downlights)
4. Go to **<Rule>** page, use the automatic height detection then save.



Switch to **<Dashboard>** to check live view again:

- If the depth map appears predominantly blue, manually increase the installation height based on the auto-detected value. (A step size of ±50mm is recommended.)
- If the depth map appears predominantly red, decrease the installation height accordingly. (A step size of ±50mm is recommended.)

5. Check for a loose lens or housing deformation, even if no visible damage is present.
6. If the issue persists, contact your Milesight sales representative.

Factors Affecting Accuracy

Factors affecting line detection:

1. The device can not recognize well if the ground is smooth and lacks patterns.
2. It is indistinguishable when the color of targets and the floor is similar.
3. Objects imaged similarly to people have a probability of being misdetected.
4. The device may not accurately recognize people walking at extremely fast speeds (more than 2.5 m/s).
5. Detection accuracy decreases in crowded scenes (distance between targets less than 30cm).

6. When the target is obscured by adjacent objects or other targets, the more occlusion features present, the higher the risk of missed detection.
7. When two people pass through the detection line at the same time and are in close proximity to each other (one in and one out), it is possible that both people will miss the count.
8. At the edge of the FOV, when one target disappears and another target appears simultaneously, an ID inheritance phenomenon may occur.

Chapter 5. Access the Sensor

The device provides user-friendly web GUI for configuration access via Wi-Fi or Ethernet port. Users need to customize the password when using the device for the first time. The default settings are as below:

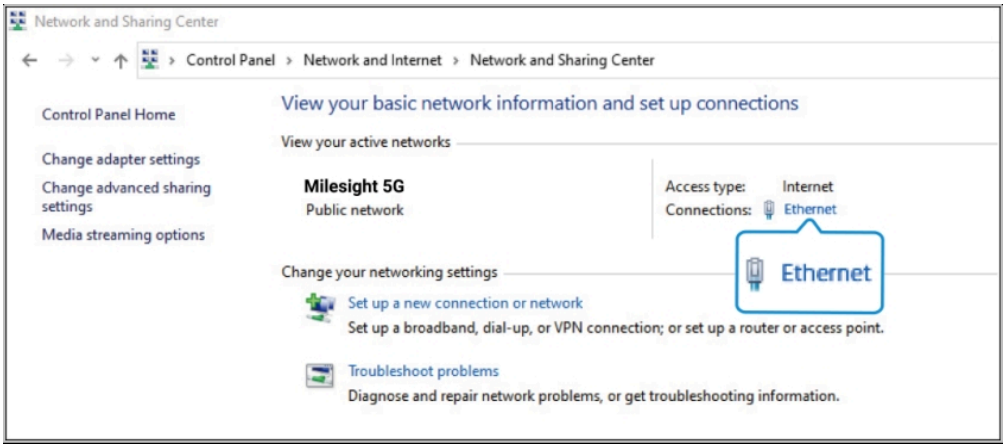
Wi-Fi SSID: **People Counter_xxxxxx** (can be found on the device label)

Wi-Fi IP: **192.168.1.1**

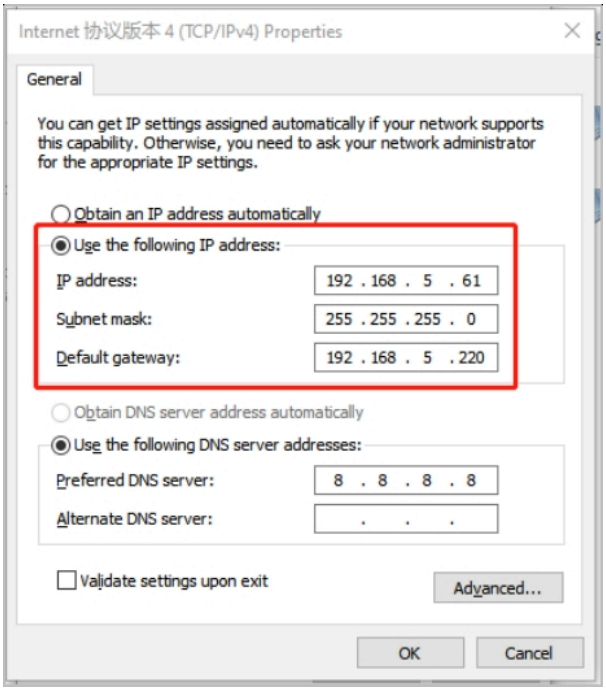
Ethernet IP: **192.168.5.220**

Step 1:

- **Wireless Method:** Enable the Wireless Network Connection on your computer, search for corresponding for Wi-Fi SSID to connect it, then type 192.168.1.1 to access the web GUI.
- **Wired Method (PoE Version Only)**: Connect the device to computer via Ethernet port, change the IP address of computer to 192.168.5.0 segment as below:
    1. Go to Start → Control Panel → Network and Internet → Network and Sharing Center → Ethernet → Properties → Internet Protocol Version 4 (TCP/IPv4).

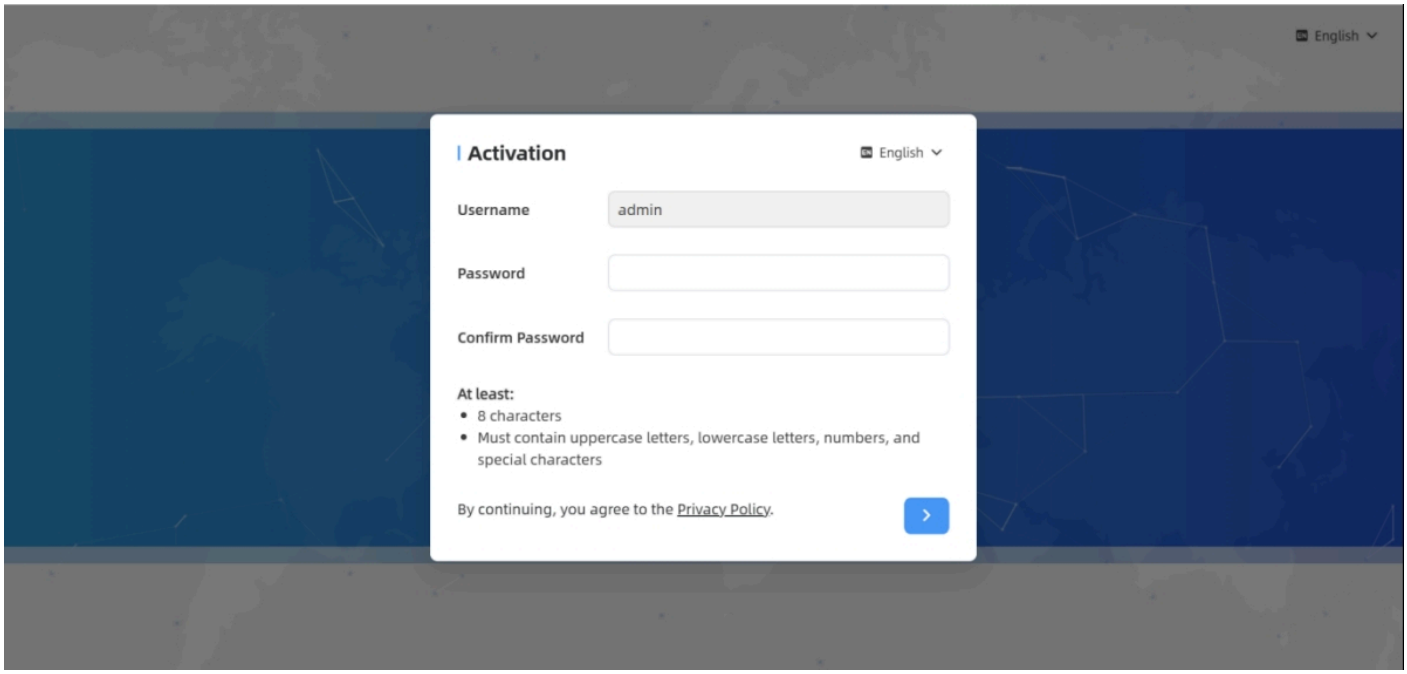


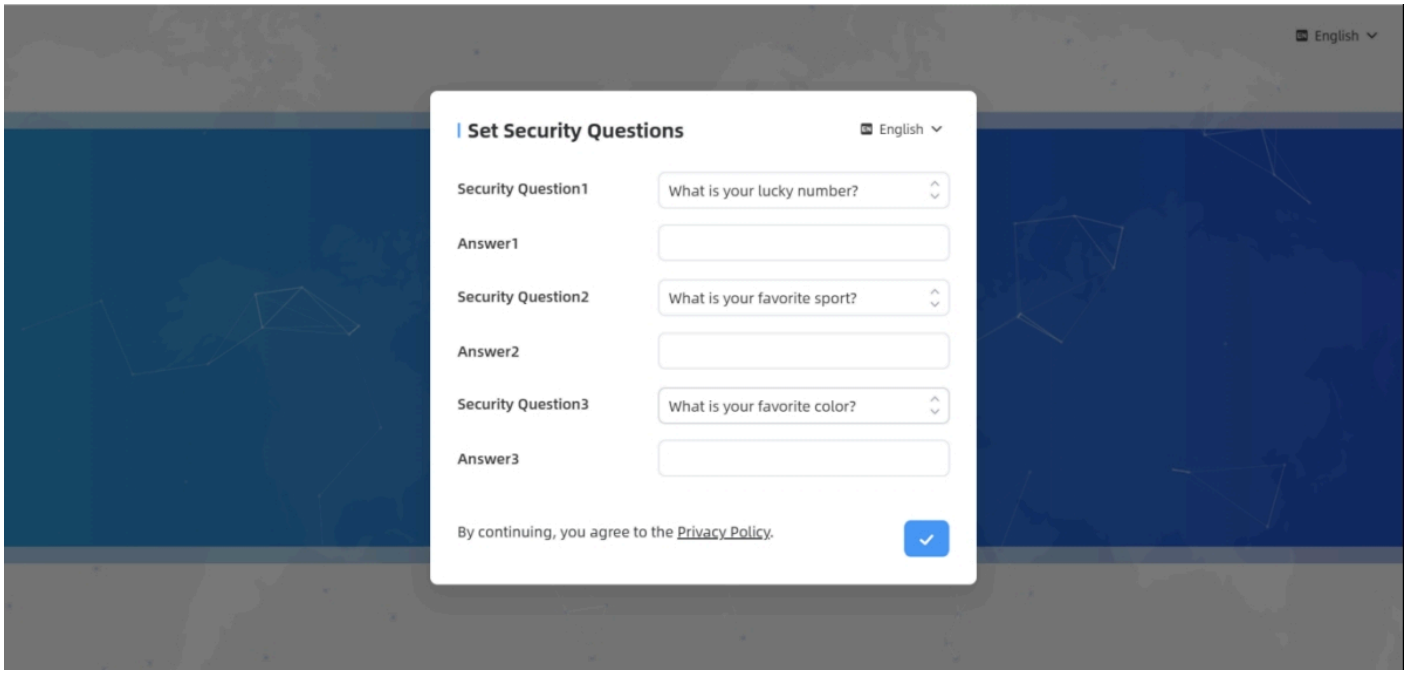
    2. Enter an IP address that in the same segment with sensor (e.g. 192.168.5.61, but please note that this IP address shall not conflict with the IP address on the existed network).



3. Then open the Browser and type 192.168.5.220 to access the web GUI.

Step 2: Users need to set the password and three security questions when using the sensor for the first time.

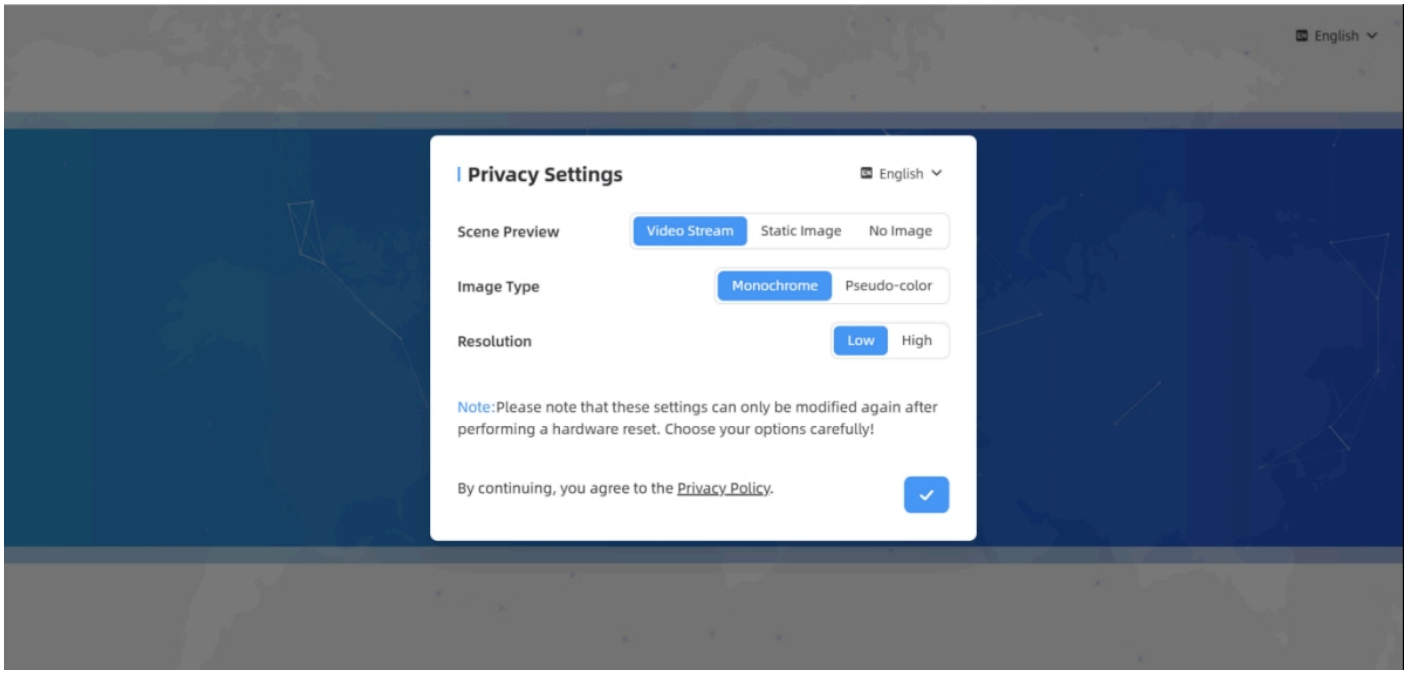




Step 3: Configure the privacy settings to select preview image modes on the dashboard.

Note:

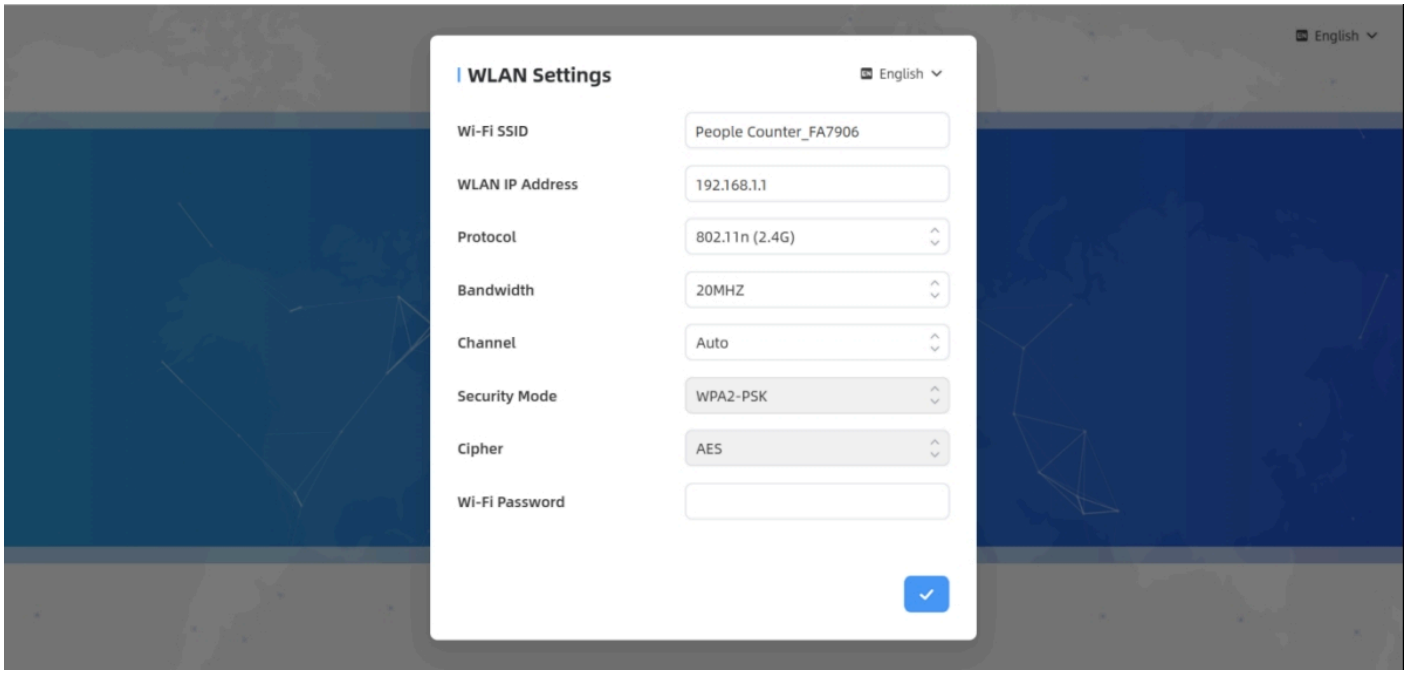
If you need to reset the privacy settings, hold on reset button for 10s to reset device to factory default.



Parameters	Description
Scene Preview	Select video stream preview, static image preview or no image preview as needed. **Video Stream:** Live preview of the video, displaying dynamic scenes and people. **Static Image:** A still image to view the scene. **No Image:** No image displayed.
Image Type	Select Monochrome or Pseudo-color image type. **Monochrome:** Black, white and gray image. **Pseudo-color:** Color-enhanced image.
Resolution	Select Low or High. **Low:** Display a less clear images, but still allow viewing of scenes and moving people **High:** Display clear scenes and people faces

Step 4: After configuration, log in with username (admin) and custom password.

Step 5: Set the Wi-Fi password.



Note:

1. Password and Wi-Fi password must be 8 to 63 characters long and contain numbers, lowercase letters, uppercase letters and special characters. If the password is entered incorrectly five times, the account will be locked for 10 minutes.
2. It is recommended that users regularly update their passwords to enhance device security and prevent unauthorized access.
3. You can click the “forgot password” in login page to reset the password by answering three security questions when you forget the password if you set the security questions in advance.

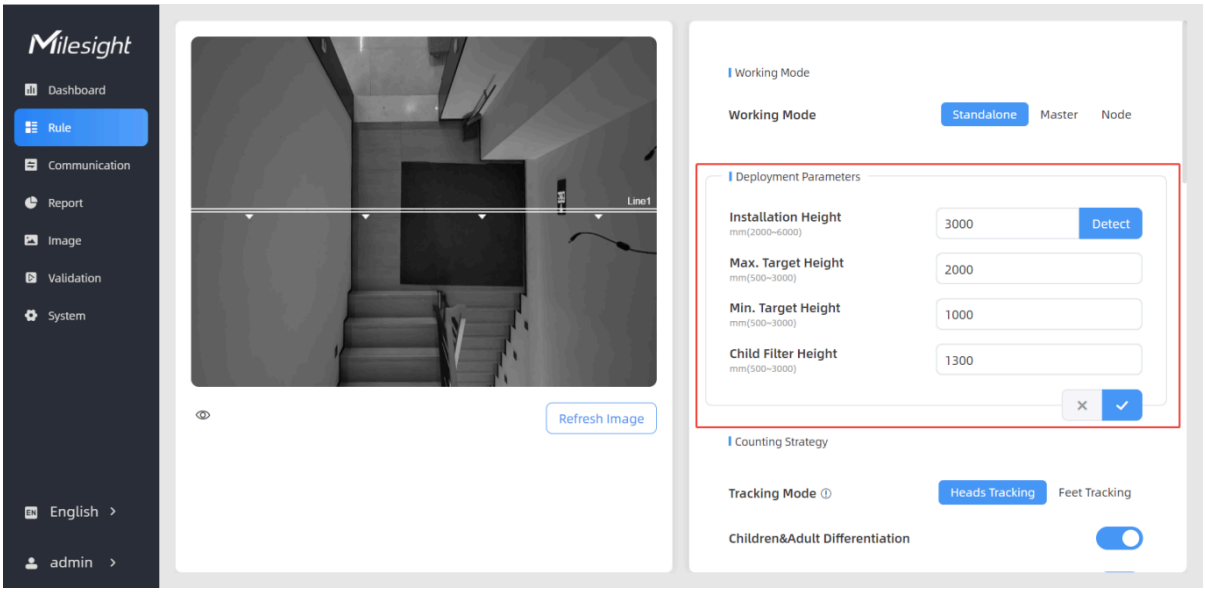
Chapter 6. Operation Guide

Basic Counting Settings

To ensure proper device operation, users are required to complete the basic counting settings first, which includes setting deployment parameters, device strategies, enable line crossing or region people counting.

Deployment Parameters

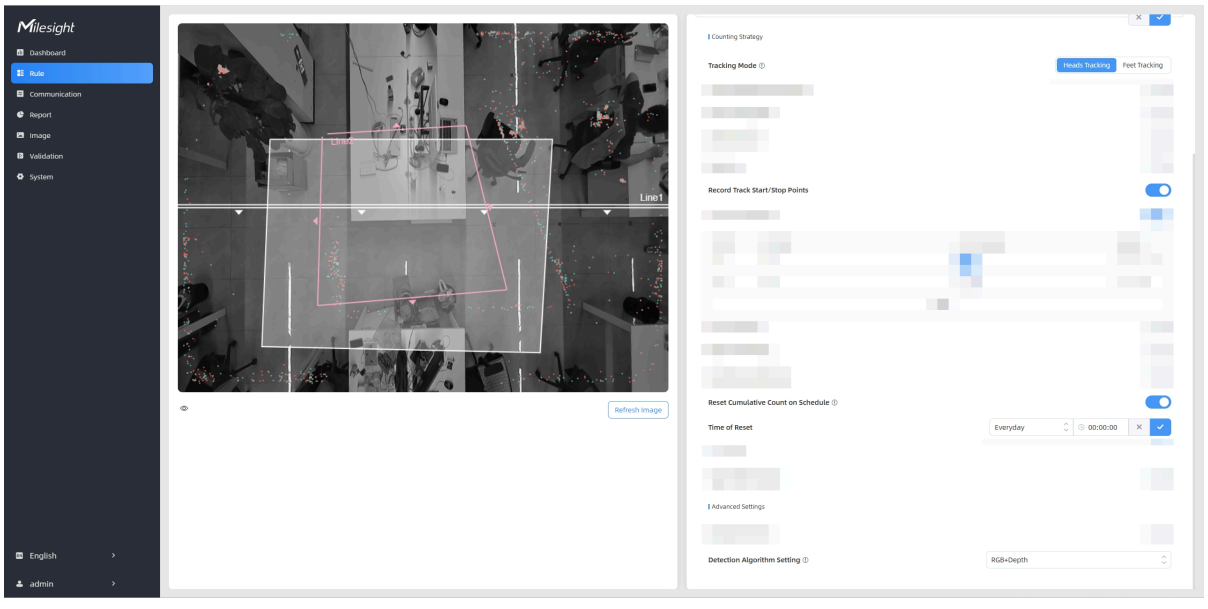
Deployment parameters typically include the installation height of the device, the height of the target to be counted, and the corresponding target height setting when other counting strategies are enabled.

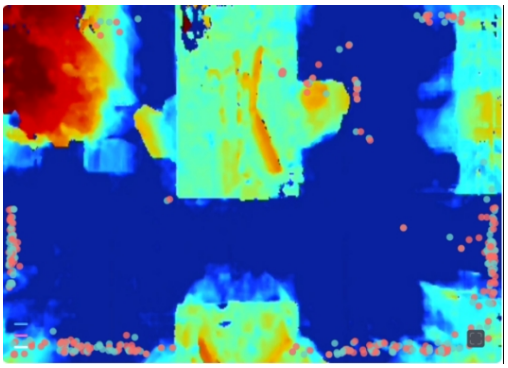


Parameters	Description
Installation Height	Set the device installation height. Click **Detect** to detect the current installation height automatically.

Parameters	Description
	Note: 1. For optimal performance, it is recommended to use attribute recognition functions (such as Gender Recognition, Child & Adult Differentiation, Staff Detection, View Direction Detection) at installation heights below 4 meters. 2. When the ground lacks patterns or textures or during low-light conditions at night, the automatic height detection may be inaccurate.
Max. Target Height	Set the maximum target height, then the device will ignore the objects higher than this setting value.
Min. Target Height	Set the minimum target height, then the device will ignore the object shorter than this setting value.
Child Filter Height	Set the max child height when children distinction feature is enabled.

Device Strategies



Parameters	Description
Tracking Mode	Select the tracking mode of counting, including Heads Tracking and Feet Tracking: When the device detects both feet of the target in the FOV, it generates a trajectory line based on the movement path of the feet. When the target's head and shoulders are detected, a corresponding trajectory line is generated according to the movement path of the head and shoulders.
Detection Algorithm Setting	Select the detection algorithm according to the real applications. **RGB+Depth:** Suitable for most scenarios. **RGB:** Switch this mode when there are many false detections. Suitable for scenes with a large number of non-human objects mistakenly detected as people. For instance, the entrances and exits of a warehouse. **Depth:** Switch this mode when there are many false detections. Suitable for scenes with a large number of human-like objects. For example, a doll shop.
Record Track Start/Stop Points	Enable to record the start track points and end track points of people in the live view for the position adjustment of the detection line. It can store 5000 track points at most, with green as the starting point and red as the stop point. 
Reset Cumulative Count on Schedule	Enable to periodically reset cumulative count on schedule. Cumulative Count includes:

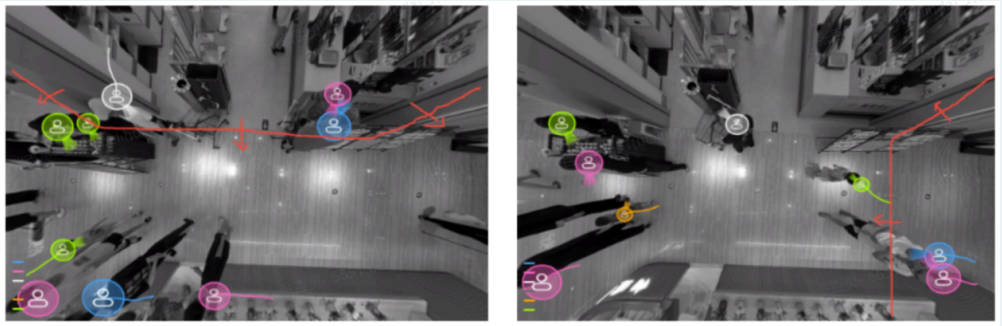
Parameters	Description
	Total In/Out counting of each detection line. Max./Avg. Dwell Time of each detection region. Total Effective Audience and Avg. Attention Time of each attention region.

Line Crossing Counting

Users can draw detection lines to count the number of people entering or exiting.

Note:

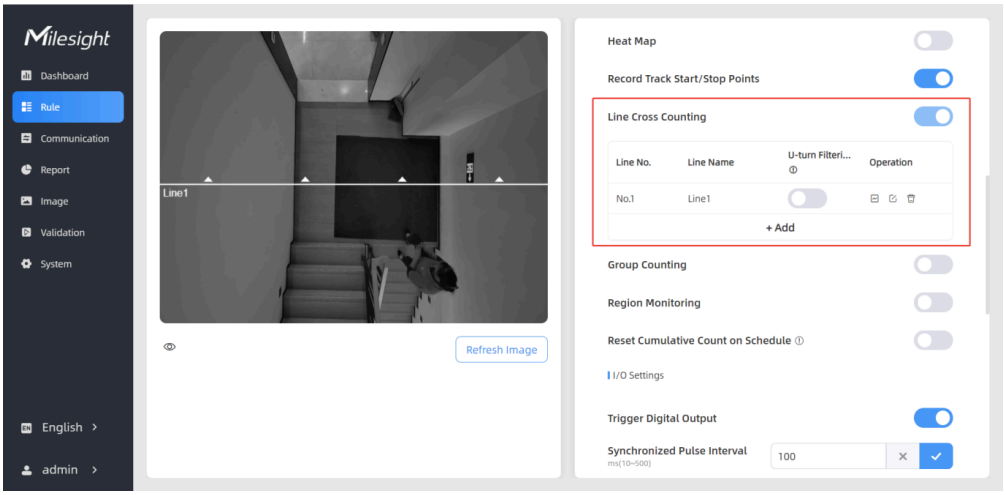
1. Ensure that the detected target can pass through the detection line completely. It's recommended that the detection line is perpendicular to the In/Out direction and on the center of the detection area without other objects around.



2. Redundant identification spaces are needed on both sides of the detection line for the target detection. This ensures stable target recognition and tracking before crossing the detection line, which will make the detection and count more accurate.
3. It is recommended to draw the detection line as close to the center of the image as possible, and ensure that the target has already been detected before crossing the line.

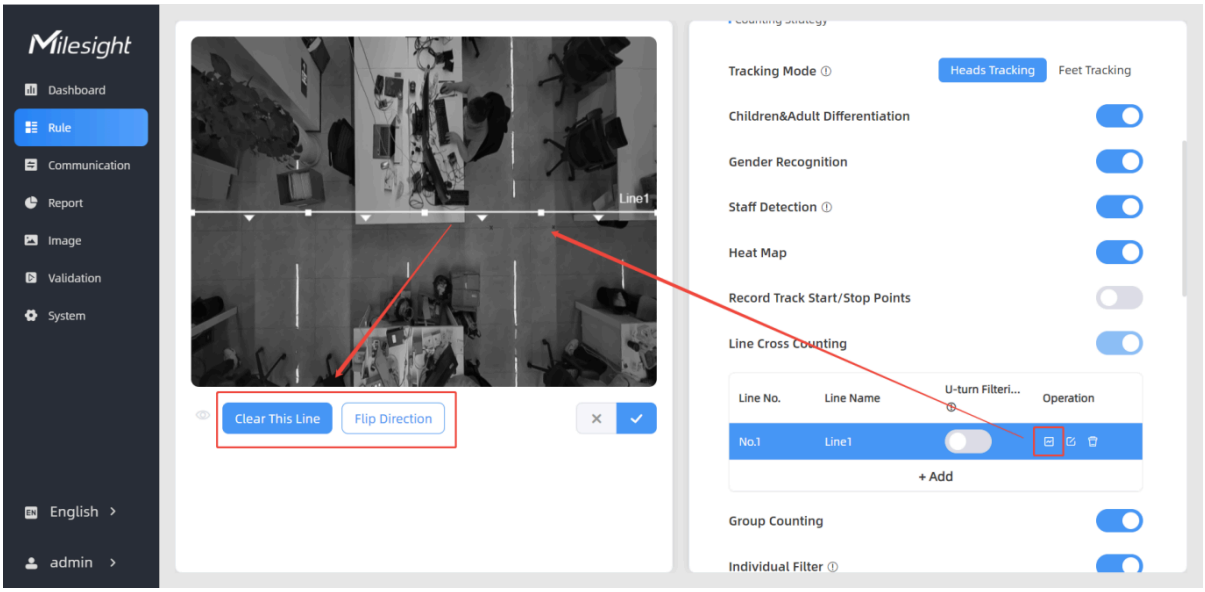
Step 1: Please ensure that the deployment parameters and device strategies have been configured before using this feature.

Step 2: Find the list of detection lines. Click **+Add** to draw a new detection line or click to edit the existed detection line on the live view.



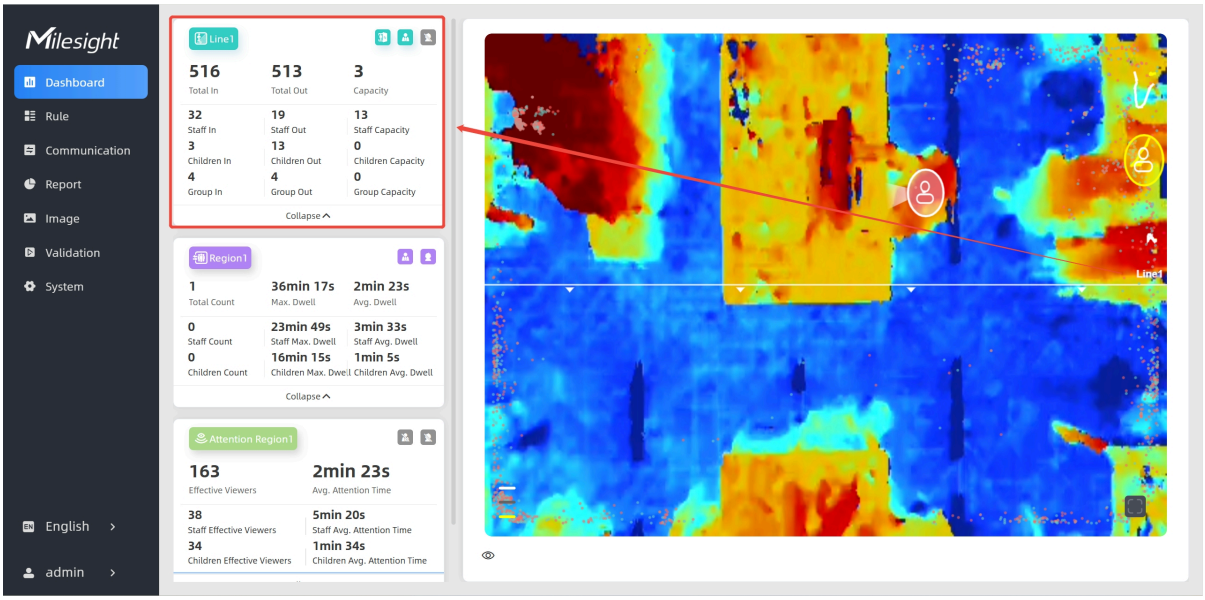
Step 3: Left-click to start drawing and drag the mouse to draw a line, left-click again to continue drawing a different direction edge, and right-click the mouse to complete the drawing. The line can be dragged to adjust the location and length. One device supports at most 4 broken lines with maximum each.

Step 4: If users want to redraw this line, click **Clear This Line** or drag the vertices of the broken line to adjust. The arrow direction of the detection line depends on your drawing direction. If users need to flip the line, click **Flip Direction.** Then click to finish drawing.

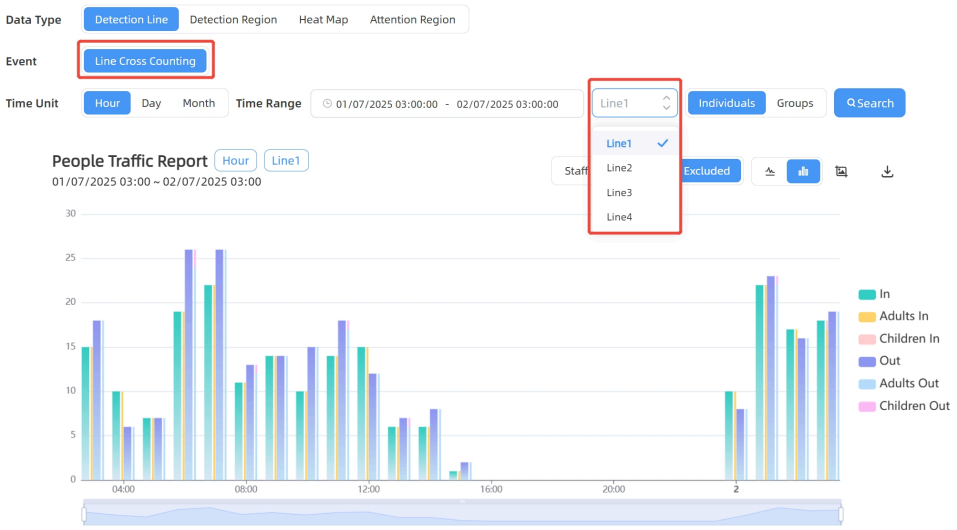


Step 5: Users can click to customize the name of line. If users need to delete a certain line, click .

Step 6: Users can see the effect in Dashboard.



To view line's data for a certain time period and generate report, please refer to Report.



```
"line_periodic_data": [{
        "line": 1,
        "line_name": "Line1111111111111111111111111111",
        "line_uuid": "9a0440de-3188-4f6d-b886-bb20c97bd26b",
        "total": {
            "female_in": 0,
            "female_out": 0,
            "in": 0,
            "male_in": 0,
            "male_out": 0,
            "out": 0
        },
```

```
"line_total_data": [{
        "line": 1,
        "line_name": "Line1111111111111111111111111111",
        "line_uuid": "9a0440de-3188-4f6d-b886-bb20c97bd26b",
        "children": {
            "female_in_counted": 0,
            "female_out_counted": 0,
            "in_counted": 0,
            "male_in_counted": 0,
            "male_out_counted": 0,
            "out_counted": 0
        },
        "total": {
            "female_in_counted": 0,
            "female_out_counted": 0,
            "in_counted": 0,
            "male_in_counted": 0,
            "male_out_counted": 0,
```

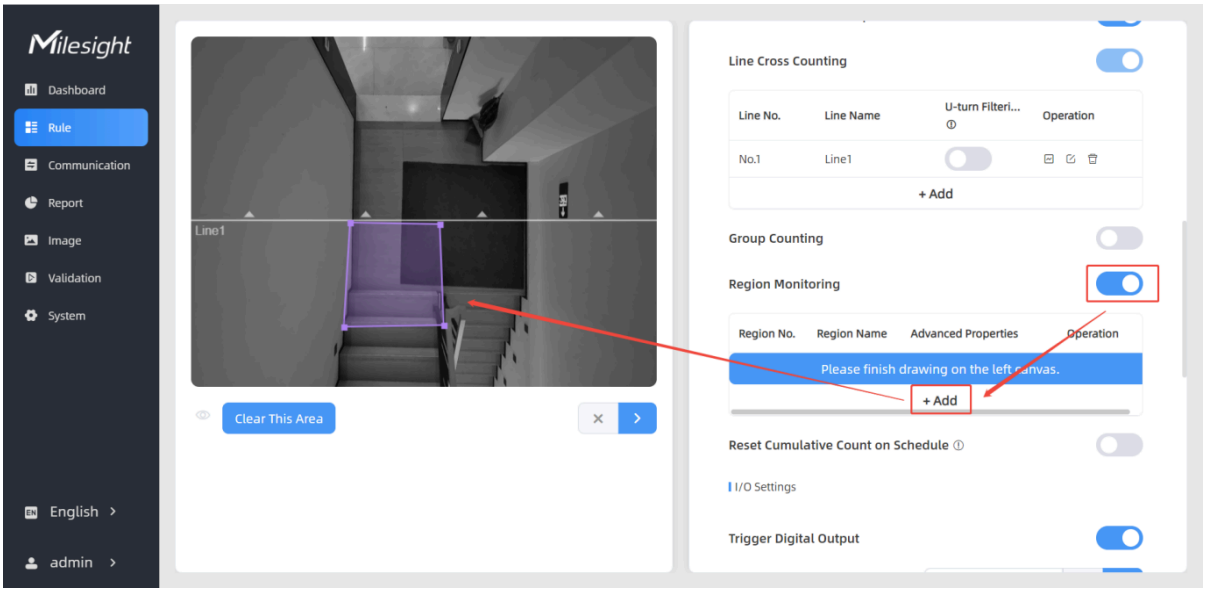
```
"line_trigger_data":
[
{
            "children": {
            "female_in": 8,
            "female_out": 2,
            "in": 14,
            "male_in": 8,
            "male_out": 2,
            "out": 6
        },
        "group": {
            "in": 0,
            "out": 0
        },
```


Region People Counting

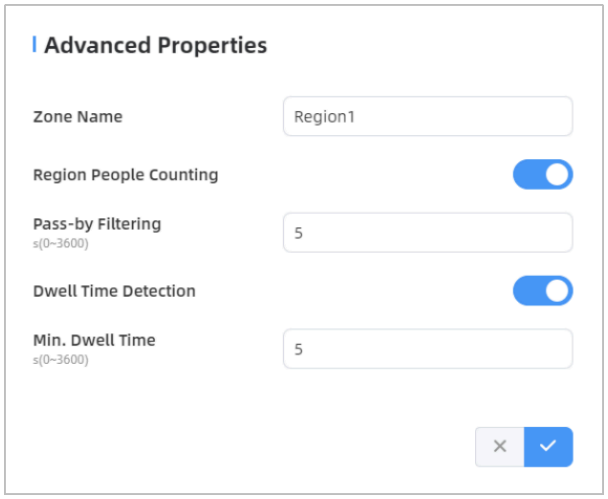
The device supports monitoring the number and the dwell time of people in the region, providing more valuable analysis data.

Step 1: Please ensure that the deployment parameters and device strategies have been configured before using this feature.

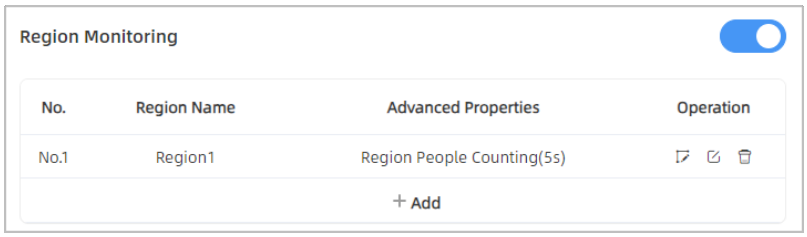
Step 2: Enable Region Monitoring. Click **+Add** to add the region monitoring on the live view. Up to 4 regions are supported with maximum 10 segments each.



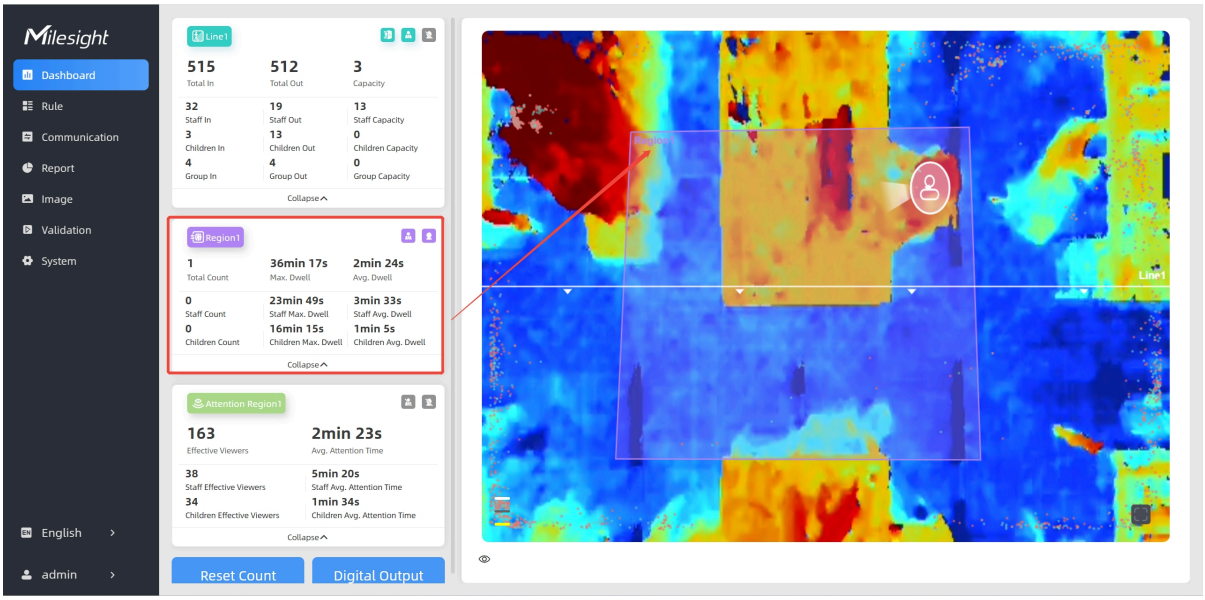
Step 3: Customize the zone name and enable Region People Counting or Dwell Time Detection as needed.



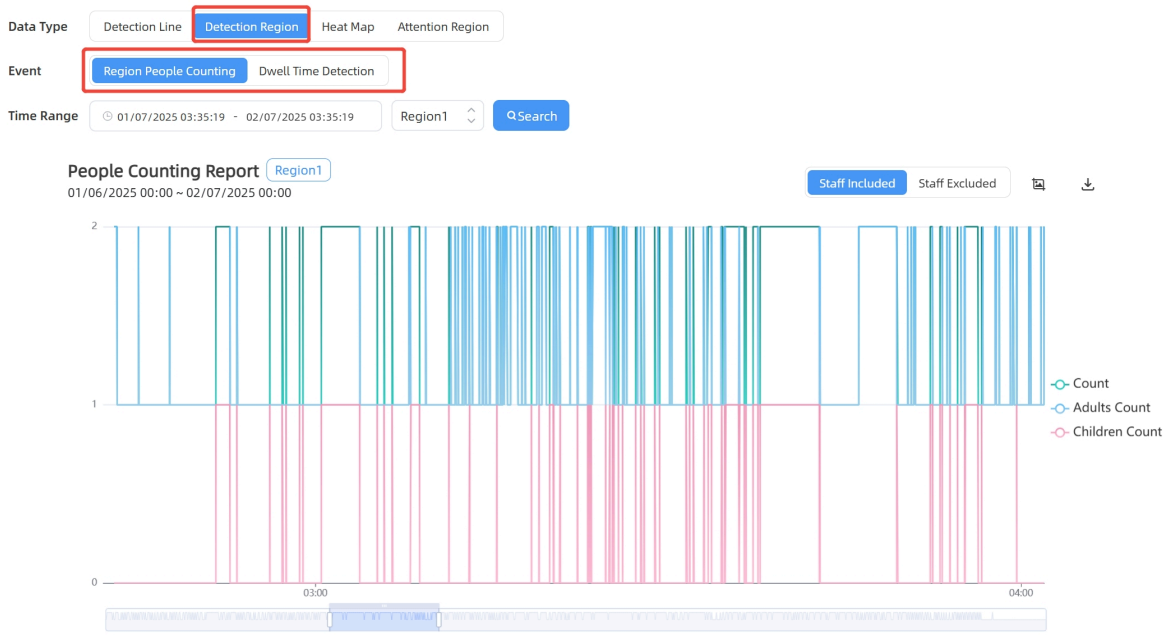
Step 4: The configuration is displayed in the list after the configuration is complete. You can redraw the areas by clicking the redraw button in the list. Click the edit button to modify the advanced settings of the areas or click delete button to delete the areas separately.



Step 5: Users can see the effect in Dashboard.



To view region's data for a certain time period and generate report, please refer to Report.



Be able to view "region_data" in the periodic report and "region_trigger_data" in the trigger report.


```
"region_data": {
    "dwell_time_data": [{
            "avg_dwell_time": 308367,
            "children_avg_dwell_time": 0,
            "children_max_dwell_time": 0,
            "female_avg_dwell_time": 0,
            "female_max_dwell_time": 519934,
            "male_avg_dwell_time": 0,
            "male_max_dwell_time": 96799,
            "max_dwell_time": 519934,
            "staff_max_dwell_time": 1522,
            "staff_avg_dwell_time": 1522,
            "region": 1,
            "region_name": "Region1",
            "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac"
        }
    ],
    "region_count_data": [{
            "total": {
            "current_female": 0,
            "current_male": 1,
            "current_total": 2
        },
        "children": {
            "current_female": 0,
```

```
"region_trigger_data":
{
        "region_count_data":
[
            {
            "total": {
                "current_female": 0,
                "current_male": 1,
                "current_total": 2
            },
            "children": {
                "current_female": 0,
                "current_male": 1,
                "current_total": 2
            },
            "staff": {
                "current_female": 0,
                "current_male": 1,
                "current_total": 2
            },
            "region": 1,
            "region_name": "Region1",
            "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac"
                }
```

Advance Property Settings

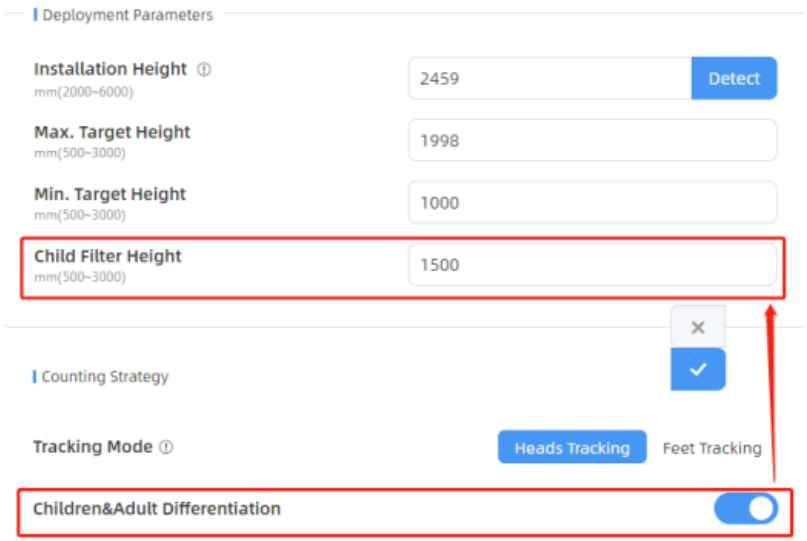
The advanced property function uses AI recognition to intelligently distinguish various target properties. Before using the advanced property function, please ensure that you have completed the setting of the basic counting function.

Children & Adult Differentiation

The device identifies individuals below the child filter threshold as children.

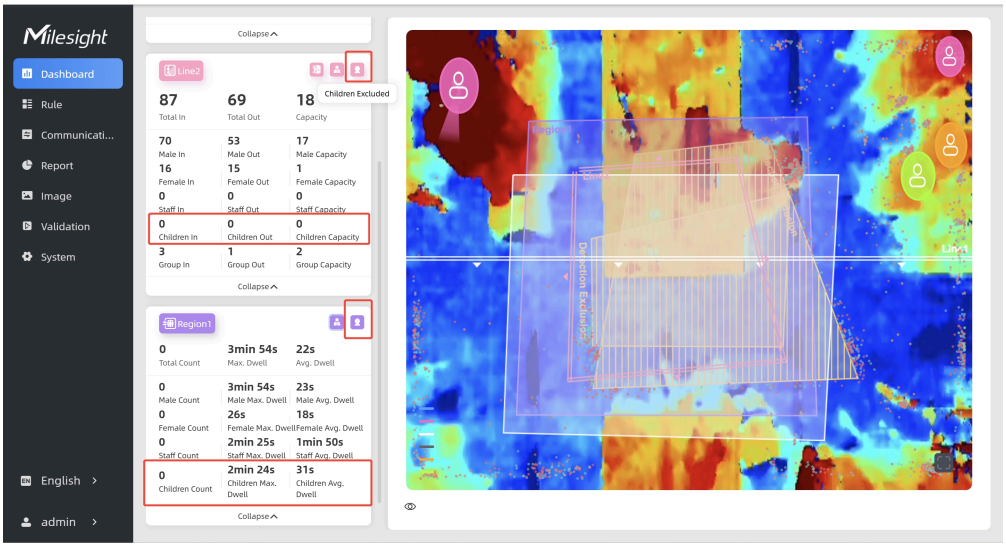
> **Note:**
> The operating installation height of this function is 2.2 ~ 4m.

Step 1: Enable **Children & Adult Differentiation**, it will display the development parameters for child filter height.

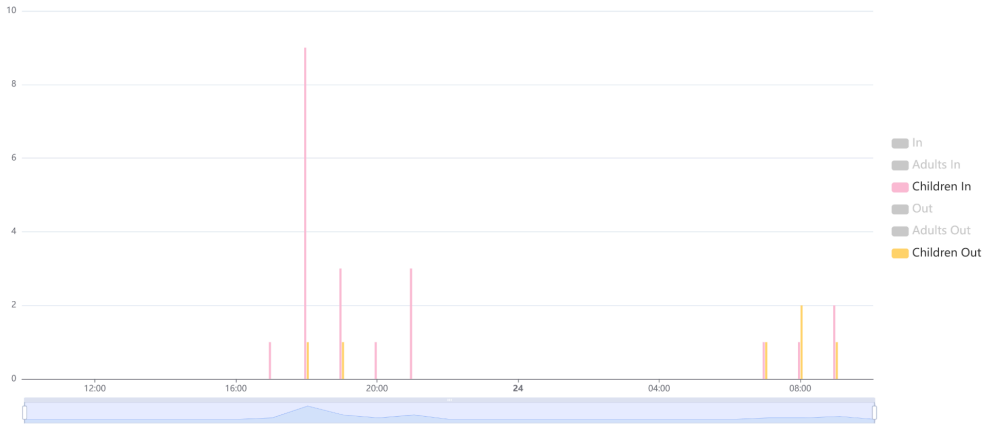


Step 2: Enter a threshold value, anyone with a height below this will be identified as a child by the device. Then click to finish configuration.

Step 3: Users can see the effect in Dashboard.



To view children's data for a certain time period and generate report, please refer to Report.



Users can also view the data through periodic report and trigger report.

Notice:

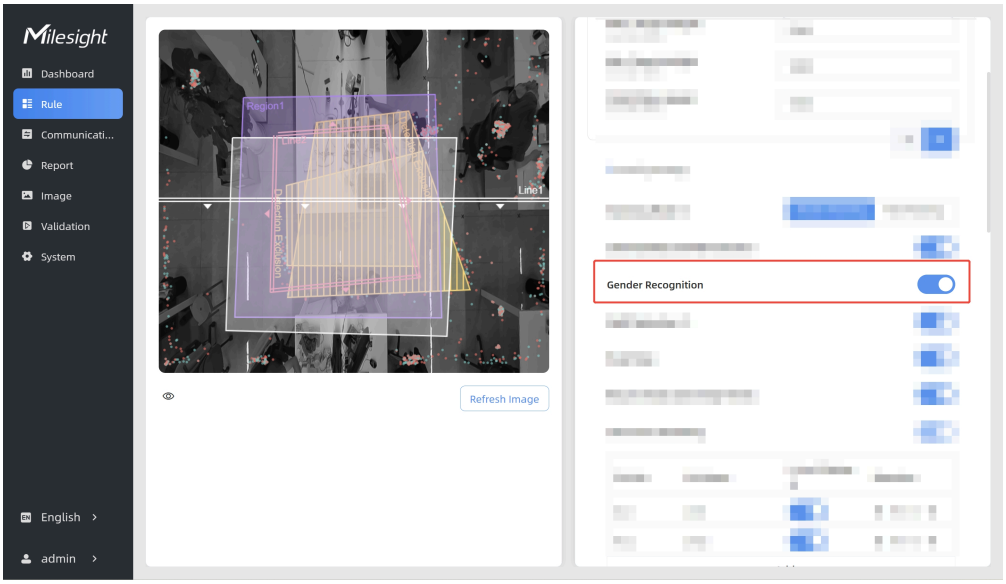
Children under 1.1m in height, children in strollers/shopping carts, children being held, and children covered by an adult have a probability of undercounting.

Gender Recognition

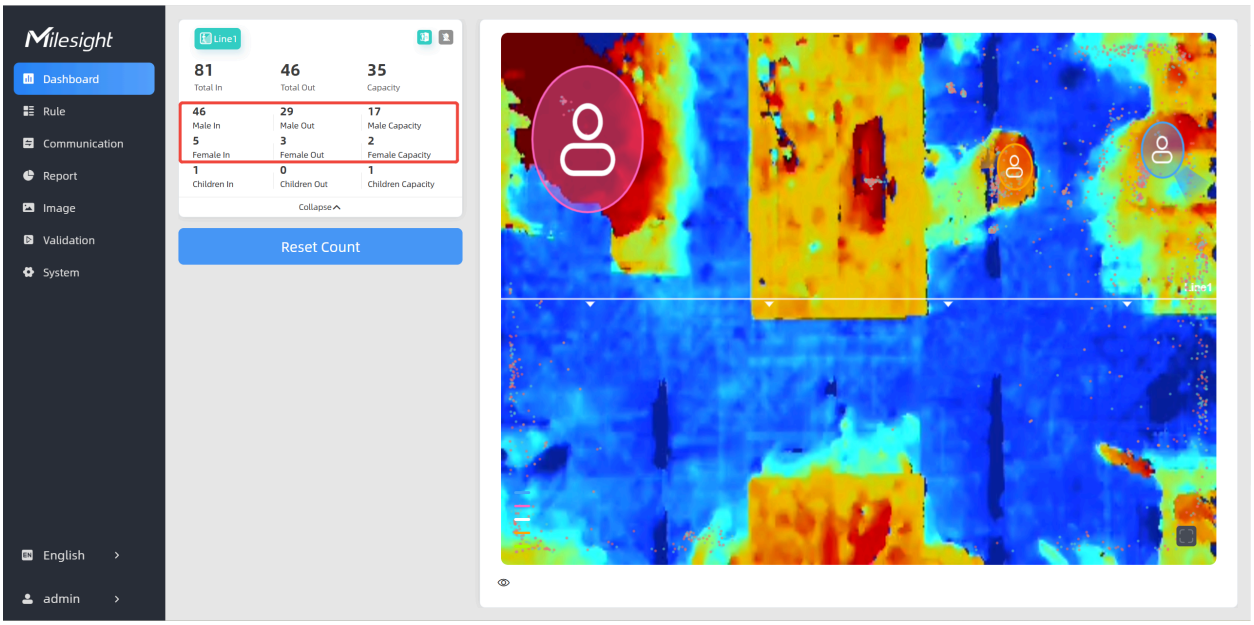
The device will detect the people who are male or female.

Note:

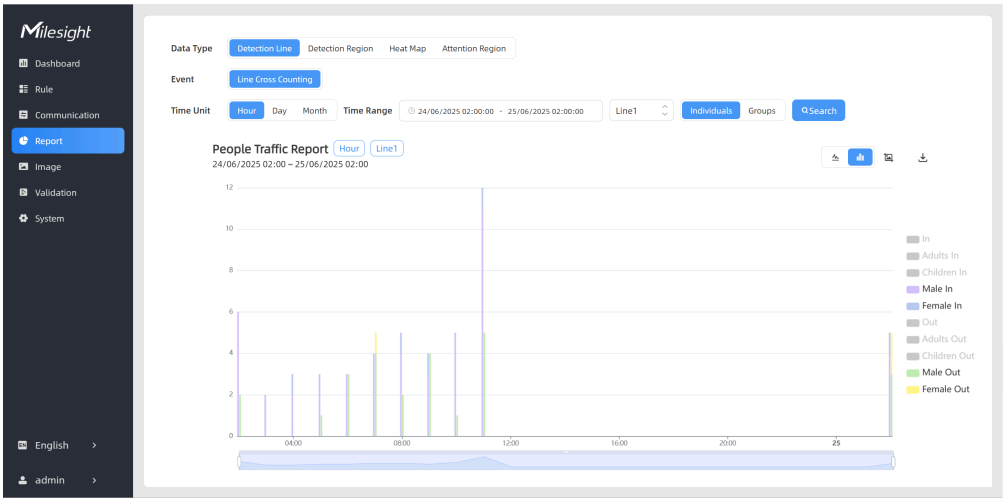
The operating installation height of this function is 2.2 ~ 4m.



Enable **Gender Recognition**, users can see the effect in Dashboard.



To view males' and females' data for a certain time period and generate report, please refer to Report.



Users can also view the data through periodic report and trigger report.

Notice:

1. Gender detection is prone to misdetection when the target has longer hair for men and shorter hair for women.
2. The device does not detect men and women when hair/clothing color is close to the color of the floor or when wearing large concealing accessories such as head scarves.

Staff Detection

The device will detect staff members who wear a designated accessories.

Important:

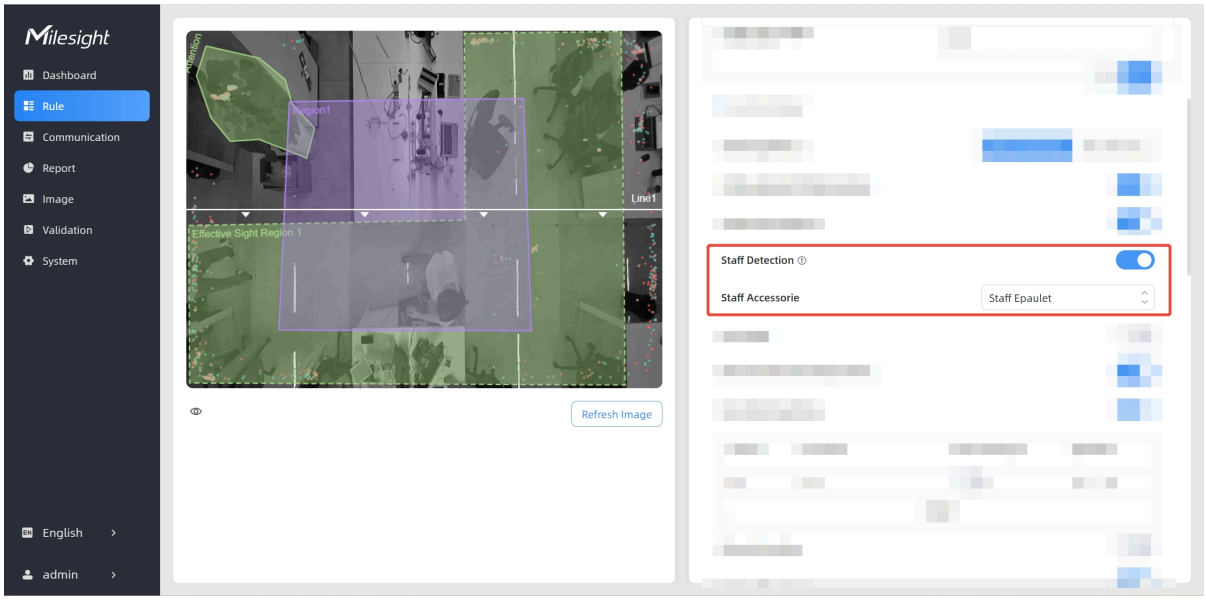
1. The operating installation height of this function is 2.2 ~ 4m.
2. The optimum detection height for **badges** is 2.2 ~ 3.5m. When the height exceeds 3.5 meters, the probability of missed detection will increase significantly due to reduced clarity.

Step 1: Check the optional accessories are complete in the unit's box. For optimal detection, it is suggested to use the staff accessories provided by Milesight. Staffs are required to wear relevant accessories in designated locations.

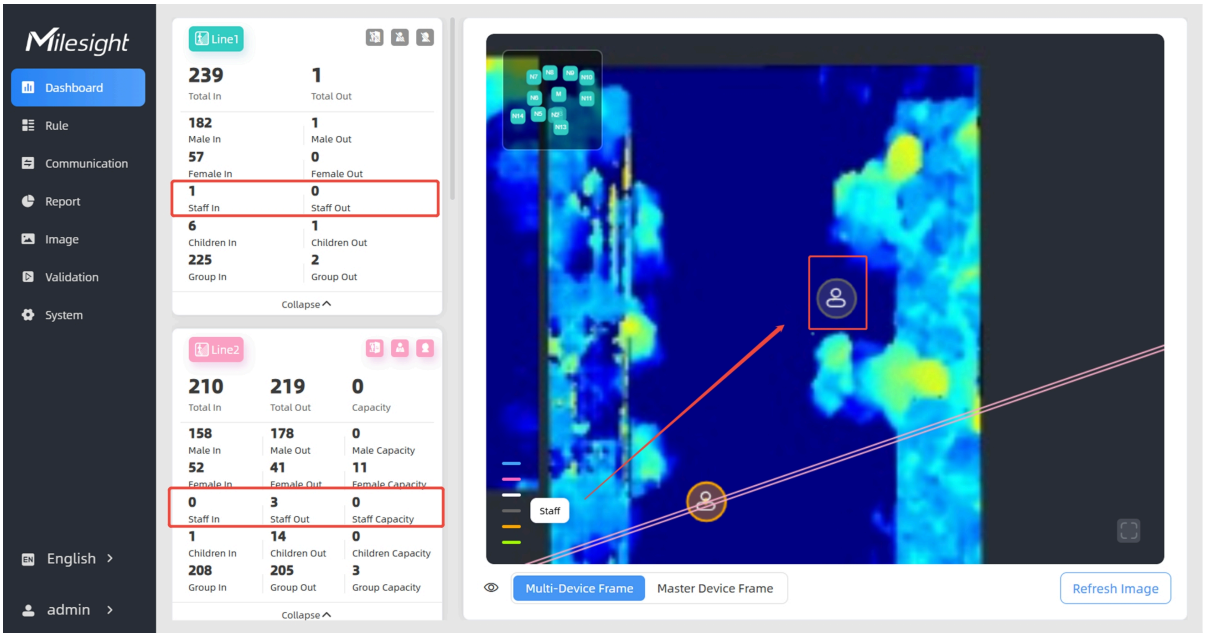
Note:

1. Staff accessories has two color options: black and red. If staff's clothes are more dark, it is recommended to use red staff accessories, to improve detection accuracy.
2. Staff lanyards, badges, epaulettes are subject to separate testing and should not be mixed. It means multiple types of accessories should not be present in the same scene at the same time.
3. Please ensure that the accessories are not obstructed by collars, scarves, hair, or other objects when worn, and try to keep it fully visible.

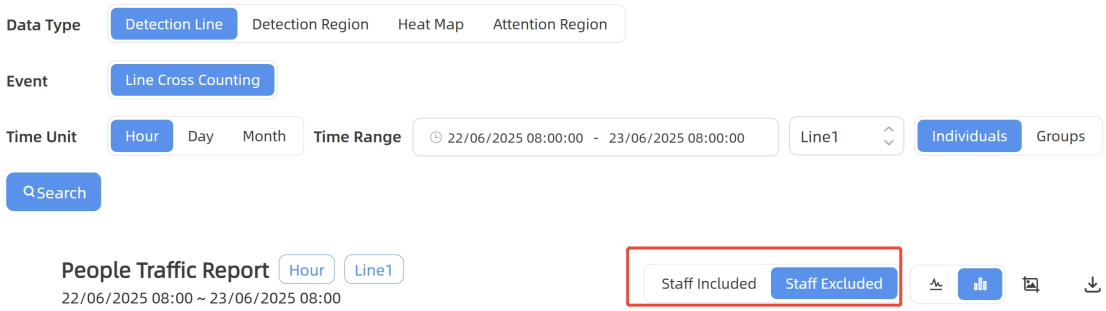
Step 2: Enable **Staff Detection**, select the corresponding accessory.



Step 3: Users can see the effect in Dashboard.



To view staffs' data for a certain time period and generate report, please refer to Report.



Users can also view the data through periodic report and trigger report.

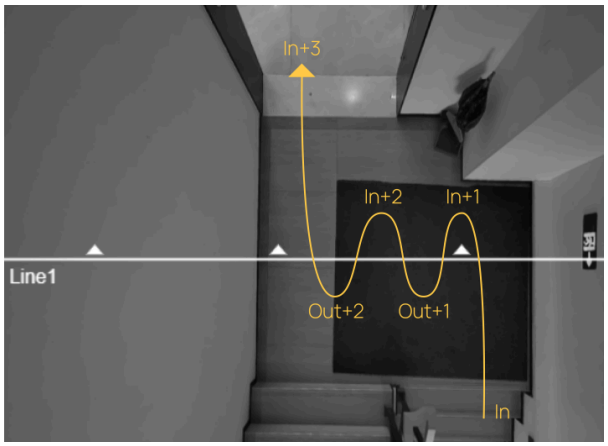
Notice:

1. When two people walk side by side, the person not wearing an staff accessory can easily be detected as an staff, while the person wearing an accessory cannot.
2. Wearing clothing with patterns similar to the staff lanyard (such as striped clothing) may result in false detection.
3. If the staffs' passing speed exceeds 2.5 m/s, there may be missed detections.

U-turn Filtering

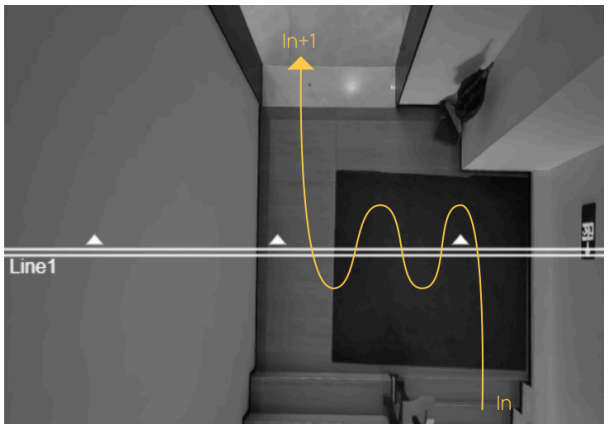
The device supports the U-turn filtering function, filtering out the people who are actually not in / out of the entrance, to avoid repeated counting. Users can draw an area for every line and the device will count the In and Out values only when people pass this area.

Disable U-turn filtering:



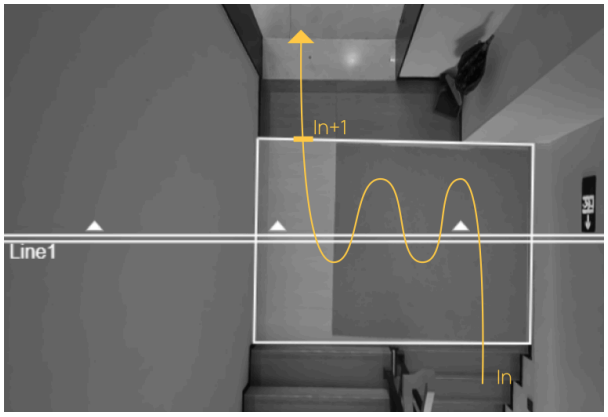
Enable U-turn filtering:

The device automatically filters out the wandering crowd in the live view.

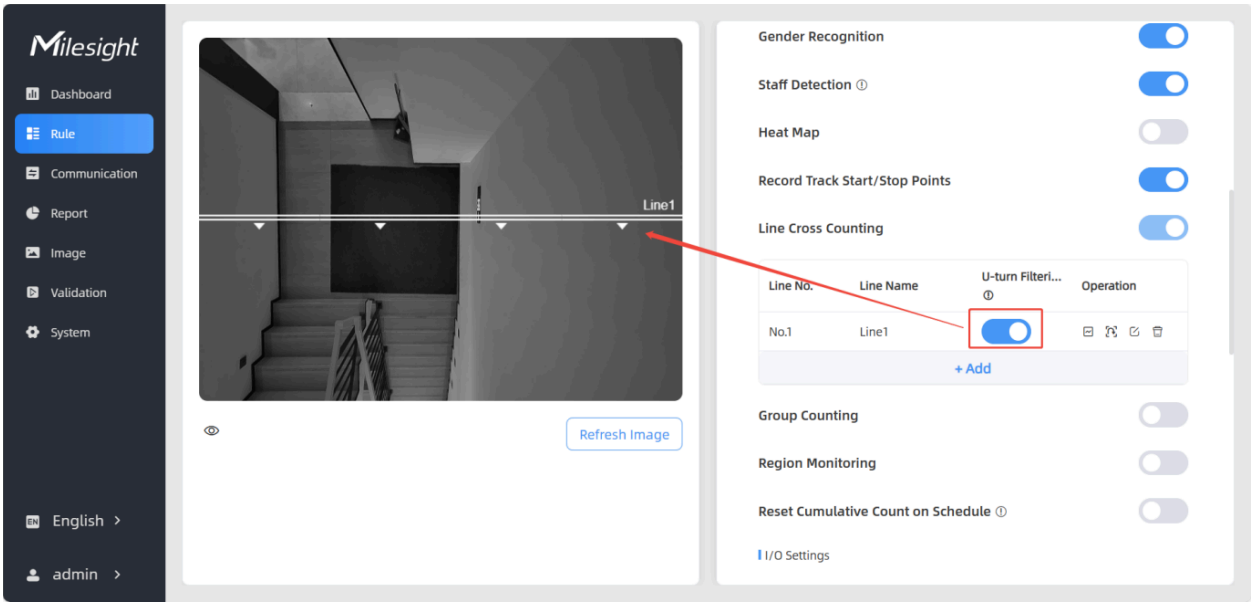


Enable U-turn filtering & Draw areas:

When you care about the timeliness of the statistics, you can choose to draw the U-turn area.

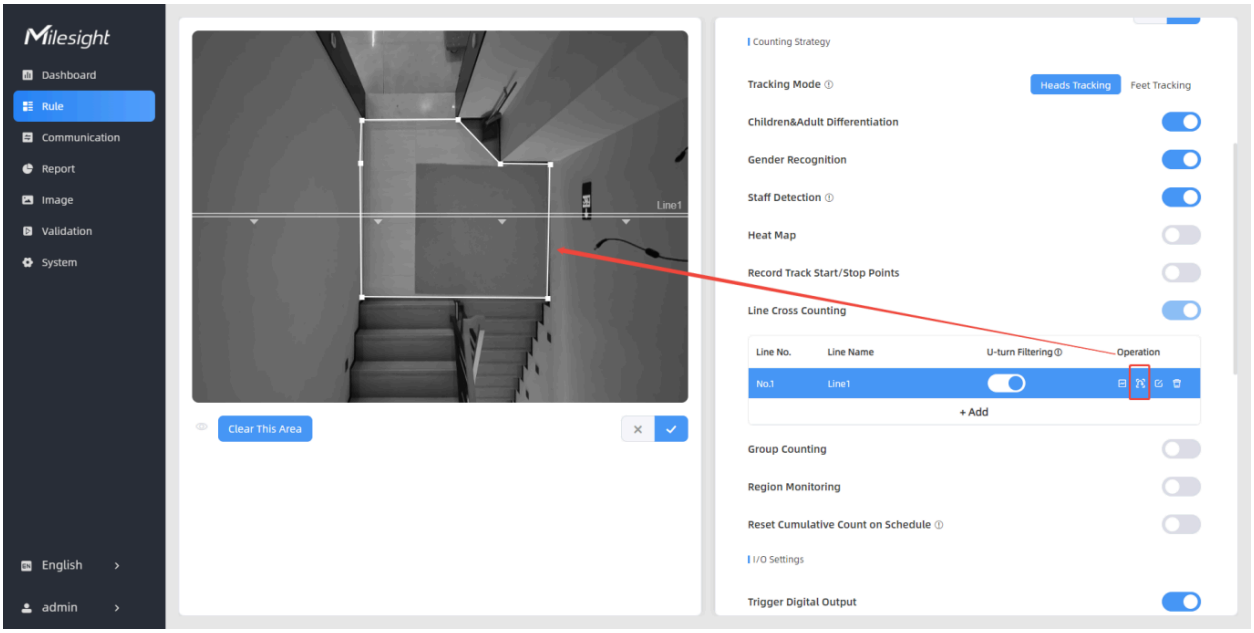


Step 1: Enable U-turn Filtering to filtering repeated counting.



If you requires to use U-turn area filtering, please continue below steps:

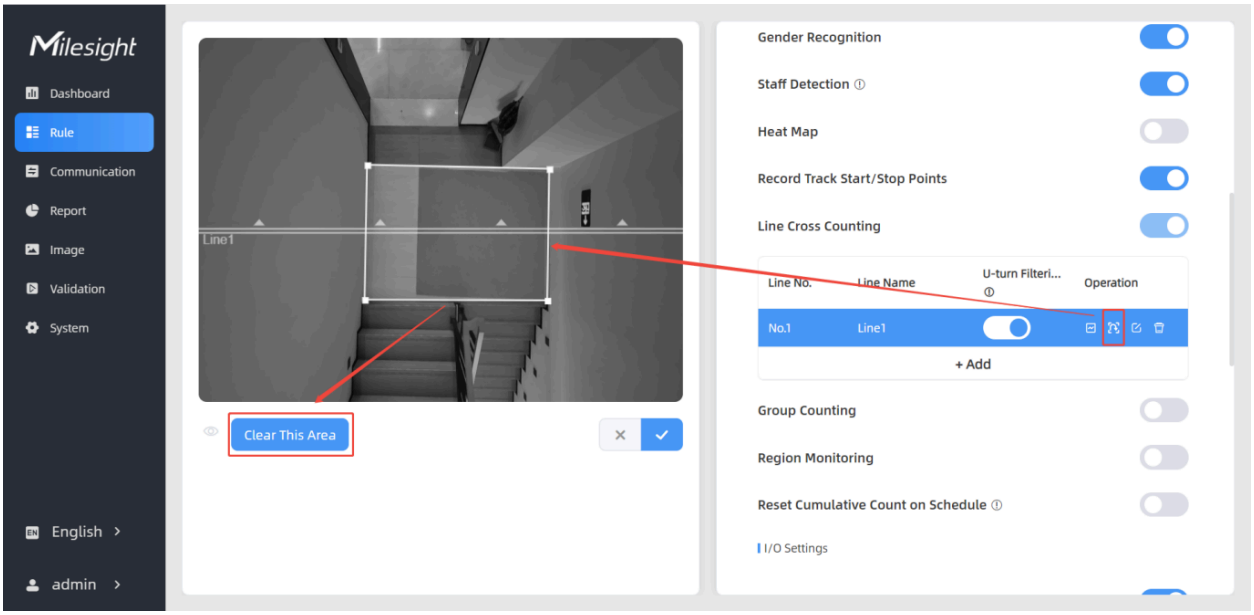
Step 2: Click to edit U-turn areas for existed detection line on the live view.



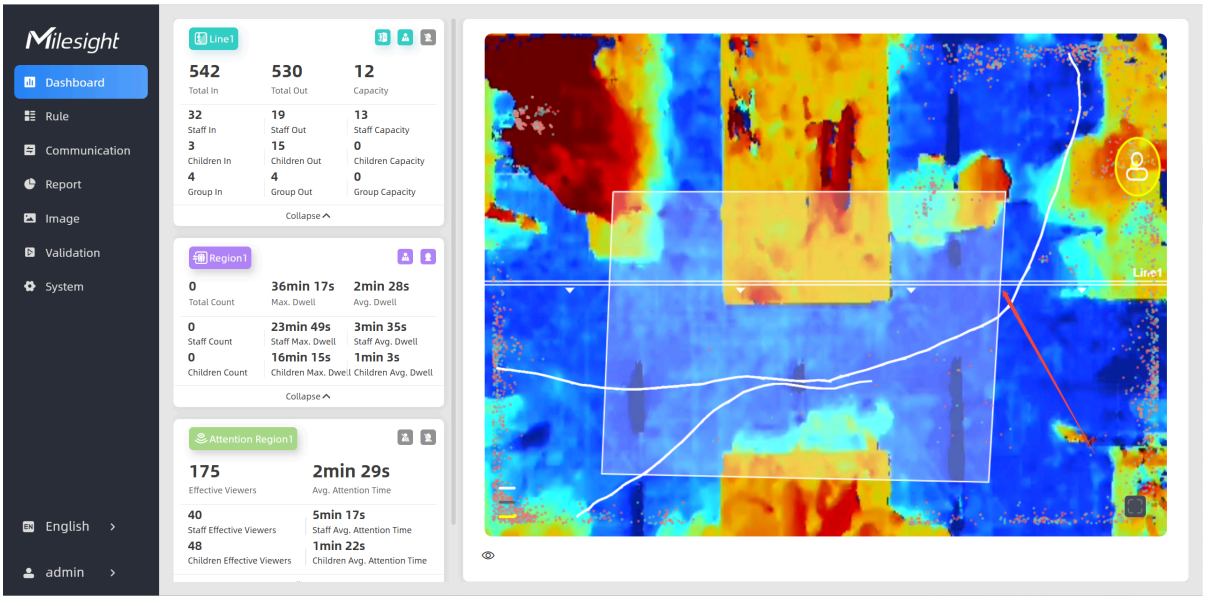
Step 3: Left-click to start drawing and drag the mouse to draw an edge. Then left-click again to continue drawing a different direction edge. Right-click the mouse to complete the drawing. The area can be dragged to adjust the location and length. One device supports up to 4 areas with maximum 10 segments each.

Step4: If users want to redraw the area, click **Clear This Area** or drag the vertices of the area to adjust. Then click  to finish drawing.

Step 5: If users need to delete a certain U-turn area, click  , then click **Clear This Area**.

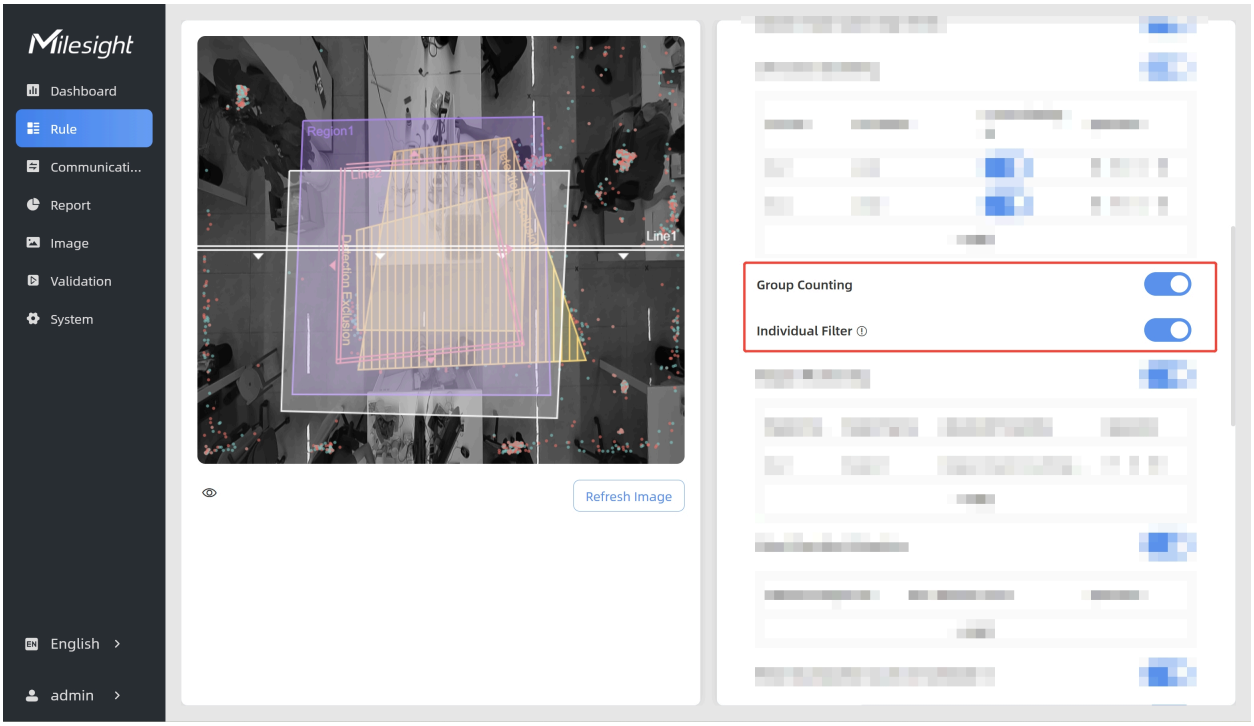


Step 6: Users can see the effect in Dashboard.



Group Counting

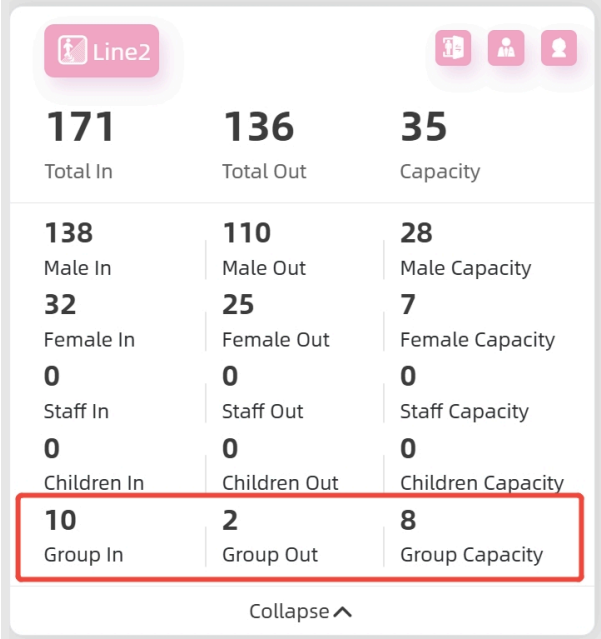
The device is capable of simultaneously recognizing and counting multiple people entering or passing through the detection area during the same period of time. By analyzing distance, movement direction, and speed differences, it provides deeper insights into customers' behaviors.



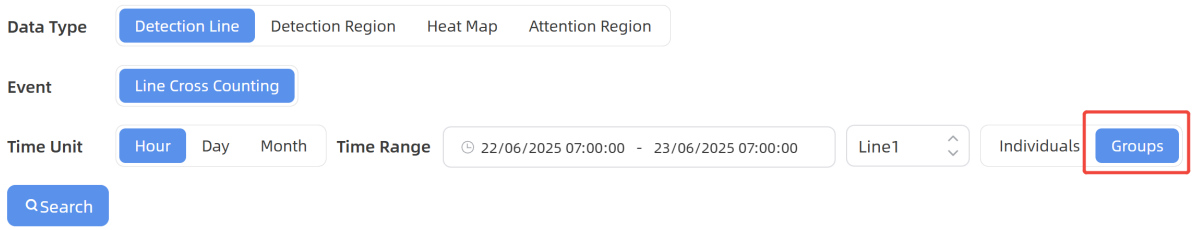
Step 1: Click to enable the **group counting** function, the device considers a group of people as a single group.

Step 2: Choose to enable or disable **Individual Filter**. When enabled, device will only count two or more individuals as a group.

Step 3: Users can see the effect in Dashboard .



To view groups' data for a certain time period and generate report, please refer to Report.



Users can also view the data through periodic report and trigger report.

View Direction Detection

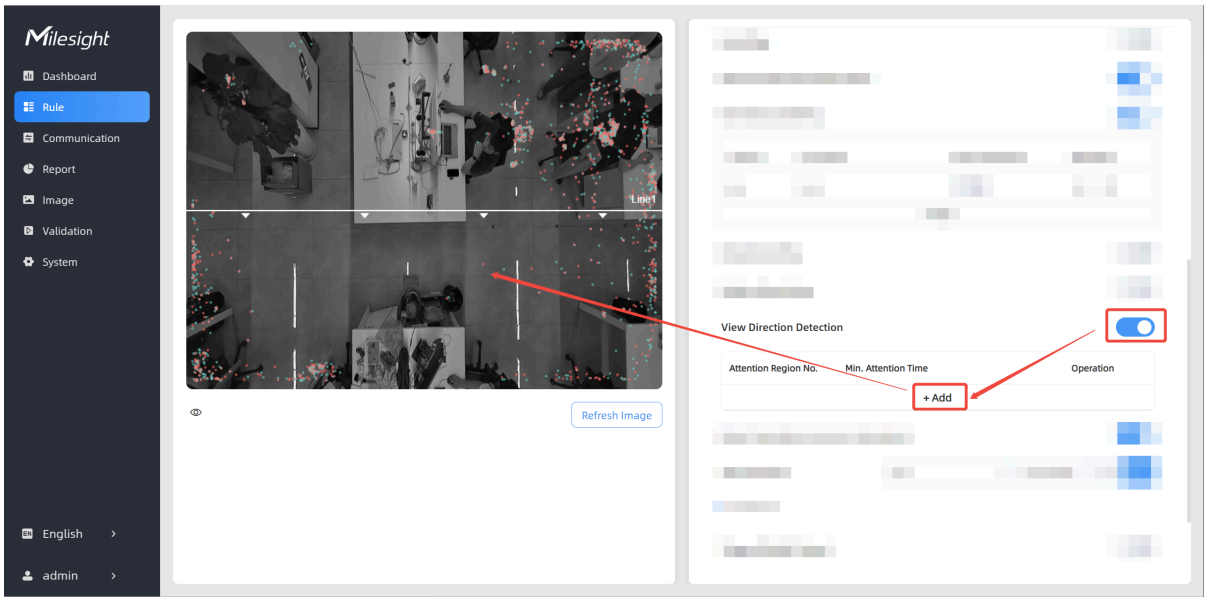
The device is able to effectively evaluate the actual reach of the advertisement by tracking the target's view track.

Rather than directly tracking the specific line of sight of the eyeballs, the device recognizes the direction of vision by detecting the orientation of the target's head. Therefore, if the target rotates eyes but keeps head still, the device may not accurately sense the change in line of sight.

Important:

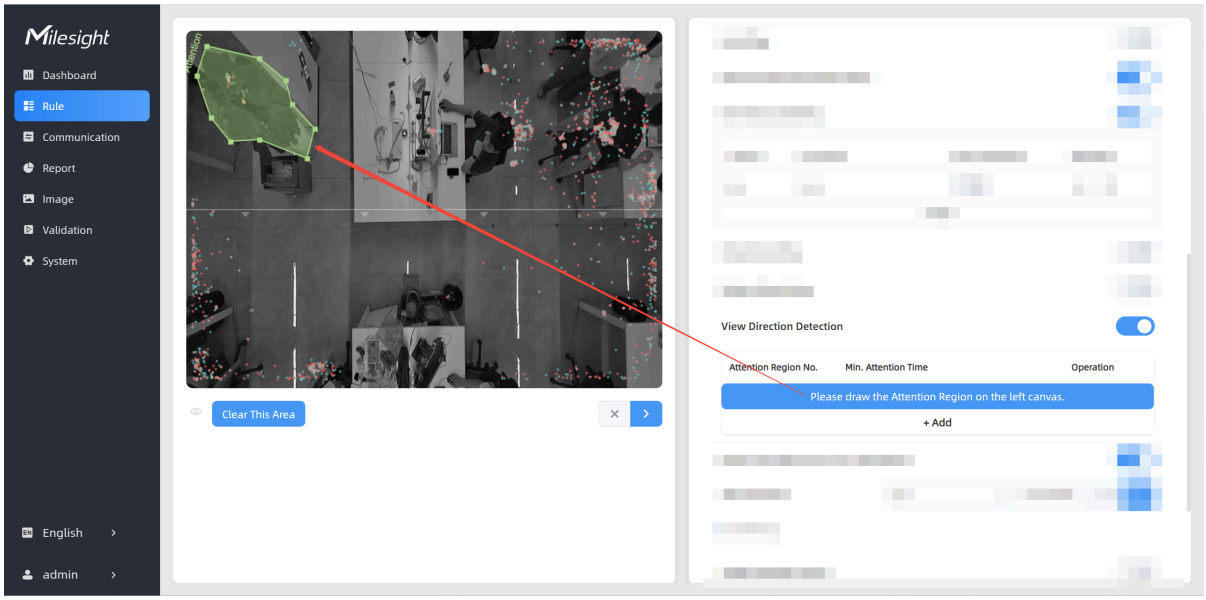
1. The operating installation height of this function is 2.2 ~ 4m.
2. This feature is Not Supported when tracking mode is Feet Tracking.
3. This feature is only available in Standalone mode because the presentation of vision direction may differ when multiple devices are stitched.

Step 1: Enable **View Direction Detection**, click **+Add** to drawing on the live view.



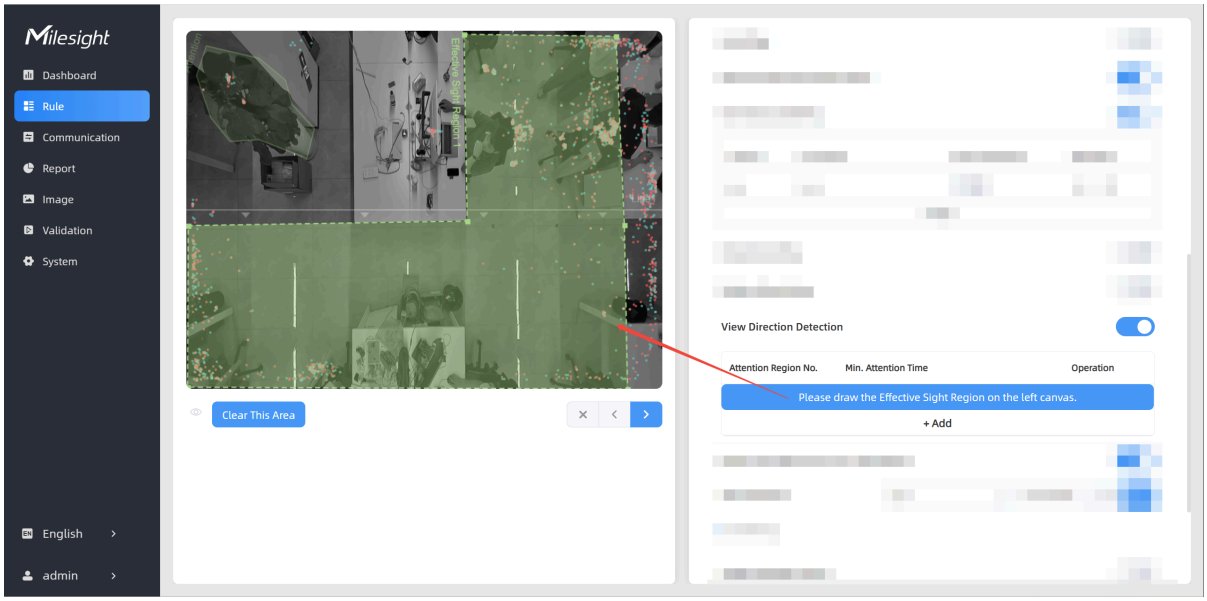
Step 2: Draw the Attention Region which requires attention to find out the effectiveness of such as billboards, new product displays, or shelves within.

Left-click to start drawing and drag the mouse to draw an edge. Then left-click again to continue drawing a different direction edge. Right-click the mouse to complete the drawing. The region can be dragged to adjust the location and length. One device supports up to 6 regions with maximum 10 segments each. Then click ›.



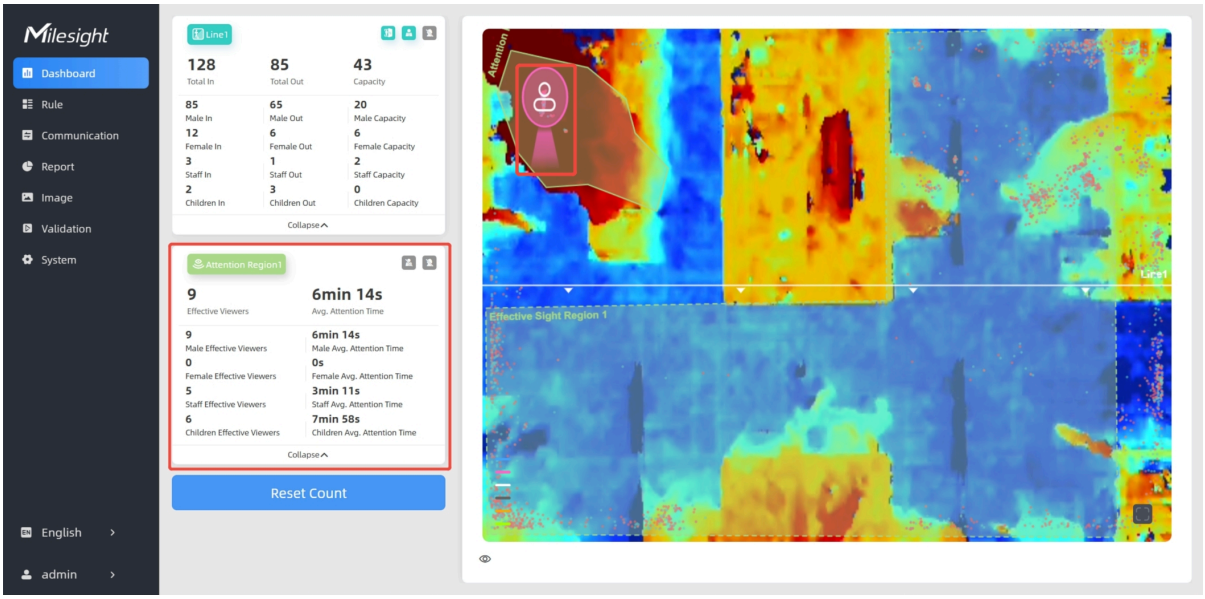
Step 3: Draw the Effective Sight Region. Within this region, the device analyzes the direction of the target's gaze, and if it overlaps with the Attention Region and remains there for more than 1 second, it begins to accumulate the duration of attention. If the line of sight moves out of the Attention Region, the timing is paused; when it overlaps again, accumulation resumes. Each device supports up to 6 regions, with a maximum of 10 segments per region.

Follow the same steps as in the previous step. Then click  .

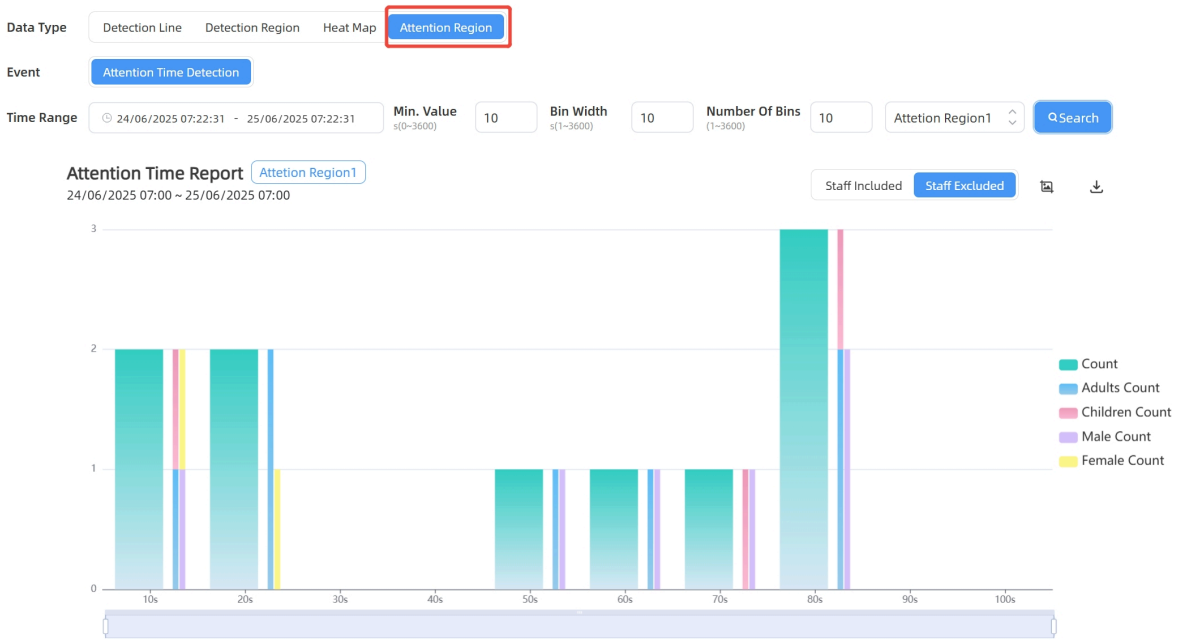


Step 4: Set Min. Attention Time. When the duration of the overlap of the target's gaze direction with the Attention Region exceeds the set threshold, it will be considered as a Effective Viewer. Click to finish the configuration.

Step 5: Users can see the effect in Dashboard.



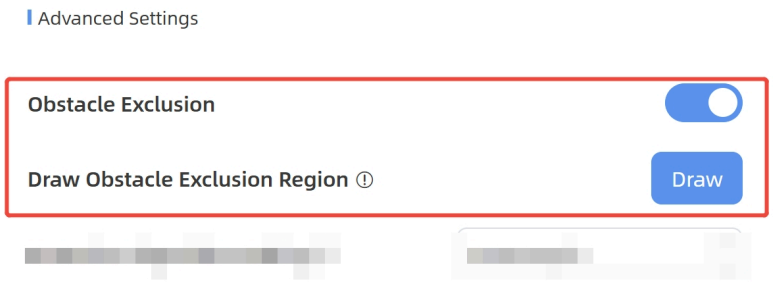
To view attention region's data for a certain time period and generate report, please refer to Report.



Users can also view "attention_region_total_data" in periodic report and "attention_region_trigger_data" in trigger report.

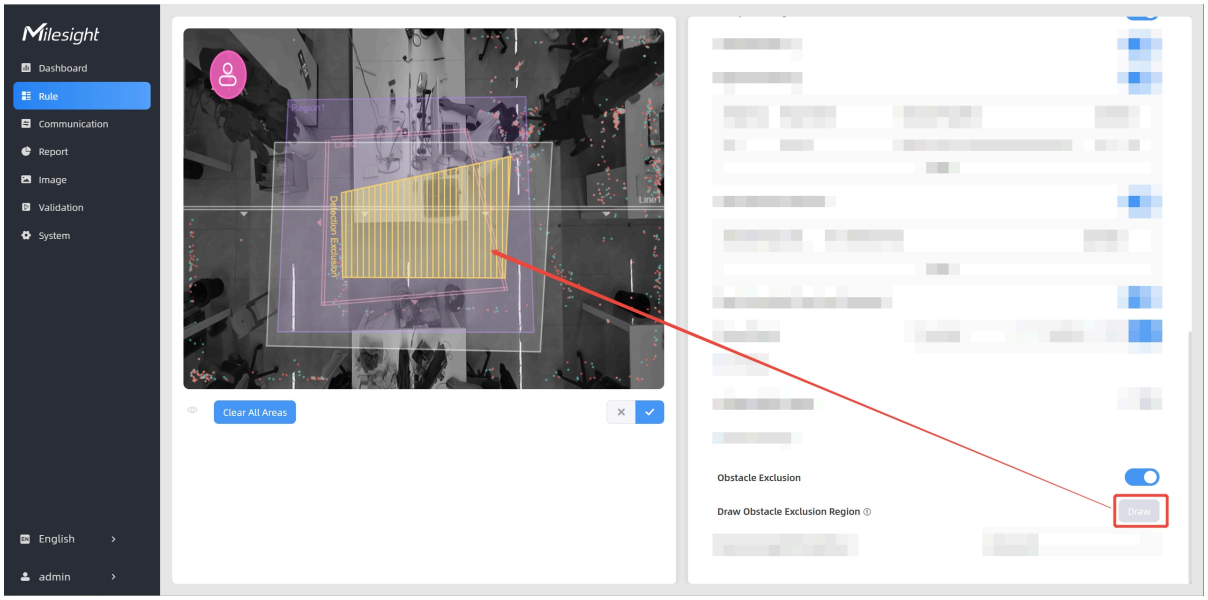
Obstacle Exclusion

When there is an immovable static obstacle within the detection range of the device, and the detection line or region cannot be adjusted to avoid the obstacle, this function can be activated to filter out obstacles similar to humans.



Step 1: Enable **Obstacle Exclusion**, click **Draw** button.

Step 2: Left-click the live view to start drawing and drag the mouse to draw an edge. Left-click again to continue drawing a different direction edge. Right-click the mouse to complete the drawing.



The region can be dragged to adjust the location and length.

One device supports up to 4 regions with maximum 10 segments each.

Step 3: Choose the method of exclusion.

Detection Exclusion: Select it when you don't want to detect anything in this area. You can just draw the highest part of the obstacle, the device will use this highest part as a reference to automatically exclude this specific area.

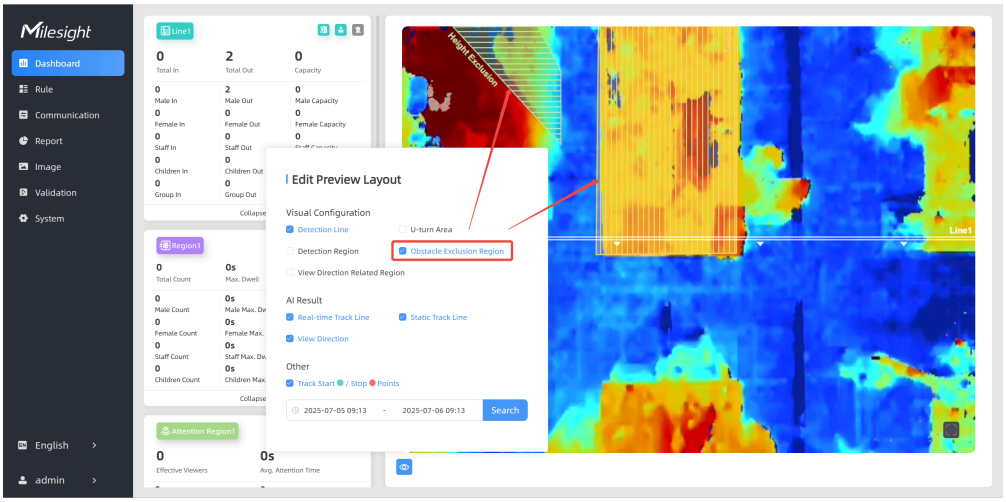
(For example, in a shelf scene, you can just frame the top end of the shelf, then the shelf won't be mistakenly detected as a person.)

Height Exclusion: Select it when you want to avoid mixing obstacles with targets and creating false detections. You can just box out the parts that are easy to confuse with the targets.

(For example, in the scene of a gate passage, you can draw the shape of the gate to avoid the device misjudging a child passing through as an adult, as the child may blend into the shape of the gate.)

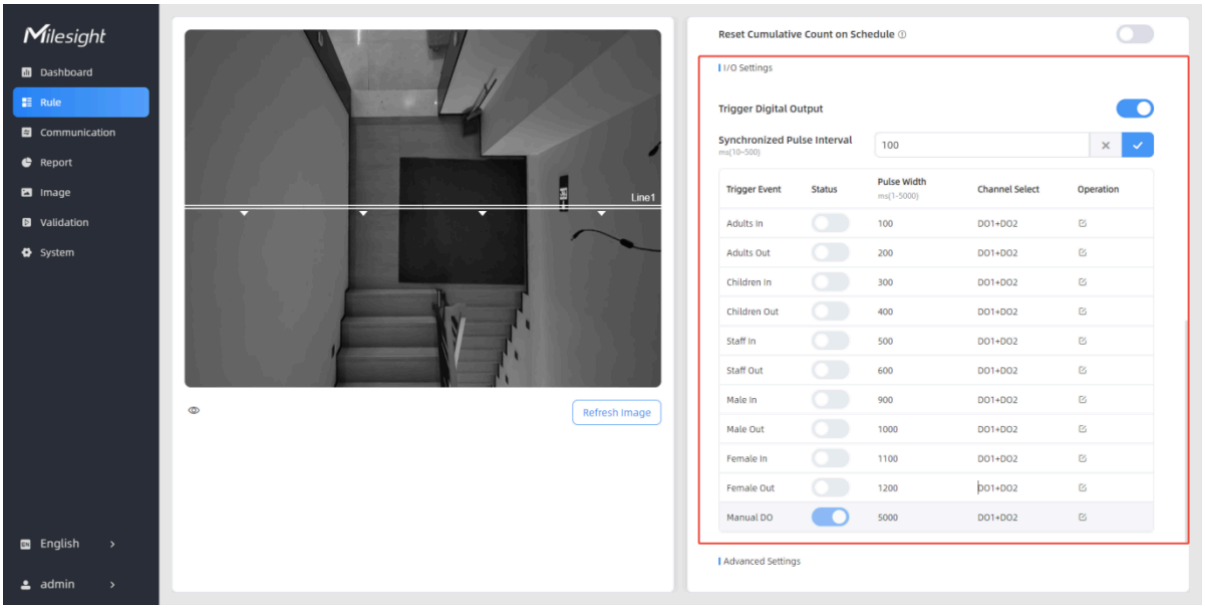
Step 4: Click to complete drawing.

Step 5: Users can see the effect in Dashboard.



I/O Settings

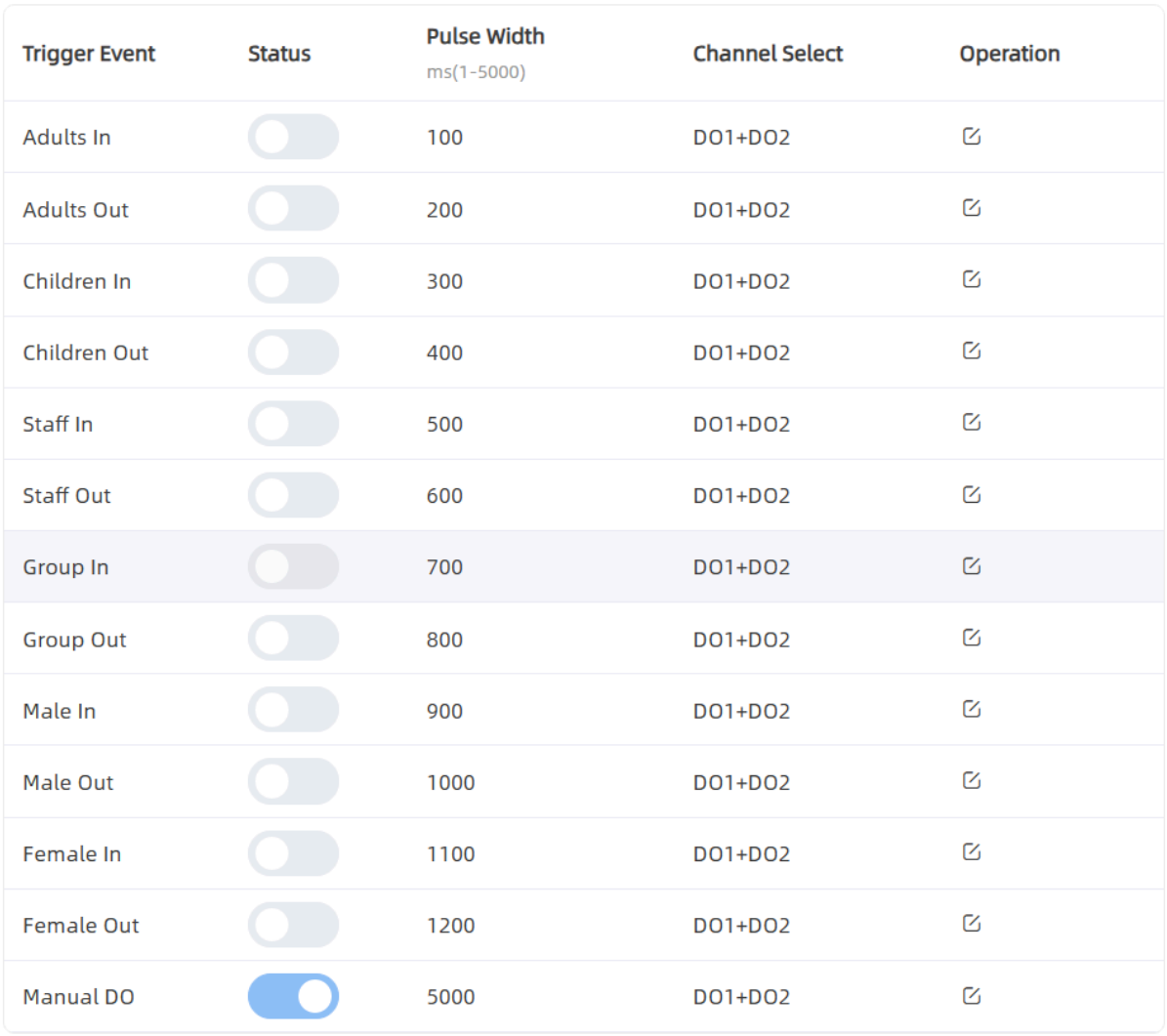
The device supports to send pulse signals when the target passes through the detection line. Please refer to the wiring diagram and use the Multi-interface Cable to connect the device in the correct sequence.



Step 1: Enable **Trigger Digital Output**, the digital output will send a preset width of high level.

Step 2: Fill in **Synchronized Pulse Interval**, the interval between multiple pulses when several people pass through or multiple events trigger at the same time.

Step 3: Enable trigger events.

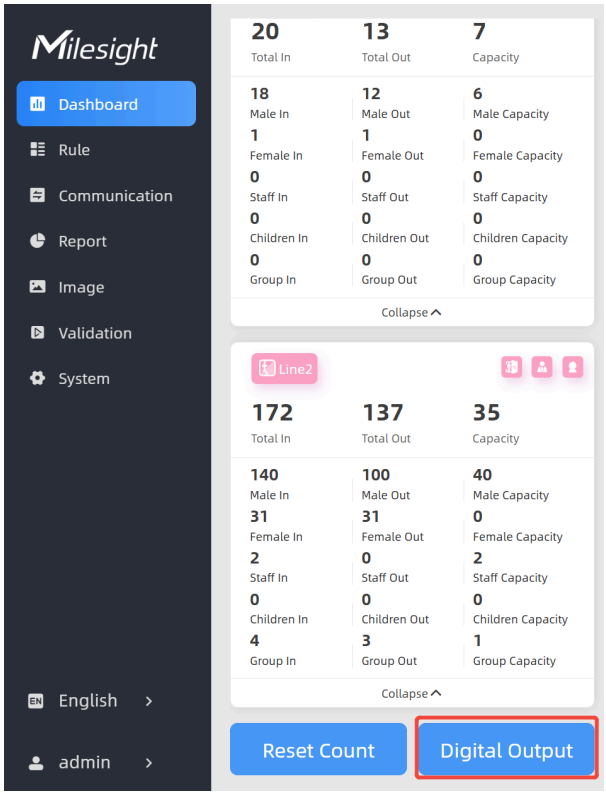


Trigger Event	Status	Pulse Width ms(1-5000)	Channel Select	Operation
Adults In		100	DO1+DO2	
Adults Out		200	DO1+DO2	
Children In		300	DO1+DO2	
Children Out		400	DO1+DO2	
Staff In		500	DO1+DO2	
Staff Out		600	DO1+DO2	
Group In		700	DO1+DO2	
Group Out		800	DO1+DO2	
Male In		900	DO1+DO2	
Male Out		1000	DO1+DO2	
Female In		1100	DO1+DO2	
Female Out		1200	DO1+DO2	
Manual DO		5000	DO1+DO2	

Parameters	Description
Trigger Event	The events to trigger the DOs to send pulse signals. **Note:** If staff event triggers, sending staff pulse signals, does not synchronize gender or adult pulse signals.
Status	Enable or disable the event to trigger the output of a pulse signal.
Pulse Width	The duration of the pulse signal.
Channel Select	Select which DO port to output the pulse signal.

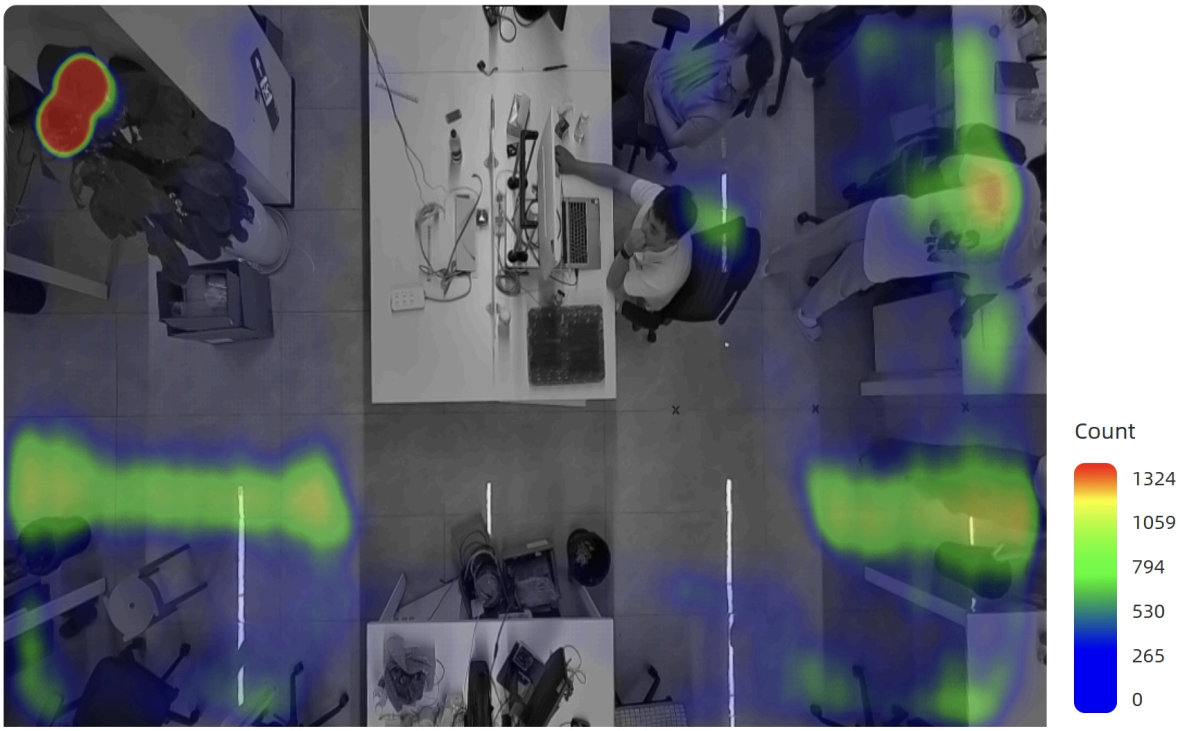
Parameters	Description
Operation	Click to edit the information.

Step 4: Users can see the effect in Dashboard.



Heat Map

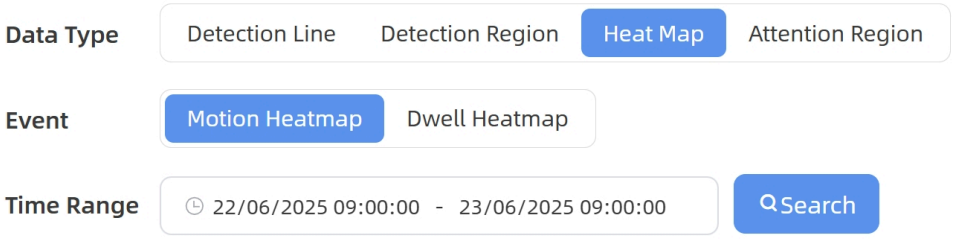
Heat Map function analyzes personnel movement and displays intuitive and accurate statistical analysis results in different colors in a temporal or spatial pattern, as needed, to provide insights for better business management.



Support Motion Heat Map and Dwell Heat Map. The motion heat map shows where the most people flow. And the dwell heat map shows the areas where people stay for the longest time.

Step 1: Click to enable the **Heat Map** function, the device start to record.

Step 2: To view heat map's data for a certain time period and generate report, please refer to Report.



Multi-Device Stitching

Overview

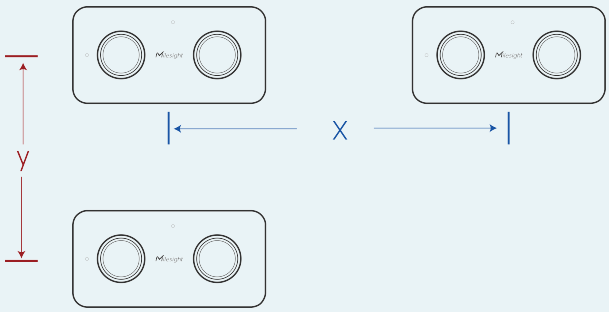
Multi-device stitching is mainly used to monitor a larger detection area than just the area covered by a single device. VS125 Series supports stitching up to 16 devices, with both the cellular and PoE versions being compatible for seamless integration, regardless of the version.

When using this feature, devices should be installed next to each other and ensure the **detection areas** are tangent or overlapping.

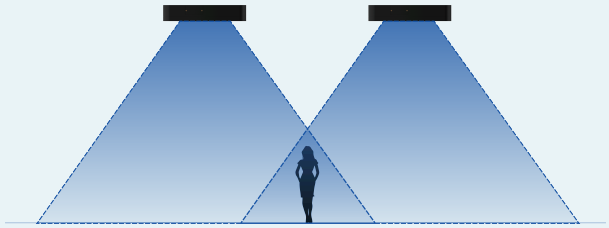
Note:

- The horizontal distance between the two devices must be less than x, and the vertical distance must be less than y.

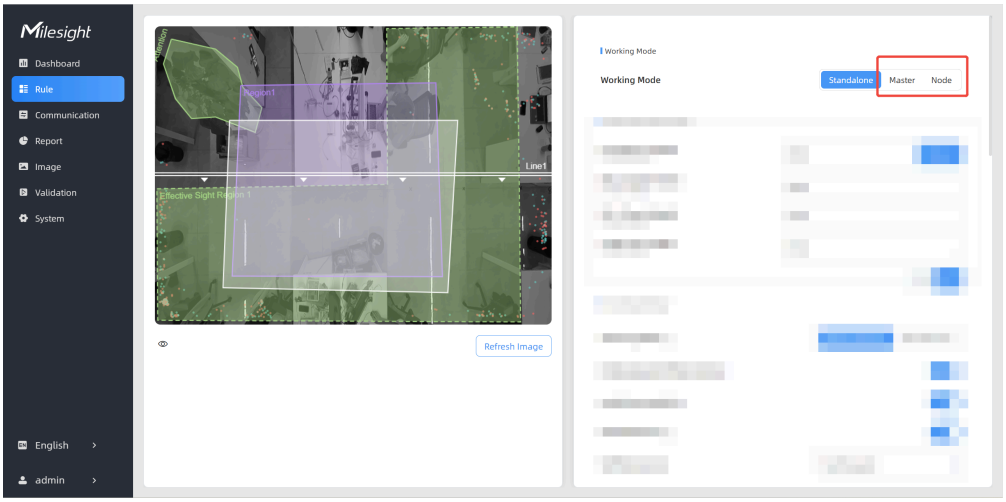
  x and y indicates the detection range, refer to Covered Detection Area for the calculation formula.



- Ensure most targets near the edges of both devices' views can be fully captured and detected at the same time.



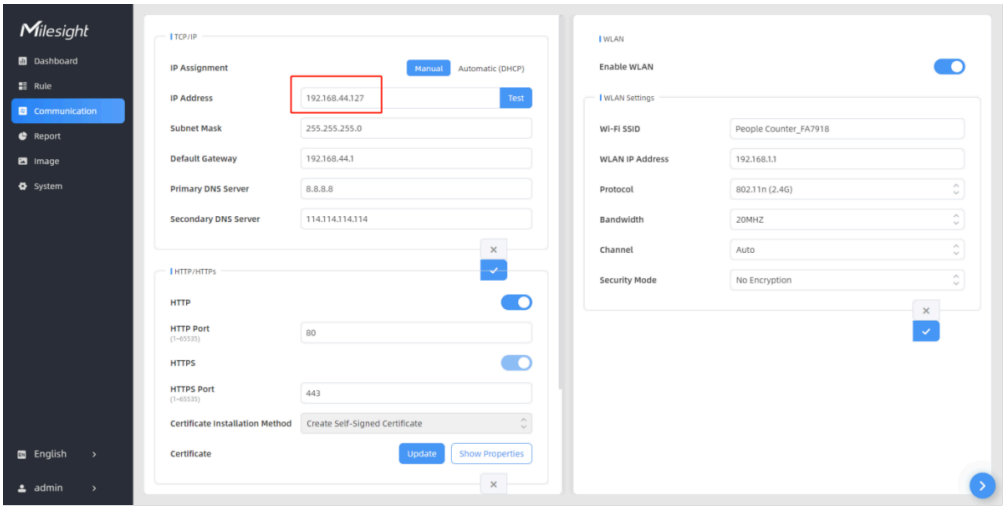
Before using this feature, set one device as **Master Mode** and other devices as **Node Mode**.



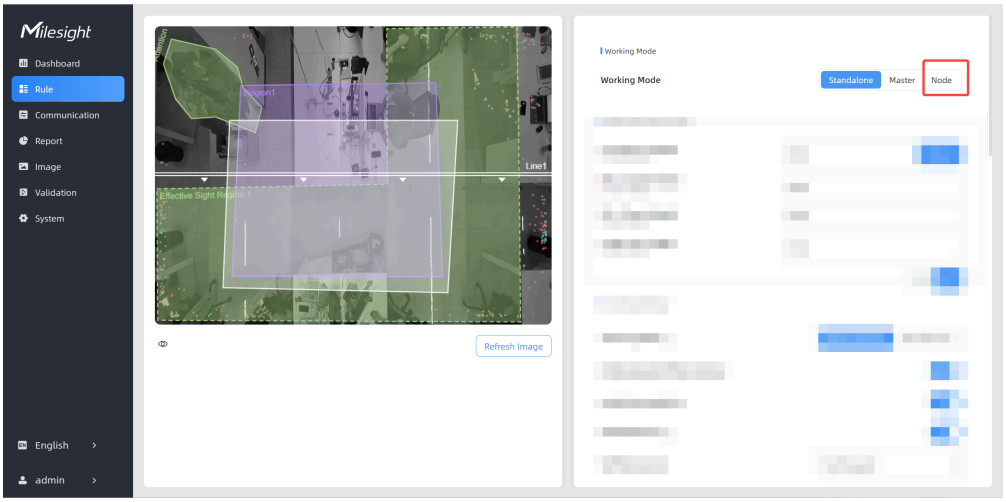
- **Master Mode:** Receive target tracks and view from the device, responsible for all counts, rule setting, data push and other functions.
- **Node Mode:** Only extends the view of the master device.

Node Device Setting

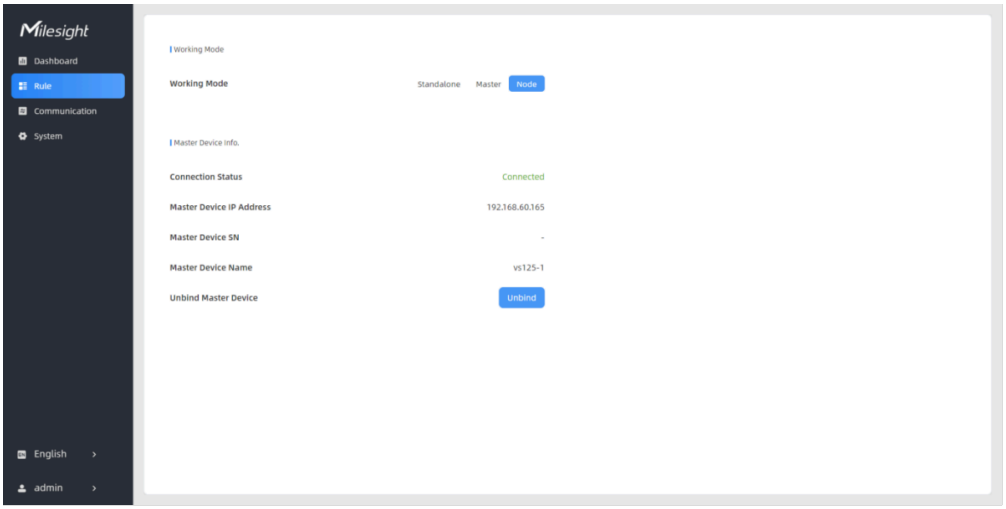
Step 1: Access the web GUI of the node device, ensure the IP address is on the same network as the master device, so that the master device can detect the node device.



Step 2: Select work mode as Node and wait for the device to reboot.



Below is an explanation of the page and parameters for the node devices after successful stitching:



Parameters	Description
Connection Status	Show the connection status between the node device and master device.
Master Device IP Address	Show master device's IP address. When this IP address is under the same network with the node device, the node device can be bind to the master device.
Master Device SN	Show the master device's serial number.
Master Device Name	Show master device name.
Unbind Master Device	Click **Unbind** to release the connection status, this device will be deleted from the list of the master device.

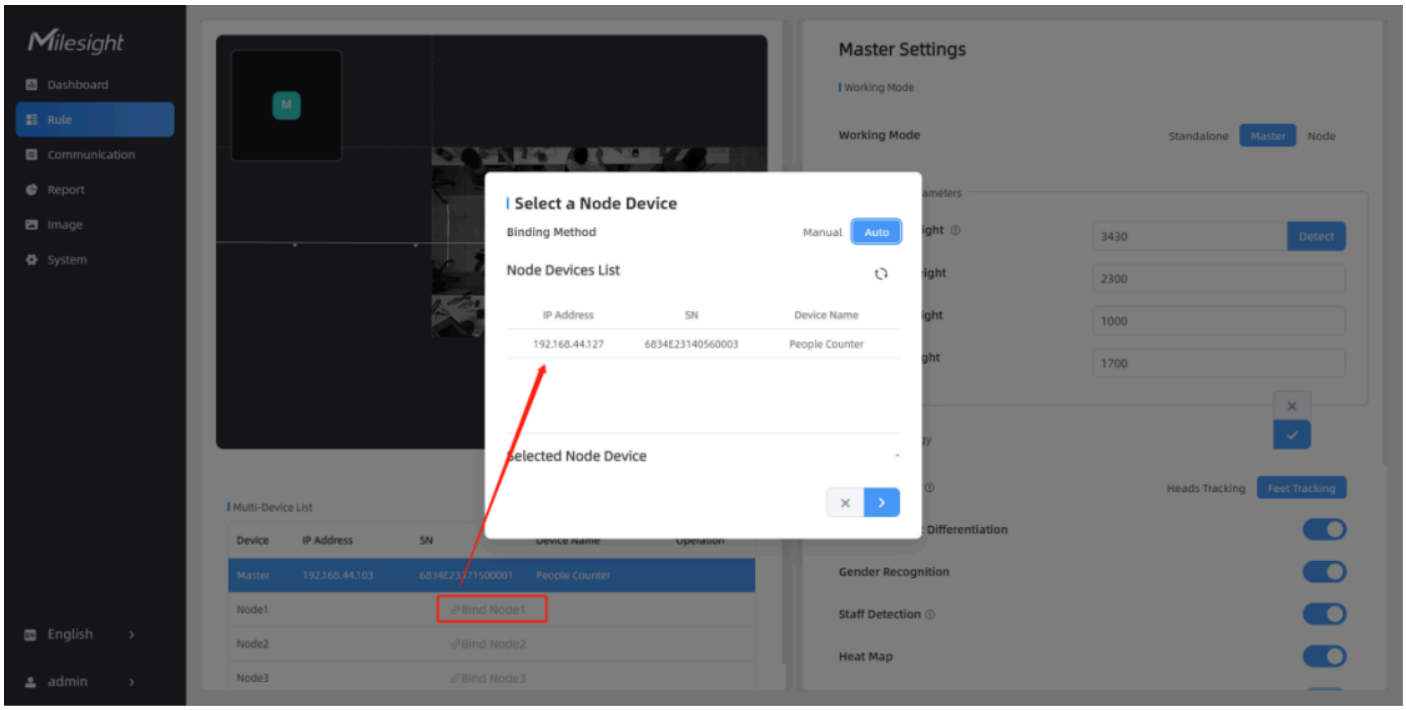
Master Device Setting

Step 1: Go to the master device web GUI, then click **Bind Node** in the Multi-Device List.

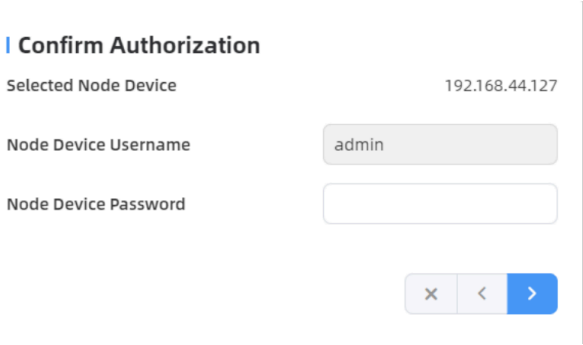
Manual: You can add a node device by the IP address, HTTP Port, Username or Password.

> **Note:**
> Please ensure that the device you want to add is on the same local network as the master device and has low latency.

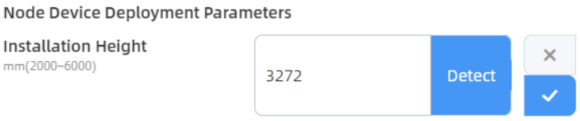
Auto: The device will use multicast protocol to search for the unbound node devices under the same local network.



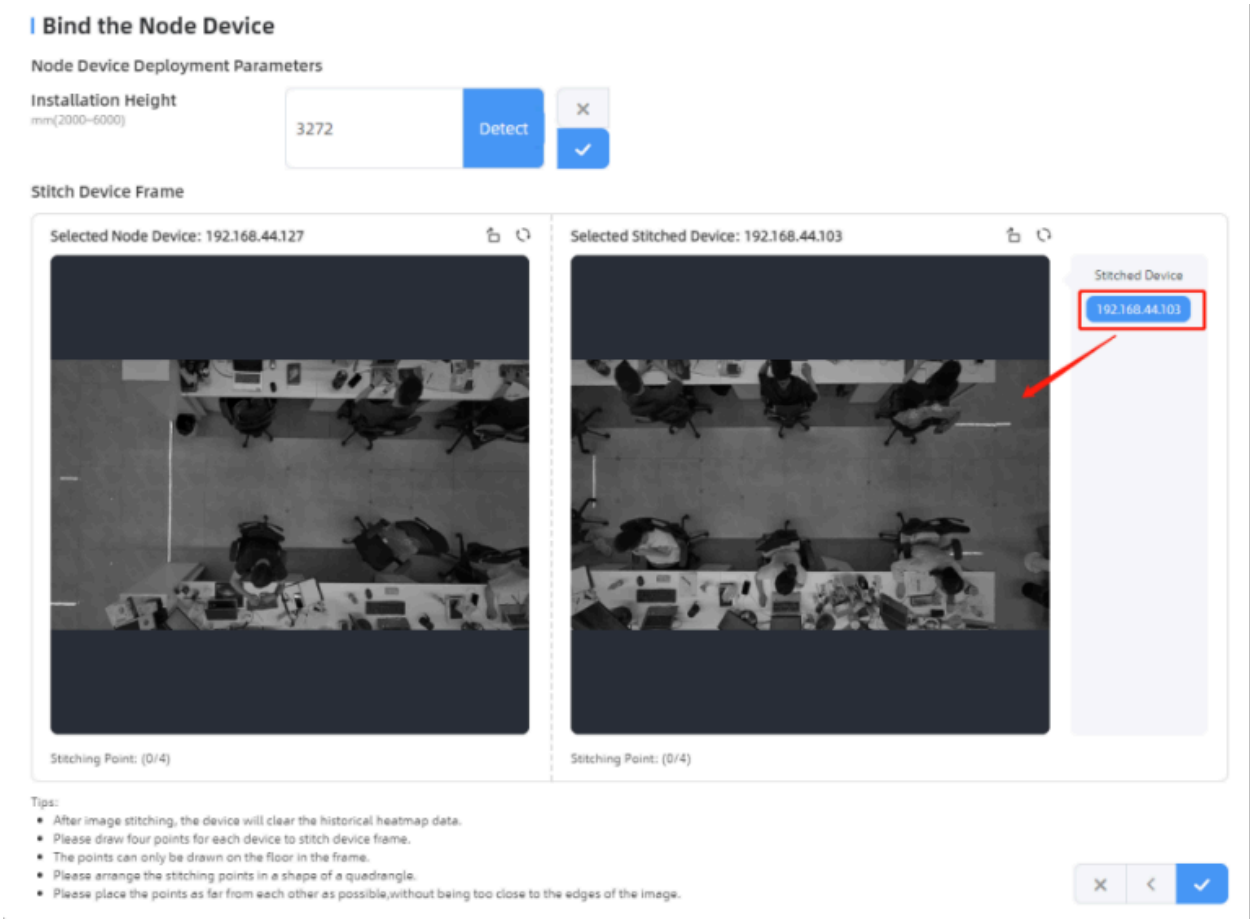
Step 2: Select the node device and type the login password of the node device.



Step 3: Fill in the **Installation Height** of the node device and relative position information if these parameters are already measured. If not, save the default settings.

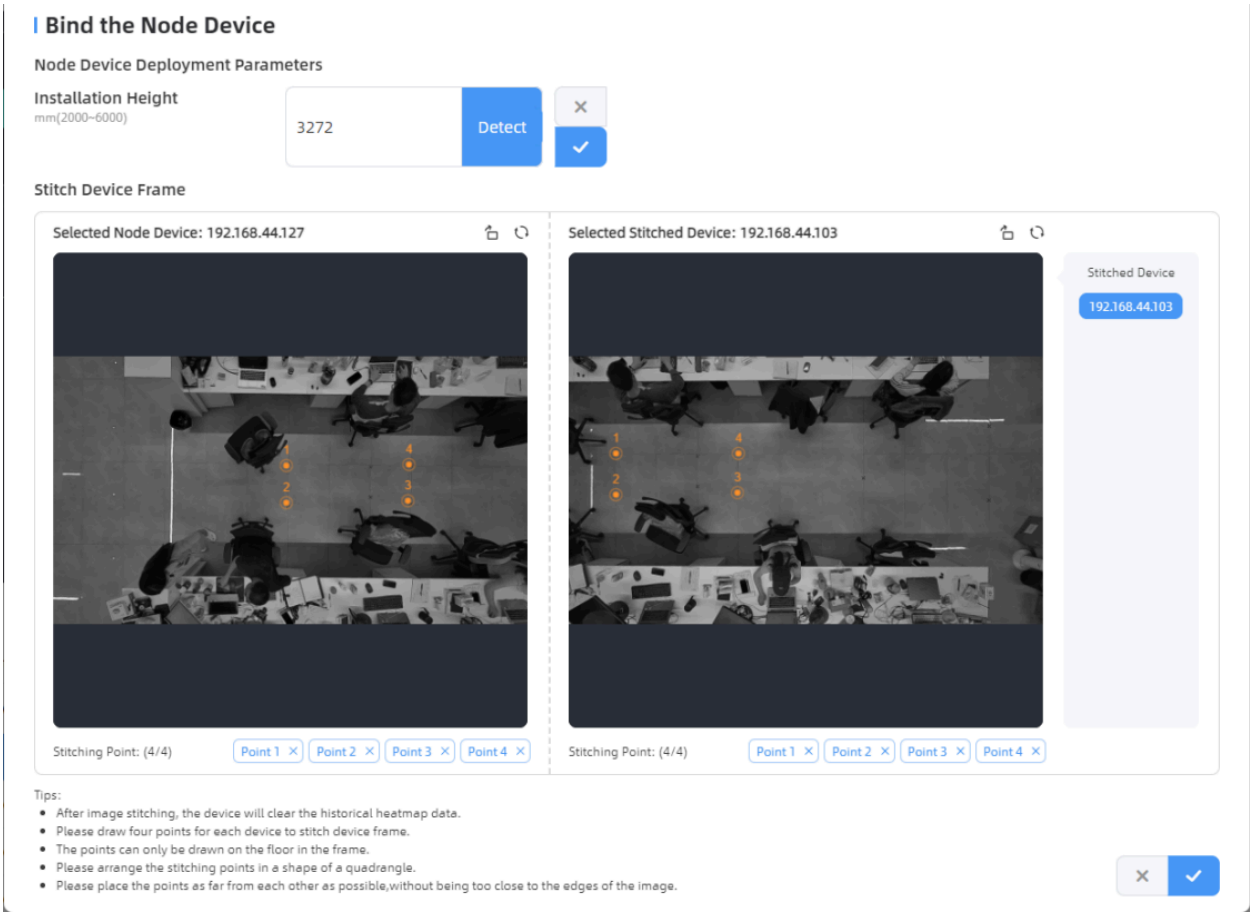


Click the IP address on the right to access the preview of the stitched device.



Important:
If most detection targets cannot be fully displayed and detected on both devices at the same time on both devices at this time, please readjust the positions of the two devices.

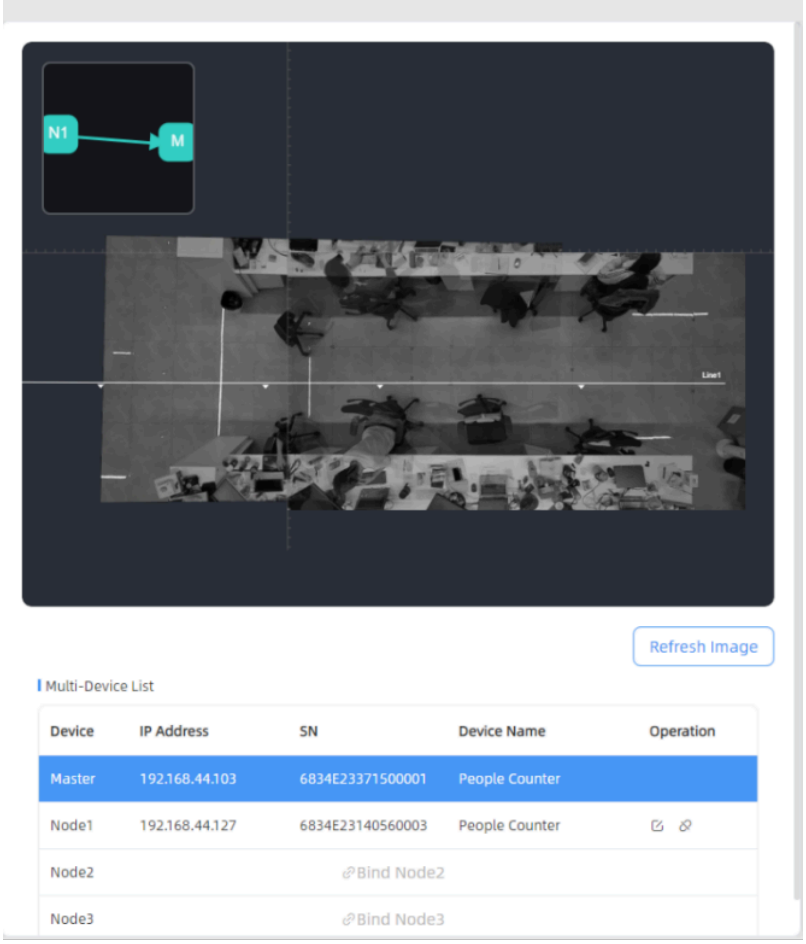
Click on the parts that need to be overlapped on both frames to form a quadrilateral. It's recommended to place the overlapping area where detection targets rarely pass. If modifications are needed, please delete the corresponding points Point 3 . Click to complete the configuration.



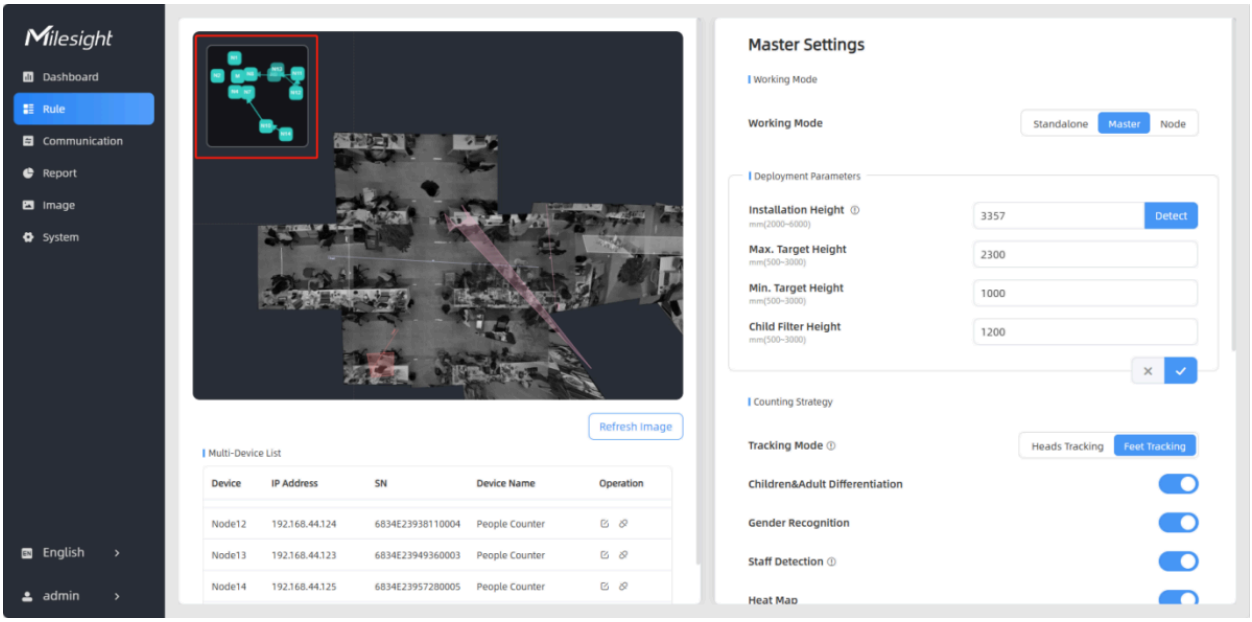
Tip:

You can use objects such as tiles, tables, or tape to mark the stitching points on the ground in overlapping areas. This makes devices stitching easier and aesthetically pleasing.

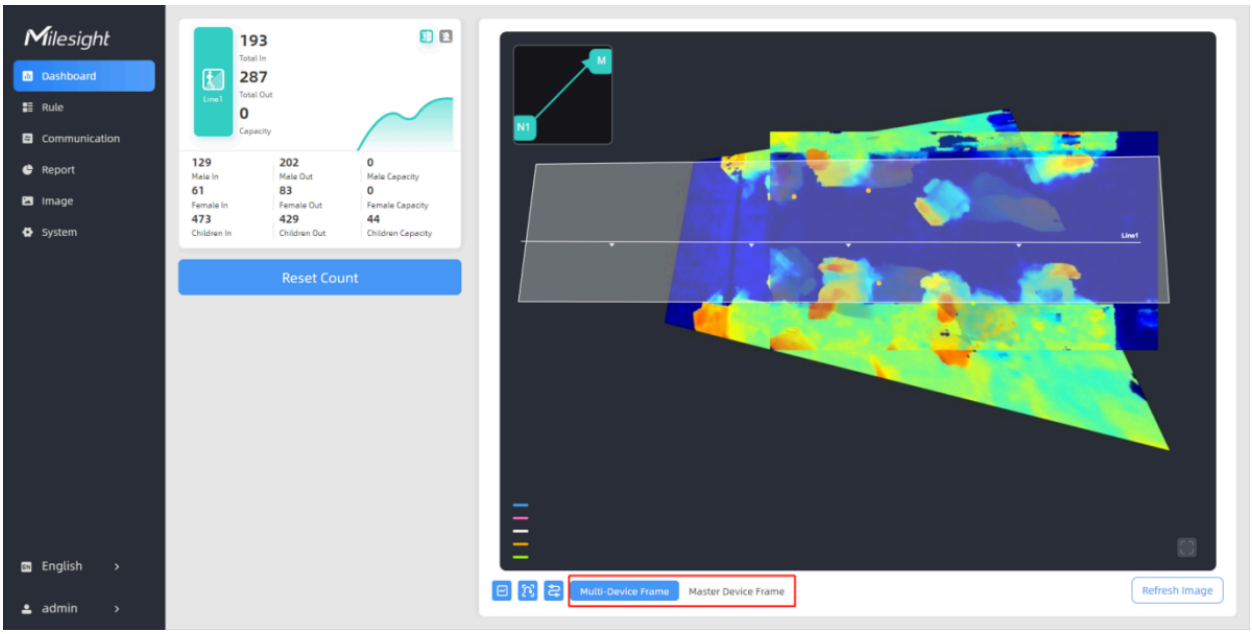
Below is the effect after stitching the two devices:



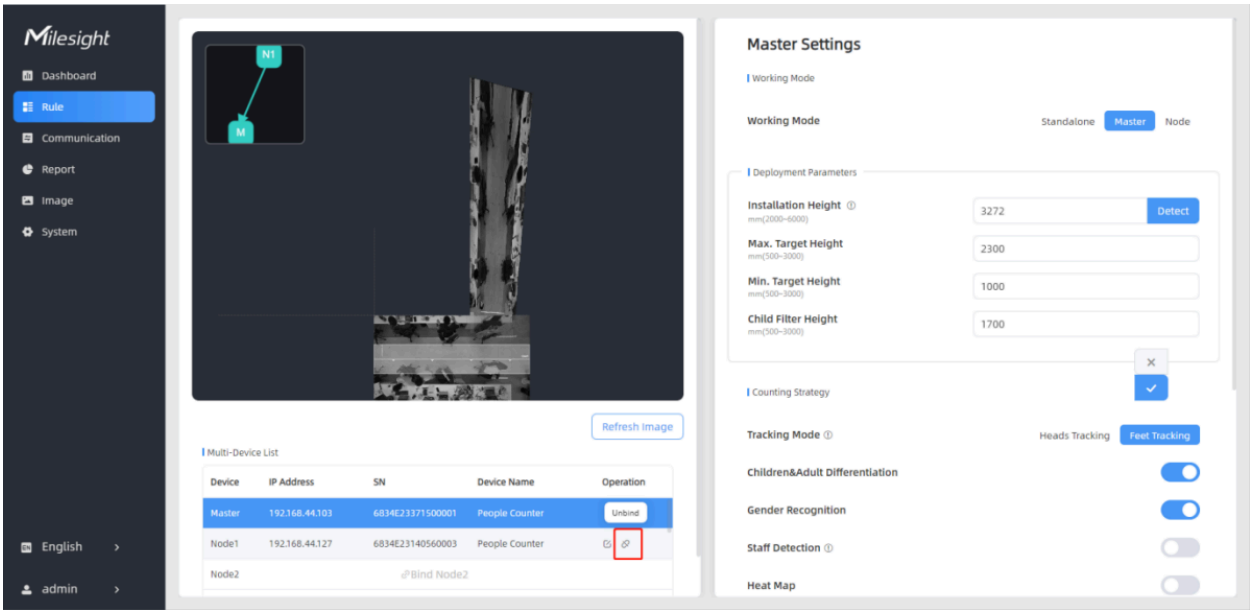
Step 4: For multiple devices, please follow step3 to stitch them sequentially. A small map in the upper left corner of the preview image shows the positions of the stitched devices.



Step 5: When all settings are completed, users can draw detection lines and even U-turn areas on the new stitching live view the same as standalone mode devices. The dashboard will automatically add two frames for viewing the stitching devices and the master device.



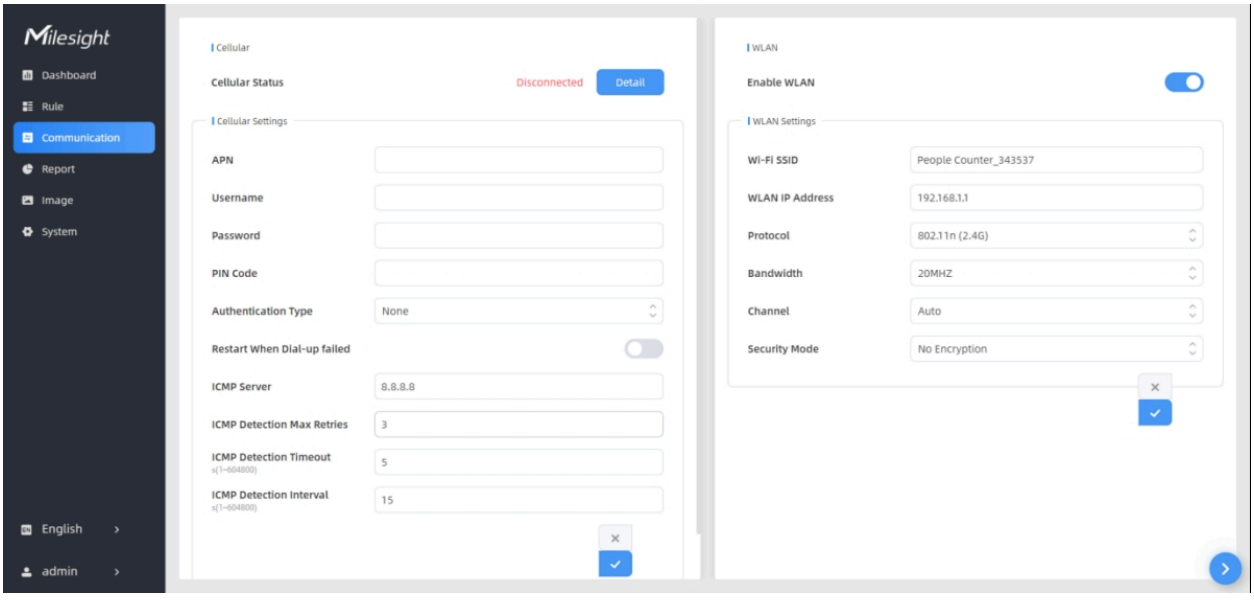
Step 6: Click **Unbind** to disconnect the node device if necessary.



Communication

Network Configuration

Cellular(Cellular Version Only)



Parameters		Description
Cellular	Cellular Status	Display the connection status of the network, including “connect” and “disconnect”.

Parameters		Description
		You can also click “Detail” button to view the cellular status.
Cellular Settings	APN	Enter the Access Point Name for cellular dial-up connection provided by local ISP. The max length is 31 characters.
	Username	Enter the username for cellular dial-up connection provided by local ISP. The max length is 31 characters.
	Password	Enter the password for cellular dial-up connection provided by local ISP. The max length is 31 characters.
	PIN Code	Enter a 4-8 characters PIN code to unlock the SIM.
	Authentication Type	Select the Authentication Type. None, PAP, CHAP, PAP and CHAP are optional.
	Roaming	Click to enable the Roaming.
	Restart When Dial-up Failed	Enable automatic device restart when multiple dial-up failed.
	ICMP Server	Configure the IP address of the ICMP detection server.
	ICMP Detection Max Retries	Set the maximum number of retries when ICMP detection failed.
	ICMP Detection Timeout	Configure ICMP detection timeout.
	ICMP Detection Interval	Configure ICMP detection interval.

Cellular Status

Parameters		Description
Cellular Status	Refresh	Click this button to manually refresh the above status.
	Modem Status	Show the corresponding detection status of the module and SIM card. • No SIM Card • SIM Card Error

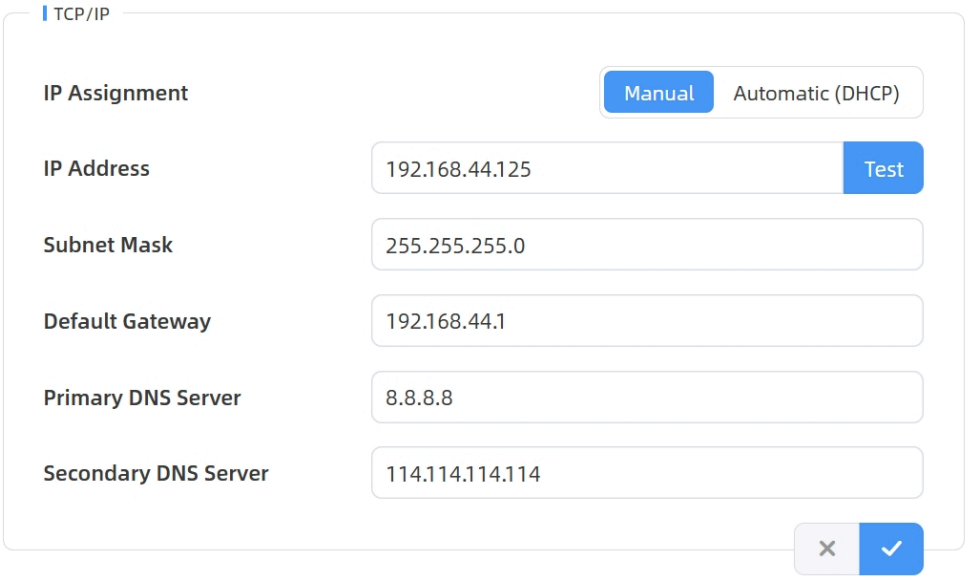
Parameters		Description
		• PN Error • PIN Required • PUK Required • No Signal • Ready • Down SIM
	Model	Show the model name of the cellular module
	Version	Show the version of the cellular module.
	Signal Level	Show the current signal strength of the network.
	Register Status	Show the connection status of the network, including “connect” and “disconnect”.
	IMEI	Show the IMEI of the module.
	IMSI	Show IMSI of the SIM card.
	ICCID	Show ICCID of the SIM card.
	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.
	Network Type	Show the connected network type, such as LTE and 3G. **Note:** It will display "-" when the device is not connected to network.
	PLMN ID	Show the current PLMNID, including MCC, MNC, LAC, and Cell ID.
	LAC	Show the location code of the SIM card.

<table>
<tr><th colspan="2">Parameters</th><th>Description</th></tr>
<tr><td rowspan="6"></td><td></td><td>Note:
It will display "-" when the SIM card is not inserted or not recognized.</td></tr>
<tr><td>Cell ID</td><td>Show the Cell ID of the SIM card location.
Note:
It will display "-" when the SIM card is not inserted or not recognized.</td></tr>
<tr><td>Network Status</td><td rowspan="4">Show the Network Status, IP Address, Netmask, Gateway and DNS Address of the current network. If the SIM card is not inserted or not recognized, it will display 0.0.0.0.</td></tr>
<tr><td>IP Address</td></tr>
<tr><td>Netmask</td></tr>
<tr><td>Gateway</td></tr>
<tr><td></td><td>DNS</td></tr>
<tr><td></td><td>Connection Duration</td><td>Show the cellular dial-up connection duration.</td></tr>
</table>

TCP/IP

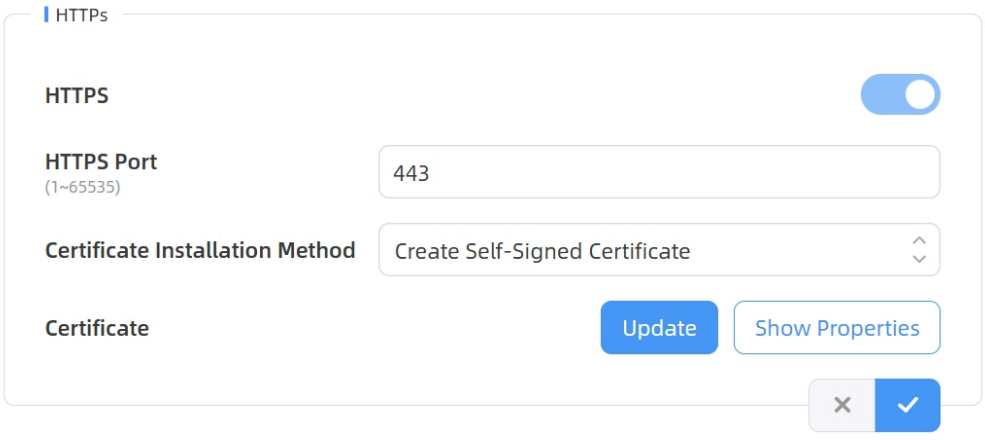
The device use Ethernet for data transmission and multi-device stitching.

For cellular version, data reporting is depended on the current network. When cellular network and Ethernet are all available, data reporting prioritizes the cellular network.



Parameters	Description
IP Assignment	Manual or Automatic (DHCP) is optional.
IP Address	Set the IPv4 address of the Ethernet port, the default IP is **192.168.5.220**.
Test	Click to test if the IP is conflicting.
Subnet Mask	Set the Netmask for the Ethernet port.
Default Gateway	Set the gateway for the Ethernet port's IPv4 address.
Primary DNS Server	Set the primary IPv4 DNS server.
Secondary DNS Server	Set the secondary IPv4 DNS server.

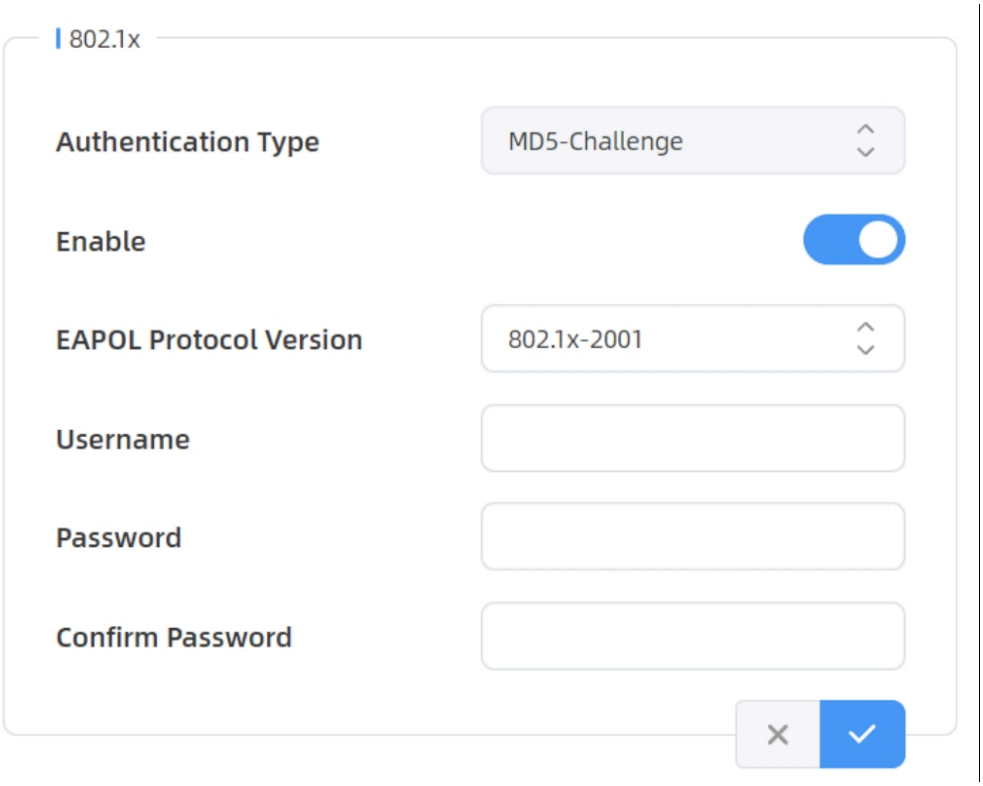
HTTPs (PoE Version Only)



Parameters	Description
HTTPS	Start or stop using HTTPS.
HTTPS Port	Web GUI login port via HTTPS, the default is 443.
Certificate Installation Method	**Create Self-signed Certificate:** upload the ".pem/.crt/.cer" format certificates issued by awarding organizations for verification. **Direct Installation Certificate:** upload the custom CA certificate, client certificate and secret key for verification.
Certificate	Create the SSL certificate.

802.1x Protocol (PoE Version Only)

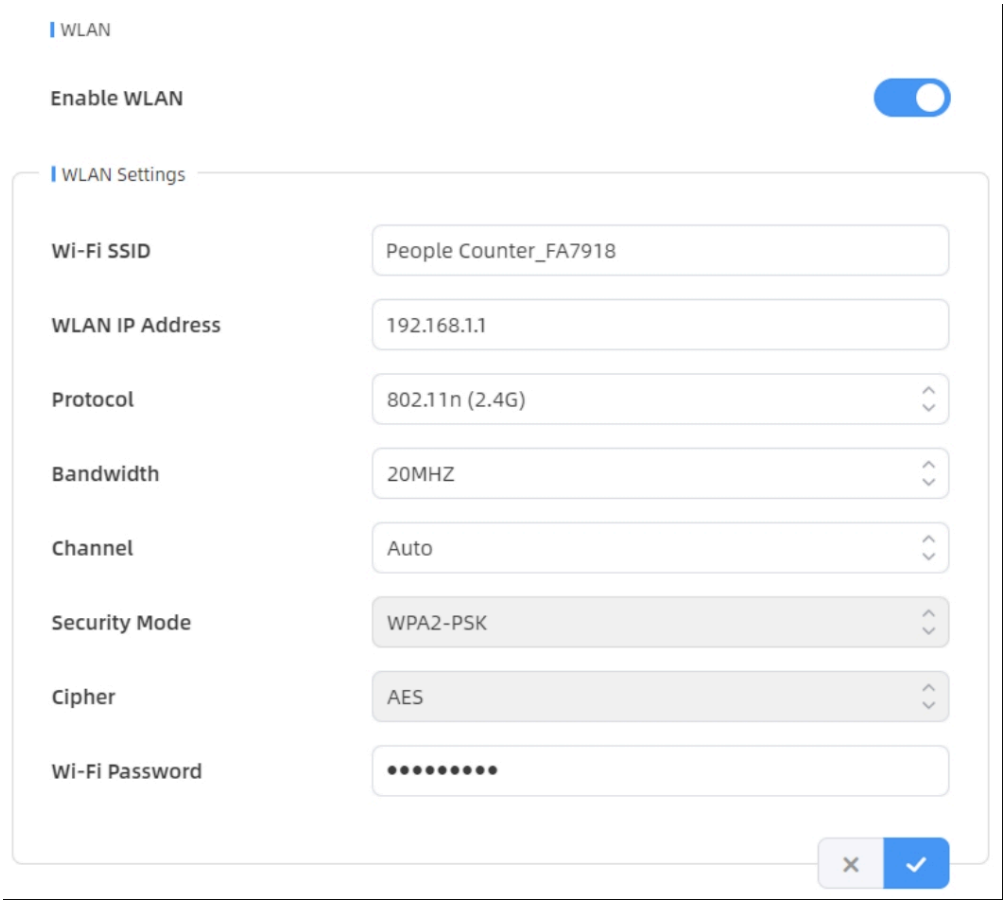
The IEEE 802.1x is an authentication protocol to allow access to networks with the use of RADIUS server.



Parameters	Description
Authentication Type	It's fixed as MD5-Challenge.
Enable	Enable or disable 802.1x authentication.

Parameters	Description
EAPOL Protocol Version	802.1x-2001 or 802.1x-2004 is optional.
Username	Set the username for 802.1x authentication.
Password	Set the password for 802.1x authentication.
Confirm Password	Enter the password again.

WLAN



Parameters	Description
Enable WLAN	Enable or disable Wi-Fi feature. If disabled, users can use button to enable it.
Wi-Fi SSID	The unique name for this device Wi-Fi access point, defined as People Counter_xxxxxx (can be found on the device label).
WLAN IP Address	Configure WLAN IP address for web access, the default IP address is 192.168.1.1.

Parameters	Description
Protocol	802.11g (2.4 GHz) and 802.11n (2.4 GHz) are optional.
Bandwidth	20 MHz or 40 MHz are optional.
Channel	Select the wireless channel. Auto, 1,...11 are optional.
Security Mode	Fixed is WPA2-PSK.
Cipher	Fixed is AES .
Wi-Fi Password	Customize the password, 8-63 characters, including numbers, lowercase letters, uppercase letters and special characters.

Recipient and API

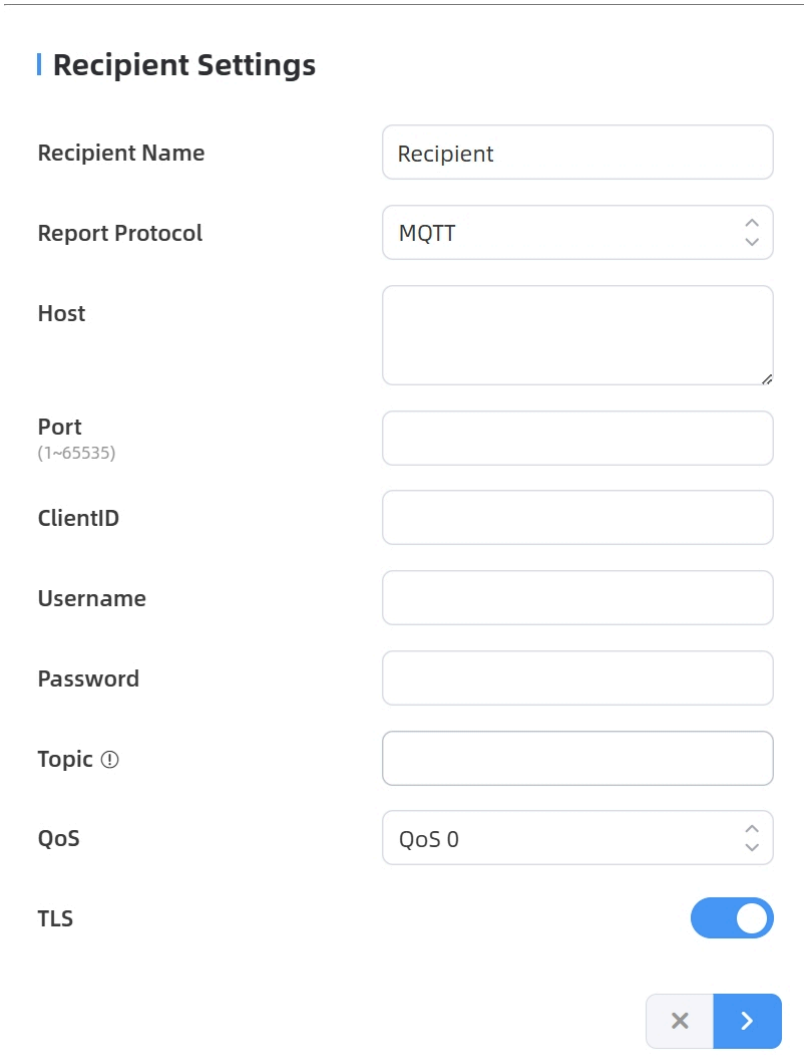
Recipient

The device supports to add data receivers (supports HTTP(s)/MQTT(s)). The device will proactively push data to the receivers according to the configured reporting scheme. For details on the data push format, please refer to Communication Protocol.

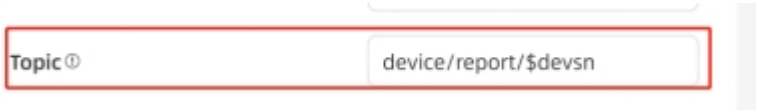
Besides, users can get the people counting data or configure the device via CGI.

Parameters	Description
Recipient Name	Show the recipient name.
URL/Host	Show the URL/host of HTTP(s) server or MQTT broker.
Protocol	Show the report protocol.
Status	Show connection status from device to HTTP(s) server or MQTT broker.
Operation	Click to edit the information or delete the recipient.

Note:
Up to 8 receivers can be added.

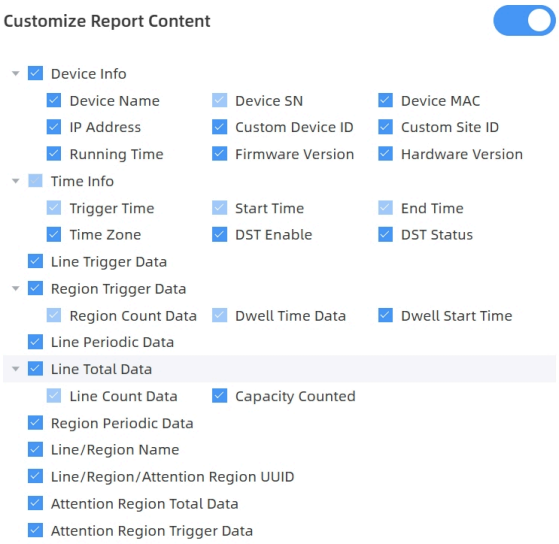


Parameters	Description
Recipient Name	Customize the recipient name.
Report Protocol	HTTP(s) or MQTT is optional.
HTTP(s)	
URL	The device will post the people counting data in json format to this URL.
Connection Test	Click **Test** to send test message to URL to check connectivity.
Username	The username used for authentication.
Password	The password used for authentication.
MQTT	

Parameters	Description
Host	MQTT broker address to receive data.
Port	MQTT broker port to receive data.
Client ID	Client ID is the unique identity of the client to the server. It must be unique when all clients are connected to the same server, and it is the key to handle messages at QoS 1 and 2.
Username	The username used for connecting to the MQTT broker.
Password	The password used for connecting to the MQTT broker.
Topic	Topic name used for publishing. These strings will be replaced with device info when subscribing to a topic: $devsn：Device SN $prdmd：Product Model $devid：Customized Device ID $siteid：Customized Site ID 
QoS	QoS0, QoS1, and QoS2 are optional.
TLS	Enable the TLS encryption in MQTT communication.
Certificate Type	CA Signed Server or Self Signed is optional. **CA signed server certificate:** verifying with the certificate issued by Certificate Authority (CA) that is pre-loaded on the device. **Self signed certificates:** upload the custom CA certificates, client certificates and secret key for verification.
Report Strategy	

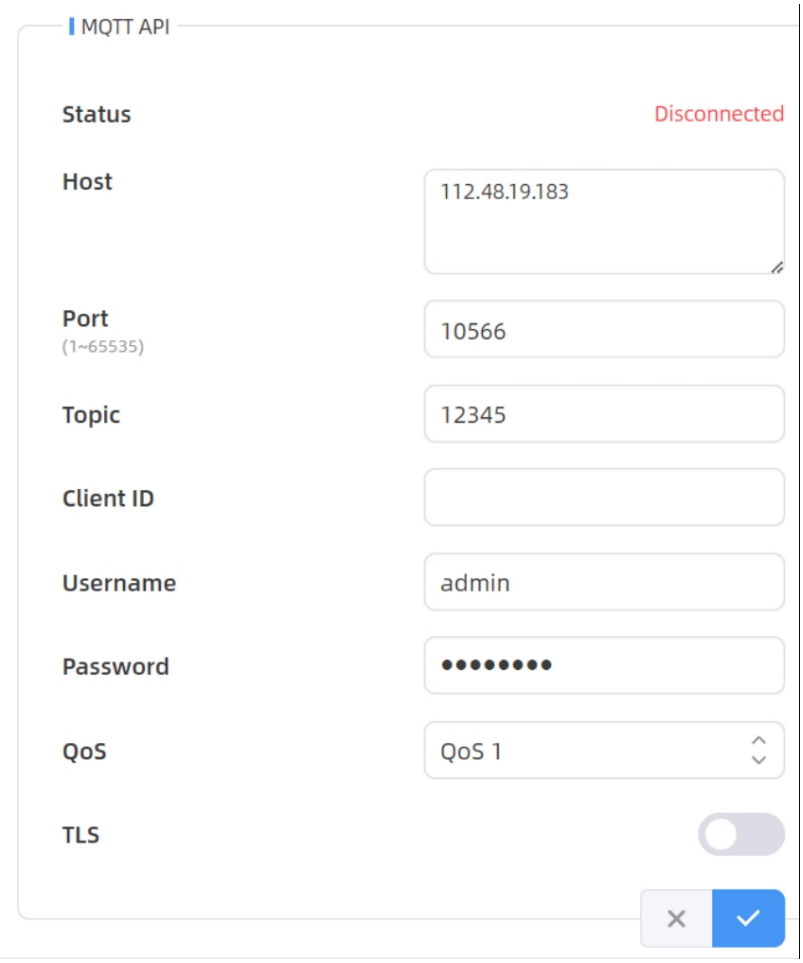
<table>
<tr><th>Parameters</th><th>Description</th></tr>
<tr><td>Trigger Report</td><td>Report immediately when there is a change of the line crossing people counting number or region people counting number.</td></tr>
<tr><td>Periodic Report</td><td rowspan="3">Select the periodic report of “On the Dot” or “From Now On”.

On the Dot: The device will report at the top of each hour. For example, When the interval is set to 1 hour, it will report at 0:00, 1:00, 2:00 and so on; when the interval is set to 10 minutes, it will report at 0:10, 0:20, 0:30, and so on.

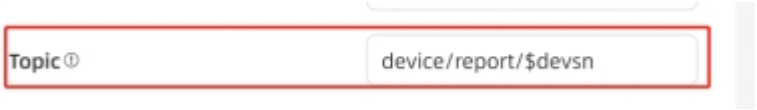
From Now On: Begin reporting from this moment onwards and regularly report based on the interval cycle.</td></tr>
<tr><td>Periodic Report Scheme</td></tr>
<tr><td>Period</td></tr>
<tr><td>Data Retransmission</td><td>Enable to resend stored data packets from the disconnected period when the device's network connection is restored. Every recipient supports to receive 50,000 pieces of data at most.</td></tr>
<tr><td>Customize Report Content</td><td>Customizable selection of content to be reported, avoiding data redundancy.
 
</td></tr>
</table>

MQTT API (Cellular Version Only)

The device provides MQTT API to support to receive downlink commands from MQTT broker to get people counting data and achieve the configuration.



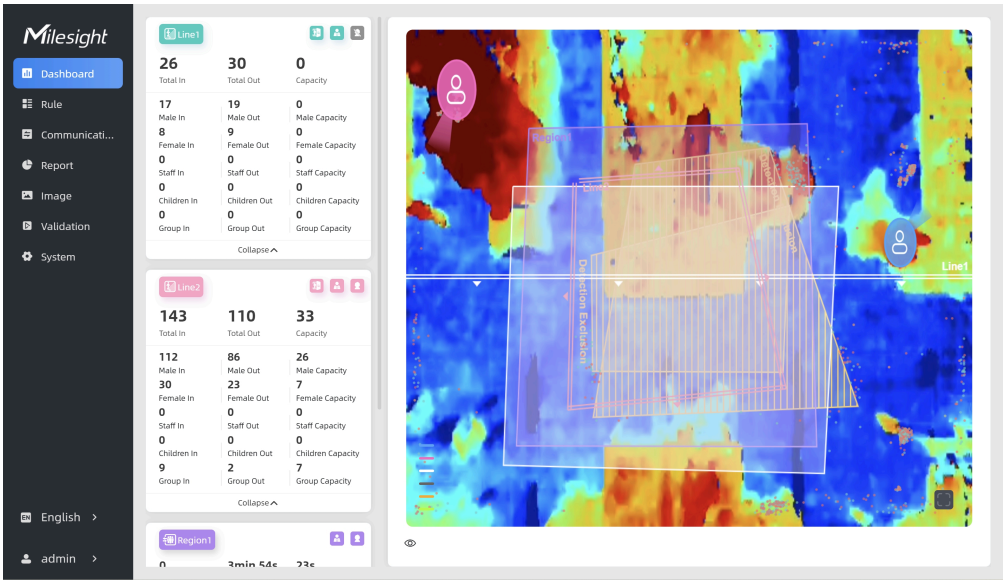
Parameters	Description
Status	Show connection status between device and MQTT broker.
Host	MQTT address to receive data.
Port	MQTT port to receive data.
Topic	Topic name used for publishing. These strings will be replaced with device info when subscribing to a topic: $devsn：Device SN $prdmd：Product Model $devid：Customized Device ID $siteid：Customized Site ID

Parameters	Description
	
Client ID	Client ID is the unique identity of the client to the server. It must be unique when all clients are connected to the same server, and it is the key to handle messages at QoS 1 and 2.
Username	The username used for connecting to the MQTT.
Password	The password used for connecting to the MQTT.
QoS	QoS0, QoS1, QoS2 are optional.
TLS	Enable the TLS encryption in MQTT communication.
Certificate Type	CA Signed Server or Self Signed is optional. **CA signed server certificate:** verifying with the certificate issued by Certificate Authority (CA) that is pre-loaded on the device. **Self signed certificates:** upload the custom CA certificates, client certificates and secret key for verification.

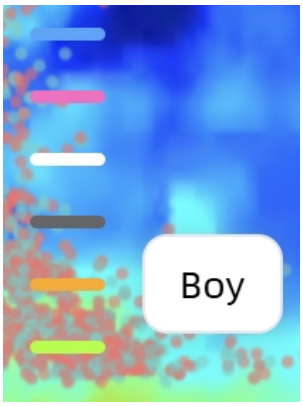
Data Presentation

After completing the configuration of both the basic counting and advanced property, the device will offer multiple data presentation options, including dashboards, reports, command line outputs, etc. You can choose the appropriate method to view the data according to your needs.

Dashboard

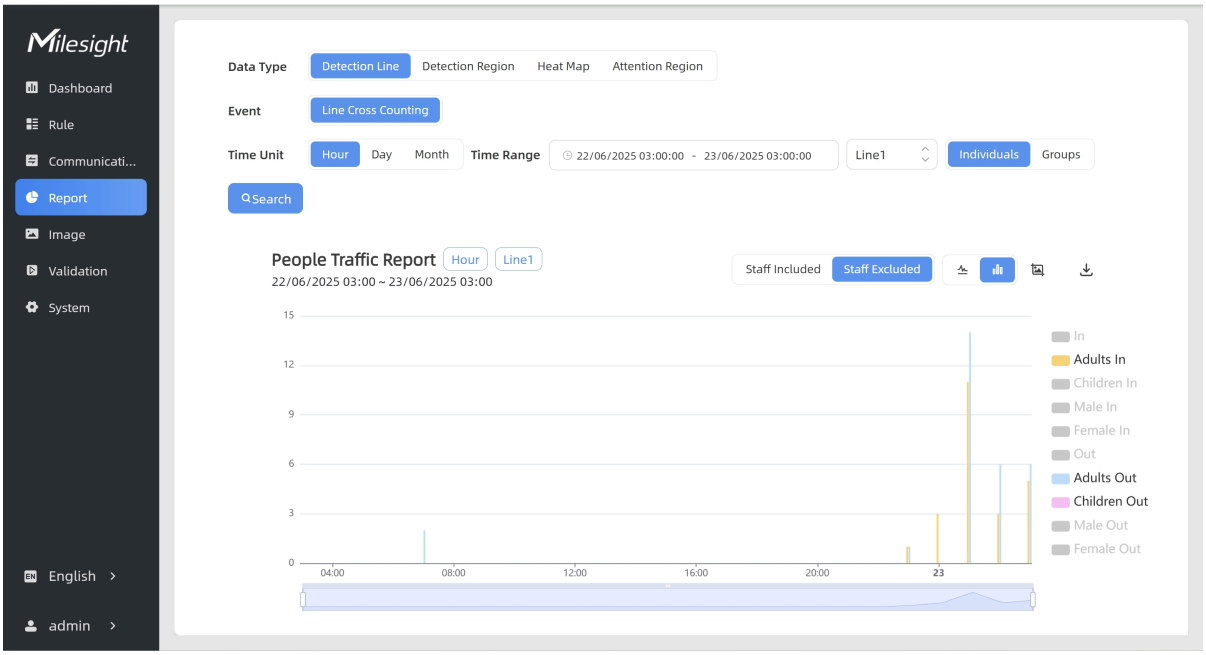


Parameters	Description
	Hide Capacity: Hide the total count data capacity; **Children Excluded:** Exclude children data from statistical data. **Staff Excluded:** Exclude staff data from statistical data.
Reset Count	Clear all accumulated entrance and exit people counting values.
Digital Output	Click to output high level signal from alarm out interface when Manual DO event is enabled. **Alarm Output:** dry contact
	Click to edit preview layout to show or hide the lines, areas and track points as needed. **Real-time Track Line:** Show or hide the target's track line through the live view. **Static Track Line:** Show or hide the history of the target's track line in the live view. Supports up to 1000 historical tracks, which will disappear when you re-fresh the page.

Parameters	Description
	Visual Configuration Detection Line U-turn Area Detection Region View Direction Related Region AI Result Real-time Track Line Static Track Line View Direction Other Track Start / Stop Points 2025-06-24 07:45 - 2025-06-25 07:45 Search **Note:** If some of the options are not shown, please check if the corresponding function of the rule is enabled.
	Show the property of targets.

Report

The device supports visual line chart or bar chart generation to display people traffic and supports report exporting. Before using this feature, do ensure that the device time is correct on **System** page.

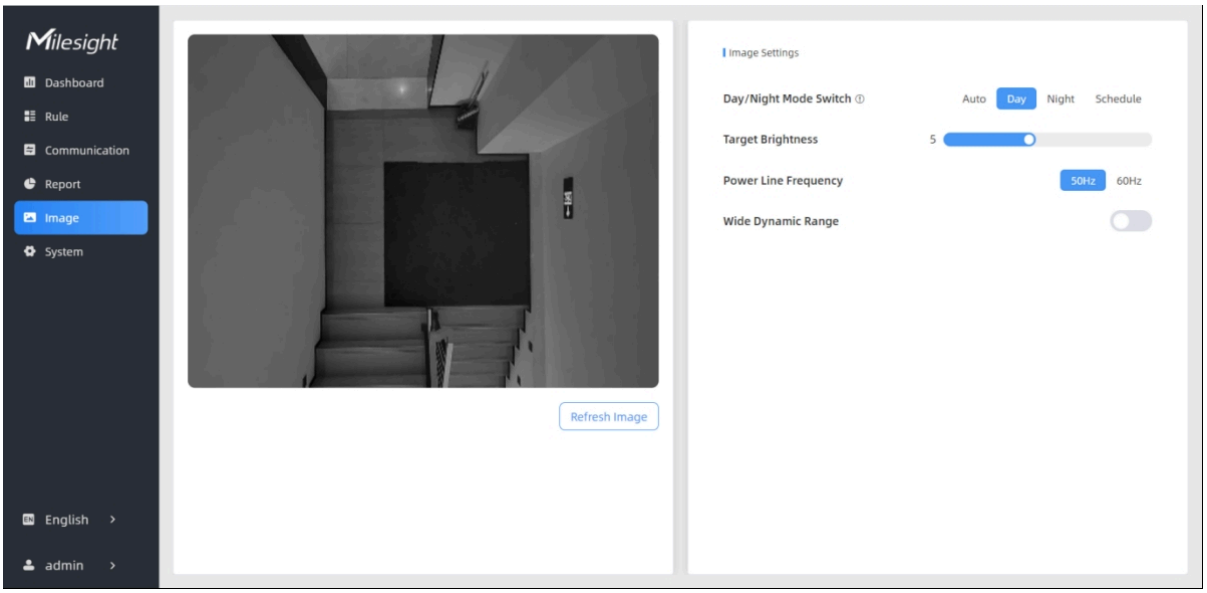


Parameters	Description
Data Type	Select the data type which you want to query the report, the relevant events will be displayed accordingly.
Event	
Time Unit	Select the unit to generate the graph or export the data.
Time Range	Select the time range to generate the graph.
Search	Click to generate or refresh the graph according to the previously selected option.
Staff Included Staff Excluded	Select whether to include staff counting values on the graph.
	Select the display type as line or bar.
	Click to download the chart screenshot.
	Export the historical traffic data as CSV file according to the selected option. The device can store up to one million data records to CSV file.

Parameters	Description
In Adults In Children In Out Adults Out Children Out	The chart displays multiple data types. Click on any category will hide it from the chart.

Image

The device has great lighting adaptability that allows it to work well in low light or even complete dark environments. It supports day and night mode switching based on the no-photosensitive scheme.

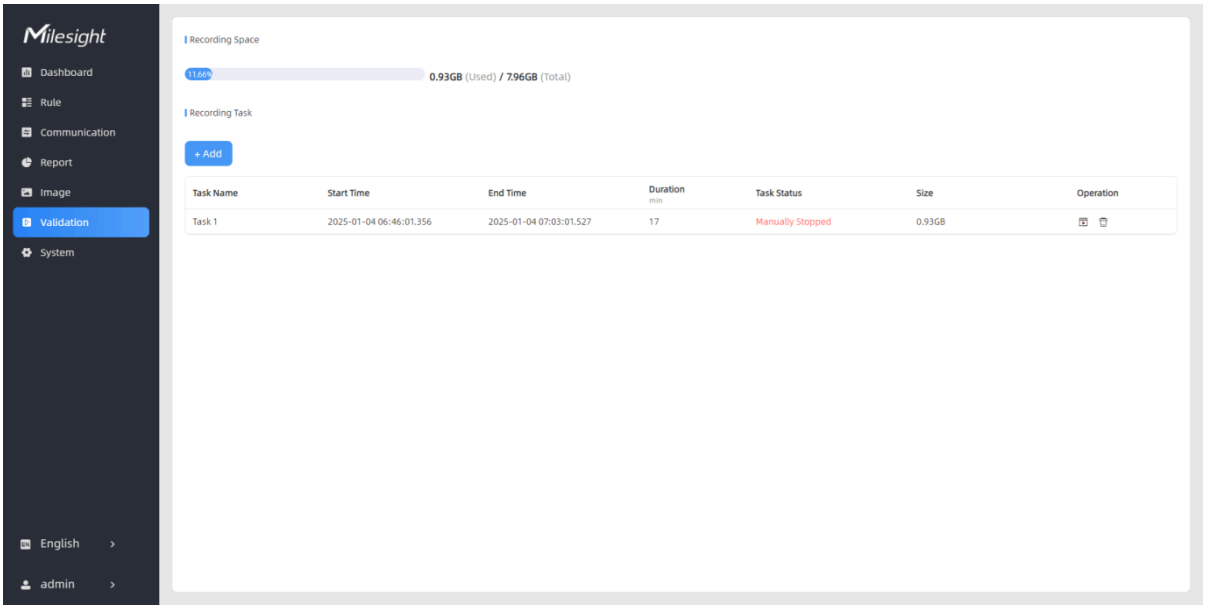


Parameters	Description
Day/Night Mode Switch	Set image mode. Auto, Day, Night and Schedule are optional. **Day:** black and white mode; **Night:** infrared based black and white mode; **Auto:** automatic switch day and night according to image brightness; **Schedule:** switch day and night according to the configured schedule.
Sensitivity	Set the sensitivity of the automatic day and night switching.The higher sensitivity, the easier to switch day and night.

Parameters	Description
Night Mode Duration	Set the schedule of the night mode.
Target Brightness	Set the brightness of the target to make image clearer. The higher brightness is, the brighter the target brightness is.
Power Line Frequency	Choose the frequency to avoid the image flashing.
Wide Dynamic Range	Enable or disable WDR. Enabling WDR can capture more detail in scenes where light conditions vary greatly.

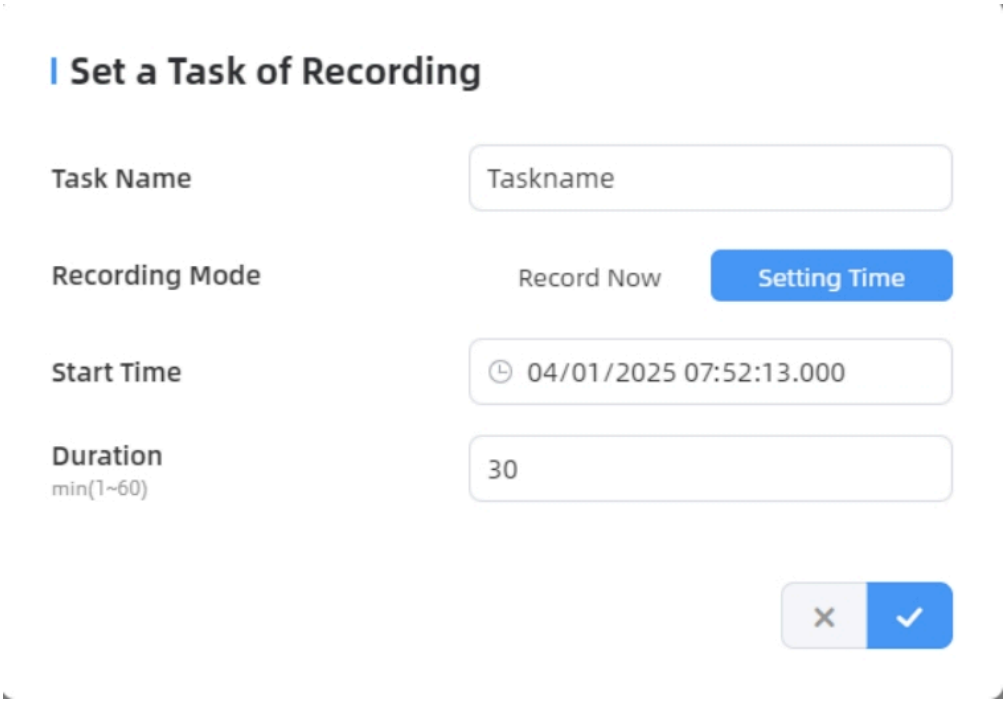
Validation

Video validation function can assist users in verifying the accuracy of people counting by setting up a video task of recording.



Parameters	Description
Task Name	Show the task name.
Start/End Time	Show the start time and end time of this video.
Duration	Show the length of the video.
Task Status	Show the video task status.
Size	Show the video size.

Parameters	Description
Operation	Click to check the video details, stop recording or delete the task.
+ Add	Click to add a video task. One device can add up to 50 tasks.

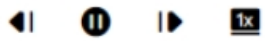
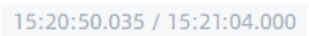


Parameters	Description
Task Name	Customize a name for this task.
Recording Mode	Record Now or Setting Time is optional.
Start Time	Set the start recording time.
Duration	Set the duration of the recording, the duration of all tasks should not be more than 60 minutes.

Note:

- The setting time range of different tasks can not be overlap.
- Detection rules cannot be modified during the recording process.
- If the validation videos need to be played locally, please use the specialized player provided by Milesight: Milesight VS Player.

Parameters		Description
Edit Pre-view Layout	Visual Configuration	Show/Hide relevant rules in the recording footage. Detection Line U-turn Area Detection Region Obstacle Exclusion Region
	AI Result	Show/Hide track line in the recording footage. **Real-time Track Line:** real-time trajectory line of the targets **Static Track Line:** historical trajectory line of the targets
	Other	Show/Hide track points in the recording footage.

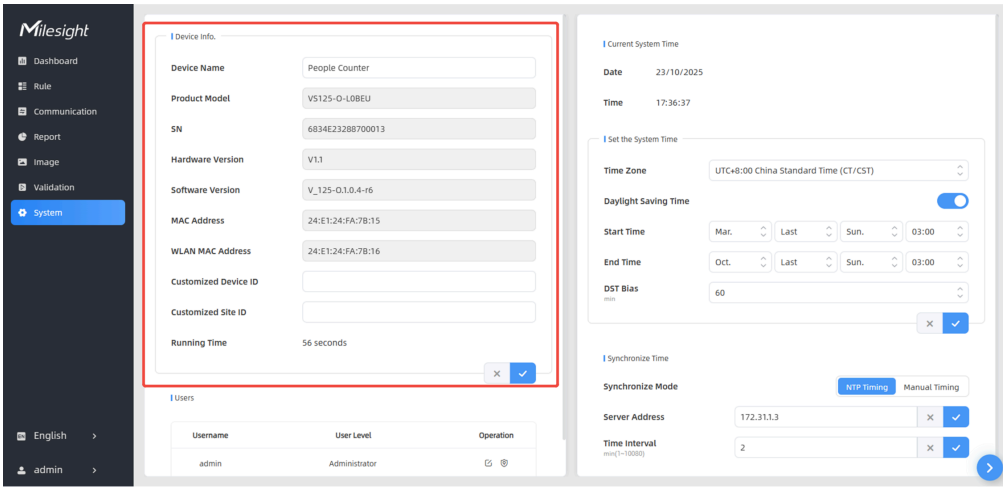
Parameters		Description
Playback Button		Rewind/Pause/Play/Forward (supports switching between 0.5x, 1x, 2x, and 4x playback speed).
		Start time and end time of the recording.
		Download video stream footage to check problem.

Note:
The playback progress bar of video stream footage highlights the video frame where the data changes.

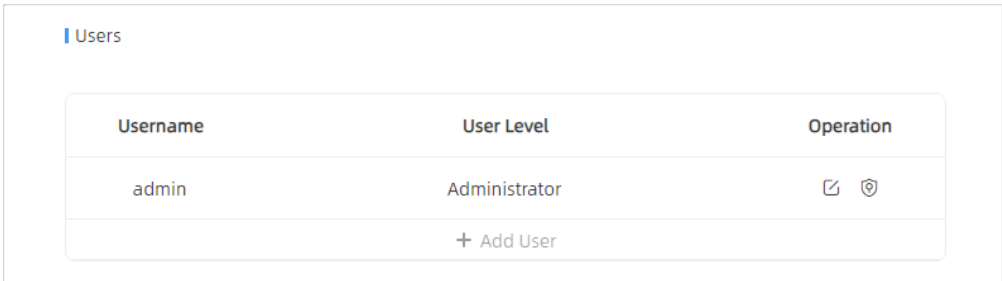
System

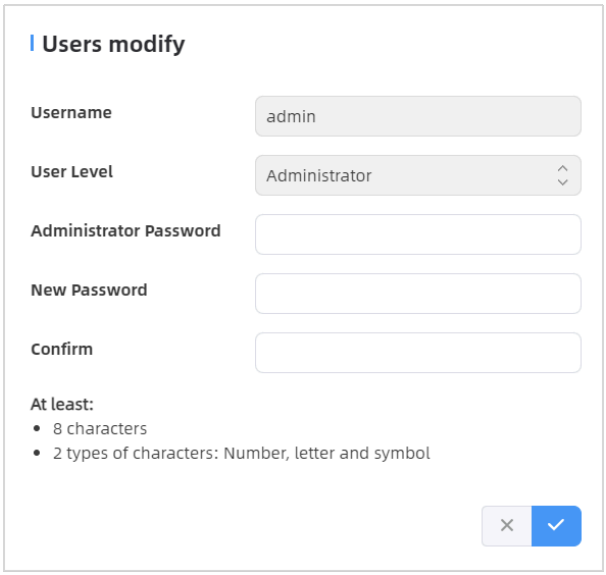
Device Info

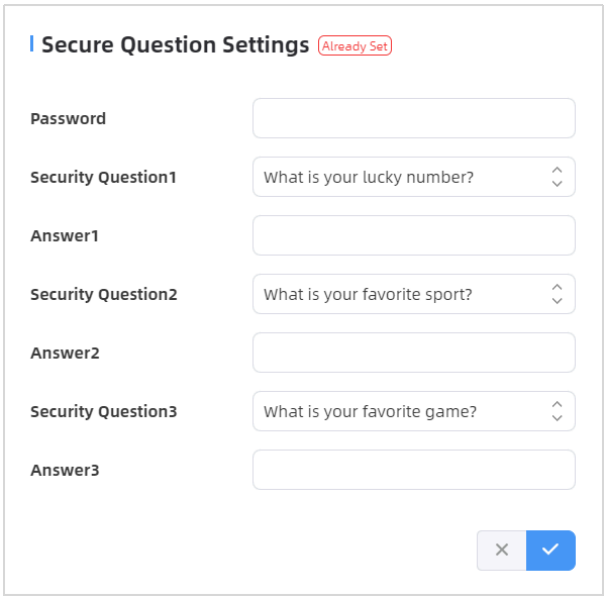
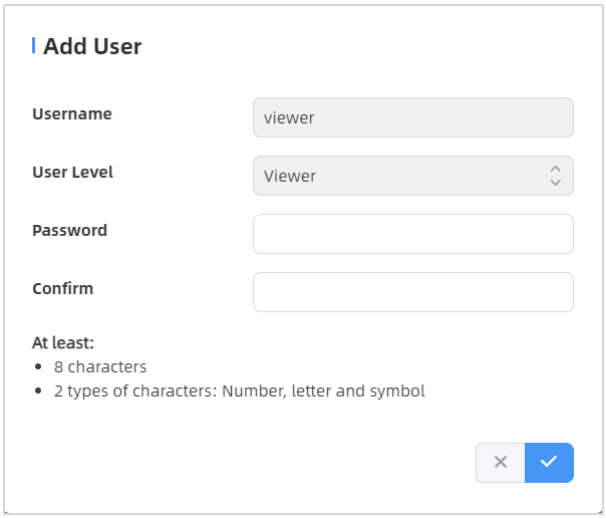
All information about the hardware and software can be checked on this page. Besides, users can modify the device name, customize device ID and site ID for large amounts of devices management.



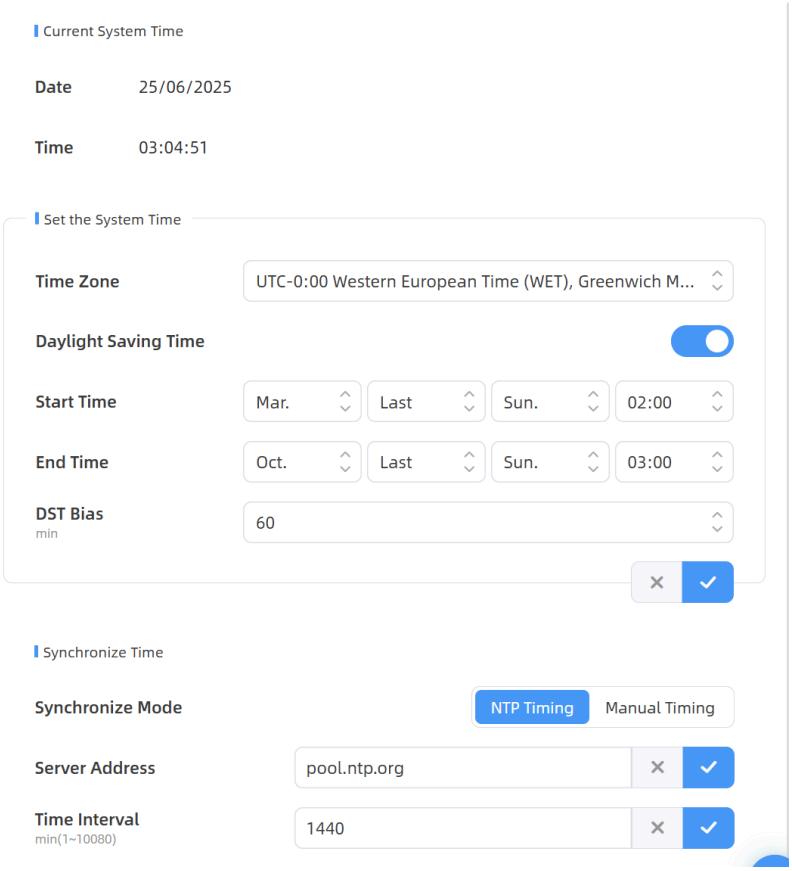
User



Parameters	Description
	You can change the login password of this device. 
	Click to set three security questions for your device. In case that you forget the password, you can click **Forget Password** button on login page to reset the password by answering three security questions correctly.

Parameters	Description
	
+ Add User	Click to add a viewer, who will only have access to the "Dashboard" and "Report" interfaces. 

Time Configuration

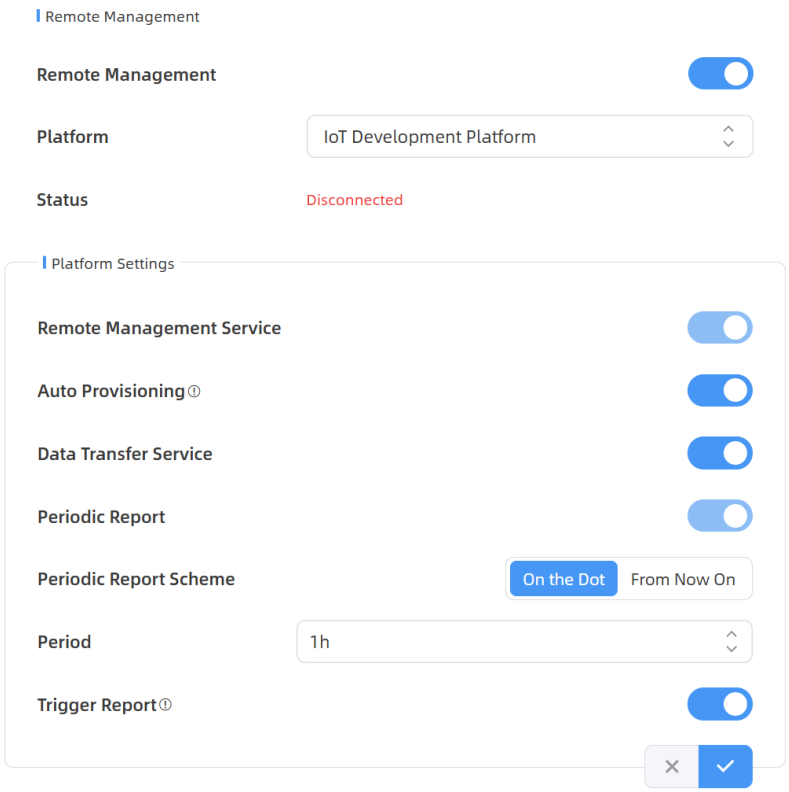


Parameters	Description
Time Zone	Choose the time zone for your location.
Daylight Saving Time	Enable or disable Daylight Saving Time (DST). **Start Time:** the start time of DST time range. **End Time:**the end time of DST time range. **DST Bias:** the DST time will be faster according to this bias setting.
Synchronize Mode	NTP Timing or Manual Timing is optional.
Server Address	NTP server address to sync the time.
Time Interval	Set the interval to sync time with NTP server.
Setting Time	Set the device time manually.

Parameters	Description
Synchronize with computer time	Synchronize the time with your computer.

Remote Management

Milesight provides remote management service for this device via Milesight DeviceHub platform or Milesight Development Platform. Before connecting, do ensure the device is connected to the network and Internet connection is stable.

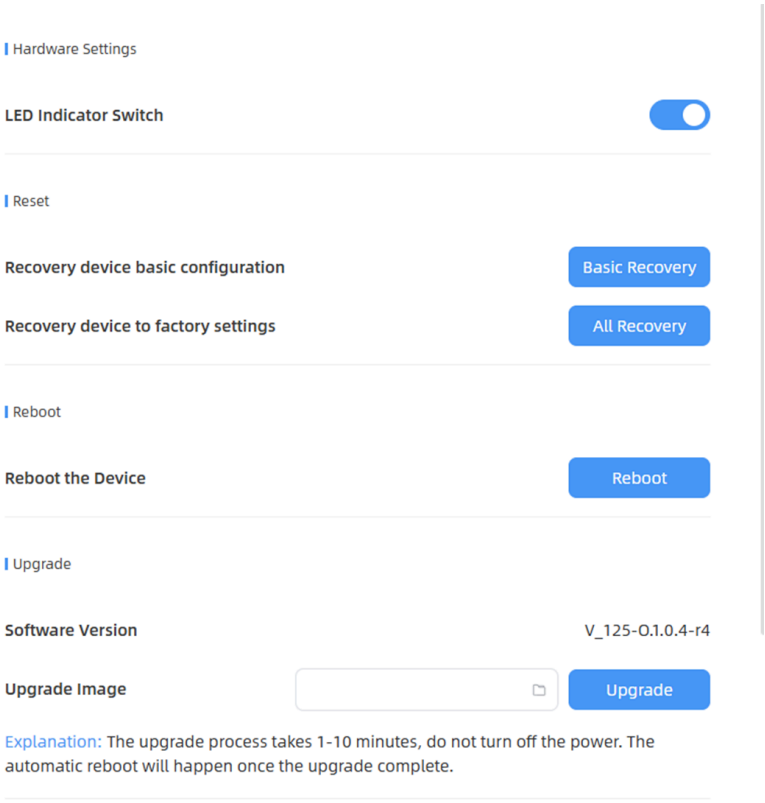


Parameters	Description
Remote Management	
Remote Management	Enable or disable to manage the device through Milesight platforms.
Platform	DeviceHub or IoT Development Platform is optional.
Status	Show the connection status between the device and the DeviceHub.
IoT Development Platform	

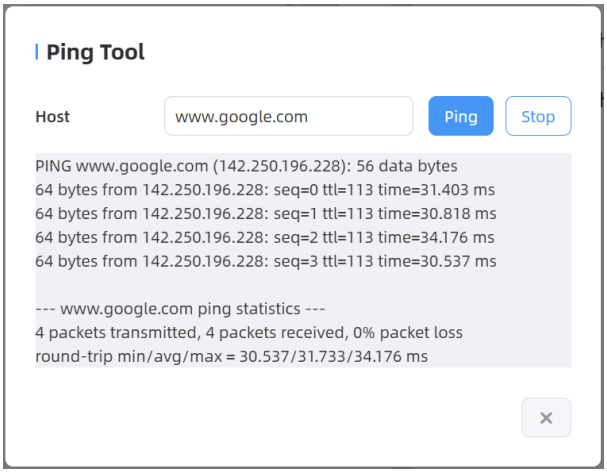
Parameters	Description
Remote Management	
Remote Management Service	Enable to change the device settings via Milesight Development platform.
Auto Provisioning	Enable to receive and deploy the configurations from Milesight Development Platform after the device is connected to Internet.
Data Transfer Service	Report people counting data to Milesight Development platform.
DeviceHub 2.0 (PoE Version Only)	
Server Address	IP address or domain of the DeviceHub 2.0 management server.
Synchronize Device Name	Enable or disable to synchronize device name on devicehub 2.0.
Synchronize Customized ID	Customize the device ID and site ID.

Parameters	Description
Security Service	
SSH	Enable or disable SSH access. The SSH port is fixed as 22.

System Maintenance



Parameters	Description
Hardware Settings	**LED Indicator Switch:** Enable or disable LED indicator when device is in normal operation.
Reset	**Recovery device basic configuration:** keep the IP settings and user information when resetting.
	Recovery device to factory settings: reset device to factory default, which needs to verify admin password.
Reboot	Restart the device immediately.
Upgrade	Click the folder icon and select the upgrading file, then click the **Upgrade** button to upgrade. The update will be done when the system reboots successfully.

<table>
<tr><th>Parameters</th><th>Description</th></tr>
<tr><td></td><td>Note:
The upgrade process takes about 1-10 minutes. Do not turn off the power and complete automatic restart after the upgrade.</td></tr>
<tr><td rowspan="2">Backup and Restore</td><td>Export Config File: Export configuration file.</td></tr>
<tr><td>Import Config File: Click the file icon and select the configuration file, click Import button to import configuration file.</td></tr>
<tr><td rowspan="2">Diagnostics</td><td>System Log: Download log files that can be used for troubleshooting.</td></tr>
<tr><td>IP Ping: Type the IP address or URL to test network connection.
 
</td></tr>
</table>

Chapter 7. Communication Protocol

The device will post the people counting data in json format to HTTP URL or MQTT broker. For details on the configuration method, please refer to Recipient.

Trigger Report

Line Crossing People Counting


```
{
"device_info":
{
      "cus_device_id": "123456",
      "cus_site_id": "789123",
      "device_mac": "24:E1:24:FA:0C:6C",
      "device_name": "People Counter",
      "device_sn": "6384E16179950009",
      "firmware_version": "V_125-O.1.0.4",
      "hardware_version": "V1.0",
      "ip_address": "192.168.60.183",
      "running_time": 58,
      "wlan mac": 24:E1:24:54:23:0A
  },
"network_info": //Cellular version only
{
      "network_status": "true",   //True is connected, False is disconnected
      "iccid": "89860117838009934120",
      "imei": "860425047368939",
      "cell_id": "340db80",
      "lac": "5299"
  },
"line_trigger_data":
[
{
         "children": {
         "female_in": 8,
         "female_out": 2,
         "in": 14,
```

```
        "male_in": 8,
        "male_out": 2,
        "out": 6
    },
    "group": {
        "in": 0,
        "out": 0
    },
    "staff": {
        "female_in": 0,
        "female_out": 0,
        "in": 0,
        "male_in": 0,
        "male_out": 0,
        "out": 0
    },
    "total": {
        "female_in": 20,
        "female_out": 22,
        "in": 27,
        "male_in": 20,
        "male_out": 22,
        "out": 27
    },
    "line": 1,
    "line_name": "Line11111111111111111111111111",
    "line_uuid": "9a0440de-3188-4f6d-b886-bb20c97bd26b"
},
    {
    "children": {
        "female_in": 8,
        "female_out": 2,
        "in": 14,
        "male_in": 8,
        "male_out": 2,
        "out": 6
    },
```

```
      "group": {
         "in": 0,
         "out": 0
      },
      "staff": {
         "female_in": 0,
         "female_out": 0,
         "in": 0,
         "male_in": 0,
         "male_out": 0,
         "out": 0
      },
      "total": {
         "female_in": 20,
         "female_out": 22,
         "in": 27,
         "male_in": 20,
         "male_out": 22,
         "out": 27
      },
      "line": 3,
      "line_name": "Line33333333333333333333333333",
      "line_uuid": "82ffe54d-0191-484b-a2fc-495628a8f2a1"
      }
   ],
"time_info":
{
      "dst_status": false,
      "enable_dst": true,
      "time": "2024-05-30T20:11:32+08:00",
      "time_zone": "UTC+8:00 China Standard Time (CT/CST)"
   }
}
```


Region People Counting


```
{
"device_info":
```

```
{
        "cus_device_id": "123456",
        "cus_site_id": "789123",
        "device_mac": "24:E1:24:FA:0C:6C",
        "device_name": "People Counter",
        "device_sn": "6384E16179950009",
        "firmware_version": "V_125-O.1.0.4",
        "hardware_version": "V1.0",
        "ip_address": "192.168.60.183",
        "running_time": 105,
"wlan mac": 24:E1:24:54:23:0A
    },
"network_info": //Cellular version only
{
        "network_status": "true",   ////True is connected, False is disconnected
        "iccid": "89860117838009934120",
        "imei": "860425047368939",
        "cell_id": "340db80",
        "lac": "5299"
    },

"region_trigger_data":
{
        "region_count_data":
[
            {
            "total": {
                "current_female": 0,
                "current_male": 1,
                "current_total": 2
            },
            "children": {
                "current_female": 0,
                "current_male": 1,
                "current_total": 2
            },
            "staff": {
```

```
            "current_female": 0,
            "current_male": 1,
            "current_total": 2
        },
        "region": 1,
        "region_name": "Region1",
        "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac"
    }
]
  },
"time_info":
{
    "dst_status": false,
    "enable_dst": true,
    "time": "2024-05-30T20:12:20+08:00",
    "time_zone": "UTC+8:00 China Standard Time (CT/CST)"
  }
}
```


Dwell Time Detection


```
{
"device_info":
{
    "cus_device_id": "123456",
    "cus_site_id": "789123",
    "device_mac": "24:E1:24:FA:0C:6C",
    "device_name": "People Counter",
    "device_sn": "6384E16179950009",
    "firmware_version": "V_125-O.1.0.4",
    "hardware_version": "V1.0",
    "ip_address": "192.168.60.183",
    "running_time": 106,
"wlan mac": 24:E1:24:54:23:0A
  },
"network_info": //Cellular version only
{
    "network_status": "true",  ////True is connected, False is disconnected
```

```
      "iccid": "89860117838009934120",
      "imei": "860425047368939",
      "cell_id": "340db80",
      "lac": "5299"
   },

"region_trigger_data":
{
      "dwell_time_data":
[
{
         "children": false,
         "duration": 96799,
         "dwell_end_time": "2024-05-30T20:12:20+08:00",
         "dwell_start_time": "2024-05-30T20:10:43+08:00",
         "people_id": 5,
         "region": 1,
         "region_name": "Region1",
         "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac",
         "gender": "male",
         "staff": true
      }
]
   },
"time_info":
{
      "dst_status": false,
      "enable_dst": true,
      "time": "2024-05-30T20:12:20+08:00",
      "time_zone": "UTC+8:00 China Standard Time (CT/CST)"
   }
}
```


Effective Viewers-Single track disappears


```
{
   "device_info": {
      "cus_device_id": "123456",
```

```
    "cus_site_id": "789123",
    "device_mac": "24:E1:24:FA:0C:6C",
    "device_name": "People Counter11",
    "device_sn": "6384E16179950009",
    "firmware_version": "V_125-O.1.0.4",
    "hardware_version": "V1.0",
    "ip_address": "192.168.60.183",
    "running_time": 58
},
"network_info": {
    "network_status": "true",
    "iccid": "89860117838009934120",
    "imei": "860425047368939",
    "cell_id": "340db80",
    "lac": "5299"
},
"attention_region_trigger_data":{
 "region_attention_time_data": [
    {
        "region": 1,
        "region_uuid": "c2cff789-8311-4a73-8ff3-9348cf4fa0d9",
        "children": false,
        "attention_time_ms": 96799,
        "people_id": 5,
        "gender": "male",
        "staff": true
    },
    {
        "region": 2,
        "region_uuid": "c2cff789-8311-4a73-8ff3-9348cf4fa0d9",
        "children": false,
        "attention_time_ms": 96799,
        "people_id": 5,
        "gender": "male",
        "staff": true
    }
    ]
```

```
  },
    "time_info": {
     "dst_status": false,
     "enable_dst": true,
     "time": "2024-05-30T20:11:32+08:00",
     "time_zone": "UTC+8:00 China Standard Time (CT/CST)"
  }
}
```

Periodic Report

```
{
  "device_info": {
     "cus_device_id": "123456",
     "cus_site_id": "789123", //PoE version only
     "device_mac": "24:E1:24:FA:0C:6C",   //PoE version only
     "device_name": "People Counter11",
     "device_sn": "6384E16179950009",
     "firmware_version": "V_125-O.1.0.4",
     "hardware_version": "V1.0",
     "ip_address": "192.168.60.183",
     "running_time": 141,
     "wlan_mac": "24:E1:24:54:23:0A"
  },
  "network_info": {//Cellular version only
  "network_status": "true", //True is connected, False is disconnected.
     "iccid": "89860117838009934120",
     "imei": "860425047368939",
     "cell_id": "340db80",
     "lac": "5299"
  },
  "line_periodic_data": [{
        "line": 1,
        "line_name": "Line11111111111111111111111111",
        "line_uuid": "9a0440de-3188-4f6d-b886-bb20c97bd26b",
        "total": {
           "female_in": 0,
           "female_out": 0,
```

```
            "in": 0,
            "male_in": 0,
            "male_out": 0,
            "out": 0
        },
        "children": {
            "female_in": 0,
            "female_out": 0,
            "in": 0,
            "male_in": 0,
            "male_out": 0,
            "out": 0
        },
        "staff": {
            "female_in": 0,
            "female_out": 0,
            "in": 0,
            "male_in": 0,
            "male_out": 0,
            "out": 0
        },
        "group": {
            "in": 0,
            "out": 0
        }
    },
    {
        "line": 2,
        "line_name": "Line22222222222222222222222222",
        "line_uuid": "b138b9a1-ce58-40bd-98f4-c401dfc118c8",
        "total": {
            "female_in": 0,
            "female_out": 0,
            "in": 0,
            "male_in": 0,
            "male_out": 0,
            "out": 0
```

```
        },
        "children": {
            "female_in": 0,
            "female_out": 0,
            "in": 0,
            "male_in": 0,
            "male_out": 0,
            "out": 0
        },
        "staff": {
            "female_in": 0,
            "female_out": 0,
            "in": 0,
            "male_in": 0,
            "male_out": 0,
            "out": 0
        },
        "group": {
            "in": 0,
            "out": 0
        }
    }
],
"line_total_data": [{
        "line": 1,
        "line_name": "Line11111111111111111111111111",
        "line_uuid": "9a0440de-3188-4f6d-b886-bb20c97bd26b",
        "children": {
            "female_in_counted": 0,
            "female_out_counted": 0,
            "in_counted": 0,
            "male_in_counted": 0,
            "male_out_counted": 0,
            "out_counted": 0
        },
        "total": {
            "female_in_counted": 0,
```

```
            "female_out_counted": 0,
            "in_counted": 0,
            "male_in_counted": 0,
            "male_out_counted": 0,
            "out_counted": 0,
            "capacity_counted": 0
        },
        "staff": {
            "female_in_counted": 0,
            "female_out_counted": 0,
            "in_counted": 0,
            "male_in_counted": 0,
            "male_out_counted": 0,
            "out_counted": 0
        },
        "group" {
            "in_counted": 0,
            "out_counted": 0
        }

    },
"region_data": {
    "dwell_time_data": [{
            "avg_dwell_time": 308367,
            "children_avg_dwell_time": 0,
            "children_max_dwell_time": 0,
            "female_avg_dwell_time": 0,
            "female_max_dwell_time": 519934,
            "male_avg_dwell_time": 0,
            "male_max_dwell_time": 96799,
            "max_dwell_time": 519934,
            "staff_max_dwell_time": 1522,
            "staff_avg_dwell_time": 1522,
            "region": 1,
            "region_name": "Region1",
            "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac"
        }
```

```
    ],
    "region_count_data": [{
            "total": {
            "current_female": 0,
            "current_male": 1,
            "current_total": 2
        },
        "children": {
            "current_female": 0,
            "current_male": 1,
            "current_total": 2
        },
        "staff": {
            "current_female": 0,
            "current_male": 1,
            "current_total": 2
        },
        "region": 1,
        "region_name": "Region1",
        "region_uuid": "bd1e6ce2-e113-4ce4-a9b6-0633f7083cac"
    }]
},
 "attention_region_total_data": {
    "region_effective_audience_data": [
        {
            "region": 1,
            "region_uuid": "c2cff789-8311-4a73-8ff3-9348cf4fa0d9",
            "total": {
            "effective_audience": 1,//Including staffs and children
            "male_effective_audience": 1,///Including male staffs and boys
            "female_effective_audience": 1////Including female staffs and girls
            },
            "children": {
                "effective_audience": 1,
                "male_effective_audience": 1,
                "female_effective_audience": 1
            },
```

```
            "staff": {
              "effective_audience": 1,
              "male_effective_audience": 1,
              "female_effective_audience": 1
            }
          }
      ],
      "region_avg_attention_time_data": [//Excluding staffs and children
          {
            "region": 1,
            "region_uuid": "c2cff789-8311-4a73-8ff3-9348cf4fa0d9",
            "avg_time_s": 10,
            "children_avg_time_s": 10,
            "staff_avg_time_s": 10,
            "male_avg_time_s": 10,
            "female_avg_time_s": 10
          },
          {
            "region": 2,
            "region_uuid": "c2cff789-8311-4a73-8ff3-9348cf4fa0d8",
            "avg_time_s": 10,
            "children_avg_time_s": 10,
            "staff_avg_time_s": 10,

            "male_avg_time_s": 10,
            "female_avg_time_s": 10
          }
      ]
    },
     "time_info": {
      "dst_status": false,
      "enable_dst": true,
      "end_time": "2024-05-30T20:21:49+08:00",
      "start_time": "2024-05-30T20:20:49+08:00",
      "time_zone": "UTC+8:00 China Standard Time (CT/CST)"
    }
}
```

Chapter 8. MQTT API Command

Search Report

Request example:

```
{
 "dst": "all",
 "type":0,
 "command":"/api/v1/system/searchReport",
 "msgId":"1",
 "requestData":{
      "event":0,
      "startTime":"2025-01-22T08:00:00.000",
      "endTime":"2025-01-23T08:00:00.000",
      "lineParam":{
          "lineId":0,
          "timeUnit":0,
          "mode":0
          },
      "regionCount":{
          "regionId":0
          },
      "dwellDetect":{
          "regionId":0,
          "timeMin":10,
          "timeBinWidth":10,
          "numOfBins":10
          },
      "heatMap":{
          "type":0
           },
      "uuid":"1d4f62b5-37f0-4bda-80f8-a5625613fc6e"
}
}
```

Parameter	Type	Description
dst	string	all: send to all recipients that subscribe the MQTT API topic SN: send to a certain recipient
type	number	0: request, 1: response
msgId	number	Identifier of this request
requestData	object	
event	number	0: Line crossing counting 1: Region people counting 2: Dwell time detection 3: Heat map 4: History Point
startTime		
endTime		
lineParam		
regionCount		
dwellDetct		
heatMap		
uuid	string	A random unique ID defined by user

Response example: Success


```
{
"code":0,
"message":"ok",
"msgId":"1",
"src":"6834E16184430017",
"transmitTime":2,
```

```
"type":1
}
```

Parameter	Type	Description
code	integer	
message	string	
msgId	number	Identifier of this request
src	string	SN for response
type	number	0: request, 1: response

Get Report Result

Request example:

```
{
 "dst": "all",
 "type":0,
 "command":"/api/v1/system/getReportResult",
 "msgId":"1",
  "requestData":{
      "uuid":"1d4f62b5-37f0-4bda-80f8-a5625613fc6e",
      "event":0
      }
}
```

Parameter	Type	Description
dst	string	all: send to all recipients that subscribe the MQTT API topic SN: send to a certain recipient
type	number	0: request, 1: response
msgId	number	Identifier of this request
requestData	object	
uuid	string	A random unique ID defined by user

Parameter	Type	Description
event	number	0: Line crossing counting 1: Region people counting 2: Dwell time detection 3: Heat map

Response example


```
{
  "code": 0,
  "data": {
    "event": 0,
    "isReady": true,
    "line": [
      {
        "children": {
          "femaleIn": 0,
          "femaleOut": 1,
          "in": 6,
          "maleIn": 6,
          "maleOut": 0,
          "out": 1
        },
        "group": {
          "in": 9,
          "out": 3
        },
        "staff": {
          "femaleIn": 0,
          "femaleOut": 0,
          "in": 0,
          "maleIn": 0,
          "maleOut": 0,
          "out": 0
        },
```

```
            "time": "2024-08-15T09:00:00.000",
            "total": {
              "femaleIn": 0,
              "femaleOut": 1,
              "in": 9,
              "maleIn": 9,
              "maleOut": 2,
              "out": 3
            }
          }
      ]
  },
  "message": "ok",
  "transmitTime": 1
}
```


Parameter	Type	Description
code	integer	
data	object []	Return data
event	number	0: Line crossing counting 1: Region people counting 2: Dwell time detection 3: Heat map
isReady	boolean	
line	object	
Children	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	

Parameter	Type	Description
maleIn	integer	
Out	integer	
staff	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
total	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
time	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
group	object	
femaleIn	integer	
femaleOut	integer	

Parameter	Type	Description
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
region	object	
Children	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
staff	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
total	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	

Parameter	Type	Description
time	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
dwell	object	
Children	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
staff	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
total	object	
femaleIn	integer	
femaleOut	integer	
In	integer	

Parameter	Type	Description
maleIn	integer	
maleIn	integer	
Out	integer	
time	object	
femaleIn	integer	
femaleOut	integer	
In	integer	
maleIn	integer	
maleIn	integer	
Out	integer	
heatmap	object	
height	number	Height of the heatmap data grid
width	number	Width of the heatmap data grid
max	number	The Maximum value of heat map
min	number	The minimum value of heat map
values	object[]	
X	number	
Y	number	
value	number	
historyPoints		
values	object[]	Trajectory Point Types: 0: Start Trajectory Point 1: Stop Trajectory Point
X	number	
Y	number	

Parameter	Type	Description
message	string	Return Information
transmitTime	number	Processing time

Search Log

Request example:

```
{
 "dst":"all",
 "type":0,
 "command": "/api/v1/system/searchLog",
  "msgId":12345678,
 "requestData":{
     "startTime": "0",
     "endTime": "1800211081920",
     "logType": 0,
     "admin": true
}
}
```

Parameter	Type	Description
dst	string	all: send to all recipients that subscribe the MQTT API topic SN: send to a certain recipient
type	number	0: request, 1: response
msgId	number	Identifier of this request
requestData	object	
startTime	string	Start Timestamp, Unit: ms
endTime	string	End Timestamp, Unit: ms
logType	number	0: Starting up log
admin	boolean	true: display response parameter “rebootCode”,

Parameter	Type	Description
		false: hidden response parameter “rebootCode”

Response example:


```
{
 "code": 0,
  "data": {
    "log": [
     {
       "PowerOnTime": "2024-07-22T09:34:27+08:00",
       "ShutdownTime": "2024-07-22T09:41:59+08:00",
       "rebootCode": 1,
       "rebootMessage": "normal",
       "runningTime": 451
     },
     {
       "PowerOnTime": "2024-07-22T09:42:05+08:00",
       "ShutdownTime": "2024-07-22T09:54:47+08:00",
       "rebootCode": 3,
       "rebootMessage": "upgrade success",
       "runningTime": 761
     }
   ],
    "recordCount": 5
  },
  "message": "ok",
  "transmitTime": 3
}
```


Parameter	Type	Description
code	integer	
data	object	
log	object[]	Item type: object
PowerOnTime	string	Boot time

Parameter	Type	Description
ShutdownTime	string	Power outage time
rebootCode	string	-1: Running 0: Unknown reason reboot 1: Manual reboot 2: Network modification reboot 3: Web upgrade reboot 4: Software reset reboot 5: Hardware reset reboot 6: Configuration import reboot 7: Remote management configuration import 8: Remote management upgrade 9: Upgrade failure reboot 10: Multicast network configuration modification reboot 11: mssserver crash 12: avserver crash 13: lighttpd crash 14: Multi-device stitching mode change 15: Multiple 4G dial-up failures
runningTime	integer	
runningTime	string	
recordCount	integer	Number of restarts, maximum display 1000
message	string	

Parameter	Type	Description
transmitTime	number	Processing time

Chapter 9. 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: iot.support@milesight.com

Online Support Portal: https://support.milesight-iot.com

Resource Download Center: https://www.milesight.com/iot/resources/download-center/

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FAX: +86-592-5023065

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