

Configuring Milesight's VS133 for Xenometric Collection

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1 Introduction

The Milesight VS133 (<https://www.milesight.com/iot/product/lorawan-sensor/vs133>) is a time-of-flight people counter that is capable of adult/child discrimination, group counting and staff detection. Count data can be sent to Xenometric in real-time as well as aggregated for historic data. There are two versions of this sensor, this manual primarily deals with the Ethernet variant VS133P. There is also a LoRaWAN version (VS133), which will be documented separately.

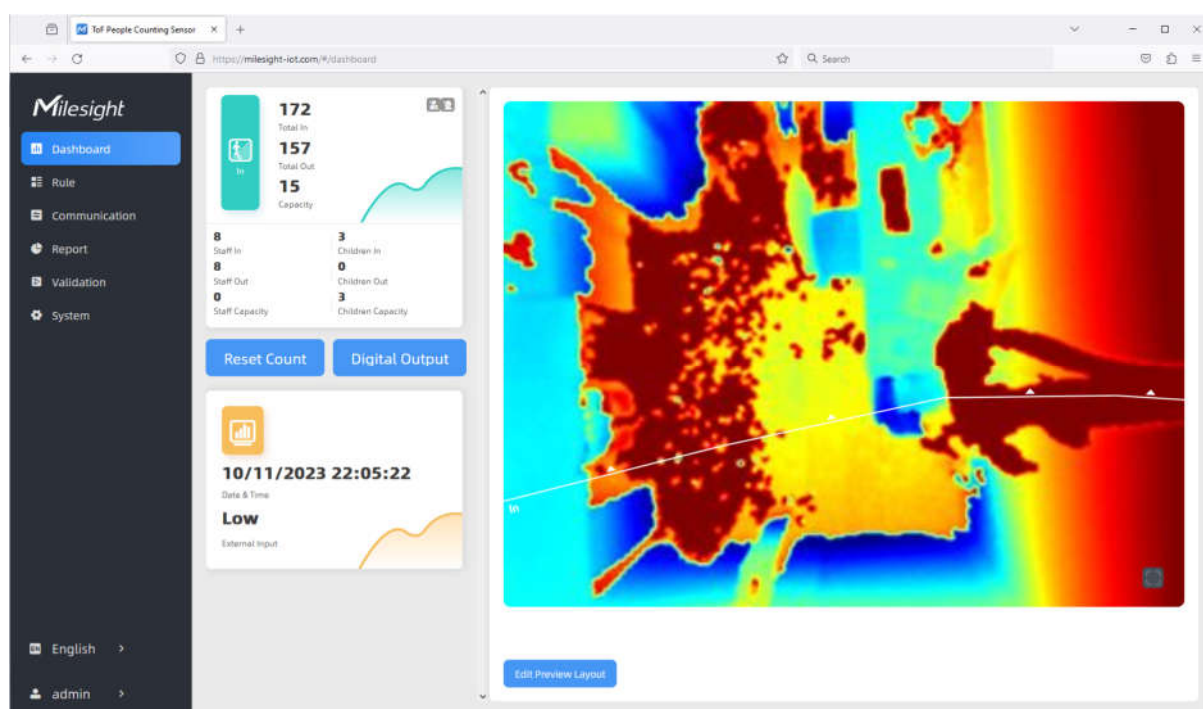
The VS133P (Ethernet version) datasheet can be found here

<https://resource.milesight.com/milesight/iot/document/vs133-p-datasheet-en.pdf>

The user guide can be downloaded here

<https://resource.milesight.com/milesight/iot/document/vs133-p-user-guide-en.pdf>

When you login to the sensor, you will see the Dashboard. Remember to check that the date and time are correct. You can also see the counts and the count line over a depth map of the sensor's view.



2 Milesight Counting Rules

Please refer to the Milesight user manual

(<https://resource.milesight.com/milesight/iot/document/vs133-p-user-guide-en.pdf>) for details on how to create and configure count lines. You can also stitch multiple units to make a single counting sensor for wide areas.

The screenshot shows the Milesight IoT web interface for configuring counting rules. The interface is divided into three main sections: a sidebar on the left, a central visualization area, and a right-hand configuration panel.

Sidebar (Left): Contains navigation links for Dashboard, Rule (selected), Communication, Report, Validation, and System. At the bottom, there are language and user selection options: English and admin.

Central Visualization Area: Displays a heatmap visualization of the sensor's field of view. A white line is drawn across the heatmap, representing a detection line. Below the heatmap are two buttons: "Draw Detection Lines" and "Refresh Image".

Right-hand Configuration Panel: Contains various settings for the counting rule.

- Working Mode:** Includes buttons for Standalone, Master, and Node. The "Standalone" button is currently selected.
- Deployment Parameters:** Includes input fields for Installation Height (2508 mm), Max. Target Height (2000 mm), Min. Target Height (500 mm), and Child Filter Height (1250 mm). A "Detect" button is next to the Installation Height field.
- Counting Strategy:** Includes a "Tracking Mode" section with "Heads Tracking" and "Feet Tracking" buttons. "Heads Tracking" is selected.
- Line Cross Counting:** A toggle switch is turned on.
- Table:** A table with columns "No.", "Line Name", and "Operation". It contains one row with "No.1", "In", and a delete icon.
- Other Settings:** Includes toggle switches for U-turn Filtering, Children Distinction, Staff Detection, Group Counting, Region Monitoring, Heat Map, Input Enable Line Crossing Count Externally, and Reset Cumulative Count on Schedule.

3 Mileight Counting IDs

Navigate to the System page, where you can apply the IDs that Xenometric requires for auto-configuration.

You can also set all the time zone information needed for the sensor to maintain local time. It is important to supply an NTP (network time protocol) server, such as pool.ntp.org. An NTP time interval of 1440 will correct the sensor's clock every 24 hours.

The screenshot shows the 'System' configuration page for a 'TdF People Counting Sensor'. The page is divided into two main sections: 'Device Info.' and 'Current System Time'.

Device Info.:

- Device Name: People Counter
- Product Model: VS133-P
- SN: 6757D16329040016
- Hardware Version: V1.2
- Software Version: V_133.1.0.5-unit1
- MAC Address: 24:E1:24:F7:4C:5D
- Customized Device ID: [AAAAAX,ABABAX,ACACAX]
- Customized Site ID: OFFICE2
- Running Time: 8 hours 37 minutes 42 seconds

Current System Time:

- Date: 10/11/2023
- Time: 22:03:18
- Time Zone: UTC+10:00 Australian Eastern Stand
- Daylight Saving Time: ☒
- Start Time: Oct. 1st Sun. 02:00
- End Time: Apr. 1st Sun. 03:00
- DST Bias: 60

Synchronize Time:

- Synchronize Mode: ☒ NTP Timing ☐ Manual Timing
- Server Address: pool.ntp.org
- Time Interval: 1440

3.2 Site ID and Device Name

This close-up view of the 'Device Info.' section highlights two specific fields with red circles:

- Device Name:** The text 'People Counter' is entered in the input field.
- Customized Site ID:** The text 'OFFICE2' is entered in the input field.

The Site ID is an identifier that is shared by all sensors in the same building. It should be all UPPERCASE and should not contain any spaces or non-standard characters. Try to use A-Z, 0-9. If your sensor is sending to Xenometric's Cloud, we will issue you with a Site ID to use.

The Device Name can be any text of your choosing. Location names can be changed in X-Server, so the Device Name has no permanence in the reporting.

3.2 Device ID

Device Info.

Device Name	People Counter
Product Model	VS133-P
SN	6757D16329040016
Hardware Version	V1.2
Software Version	V_133.1.0.5-unit1
MAC Address	24:E1:24:F7:4C:5D
Customized Device ID	[AAAAAX,ABABAX,ACACAX]
Customized Site ID	OFFICE2
Running Time	8 hours 37 minutes 42 seconds

The Milesight camera will deliver 3 pairs of counts for each count line. These are the in/out counts, children in/out counts and staff in/out counts. The in/out counts do not include the children and staff counts. If you want just an in/out count that includes all visitors (adults, children and staff), it is possible to use a simple Device ID format to combine all counts.

There are 2 Device ID formats that can be used.

1. The first is a simple format that combines all visitors (adults, children and staff). It takes the form of a comma delimited list of device IDs. e.g. AAAAAX,ABABAX,ACACAX

Count line	Device ID	Counts
Line 1	AAAAAX	Adults + Children + Staff
Line 2	ABABAX	Adults + Children + Staff
Line 3	ACACAX	Adults + Children + Staff

If you only have one count line, then you only need one Device ID in the list, e.g. AAAAAX

2. The second format is more complicated, but allows the adults, children and staff to be recorded separately. Each count line is represented by the text within square brackets []. If you have multiple count lines, you can supply several strings surrounded by square brackets, e.g. for a camera with 3 count lines, you would have 3 sets of brackets [][[]].

Inside each square bracket we need to supply up to 3 individual Device IDs. For example, if we want to use the adult, child and staff counts, we might have a string like [AAAAAX,ABABAX,ACACAX]

For a camera with multiple lines, we might have something like [AAAAAX,ABABAX,ACACAX] [ADADAX,AEAEAX,AFAFAX] [AGAGAX,AHAHAX,AIAIAX]

Count line	Device ID
Line 1 Adults	AAAAAX
Line 1 Children	ABABAX
Line 1 Staff	ACACAX
Line 2 Adults	ADADAX
Line 2 Children	AEAEAX
Line 2 Staff	AFAFAX
Line 3 Adults	AGAGAX
Line 3 Children	AHAHAX
Line 3 Staff	AIAIAX

If you don't need the children or staff counts, you can omit their Device IDs from the string. This string [AAAAAX, ,ABABAX] [ACACAX,ADADAX,] would omit children from the first line and would omit staff from the second line.

For many installations there will only be a single count line. If you need separate counts for adults, children and staff a Device ID of [AAAAAX,ABABAX,ACACAX] is good (assuming other sensors are not using AA, AB and AC).

4 Communication

The left panel details the TCP/IP configuration of the sensor and is not part of the Xenometric configuration.

The screenshot shows the Milesight IoT communication configuration interface. The left sidebar contains navigation links: Dashboard, Rule, Communication (selected), Report, Validation, and System. The main area is divided into two panels. The left panel, titled 'TCP/IP', has tabs for 'Manual' and 'Automatic (DHCP)'. It includes fields for IP Address, Subnet Mask (255.255.255.0), Default Gateway, Primary DNS Server, and Secondary DNS Server (8.8.8.8). The right panel, titled 'Recipient', shows a table with columns: Recipient Name, URL/Host, Protocol, Status, and Operation. A single entry is listed with URL 'https://count...' and status 'Connected'. Below the table is a '+ Add' link.

The right panel lists the destinations for data delivery. If no destinations are listed, you can click on the *Add* link to create a new destination. Alternatively, click on the edit icon  to change your communication details.

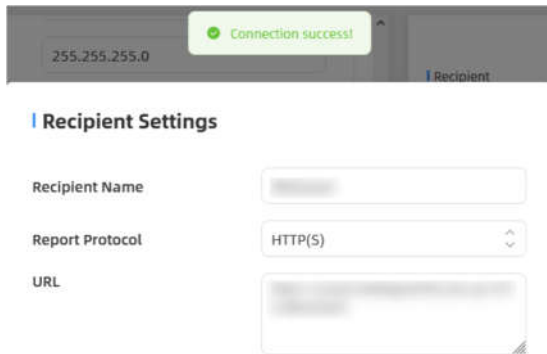
The Recipient Settings allow you to choose between communicating over HTTP(S) or MQTT. Xenometric currently supports the HTTP(S) mechanism, but may add MQTT in the future. Please select the Report Protocol as HTTP(S). The Recipient Name can be any text that helps you identify this destination.

The screenshot shows the 'Recipient Settings' form. It includes fields for Recipient Name, Report Protocol (set to HTTP(S)), and URL (with a placeholder 'https://.../MILESIGHT'). There is a 'Test' button for the Connection Test. Below these are fields for Username and Password. At the bottom are 'x' and 'y' buttons.

The URL must match the IP and port that the X-Server's X-Push service is listening on. This can be an IP:port or domain:port. The X-Server is capable of acting as an HTTP or HTTPS server, so create the URL according to the HTTP(S) type that you are using in X-Server. For example, `http://data.xenometric.com:6000/MILESIGHT` for non-SSL data on port 6000 or `https://192.168.0.20:443/MILESIGHT` for SSL data transmission on the standard HTTPS port (443).

It is important that the URL contains `/MILESIGHT` at the end.

You can test the connection to make sure the sensor can connect to the server. Click on the *Test* button. You should see a success message. If the test fails, there is most likely a firewall problem.

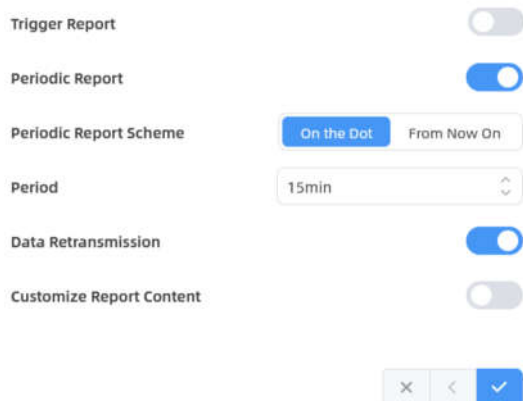


The screenshot shows a web interface with a green notification box at the top that says "Connection success!". Below this, there's a section titled "Recipient Settings". It contains three input fields: "Recipient Name" (a text box), "Report Protocol" (a dropdown menu currently showing "HTTP(S)"), and "URL" (a text box). At the bottom of the form, there are navigation buttons: a close button (X), a back button (left arrow), and a confirm button (checkmark).

Click on the arrow button  to navigate to the Report Strategy page. This page configures what is sent and how often.

Trigger Report is the real-time data. Periodic Report is the historic data. Unless you specifically need real-time data delivery, the Trigger Report should be switched off.

Report Strategy



The screenshot shows the "Report Strategy" configuration page. It has several settings: "Trigger Report" (a toggle switch that is currently off), "Periodic Report" (a toggle switch that is currently on), "Periodic Report Scheme" (two buttons: "On the Dot" which is selected, and "From Now On"), "Period" (a dropdown menu showing "15min"), "Data Retransmission" (a toggle switch that is currently on), and "Customize Report Content" (a toggle switch that is currently off). At the bottom, there are navigation buttons: a close button (X), a back button (left arrow), and a confirm button (checkmark).

Always use *On the Dot* for the Periodic Report Scheme, as this aligns the count intervals correctly. For example, a 15-minute period will be aligned to ranges like 14:15:00 – 14:30:00.

Data Retransmission should be on and we don't need to customise the report content for most installations.