# Wireless Asset Sensor

Wireless Sensor Network Based on LoRa Technology



# R718MA

# Data Sheet

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**Wireless Asset Sensor**

# Introduction

This device is a simple positioning function (which can detect the position status of the device), and periodically reports RSSI and SNR. It applies SX1276 wireless communication module.

# Main Characteristic

- Improved interference immunity

- Encrypt-RF™ Security (Diffie-Hellman Key Exchange + AES-128 CBC for sensor data messages)

- Compatible with LoRaWAN$^{TM}$ Class A

- Frequency hopping spread spectrum (FHSS)

- The base is attached with a magnet that can be attached to a ferromagnetic material object

- Configuration parameters can be configured through third-party software platforms, data can be read and alarms can be set via SMS text and email (optional)

- Applicable to the third-party platforms: Actility/ThingPark, TTN, MyDevices/Cayenne

- Low power consumption and long battery life

Note:

Battery life is determined by the sensor reporting frequency and other variables, please refer to http://www.netvox.com.tw/electric/electric_calc.html

On this website, users can find battery life of various models in different configurations.

# Application

- Smart home

- Industrial and commercial
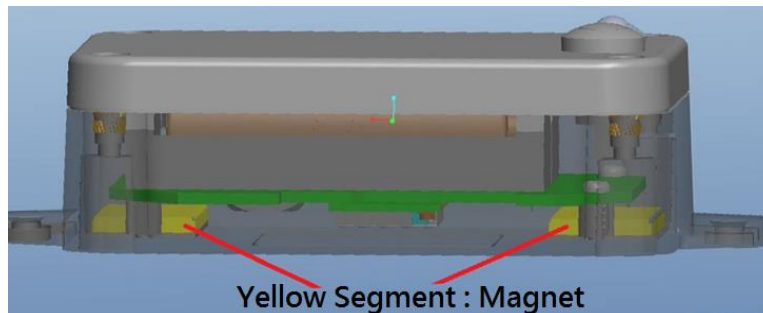
- Objects to be detected location range

## Dimension



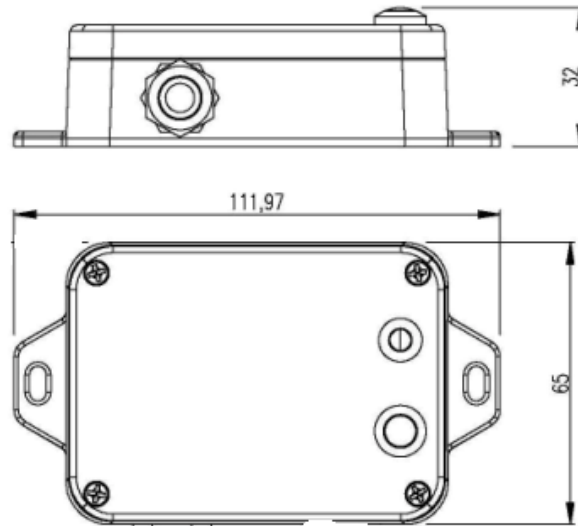Figure 2 Dimensions of main engine shell

## Electric

| | |
|---|---|
| Input Power | 2 x 3.6V ER14505 AA lithium batteries (3.6V 2400mah/ section) |
| Standby Current | 22uA |
| Wakeup Current | 6.3mA/ 3.3V |
| Receiving Current (max) | 11mA/ 3.3V |
| Transmitting Current (max) | 120mA/ 3.3V |
| Battery Measurement Accuracy | ± 0.1V |
| Low Voltage Threshold | 3.2V |

\* Specific electrical characteristics may vary depending on the power supply voltage

**Wireless Asset Sensor**

## Frequency

| Frequency Range | 863MHz-928MHz    470MHz-510MHz |
|---|---|
| TX Power | US915      20dbm;<br>AS923      16dbm;<br>AU915      20dbm;<br>CN470     19.15dbm;<br>EU868      16dbm;<br>KR920      14dbm;<br>IN865       20dbm; |
| Receiving Sensitivity | -136 dBm<br>(LoRa, Spreading Factor=12, Bit Rate = 293bps)<br>-121 dBm<br>(FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps) |
| Antenna Type | Build-in antenna |
| Communication Distance | 10 km<br>(Visible linear obstacle-free transmission distance, actual transmission distance depending on the environment.) |
| Data Transfer Rate | 0.3kbps ~ 50kbps |
| Modulation | LoRa / FSK (Note: choose one of them) |
| Supportable LoRaWAN Frequency | EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867,CN470-510<br>(Note: The frequency band is optional and needs to be configured before shipment.) |

## Physical

| Dimension | L: 112 mm x W: 65 mm x H: 32 mm |
|---|---|
| Weight | 141g |
| Environment Humidity Range | <90 %RH (No condensation) |
| Operating Temperature | -20°C to 55 °C |
| Storage Temperature | -40°C to 85 °C |