



VA05

Advanced Staff Detection Kit

User Guide

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Chapter 1. Preface

Copyright Statement

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Milesight reserves the right to change this guide and the specifications without prior notice. The latest specifications and user documentation for all Milesight products are available on our official website <http://www.milesight.com>

Safety Instruction

These instructions are intended to ensure that users can use the product correctly to avoid danger or property loss. Milesight will not take responsibility for any loss or damage resulting from failure to follow the instructions in this operating guide.



CAUTION:

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

- The device is intended only for indoor use.
- The device is not intended to be used as a reference sensor, and Milesight will not take responsibility for any damage which may result from inaccurate readings.
- The device must not be disassembled or remodeled in any way.
- Do not place the device close to objects with naked flames.
- Do not place the device where the temperature is below/above the operating range.
- The device must never be subjected to shocks or impacts.
- To prevent heat accumulation, do not block air circulation around the device.

Revision History

Release Date	Version	Revision Content
Apr. 30, 2026	V1.0	Initial version

Chapter 2. Product Introduction

This chapter describes basic product information.

Overview

VA05 is a high-precision staff identification and positioning solution. Leveraging advanced UWB (Ultra Wide Band) technology, it achieves up to 99% accuracy in staff identification and counting. This solution addresses key challenges in traditional staff identification methods, including wearability limitations, charging inconvenience, and inefficient storage. With its lightweight and discreet design, the VA05 meets the demands of high-end retail environments for unobtrusive staff identification and accurate foot traffic analysis. It integrates seamlessly with VS series devices to support staff trajectory analysis and resource optimization, enabling more intelligent and refined personnel management for retail businesses.

VA05 can be used in retail environments, such as stores and similar scenarios.



1: **Anchor**, used to identify and receive tag signals for positioning.

2: **Tag**, worn by personnel to transmit positioning signals.

3: **Charging Base**, provides a charging for the tag.

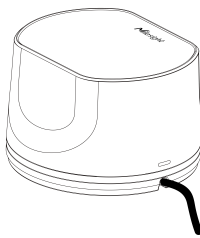
The device has the following features:

- Compliant with International UWB Standard, IEEE 802.15.4.
- Achieves up to 99% accuracy in staff identification and counting, ensuring precise foot traffic data.
- Ultra-compact and lightweight, the tag fits easily into a pocket for a truly unobtrusive wearing experience.
- Comes with a charging cradle that charges and stores tags simultaneously, simplifying daily management.
- Supports magnetic charging, enhancing user convenience and operational efficiency.
- Designed to last throughout full retail operating hours, from opening to closing.

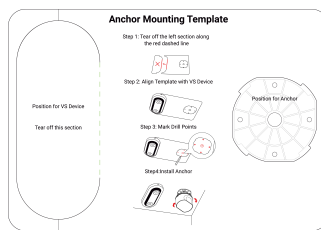
- Works in tandem with Mileight VS series devices for staff location tracking and movement analysis.
- Unified industrial design across base stations and tags, enhancing brand perception and user experience.

Packing List

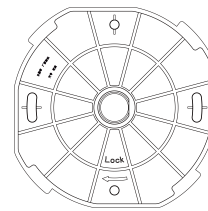
This section describes the packing list. After unboxing, please check that the following items are included in the package. If any of the below items are missing or damaged, please contact your sales representative.



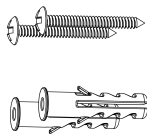
1 × Anchor



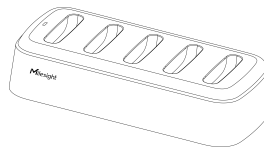
1 × Anchor Mounting Template



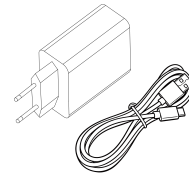
1 × Anchor Mounting Bracket



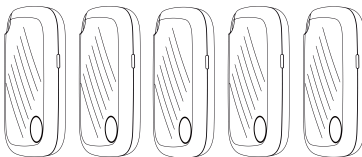
2 × Screws Kits



1 × Charging Base



1 × Power Adapter



5 × Tags



1 × Quick Guide Card

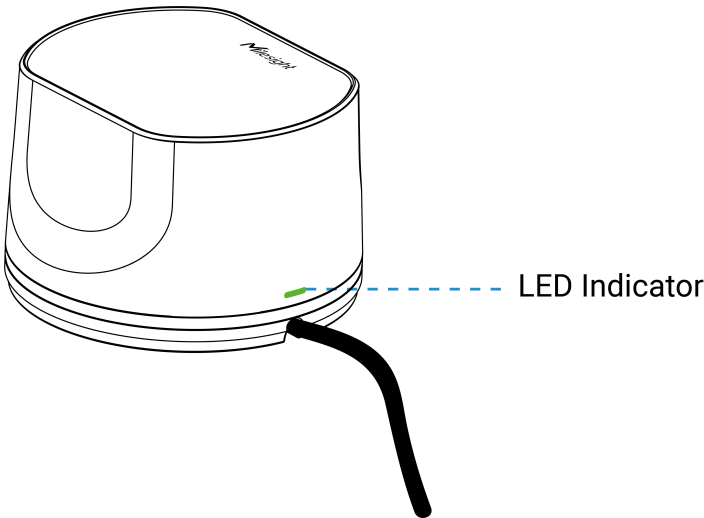


1 × Warrant Card

Hardware Introduction

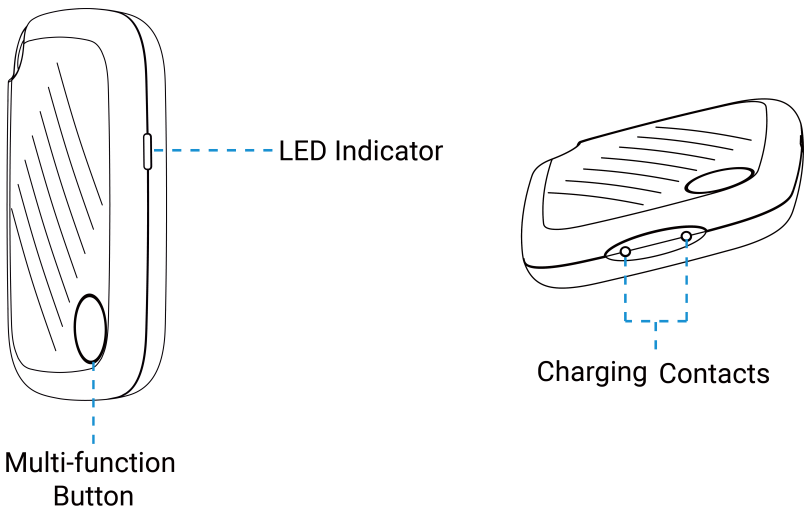
Hardware Overview

Anchor



Part	Description
LED Indicator	Indicates the device status. For more details, see Button and LED Indicator Description .

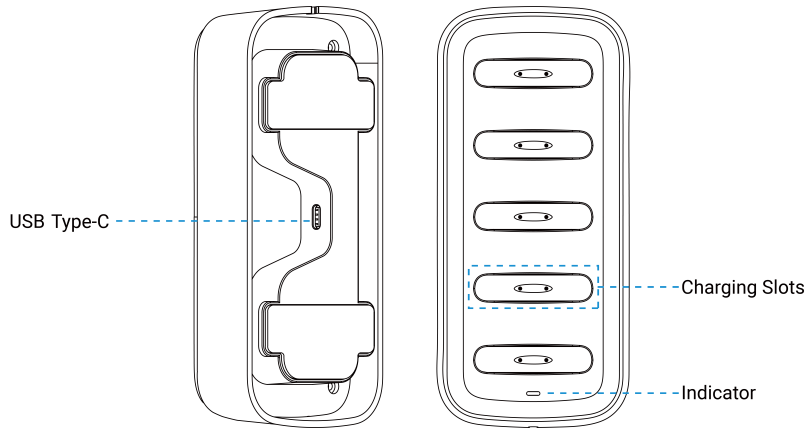
Tag



Part	Description
LED Indicator	Indicates the device status. For more details, see Button and LED Indicator Description .
Multi-function Button	Used for powering the device on/off and checking the tag status. For more details, see Button and LED Indicator Description .

Part	Description
Charging Contacts	Charging interface. Keep it clean.

Tag Charging Base



Part	Description
USB Type-C	Used for power supply connection.
Charging Slots	Provides five slots for charging tags.
LED Indicator	Show the state of the base. For more details, see Button and LED Indicator Description .

Button and LED Indicator Descriptions

Table 1. Anchor

Function	LED Indicator
Power On	Off → On
Power Off	On → Off
Operating Normally	Green Light Stays On
Upgrading	Red Light Blinks Slowly
Upgrade Failure	Red Light Stays On for 3s and Reboot

Table 2. Tag

Function	Action	LED Indicator
Power On	Press and hold the multi-function button for more than 3 seconds.	Off → On
Power Off		On → Off
Operating Normally	/	Light Off
Check Status	Quick press the multi-function button once	Power Off: Off
		Power On & Battery Level >10%: Green Light
		Power On & Battery Level ≤10%: Red Light
Anchor Binding Status	/	Successfully Bind: Green Light for 3s
Battery Level Status*	/	Battery Level ≤10%: Red light blinks once every 10s
		Charging: Red Light Stays On
		Fully Charged: Green Light Stays On

**If a fully charged tag's red light briefly turns on when placed in the charge base, this is normal. No action is needed.*

Table 3. Tag Charging Base

Function	LED Indicator
Power On	Off → On
Power Off	On → Off
Operating Normally	Green Light Stays On

Dimensions

The following figure shows the device dimensions (unit: mm).

Figure 1. Anchor

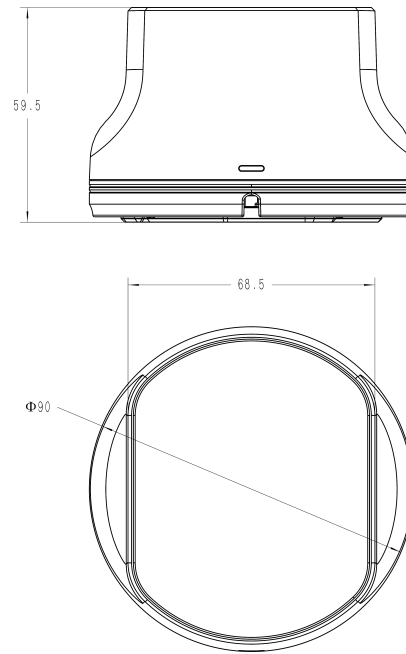


Figure 2. Tag

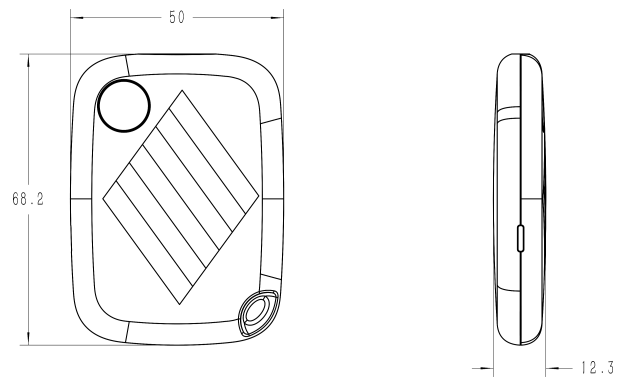
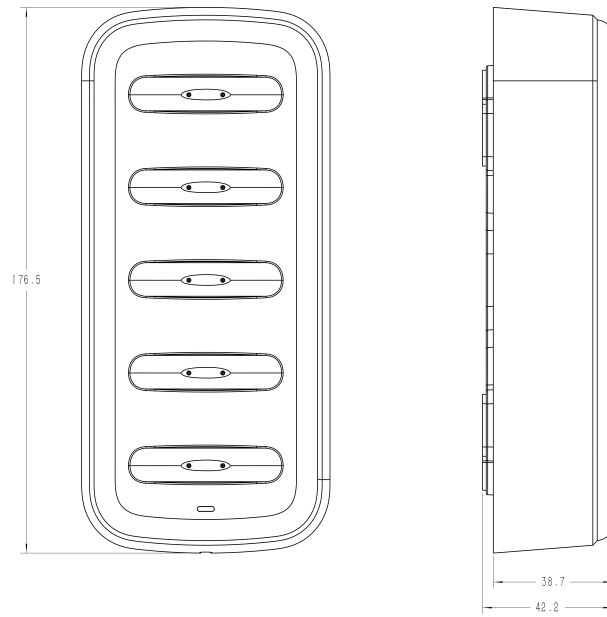


Figure 3. Tag Charging Base



Chapter 3. Power Supply

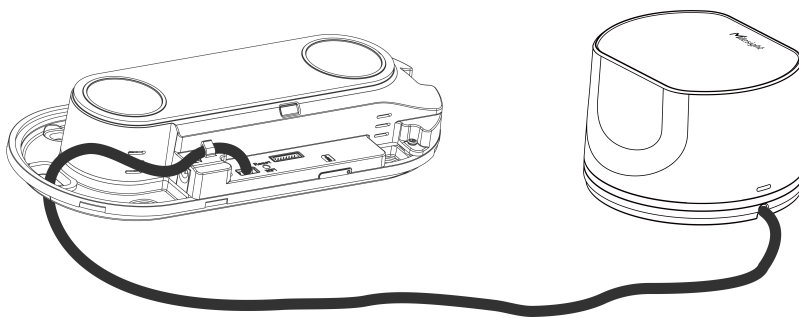
This section describes how to power the three components of the VA05: anchor, tag, and tag charging base.

Anchor Powered by VS Device

Anchor comes with an attached cable. Plug it directly into the corresponding serial port on your VS series device. The anchor receives power from the VS device through this cable when the VS device is powered on; no separate power adapter is required.

Please verify the device version before powering on.

Compatible VS Device	Hardware Version	Firmware Version
VS125-LW	1.1 and later	1.0.5 and later
VS125	2.2 and later	1.0.6 and later



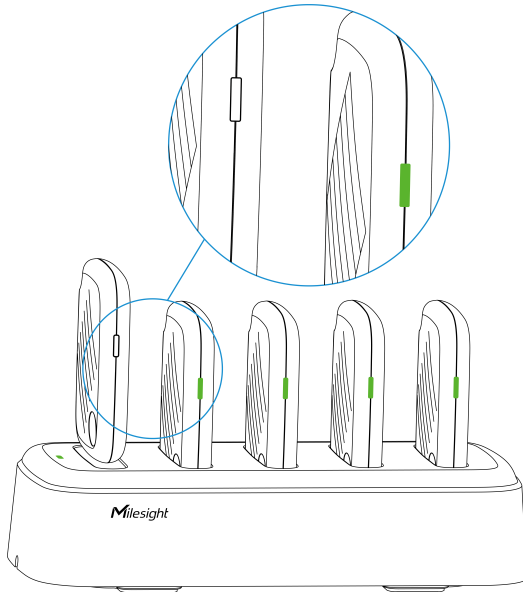
**The anchor firmware updates automatically when you connect to the VS device. No separate action is required.*

Tag Powered by Batteries

Tag has a built-in rechargeable lithium polymer battery (model UFX702035) installed by default.

To charge the tag, simply place it into the charging slot of the charging base; the pogo pins on the bottom of the tag will automatically make contact. The red indicator lights up during charging, and the green indicator lights up when the tag is fully charged.

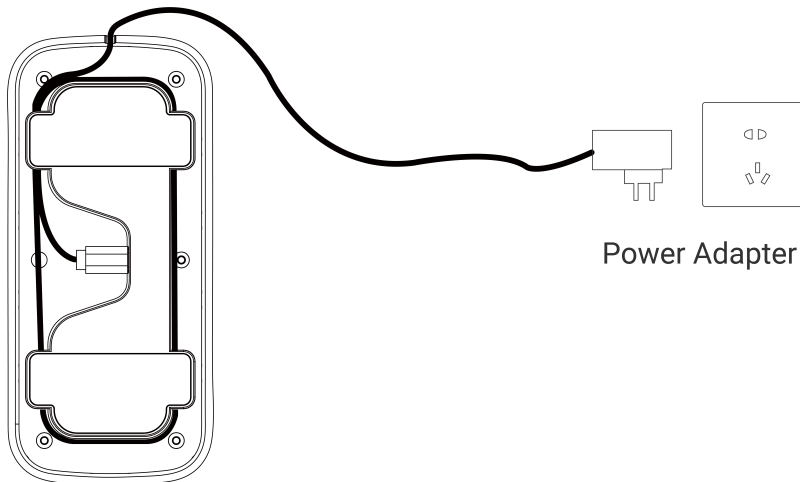
The battery can be recharged for 500 cycles. A full charge supports up to 3 days of operation.



Charging Base Powered by USB Type-C (5V/2A)

Charging base is powered directly via USB Type-C.

Place the base on a stable, flat surface to prevent it from falling. Ensure there is 2–3 cm of space around the base for ventilation and heat dissipation.



Chapter 4. Deployment and Usage

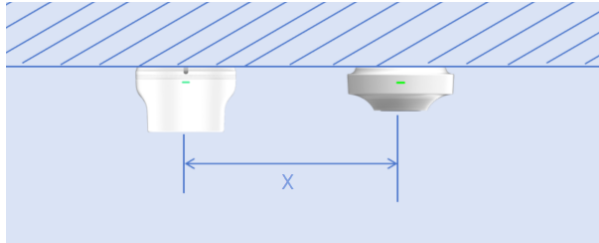
Anchor Deployment

Preparations: Ensure the VS device is securely mounted to the ceiling.

Requirements:

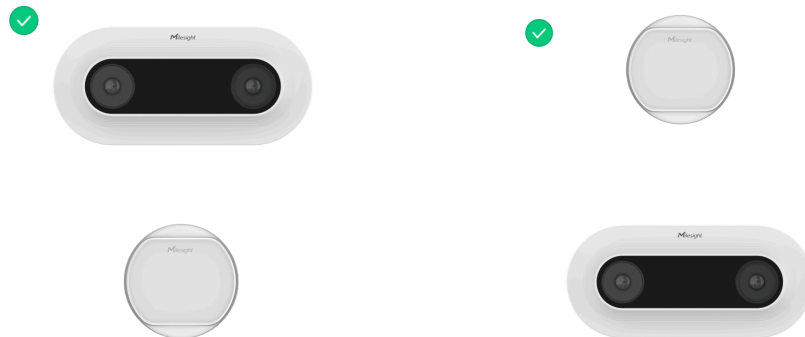
- Anchor does not support recessed/flush mounting (e.g., embedding into a ceiling).
- No metal objects or walls between anchor and tag.
- Install according to the Mounting Template whenever possible. If the template cannot be used due to site limitations, follow the requirements below; otherwise, detection accuracy may be compromised.

1. Installation Distance: $20\text{cm} < X < 47\text{cm}$ (Anchor cable length)



2. Installation Direction:

▪ Correct Installation Direction:



▪ Wrong Installation Direction:



- If you need to install multiple anchors, please follow the requirements below.

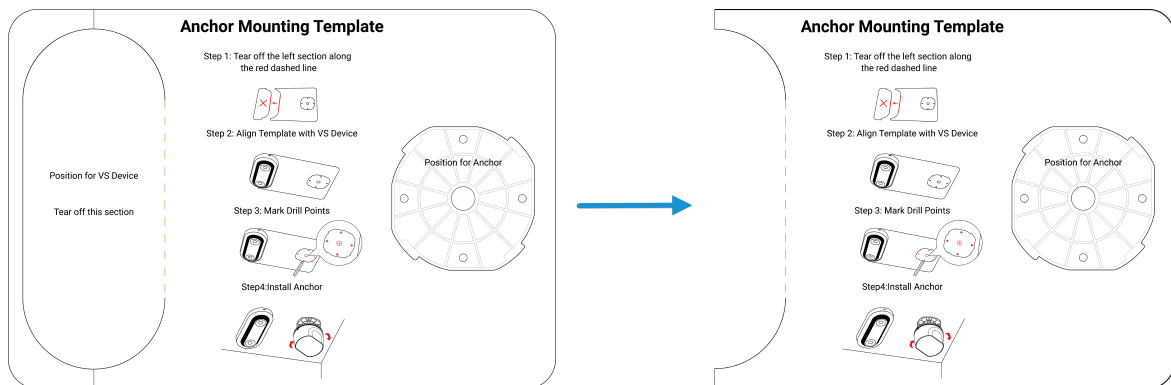
Scenario	Installation Requirement	Description
Different stores / entrances identify different groups of staff	Anchor Spacing $\geq Y$ meters, $Y = 2\sqrt{3} h + 10$	h =installation height (m); Prevents signal interference.
Cross-store identification of the same group of staff	Anchor Spacing > 56 meters	Ensures tags of the same group are recognized by multiple anchors.

For large open entrances wider than the VS device's Field of View (FOV) or for large retail floors requiring multiple VS devices, the current version of VA05 does not support stitching multiple Anchors. Please contact Milesight support for consultation on your specific layout.

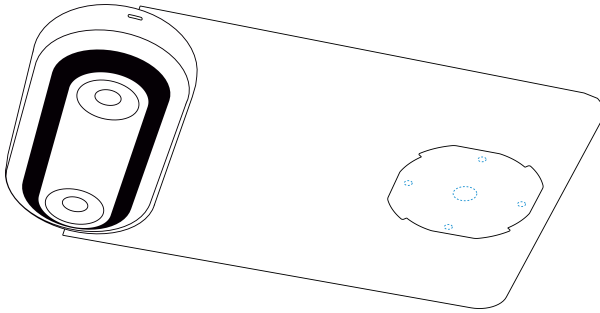
The steps below are for standard ceiling mounting. The anchor can also be used for extended ceiling or lintel installations, which requires the purchase of VB accessories. For details, please refer to the [VB03 Datasheet](#).

Steps:

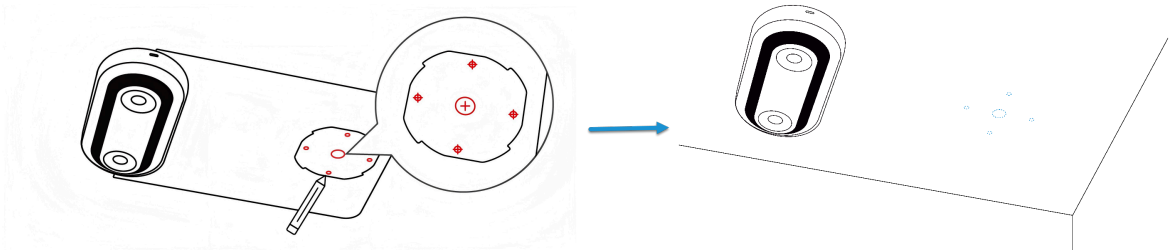
1. Take out the Anchor Mounting Template and tear off the left section along the red dashed line.



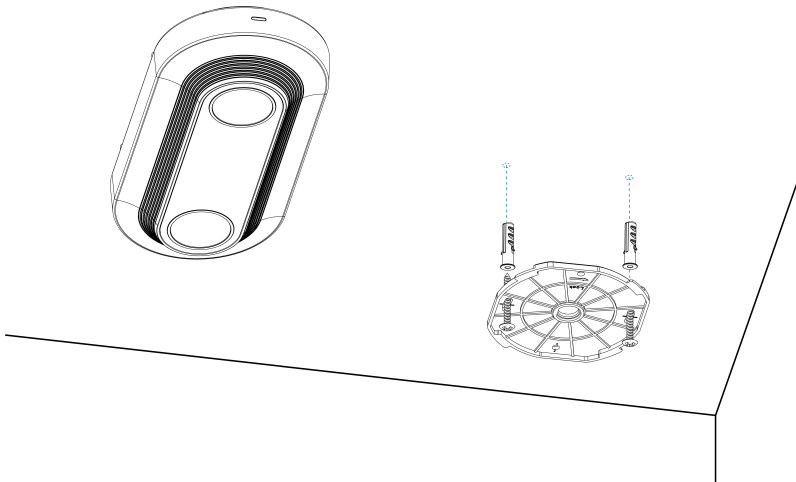
2. Align the folded mounting template with the VS device, then mark the anchor mounting holes and cable exit holes using a marker.



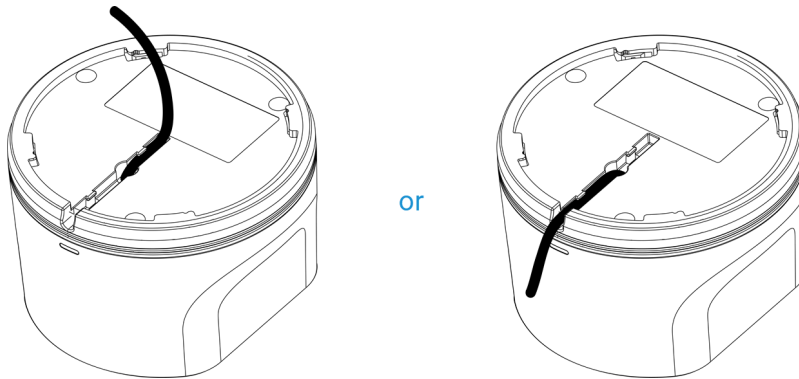
3. Remove the template, drill holes at the marked positions, and create cable openings if required.



4. Insert bolts, then position the anchor mounting bracket and secure it with screws. Ensure the bracket is at the same horizontal level as the VS device.

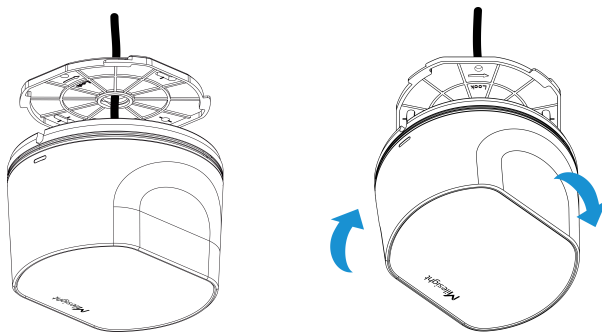


5. Select the cable exit direction for the anchor (bottom or side).

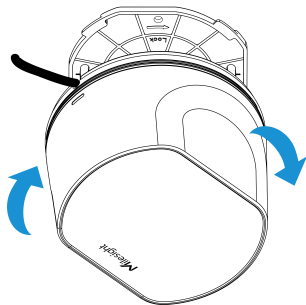


6. Align the anchor with the bracket and rotate clockwise to lock it in place.

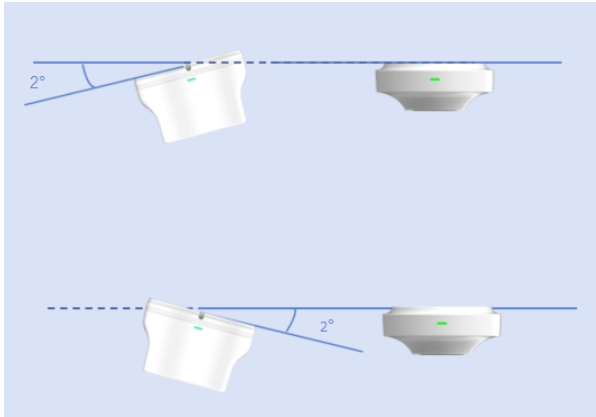
Bottom:



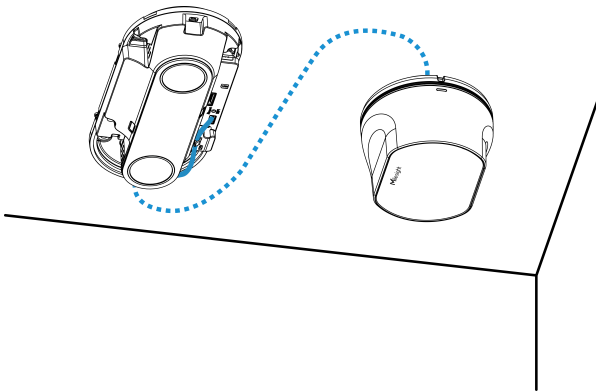
Side:



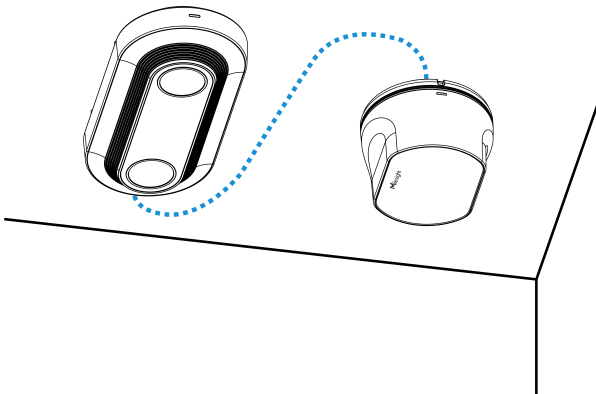
7. Ensure the tilt angle between the anchor and VS device will not exceed 2°. If the requirement is not met, please readjust.



8. Remove the outer cover of the VS device, then connect the anchor cable to the serial port of the VS device.



9. Close the outer cover of the VS Device and ensure all components are firmly installed.



10. (Optional) If multiple anchors are required, repeat the steps starting from Step 1.

Tag Usage

Preparations: The tag's power is sufficient.

Steps:

1. **Check the tag status:** Short press the multifunction button on the tag once.
 - If the indicator light shows green, the tag is functioning properly.
 - If there is no response, press and hold the button for more than 3 seconds to power on the tag.
 - If the tag still has no response after pressing and holding, the battery may be depleted. Please charge the tag first.
2. **Wearing Requirements:**
 - a. Place the tag in a front-facing pocket (chest or front pants pocket).
 - b. Ensure the button side faces away from your body (toward the anchor).
 - c. Do not hold the tag in your hand, the anchor cannot detect the tag through the hand.
 - d. Avoid locations with excessive movement (e.g., a shirt sleeve pocket).
 - e. If other metal objects (e.g., keys, mobile phone) are in the same pocket, place the metal objects on the side closer to your body and the tag on the outside.
3. Enter [Staff Detection configuration](#).
4. (Optional) To power off the tag (e.g., for long-term storage), press and hold the multi-function button for more than 3 seconds until the indicator turns off.

Chapter 5. Configure Staff Detection

This section describes how to configure staff detection via the Web GUI of VS device.

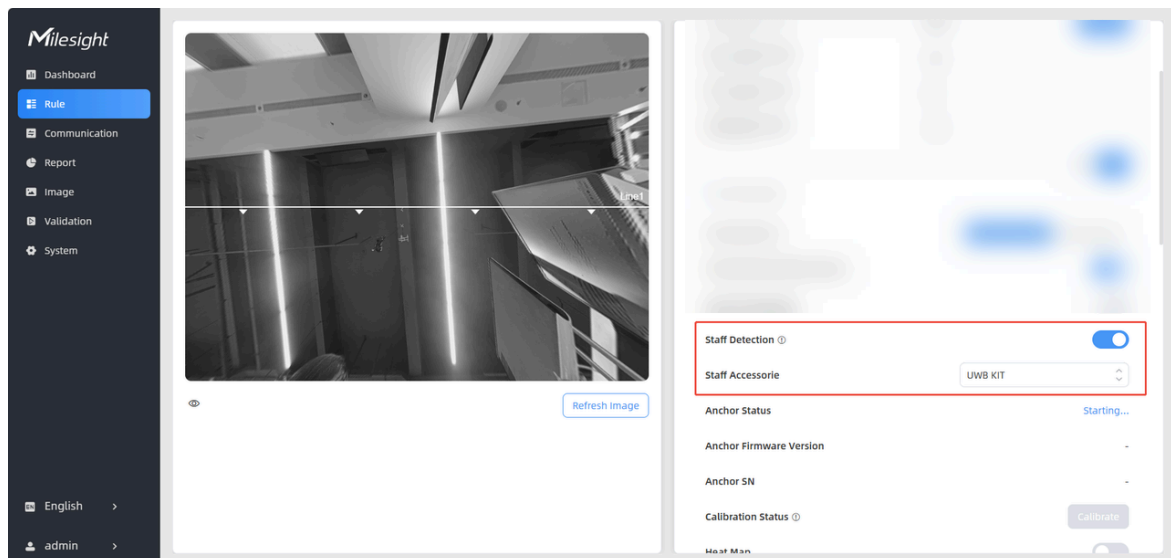
Prerequisites:

- Only the tag is supported. Do not mix with other staff accessories (e.g., lanyards, badges).
- Working Mode is set to **Standalone**.
- Version Requirement.

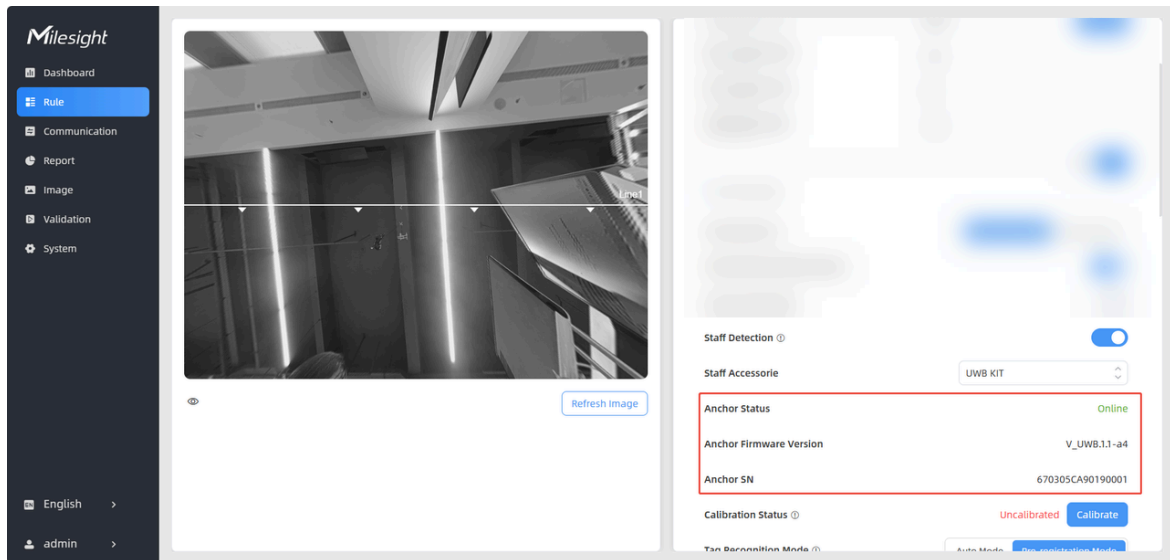
Compatible VS Device	Hardware Version	Firmware Version
VS125-LW	1.1 and later	1.0.5 and later
VS125	2.2 and later	1.0.6 and later

Steps:

1. In the main page, click **Rule** from the navigation tree on the left.
2. Enable **Staff Detection** and select the corresponding accessory: **UWB KIT**.



3. The device starts acquiring information from the anchor, the relevant information of the anchor will be displayed.



4. Click **Calibrate** to enter tag calibration process. Calibration must be performed before initial use or whenever the positions of anchors or devices are adjusted.
5. Prepare the Tag for Calibration.
 - a. Ensure the tag is powered on. If it is not, press and hold the button on the tag for three seconds to power it on.
 - b. Assign **one** tag to each target individual. The tag can be placed in a chest pocket or in a front trouser pocket.
 - c. Ensure no other tags are visible in the live view during calibration, power off all other tags or place them in the charging base; otherwise, the calibration will fail.
6. Calibration Process.

- a. Follow the foot direction indicator on the screen and move while carrying the tag so that the displayed icon enters the recommended calibration area. You can click the  icon at the lower-left corner to adjust the live view for easier observation.



- b. Once the icon is within the calibration area, tap the icon.





Troubleshooting:

If environmental constraints prevent access to the recommended calibration area, calibration can be performed at the four corners of the maximum accessible area.

- c. A green check mark will appear, indicating that the point has been selected successfully. Tap the **Calibrate** button in the lower right corner to complete the first calibration.

UWB Anchor Calibration

[Calibration Guide](#)

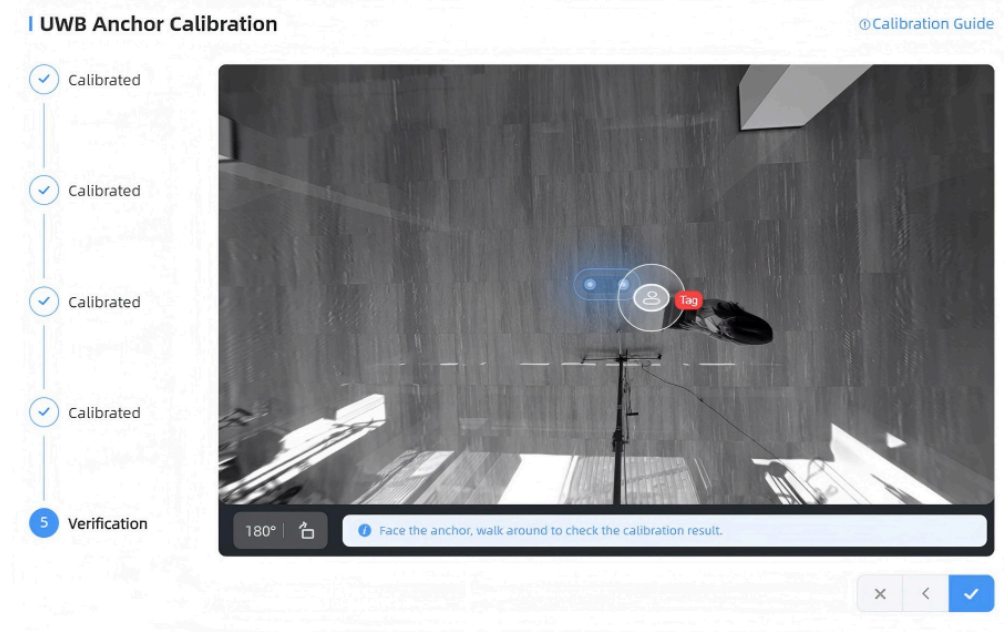


- d. Wait for the calibration to complete automatically. The system will then recommend the next calibration area. Repeat the above steps until all four calibration points are completed.
- e. After completing all calibration points, face the anchor and walk around to check the tag status:

- If the tag appears **green** for most of the walk, tap  to complete the calibration process.

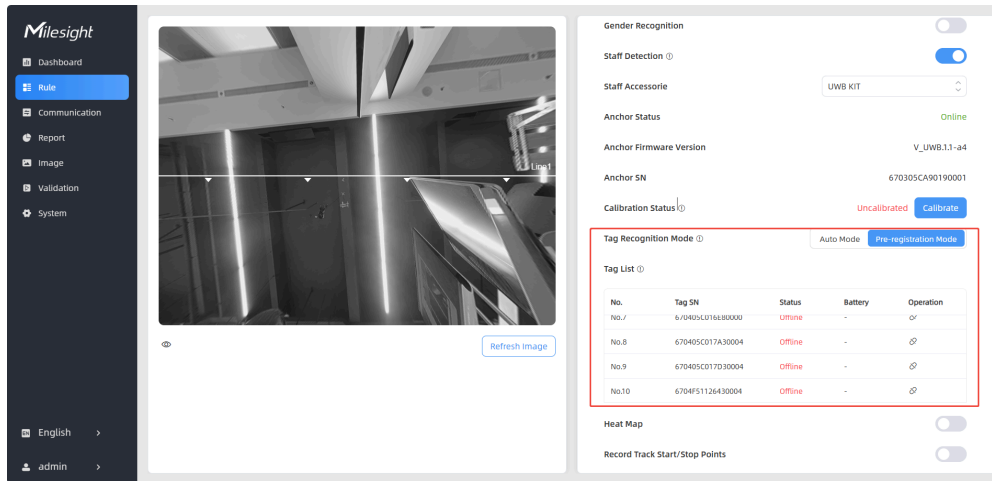


- If the tag appears **red** for most of the walk, it indicates that the calibration is invalid.



In this situation, please verify the tag's orientation and ensure there are no obstructions between the tag and the anchor. After making adjustments, restart the calibration process beginning from Step 1.

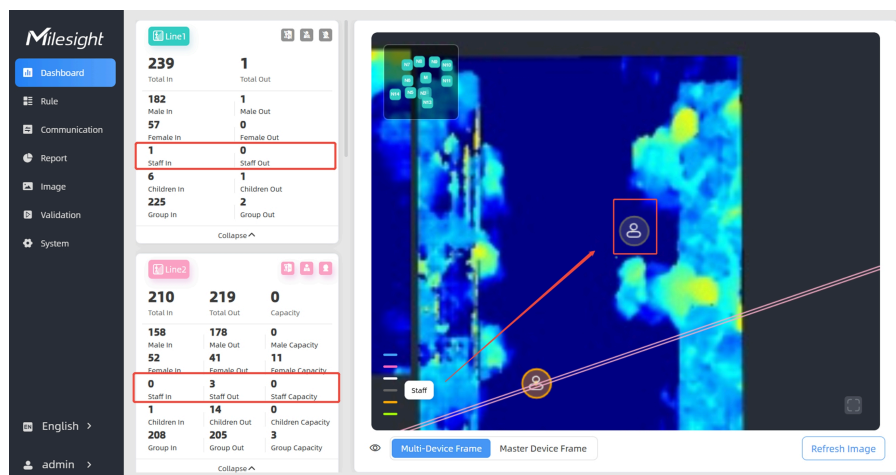
7. Select Tag Recognition Mode.



Tag Recognition Mode	Description
Auto Mode	Suitable for scenarios with more than 10 tags. All Milesight UWB tags will be detected and displayed in the list.  Note: The anchor can detect a maximum of 10 tags simultaneously. Tags beyond this limit will not be recognized at the same time.
Pre-registration Mode	Suitable for scenarios with a fixed number of tags (≤ 10). Only pre-registered tags will be recognized.

8. Check data through any of the following methods:

- To check the visual configuration effect, click **Dashboard** from the left navigation tree.



- To view the staff data for a certain time period and generate the corresponding report, click **Report** from the left navigation tree.

Data Type: Detection Line Detection Region Heat Map Attention Region

Event: Line Cross Counting

Time Unit: Hour Day Month Time Range: 22/06/2025 08:00:00 - 23/06/2025 08:00:00 Line1 Individuals Groups

Search

People Traffic Report Hour Line1 Staff Included Staff Excluded Print Share Download

22/06/2025 08:00 ~ 23/06/2025 08:00

- Check data reported by the device. For details, refer to Uplink Data Example for the relevant model.

```
"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": 1,
      "female_out": 0,
      "in": 2,
      "male_in": 1,
      "male_out": 1,
      "out": 1,
      "in_uwb_tag_battery": [
        "100",
        "100"
      ],
      "in_uwb_tag_sn": [
        "670405C016500001",
        "670405C017D30004"
      ]
    }
  },
  {
    "out_uwb_tag_battery": [
      "100"
    ],
    "out_uwb_tag_sn": [
      "670405C016500001"
    ],
    "female_in_uwb_tag_battery": [
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    ],
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    ],
    "male_out_uwb_tag_sn": [
      "670405C016500001"
    ]
  }
],
```

Chapter 6. Maintenance

Tag Maintenance

1. Avoid Actions:

- a. Do not use or store the device in humid environments (such as bathrooms or near sinks).
- b. Do not spray or soak with alcohol, cleaning agents, or other chemical liquids.
- c. Do not remove or disassemble.



CAUTION:

Disassembly may cause an explosion.

2. Keep the tag contacts clean.

- a. If there is dust or dirt, disconnect the power supply first;
- b. Then clean with a soft dry cloth or cotton swab.

3. Clean metal contacts of tag.

- a. Use a cotton swab slightly dampened with a small amount of alcohol.
- b. Gently wipe the metal contacts on the bottom of the tag.
- c. For stubborn stains, press the swab against the stain for 20–30 seconds to soften, then wipe gently.
- d. After cleaning, let the tag sit in a ventilated area for 1–2 minutes to ensure the alcohol has fully evaporated and the contacts are dry.
- e. **Do not power on or charge the tag before it is completely dry.**

4. Long-term storage: If not using for a long time, power off the tag and store it in a dry, clean place.

Tag Charging Base Maintenance

1. Avoid Actions:

- a. Do not use or store the base in damp environments.
- b. Do not place the base in enclosed drawers or cabinets when using.
- c. Do not spray or soak with alcohol, cleaning agents, or other chemical liquids.

2. Keep the base contacts clean.

- a. If there is dust or dirt, disconnect the power supply first.
- b. Then clean with a soft dry cloth or cotton swab.

3. Clean metal contacts of charging base.

- a. Use a cotton swab slightly dampened with a small amount of alcohol.
 - b. Gently wipe each metal pin of the charging base. Do not press hard or poke the spring pins.
 - c. After cleaning, let it sit for 1–2 minutes to allow the alcohol to fully evaporate.
4. Inspect cables regularly: Check the power cable and adapter regularly to ensure there is no damage, looseness, or overheating.

Chapter 7. Troubleshooting

This section describes how to troubleshoot when something does not work.

Charging base does not charge the tag

Possible causes:

- The USB Type-C cable or power adapter is faulty.
- The charging base's internal pogo pins may be damaged.

To resolve the issue:

1. Check the power supply. Ensure the green LED on the charging base is on.
2. Try replacing the USB cable and power adapter.
3. Inspect the pogo pins on the charging base. Look for broken or sunken spring pins. If any pin is damaged, do not attempt to repair it yourself.
4. If the issue persists after the above steps, contact Milesight technical support. Do not disassemble the charging base yourself.

Tag does not charge

Possible causes:

- The tag is inserted in the wrong direction.
- The charging contacts on the tag or base are dirty or damaged.

To resolve the issue:

1. Verify the charging direction. Try flipping the tag horizontally and re-inserting it into the charging slot.
2. Clean the charging contacts again. Use a cotton swab slightly dampened with alcohol to gently wipe the metal contacts on the bottom of the tag. Let it dry completely before retrying.
3. Test with a different charging slot. Place the tag into another slot on the same charging base to determine if the original slot is faulty.
4. If the issue persists after the above steps, contact Milesight technical support. Do not disassemble the tag yourself.

Calibration always fails (red tag appears)

Possible causes:

- The tag orientation is wrong.
- More than one tag is present in or near the live view.
- There are obstructions (metal or walls) between the tag and the anchor.

To resolve the issue:

1. Verify the tag direction. The button side of the tag must face the anchor (away from your body).
2. Remove other tags. Power off all other tags or place them into the charging base.
3. Remove any metal objects (e.g., shelves, fans, pendant lights, keys, phones) or walls between the tag and the anchor.
4. If the issue persists after the above steps, contact Milesight technical support. Do not disassemble the tag yourself.

The device fails to identify the target or identifies it incorrectly

Use the following checklist to identify and resolve the causes.

1. If the tag is not placed in a front pocket, is upside down, backward or is being held in hand,
→ Place the tag in a front-facing pocket (e.g., chest or front pants pocket) with the button side facing away from your body (toward the anchor). Do not cover the tag with your hand.



2. If there are metal objects (e.g., shelves) or walls between the tag and the anchor,

- Remove the obstruction or adjust the installation position to ensure a clear line of sight.
- 3. If staff pass by with their back facing the anchor,
 - Adjust walking direction to face the anchor.
- 4. If the device has been installed or repositioned and calibration has not been performed,
 - Recalibrate the system before use.
- 5. If more than 10 tags are present in the field of view simultaneously,
 - Reduce the number of tags or switch to Auto Mode. Anchor can detect a maximum of 10 tags simultaneously, any tags beyond this limit will not be recognized at the same time.
- 6. If staff and non-staff are too close to each other,
 - Increase the distance to more than 50cm between individuals.
- 7. If you have checked all the above and the issue persists, please contact technical support.

Chapter 8. Services

Milesight provides customers with timely and comprehensive technical support services. End-users can contact their local dealer to obtain technical support. Distributors and resellers can contact Milesight directly 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/>

MILESIGHT CHINA

TEL: +86-592-5085280

FAX: +86-592-5023065

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