

# Milesight IoT Product Catalogue

5G, AI & Sensing Technology

Better Inside, More in Sight

V3.1



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# About Milesight IoT

Milesight is a fast-growing high-tech company delivering smart IoT and video surveillance products with a focus on IoT technologies, including Artificial Intelligence, 5G and LoRaWAN®, since 2011. With improved sensing capability and advanced IoT insights, we help customers worldwide optimize their business operation in a more efficient and sustainable way. In collaboration with a global network of distributors and system integrators, we are committed to building open ecosystems and accelerating IoT strategies to the next level.

Milesight IoT delivers products including IoT Gateways, IoT Sensors, IoT Controllers and 4G/5G Industrial Routers & Switches to offer complete device-to-cloud-solutions for massively growing markets of smart office, smart building and smart agriculture in an actionable and adapted way.

## Milesight Milestone



# Why Milesight



## Professional Technology

- Strong IoT know-how
- State-of-the-art IoT technology: 5G, sensing, LoRaWAN®, Milesight D2D, AI



## Strong Capabilities

- 56% of employees are working in R&D team
- 15% revenue invested into R&D



## Compliance and Associations



## Flexible Integration

- The Things Industries, ChirpStack, Actility, Senet and many more
- Embrace easy interoperability with other network servers and clouds



## Worldwide Coverage

- Provide services over 120+ countries and regions
- Form a healthier and value-added channel management network

# WHY MILESIGHT

# Why LoRaWAN®

LoRaWAN® is a long range, wide area, and low-power networking protocol.



# Why Milesight D2D

Milesight D2D is a device to device communications protocol which enables LoRaWAN® based devices to communicate directly with one another when they are in the same group.

\* Independently Developed by Milesight



- Low latency (less than 1 second in the same room)
- Low power for battery operation of both sides
- Long range and as secure as LoRaWAN®
- No useless beaconing and difficult synchronization
- Initial feature which coexists with LoRaWAN®
- No additional hardware and LoRaWAN® gateways are needed



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## LoRaWAN® Gateway

Enable All-Round Connectivity

- Mini LoRaWAN® Gateway UG63
- Industrial LoRaWAN® Gateway UG56
- Semi-Industrial LoRaWAN® Gateway UG65
- Outdoor LoRaWAN® Gateway UG67



## Occupancy & People Counting Sensor

Get Informed with 100% Anonymity

- AI Workplace Occupancy Sensor VS121
- AI ToF People Counting Sensor VS133
- Cubicle Occupancy Sensor VS330



## iBox Kit Series

Kick off IoT PoCs with LoRaWAN® Demo Kits

- iBox IAQ Kit
- iBox CoWork Kit
- iBox Smart Building Kit
- Smart Restroom Solution



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P 14 & P 30

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## Smart Office CoWork Series

Explore the Potential of Workplace

- Smart Button WS101
- Smart Scene Panel WS136 & WS156
- Smart Fill Level Monitoring Sensor WS201
- PIR & Light Sensor WS202
- Wire-Free Magnetic Contact Switch WS301
- Sound Level Sensor WS302
- Mini Leak Detection Sensor WS303
- Smart Wall Switch WS50x
- Smart Portable Socket WS523
- Smart Light Controller WS558



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## Indoor Gas Sensor

Detect NH<sub>3</sub> and More Accurately

- Gas Detector GS101
- Bathroom Odor Detector GS301



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## Indoor Air Quality (IAQ) Sensor

See CO<sub>2</sub> and More Directly

- 3-in-1 IAQ Sensor AM103/AM103L
- 7-in-1 IAQ Sensor AM107
- 9-in-1 IAQ Sensor AM307/AM308/AM319



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## IoT Display

Integrate Connectivity and Applications in One

- IoT E-ink Display DS3604
- IoT Display DS7610



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## Building & Urban Environment Monitoring Sensor

Develop Smart Cities with Milesight EM300 Series

- Pulse Counter EM300-DI
- Magnetic Contact Switch EM300-MCS
- Temperature & Humidity Sensor EM300-TH
- Leak Detection Sensor EM300-SLD/ZLD
- Tilt Sensor EM310-TILT
- Ultrasonic Distance/Level Sensor EM310-UDL
- FDA Approved Temperature & Humidity Sensor EM320-TH
- FDA Approved Tilt Sensor EM320-TILT
- Insertion Temperature Sensor TS101



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## Distance/Level Measurement Sensor

Discover New Possibilities with Milesight EM400 Series

- ToF Laser Distance Sensor EM400-TLD
- Multifunctional Ultrasonic Distance Sensor EM400-MUD
- Ultrasonic Distance Sensor EM400-UDL



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## Asset Tracker

Protect and Manage Critical Assets at All Times

- Outdoor Asset Tracker AT101



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## Industrial & Suburban Environment Monitoring Sensor

Build Smart World with Milesight EM500 Series

- CO<sub>2</sub> Sensor (4 in 1) EM500-CO<sub>2</sub>
- Light Sensor EM500-LGT
- Pipe Pressure Sensor EM500-PP
- Industrial Temperature Sensor EM500-PT100
- Ultrasonic Distance/Level Sensor EM500-UDL
- Soil Moisture, Temperature and Electrical Conductivity Sensor EM500-SMTC
- Submersible Water Level Sensor EM500-SWL



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## 5G Series

Ultra-Fast and Futuristic Applications

- 5G Dongle UF31
- 5G CPE UF51
- 5G AIoT Camera
- Ultra Series 5G Industrial Router UR75



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## Sensing Camera

Get Advanced Imaging Insights with Milesight X Infinity Series

- X1 Sensing Camera for Indoor Scenarios
- X5 Sensing Camera for Outdoor Applications



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## IoT Controller Series

Empower Automatic and Intelligent Control

- Modbus to LoRaWAN<sup>®</sup> IoT Controller UC100
- LoRaWAN<sup>®</sup>/4G IoT Controller UC300
- Multi-Interface LoRaWAN<sup>®</sup> Controller UC50x
- LoRaWAN<sup>®</sup> Solenoid Valve Controller UC51x





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## Industrial Cellular Router & Switches

Rugged and Reliable Communications

- Mini Series UR41
- Lite Series UR32L
- Pro Series UR32 & UR35
- Ultra Series 5G Industrial Router UR75
- Industrial PoE Switch

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## IoT Weather Station

Measure Atmospheric Conditions Precisely

- IoT Weather Station Standard Version WTS305
- IoT Weather Station Pro Version WTS50x



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## Milesight IoT Cloud

User-Friendly and Effortless Management

- Milesight IoT Cloud

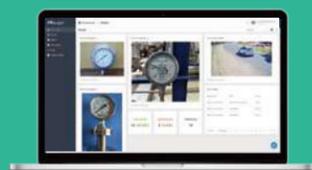


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## Milesight AIoT Sensing Platform

Enable Pictures to Inspire Unlimited Sensing Insights

- Milesight AIoT Sensing Platform



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## Connectivity Suite

Remote and Bulk Management

- DeviceHub
- Milesight VPN

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# SENSING INSIGHT

SENSING THE INFINITY TO DRIVE THE WORLD



**Sensing by Products:**

Ingest the original environment from the sensing devices, whether they are network cameras or environmental sensors.

**Insight on Environment:**

Through IoT technologies, convert the original resource into visualized, automated, and value-added data that is critical to the physical world.

**Drive the Digital World:**

Massive critical information about the environment gathered becomes insights. The outcome, such as decision-making and future planning, tells us how to create a more efficient and intelligent world.

Digital Sensing

Sensing Nodes

Connectivity

LoRaWAN® Gateway

4G/5G Industrial Routers

5G Super-Speed Suit

Interaction

IoT Display

Visualized Data on IAQ Sensor

Application

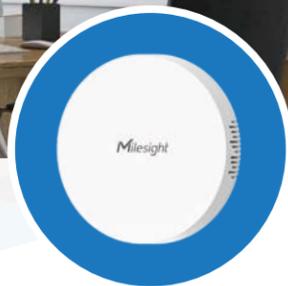
Smart Workplace

Smart City

Smart Agriculture

# Mini LoRaWAN® Gateway

UG63 is a mini-sized indoor LoRaWAN® gateway that fits the LoRaWAN® network coverage for blind spots and standalone deployment.



## Overall Features

- Mini Size for Flexible Installation
- Gateway Fleet for Better Blind Spot Coverage
- Listen Before Talk (LBT) for Downlink Data Integrity
- Semtech SX1302 Chip for Standalone Deployment
- Embedded Network Server Compatible with TTN, ChirpStack, Everynet, Senet, etc.

**UG63**

Model		UG63
LoRaWAN®	Chipset	SX1302, 8 Channels (Half/Full-duplex)
	Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
	Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
Connectivity	Ethernet	1 x RJ45 (PoE PD Supported), 10/100 Base-T (IEEE 802.3)
Hardware	CPU	528 MHz, ARM Cortex-A7
	Built-in	Watchdog, RTC, Timer
	Power Supply	① 1 x 802.3af Standard PoE Input ② 5V by Type-C Port
Physical Characteristics	Ingress Protection	IP30
	Dimension	Φ 115 x 21 mm (Φ 4.52 x 0.83 in)
	Installation	Desktop, Wall or Ceiling Mounting

# Industrial LoRaWAN® Gateway

UG56 is a high-performance 8-channel LoRaWAN® gateway that offers reliable connectivity for industrial applications.



## Overall Features

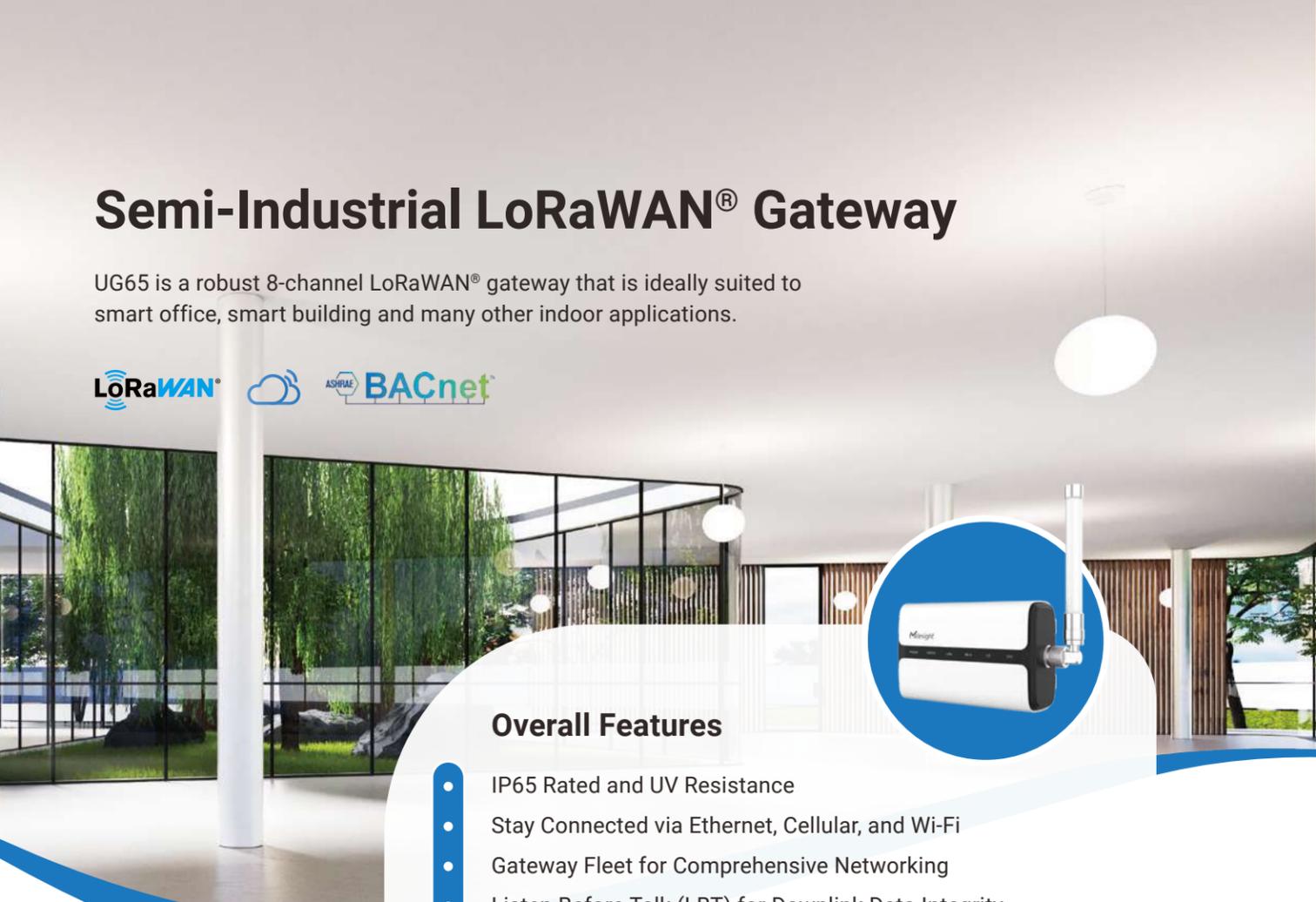
- Industrial-Grade Design with Compact Size
- Stay Connected via Ethernet, Cellular, and Wi-Fi
- Gateway Fleet for Comprehensive Networking
- Listen Before Talk (LBT) for Downlink Data Integrity
- Semtech SX1302 Chip with High-Performance Quad-Core CPU
- Embedded Network Server Compatible with TTN, ChirpStack, Everynet, Senet, etc.
- BACnet/IP Support for Seamless Integration into Existing Building Management Systems (BMS)

**UG56**

Model		UG56
LoRaWAN®	Chipset	SX1302, 8 Channels (Half-duplex)
	Antenna	1 x 50 Ω SMA Connector (Center PIN: SMA Female)
	Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
	Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
Connectivity	Ethernet	1 x RJ45 PoE PD Port, 10/100 Base-T (IEEE 802.3)
	Wi-Fi	IEEE 802.11b/g/n, 2.4 GHz
	Cellular (Opt.)	1 x Mini SIM-2FF Slot, Support Global GSM/3G/4G LTE Frequency Bands
Hardware	CPU	Quad-core 1.3 GHz, 64-bit ARM Cortex-A35
	Power Supply	① 1 x 802.3af Standard PoE Input ② 5V, 2A by Type-C Port
Physical Characteristics	Ingress Protection	IP30
	Dimension	110 x 75 x 24 mm (4.33 x 2.95 x 0.94 in)
	Installation	Desktop, Wall Mounting

# Semi-Industrial LoRaWAN® Gateway

UG65 is a robust 8-channel LoRaWAN® gateway that is ideally suited to smart office, smart building and many other indoor applications.



## Overall Features

- IP65 Rated and UV Resistance
- Stay Connected via Ethernet, Cellular, and Wi-Fi
- Gateway Fleet for Comprehensive Networking
- Listen Before Talk (LBT) for Downlink Data Integrity
- Semtech SX1302 Chip with High-Performance Quad-Core CPU
- Embedded Network Server Compatible with Actility, AWS, TTN, ChirpStack, Everynet, Senet, etc.
- BACnet/IP Support for Seamless Integration into Existing Building Management Systems (BMS)

UG65

Model		UG65
LoRaWAN®	Chipset	SX1302, 8 Channels (Half/Full-duplex)
	Antenna	1 x 50 Ω N-Female External Connector (Opt.)
	Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
	Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
Connectivity	Ethernet	1 x RJ45 PoE PD Port, 10/100/1000 Base-T (IEEE 802.3)
	Wi-Fi	IEEE 802.11b/g/n, 2.4 GHz
	Cellular (Opt.)	1 x Mini SIM-2FF Slot, Support Global GSM/3G/4G LTE Frequency Bands
Hardware	Processor	Quad-core 1.5 GHz, 64-bit ARM Cortex-A53
	Built-in	Watchdog, RTC, Timer
	Power Supply	① 1 x 802.3 af Standard PoE Input ② 9 ~ 24 VDC by DC Male Jack Connector
Physical Characteristics	Ingress Protection	IP65
	Dimension	180 x 110 x 56.5 mm (7.09 x 4.33 x 2.22 in)
	Installation	Desktop, Wall or Pole Mounting

# Outdoor LoRaWAN® Gateway

UG67 is a robust 8-channel LoRaWAN® gateway that is well-matched to smart agriculture, smart metering and many other outdoor applications.



## Overall Features

- IP67 Rated and UV Resistance
- Stay Connected via Ethernet, Cellular, and Wi-Fi
- Gateway Fleet for Comprehensive Networking
- Listen Before Talk (LBT) for Downlink Data Integrity
- Semtech SX1302 Chip with High-Performance Quad-Core CPU
- Embedded Network Server Compatible with Actility, AWS, TTN, ChirpStack, Everynet, Senet, etc.
- BACnet/IP Support for Seamless Integration into Existing Building Management Systems (BMS)

UG67

Model		UG67
LoRaWAN®	Chipset	SX1302, 8 Channels (Half/Full-duplex)
	Antenna	2 x 50 Ω N-Female External Connectors
	Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
	Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
Connectivity	Ethernet	1 x RJ45 PoE PD Port, 10/100/1000 Base-T (IEEE 802.3)
	Wi-Fi	IEEE 802.11b/g/n, 2.4 GHz
	Cellular (Opt.)	1 x Mini SIM-2FF Slot, Support Global GSM/3G/4G LTE Frequency Bands
	GPS	Support (Internal Antenna)
Hardware	Processor	Quad-core 1.5 GHz, 64-bit ARM Cortex-A53
	Built-in	Watchdog, RTC, Timer
	Power Supply	① 1 x 802.3 af Standard PoE Input ② 12 VDC with M12 Connector
Physical Characteristics	Ingress Protection	IP67
	Dimension	240 x 164 x 90.9 mm (9.45 x 6.46 x 3.58 in)
	Installation	Wall or Pole Mounting

# AI Workplace Occupancy Sensor

VS121 delivers curated insights by real-time occupancy data to unleash potential, especially for workplace and buildings.



## Overall Features

- LoRaWAN® & PoE Versions for Broader Applications
- High Ceiling Mount Version up to 7 Meters High Is Available
- Embedded AI Algorithm Realizes Up to 98% Accuracy Counting
- Compliant with GDPR & 100% Anonymous Detection
- 78m<sup>2</sup> Large Detection Area with 16 Custom Detection Regions
- Bi-Directional People Counting via In/Out Counting
- Smart U-Turn Detection via the U-Shape Tracks of People Flow
- Milesight D2D with Communication Latency to <1 Sec

**VS121**  
**VS121-P**

Model		VS121	VS121-P
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D	
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4	
	Mode	OTAA/ABP Class C	
Ethernet Transmission	Ethernet Port	1x RJ45 10/100 Mbps (PoE PD)	
	Network Protocol	MQTT(S), HTTP, RTSP, NTP, SSH, etc.	
Measurement	Field of View	Standard Version: 190° Horizontal, 112° Vertical High Ceiling Mount Version: 129.4° Horizontal, 68.4° Vertical	
	Recognition Range	Standard Version: a Radius of 5 Meters, At the Height of 3m High Ceiling Mount Version: 18m x 7m, At the Height of 7m	
	Recognition Rate	Region Counting: Up to 95% Line Crossing Counting: Up to 98% People Flow Analysis: Up to 98%	
	Installation Height	Standard Version: 2.5m to 4m High Ceiling Mount Version: 5m to 7m	
	Advanced Feature	Mapped Detection Region Customization, Filter U-Turns, Privacy Mask	
Physical Characteristics	Configuration	Wi-Fi	Ethernet
	Power Supply	5 VDC / 1.5A by Type-C Port	1.5VDC / 2A by Terminal Block 2. 802.3af PoE
	Installation	Ceiling Mounting	

\* Tested under laboratory conditions and for guideline purposes only

# AI ToF People Counting Sensor

VS133 is a people counting sensor Gen 2 with combination of AI and upgraded ToF technology to offer line crossing people counting data in real-time to get precise and valuable statistics for facility operators.



## Overall Features

- Combination of On-board AI Algorithm and 2<sup>ND</sup> Generation ToF Technology
- Industry-Leading 99.8% Accuracy
- Support Staff Detection and Adults/Children Differentiation
- Compliant with GDPR & 100% Anonymous Detection
- Smart U-Turn Detection Suitable for Real World Scenarios
- Bi-Directional People Counting via In/Out Counting
- High-Capacity of Storing a Million Data Locally
- User-Friendly Management on DeviceHub

**VS133**  
**VS133-P**

Model		VS133	VS133-P
Wireless Transmission	Technology	LoRaWAN®	
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4	
	Mode	OTAA/ABP Class C	
Ethernet Transmission	Ethernet Port	1x RJ45 10/100 Mbps (PoE PD)	
	Network Protocol	HTTP, MQTT, NTP, etc.	
Measurement	ToF	FoV: 98° Horizontal, 80° Vertical Light Beam: 940nm (Invisible)	
	Accuracy	<3.5 cm	
	Range	0.5~3.5 m	
	Recognition Rate	Up to 99.8%	
Physical Characteristics	Configuration	Wi-Fi	Ethernet
	Power Supply	12VDC / 2A	802.3 at PoE
	Operation Temperature	-20°C ~ +50°C	
	Ingress Protection	IP40	
Installation	Ceiling Mounting, Extended Ceiling Mounting & Lintel Mounting (with Optional Multifunctional Bracket)		

\* Tested under laboratory conditions and for guideline purposes only

# Bathroom Occupancy Sensor

VS330 combines ToF and PIR technology for accurate detection, solving the ultimate difficulty in public toilets and bathrooms.



## Overall Features

- Combine PIR & ToF Technology with Low Power Consumption
- Detection & Report with Smart Logic Achieving 99.5% Accuracy
- Compliant with GDPR & 100% Anonymous Detection
- Real-Time Data Collection at a 10-Second Intervals for Prompt and Accurate Updates
- Conformal Coating on PCBA and Rotatable Probe for Reliable Usage

**VS330**

Model		VS330	
Wireless Transmission	Technology	LoRaWAN®	
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4	
	Mode	OTAA/ABP Class A	
Measurement	ToF	ToF FoV	27°
		Detection Accuracy and Range	±2cm, 0.040 ~ 3.500m
	PIR	Detection Area	80°
		Detection Distance	Maximum 2.5m
	Others	Sensor Adjustable Angle	0°, 15°, 30°, 45°, 60°, 75°
Physical Characteristics	Configuration	Mobile App via NFC	
	Power Supply*	Easily Replaceable Batteries with up to 4-Year Battery Life	
	Button	1 × Power/Reset Button	
	Ingress Protection	IP30	
	Dimension	Φ100 x 24 mm (Φ3.94 x 0.95 in)	
	Installation	Ceiling Mount or Wall Mount via Screws or 3M tapes	

# iBox Kit Series

Milesight iBox Kit is designed for users to quickly evaluate the LoRaWAN® technology with testified devices and services. Going comprehensively digital transformation with more certainty, these solutions are the one step before users to scale connected device deployments securely with high reliability.



## Overall Features

- Starters Enjoy It for Putting PoCs into Action with Reduced Time & Cost
- Operators Need It for New Projects and Potential Market Demands
- Deployers Love It for Easy to Deploy and Integrate with Multiple NS Platforms

**Kick off IoT PoCs with LoRaWAN® Demo Kits**

- AM319
- AM307
- AM103
- AM103L
- UG63
- Milesight IoT Cloud
- \*Pro1 Valid for One Year



Indoor Air Quality Solution **iBox IAQ Kit**

- VS121
- WS156
- UG63
- WS101
- WS202
- WS301
- Milesight IoT Cloud
- \*Pro1 Valid for One Year



Smart Office Solution **iBox CoWork Kit**

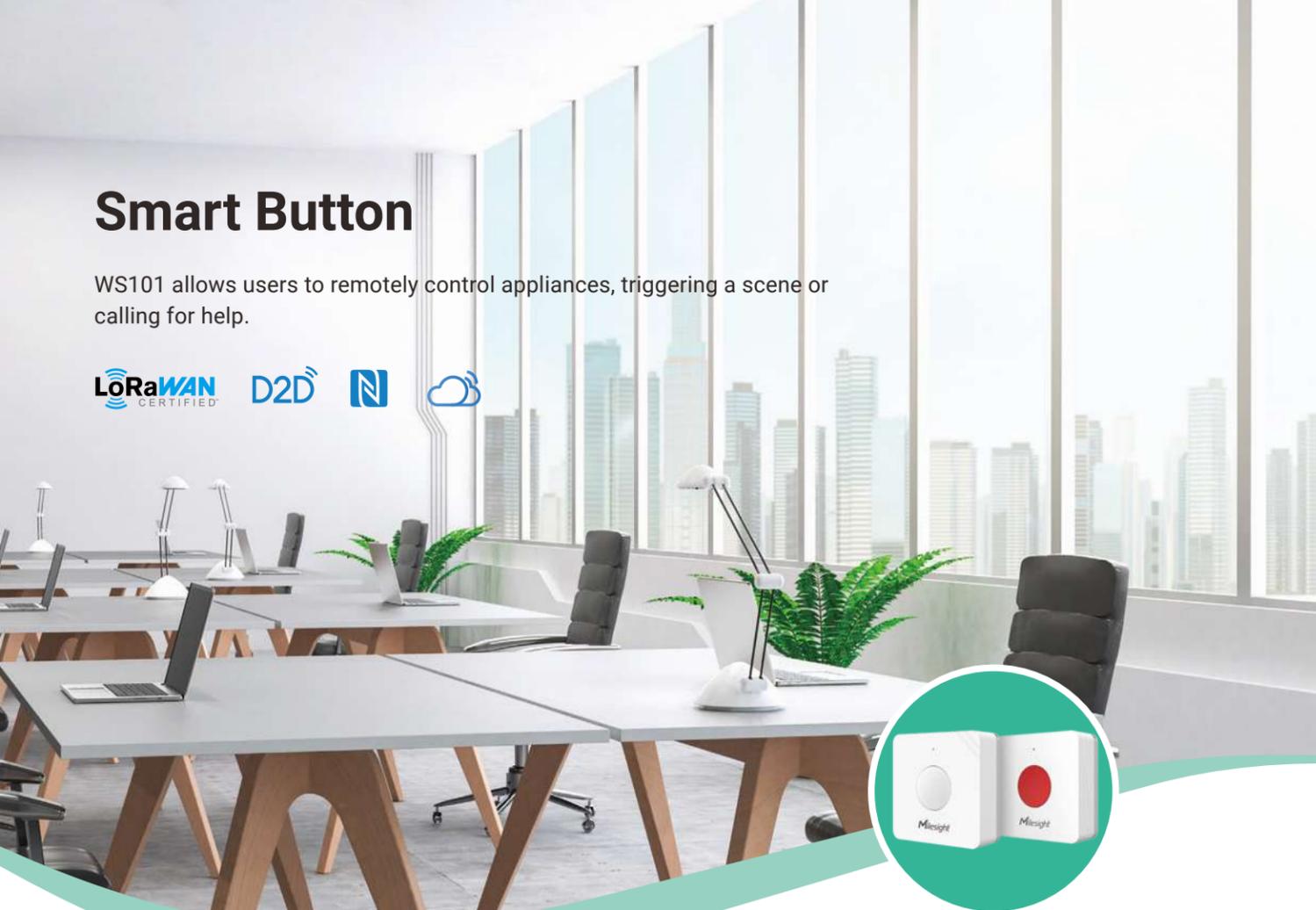
- UC300
- UG65
- EM300
- WS101
- WS301
- AM103
- Milesight IoT Cloud
- \*Pro1 Valid for One Year



Smart Building Solution **iBox Smart Building Kit**

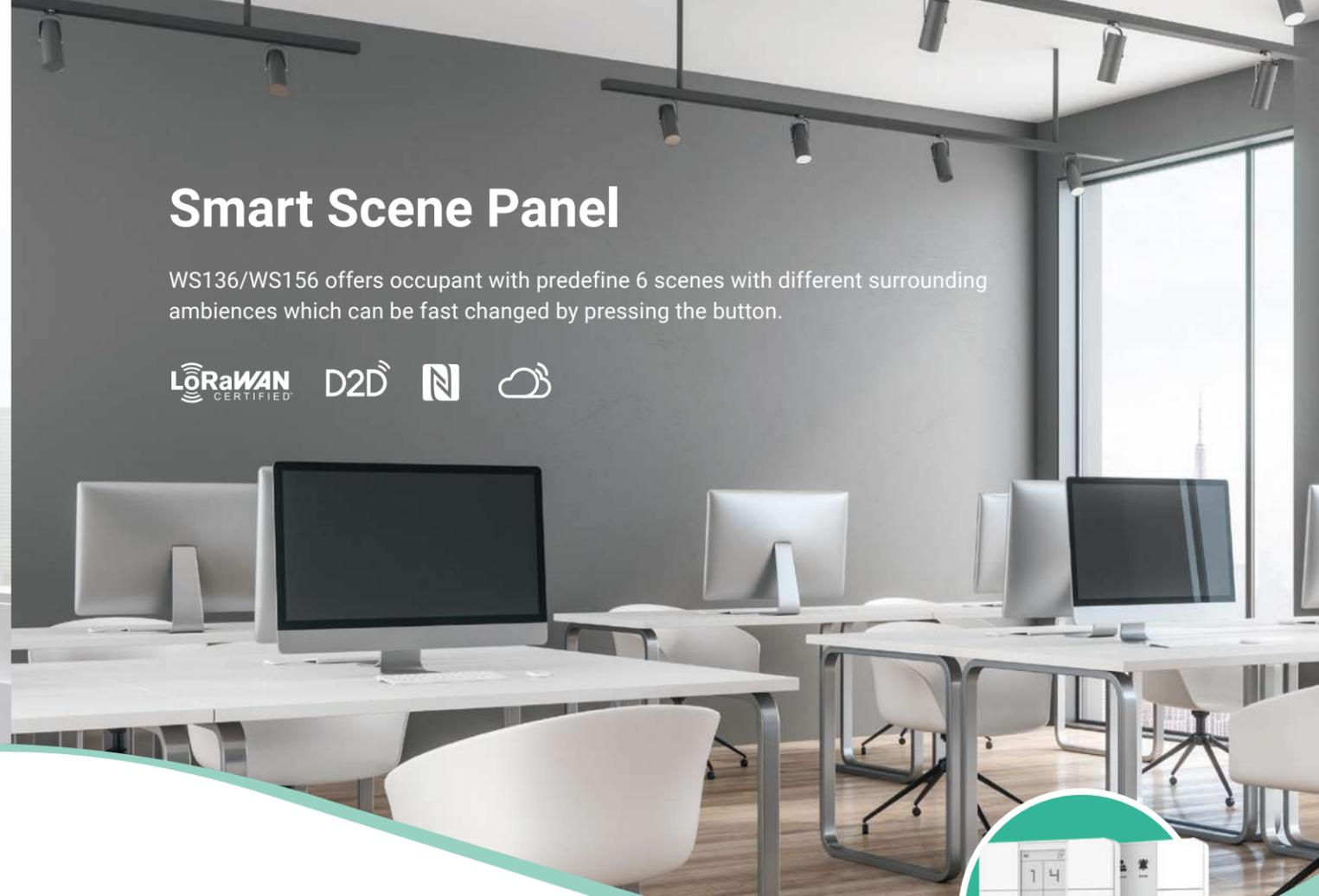
# Smart Button

WS101 allows users to remotely control appliances, triggering a scene or calling for help.



# Smart Scene Panel

WS136/WS156 offers occupant with predefine 6 scenes with different surrounding ambiances which can be fast changed by pressing the button.



## WS101

### Overall Features

- Single/Double/Long Press Mode for Customized Application
- LoRaWAN® Wireless Deployment with Low Power Consumption
- Built-in LED Indicator & Buzzer for Status Indication
- Milesight D2D with Communication Latency to <1 Sec
- Convenient Size with 5 Years Battery Life

Model		WS101
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Physical Characteristics	Power Supply*	Easily Replaceable Battery with over 5-year Battery Life
	Ingress Protection	IP30
	Dimensions	50 × 50 × 18 mm (1.97 × 1.97 × 0.71 in) Button: Φ20 mm (Φ0.79 in)
	Installation	On the Flat Surfaces with Screws or 3M Tapes, Lanyard
Others	Configuration	NFC
	Button	1 × External Button + 1 × Reset Button (Internal)
	Advanced Feature	Milesight D2D Controller

\* Tested under laboratory conditions and for guideline purposes only.

### Overall Features

- 100% Wire-Free with Multiple Scenes Control
- Customizable Display/Stickers Suitable for Various Scenarios
- Control Multiple Devices Simultaneously with One Command
- LoRaWAN® Wireless Deployment with Low Power Consumption
- Milesight D2D with Communication Latency to <1 Sec

## WS136 WS156

Model		WS136/WS156
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/RU864/IN865/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Physical Characteristics	Power Supply*	Easily Replaceable Batteries with over 3-Year Battery Life
	Ingress Protection	IP30
	Dimensions	86 × 86 × 14 mm (3.39 × 3.39 × 0.55 in)
	Display	2.9-Inch Black & White E-Ink Screen (WS156 Only)
	Installation	Desktop, 3M Tape Mounting, 86 Box Mounting
Others	Configuration	NFC
	Button	6 Scene Buttons (Blue Light) & 1 Reset Button (Internal)
	Advanced Feature	Milesight D2D Controller, Screen Display Customization

\* Tested under laboratory conditions and for guideline purposes only.

# Smart Fill Level Monitoring Sensor

WS201 monitors container fill levels in real time with high accuracy through ToF technology to optimize management.



## Overall Features

- Detection Ranges from 1cm to 55cm
- Suitable for Diverse Toilet Paper Dispenser
- Accurate Fill Level Monitoring with ToF Technology
- Up to 2 Years Battery Life with One Coin Cell Battery
- LoRaWAN® Wireless Deployment with Low Power Consumption

### WS201

Model		WS201
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/ IN865/RU864/EU868/US915/AU915/KR920/AS923- 1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	ToF FoV	25°(Accuracy± 5°)
	Range&Accuracy	1 ~ 55 cm (Accuracy: ± 1 cm)
	Resolution	1mm (1.0 ≤ X ≤ 15.0cm) 2mm (15.0 < X ≤ 35.0cm) 3mm (35.0 < X ≤ 55.0cm) X = Detection Distance
Physical Characteristics	Dimension	66 × 38 × 12 mm (2.60 × 1.50 × 0.47 in)
	Configuration	NFC
	Power Supply*	Easily Replaceable Battery with 2-Year Battery Life
	Operation Temperature	-10°C ~ +60°C
	Ingress Protection	IP30
	Installation	On the Flat Surface with 3M Tapes

\* Tested under laboratory conditions and for guideline purposes only

# PIR & Light Sensor

WS202 provides PIR motion detection and brightness measurement, providing reliable supports for automatic lighting control system.



## Overall Features

- PIR & Light Sensor for Occupancy/Motion Detection
- Wide Detection Range up to 8m in Distance
- Customizable Bright/Dark Conditions Threshold
- Milesight D2D with Communication Latency to <1 Sec
- Convenient Size with 5 Years Battery Life

### WS202

Model		WS202
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923
	Mode	OTAA/ABP Class A
Measurement	PIR	120° Horizontal, 100° Vertical, Maximum 8 m
	Light Status	Bright/Dark (Determine 1-60000 lux as Bright or Dark According to Custom Threshold)
Physical Characteristics	Power Supply*	Easily Replaceable Battery with up to 4-Year Battery Life
	Ingress Protection	IP30
	Dimension	50 × 50 × 23.8 mm (1.97 × 1.97 × 0.94 in)
	Installation	On the Flat Surfaces with Screws or 3M Tapes
Others	Configuration	NFC
	Advanced Feature	Milesight D2D Controller

\* Tested under laboratory conditions and for guideline purposes only.

# Magnetic Contact Switch

WS301 detects the opening or closing event, sending alarms accordingly. The minimal magnet is placed inside the portable part, while the sensor is inside the fixed part on door, window or other projects.



## Overall Features

- 100% Wire-Free with Double Sided Tape/Screw
- Real-Time Tamper Detection & Report
- Built-in LED Indicator for Status Indication
- Milesight D2D with Communication Latency to <1 Sec
- Convenient Size with 5 Years Battery Life

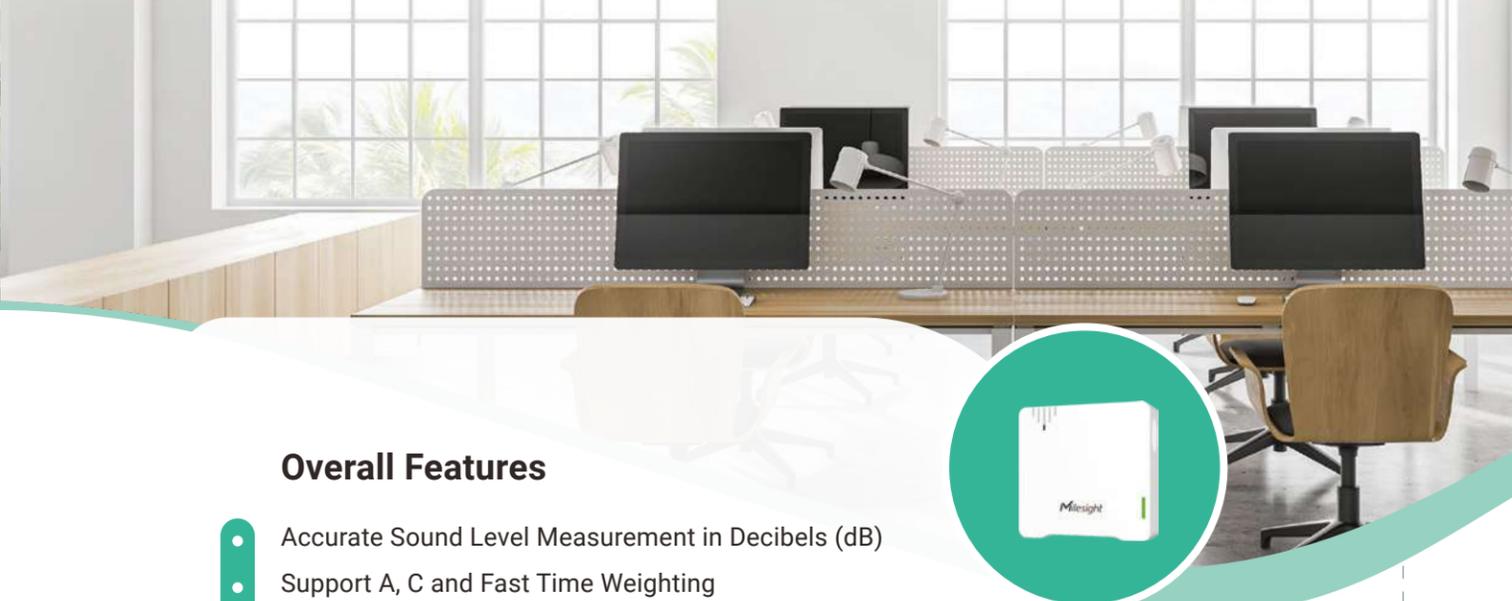
**WS301**

Model		WS301
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923
	Mode	OTAA/ABP Class A
Measurement	Detection Distance	10-15 mm
Physical Characteristics	Power Supply*	Easily Replaceable Battery with over 5-year Battery Life
	Ingress Protection	IP20
	Dimension	Sensor: 50.5 × 31 × 18.5 mm (1.99 × 1.22 × 0.73 in) Magnet: 30 × 13.5 × 10 mm (1.18 × 0.53 × 0.39 in)
	Installation	On the Flat Surfaces with Screws or 3M Tapes
Others	Configuration	NFC
	Button	1 × Reset Button (Internal), 1 × Tampering Button
	Alarms	Open/Close Status, Tamper
	Advanced Feature	Milesight D2D Controller

\* Tested under laboratory conditions and for guideline purposes only.

# Sound Level Sensor

WS302 can not only measure noise levels and generate various values via LoRaWAN® network, but also supports multiple weighting measurements for different application scenarios.



## Overall Features

- Accurate Sound Level Measurement in Decibels (dB)
- Support A, C and Fast Time Weighting
- Built-in LED Indicator for Status Indication
- LoRaWAN® Wireless Deployment with Low Power Consumption
- Convenient Size with 5 Years Battery Life

**WS302**

Model		WS302
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Sound Level	± 3 dB (0°C to +45°C), 30 dBA to 120 dBA, 35 dBC to 120 dBC
	Frequency Range	30 Hz to 8 kHz
	Weighting	A and C Fast Weighting
	Measurement Unit	SPL Actual, Leq, Lmax
Physical Characteristics	Power Supply*	Easily Replaceable Batteries with over 4-Year Battery Life (Fast Time Weighting Disabled) And over 1.5 Years (Fast Time Weighting Enabled)
	Ingress Protection	IP30
	Dimension	68 × 65 × 20.5 mm (2.68 × 2.56 × 0.81 in)
	Installation	On the Flat Surfaces with Screws or 3M Tapes
Others	Configuration	NFC
	Button	1 × Power/Reset Button

\* Tested under laboratory conditions and for guideline purposes only.

# Mini Leak Detection Sensor

WS303 detects the presence of leaks and raises alarms locally and remotely, which is ideal for smart offices, buildings, houses, etc.



## Overall Features

- IP67 Rated for Harsh Environment
- Water Leak Detection with 0.5mm to Trigger Alert
- Immediate Warning Locally and Remotely
- Up to 5 Years Battery Life with One Coin Cell Battery
- LoRaWAN® Wireless Deployment with Low Power Consumption
- Milesight D2D with Communication Latency to <1 Sec

**WS303**

Model		WS303
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/ IN865/RU864/EU868/US915/AU915/KR920/AS923- 1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Trigger Condition	Conductive Liquid When Liquid Level Reaches 0.5 mm
	Configuration	NFC
Physical Characteristics	Power Supply*	Easily Replaceable Battery with 5-Year Battery Life
	Operation Temperature	-10°C to +60°C
	Ingress Protection	IP67
	Dimension	63 x 63 x 14 mm
	Installation	3M Tape Mounting, Desktop

\* Tested under laboratory conditions and for guideline purposes only

# Smart Wall Switch

WS50x is designed for the local and remote control of lights and electrical appliances. It adopts two standard sizes for most of international wall switch types, which can replace the traditional wall switches directly.



## Overall Features

- Time-Delay, Schedule, Remote and Scene-Based Control
- Support 1/2-Gang with 3-Wire/2-Wire Circuit Design
- Built-in LED Indicator for Status Indication
- Multicast for Remote Control in Bulk
- Milesight D2D with Communication Latency to <1 Sec

**WS50x**

Model		WS50x	
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D	
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4	
	Mode	OTAA/ABP Class C	OTAA/ABP Class B, Class C to B, Class C
Electrical	Circuit Type	3-Wire	2-Wire
	Maximum Current	Inductive: 5 A per Gang, Total 10 A Resistive: 10 A per Gang, Total 10 A	
	Rated Load	Max 1000 W per Gang, total 0 ~ 2000 W	Max 1000 W per Gang, total 38 ~ 2000 W
	Measurement	Voltage (VAC), Current (mA), Power Factor (%), Power (W), Power Consumption (kWh)	-
Physical Characteristics	Dimensions	86 Type: 86 x 86 x 40 mm (3.39 x 3.39 x 1.57 in) 120 Type: 118 x 72 x 46.9 mm (4.65 x 2.83 x 1.85 in)	
	Ingress Protection	IP20	
Operation	Configuration	NFC	
	Switch Control	Local Press or Remote Control	
	Advanced Features	Schedule Switch, Switch Lock, Overcurrent Protection, Multicast, D2D Controller, Milesight D2D Agent	

# Smart Portable Socket

WS523 is designed for the remote scheduled on/off control of electronic applications as well as power consumption measurement.



## Overall Features

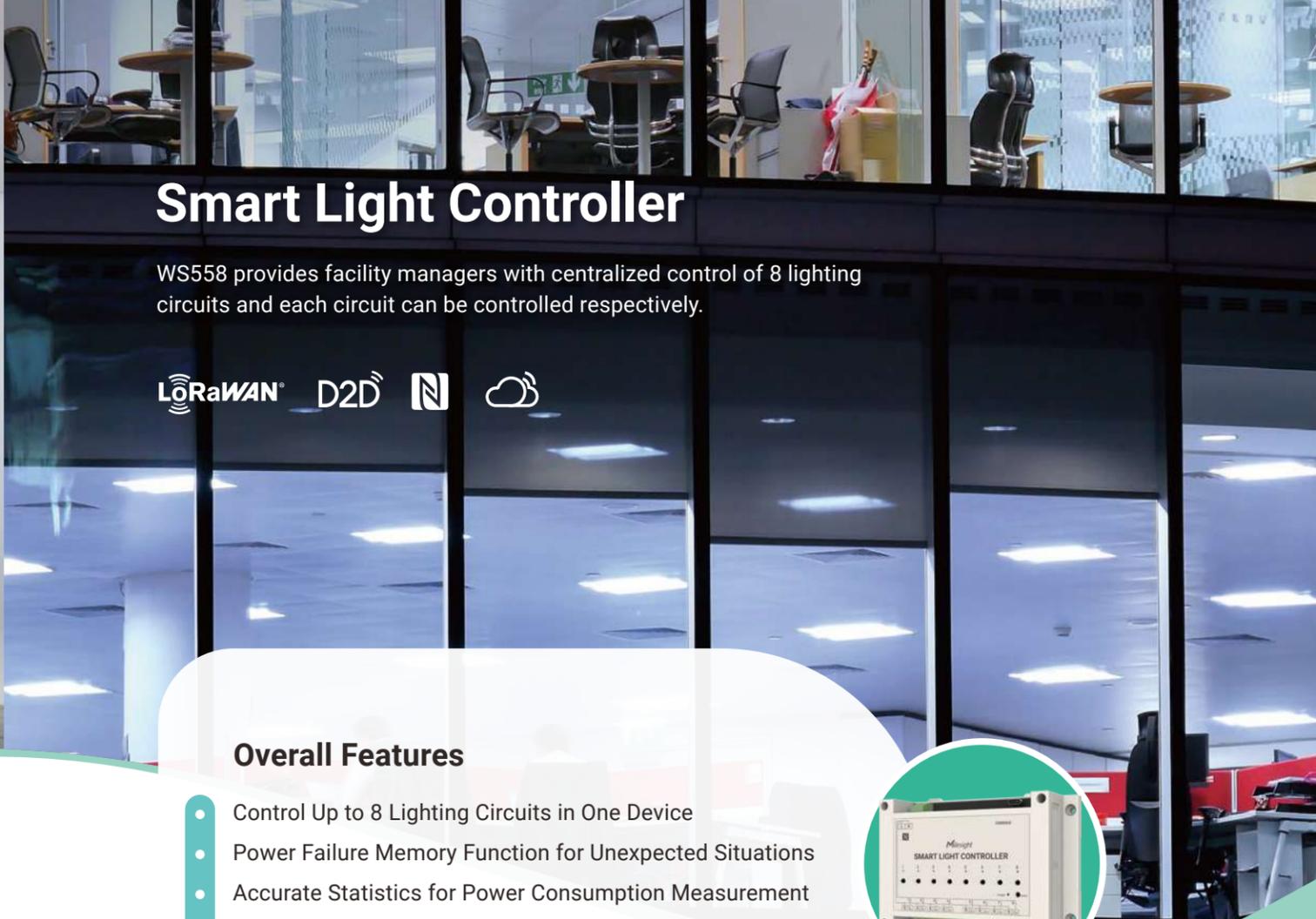
- Schedule, Remote and Scene-Based Control
- Accurate Statistics for Power Consumption Measurement
- Overcurrent Protection/Alarm for Safer Operation
- Multicast for Remote Control in Bulk
- Milesight D2D with Communication Latency to <1 Sec

### WS523

Model		WS523
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class C
Measurement	Socket & Plug Type	US/EU/AU/UK/CN, 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), ±1 % Accuracy
Physical Characteristics	Dimensions	110 x 62.3 x 34.6 mm (4.33 x 2.45 x 1.36 in)
	Ingress Protection	IP30
	Configuration	NFC or Downlink
Others	Switch Control	Button or Remote Control
	Button	ON/OFF, Reset
	Advanced Features	Schedule Switch, Button Lock, Overcurrent Protection/Alarm, Multicast, Power Outage Alert, Milesight D2D Agent

# Smart Light Controller

WS558 provides facility managers with centralized control of 8 lighting circuits and each circuit can be controlled respectively.



## Overall Features

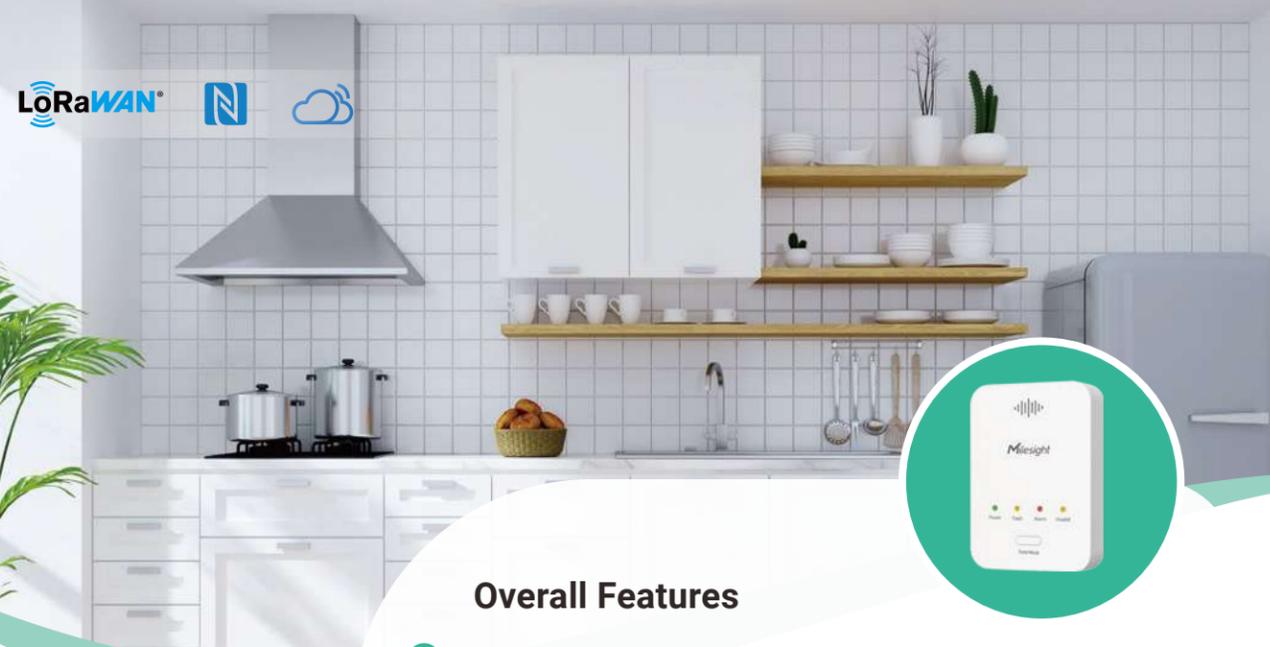
- Control Up to 8 Lighting Circuits in One Device
- Power Failure Memory Function for Unexpected Situations
- Accurate Statistics for Power Consumption Measurement
- Overcurrent Protection for Safer Operation
- Multicast for Remote Control in Bulk
- Schedule, Remote and Scene-Based Control
- Milesight D2D with Communication Latency to <1 Sec

### WS558

Model		WS558-LN	WS558-Switch
Electrical	Input Voltage	100~240 VAC, 50~60 Hz	
	Output	8 Active Outputs	8 Passive Switches
	Capacitive & Inductive Load	Maximum 5A per Output, Total 16A	Maximum 5A per Switch
	Resistive Load	Maximum 10A per Output, Total 16A	Maximum 10A per Switch
	Electrical Measurement	Voltage (VAC), Current (mA), Power Factor (%), Power (W), Power Consumption (kWh)	-
	Switch Control	Local Press or Remote Control	
Wireless Transmission	Protocol	LoRaWAN®, Milesight D2D	
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4	
	Mode	OTAA/ABP Class C	
Physical Characteristics	Dimensions	145 x 90 x 40 mm (5.7 x 3.54 x 1.57 in)	
	Installation	Wall Mounting, DIN Rail Mounting	
Others	Configuration	NFC, USB Type-C or Downlink	
	Advanced Features	Multicast, Remote Schedule Switch, Overcurrent Protection, Milesight D2D Agent	

# Gas Detector

GS101 detects methane (CH<sub>4</sub>) leakage in residential space such as houses, apartments, hotels, etc., features a gas alarm threshold as low as 8% Lower Explosive Limit (LEL) that quickly alerts residents to an emergency.



## Overall Features

- Detect CH<sub>4</sub> with Higher Accuracy
- Event Trigger via Relay Output/Solenoid Valve Output
- Built-in Self-Test Function for Safer Operation
- Built-in LED Indicator & Buzzer for Status Indication
- Support Retransmission for Reliable Communication
- Store Capacity with 800 Sets of Historical Data Records
- LoRaWAN® Wireless Deployment with Low Power Consumption

**GS101**

Model		GS101
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class C
Measurement	Detecting Gas	Methane (CH <sub>4</sub> )
	Alarm Level	8% LEL
	Historical Records Storage	Alarm Records, Alarm Dismissed Records, Device Fault Records, Device Fault Recovered Records, Device Power on Records, Device Power off Records, Device Invalid Records
	Alarm System	Sound (8% LEL), LED Indicators
Physical Characteristics	Configuration	NFC
	Power Supply	12VDC, 1A through DC Jack Connector
	Ingress Protection	IP30
	Dimension	120 × 85 × 32.5 mm (4.72 × 3.35 × 1.28 in)
	Installation	Wall Mounting

# Bathroom Odor Detector

GS301 can be applied to measure the concentration of harmful gases such as ammonia and hydrogen sulfide in real-time.



## Overall Features

- Detect NH<sub>3</sub> & H<sub>2</sub>S with Higher Accuracy
- Built-in Buzzer & Traffic Light Status Indicator for Alarming
- Up to 3 Years Battery Life for Easy Maintenance
- Support LoRaWAN® & Milesight D2D Simultaneously
- LoRaWAN® Wireless Deployment with Low Power Consumption
- Milesight D2D with Communication Latency to <1 Sec

**GS301**

Model		GS301
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Ammonia (NH <sub>3</sub> )	± 5% (-40 - 35°C), 0 ~ 10 ppm
	Hydrogen Sulfide (H <sub>2</sub> S)	± 5% (-40 - 35°C), 0 ~ 5 ppm
	Temperature	± 0.2°C (-40 - 85°C)
	Humidity	± 2%RH (0 - 100%)
Physical Characteristics	Configuration	NFC
	Power Supply*	Easily Replaceable Batteries with up to 3-Year Battery Life
	Ingress Protection	IP30
	Dimension	120 × 85 × 32.5 mm (4.72 × 3.35 × 1.28 in)
	Alarm System	1 × Status/Alarm Indicator + 1 × Buzzer
	Installation	Wall Mounting

\* Tested under laboratory conditions and for guideline purposes only.

# 3-in-1 Indoor Air Quality Sensor

AM103/AM103L is a compact IAQ sensor for detecting CO<sub>2</sub> concentration, humidity and temperature accurately and economically.



## Overall Features

- Traffic Light Status Indicator for Direct Notification
- Wireless Installation with Anti-theft Protection
- Support Data Storage and Retransmission
- Smart Screen Mode & Hibernation Mode for Ultra-Low Power Consumption
- 2.13 -Inch E-Ink Screen with Vivid Emoticon Indication (AM103)
- Light/Dark Color Theme with Multiple Display Styles (AM103)
- Battery Life up to 3 Years (AM103) / 4 Years (AM103L)

**AM103**  
**AM103L**

Model		AM103	AM103L
Wireless Transmission	Technology	LoRaWAN®	
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4	
	Mode	OTAA/ABP Class A	
Measurement	Temperature	± 0.2°C (-20°C ~ 60°C)	
	Humidity	± 2% RH (0% ~ 100%)	
	Carbon Dioxide (CO <sub>2</sub> )	± (30 ppm + 3% of Reading), 400 to 5000 ppm	
Physical Characteristics	Configuration	NFC	
	Display	2.13-inch Black & White E-Ink Screen	-
	Alarm System	1 × Traffic Light Status Indicator	
	Power Supply*	Easily Replaceable Batteries with up to 3-Year Battery Life	Easily Replaceable Batteries with up to 4-Year Battery Life
	Ingress Protection	IP30	
	Dimension	68 × 65 × 20.5 mm (2.68 × 2.56 × 0.81 in)	
	Installation	Wall Mounting	

\* Tested under laboratory conditions and for guideline purposes only.

# 7-in-1 Indoor Air Quality Sensor

AM107 is a well-qualified IAQ sensor for monitoring CO<sub>2</sub> concentration, temperature, humidity, light, TVOC, barometric pressure and motion in indoor scenarios.



## Overall Features

- 2.13-Inch E-Ink Screen with Intuitive Display
- Smart Screen Mode for Low Power Consumption
- Powered via USB Type-C for Stable Power Supply
- Battery Life up to 1 Year

**AM107**

Model		AM107
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Temperature	±0.3°C (-20°C ~ 70°C), ±0.6°C (-20°C ~ 0°C)
	Humidity	± 3%RH (10% ~ 90%), ± 5%RH (0%~10%,10% ~ 90%)
	PIR	94 ° Horizontal, 82 ° Vertical, 5 m
	Light	±30%, 60000 lux (Visible + IR, IR)
	Carbon Dioxide (CO <sub>2</sub> )	± (30 ppm + 3% of Reading), 400 ~ 5000 ppm
	TVOC	±15% (0 ~ 60000 ppb)
	Barometric Pressure	±1 hPa, 300 ~ 1100 hPa (-40°C ~ 85°C)
Physical Characteristics	Configuration	NFC, USB Type-C Port
	Power Supply*	Easily Replaceable Batteries with up to 1-Year Battery Life
	Ingress Protection	IP30
	Dimensions	105 × 70.4 × 21.2 mm (4.1 × 2.8 × 0.8 in)
	Display	2.13-inch Black & White E-Ink Screen
	Installation	Wall Mounting

\* Tested under laboratory conditions and for guideline purposes only.

# 9-in-1 Indoor Air Quality Sensor

AM307/AM308/AM319 is a comprehensive IAQ sensor for detecting CO<sub>2</sub> concentration, temperature, humidity, light, HCHO/O<sub>3</sub> level, TVOC, barometric pressure, PM2.5, PM10 and motion.



## Overall Features

- 4.2 -Inch E-ink Screen with Vivid Emoticon Indication
- Traffic Light Status Indicator and Built-In Buzzer for Alarming
- Flexible Installation with Anti-theft Protection
- Support Retransmission for Reliable Communication
- Store Capacity with 18,000 Sets of Historical Data Records
- Smart Screen Mode for Low Power Consumption
- Powered via USB Type-C for Stable Power Supply
- Battery Life up to 3 Years (AM307) / 1 Year (AM308)

**AM307**  
**AM308**  
**AM319**

Model		AM307	AM308	AM319
Wireless Transmission	Technology	LoRaWAN®		
	Frequency	CN470/RU864/IN865/EU868/US915/AU915/KR920/AS923-1&2&3&4		
	Work Mode	OTAA/ABP Class A	OTAA/ABP Class A	OTAA/ABP Class C
Measurement	Temperature	± 0.2°C (-20°C - 60°C)		
	Humidity	±2%RH (0% ~ 100%RH)		
	Motion	Vacant/Occupied (Status)		
	Light	0-60000 Lux (Determine as 6 Levels, 0-5)		
	TVOC (IAQ Rating)	1.00 - 5.00, ±1 Accuracy		
	Barometric Pressure	±0.5 hPa (260 ~ 1260 hPa)		
	Carbon Dioxide (CO <sub>2</sub> )	± (30 ppm + 3% of Reading), 400 ~ 5000 ppm		± (50 ppm + 5% of Reading), 400 ~ 2000 ppm
	PM2.5 & PM10	±10µg/m <sup>3</sup> (0-100 µg/m <sup>3</sup> ), ±10% (100 ~ 1000µg/m <sup>3</sup> )		
	Formaldehyd(HCHO)*	-		±10% (0 - 1.25 mg/m <sup>3</sup> )
	Ozone (O <sub>3</sub> )*	-		±5% FS (0 - 10 ppm)
Physical Characteristics	Configuration	NFC, USB Type-C Port		
	Power Supply**	Easily Replaceable Batteries with up to 3-Year Battery Life	Easily Replaceable Battery with over 1-Year Battery Life	5V/1A by Type-C Port
	Ingress Protection	IP30		
	Dimensions	100.8 × 114 × 22 mm (3.97 × 4.49 × 0.87 in) & 4.2-inch E-Ink Screen		
	Installation	3M Tape Mounting, Wall Screw Mounting, 86 Box Mounting		

\* HCHO or O<sub>3</sub> sensor is alternative option and both support replacement.  
\*\* Tested under laboratory conditions and for guideline purposes only.



## Smart Restroom Solution

Reshape Restroom, Release the Values of Smartness

Milesight Smart Restroom Solution seamlessly integrates advanced operational and environmental sensors and IoT technologies breaking the limitations of traditional restrooms.



- Effective Toilet Paper Replacement with Fill Level Monitoring
- Advanced HVAC Systems Based on H<sub>2</sub>S and NH<sub>3</sub> Detection Data
- Detect Leaks Immediately with Leak Detection and Take Countermeasures.
- Integrated Information Displayed for Users Can Have a Visual View of the Restroom Conditions
- Metering Management in Real Time to Improve Energy Utilization and Energy Saving
- Occupancy Mastery Based on Cubicles Vacancy Data

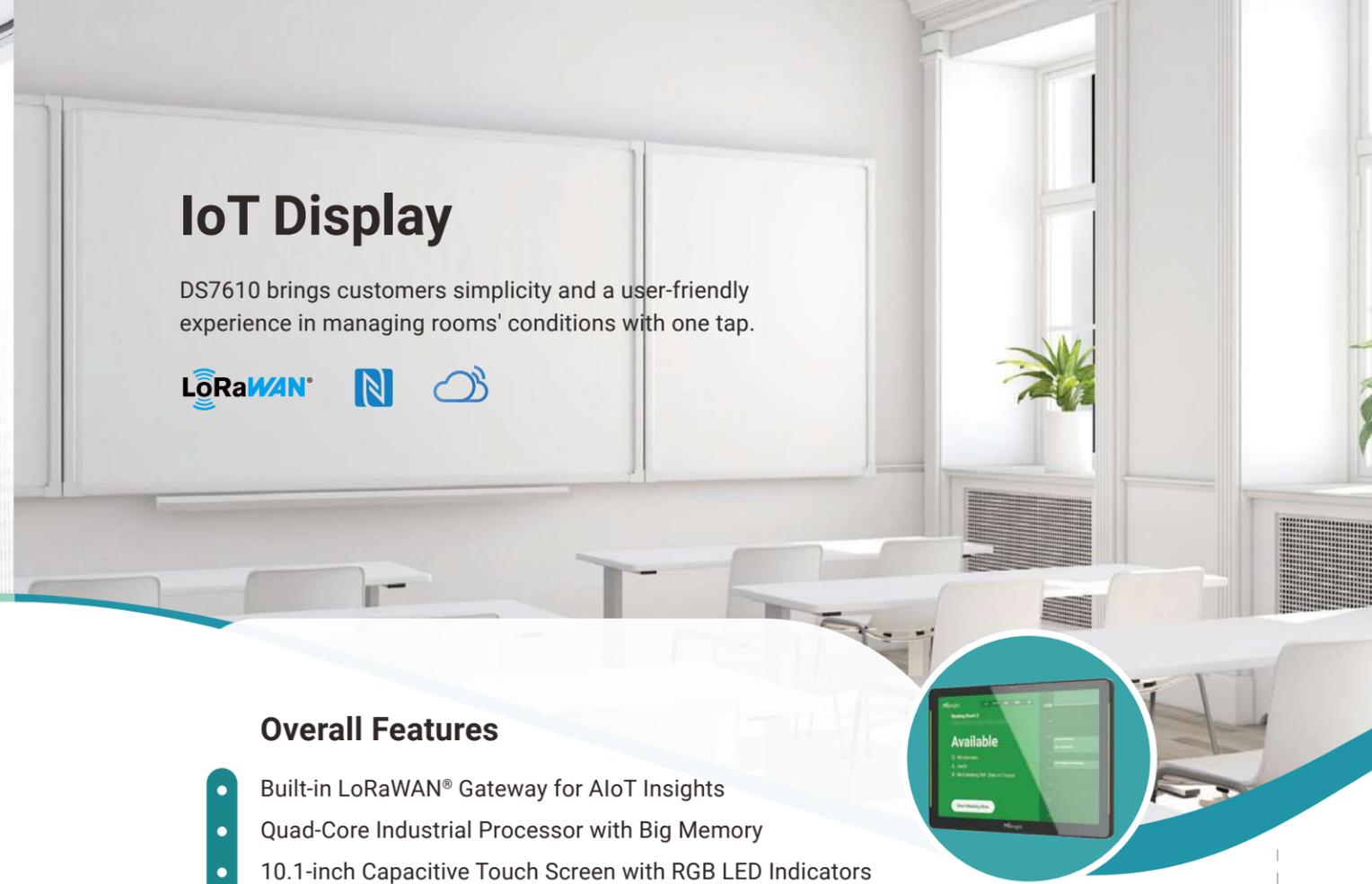
# IoT E-ink Display

DS3604 with high-definition e-ink display is great for flexible content presentation in retail, warehouse and logistics management, smart production lines and more.



# IoT Display

DS7610 brings customers simplicity and a user-friendly experience in managing rooms' conditions with one tap.



## Overall Features

- Built-in LoRaWAN® Gateway for AIoT Insights
- Quad-Core Industrial Processor with Big Memory
- 10.1-inch Capacitive Touch Screen with RGB LED Indicators
- Powerful SDK Capabilities for Secondary Developer
- Support Third-party Android Applications
- More User-Friendly with NFC Enabled Applications
- Smart Screen Mode for Low Power Consumption
- Optional Docking Station with Flexible Connection Options

## DS7610

## DS3604

## Overall Features

- Bigger E-ink Screen Featuring Red/White/Black Color Display
- Customized Templates in Multiple Modules and Languages
- Low Power Consumption with up to 5 Years Battery Life
- Open API and a LoRaWAN® Button Enable Various Applications
- Support Local and Remote Control for Bulk Deployment
- LoRaWAN® Wireless Deployment with Low Power Consumption

Model		DS3604
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/ IN865/RU864/EU868/US915/AU915/KR920/AS923- 1&2&3&4
	Mode	OTAA/ABP Class A/Class B (Default OTAA Class B)
Display	E-Ink Screen	4.2-inch Black & White & Red E-Ink Screen
	Resolution	400 x 300 Pixels
	Refresh Rate	16s (10 - 40°C)
Physical Characteristics	Configuration	NFC
	Battery Life*	Around 5 Years (Class A Mode + 1 Screen Refresh per Day) Around 1 Year (Class B Mode + 12 Screen Refreshes per Day)
	Operation Temperature	0°C ~ +40°C
	Dimension	99 x 87 x 10.5 mm (3.90 x 3.43 x 0.41 in)
	Installation	3M Tape Mounting, Wall Screw Mounting

\* Tested under laboratory conditions and for guideline purposes only.

Model		DS7610
Display	LCD Screen	10.1-inch TFT LCD Touch Screen (STB 74.88%)
	Resolution	1280 x 800 Pixels
	Indicators	RGB Side LED Indicators, Stepless Adjustment
Sensors & NFC	Proximity Sensor	Detection Distance: 1 m (Max.)
	Light Sensor	5 Brightness Level Adjustment
	NFC	13.56 MHz
Wireless Transmission	LoRaWAN® Channel	Single Channel
	LoRaWAN® Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
	LoRaWAN® Protocol	V1.0.3 Class A/Class C
	Wi-Fi	IEEE 802.11 b/g/n, 2.4 GHz, IEEE 802.11 a/n/ac, 5 GHz
	Bluetooth	Bluetooth 5.0
Physical Characteristics	Ethernet	1 x RJ45 10/100/1000 Mbps Ethernet Port (PoE PD Supported)
	Processor	Quad-core ARM Cortex-A55
	Operating System	Android 11.0
	Power Supply	① 802.3af PoE ② 12V/1A by DC Jack Connector ③ 5V/2A by Type-C Port
	Ingress Protection	IP30
	Installation	Wall Mounting, 3M Tape Mounting, VESA Desktop Stand Mounting (75 x 75mm)

# Pulse Counter

EM300-DI is a LoRaWAN® pulse counter which transforms traditional water meters into wireless intelligent meters at ease.



## Overall Features

- IP67 Rated for Harsh Environment
- Support Digital Filtering for More Accurate Counters
- Embedded Pulse/Digital Signals & Temp & Humidity
- Support Retransmission for Reliable Communication
- Store Capacity with 1,000 Sets of Historical Data Records
- Up to 5 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

## EM300-DI

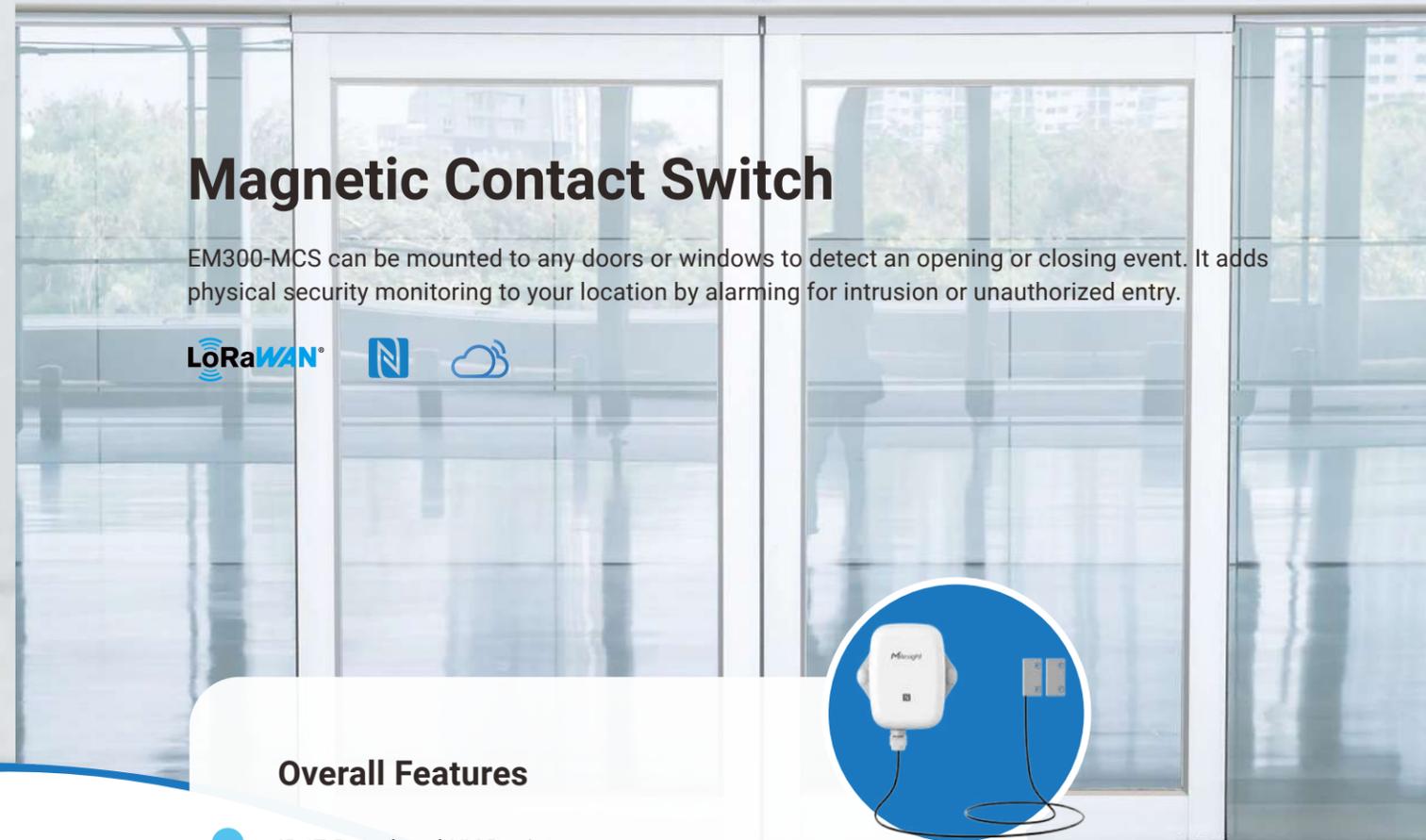
- IP67
- Pulse Counting
- 5-Year Battery Life

Model		EM300-DI
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	GPIO	1 x GPIO Interface, Work as Pulse Counter
	Temperature	±0.3°C (0°C ~ 70°C), ±0.6°C (-30°C ~ 0°C)
	Humidity	±3%RH (10%RH ~ 90%RH), ±5%RH (below 10%RH and above 90%RH)
Physical Characteristics	Configuration	NFC
	Power Supply*	Easily Replaceable Battery with up to 5-Year Battery Life
	Operation Temperature	-30°C ~ 70°C
	Ingress Protection	IP67
	Dimension	105.6 × 85.2 × 27 mm (4.15 × 3.35 × 1.06 in)
Installation	Screw Mounting	

\* Tested under laboratory conditions and for guideline purposes only.

# Magnetic Contact Switch

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



## Overall Features

- IP67 Rated and UV Resistance
- Detect Temperature, Humidity and Door/Window Status
- High Sensitivity with 20 to 30 mm Open/Close Sensing Distance
- Customized Alarm Reporting Interval/Times for Various Usage
- Support Retransmission for Reliable Communication
- Store Capacity with 2,800 Sets of Historical Data Records
- Up to 5 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

## EM300-MCS

Model		EM300-MCS
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement Door Magnet	Detection Distance	20-30 mm
	Cable Length	1.5 m
	Temperature	±0.3°C (0°C ~ 70°C), ±0.6°C (-30°C ~ 0°C)
	Humidity	±3%RH (10%RH ~ 90%RH), ±5%RH (below 10%RH and above 90%RH)
Physical Characteristics	Configuration	NFC
	Power Supply*	Easily Replaceable Battery with up to 10-year Battery Life
	Operation Temperature	-30°C ~ 70°C
	Ingress Protection	IP67
	Dimension	Transceiver: 105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in) Magnet: 32 × 15 × 8 mm (1.25 × 0.59 × 0.31 in)
Installation	Wall Mounting	

\* Tested under laboratory conditions and for guideline purposes only.

# Temperature & Humidity Sensor

EM300-TH is suitable for indoor and outdoor temperature and humidity monitoring. It can be widely used in office areas, greenhouses and other environments



## Overall Features

- IP67 Rated and UV Resistance
- Detect Temperature and Humidity with Higher Accuracy
- Support Retransmission for Reliable Communication
- Store Capacity with 2,800 Sets of Historical Data Records
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

**EM300-TH**

Model		EM300-TH
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Temperature	±0.3°C (0°C ~ 70°C), ±0.6°C (-30°C ~ 0°C)
	Humidity	±3%RH (10%RH ~ 90%RH), ±5%RH (below 10%RH and above 90%RH)
Physical Characteristics	Configuration	NFC
	Power Supply*	Easily Replaceable Battery with up to 10-Year Battery Life
	Operation Temperature	-30°C ~ 70°C
	Ingress Protection	IP67
	Dimension	88.5 × 85.3 × 27 mm (3.48 × 3.36 × 1.06 in)
	Installation	Wall Mounting

\* Tested under laboratory conditions and for guideline purposes only.

# Leak Detection Sensor

EM300-SLD/ZLD is suitable for detecting presence of water or other liquids and remotely alerting users the potential water leak accordingly.



## Overall Features

- IP67 Rated and UV Resistance
- Conductive Liquids Leak Detection with 5mm to Trigger Alert
- Embedded Temperature & Humidity Sensors with High Accuracy
- Customized Alarm Reporting Interval/Times for Various Usage
- Support Retransmission for Reliable Communication
- Store Capacity with 2,800 Sets of Historical Data Records
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

**EM300-SLD  
EM300-ZLD**

Model		EM300-SLD	EM300-ZLD
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D	
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4	
	Mode	OTAA/ABP Class A	
Measurement Leakage Detection	Temperature	±0.3°C (0°C ~ 70°C), ±0.6°C (-30°C ~ 0°C)	
	Humidity	±3%RH (10%RH ~ 90%RH), ±5%RH (below 10%RH and above 90%RH)	
	Trigger Condition	When Conducting Liquid Level Reaches 5mm	
	Cable Length	1.5 m (Customizable)	3 m (Customizable)
Physical Characteristics	Configuration	NFC	
	Power Supply*	Easily Replaceable Battery with up to 10-Year Battery Life	
	Operation Temperature	-30°C ~ 70°C	
	Ingress Protection	IP67	
	Dimension	105.6 × 85.3 × 27 mm (4.16 × 3.36 × 1.06 in)	
	Installation	Wall Mounting	

\* Tested under laboratory conditions and for guideline purposes only.

# Tilt Sensor

EM310-TILT is suitable for angle measurement and asset movement based on angle changes and send threshold alarms.



## Overall Features

- IP67 Rated for Harsh Environment
- 3-Axis Accelerometer for Accurate Detection
- Built-in Zero Adjustment for Smart Measurement
- 36 Customized Trigger Rules for Various Applications
- Up to 5 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

**EM310-TILT**

Model		EM310-TILT
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Axis	X, Y, Z
	Range	± 1°, (- 90° ~ +90°)
	Resolution	0.01°
Physical Characteristics	Configuration	NFC
	Power Supply*	Easily Replaceable Batteries with over 5-Year Battery Life
	Operation Temperature	-20°C ~ 60°C
	Ingress Protection	IP67
	Dimension	111 × 62 × 33 mm (4.37 × 2.44 × 1.30 in)
	Installation	On the Flat Surfaces with Screws

\* Tested under laboratory conditions and for guideline purposes only.

# Ultrasonic Distance/Level Sensor

EM310-UDL features short blind zone and broad range distance measurement. It is suitable for various applications such as smart parking, smart waste bin and so on.



## Overall Features

- IP67 Rated for Harsh Environment
- Non-Contact Distance Detection with 3-450cm Measurement Range
- 3-Axis Accelerometer for Accurate Measurement
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

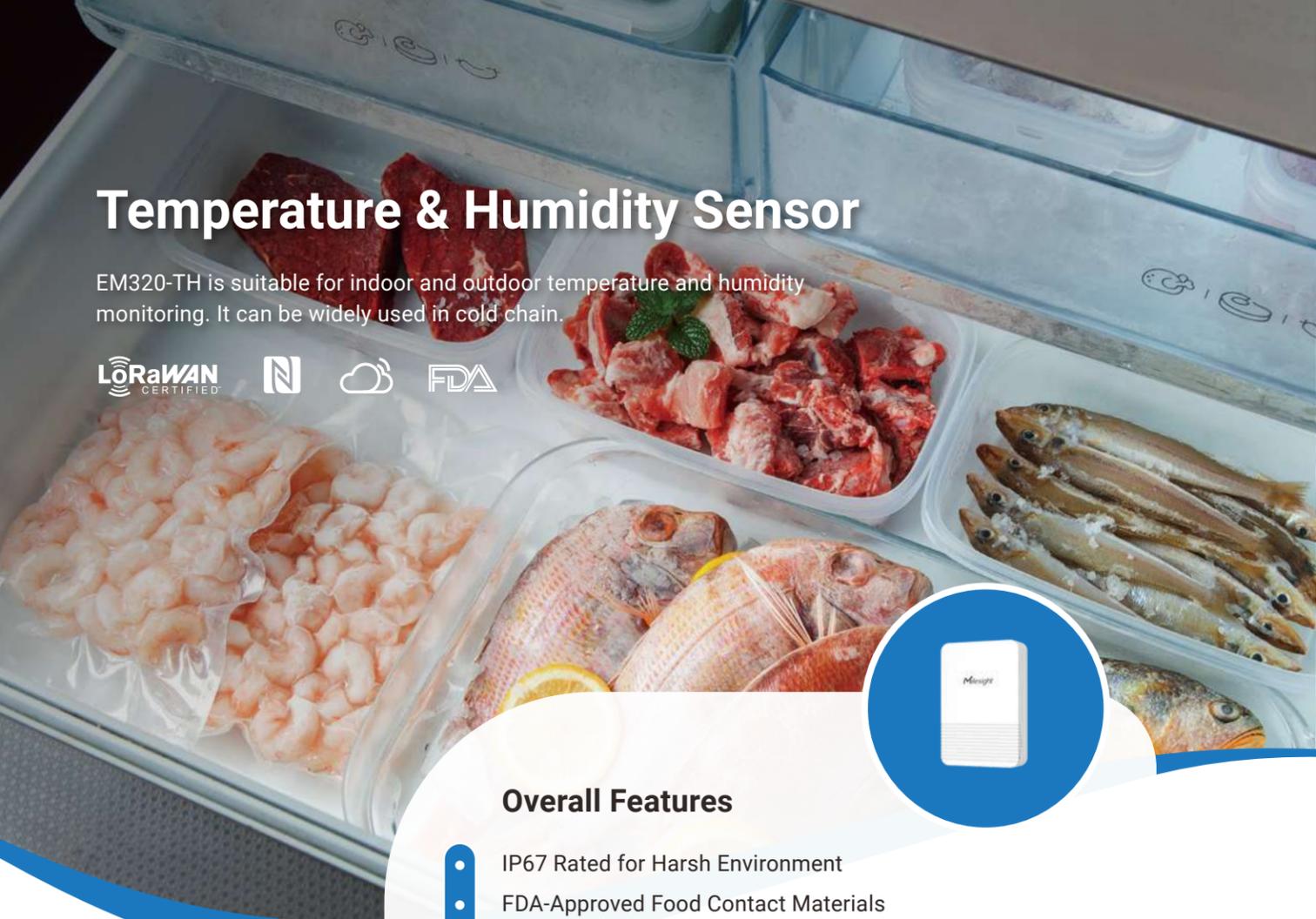
**EM310-UDL**

Model		EM310-UDL
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923
	Mode	OTAA/ABP Class A
Measurement	Distance Range	± (1+0.3%*S) cm, S=distance (3 ~ 450 cm)
	Distance Resolution	1 mm
	Device Position	Normal/Tilt (Status)
Physical Characteristics	Configuration	NFC
	Power Supply*	Easily Replaceable Batteries with over 10-year Battery Life
	Operation Temperature	-15°C ~ 60°C
	Ingress Protection	IP67
	Dimension	111 × 62 × 40 mm (4.37 × 2.44 × 1.57 in)
	Installation	On the Flat Surfaces with Screws

\* Tested under laboratory conditions and for guideline purposes only.

# Temperature & Humidity Sensor

EM320-TH is suitable for indoor and outdoor temperature and humidity monitoring. It can be widely used in cold chain.



## Overall Features

- IP67 Rated for Harsh Environment
- FDA-Approved Food Contact Materials
- Support Subtle Changes Monitoring with Higher Accuracy
- Standard & Magnetic Version for Practical Usage
- Support Retransmission for Reliable Communication
- Store Capacity with 3,000 Sets of Historical Data Records
- Up to 5 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

## EM320-TH

Model		EM320-TH
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Temperature	±0.2°C (-30°C ~ 60°C)
	Humidity	±2%RH (0%RH ~ 100%RH)
Physical Characteristics	Configuration	NFC
	Power Supply*	Easily Replaceable Batteries with over 5-year Battery Life
	Material	PC + ABS (Food-Grade)
	Operation Temperature	-30°C ~ 60°C
	Ingress Protection	IP67
	Dimension	85 × 58 × 18 mm (3.34 × 2.28 × 0.70 in)
	Installation	Wall or Pole Mounting (Standard Version) Magnetic Adsorption (Magnet Version)

\* Tested under laboratory conditions and for guideline purposes only.

# Tilt Sensor

EM320-TILT is suitable for angle measurement and asset movement based on angle changes and send threshold alarms.



## Overall Features

- IP67 Rated for Harsh Environment
- 3-Axis Accelerometer for Accurate Detection
- Built-In Zero Adjustment for Smart Measurement
- 36 Customized Trigger Rules for Various Applications
- Up to 3 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

## EM320-TILT

Model		EM320-TILT
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Axis	X, Y, Z
	Range&Accuracy	-90°~ +90°(Accuracy : ±1°)
Physical Characteristics	Configuration	NFC
	Power Supply*	Easily Replaceable Batteries with over 3-Year Battery Life
	Operation Temperature	-30°C ~ +60°C
	Ingress Protection	IP67
	Dimension	85 × 58 × 18 mm (3.34 × 2.28 × 0.70 in)
	Installation	Wall Mounting, Pole Mounting

\* Tested under laboratory conditions and for guideline purposes only.

# Insertion Temperature Sensor

TS101 provides high precision and reliable consistency with an advanced measuring unit that offers a wide temperature measuring range.



## Overall Features

- ±0.5°C Detection Accuracy
- Food-Grade Enclosure and Probe
- IP67 Rated for Harsh Environment
- IK10 Rated Transceiver for Impact Resistance
- Support Retransmission for Reliable Communication
- Store Capacity with 1,200 Sets of Historical Data Records
- Up to 10 Years Battery Life for Easy Maintenance

**TS101**

Model		TS101
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/ IN865/RU864/EU868/US915/AU915/KR920/AS923- 1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Range	-30°C ~ +70°C (Accuracy: ±0.5°C)
	Resolution	0.1°C
Physical Characteristics	Configuration	NFC
	Power Supply*	Easily Replaceable Battery with 10-Year Battery Life
	Material	Transceiver: ABS + PC Sensor Probe: 316 Stainless Steel (Food-Grade, Phosphine & Corrosion Resistant)
	Ingress Protection	IP67
	Impact Protection	IK10(Transceiver)
	Dimension	Transceiver: Φ 92 × 92 × 26 mm (Φ 3.62 × 3.62 × 1.02 in) Sensor Probe: Φ 7 × 400 mm (Φ 0.28 × 15.75 in)
	Installation	Insert Installation

\* Tested under laboratory conditions and for guideline purposes only.

# ToF Laser Distance Sensor

EM400-TLD is designed for small & mini trash bins, boasts a range of powerful features, including the ability to detect overflowing garbage, the status of the garbage bin lid, and trash combustion.



## Overall Features

- Detection Ranges from 2cm to 350cm
- Designed for Level Monitoring in Small Trash Bins
- LoRaWAN® & NB/Cat.M Version
- IP67 Rated for Harsh Environment
- High Accuracy and Almost No Blind Spot with ToF Technology
- 3-Axis Accelerometer for Asset Status Management
- Embedded NTC Thermistor for Fire Alarms
- Two Pre-set Modes for Seamless User Experience
- Up to 10 Years Battery Life for Easy Maintenance
- Positioning Function Enabled by GNSS Modules (NB-IoT Version)



**EM400-TLD**

Model		EM400-TLD	
Wireless Transmission	Technology	LoRaWAN®	NB-IoT/Cat M
	Frequency	CN470/IN865/RU864/EU868/US915 /AU915/KR920/AS923-1&2&3&4	Cat M1: B1/B2/B3/B4/B5/B8/B12/B13/B18 /B19/B20/B25/B26/B27/B28/B66/B85 Cat NB2: B1/B2/B3/B4/B5/B8/B12/B13/B18 /B19/B20/B25/B28/B66/B71/B85
	Mode	OTAA/ABP Class A	-
Measurement	ToF FoV	27°	
	Range&Accuracy	Range: 2 ~ 350 cm Accuracy: ±2 cm (-20°C~70°C) Resolution: 1 mm	
	Temperature	-40°C ~125°C	
	Position	Normal/Tilt	
	Location	-	Longitude & Latitude (GNSS)
Physical Characteristics	Configuration	NFC	
	Battery Life*	Around 10 years (Standard Mode -10min Interval, Bin Mode -20min Interval, 25°C)	TCP/UDP—Around 10 Years MQTT/AWS—Around 5 Years (4 Times Report Per Day, Per Report Includes 12 Packages with 30-min Collection Interval, 25°C)**
	Ingress Protection	IP67	
	Installation	On the Flat Surface with Screws	

\*Tested under laboratory conditions and for guideline purposes only.

\*\*PSM is required for SIM card and will be impacted by cellular base station signals.

# Multifunctional Ultrasonic Distance Sensor

M400-MUD is equipped with multiple application modes catering to a variety of scenarios such as smart waste management, smart parking and other distance / level measurement applications.



## Overall Features

- Detection Ranges from 3cm to 450cm
- Specialized in Distance Detection in Trash Bin and Parking Lot
- LoRaWAN® & NB/Cat.M Version
- IP67 Rated for Harsh Environment
- Pre-set Modes: Standard Mode & Bin Mode
- Support Pre-set Parking Lot Mode (LoRaWAN® Version Only)
- Ultrasonic Technology with Small Blind Spots Calibration
- 3-Axis Accelerometer for Asset Status Management
- Embedded NTC Thermistor for Fire Alarms
- Up to 10 Years Battery Life for Easy Maintenance
- Positioning Function Enabled by GNSS Modules (NB-IoT Version)

## EM400-MUD

Model		EM400-MUD		
Wireless Transmission	Technology	LoRaWAN®	NB- IoT/Cat M	
	Frequency	CN470/ IN865/RU864/EU868/US915 /AU915/KR920/AS923- 1&2&3&4	Cat M1: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85 Cat NB2: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85	
	Mode	OTAA/ABP Class A	-	
Measurement	Detection Range	3 ~ 450 cm		
	Detection Accuracy	± (1+0.3%*S) cm (-15°C ~ 60°C), S=distance		
	Temperature	-40°C ~ 125°C		
	Position	Normal/Tilt		
	Location	-	Longitude & Latitude (GNSS)	
Physical Characteristics	Configuration	NFC		
	Battery Life*	Standard Mode: >10 years (10min Interval, 25°C) Bin Mode: >10 years (20min Interval, 25°C) Parking Lot Mode: 5 years (12 Triggers Per Day, 25°C)	TCP/UDP—Around 10 Years MQTT/AWS—Around 5 Years (4 Times Report Per Day, Per Report Includes 12 Packages with 30-min Collection Interval, 25°C)**	
	Operation Temperature	-30°C ~ +70°C		
	Ingress Protection	IP67		
	Dimension	118 x 65 x 32.5 mm		
	Installation	On the Flat Surface with Screws		
			*Tested under laboratory conditions and for guideline purposes only. **PSM is required for SIM card and will be impacted by cellular base station signals.	

# Ultrasonic Distance Sensor

M400-UDL offers three versions (Standard, Pro, and Snow Level) with varying detection range, resolution, and accuracy, which is designed to cater to the demands of professional applications.



## Overall Features

- Detection Ranges from 25cm to 1000cm
- Professional for Detecting Water Level in Reservoir, Industrial Tank Level and etc.
- LoRaWAN® & NB/Cat.M Version
- IP67 Rated for Harsh Environment
- Non-Contact Distance Measurement
- Ultrasonic Technology with Small Blind Spots Calibration
- 3-Axis Accelerometer for Asset Status Management
- Embedded NTC Thermistor for Fire Alarms
- Up to 10 Years Battery Life for Easy Maintenance
- Positioning Function Enabled by GNSS Modules (NB-IoT Version)

## EM400-UDL

Model		EM400-UDL		
Wireless Transmission	Technology	LoRaWAN®	NB- IoT/Cat M	
	Frequency	CN470/ IN865/RU864/EU868/US915/ AU915/KR920/AS923-1&2&3&4	Cat M1: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B26/B27/B28/B66/B85 Cat NB2: B1/B2/B3/B4/B5/B8/B12/B13/B18/B19/B20/B25/B28/B66/B71/B85	
	Mode	OTAA/ABP Class A		
Measurement	Model	Standard	Pro	Snow Level Detection
	Detection Range	C050: 25 ~ 500 cm C100: 25 ~ 1000 cm	W050: 30 ~ 500 cm W100: 50 ~ 1000 cm	S050: 50 ~ 500 cm
	Detection Accuracy	± (1+0.3%*S) cm, S=distance (-15°C ~ 60°C)*		± 1% FS (-30°C ~ 65°C)
	Temperature	-40°C ~ +125°C		
	Position	Normal/Tilt		
	Location	-	Longitude & Latitude (GNSS)	
	Configuration	NFC		
Physical Characteristics	Battery Life**	> 10 Years (10min Interval, 25°C)		(4 Times Report Per Day, Per Report Includes 12 Packages with 30-min Collection Interval, 25°C)***
	Operation Temperature	-30°C ~ 70°C		
	Ingress Protection	IP67		
	Installation	On the Flat Surface with Screws		
			*This accuracy is applicable to the measuring range of 25~800cm. **Tested under laboratory conditions and for guideline purposes only. ***PSM is required for SIM card and will be impacted by cellular base station signals.	

# Outdoor Asset Tracker

AT101 allows asset/property owners to ensure awareness for critical assets comes first via highly accurate positioning data from GNSS and Wi-Fi scanning.



## Overall Features

- High-Accurate GNSS Positioning and Cooperate with Wi-Fi Positioning
- Support Geofencing for Targeted Messaging to Secure the Assets and Area
- Provide Motion/Periodic/Timing Modes
- IP67 Rated for Harsh Environment
- IK09 Rated for Impact Resistance
- Easy Configuration via NFC or Bluetooth
- 3-Axis Accelerometer for Asset Status Management
- Embedded NTC Thermistor for Fire Alarms
- Support Retransmission for Reliable Communication
- Store Capacity with 1,000 Sets of Historical Data Records
- Over 15 Years Battery Life for Easy Maintenance

AT101

Model		AT101
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/ IN865/RU864/EU868/US915/AU915/KR920/AS923- 1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Positioning	GNSS Resolution: 0.000001 (Longitude/Latitude) Accuracy: 5.0m (Direct Line of Sight)
		Wi-Fi Wi-Fi Parameters: BSSID, RSSI Wi-Fi Standard: 802.11b/g/n 2.4GHz
Physical Characteristics	Motion	Normal/Tilt
	Temperature	-40°C ~ 125°C
	Configuration	NFC, Bluetooth® 5.3
	Battery Life*	Twice Daily Location Updates - 15+ Years Tenth Daily Location Updates - 8+ Years Hourly Location Updates - 4+ Years
	Ingress Protection	IP67
	Impact Protection	IK09
	Installation	Wall Screw Mounting, 3M Tape Mounting, Cable-tie Mounting

\* Tested under laboratory conditions and for guideline purposes only.

# CO<sub>2</sub> Sensor (4 in 1)

EM500-CO<sub>2</sub> is designed for monitoring CO<sub>2</sub> concentration, temperature, humidity and barometric pressure in outdoor scenarios.



## Overall Features

- IP65 Rated for Harsh Environment
- 4 Sensors in 1 for Various Outdoor Usage
- Measuring Ranges from 400 ppm to 5,000 ppm
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

EM500-CO<sub>2</sub>

Model		EM500-CO <sub>2</sub>
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Carbon Dioxide (CO <sub>2</sub> )	± (30 ppm + 3% of reading), 400 - 5000 ppm (0°C ~ 50°C, 0~85%RH)
	Temperature	±0.3°C (0°C ~ 70°C), ±0.6°C (-30°C ~ 0°C)
	Humidity	±3%RH (10%RH ~ 90%RH), ±5%RH (below 10%RH and above 90%RH)
	Barometric Pressure	±1 hPa, 300 ~ 1100 hPa (-40°C ~ 85°C)
Physical Characteristics	Configuration	NFC, USB Type-C Port
	Power Supply*	Built-in 19000 mAh Can be Used for up to 10 Years
	Operation Temperature	-30°C ~ 70°C
	Ingress Protection	IP65
	Dimensions	147.9 × 71 × 69.5 mm (5.8 × 2.8 × 2.7 in)
	Installation	Pole, Wall or DIN Rail Mounting

\* Tested under laboratory conditions and for guideline purposes only.

# Light Sensor

EM500-LGT can accurately monitor changes in the surrounding light intensity.



## Overall Features

- IP67 Rated and UV Resistance
- Measuring Ranges from 0 lux to 100,000 lux
- Fast 1-Sec Response for Accurate Monitoring
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

## EM500-LGT

Model		EM500-LGT
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923
	Mode	OTAA/ABP Class A
Measurement	Light	0 ~ 100000 lux
	Accuracy	±3%
Physical Characteristics	Configuration	NFC, USB Type-C Port
	Power Supply*	Built-in 19000 mAh Can be Used for up to 10 Years
	Operation Temperature	-30°C ~ 60°C
	Ingress Protection	IP67 (Transceiver)/IP65 (Light Sensor)
	Dimension	Transceiver: 105.4 × 71 × 69.5 mm (4.1 × 2.8 × 2.7 in) Light Sensor: 64 × 58 × 34 mm (2.5 × 2.3 × 1.3 in) Cable Length: 3 m
	Installation	Pole, Wall or DIN Rail Mounting

\* Tested under laboratory conditions and for guideline purposes only.

# Pipe Pressure Sensor

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



## Overall Features

- IP67 Rated and UV Resistance
- Measuring Ranges from 0 kPa to 1,600 kPa
- Shock & Vibration & Corrosion Resistant
- ±0.5% FS Measuring Accuracy to Prevent Leakage Danger
- Temperature Compensation for Correcting Temperature Changes
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

## EM500-PP

Model		EM500-PP
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Pressure Type	Gauge Pressure
	Range	± 0.5% FS, 0 - 1600 kPa (16 Bar)
	Overload	150% FS
	Long-term Stability	± 0.3% FS/year
Physical Characteristics	Configuration	NFC, USB Type-C Port
	Power Supply*	Built-in 19000 mAh Can be Used for up to 10 Years
	Operation Temperature	-30°C ~ 70°C (Transceiver)/-10°C ~ 70°C (Pipe Pressure Sensor)
	Ingress Protection	IP67 (Transceiver)/IP65 (Pipe Pressure Sensor)
	Dimension	Transceiver: 105.4 × 71 × 69.5 mm (4.1 × 2.8 × 2.7 in) Pipe Sensor: 67.5 × Φ27 mm (2.7 × Φ1.1 in) Cable Length: 1.5 m
	Installation	Pole, Wall or DIN Rail Mounting

\* Tested under laboratory conditions and for guideline purposes only.

# Industrial Temperature Sensor

EM500-PT100 equips a highly accurate temperature sensor PT100, platinum resistance temperature detector, to provide temperature measurement from -200°C to 800°C.



## Overall Features

- IP67 Rated and UV Resistance
- Measuring Ranges from -200°C to 800°C
- Support Various Terminal Heads including Straight Tube, Armored, SMT, Threaded and Magnet
- 3-Wire Circuit Design for Stable Connection
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

**EM500-PT100**

Model		EM500-PT100
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Connection Type	3-wire connection
	Range	T050: -200°C ~ 50°C, T500: -50°C ~ 500°C T200: -50°C ~ 200°C, T800: -50°C ~ 800°C (Customizable from -200°C ~ 800°C)
	Accuracy	±0.5°C
Physical Characteristics	Configuration	NFC, USB Type-C Port
	Power Supply*	Built-in 19000 mAh Can be Used for up to 10 Years
	Operation Temperature	-30°C ~ 70°C
	Ingress Protection	Transceiver: IP67, Sensor: Differ Based on Temperature Ranges
	Dimension	105.4 × 71 × 69.5 mm (4.1 × 2.8 × 2.7 in)
	Probe Type	Straight Tube (Customizable)
	Cable Length	1.5 m (Customizable)

\* Tested under laboratory conditions and for guideline purposes only.

# Ultrasonic Distance/Level Sensor

EM500-UDL provides highly accurate distance measurement for a variety of applications in harsh environment.



## Overall Features

- IP67 Rated and UV Resistance
- Measurements in Small Containers or Openings
- Measuring Ranges from 0.3m to 10 m
- Range is Customizable for Snow Level Detection Usage
- Support Detection of Corrosive Liquid, Chemicals or Combustibles with Non-Contact Design
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

**EM500-UDL**

Model		EM500-UDL
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Range & Accuracy	W050: 0.3 ~ 5 m, ±1% FS W100: 0.5 ~ 10 m, ±1% FS S050: 0.3 ~ 5 m (Snow Version), ±1% FS C050: 0.25 ~ 5 m, ± (1+0.3%*S) cm, S=Distance C100: 0.25 ~ 8 m, ± (1+0.3%*S) cm, S=Distance
		Physical Characteristics

\* Tested under laboratory conditions and for guideline purposes only.

# Soil Moisture, Temperature and Electrical Conductivity Sensor

EM500-SMTC/SMT is suitable for soil condition monitoring. With an external probe, it can accurately and instantly detect conditions on soil moisture content, temperature, and electrical conductivity.



## Overall Features

- IP67 Rated and UV Resistance
- Research-Grade Accuracy in Multiple Soil Media
- Rapid Monitoring of Growing Conditions
- Temperature Compensation for Correcting Temperature Changes
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

## EM500-SMTC

Model		EM500-SMTC
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/ IN865/RU864/EU868/US915/AU915/KR920/AS923- 1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Moisture	Range: 0% ~ 100% RH Accuracy: ±2%(0~50%), ± 3%(50%~100%) Resolution: 0.01%
	Temperature	Range: -40°C ~ 80°C Accuracy: ±0.5°C Resolution: 0.1°C
	Conductivity	Range: 0~20000 µs/cm Accuracy: ±3%(0~10000 µs/cm), ±5%(10000~20000 µs/cm) Resolution: 1 µs/cm
Physical Characteristics	Configuration	NFC, USB Type-C Port
	Battery Life*	Built-in 19000 mAh Can be Used for up to 10 Years
	Operation Temperature	-30°C to +70°C
	Cable Length	2m
	Ingress Protection	IP67 (Transceiver)/IP68(Soil Sensor)
Installation	Pole, wall or DIN Rail Mounting	

\* Tested under laboratory conditions and for guideline purposes only.

# Submersible Water Level Sensor

EM500-SWL is designed to measure the tank level or open water applications while fully submerged in liquid.



## Overall Features

- IP67 Rated and UV Resistance
- Accurate Detection without Affecting by Foam, Wind, or Rain
- Support Water Detection & Customizable for Oil and Other Non-Corrosive Media
- Measuring Range is Customizable up to 200 m
- ±0.5% FS Measuring Accuracy for Better Detection
- Up to 10 Years Battery Life for Easy Maintenance
- LoRaWAN® Wireless Deployment with Low Power Consumption

## EM500-SWL

Model		EM500-SWL
Wireless Transmission	Technology	LoRaWAN®
	Frequency	CN470/IN865/RU864/EU868/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class A
Measurement	Pressure Type	Gauge Pressure
	Range	± 0.5% FS, (0 ~ 3m/5m/10m (H2O)) (Customizable up to 200 m and for Other Liquids)
	Long-term Stability	≤ ± 0.3% FS/Year
Physical Characteristics	Configuration	NFC, USB Type-C Port
	Power Supply*	Built-in 19000 mAh Can be Used for up to 10 Years
	Operation Temperature	-30°C ~ 70°C (Transceiver) -10°C ~ 70°C (Level Sensor)
	Ingress Protection	IP67 (Transceiver)/IP68 (Level Sensor)
	Dimension	Transceiver: 105.4 × 71 × 69.5 mm (4.1 × 2.8 × 2.7 in) Level Sensor: 140 × φ28 mm (5.5 × φ1.1 in) Cable Length: At Least 1 ~ 1.5 m Longer than Measuring Range
Installation	Pole, wall or DIN Rail Mounting	

\* Tested under laboratory conditions and for guideline purposes only.

# X1 Sensing Camera

X1 builds a connection between objects, people, and scenarios through images to realize easy upgrades or enable unlimited sensing insights for more possibilities.



## Overall Features

- Inspire Sensing Insights through Images
- 2MP High-Definition Images for Valuable Information
- Easy-to-Get Wireless Deployment
- Long Service Life with Low Power Consumption
- Multi-Object Catching & Multi-Capturing Modes
- Compact Design & Powerful Camera Capacity
- Collaborate with AIoT Sensing Platform
- Well Compatible with the Third-Party Platforms

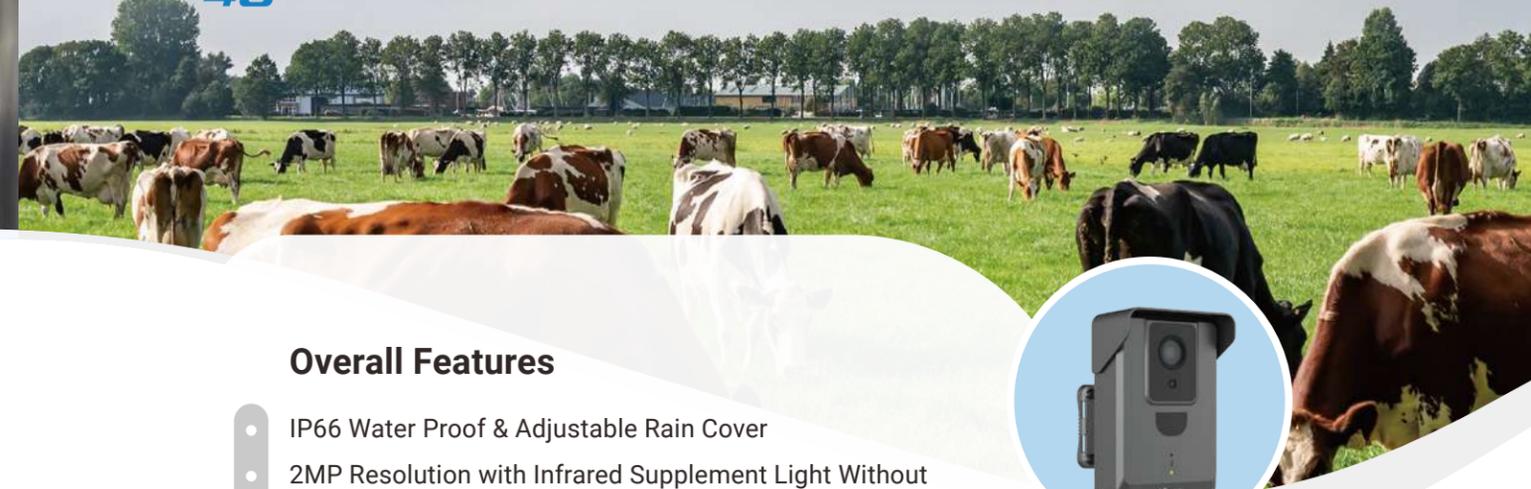
SC541

Model		X1
Wireless Transmission	Wi-Fi	IEEE 802.11 b/g/n , 2.4GHz (AP & STA)
	Protocol	MQTT
Measurement	Resolution	1920 x 1080 Pixels
	Aperture	F2.4
	Focal Length	4.8 mm
	Field of View	77°
	Capture Mode	Scheduled Capture(Interval & Timed) /Alarm-in Capture/Button Capture
Physical Characteristics	Battery Life*	Up to 2 Years (3 Captures per Day, Supplement Light Off, 25°C)
	Operation Temperature	0°C~50°C
	Ingress Protection	IP30
	Dimension	62 x 62 x 25 mm
	Installation	Universal Camera Bracket Mounting

\*DC and PoE supply cannot be used at the same time.

# X5 Sensing Camera

X5 captures photos when there is a trespass based on radar or PIR, and alarming immediately.



## Overall Features

- IP66 Water Proof & Adjustable Rain Cover
- 2MP Resolution with Infrared Supplement Light Without Disturbance
- Wireless Deployment Based on 4G Transmission & WiFi Configuration
- Active Based on Time, DI, PIR, Radar, Temperature or Noise
- Power Supply via Battery, Type-C and Solar Power
- Low Power Consumption with Hibernate Mode
- Collaborate with AIoT Sensing Platform
- Support GPS for Various Applications

SC311

Model		X5
Wireless Transmission	4G	NA: B2/ B4/ B5/ B12/ B13/ B25/ B26 EU: B1/ B3/ B7/ B8/ B20/ B28 AU: B1/ B2/ B3/ B4/ B5/ B7/ B8/ B28/ B66
	SIM Card	1x Mini-2FF SIM Slot
Connectivity	Resolution	1920 x 1080 Pixels
	Focal Length	2.8 mm
	Field of View	>100°
	Trigger Capture	PIR Awake; Radar Awake; Time Awake; DI Awake; Temp. Awake; Noise Awake.
	Configuration	Wi-Fi 802.11b/g/n 2.4GHz
	Power Source	Solar Panel with Chargeable Battery/Type-C
Others	Operation Temperature	-20°C ~60°C
	Ingress Protection	IP66
	Installation	Wall or Pole Mounting

\*DC and PoE supply cannot be used at the same time.

# 5G Dongle

UF31 is a 5G-to-wire device which offers a 4G to 5G migration solution for mobility, embedded system, smart buildings and etc.

5G 4G



## Overall Features

- Ultra-Fast 4G/5G Connectivity with SA & NSA Modes
- Plug & Play Networking with Pint-Sized Design
- Support Power & Networking Supply via USB Type-C Port
- Higher Performance with 2 GHz Quad-Core Processor
- Industrial-Grade Design with Heavy Cast Aluminum Casing
- Support Devicehub Management for Easy Maintenance

UF31

Model	UF31	
Hardware	Processor	Quad-core ARM Cortex-A55, 2 GHz
	Memory	1 GB LPDDR4X RAM and 1 GB NAND Flash
	Button	1 x Reset Button (Internal)
	GNSS	1 x 50 Ω SMA Connector
Connectivity	Cellular Interface	5G NR SA&NSA/4G LTE/WCDMA
	Ethernet Interface	1 x 10/100/1000 Mbps LAN Port
Others	Network Protocols	IPv4/IPv6, TCP, UDP, DHCPv4/DHCPv6, HTTP, HTTPS, DNS, ARP, Telnet, SSH, etc.
	Power Input	① 5-24 VDC, with Surge-Protection and Reverse Polarity Protection ② 5V/3A by USB Type-C Port
	Ingress Protection	IP30
	Operating Temperature	-20°C ~ +50°C (-4°F to +122°F)
	Dimension	90 x 72 x 15 mm (3.54 x 2.83 x 0.59 in)
Installation	Desktop, Wall Mounting, DIN Rail Mounting	

\*DC and PoE supply cannot be used at the same time.

# 5G CPE

UF51 features aesthetic design and outstanding performance with IP67 rating to deliver fast 5G connectivity, higher bandwidth, and low latency to more business.

5G



## Overall Features

- IP67 Rated and UV Resistance
- Ultra-Fast 5G Connectivity with SA & NSA Modes
- Dual Band Wi-Fi 6 with up to 3.6 Gbps Download Speed
- Equipped with Qualcomm Quad-Core Processor
- Aesthetic Design with Flexible Installation Ways
- Support Devicehub Management for Easy Maintenance

UF51

Model	UF51	
Hardware	Processor	Quad-core ARM Cortex-A55, 2 GHz
	Memory	1 GB LPDDR4X RAM and 1 GB NAND Flash
Connectivity	Cellular Interface	5G NR SA&NSA/4G LTE/WCDMA (1 x Micro-3FF SIM Slot)
	Ethernet Interface	1 x 10/100/1000/ Mbps (LAN2) 1 x 10/100/1000/2500 Mbps (LAN1/WAN)
	Wi-Fi Interface (Optional)	IEEE 802.11b/g/n/ax 4 x 4 MIMO, 2.4 GHz IEEE 802.11a/n/ac/ax 4 x 4 MIMO, 5 GHz
	Serial Interface	1 x RS485 (RS232 Hardware Optional)
Others	DI/DO	1 x DI+ 1 x DO, Galvanic Isolation
	Network Protocols	IPv4/IPv6, TCP, UDP, DHCP, HTTP, HTTPS, ARP, NTP, DNS, ARP, SSH, etc.
	Ingress Protection	IP67
	Dimension	No Waterproof Connector: φ105 x 110 x 187 mm (φ4.13 x 4.33 x 7.36 in) With Waterproof Connector: φ105 x 110 x 218 mm (φ4.13 x 4.33 x 8.58 in)
	Installation	Desktop, Pole Mounting, Wall Mounting, Bottom Screw Mounting

\*DC and PoE supply cannot be used at the same time.

# 5G AIoT 4X/12X Pro Bullet Plus Network Camera

Milesight 5G AIoT 4X/12X Pro Bullet Plus Network Camera provides a fresh experience of UHD image quality, low latency and fast transmission speed to some scenarios where wiring is inconvenient.



## Overall Features

- Built-in LoRaWAN® Gateway for AIoT Insights
- Embedded Network Server for Easy Deployment
- Better AI Video Analytics, Face Detection, People Counting via AI Deep Learning
- 5G Wireless Communication with Higher Bandwidth, Higher Mobility, Higher Scalability, Lower Latency

## Camera

Model	5G AIoT 4X Pro Bullet Plus Network Camera	5G AIoT 12X Pro Bullet Plus Network Camera	
Camera	Megapixel	2MP	4K
	Image Sensor	1/2.8" Progressive Scan CMOS	1/1.8" Progressive Scan CMOS
	Lens	5.3~64mm, 12X Optical Zoom	8~32mm, 4X Optical Zoom
	Field of View	H61°~H5°/D69°~D5°/V36°~V2°	H44°~H13°/D51°~D15°/V25°~V7°
Max. Image Resolution	1920x1080	3840x2160	
LoRaWAN®	Chipset	SX1302, 8 Channels (Half/Full-duplex)	
	Antenna	2 x Internal Antennas + 2 x 50 Ω N-Female External Connectors	
	Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4	
	Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C	
Connectivity	Cellular	Support 5G/4G/3G ( 1 x Nano SIM Slot )	
	Ethernet	1*RJ45 10M/100M Ethernet Port	
	Audio I/O	1/1	
	Alarm I/O	1/1	
Physical Characteristics	Power Supply	PoE (802.3at) / DC 12V±10%	
	Ingress Protection	IP67(Only for Camera Body)	
	Dimension	320 x 134 x 126 mm (12.60 x 5.28 x 4.96 in) 320 x 134 x 292 mm (12.60 x 5.28 x 11.50 in) (With 5G Antennas)	

# 5G Industrial Router

The Milesight Ultra-Series Industrial Cellular Router UR75 delivers 5G connectivity for wireless networking solutions



## Overall Features

- Ultra-Fast 5G Connectivity with Superb Download Speed up to 4.67 Gbps
- Strong Wi-Fi Performance with up to 1.8 Gbps Download Speed
- Equipped with Quad-Core CPU Arm Cortex-A55 for Faster Data Transmission
- Advanced OpenCPU System for More Simplified Yet Efficient Frame Work
- Support Transmission of Data via RS232/RS485/ DI/DO
- Support GPS & Wi-Fi for Various Applications

## UR75

Model	UR75	
Hardware	Processor	Quad-core ARM Cortex-A55, 2 GHz
	Memory	1 GB DDR4x RAM and 1 GB NAND Flash
	Extendable Storage	1 x M.2 NVMe SSD Interface
	Button	1 x Reset Button
	GNSS	1 x 50 Ω SMA Connector
Connectivity	Cellular Interface	5G NR SA & NSA/4G LTE/WCDMA
	Ethernet Interface	1 x WAN + 4 x LAN ( 5 x 10/100/1000 Mbps)
	Wi-Fi Interface (Optional)	IEEE 802.11b/g/n/ax 2 x 2 MIMO, 2.4 GHz IEEE 802.11a/n/ac/ax 2 x 2 MIMO, 5 GHz
	Serial Port	1 x RS232 + 1 x RS485
	DI/DO	1 x DI + 1 x DO
Others	Ingress Protection	IP30
	Dimension	135 x 115 x 36.4 mm (5.31 x 4.53 x 1.43 in)
	Installation	Desktop, Wall or DIN Rail Mounting

# Modbus to LoRaWAN® IoT Controller

UC100 is used for remote control and data acquisition from Modbus RS485 devices via LoRaWAN® networks.



## Overall Features

- Modbus RS485 to LoRaWAN® Transmission
- Data Collection up to 16 Registers for Various Usage
- Compact Size with Embedded LoRa® Antenna
- Support Autonomous Operation even when the Network is Unavailable
- Built-in LED Indicator for Status Indication
- USB Type-C Port for Local Configuration & LoRa® Downlink for Remote Configuration
- Milesight D2D with Communication Latency to <1 Sec

UC100

Model		UC100
Wireless Transmission	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class C
	Advanced Feature	Milesight D2D Controller/Agent
Data Interfaces	Connector	3.5 mm Terminal Block Connector
	Port	1 × RS485
	Protocol	Modbus RTU, Support Reading 16 Register Values
Physical Characteristics	Configuration	USB Type-C Port
	Power Supply	① 5 ~ 24 VDC by Terminal Block ② 5 VDC by Type-C Port
	Power Consumption	< 0.5 W
	Ingress Protection	IP30
	Dimension	70 × 45 × 13 mm (2.75 × 1.77 × 0.51 in)
	Installation	Desktop, Wall Mounting

# LoRaWAN®/4G IoT Controller

UC300 is designed to connect devices on fields via rich industrial interfaces and backhaul connectivity.



## Overall Features

- Support LoRaWAN® & 4G LTE Version
- Integrated Rich Interfaces: DI/DO/AI/RS232/RS485/PT100/RTD Input
- Data Collection up to 16 Registers for Various Usage
- Autonomous Operation when the Network is Unavailable
- Industrial-Grade Design with Heavy Cast Aluminum Casing
- Milesight D2D with Communication Latency to <1 Sec
- Bridge Modbus Data between Serial and Ethernet Network

UC300

Model		UC300
LoRaWAN® Model (Option A)	Technology	LoRaWAN®, Milesight D2D
	Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
	Mode	OTAA/ABP Class C
	Advanced Feature	Milesight D2D Controller/Agent
Cellular Model (Option B)	Network	4G LTE/3G/2G
	Application Mode	TCP/UDP/MQTT/AWS/Milesight IoT Cloud/SMS
Data Interfaces	Interface Type	3.5 mm Terminal Block
	IO	4 × DI + 2 × DO
	Serial Port	1 × RS232(Transparent) + 1 × RS485(Transparent, Modbus RTU)
	Analog Input	2 × 4 ~ 20 mA, 2 × 0 ~ 10 V, 2 × PT100 RTD Input
Physical Characteristics	Configuration Port	USB Type-C port
	Built-in	Watchdog, Timer
	Power Supply	5 ~ 24 VDC
	Ingress Protection	IP30
	Dimension	93 × 70 × 22 mm (3.66 × 2.76 × 0.87 in)
	Installation	Desktop, Wall Mounting, DIN Rail Mounting

# Multi-Interface LoRaWAN® Controller

UC50x is fully integrated and battery-powered with multiple communication interfaces.



## Overall Features

- IP67 Rated and UV Resistance Enclosure with M12 Connectors
- Integrated Rich Interfaces: RS232, RS485, GPIO, Analog Input and SDI-12
- Solar Powered and Built-In Batteries for Flexible Power Supply Options
- Support Configuration via NFC or Wired USB Type-C Port
- Bridge Modbus Data between Serial and Ethernet Network via LoRaWAN®

UC50x

Model		UC501	UC502
Wireless Transmission	Technology	LoRaWAN®	
	Antenna	Internal Antenna or External Antenna (Hardware Optional) External Antenna (EA) Version: 1 x 50 Ω SMA Female Connector	
	Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4	
	Mode	OTAA/ABP Class A, Class C	OTAA/ABP Class A
Data Interfaces	Interface Type	M12 A-Coded Male	
	IO Port	2 x GPIO	
	Serial Ports	1 x RS232 or RS485 (Switchable) (Transparent/Modbus RTU)	
	Analog Input	2 x 4 ~ 20 mA (or 0 ~ 10 V) (Switchable)	
	SDI-12	1 x SDI-12 (V1.4)	
	Power Output	2 x 3.3 V@Max 100mA, 2 x 5/9/12 V@Max 100 mA (Switchable)	
Physical Characteristics	Configuration	NFC, USB Type-C Port	
	Power Supply	① 2 x Chargeable Batteries ② Solar Powered (6 V, 1.7 W) ③ 5 ~ 24 VDC	① 3 x 9000 mAh Replaceable Batteries ② 5 ~ 24 VDC
	Operation Temperature	-20°C ~ +60°C	-30°C ~ +70°C
	Ingress Protection	IP67	
	Dimension	116 x 116 x 45.5 mm (4.56 x 4.56 x 1.79 in)	
	Installation	Wall or Pole Mounting	

# LoRaWAN® Solenoid Valve Controller

UC51x provides access capabilities for common irrigation vales with embedded pulse counter to monitor flow precisely.



## Overall Features

- IP67 Rated and UV Resistance Enclosure with M12 Connectors
- Water Flow Monitoring with Programmable Unit per Pulse
- Solar Powered and Built-in Batteries for Flexible Power Supply Options
- Support Configuration via NFC or Wired USB Type-C Port

UC51x

Model		UC511	UC512
Wireless Transmission	Technology	LoRaWAN®	
	Antenna	Internal Antenna or External Antenna (Hardware Optional) External Antenna (EA) Version: 1 x 50 Ω SMA Female Connector	
	Frequency	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4	
	Mode	OTAA/ABP Class A, Class B, Class C, Class C to B	OTAA/ABP Class A, Class B
Data Interfaces	Interface Type	M12 A-Coded Male	
	Solenoid Interface	2 x Solenoid Interfaces, 5/9/12 VDC Switchable	
	GPIO Interface	2 x GPIO Interfaces (Digital Input, Pulse Counter)	
Physical Characteristics	Configuration	NFC, USB Type-C Port	
	Power Supply	① Solar Powered (6V, 1.7W) ② 2 x Chargeable Batteries ③ 5-24 VDC (EA Version Only)	3 x 9000 mAh Replaceable Batteries
	Operation Temperature	-20°C to +60°C	-30°C to +70°C
	Ingress Protection	IP67	
	Dimension	116 x 116 x 45.5 mm (4.56 x 4.56 x 1.79 in)	
	Installation	Wall or Pole Mounting	

# Mini Series Industrial Router

UR41 is a compact size 4G router for IoT applications with low-cost and high efficiency.

4G



## Overall Features

- Secure 4G Connectivity in a Compact Design
- Power Consumption as Low as 60mA in Idle Mode
- Protect Power Sources by Dropping Power Consumption to a Target of 6.3mA in Standby Mode
- Fast Network Response from Standby Mode Triggered by Timers, DI, Cellular, Ethernet or Serial Port
- Remote and Bulk Management for Easy Maintenance
- Support GPS & Multiple Interfaces for Various Applications

UR41

Model		UR41
Hardware System	Processor	ARM Cortex-A7, 528 MHz
	Memory	128 MB DDR3 RAM and 128MB Flash
Connectivity	Cellular Interface	4G LTE (CAT 4)/WCDMA/GSM (1 x Nano SIM Slot)
	Ethernet Interface	1 x 10/100 Mbps LAN Port
	GNSS	1 x 50 Ω SMA Connector (Center PIN: SMA Female), GPS/GLONASS/Beidou/Galileo/QZSS
	Serial Interface	1 x RS232 or 1 x RS485 (Software Switchable)
	DI/DO	1 x DI + 1 x DO
Others	Network Protocols	IPv4/IPv6, PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, DDNS, VRRP, HTTP, HTTPS, DNS, ARP, QOS, SNTP, Telnet, VLAN, SSH, etc.
	Power Input	① 5-24 VDC, with Surge-Protection and Reverse Polarity Protection ② 5V/1A by USB Type-C Port
	Ingress Protection	IP30
	Dimension	70 x 55 x 22 mm (2.76 x 2.17 x 0.87 in) ( Antenna Excluded)
	Installation	Desktop, Wall Mounting

# Lite Series Industrial Router

UR32L is rugged and secured 4G router for IoT applications with low-cost and high efficiency.

4G



## Overall Features

- Industrial-Grade Design with Rugged Metal Casting
- Equipped with NXP Industrial Grade Processor
- Support Operating Temperature from -40°C to 70°C
- PoE-PSE for Less Wire Connection Option
- Reliable Connectivity with 4G/Ethernet Failover
- Support Milesight VPN & Devicehub Management for Easy Maintenance

UR32L

Model		UR32L
Hardware System	Processor	ARM Cortex-A7, 528 MHz
	Memory	128 MB DDR3 RAM and 128MB Flash
	Button	1 x Reset Button
Connectivity	Cellular Interface	4G LTE (CAT 4)/WCDMA/GSM (1 x Mini SIM Slot)
	Ethernet Interface	1 x WAN + 1 x LAN or 2 x LAN ( 2 x 10/100 Mbps)
Others	Network Protocols	IPv4/IPv6, PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, DDNS, VRRP, HTTP, HTTPS, DNS, ARP, QOS, SNTP, Telnet, VLAN, SSH, TR069, MQTT, etc.
	Power Consumption	Typical 1.8 W, Max 2.2 W (In Non-PoE Mode)
	Ingress Protection	IP30
	Dimension	108 x 90 x 26 mm (4.25 x 3.54 x 1.02 in)
	Installation	Desktop, Wall or DIN Rail Mounting

# Pro Series Industrial Router

UR32/UR35 secures reliable cellular-to-ethernet connectivity for IoT applications, such as kiosk, self-service terminals and process automation equipment.



## Overall Features

- Support Modbus RTU/TCP & Python Programming
- Industrial-Grade Design with Rugged Metal Casting
- Equipped with NXP Industrial Grade Processor
- Support Operating Temperature from -40°C to 70°C
- PoE-PSE for Less Wire Connection Option
- Reliable Connectivity with 4G/Ethernet/Wi-Fi Failover & Dual SIM Backup
- Support Milesight VPN & Devicehub Management for Easy Maintenance
- Verizon Open Development Certification (UR32)

UR32  
UR35

Model		UR32	UR35
Hardware System	Processor	ARM Cortex-A7, 528 MHz	
	Memory	128 MB DDR3 RAM and 128MB Flash	
	Extendable Storage	1 x Micro SD Slot	
	Button	1 x Reset Button	
Connectivity	Cellular Interface	4G LTE (CAT 4)/WCDMA/GSM (2 x Mini SIM Slots)	
	Ethernet Interface	2 x 10/100 Mbps (1 x WAN + 1 x LAN or 2 x LAN)	5 x 10/100 Mbps (1 x WAN + 4 x LAN)
	Wi-Fi Interface (Optional)	IEEE 802.11 b/g/n, 2.4GHz	
	Serial Interface	1 x RS232( 1 x RS485 Optional)	1 x RS232 + 1 x RS485 (2 x RS485 Optional)
	DI/DO	1 x DI + 1 x DO	
	GPS (Optional)	1 x 50 Ω SMA Connector	
Others	Network Protocols	IPv4/IPv6, PPP, PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, RIPv1/v2, OSPF, DDNS, VRRP, HTTP, HTTPS, DNS, ARP, QOS, SNTP, Telnet, VLAN, SSH, MQTT, TR069, etc.	
	Power Input	9-48 VDC, 2-pin 5.08 mm Terminal Block	
	Power Output	2 x 802.3 af/at PoE PSE on LAN Ports (Optional)	4 x 802.3 af/at PoE PSE on LAN Ports (Optional)
	Ingress Protection	IP30	
	Dimension	108 x 90 x 26 mm (4.25 x 3.54 x 1.02 in)	135 x 103 x 45 mm (5.31 x 4.06 x 1.77 in)
Installation	Desktop, Wall or DIN Rail Mounting		

# Ultra Series Industrial Router <sup>5G</sup>

Milesight Ultra-Series Industrial Cellular Router UR75 delivers 5G connectivity for wireless networking solutions.



UR75

## Overall Features

- Ultra-Fast 5G Connectivity with Superb Download Speed up to 4.67 Gbps
- Strong Wi-Fi Performance with up to 1.8 Gbps Download Speed
- Equipped with Quad-Core CPU Arm Cortex-A55 for Faster Data Transmission
- Advanced OpenCPU System for More Simplified Yet Efficient Frame Work
- Support Transmission of Data via RS232/RS485/ DI/DO
- Support GPS & Wi-Fi for Various Applications

\*For more specification, please refer to Page 44.

# Milesight PoE Switch

Milesight PoE Switch transmits data and power simultaneously, which is suitable for installation environment where power outlet is limited.



## PoE Switch

### Overall Features

- Multiple Options for Ports from 4, 8, 16 to Maximum 24 Ports
- Up to 14.8 Gbps Switching Capacity with Full Link-Speed Forwarding
- Maximum 400W Power Budget with 4 Kv Surge Protection
- Allow Different Camera Variations to be Configured

Model	MS-S0204-EL	MS-S0208-EL	MS-S0208-GL	MS-S0216-GL	MS-S0416-GF	MS-S0224-GL	MS-S0424-GF
Ports	8X10/100Mbps PoE Ports (RJ45)	8X10/100Mbps PoE Ports (RJ45)	16X10/100Mbps PoE Ports (RJ45)	24X10/100Mbps PoE Ports (RJ45)			
	2X100Mbps Uplink Ports		2X1000Mbps Uplink Ports				
					2X1000Mbps SFP Ports		2X1000Mbps SF Ports
Switching Capacity	1.6Gbps	2Gbps	11.8Gbps	14.8Gbps			
	Non-blocking						
Power	Built-in Switching Power Supply, AC 100~240V, 50-60Hz						
Supply	1A	2.2A	2.5A	3A	5A		
PoE Standard	IEEE802.3af/at						

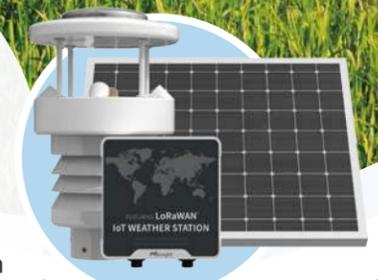
# IoT Weather Station

WTS305/WTS50x is an ultimate all-in-one weather monitoring system with WTS Sensors, WTS Hub, and solar panel for various atmospheric conditions, including wind speed, wind direction, temperature, humidity, barometric pressure and rainfall.



### Overall Features

- IP65 Rated for WTS Sensors & IP67 Rated for WTS Hub
- Reliable Measurement for Standard Version (WTS305)
- Research-Grade Measurement for Professional Version (WTS50x)
- Solar-Powered & Chargeable Batteries Backup for Better Operation
- Support Normal Work for 7 Days without Sunlight
- Support Retransmission for Reliable Communication
- Store Capacity with 19,000 Sets of Historical Data Records

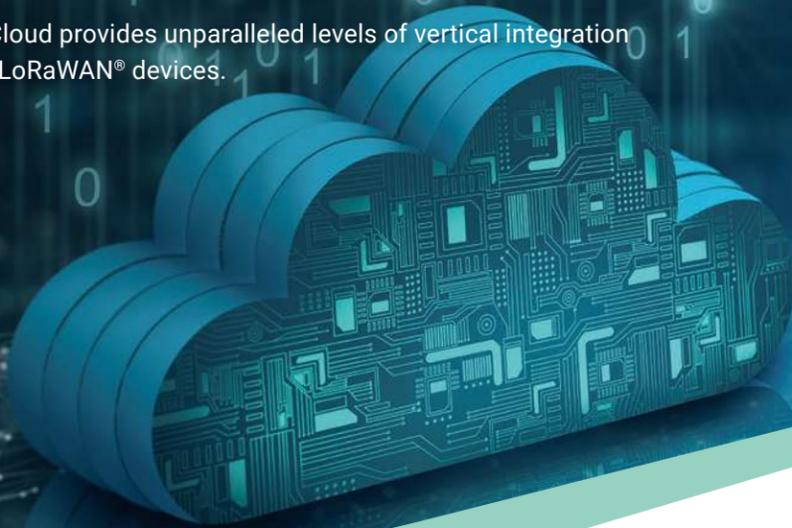


**WTS305**  
**WTS50x**

Model	WTS305	WTS505	WTS506	
WTS Sensors	Temperature	±0.3°C, (-40°C ~ 85°C)		
	Humidity	±5% RH (0% ~ 100%)	±3% RH (0% ~ 100%)	
	Wind Direction	±3° (0° ~ 360°), 1°	0° ~ 360°, 0.1°	
	Wind Speed	± (0.5 + 0.02 V) m/s (0 ~ 60m/s)	±0.3 m/s or ±3% (0 ~ 60 m/s)	
	Barometric Pressure	±1 hPa (500 ~ 1100 hPa)	±0.5 hPa (500 ~ 1100 hPa)	
	Rainfall	-	±0.5 mm (0~10 mm)	
WTS Hub	LoRaWAN® Frequency	CN470/RU864/IN865/EU868/US915/AU915/KR920/AS923-1&2&3&4		
	LoRaWAN® Work Mode	OTAA/ABP Class A		
Solar Panel	Open-Circuit Voltage	18 V (± 0.3 V)		
	Rated Voltage	15 V (±0.3 V)	Rated Current	1 A (±5%)
	Maximum Power	15 W (±5%)	Minimal Power	14.5 W (±5%)
Physical Characteristics	Configuration	NFC, USB Type-C Port		
	Power Supply	Solar Powered (15 W, 1 A) & 2 x 2550 mAh Replaceable Batteries Backup		
	Ingress Protection	IP65 (WTS Sensors), IP67 (WTS Hub)		
	Dimension	φ140 x 248 x φ50 mm (WTS305 Sensor)	φ160 x 252 x φ73 mm (WTS505 Sensor)	φ160 x 263 x φ73 mm (WTS506 Sensor)
		116 x 116 x 45.5 mm (WTS Hub) 343 x 283 x 16.5 mm (Solar Panel)		
Installation	Pole Mounting (WTS Sensor, Solar Panel) Screw Mounting (WTS Hub)			

# Milesight IoT Cloud

Milesight IoT Cloud provides unparalleled levels of vertical integration with Milesight LoRaWAN® devices.



Built on AWS to Provide Confidential and Reliable Infrastructure



Licensing with Ease: Just Copy & Paste and Upgrade Is Done



Get the **Free Trial** now and begin your data-driven future.

Transform Real-Time and Historical Data into Drag-and-Drop Widgets on Dashboard



Control Access and Monitor Projects from Anywhere

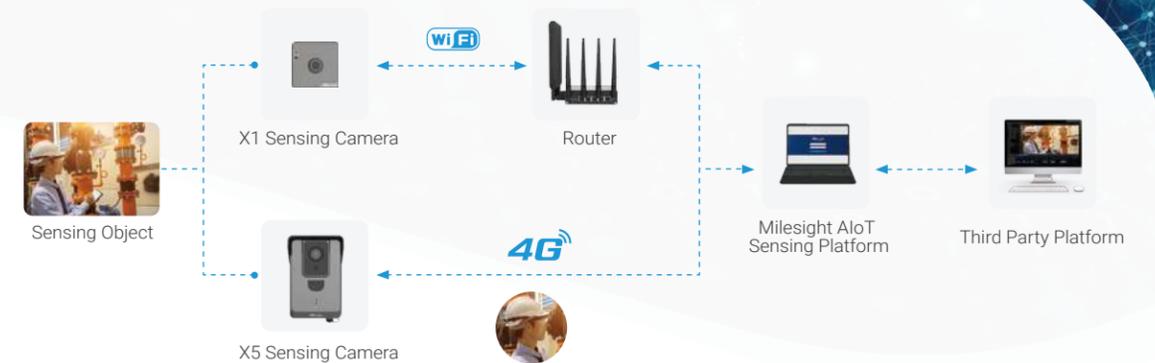


Email and Mobile Push Notifications based on Triggered Events



# Milesight AIoT Sensing Platform

The AIoT sensing platform aims to form a data group of each sensing object including all aspects for further analysis to avoid the incomplete, unreliable problem because of scattered data.



## Device Management

- Add Sensing Devices & Check the Latest Device Telemetry Data
- Customized ROI Realizing Image Subdivision
- Recognize the Image Information of Meters and Digital Display Instrument, Define AI Recognition Values

## Sensing Objects

- Build a Sensing Object from Different Telemetry Data of Different Devices
- Search Historical Data of Sensing Objects

## Trigger

- Low Battery and Inactive Status Trigger Alarm Push
- Multiple HTTP and MQTT Receivers Can Be Set

## Dashboard

- Real-Time Update of Images Captured by Sensing Cameras
- Statistics on Inactive and Active Device Status
- Device Exception Alarm (Low Battery or Inactive Status)

## Open APIs

- Normalize All Data of The Sensing Object
- Support Data Output to Third-Party Platforms for Secondary Applications

## OTA Update

- Batch Hardware Updating
- Configuration Files Batch Importing

# Milesight IoT Cloud

Milesight IoT Cloud provides unparalleled levels of vertical integration with Milesight LoRaWAN® devices.

## DeviceHub

Milesight DeviceHub is a platform which is designed to provide a high-efficiency, low maintenance solution to easily deploy Milesight IoT devices (especially industrial cellular routers) across multiple locations, reducing complexity and increasing productivity.

- Large Scale Deployment
- Real-Time Monitoring
- Comprehensive Report



## Milesight VPN

Milesight VPN is a web-based VPN monitoring and management platform

- Intuitive Web GUI
- Connection Status Overview
- Easy to Setup VPN Tunnel
- Access to Remote Devices Securely
- Support up to 1,000+ Connected Devices



# List of LTE Frequency Band

	Number	Model	Region	Frequency Band
4G Cellular Module	L04AF	UR3x/UR75-4G	North America	LTE FDD: B2/B4/B5/B12/B13/B14/B66/B71 WCDMA: B2/B4/B5
	L04AU		Latin America, ANZ	FDD: B1/B2 <sup>1</sup> /B3/B4/B5/B7/B8/B28 TDD: B40 WCDMA: B1/B2/B4/B5/B8 GSM/EDGE: B2/B3/B5/B8
	L04EU		EMEA, Thailand	FDD: B1/B3/B7/B8/B20/B28A TDD: B38/B40/B41 WCDMA: B1/B8 GSM/EDGE: B3/B8
	L04AF	UR41	North America	LTE-FDD:B2/B4/B5/B12/B13/B25/B26 WCDMA: B2/B4/B5
	L08AU		Latin America, ANZ	LTE-FDD:B1/B2/B3/B4/B5/B7/B8/B28/B66 WCDMA: B1/B2/B5/B8 GSM:B2/B3/B5/B8
	L08EU		EMEA, ANZ	LTE-FDD:B1/B3/B7/B8/B20/B28 WCDMA: B1/B8 TD-SCDMA :B34/B39 GSM:EGSM900/DCS1800

<sup>1</sup> Rx-diversity not supported.

	Number	Model	Region	Frequency Band
5G Cellular Module	504AE	UR75-5G/UF51	EMEA, APAC, Brazil	5G NR: N1/3/5/7/8/20/28/38/40/41/77/78 LTE FDD: B1/3/5/7/8/20/28/32 LTE TDD: B38/40/41/42/43 WCDMA: B1/5/8
	554AE	UF31	EMEA, APAC	5G NR: N1/3/5/7/8/20/28(a&b)/38/40/41/77/78/79 LTE FDD: B1/3/5/7/8/18/19/20/28(a&b)/32 LTE TDD: B38/40/41/42/43/46 WCDMA: B1/5/8

# Milesight IoT Product Naming Convention

## Occupancy & People Counting Sensor

### AI Workplace Occupancy Sensor

VS 1 2 1 - 915M

① ② ③ ④

- ① Occupancy & People Counting Sensor
  - VS121
  - VS133
  - VS330
- ② Detection Type
  - 1: People Counting
  - 3: Continuous Perception
- ③ Detection Technology Type
  - 2: RGB
  - 3: ToF
- ④ LoRaWAN® Module

## LoRaWAN® Gas Sensor

### LoRaWAN® Gas Sensor

GS 1 01 - 915M

① ② ③

- ① Gas Sensor
  - GS101
  - GS301
- ② Sub-Series
- ③ LoRaWAN® Module

## IoT Weather Station

### IoT Weather Station

WTS 3 0 5 - 915M

① ② ③ ④

- ① Weather Station
  - WTS305
  - WTS505
  - WTS506
- ② Sub-Series
  - 3: Standard Version
  - 5: Professional Version
- ③ Number of Sensors
- ④ LoRaWAN® Module

## Display Screen

### LoRaWAN® IoT Display

DS 7 6 10 - 915M

① ② ③ ④

- ① Display Screen
- ② Screen Type
  - 7: Android Electronic Screen
  - 3: Three-Pigment E-ink Screen
- ③ Screen Size
  - 10: 10.1 Inch
  - 04: 4.2 Inch
- ④ LoRaWAN® Module

## Industrial Cellular Router & 5G CPE & IoT Controller

UR32 - L 04 EU - G - P - W - RS 485

① ② ③ ④ ⑤ ⑥

- ① Model Name
  - UR41
  - UR32L
  - UR32
  - UR35
  - UR75
  - UF51
  - UC300
- 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
  - UG56
  - 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
  - AM103
  - AM103L
  - AM107
  - AM307
  - AM308
  - AM319
  - EM300
  - EM310
  - EM320
  - EM400
  - EM500
  - TS101
- ② Sensor Type
  - UDL: Ultrasonic Distance/Level Sensor
  - SMTC/SMT: Soil Sensor
  - SWL: Submersible Water Level Sensor
  - LGT: Light Sensor
  - PT100: PT100 Temperature Sensor
  - CO<sub>2</sub>: CO<sub>2</sub> Sensor
  - PP: Pipe Pressure Sensor
  - TH: Temperature & Humidity Sensor
  - MCS: Magnetic Contact Switch Sensor
  - SLD: Spot Leak Detection Sensor
  - ZLD: Zone Leak Detection Sensor
  - DI: Pulse Counter
  - TLD: ToF Laser Distance
  - MUD: Multifunctional Ultrasonic Distance
- ③ LoRaWAN® Module
  - 470M: CN470
  - 868M: RU864/IN865/EU868
  - 915M: US915/AU915/KR920/AS923

## LoRaWAN® Controller

UC511 - DI - 915M - EA

① ② ③ ④

- ① Model Name
  - UC100
  - UC300
  - UC501
  - UC502
  - UC511
  - UC512
- ② Interface (For UC51x Only)
  - Digital Input (Pulse Counter)
- ③ LoRaWAN® Module
  - 470M: CN470
  - 868M: RU864/IN865/EU868
  - 915M: US915/AU915/KR920/AS923
- ④ External Antenna

## CoWork Series

### LoRaWAN® Smart Button

WS 10 1 – 915M

① ② ③

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

### LoRaWAN® Smart Scene Panel

WS 1 5 6 – 915M

① ②③ ④

- ① Workplace Sensor
- ② Display
  - 5: E-Ink Screen
  - 3: PVC Sticker
- ③ Number of Buttons
- ④ LoRaWAN® Module

### LoRaWAN® PIR & Light Sensor

WS 20 2 – 915M

① ② ③

- ① Workplace Sensor
- ② Number of Sensors
  - 1: ToF
  - 2: PIR & Light
- ③ LoRaWAN® Module

### LoRaWAN® Magnetic Contact Switch

WS 30 1 – 915M

① ② ③

- ① Workplace Sensor
- ② Sub-series
  - 1. Magnetic Contact Switch
  - 2. Sound Level Sensor
  - 3. Mini Leak Detection Sensor
- ③ LoRaWAN® Module

### LoRaWAN® Smart Portable Socket

WS 52 3 – 915M

① ② ③

- ① Workplace Sensor
- ② Grounding
  - 2. No Grounding
  - 3. Grounding
- ③ LoRaWAN® Module

### Smart Light Controller

WS 55 8 – 915M

① ② ③

- ① Workplace Sensor
- ② Number of Circuits
- ③ LoRaWAN® Module

## Industrial PoE Switch

MS – S0 2 04 – E L  
① ② ③ ④

MS – S0416 – G F  
⑤ ⑥

- 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)

## Asset Tracker

### Outdoor Asset Tracker

AT 101 – 915M

① ②

- ① Asset Tracker
  - AT101
- ② LoRaWAN® Module

## Sensing Camera

### X1 Sensing Camera

SC 541

①

- ① Sensing Camera
  - SC541
  - SC311