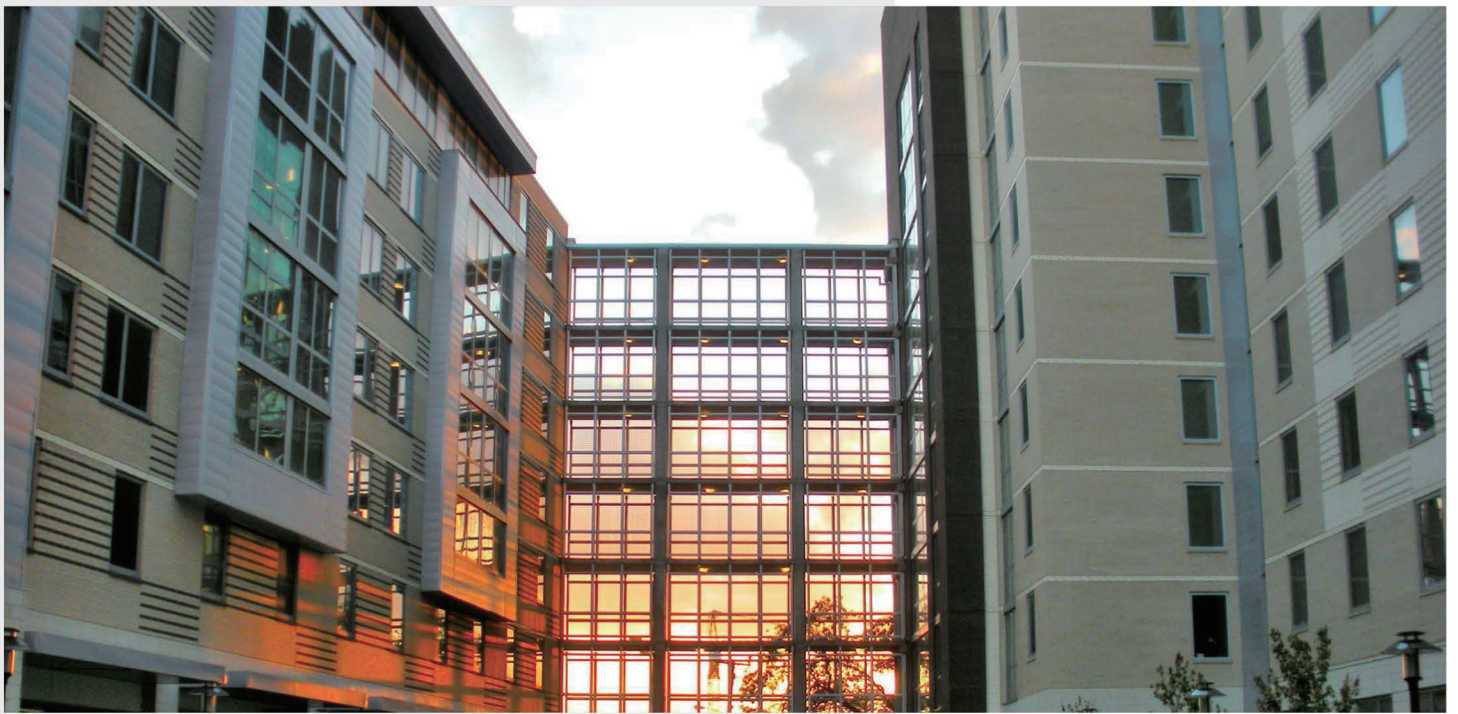


The LoRaWAN logo features a blue wireless signal icon on the left, composed of three concentric arcs above and below a central vertical line. The text 'LoRaWAN' is positioned to the right of the icon, with 'LoRa' in black and 'WAN' in blue. A registered trademark symbol (®) is located at the end of the word 'WAN'.

# LoRaWAN<sup>®</sup>

IoT Solutions from Home to Industry



### Enhanced your product value with BSI LoRaWAN Technology

At BSI, we are at the forefront of technological innovation, and we're excited to announce that we are embracing the IoT revolution. We've integrated cutting-edge, low-power, and highly efficient wireless LoRaWAN technology into our product lineup. This advancement allows us to expand our range of offerings, catering to an array of customer needs with unparalleled connectivity and reliability.

Our commitment to staying ahead of the curve drives us to continually evolve, ensuring that our products are not just innovative but also future-ready. With LoRaWAN, we're taking a giant leap towards delivering solutions that seamlessly integrate into the ever-expanding IoT landscape.

Why LoRaWAN? It's simple. This technology enables us to create products that are not only energy-efficient but also boast extended range and exceptional performance. Whether it's enhancing security measures in schools, streamlining operations in airports, or fortifying high-security and military facilities, our LoRaWAN-powered solutions redefine what's possible.

By leveraging the power of LoRaWAN, we're transforming the way buildings function and communicate. Imagine a future where every aspect of your building's security and hardware is seamlessly connected, providing real-time insights and control at your fingertips.

At BSI, our relentless pursuit of excellence and customer satisfaction is evident in every product we create. Join us on this transformative journey into the IoT era, where connectivity meets efficiency, and possibilities are limitless.

Experience the future today with BSI – where innovation meets reliability, and your needs are our priority.



2012 Concours Lepine



2012 Archidex



# Smart Door Locks




**Enhanced-Tech  
Access Control to  
Lodging System**

IoT

Cloud-Based System

LoRaWAN Access Control

### Access Control Solution

- Look up the history logs from Web.
- Authorize, or change users' access from Web.
- Remote unlocking by waking up touch keypad on site.
- Door sensor, and lock sensor options available.
- Data can be synchronized and stored by the Cloud or Server.
- The data can also be synchronized manually from the lock.
- One gateway can configure 8 to 16 locks.
- Power status of lock shows from the Web. 

### Access powered by LoRaWAN

- PIN Code, RFID Card.

### Touch Keypad

- Responsive touch keypad.
- LED backlit for convenient operation at night.

### Emergency Power Supply

- When batteries are completely dead, use a type C cable to temporarily power up the lock.

### Low Battery Warning

- If the batteries are running low, the door lock informs you through keypad with a digit for entry times left, also beep and blink \* 3 times .

### GW1000 Indoor Gateway



GW1000 is a light indoor gateway, mainly used on small scale LoRa networking applications as a supplement device for signal blind area. Equipped with SX1308 chip, it complies with LoRaWAN. Receiving data from 8 channels at the same time, it has data packed into Ethernet data protocol packets, transmits data to LoRaWAN network server in real time. Meanwhile, it can accept the single task from the network server, convert Ethernet data into radio frequency data and send them to corresponding end-devices. It provides technical solutions for the bidirectional transmission of the Internet of Things.

#### LoRa Parameter

|                     |   |
|---------------------|---|
| Working Frequency   | CN470-510/EU863-870/US902-928/AS923/AU915-928/KR920-923 |
| Transmitted Power   | up to 20dBm   |
| Receive Sensitivity | -141dBm   |
| Channels            | 8 uplinks, 1 downlink                                   |

#### Electrical/Physical Parameter

|                         |                 |
|-------------------------|-----------------|
| Communication Interface | WAN, 4G         |
| Input                   | DC12V           |
| Temperature Range       | -10°C to 50°C   |
| Working Humidity        | 5% to 95%       |
| Antenna                 | LoRa, WiFi, 4G. |
| Dimension               | 180x115x30mm    |

**R8 ANSI Mortise**



(Card access only)

**R8-ZERO ANSI Mortise**



**R8-ZERO EN Mortise**



**R8-ZERO Cylindrical**



**R3-DB Deadbolt**



# Gateways



## GW5000A Industrial-Grade Outdoor Gateway

- EU, US, AND Asia frequency support
- EU, US, and Asia frequency support
- LoRaWAN compliant
- CE/FCC certified
- IP67

GW5000A is a complete LoRaWAN compliant gateway, which can provide low power, mobile and safe local bidirectional communication service for IoT devices. With our IoT technology and the industrial-grade gateway GW5000A, users can then have their own IoT control system to achieve customized smart services, which will be widely applied in the fields of intelligent transportation, energy management, smart city, industry 4.0, smart home.

### LoRa Parameter

|                          |                          |
|--------------------------|--------------------------|
| <b>Working Frequency</b> | EU868, US915, AS923      |
| <b>Transmitted Power</b> | up to 27dBm              |
| <b>Receive Sensivity</b> | -143dBm                  |
| <b>Channels</b>          | 8/1 multi/high-data rate |

### Electrical/Physical Parameter

|                                |                            |
|--------------------------------|----------------------------|
| <b>Communication Interface</b> | LAN, WAN, WiFi, LTE module |
| <b>Input</b>                   | POE power supply           |
| <b>Temperature Range</b>       | -30°C to 80°C              |
| <b>Working Humidity</b>        | 10% to 90%                 |
| <b>Antenna</b>                 | LoRa, WiFi, GPS, 4G        |
| <b>Dimension</b>               | 288x215x59mm               |

## GW1000 Indoor Gateway



GW1000 is a light indoor gateway, mainly used on small scale LoRa networking applications as a supplement device for signal blind area. Equipped with SX1308 chip, it complies with LoRaWAN. Receiving data from 8 channels at the same time, it has data packed into Ethernet data protocol packets, transmits data to LoRaWAN network server in real time. Meanwhile, it can accept the single task from the network server, convert Ethernet data into radio frequency data and send them to corresponding end-devices. It provides technical solutions for the bidirectional transmission of the Internet of Things.

### LoRa Parameter

|                          |   |
|--------------------------|---|
| <b>Working Frequency</b> | CN470-510/EU863-870/US902-928/AS923/AU915-928/KR920-923 |
| <b>Transmitted Power</b> | up to 20dBm   |
| <b>Receive Sensivity</b> | -141dBm   |
| <b>Channels</b>          | 8 uplinks, 1 downlink                                   |

### Electrical/Physical Parameter

|                                |                   |
|--------------------------------|-------------------|
| <b>Communication Interface</b> | WAN, 4G           |
| <b>Input</b>                   | DC12V             |
| <b>Temperature Range</b>       | -10°C to 50°C     |
| <b>Working Humidity</b>        | 5% to 95%         |
| <b>Antenna</b>                 | LoRa, WiFi, , 4G. |
| <b>Dimension</b>               | 180x115x30mm      |

## M2 Indoor Gateway



M2 is a multi-function indoor gateway, which supports LoRaWAN, BLE5.0, cat1, PoE (RJ45 interface), WiFi data transmission. It can satisfy small scale LoRa networking applications as a supplement device for signal blind area. It is flexible for use, convenient installation, simple deploy. It adapts to high quality signal communication, high anti-interference, high sensibility, low power consumption, multiple input ports and diverse network applications, to provide users low cost with high reliability of indoor IoT solutions. M2 gateway is not only can be operated alone for smart fire alarm, smart home, smart building, indoor parking, smart warehouse. It can also be used with outdoor gateways as a supplement of LoRa signal blind area to cover a greater area of network, which is applied to smart city, smart transportation, smart community, smart industrial park.

### LoRa Parameter

|                           |                                |
|---------------------------|--------------------------------|
| <b>Working Frequency</b>  | CN470-517, and others.         |
| <b>Transmitted Power</b>  | up to 22dBm, adjustable        |
| <b>Receive Sensivity</b>  | -141dBm@SF12                   |
| <b>Communication Rate</b> | 292bps to 5.4kbps, SF7 to SF12 |

### Electrical/Physical Parameter

|                                |                         |
|--------------------------------|-------------------------|
| <b>Communication Interface</b> | WAN, WiFi               |
| <b>Input</b>                   | POE power supply        |
| <b>Temperature Range</b>       | -20°C to 60°C           |
| <b>Antenna</b>                 | LoRa, WiFi, BLE         |
| <b>Dimension</b>               | dia. 112mm, height 35mm |

## M200C LoRaWAN Module



The module features with small size, multiple interface, high Rx sensitivity, low-power consumption, long transmission distance. It can be widely applied to IoT industry. Customers can easily and quickly do development based on this module.

|                                |   |
|--------------------------------|---|
| <b>Working Frequency</b>       | CN470-510MHz, EU863-870MHz<br>US902-928MHz, and other sub-GHz ISM |
| <b>Protocol</b>                | LoRaWAN.  |
| <b>Communication Interface</b> | SPI, UART, ADC, GPIO, I2C   |
| <b>Input Voltage</b>           | 3.3V  |
| <b>Working Temperature</b>     | -40°C to 85°C   |
| <b>Sleep Status</b>            | 3.0uA   |
| <b>Receive Status</b>          | 6.3mA   |
| <b>Transmit Status</b>         | 120mA   |
| <b>Rx Sensitivity</b>          | SF=12, BW=125KHz,<br>Rx sensitivity=-138dBm                       |
| <b>RF Power</b>                | 20dBm   |
| <b>Dimension</b>               | 14x15.6mm   |

# Sensor Devices



## AN-106 LoRa Tester

AN-106 can realize professional coverage analysis and assessment, and can solve the problems encountered in the site deployment or during testing of LoRa network. You can use it to do statistics of the packet loss rate of wireless communication data between statistics and gateways.

|                     |                                       |
|---------------------|---------------------------------------|
| Sensor              | Built-in GPS                          |
| Working Frequency   | EU868, US915, AS923                   |
| Protocol            | LoRaWAN                               |
| RF Tx Power         | 17dBm                                 |
| RF Rx Sensitivity   | -140dBm                               |
| Working Temperature | -20°C to 70°C                         |
| Working Humidity    | 10% to 90%                            |
| Battery             | Built-in rechargeable lithium battery |
| Battery Capacity    | 3.7V/3500mAh                          |
| Transmit Status     | 150mA                                 |
| IP Rating           | IP65                                  |
| Dimension           | 190x86x30mm                           |

## AN-201A Sensor Box



AN-201A Sensor Box is a wireless data gathering device, it has been integrated with multiple communication ports for a variety of sensors. Its high-gain omnidirectional external antenna expands the communication distance. Suitable for workshop, warehouse, agricultural greenhouse, docking within scenarios such as rooms, hydrological monitoring sensors, e.g.: hydraulic pressure sensors, liquid level sensor, liquid flow sensor, water sensor, temperature sensor, humidity sensor, light sensor, PM2.5, angle sensor, wind speed sensor, etc. Typical applications scenario: Industrial monitoring, building automation, smart agriculture.

|                     |                                       |
|---------------------|---------------------------------------|
| Sensor              | Built-in GPS                          |
| Working Frequency   | EU868, US915, AS923                   |
| Protocol            | LoRaWAN                               |
| RF Tx Power         | 17dBm                                 |
| RF Rx Sensitivity   | -140dBm                               |
| Working Temperature | -20°C to 70°C                         |
| Working Humidity    | 10% to 90%                            |
| Battery             | Built-in rechargeable lithium battery |
| Battery Capacity    | 3.7V/3500mAh                          |
| Transmit Status     | 150mA                                 |
| IP Rating           | IP65                                  |
| Dimension           | 190x86x30mm                           |



## AN-202A Water Pressure Transmitter



AN-202A The pressure range can be customized (10KPa...100MPa), cable length can be customized. With LoRa spread spectrum communication technology, external outer-directional antenna design can better transmit and receive wireless signals and improve the communication distance of wireless transmission. It can be used indoors and outdoors, Fluid pressure detection and control in petroleum, chemical industry, electric power, hydrology, environmental protection and etc.

|                            |   |
|----------------------------|---|
| <b>Working Frequency</b>   | CN470-510MHz, EU863-870MHz<br>US902-928MHz, AS923MHz,<br>AU915-928MHz, RU864-870MHz<br>IN865-867MHz |
| <b>Range</b>               | 0-10KPa, 0-100MPa   |
| <b>Data Transmit</b>       | 300bps to 5.4kbps   |
| <b>Battery Capacity</b>    | 3.6V/1900AH   |
| <b>Working Temperature</b> | 0°C to 80°C   |
| <b>Working Humidity</b>    | 10% to 95% (without condensing)   |
| <b>Sleep Status</b>        | ≤ 10uA  |
| <b>Working Current</b>     | ≤ 130mA   |
| <b>Tx Status</b>           | 19dBm   |
| <b>Rx Sensibility</b>      | SF=12, -140dBm  |
| <b>Input Voltage</b>       | 3.3VDC  |
| <b>IP Rating</b>           | IP65  |
| <b>Dimension</b>           | 112x30mm (head part)  |

## AN-305A Door Window Contact Sensor



AN-305A informs your system if something is open or closed. Typically installed on door, windows or drawers throughout the house. For example, you can get an alert if a window open when you go to bed, or if you leave home without closing the back door.

|                              |   |
|------------------------------|---|
| <b>Working Frequency</b>     | CN470-510MHz, EU863-870MHz,<br>US920MHz             |
| <b>Data Transferred Rate</b> | 300bps to 5.4kbps                                   |
| <b>Battery</b>               | 3.0V/1500mAh (CR123A)                               |
| <b>Working Temperature</b>   | -10°C to 50°C                                       |
| <b>Working Humidity</b>      | 10% to 95%  |
| <b>Standby Current</b>       | 125mA   |
| <b>Tx Status</b>             | Max. 20dBm  |
| <b>Tx Power</b>              | ≤ 16mA  |
| <b>Rx Status</b>             | -141dBm   |
| <b>Rx Sensitivity</b>        | 3.0VDC  |
| <b>Voltage</b>               | IP64  |
| <b>IP Rating</b>             | 88x30x21mm (main kit)<br>15x44x12mm (secondary kit) |
| <b>Dimension</b>             |   |

### AN-122-A03 LoRa GPS Tracker



AN-202A has been integrated with GPS, G-sensor, anti-dismantle switch sensor and power switch module. GPS positioning data will be acquired when the device moves. It has functions of anti-dismantle and alarm sound. It is in small size, with long battery life, low power consumption that makes it has return to deployment. Widely used in the supervision of asset tracking, livestock supervision, commodity supervision, Shared bicycles and other fields.

|                            |  |
|----------------------------|--|
| <b>Working Frequency</b>   | CN470MHz-510MHz, EU863MHz-870MHz, US902MHz-928MHz, AS920MHz-923MHz, AS923MHz-925MHz, AU915MHz-928MHz |
| <b>Protocol</b>            | LoRaWAN, P to P  |
| <b>RF Tx Power</b>         | Max. 20dBm   |
| <b>RF Rx Sensitivity</b>   | 5V/1000mA  |
| <b>Working Temperature</b> | -30°C to 80°C  |
| <b>Working Humidity</b>    | 10% to 90%   |
| <b>Battery</b>             | 4.2V/2400mAh (built-in Li-SOCL2)   |
| <b>Sleep Status</b>        | ≤20uA  |
| <b>Tx Status</b>           | 150mA  |
| <b>IP Rating</b>           | IP65   |
| <b>Dimension</b>           | 111x65x33.5 mm   |

### AN-301 SOS Button



AN-301 is wiring free and easy for installation. When you are in an emergency situation, press the SOS button. The alarm signal is sent through wireless transmission to the monitoring platform. Security can be deployed in time. It can be used in schools, hospitals, banks, depots, stores, and other facilities.

|                            |  |
|----------------------------|--|
| <b>Working Frequency</b>   | CN470MHz-510MHz, EU863MHz-870MHz, US902MHz-928MHz, AS920MHz-923MHz, AS923MHz-925MHz, AU915MHz-928MHz, KR920-923MHz |
| <b>Protocol Version</b>    | 1.0.2 and 1.0.3  |
| <b>Tx Rate</b>             | 3000bps - 5.4Kbps  |
| <b>Tx Power</b>            | 19dBm  |
| <b>Tx Current</b>          | ≤125mA   |
| <b>Rx Sensitivity</b>      | SF=12, -141dBm   |
| <b>Battery</b>             | 3.6V/8000mAh (Li-SOCL2)  |
| <b>Standby Current</b>     | ≤10uA  |
| <b>Working Temperature</b> | -10°C to 50°C  |
| <b>Working Humidity</b>    | 10% to 95% (without condensing)  |
| <b>Dimension</b>           | 87x87x26 mm  |

### AN-303 Temperature Humidity Sensor



AN-303 is a wireless temperature and humidity unit for data gathering and monitoring. It has a built-in temperature and humidity chip. It has small body size and high accuracy. With stable performance, low power consumption, it is suitable for data transmission in long distance. Based on long battery life, free wiring installation, AN-303 temperature and humidity sensor decreases the system cost greatly. Communication room, workshop line, drug warehouses, logistics warehouse, agricultural greenhouses, archives, museums, hvac control.

|                          |  |
|--------------------------|--|
| <b>Working Frequency</b> | CN470MHz-510MHz, EU863MHz-870MHz, US902MHz-928MHz, AS923MHz, KR920MHz-923MHz, AU915MHz-928MHz IN865-867MHz |
| <b>Tx Power</b>          | Max. 17dBm   |
| <b>Tx Current</b>        | ≤ 125mA  |
| <b>Rx Sensitivity</b>    | SF=12, -140dBm   |
| <b>Standby Current</b>   | ≤ 9uA  |
| <b>Battery</b>           | 3.6V/8000mA (built-in Li-SOCL2)  |
| <b>Input Voltage</b>     | 3.6VDC   |
| <b>Detecting Range</b>   | -30°C to 70°C<br>0% to 99%RH (non-condensing)  |
| <b>IP Rating</b>         | IP30   |
| <b>Dimension</b>         | 86x86x26mm   |

### AN-304 PIR Motion Sensor



AN-304 is a wireless infrared detector that can automatically detect the movement of human body in the area. When an intruder passes through the monitoring area and moves dynamically, an alarm signal will be sent to the monitoring platform immediately. It is suitable for the safety prevention of residential area, villas, workshops, shopping malls, warehouses, office buildings and other places.

|                               |   |
|-------------------------------|---|
| <b>Working Frequency</b>      | CN470MHz-510MHz, EU863MHz-870MHz, US902MHz-928MHz, AS923MHz, KR920MHz-923MHz, AU915MHz-928MHz |
| <b>Tx Power</b>               | Max. 19dBm  |
| <b>Tx Current</b>             | ≤ 120mA   |
| <b>Rx Sensitivity</b>         | SF=12, -140dBm  |
| <b>Standby Current</b>        | ≤ 15uA  |
| <b>Battery</b>                | Built-in Li-SOCL2   |
| <b>Data Transmission Rate</b> | 300bps to 5.4Kbps   |
| <b>Working Temperature</b>    | -10°C to 50°C   |
| <b>Working Humidity</b>       | 5% to 95% (without condensing)  |
| <b>Detecting Range</b>        | 8 to 10m  |
| <b>Detecting Angle</b>        | 100°  |
| <b>Dimension</b>              | 86x86x26 mm   |

### AN-103 Temperature Humidity Sensor



AN-103 adopts dedicated digital module acquisition technology and temperature and humidity sensing technology to ensure high reliability and long-term stability of products. It has advantages of high quality, super fast response, strong anti-interference ability and high cost performance.

|                     |  |
|---------------------|--|
| Sensor              | Built-in temperature and humidity sensor |
| Working frequency   | EU868, US915, AS923                      |
| Protocol            | LoRaWAN and P2P                          |
| RF TX power         | 17dBm                                    |
| RF Rx sensitivity   | -140dBm                                  |
| Working temperature | -30°C to 80°C                            |
| Working humidity    | 10% to 90%                               |
| Battery type        | Li-SOCI2                                 |
| Battery capacity    | 3.6V/4000mAh                             |
| Sleep status        | 15uA                                     |
| Transmit status     | 110mA                                    |
| IP Rating           | IP67                                     |
| Dimension           | 108x80x36mm                              |

### WLC-NEMA-03 Lamp Control



WLC-NEMA-03 LoRaWAN Lamp Controller with is made for smart lighting for street lamp control system. With current and voltage measurement circuit inside, it collects the load status in real time. It has strong anti-interference ability and costs low power consumption, capable in long distance transmission. It has the advantages of small size, easy operation and maintenance, free wiring, reliable performance. It is an energy-saving design for smart lighting.

|                   |                            |
|-------------------|----------------------------|
| Working frequency | EU863-870MHz, US902-928MHz |
| Protocol          | AU915-928MHz, AS923        |
| RX power          | Max. 19dBm, adjustable     |
| RFRxsensitivity   | -141dBm, SF=12             |
| Ambient Humidity  | 10% to 95%RH               |
| Input/Output      | AC90-265V, 50Hz            |
| IP Rating         | IP65                       |
| Dimension         | 84x98mm                    |

### M401A Outdoor BLE GPS



M401A features low-power consumption, high sensitivity, convenient deploy. It is applied to multiple outdoor places for GPS, tourist area, exhibition, property asset, people, etc.

|                     |                              |
|---------------------|------------------------------|
| Working temperature | -40°C to 80°C                |
| Working humidity    | -10% to 90% (non-condensing) |
| Bluetooth           | 5.0                          |
| Operation Rate      | 2400 to 2483.5MHz            |
| Transmit Rate       | 1Mbps                        |
| Battery             | 3.6V/4000mAh                 |
| IP Rating           | IP67                         |
| Dimension           | 108x81x36mm                  |

### M401B Indoor BLE GPS



M401B features low-power consumption, high sensitivity, convenient deploy. It is applied to multiple outdoor places for GPS, tourist area, exhibition, property asset, people, etc.

|                     |                              |
|---------------------|------------------------------|
| Working temperature | -40°C to 80°C                |
| Working humidity    | -10% to 90% (non-condensing) |
| Bluetooth           | 5.0                          |
| Operation Rate      | 2400 to 2483.5MHz            |
| Transmit Rate       | 1Mbps                        |
| Battery             | 3.0V/1500mAh                 |
| Dimension           | 58x55x21mm                   |

## CM100-BT Personnel Locator



CM100-BT supports BLE GPS technology, the built-in sensor can transmit the personnel's position to the management system. It also has a SOS feature for emergency condition. It is small, low-power consumption, applied to attendance management in business or educational premises, monitoring guests, environment patrol.

|                     |                 |
|---------------------|-----------------|
| Working Temperature | -0 °C to 50 °C  |
| Working humidity    | 10% to 95%      |
| Working Range       | 5 to 10m        |
| Tx Status           | Max. 20dBm      |
| Rx Sensitivity      | SF=12, -141dBm  |
| Battery             | 4.2V/900mAh     |
| IP Rating           | IP65            |
| Dimension           | 87.4x55.2x8.7mm |

## AN101D Parking Sensor



AN101D is a surface-mounted type geomagnetic parking sensor with radar to detect the status (occupied or empty) of a parking space. When it detects that there is a car parked in or leaving the parking space, the status information of the parking space will be sent to a LoRa gateway, and gateway will transmit the information to LoRa network server, then LoRa network server will decode the LoRa data and interface with the smart parking platform to achieve real-time management of parking lots. Easy to install in ground, it is widely used in urban road-side parking space and other application scenarios.

|                     |  |
|---------------------|--|
| Working Frequency   | CN470MHz, EU868MHz<br>US915MHz, AS923MHz<br>AU915MHz, RU864-870MHz<br>IN865-867MHz |
| Working Temperature | -40°C to 80°C  |
| Rx Current          | ≤ 15mA   |
| Standby Current     | ≤ 15uA   |
| Battery             | 3.6V/1600mAh (built-in Li-SOCL2)   |
| Dimension           | dia. 195x29.5mm  |




***IoT Solutions in One Stop***



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