Wireless Surface-Mounted Parking Sensor

Wireless Sensor Network Based on LoRa Technology

R719A Datasheet

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Introduction

R719A is a smart parking vehicle detection sensor. It can be used to detect the presence or absence of parking vehicles in the parking space. It uses the SX1276 wireless communication module and adds vehicle status information to the gateway and displays the collected data in the gateway.

Features

- SX1276 wireless communication module
- The magnet approach to the top cover to turn on/off
- 2 ER18505 battery (3.6V/section) in parallel
- Geomagnetic and radar sensor detection
- IP67 rating
- R719A weight limit: 5 tons
- Compatible with LoRaWAN™ Class A
- Frequency hopping spread spectrum (FHSS)
- 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.

Applications

- Intelligent parking detection
- Others

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Dimensions
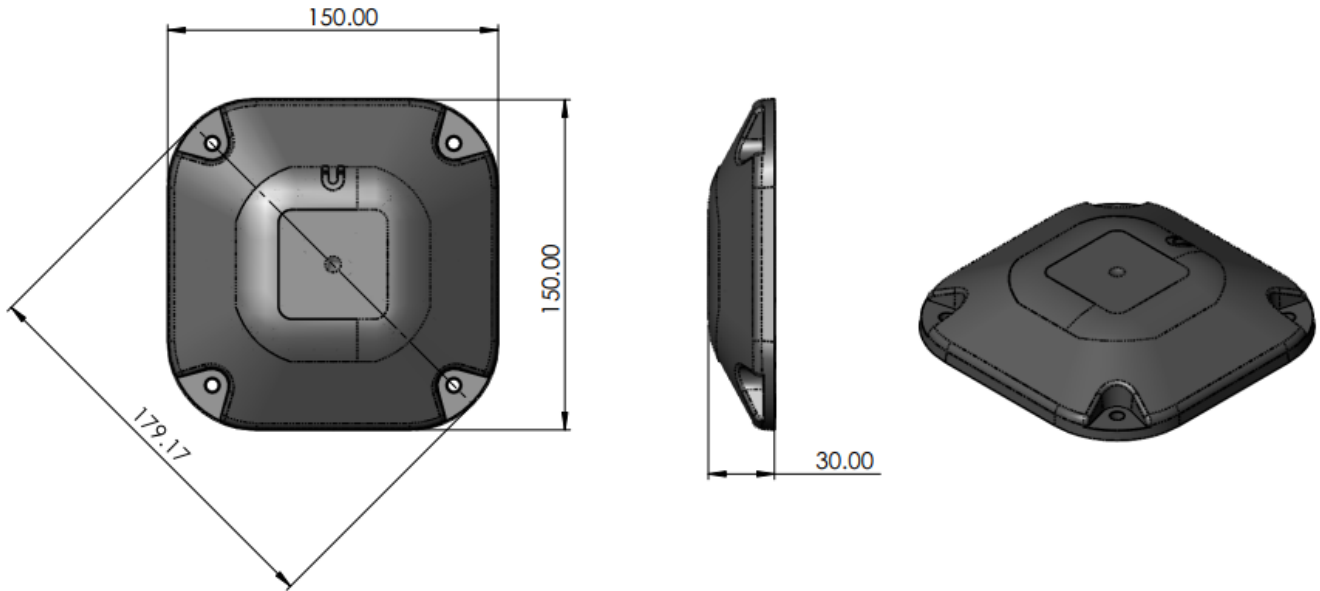
Electrical Specifications

Input Power	2 x 3.6V ER18505 (3.6V 4000mAh/section) in parallel
Battery Life	5 years (Under the below conditions: ambient temperature: 25 ℃; report every 60 minutes; txpower = 20 dBm, LoRa SF = 10)
Standby Current	80uA
Wakeup Current	6.3mA @3.3V
Transmitting Current (max)	120mA @3.3V
Receiving Current (max)	11mA @3.3V
Battery Measurement Accuracy	±0.1V
Magnetic Field Detection Range	±50 gauss
Radar Sensor Working Frequency	60GHZ
Radar Sensor Detection Range	6cm to 2m

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Note:

When using ER18505 lithium battery for the first time, users need to make sure that the lithium battery has been activated. The inactive lithium battery should be activated by following the activation method.

Activation Method:

ER18505 single battery is connected in parallel with a 33ohm resistor for 6 minutes. When the load voltage≥3.3V, the activation is completed.

Frequency

Frequency Range	863MHz-928MHz 470MHz-510MHz
TX Power	US915 20dbm; AS923 16dbm; AU915 20dbm; CN470 19.15dbm; EU868 16dbm; KR920 14dbm; IN865 20dbm;
Receiving Sensitivity	-136dBm (LoRa, Spreading Factor=12, Bit Rate = 293bps) -121dBm (FSK, Frequency deviation=5kHz, Bit Rate=1.2kbps)
Antenna Type	Build-in antenna
Communication Distance	10km (The actual distance may vary depending on the environment.)
Data Transfer Rate	0.3kbps ~ 50kbps (LoRa) 1.2kbps ~ 300kbps (FSK)
Modulation	LoRa/FSK (Note: Please choose one modulation.)
Supportable LoRaWAN Frequency	EU863-870, US902-928, AU915-928, KR920-923, AS923-1, AS923-2, AS923-3, IN865-867,CN470-510 (Note: optional, to be configured before shipment)

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Physical Properties

Dimensions	150mm x 150mm x 30mm
Weight	353g
Environment Humidity Range	<90%RH (No condensation)
Operating Temperature Range	-20°C to 75°C