2021

V2.6

Milesight

BETTER INSIDE, MORE IN SIGHT

PRODUCT CATALOGUE

5G & AIoT

Milesight

Contents

LoRaWAN® Gateway

UG65 Semi-Industrial Gateway/UG67 Outdoor Gateway

Embedded Network Server

➤ Gateway Fleet for receiving data from multiple Milesight gateways
➤ Real-time data collection & processing
➤ Save investment of external network service

Industrial Design

➤ IP65/IP67 waterproof
➤ PoE powered device
➤ -40°C to 70°C operating temperature

Powerful LoRa Capabilities

➤ Semtech SX1302 LoRa chip
➤ LoRaWAN® Class A/Class B/Class C
➤ Up to 15 kilometers range
➤ Support CN470/EU868/US915/AS923 and more

Advanced Gateway Features

➤ Node-RED development tool for codeless visual programming
➤ Multicast for sending downlink messages to a group of end-devices
➤ Noise Analyzer to improve network quality and deployment efficiency

Specifications

Model		UG65	UG67
Product Image			
LoRaWAN	Channel	8	
	Frequency	CN470/RU864/IN865/EU868/US915/AU915/KR920/AS923	
	Sensitivity	-140dBm Sensitivity @292bps	
	Output Power	27 dBm Max	
	Protocol	V1.0/V1.0.2, Class A/Class B/Class C	
Hardware	Processor	Quad-core 1.5G Hz, 64-bit ARM Cortex-A53	
	Memory	512 MB DDR4	
	Flash	8 GB eMMC (pSLC mode)	
	Power Supply	1. 9-24 VDC Jack Connector 2. 1 × 802.3af PoE input	1. 12 VDC with M12 Connector 2. 1 × 802.3af PoE input
	Ingress Protection	IP65	IP67
Connectivity	Cellular (Optional)	1 x SIM Slot, Support Global GSM/3G/4G LTE Frequency Bands	
	Wi-Fi	IEEE 802.11b/g/n	
	Ethernet	1 x 10/100/1000 Mbps	
	GPS	/	Yes

Indoor Ambience Monitoring Sensor

LoRaWAN CERTIFIED™

- Temperature & Humidity
- Activity Level (PIR)
- Light
- Barometric Pressure
- TVOC
- CO2

Milesight AM100 Series consists of multiple smart sensors that are built specifically for indoor air quality monitoring. It has a clean and modern design that makes it discrete in indoor ambience.

Clean and Modern Design
Bring "less is more" concept to indoor or HVAC environment

Multiple Sensors in One
Temperature, humidity, activity level (PIR), CO_2, TVOC, barometric pressure

Configure with One Touch
NFC technology enables easy configuration and on/off operation

Better Readability than LCD Monitor
E-ink technology offers high display clarity and sunlight visibility

Low Power Consumption
AA alkaline batteries can last for 1 year and ensure low maintenance cost

Smart Screen Mode
Screen will stop updating data if no motion is detected continuously for 20 minutes, which will save more power and prolong the use life of batteries.

Compliant with ToolBox & Milesight IoT Cloud
Manage and configure your sensor easily

Model		AM107	AM104
Hardware	Frequency	CN470/RU864/IN865/EU868/US915/AU915/KR920/AS923	
	Tx Power	17dBm (470 MHz) / 16dBm (868 MHz) / 20dBm (915 MHz)	
	Sensitivity	-137dBm @300bps	
	Mode	OTAA/ABP	
	Power Supply	2 × AA alkaline batteries/Powered via Type C port	
	Battery Lifetime	Around 1 year	Around 1.5 years
Sensors	Temperature Range	-20°C to + 70°C	
	Temperature Accuracy	±0.3°C (0 ~ 70°C), ±0.6°C (-20 ~ 0°C)	
	Humidity Range	0% to 100% RH	
	Humidity Accuracy	±3% RH (10 ~ 90%), ±5% RH (0 ~ 10%, 90 ~ 100%)	
	PIR Detection Area	94° Horizontal, 82° Vertical	
	PIR Detection Distance	5 m	
	Light Range	60000 lux (Visible + IR, IR)	
	Light Accuracy	±30%	
	CO2 Range	400 ~ 5000 ppm	
	CO2 Accuracy	±30 ppm or ±3% of reading	
	TVOC Range	0 ~ 60000 ppb (total VOC)	N/A
	TVOC Accuracy	±15% of reading	
	TVOC Long-term Stability	1.3% accuracy drift per year	
	Barometric Pressure Range	300 ~ 1100 hPa (-40 ~ 85°C)	
	Barometric Pressure Accuracy	±1 hPa	

LoRaWAN®
Ambience Monitoring Sensor

AM300 Series

Brings on All the Comfort Feels

AM300 Series

- Temperature
- Humidity
- PIR
- Light
- TVOC
- Barometric Pressure
- CO2
- PM2.5 & PM10
- HCHO
- O3

Milesight AM300 series is an all-round ambience monitoring device designed for indoor air quality monitoring. It collects various indoor ambience conditions through 9 built-in sensors, and delivers the data to both mobile App and its 4.2 inch E-ink screen, to help you to understand the indoor comfort & health level visually.

Emoticon Indication
Indicating comfort level by emoticon on screen

Better Screen Display
Light & dark color theme with three display styles
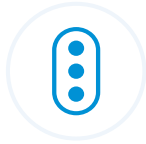
Traffic Light Indicator
Presenting ambience conditions in a tri-color LED

Anti-Theft Design
Preventing the device being taken away thoughtlessly

Specifications				
	Model		AM319	AM307
Hardware	Screen		4.2 inch E-ink	
	LED & Buzzer		1 × Traffic Light Status Indicator, 1 × Buzzer	
	Configuration		NFC (mobile App & NFC reader with PC), USB Type-C port	
	Frequency		CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923	
	Work Mode		LoRaWAN® Class C	LoRaWAN® Class A
	Power Supply		5V/1A via Type-C Port	4 × 2700 mAh ER14505 Li-SOCl2 battery
Sensors	Temperature	Range	-40°C - 85°C	
		Accuracy	± 1°C	
	Humidity	Range	0% - 100% RH	
		Accuracy	± 3%	
	PIR	Detection Area	80 ° Horizontal, 55 ° Vertical	
		Detection Distance	5 m	
	Light	Function	0-60000 Lux	
		Range	Display as 6 levels, 0-5	
	TVOC	Range	0-500 (IAQ Index)	
		Accuracy	±15%	
	Barometric Pressure	Range	300 - 1100 hPa (-40°C - 85°C)	
		Accuracy	±0.6 hPa	
	CO2	Range	400 - 5000 ppm	400 - 2000 ppm
		Accuracy	±30 ppm or ±3 % of reading	±50 ppm or ±5 % of reading
	PM2.5 & PM10	Range	0 - 1000 µg/m3	
		Accuracy	0-100 (±10µg/m3), 100-1000(±10 %)	
	HCHO*	Range	0 - 6 mg/m3	/
		Accuracy	±10 %	
	O3*	Range	0 - 10 ppm	
		Accuracy	±5 % FS	

* HCHO Sensor and O3 Sensor is Alternative on AM319.

Environment Monitoring Sensor

EM300 Series

Featuring a simple yet modern design, compact size and waterproof capability, EM300 series are ideal to fit into the indoor or outdoor environment.

Configure with One Touch
NFC technology enables easy configuration and on/off operation

Low Power Consumption
Dual batteries (one battery by default) can last for up to 10 years

Compliant with ToolBox & Milesight IoT Cloud
Manage and configure your sensor easily

Compact & Waterproof
Small size with an IP67 rating enclosure

LoRaWAN® Wireless
Up to 15 km wireless communication range

EM300-TH Temperature & Humidity Sensor is a sensor suitable for indoor and outdoor temperature and humidity monitoring. It can be widely used in office areas, greenhouses, houses and other environments.

Specifications	
Temperature	±0.3°C (0 ~ 70°C), ±0.6°C (-30 ~ 0°C)
Humidity	±3% RH (10 ~ 90%), ±5% RH (0 ~ 10%, 90 ~ 100%)
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	Easily replaceable battery with up to 10 years service life
Operating Temperature	-30 ~ 70°C
Ingress Protection	IP67
Dimensions	88 x 87 x 27 mm (3.46 × 3.42 × 1.06 in)

Office

Greenhouse

Residence

Leak Detection Sensor
Preventing assets away from water damage

Magnetic Contact Switch
Door/window status monitoring
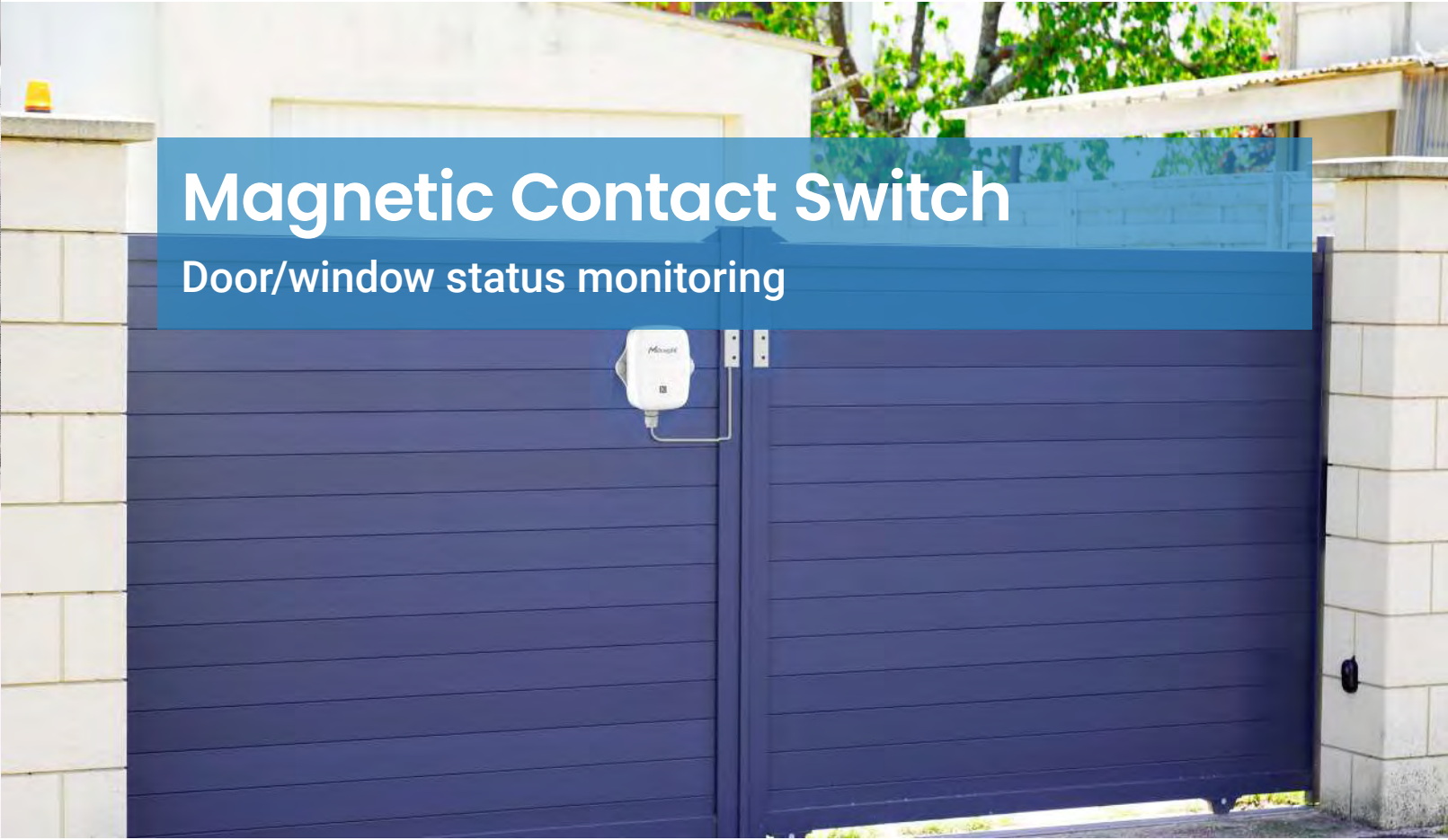
EM300-SLD/ZLD offers reliable performance to detect presence of water or other liquids by remotely alerting you the potential water leak before the issue becomes too serious, thus helping to prevent water damage.

EM300-MCS can be mounted to any door or window to detect an opening or closing event. It adds physical security monitoring to your location by alarming for intrusion or unauthorized entry.

Model	EM300-SLD	EM300-ZLD
Sensor Type	Probe	Rope
Cable Length	1.5 m	3 m
Temperature	±0.3°C (0 ~ 70°C), ±0.6°C (-30 ~ 0°C)	
Humidity	±3% RH (10 ~ 90%), ±5% RH (0 ~ 10%, 90 ~ 100%)	
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923	
Power Supply	Easily replaceable battery with up to 10 years service life	
Ingress Protection	IP67	
Operating Temperature	-30 ~ 70°C	
Dimensions	88 x 87 x 27 mm (3.46 × 3.42 × 1.06 in)	

Specifications	
Sensing Distance	20 ~ 30 mm
Cable	ULI 1007 22AWG, 260mm
Temperature	±0.3°C (0 ~ 70°C), ±0.6°C (-20 ~ 0°C)
Humidity	±3% RH (10 ~ 90%), ±5% RH (0 ~ 10%, 90 ~ 100%)
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	Easily replaceable battery with up to 10 years service life
Ingress Protection	IP67
Operating Temperature	-30 ~ 70°C
Dimensions	88 x 87 x 27 mm (3.46 × 3.42 × 1.06 in)

Hospital   Warehouse   Server Room

Fire Door   Library   Residence

Outdoor Environment Monitoring Sensor

The EM500 Series are LoRaWAN® sensors designed for different professional applications. These sensors adopt a high ingress protection rating enclosure for use in the most challenging outdoor environmental conditions, and are powered by built-in battery for years-long use life.

High IP Rating Enclosure
IP rated as "dust tight" and protected against heavy fog or powerful jets of water

Rich Installations Available
Pole mounting, wall mounting, DIN rail mounting

Configure with One Touch
NFC technology enables easy configuration and on/off operation

Multiple Applications in Vertical Markets
Soil monitoring, water management, temperature & humidity measurement, etc.

Long Battery Use Life
19000 mAh replaceable battery ensures low maintenance cost

Compliant with ToolBox Milesight IoT Cloud
Manage and configure your sensor easily

Soil Moisture, Temperature and Electrical Conductivity Sensor
EM500-SMTC/SMT

Industrial Temperature Sensor
EM500-PT100

Light Sensor
EM500-LGT

Ultrasonic Distance/Level Sensor
EM500-UDL

Pipe Pressure Sensor
EM500-PP

Carbon Dioxide Sensor (4 in 1)
EM500-CO2

Submersible Water Level Sensor
EM500-SWL

Soil Moisture, Temperature and Electrical Conductivity Sensor
- Research-grade accuracy in multiple soil media
- Easy installation into undisturbed soil
- Rapid monitoring of growing conditions

Light Sensor ☀
- Measuring ranges from 0 to 100, 000 lux
- Fast 1-second response
- 10-year battery life with low maintenance cost
- Accurately detect any light changes

EM500-SMTC/SMT provides an external probe for receiving accurate and instantaneous information on soil moisture content, temperature, and electrical conductivity. It is an important tool for soil condition monitoring.

EM500-LGT can accurately monitor the changes in the surrounding light intensity. It is suitable for light measurement and research in agriculture, forestry, greenhouse, horticulture, breeding, industrial workshops, warehouses, urban lighting, and buildings.

Model	EM500-SMTC	EM500-SMT
Moisture	0 ~100% RH	0 ~ 100% RH
	±2% (0 ~ 50%), ±3% (50 ~ 100%)	±2% RH
	0.01% RH	0.01% RH
Temperature	-40 ~ 80°C	/
	±0.5°C	
	0.1°C	
Electrical Conductivity	0 ~ 20000 μS/cm	/
	±3% (0 ~ 10000 μS/cm), ±5% (10000 ~ 20000 μS/cm)	
	10 μS/cm (0 ~ 10000 μS/cm), 50 μS/cm (10000 ~ 20000 μS/cm)	
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923	
Power Supply	Built-in 19000 mAh high-capacity battery can be used for 10 years	
Ingress Protection	Transceiver: IP67 Sensor: IP67 (EC5) / IP68 (MEC20)	
Operating Temperature	-30 ~ 70°C (Transceiver), -40 ~ 85°C (Sensor)	-30 ~ 70°C (Transceiver), -40 ~ 60°C (Sensor)

Specifications	
Range	0 ~ 100000 lux
Accuracy	±3% (Acquired Value)
Resolution	1 lux
Cable length	3 m
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	Built-in 19000 mAh high-capacity battery can be used for 10 years
Ingress Protection	Transceiver: IP67 Sensor: IP65
Operating Temperature	-30 ~ 70°C (Transceiver), -30 ~ 60°C (Sensor)

Grassland

Farmland

Greenhouse

Agriculture

Forestry

Greenhouse Cultivation

Pipe Pressure Sensor

- No leakage danger
- Shock-resistant and vibration-resistant
- Measuring accuracy is less than ±0.5% FS
- Temperature compensation for correction of temperature changes

Submersible Water Level Sensor

- Customizable measuring range up to 200 m
- Submersible pressure sensor not affected by foam, wind, or rain
- IP67 full sealed plastic waterproof design
  (Transceiver is not included)
- Measuring medium: water
  (Customizable for oil and other non-corrosive media)

EM500-PP is designed for the pressure monitoring of tank level or leakage in pipes.

Specifications	
Range	0 - 1600 kPa (16 Bar)
Accuracy	±0.5% FS
Resolution	1 kPa (0.01 Bar)
Pressure Type	Gauge Pressure
Overload	150% FS
Long-term Stability	±0.3% FS/year
Process Connection	G 1/2" Male
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	Built-in 19000 mAh high-capacity battery can be used for 10 years
Ingress Protection	Transceiver: IP67 Sensor: IP65
Operating Temperature	-30 ~ 70°C (Transceiver), -30 ~ 80°C (Sensor)

EM500-SWL is designed to measure the tank level or open water applications while fully submerged in liquid. It is robust and sealed to prevent corrosion and failure.

Specifications	
Range	0 ~ 3m/5m/10m (H2O), Customizable up to 200 m and for other liquids
Accuracy	±0.5% FS
Resolution	0.01 m
Pressure Type	Gauge Pressure
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	Built-in 19000 mAh high-capacity battery can be used for 10 years
Ingress Protection	Transceiver: IP67 Sensor: IP68
Operating Temperature	-30 ~ 70°C (Transceiver), -30 ~ 80°C (Sensor)

Constant Water Supply

Hydraulic Equipment

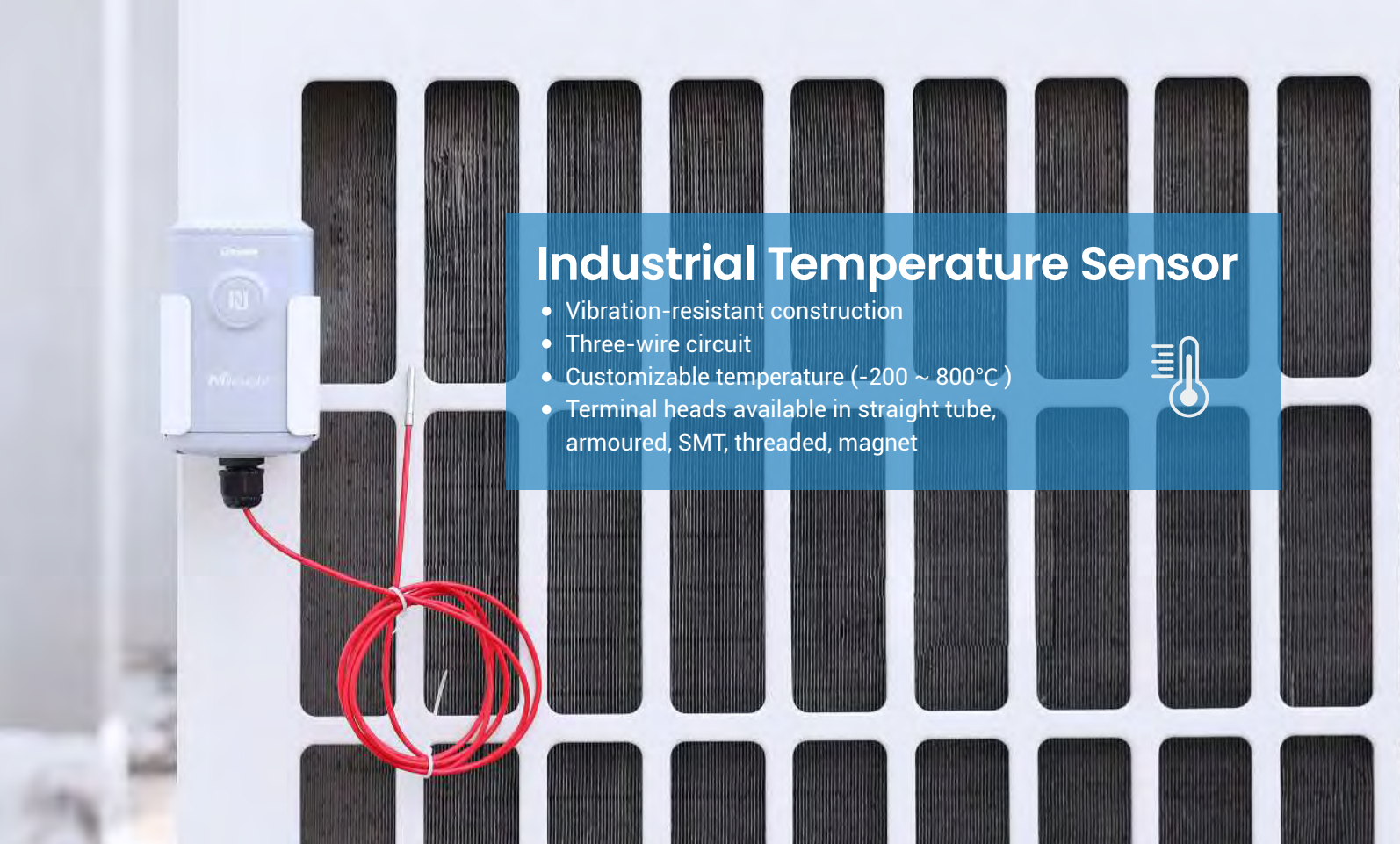**Barometric Pressure Detection**

Reservoir

Tank

Lake

Industrial Temperature Sensor

- Vibration-resistant construction
- Three-wire circuit
- Customizable temperature (-200 ~ 800°C)
- Terminal heads available in straight tube, armoured, SMT, threaded, magnet

CO2 Sensor (4 in 1)

- Measuring ranges from 400 ppm to 5000 ppm
- Easy installation in any enclosed areas or outdoor environment
- 4 in 1 (CO_2, barometric pressure, humidity, temperature)

EM500-PT100 equips a highly accurate temperature sensor PT100, the platinum resistance temperature detector offers the most stable and precise temperature measurement from -200 to 800°C.

EM500-CO2 is designed for the application where knowing CO_2 level is important like greenhouse, building ventilation, fruit and vegetable storage. It also supports temperature, humidity and barometric pressure measurement.

Specifications	
Range	T050: -200 °C to +50 °C T200: -50 °C to +200 °C T500: -50 °C to +500 °C T800: -50 °C to +800 °C (Customizable from -200 °C to +800 °C)
Accuracy	±0.5°C
Resolution	0.1°C
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	Built-in 19000 mAh high-capacity battery can be used for 10 years
Ingress Protection	Transceiver: IP67 Sensor: IP68 (T200) / IP30 (T050) / IP30 (T500) / IP30 (T800)
Operating Temperature	-30 ~ 70°C (Transceiver)

Specifications			
Sensor Specs	Range	Accuracy	Resolution
CO2	400 ~ 5000 ppm	±30 ppm or ±3% of reading	1 ppm
Barometric Pressure	300 ~ 1100 hPa (-40 ~ 85°C)	±1 hPa	0.1 hPa
Temperature	-30°C ~ 70°C	±0.6°C (-40 ~ 0°C), ±0.3°C (0 ~ 70°C)	0.1°C
Humidity	0 ~ 100% RH	±3% RH (10 ~ 90%), ±5% RH (0 ~ 10%, 90 ~ 100%)	0.5% RH
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923		
Power Supply	Built-in 19000 mAh high-capacity battery can be used for 10 years		
Ingress Protection	IP65		
Operating Temperature	-30 ~ 70°C		

Industrial Process   **Cold Chain**   **Laboratory**

Smart City   **Livestock Farming**   **Forest Fire Monitoring**

Ultrasonic Distance/Level Sensor

- Measuring ranges from 0.3 m to 10 m
- Measurements in very small containers or openings
- Suitable for measuring benign and chemical mediums
- Non-contact detection for any corrosive liquid chemicals or combustibles

# LoRaWAN®️ Ultrasonic Distance/ Level Sensor

EM310-UDL

EM500-UDL provides highly accurate distance measurement for a variety of applications in harsh environments like flood monitoring, wastewater management, fill level monitoring in grains or fertilizer. The measurement is based on ultrasonic waves transmitted and reflected back from nearby objects.

Specifications	
Range	W050: 0.3 ~ 5 m W100: 0.5 ~ 10 m
Accuracy	±1% FS
Resolution	1 mm
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	Built-in 19000 mAh high-capacity battery can be used for 10 years
Ingress Protection	IP67
Operating Temperature	-30 ~ 65°C

Water Treatment
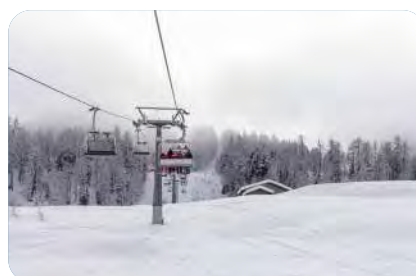
Snow Depth

Grain Silo

Milesight EM310-UDL is an ultrasonic sensor featuring short blind zone and broad range distance measurement. It also has a 3-axis accelerometer to detect the device motion when it is moved or fell down, which is ideal for monitoring of solid or liquid level of containers like waste bin.

Specifications	
Ultrasonic Sensor	Range: 3 - 450 cm, 60° Accuracy: ±(1+0.3% × S), S = distance
Accelerometer	Normal/Tilt (device position detection)
Configuration	NFC (mobile App & NFC reader with PC)
LoRaWAN®️ Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	2 × 3500 mAh ER17505 Li-SOCl2 battery
Battery Life	Built-in 1650 mAh battery to use for over 5 years with around 20 triggers per day
Ingress Protection	IP67
Operating Temperature	-15°C to +60°C

Waste Bin

Manhole Cover

Parking Lot

Outdoor LoRaWAN® Controller

Feature-Rich SensorHub for Connecting Sensors

LoRaWAN®

LoRaWAN® Solenoid Valve Controller LoRaWAN®

Empower Automatic & Precision Irrigation

The UC50x Series LoRaWAN® Controller is a fully integrated and battery-powered LoRaWAN® node with solar panel and multiple communication interfaces for connecting to a wide range of external sensors. With quick installation and easy maintenance, the UC50x Series LoRaWAN® Controller is ideal to work in harsh environments for remote monitoring and collecting data from sensors.

The UC51x Series LoRaWAN® Solenoid Valve Controller provides seamless ultra long range access capability for common irrigation valves. With Milesight IoT Cloud, the valve can be remotely controlled from anywhere at any time. Moreover, the embedded pulse counter feature enables the device to monitor flow easily, as well as to make irrigation precisely.

Model	UC501	UC502
Power Supply	Rechargeable 4900 mAh battery with solar panel	Non-rechargeable Built-in 19000 mAh Li-SOCl2 battery
Interface 1	2 × GPIO 1 × RS485/RS232 switchable 1 × 3.3 V output 1 × 5/9/12 V output switchable	
Interface 2	2 × analog input 1 × 3.3 V output 1 × 5/9/12 V output switchable	
Dimension	120.1 × 120.1 × 55.4 mm (4.73 × 4.73 × 2.18 in)	
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923	
Ingress Protection	IP67	
Operating Temperature	-20 ~ 60°C	

Solenoid Valve Control
➤ Time-Based Open/Close
➤ Volume-Based Open/Close

Flow Monitoring
➤ Connecting up to 2 Meters
➤ Configurable Volume per Pulse

Long Term Reliability
➤ IP67 Waterproof
➤ 3-Year Battery Life

Model	UC511	UC512
Power Supply	Rechargeable 4900 mAh battery with solar panel 1 month battery life without charging (Class C)	Non-rechargeable Replaceable 19000 mAh Li-SOCl2 battery Up to 3-year battery life (Class A)
Solenoid Interface	2 × 2-Wire 12 VDC Latching Solenoid	
Pulse Interface	2 × Pulse Input	
Dimension	120.1 × 120.1 × 55.4 mm (4.73 × 4.73 × 2.18 in)	
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923	
Ingress Protection	IP67	
Operating Temperature	-20 ~ 60°C	

Compact Controller

The Compact Controller is designed for monitoring and controlling field devices, and collecting data onto cloud.

RS232

RS485

Analog Input

Relay Output

Alarm Input

4G LTE

LoRaWAN®

Milesight IoT Cloud

aws
AWS

Azure
Azure

Alibaba Cloud
Alibaba Cloud

TCP/UDP/MQTT Server

Specifications

Model	Analog Input	Digital Input	Relay Output	RS232	RS485	Network
UC1114	—	2	2	—	—	LoRaWAN®
UC1122	2	1	1	—	—	LoRaWAN®
UC1152	—	1	1	1	1	LoRaWAN®
UC3414	—	2	2	—	—	2G/3G/4G
UC3422	2	1	1	—	—	2G/3G/4G
UC3452	—	1	1	1	1	2G/3G/4G

LoRaWAN®   *CoWork Series*
AI workplace Sensor

VS121

Milesight VS121 is an AI powered workplace sensor featuring LoRaWAN® technology. It complies with GDPR and uses anonymous people counting data to help you see and understand your workspace utilization.

Anonymous Detection
No facial detection technology being applied nor PII collected

High Recognition Rate
95% recognition rate to determine objects as human or non-human

Large Detection Area
Covering up to 5 meters radius at 3 meters height

Custom Detection Region
Define 12 custom mapped regions as detection/non-detection region

Specifications	
Field of View	190°Horizontal, 112°Vertical
Recognition Rate	>95%
Wi-Fi	IEEE 802.11b/g/n, as AP for configuration only
LoRaWAN® Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	5V/1.5A by Type-C Port
Ingress Protection	IP30
Operating Temperature	-5 ~ +55°C

LoRaWAN®
CoWork Series
Smart Button

WS101

LoRaWAN® CoWork Series
PIR & Light Sensor

WS202

The WS101 LoRaWAN smart button is an ultra-tiny device that allows you to remotely control appliances, triggering a scene or calling for help as whatever and wherever you need it.

Combined the PIR motion detection technology and brightness measurement, Milesight WS202 can easily determine whether an indoor space is being used by human or not, thus providing reliable support for automatic lighting control system.

Single/Double/Long Press Mode

Buzzer & LED Light for Status Indication

Easy Configuration via NFC

Over 6 Years Battery Life

Ultrawide Range Detection

120° Horizontal
100° Vertical
Up to 8 m distance

Smart Brightness Measurement

1 lux resolution
Measurement from 1 to 60000 lux
Custom Bright/Dark conditions threshold

Specifications	
Button	1 × Action Button (white and red optional)
Press Mode	Single press, double press, long press
Configuration	NFC (mobile App & NFC reader with PC)
LoRaWAN® Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	Built-in 1650 mAh battery to use for over 5 years with around 10 presses per day
Ingress Protection	IP30
Operating Temperature	-30°C to +60°C

Specifications	
PIR Sensor	120°Horizontal, 100°Vertical Maximum 8 m distance
Light Sensor	1 to 60000 lux (Determine as Bright or Dark according to custom threshold)
Configuration	NFC (mobile App & NFC reader with PC)
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Power Supply	Built-in 1650 mAh battery to use for around 5 years with 30 triggers per day
Ingress Protection	IP30
Operating Temperature	-30°C to +60°C

LoRaWAN®
Magnetic Contact Switch

WS301

LoRaWAN®
Smart Portable Socket

WS52x

The WS301 is a 100% wire-free magnetic contact switch to be easily installed on a door or window to detect the opening or closing event, and report alarms over the LoRaWAN® network. The minimal magnet is placed inside the portable part, while the sensor is inside the fixed part on door, window or other object.

Easy Installation
Double sided tape/Screw

LED Indicator
Open/close, tamper and low battery alarm

NFC Enabled
Configure device easily and wirelessly

2-Year Battery Life
1200 mAh replaceable battery

Tamper Detection
Detect any attempt of tamper and report

Milesight IoT Cloud
Compliant with Milesight IoT Cloud

Specifications	
Detection Distance	15-20 mm
Button	1 × Power Button (Internal), 1 × Tampering Button
Power Supply	1 × 1200 mAh ER14250 Li-SOCl2 battery
Dimensions	Sensor: 50 × 30 × 17 mm (1.97 × 1.18 × 0.67 in) Magnet: 30 × 17 × 8 mm (1.18 × 0.67 × 0.31 in)
Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Ingress Protection	IP30
Operating Temperature	-20 ~ 60°C

WS52x is a LoRaWAN® Smart Portable Socket for the monitoring and control of electronic appliances. It helps the owner to improve the management efficiency, as well as to reduce the manpower & electricity cost with its remote scheduled on/off control capability and power consumption measurement.

Remote ON/OFF

Time-Based ON/OFF

Power Consumption Measurement

Overload Protection

Specifications	
Socket & Plug Type	Type A, Type B, Type C, Type G, Type I, etc.
Operating Voltage	100~250 VAC, 50~60 Hz
Max Load Capacity	10 A/16 A (Optional), 250 VAC
Measurement	Voltage (VAC), Current (mA), Power Factor (%), Power (W), Power Consumption (kWh)
Configuration	NFC (mobile App & NFC reader with PC)
LoRaWAN Frequency	CN470/RU864/IN865/EU868/AU915/US915/KR920/AS923
Ingress Protection	IP30
Operating Temperature	-20°C to +60°C

5G CPE IP67
Ultra Fast and Futuristic

UF51

Milesight PoE Switch
Simplify Network Deployment with Power over Ethernet

Milesight UF51 5G CPE features aesthetic design and outstanding performance with IP67 rating to delivers fast 5G connectivity, higher bandwidth, and low latency to more businesses.

Milesight PoE switch is a highly-dependable device that transmits data and power simultaneously, which helps to eliminate the need for a separate power supply when you are installing devices with great difficulty to access or without power outlet.

Fast 5G Connectivity

2.5 Gbps Downlink
4 × 4 MIMO
NSA & SA Modes

Dual Band Wi-Fi

1.733 Gbps Peak Speed
IEEE 802.11b/g/n/ac
2 × 2 MIMO

Outstanding Performance

Quad-Core Processor
512 MB DDR3 RAM
8 GB Flash

Flexible Installation

Desktop Installation
Wall & Pole Mounting
Bottom Screw & Magnet Mounting

Versatile Ports

With a wide range of PoE ports from 4, 8, 16 to 24 at maximum, and 2 SFP ports

4-Port PoE Switch	8-Port PoE Switch	16-Port PoE Switch	24-Port PoE Switch
4 × 10/100 Mbps PoE ports + 2 × 100 Mbps uplink ports	8 × 10/100 Mbps PoE ports + 2 × 100 Mbps uplink ports	16 × 10/100 Mbps PoE ports + 2 × 100 Mbps uplink ports	24 × 10/100 Mbps PoE ports + 2 × 100 Mbps uplink ports

Zero Configuration

250 m Extend Mode

Up to 14.8 Gbps Switching Capacity
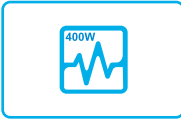
Maximum 400 W Power Budget

4 kV Surge Protection

UR32 Lite
Industrial Cellular Router

UR32 Lite (UR32L) is a featured industrial router that secures reliable cellular-to-ethernet connectivity for IoT applications, such as kiosk, self-service terminals and process automation equipment. Powered by DeviceHub, a remote management platform, UR32 Lite simplifies your process of setup, mass configuration, maintenance and support.

UR32L

Reliable Connectivity
Major carriers and LTE support make it easy to get connected globally

Remote Management
Gain easy setup, mass configuration, maintenance and support on remote locations

Mighty Mite
Combine compact size with powerful ability to provide high performance and reliability

UR32&UR35 *Pro Series*
Industrial Cellular Router
Rugged & Programmable 4G Router

UR32   UR35

High Performance
➤ NXP Industrial Grade Processor
➤ -40°C to 70°C Operating Temperature
➤ Support Wi-Fi, GPS, Serial, I/Os and Voice

Low Maintenance & Easy Operation
➤ User-friendly GUI
➤ MilesightVPN for Remote Access
➤ DeviceHub Central Management

Intelligent & Programmable
➤ Python Programming
➤ Support Modbus RTU/TCP

Lower Investment
➤ Affordable Price
➤ PoE-PSE for Less Wire Connection
➤ Reduce Time Cost by Remote Management

UR75 High-Performance 5G Industrial Router

Ultra Series

Featuring the latest and fastest cellular technology - 5G, UR75 is not only an intelligent industrial IoT router, but also an unrivaled wireless networking solution.
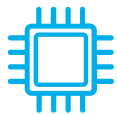

UR75

Outstanding Performance

➤ 5G NSA & SA Modes

➤ Qualcomm Quad-Core Processor

➤ CAT4/6/12/20 Cellular Modem (Optional)

Rich Connectivities

➤ 2 × 2 MIMO 802.11ac Wi-Fi

➤ 1 × RS232 + 1 × RS485

➤ 1 × Digital Input & Output

Edge Intelligence

➤ Azure IoT Edge

➤ AWS Greengrass

➤ Python Programming

Specifications

		UR32L	UR32	UR35	UR75
Interfaces	SIM Slots	1		2	
	Ethernet Ports	2 x 10/100 Mbps		5 x 10/100 Mbps	5 × 10/100/1000 Mbps
	Serial Ports	N/A	1 x RS232 or 1 x RS485	1 x RS232 + 1 x RS485	1 × RS232 + 1 × RS485
	DI/DO	N/A		1 × DI + 1 × DO	
	Voice	N/A		1 × FXS (RJ11)	N/A
	Antenna Connectors	1 × Cellular Connector	2 x Cellular Connectors 1 x Wi-Fi /GPS Connector	2 x Cellular Connectors 1 x Wi-Fi Connector 1 x GPS Connector	3 x Cellular Connectors 1 x Cellular/GPS Connector 2 x Wi-Fi Connectors
Network	Cellular	4G CAT4			5G, 4G CAT4/6/9/12/20 (Optional)
	Wi-Fi (Optional)	N/A	IEEE 802.11b/g/n		IEEE 802.11a/b/g/n/ac
	Serial Port	N/A	Transparent (TCP Client/Server, UDP), Modbus Gateway (Modbus RTU to Modbus TCP), Modbus Master		
	Network Protocols	PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIP v1/v2, OSPF, DDNS, VRRP, HTTP, HTTPS, DNS, ARP, QoS, SNTP, Telnet, VLAN, SSH			
	AAA	RADIUS, TACACS+, LDAP, Local Authentication			
	Firewall	URL Filtering/ACL/DMZ/Port Mapping/MAC Binding/SPI/DoS Protection			
	Reliability	VRRP, WAN Fail-over, Dual SIM Backup			
	VPN	OpenVPN, IPsec, PPTP, L2TP, DMVPN, GRE			
Maintenance	Management	Web, CLI, SMS, Watchdog, On-demand Dial Up			
	Multilevel Authority	Multiple Levels of User Authority			
Capabilities	CPU	528 MHz, 32-bit ARM Cortex-A7			716 MHz, Quad-Core ARM Cortex-A7
	Flash	128 MB			8 GB
	Memory	128 MB DDR3			512 MB DDR3
	Built-in	Watchdog			
	GPS (Optional)	N/A	GPS + GLONASS		
	Extended Memory	N/A	1 × micro SD card slot, up to 128 GB		1 × M.2 NVMe SSD Slot
Hardware	Power Input	9 ~ 48 VDC			
	Power Output (Optional)	2 × 802.3af/at PoE PSE		4 × 802.3af/at PoE PSE	
	Ingress Protection	IP30			
	Housing & Weight	Metal, 246g (0.54 lb)	Metal, 271 g (0.60 lb)	Metal, 481 g (1.06 lb)	Metal, 525 g (1.16 lb)
	Dimensions	108 x 90 x 26 mm		135 x 100 x 45 mm	135 × 118 × 45 mm
	Mounting	Desktop, Wall or DIN Rail Mounting			
Others	Operating Temperature	-40°C to +70°C (-40°F to +158°F) Reduced cellular performance above 60°C			
	Storage Temperature	-40°C to +85°C (-40°F to +185°F)			
	Relative Humidity	0% to 95% (non-condensing) at 25°C/77°F			
	Certifications	RoHS, CE, FCC	RoHS, CE, FCC, PTCRB, AT&T, RCM, SPDDI, NBTC	RoHS, CE, FCC	
	Frequency Band — E	LTE: B1/B3/B5/B7/B8/B20/B38/B40/B41		3G: B1/B5/B8	GSM: B3/B8
	Frequency Band — AF	LTE: B2/B4/B5/B12/B13/B14/B66/B71		3G: B2/B4/B5	N/A
	Frequency Band — AU	LTE: B1/B2/B3/B4/B5/B7/B8/B28/B40		3G: B1/B2/B5/B8	GSM: B2/B3/B5/B8
	Frequency Band — 500GL	5G NR: N1/N2/N3/N5/N7/N8/N12/N20/N28/N41/ N66/N71/N77/N78/N79		LTE FDD: B1/B2/B3/B4/B5/B7/B8/B9/B12/B13/B14/B17/B18/ B19/B20/B21(TBD)/B25/B26/B28/B29/B30/B32/B66/B71 LTE TDD: B34/B38/39/B40/B41/B42/B48	

Milesight IoT Cloud

The Milesight IoT Cloud provides unparalleled levels of vertical integration with Milesight LoRaWAN® gateways, sensors and controllers. It visualizes field data and enables user to monitor and control remote assets on an intuitive dashboard.

Visualization

Transform real-time and historical data into drag-and-drop widgets on dashboard

Monitoring & Control

Control access and monitor your projects from anywhere

Alerts

Enable email and mobile push notifications based on triggered events

Security & Reliability

Built on AWS to provide the most confidential and reliable infrastructure for your data

Connectivity Suite

Applicable to Industrial Cellular Router and LoRaWAN® Gateway

Milesight DeviceHub is a web-based platform that lets you manage all your Milesight routers and gateways from a single location at any time.

The Milesight DeviceHub is able to monitor all critical parameters of remote routers and gateways, perform configuration, upgrade firmware, analyze system log, create graphic reports and more. It helps to improve productivity, reduce costs, and enhance the intelligence of your network and business operations.

MilesightVPN is the core component of Milesight VPN solution. Typically it's hosted on your own server.

Software Requirements

- OS: Ubuntu 20.04
- Supports installation package
- Browser: Chrome, Firefox

Hardware Requirements

Your host hardware must meet the following minimum requirements:

For 500 devices	For 1000 devices
RAM: 16 GB	RAM: 32 GB
Disk: 512 GB	Disk: 1 TB

Milesight IoT Product Naming Convention

Industrial Cellular Router & 5G CPE

UR32 - L 04 EU - G - P - W - RS485
 ①   ② ③ ④   ⑤   ⑥

① Model Name
- UR32L
- UR32
- UR35
- UR75
- UF51

② Cellular Network Type
- L: 4G LTE
- 5: 5G

③ Modem Manufacturer & Model

④ Operating Region
- EU: EMEA/South Korea/Thailand/India
- AU: Latin America/Australia/New Zealand
- AF: North America FirstNet
- GL: Global

⑤ Function (for routers only)
- G: GPS
- P: PoE
- W: Wi-Fi

⑥ RS485 (for UR32 only)
- Add RS-485 Serial Interface

LoRaWAN® Gateway

UG65 - L 04 EU - 915M - EA
 ①   ② ③ ④   ⑤   ⑥

① Model Name
- UG63
- UG65
- UG67

② Cellular Network Type
- L: 4G LTE

③ Modem Manufacturer & Model

④ Operating Region
- EU: EMEA/South Korea/Thailand/India
- AU: Latin America/Australia/New Zealand
- AF: North America FirstNet

⑤ LoRaWAN® Module
- 470M: CN470
- 868M: RU864/IN865/EU868
- 915M: US915/AU915/KR920/AS923

⑥ External Antenna

LoRaWAN® Sensor

EM500 — UDL 915M
  ①   ②   ③

① Model Name
- AM104
- AM107
- AM307
- AM319
- EM300
- EM310
- EM500

② Sensor Type
- UDL: Ultrasonic Distance/Level Sensor
- SMTC/SMT: Soil Sensor
- SWL: Submersible Water Level Sensor
- LGT: Light Sensor
- PT100: PT100 Temperature Sensor
- CO₂: CO₂ Sensor
- PP: Pipe Pressure Sensor
- TH: Temperature & Humidity Sensor
- MCS: Magnetic Contact Switch Sensor
- SLD: Spot Leak Detection Sensor
- ZLD: Zone Leak Detection Sensor

③ LoRaWAN®Module
- 470M: CN470
- 868M: RU864/IN865/EU868
- 915M: US915/AU915/KR920/AS923

LoRaWAN® Controller

UC511— DI - 915M
  ①   ②   ③

① Model Name
- UC501
- UC502
- UC511
- UC512
- UC1114
- UC1122
- UC1152

② Interface (For UC51x Only)
- Digital Input (Pulse Counter)

③ LoRaWAN®Module
- 470M: CN470
- 868M: RU864/IN865/EU868
- 915M: US915/AU915/KR920/AS923

CoWork Series

LoRaWAN® AI Workplace Sensor

VS 1 2 1 — 915M
 ①   ② ③   ④

① Vision Sensor   **② MegaPixel**   **③ Sub-series**   **④ LoRaWAN® Module**

LoRaWAN® Smart Button

WS 10 1 — 915M
  ①   ②   ③

① Workplace Sensor   **② Number of Buttons**   **③ LoRaWAN® Module**

LoRaWAN® PIR & Light Sensor

WS 20 2 — 915M
  ①   ②   ③

① Workplace Sensor   **② Number of Sensors**   **③ LoRaWAN® Module**

LoRaWAN® Magnetic Contact Switch

WS 30 1 — 915M
  ①   ②   ③

① Workplace Sensor   **② Sub-series**   **③ LoRaWAN® Module**

LoRaWAN® Smart Portable Socket

WS 52 3 — 915M
  ①   ②   ③

① Workplace Sensor   **② Number of Holes**   **③ LoRaWAN® Module**

Industrial PoE Switch

MS — S0 2 04 — E L   MS — S0416 — G F
       ① ②   ③④   ⑤⑥

① Uplink Port and SFP Port
- 2: 2 × Uplink Ports
- 4: 2 × Uplink Ports + 2 × SFP Ports

② Number of PoE Ports

③ Fast Uplink Port (10/100 Mbps)

④ Extend Mode

⑤ Gigabit Uplink Port (10/100/1000 Mbps)

⑥ Optical Fiber Port (SFP)